

**S.S.51 "ALEMAGNA"**  
VARIANTE DI LONGARONE

**PROGETTO FATTIBILITA' TECNICA ED ECONOMICA**

COD. VE407

**PROGETTAZIONE: ATI VIA - SERING - VDP - BRENG**

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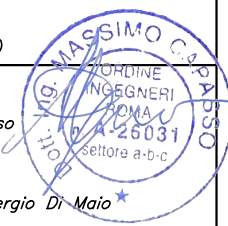
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**Relazione tecnica e di calcolo Muri a fondazione diretta**

CODICE PROGETTO		NOME FILE		REVISIONE	SCALA:
PROGETTO	LIV. PROG. ANNO	VE407_P000S00GETRE01_B			
DPVE0407	D 21	CODICE ELAB.	P00OS00GETRE01	B	-
D		-	-	-	-
C		-	-	-	-
B	Recepimento osservazioni CdS Preliminare	15-12-2022	L.STARNA	G.PIAZZA	M.CAPASSO
A	EMISSIONE	SETT. 2021	L.STARNA	G.PIAZZA	M.CAPASSO
REV.	DESCRIZIONE	DATA	REDATTO	VERIFICATO	APPROVATO



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## 1 GENERALITA'

### 1.1 Oggetto

La presente relazione illustra le analisi e le verifiche relative ai **Muri di sostegno su fondazione diretta** previsti nell'ambito dei lavori di realizzazione della "VE407 - SS 51 "Alemagna"- Variante di Longarone".

Le analisi e le verifiche statiche mirano al dimensionamento degli elementi principali per consentirne una piena definizione dal punto di vista prestazionale ed economico.

Le analisi e le verifiche degli aspetti di dettaglio, saranno sviluppate nella successiva fase di Progettazione.

### 1.2 Vita Nominale di progetto, Classe d'uso e Periodo di Riferimento dell'opera

#### 1.2.1 Vita Nominale $V_N$

La vita nominale di progetto  $V_N$  di un'opera è convenzionalmente definita come il numero di anni nel quale è previsto che l'opera, purché soggetta alla necessaria manutenzione, mantenga specifici livelli prestazionali.

I valori minimi di  $V_N$  da adottare per i diversi tipi di costruzione sono riportati nella Tab. 2.4.I. (§ 2.4.1 NTC2018). Tali valori possono essere anche impiegati per definire le azioni dipendenti dal tempo.

**Tab. 2.4.I – Valori minimi della Vita nominale  $V_N$  di progetto per i diversi tipi di costruzioni**

TIPI DI COSTRUZIONI		Valori minimi di $V_N$ (anni)
1	Costruzioni temporanee e provvisorie	10
2	Costruzioni con livelli di prestazioni ordinari	50
3	Costruzioni con livelli di prestazioni elevati	100

*Tabella 5.1 – Valori minimi della Vita nominale  $V_N$  di progetto per i diversi tipi di costruzioni*

In accordo con la Committenza Anas è stato assunto:


- Vita Nominale di progetto:  $V_N = 50$  anni (costruzioni con livelli di prestazione elevati).

#### 1.2.2 Classi d'Uso

Con riferimento alle conseguenze di una interruzione di operatività o di un eventuale collasso, le costruzioni sono suddivise in classi d'uso così definite (§2.4.2 NTC2018):

*Classe I:* Costruzioni con presenza solo occasionale di persone, edifici agricoli.

*Classe II:* Costruzioni il cui uso preveda normali affollamenti, senza contenuti pericolosi per l'ambiente e senza funzioni pubbliche e sociali essenziali. Industrie con attività non pericolose per l'ambiente. Ponti, opere infrastrutturali, reti viarie non ricadenti in Classe d'uso III o in Classe d'uso IV, reti ferroviarie la cui interruzione non provochi situazioni di emergenza. Dighe il cui collasso non provochi conseguenze rilevanti.

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*Classe III:* Costruzioni il cui uso preveda affollamenti significativi. Industrie con attività pericolose per l'ambiente. Reti viarie extraurbane non ricadenti in Classe d'uso IV. Ponti e reti ferroviarie la cui interruzione provochi situazioni di emergenza. Dighe rilevanti per le conseguenze di un loro eventuale collasso.

*Classe IV:* Costruzioni con funzioni pubbliche o strategiche importanti, anche con riferimento alla gestione della protezione civile in caso di calamità. Industrie con attività particolarmente pericolose per l'ambiente. Reti viarie di tipo A o B, di cui al DM 5/11/2001, n. 6792, "Norme funzionali e geometriche per la costruzione delle strade", e di tipo C quando appartenenti ad itinerari di collegamento tra capoluoghi di provincia non altresì serviti da strade di tipo A o B. Ponti e reti ferroviarie di importanza critica per il mantenimento delle vie di comunicazione, particolarmente dopo un evento sismico. Dighe connesse al funzionamento di acquedotti e a impianti di produzione di energia elettrica.

Relativamente alle conseguenze di una interruzione di operatività o di un eventuale collasso, delle opere di cui trattasi, vi si attribuisce:

- Classe d'Uso: **IV**;
- Coefficiente d'Uso:  $C_U = 2.0$ .

### 1.2.3 Periodo di Riferimento per l'azione sismica

Il periodo di riferimento, impiegato nella valutazione delle azioni sismiche risulta pari a:

- Periodo di Riferimento:  $V_R = V_N \times C_U = 50 \times 2.0 = 100$  anni.


## 1.3 Descrizione delle opere

Tutte le opere analizzate nella presente relazione sono costituite da muri gettati in opera.

### 1.3.1 Muri di sostegno

I tipologici esaminati sono i seguenti:


- Muro di sostegno tipo H3 ("MSTD – H3"): per altezze del paramento  $2.01 \text{ m} \leq H \leq 3.0 \text{ m}$ ;
- Muro di sostegno tipo H4 ("MSTD – H4"): per altezze del paramento  $3.01 \text{ m} \leq H \leq 4.0 \text{ m}$ ;
- Muro di sostegno tipo H5 ("MSTD – H5"): per altezze del paramento  $4.01 \text{ m} \leq H \leq 5.0 \text{ m}$ ;
- Muro di sostegno tipo H6 ("MSTD – H6"): per altezze del paramento  $5.01 \text{ m} \leq H \leq 6.0 \text{ m}$ ;
- Muro di sostegno tipo H7 ("MSTD – H7"): per altezze del paramento  $6.01 \text{ m} \leq H \leq 7.0 \text{ m}$ ;
- Muro di sostegno tipo H8 ("MSTD – H8"): per altezze del paramento  $7.01 \text{ m} \leq H \leq 8.0 \text{ m}$ ;
- Muro di sostegno tipo H9 ("MSTD – H9"): per altezze del paramento  $8.01 \text{ m} \leq H \leq 9.0 \text{ m}$ ;
- Muro di sostegno tipo H10 ("MSTD – H10"): per altezze del paramento  $9.01 \text{ m} \leq H \leq 10.0 \text{ m}$ ;

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## **2 NORMATIVE E RIFERIMENTI**


Le analisi e le verifiche delle strutture sono state effettuate nel rispetto della seguente normativa vigente:

- [D\_1]. DM 17 gennaio 2018: Aggiornamento delle <<Norme tecniche per le costruzioni>> (nel seguito indicate come NTC18).
- [D\_2]. Circolare 21 gennaio 2019 n.7: Istruzioni per l'applicazione dell' "Aggiornamento delle Norme tecniche per le costruzioni" di cui al DM 17 gennaio 2018, supplemento ordinario n° 5 alla G. U. n° 35 del 11/02/2019 (nel seguito indicate come CNTC18).
- [D\_3]. Norma Europea UNI EN 206: Calcestruzzo – Specificazione, prestazione, produzione e conformità (Dicembre 2016).
- [D\_4]. Norma Italiana UNI 11104: Calcestruzzo – Specificazione, prestazione, produzione e conformità – Specificazioni complementari per l'applicazione della EN 206 (luglio 2016).

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### **3 NORME TECNICHE**

Il metodo di calcolo adottato è quello semiprobabilistico agli stati limite, con applicazione di coefficienti parziali per le azioni o per l'effetto delle azioni, variabili in ragione dello stato limite indagato.

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## 4 CARATTERISTICHE DEI MATERIALI E RESISTENZE DI PROGETTO

### 4.1 Calcestruzzi

#### 4.1.1 Caratteristiche ai fini della durabilità

Al fine di valutare le caratteristiche vincolanti delle miscele di calcestruzzo nei confronti della durabilità viene fatto riferimento alle norme [D\_3] e [D\_4].

Relativamente alla scelta delle classi di esposizione tenuto conto che il tracciato si sviluppa oltre 2 km dalla linea di costa è stata esclusa l'applicazione della classe XS (Corrosione indotta dai cloruri contenuti nell'acqua di mare).

Relativamente alla scelta delle classi di esposizione, in accordo alla "Classificazione del livello di rischio di attacco del gelo per aree climatiche del territorio italiano" contenuta nell'appendice A alla norma [D\_4], che attribuisce al Veneto un livello di rischio Alto, è stata considerata l'applicazione della classe XF (Attacco dei cicli gelo/disgelo con o senza disgelanti), mentre è stata esclusa la classe XD (corrosione indotta da cloruri esclusi quelli provenienti dall'acqua di mare).

Di seguito, per ciascun elemento gettato in opera, viene riportata la classe di esposizione che risulta vincolante ai fini delle caratteristiche della miscela. Inoltre, sono riportati la classe di resistenza, i range previsti per le dimensioni massime degli aggregati, la classe di consistenza, il valore massimo del rapporto acqua/cemento, il tipo di cemento da impiegare in funzione della parte d'opera e il contenuto minimo di cemento:

CARATTERISTICHE DEI CALCESTRUZZI (UNI EN 206-1 / UNI 11104)				
CALCESTRUZZO PER	Magrone di sottofondazione	Fondazioni - Muri gettati in opera	Elevazioni - Muri gettati in opera	Cordoli
Classe di resistenza (fck/Rck) (Mpa)	<b>C12/15</b>	<b>C32/40</b>	<b>C32/40</b>	<b>C35/45</b>
Classe di esposizione ambientale	-	<b>XC2 - XA1</b>	<b>XC4 - XD1 - XF2</b>	<b>XC4 - XD3 - XF4</b>
φ max inerti (mm)	Dupper	32	25	25
	Dlower	20	16	16
Classe di consistenza	-	S4	S4	S5
Rapporto max acqua/cemento	-	0.5	0.5	0.45
Contenuto minimo di aria	-	-	4%	4%
Contenuto minimo di cemento (kg/m <sup>3</sup> )	150	340**_*	340**_*	360

*Tabella 5.2 – Caratteristiche dei Calcestruzzi per getti in opera*

\* Cemento LH (Low Heat) a basso calore di idratazione.

\*\* I contenuti di cemento indicati saranno verificati in sede di prequalifica, imponendo che il riscaldamento del calcestruzzo del nucleo in condizioni adiabatiche rispetti le seguenti condizioni:

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- $\delta T_{3gg} \leq 35^\circ$  per getti di spessore non superiore a 2 m;
- $\delta T_{7gg} \leq 35^\circ$  per getti di spessore superiore a 2 m.

In ogni caso, dovrà essere garantito il rispetto delle classi di esposizione e resistenza sopra indicate.

**4.1.2 Copriferri nominali**

I valori minimi dello spessore dello strato di ricoprimento di calcestruzzo (copriferro), ai fini della protezione delle armature dalla corrosione, sono riportati nella Tab. C4.1.IV delle circolari applicative §[D\_2], nella quale sono distinte le tre condizioni ambientali di Tab. 4.1.III delle NTC:

Tabella C4.1.IV - Copriferri minimi in mm

C <sub>min</sub>	C <sub>0</sub>	ambiente	barre da c.a. elementi a piastra		barre da c.a. altri elementi		cavi da c.a.p. elementi a piastra		cavi da c.a.p. altri elementi	
			C <sub>0</sub> ≥ C <sub>0</sub>	C <sub>0</sub> < C <sub>0</sub>	C <sub>0</sub> ≥ C <sub>0</sub>	C <sub>0</sub> < C <sub>0</sub>	C <sub>0</sub> ≥ C <sub>0</sub>	C <sub>0</sub> < C <sub>0</sub>	C <sub>0</sub> ≥ C <sub>0</sub>	C <sub>0</sub> < C <sub>0</sub>
C25/30	C35/45	ordinario	15	20	20	25	25	30	30	35
C30/37	C40/50	aggressivo	25	30	30	35	35	40	40	45
C35/45	C45/55	molto ag.	35	40	40	45	45	50	50	50

I valori della tabella C4.1.IV si riferiscono a costruzioni con Vita Nominale di 50 anni (tipo 2 della Tab. 2.4.1 delle NTC). Per costruzioni con vita nominale di 100 anni (tipo 3 della citata Tab. 2.4.1), i valori della Tab. C4.1.IV vanno aumentati di 10 mm.

Per la definizione del calcestruzzo nominale, ai valori minimi di copriferro vanno aggiunte le tolleranze di posa, pari a 5 mm, secondo indicazioni di norme di comprovata validità.

Per le produzioni di elementi sottoposte a controllo di qualità che preveda anche la verifica dei copriferri, i valori della tabella possono essere ridotti di 5 mm.

La tabella seguente illustra i valori del calcestruzzo nominale gettato in opera richiesti in base all'applicazione dei criteri sopra esposti e specializzati al caso in esame:

**DETERMINAZIONE DEI COPRIFERRI NOMINALI SECONDO NTC2018**

Dati generali relativi all'opera	Var	unità	
Tipo di costruzione (1=temp. o provvisoria; 2 = prestazioni ordinarie; 3=prestazioni elevate)	TC		2
Vita nominale dell'opera	V <sub>N</sub>	anni	50

Tabella C4.1.IV Copriferri minimi in mm

ambiente	R <sub>ckmin</sub>	R <sub>ck0</sub>	barre da c.a.				cavi da c.a.p.			
			elementi a piastra		altri elementi		elementi a piastra		altri elementi	
			R <sub>ck</sub> ≥ R <sub>ck0</sub>	R <sub>ckmin</sub> ≤ R <sub>ck</sub> ≤ R <sub>ck0</sub>	R <sub>ck</sub> ≥ R <sub>ck0</sub>	R <sub>ckmin</sub> ≤ R <sub>ck</sub> ≤ R <sub>ck0</sub>	R <sub>ck</sub> ≥ R <sub>ck0</sub>	R <sub>ckmin</sub> ≤ R <sub>ck</sub> ≤ R <sub>ck0</sub>	R <sub>ck</sub> ≥ R <sub>ck0</sub>	R <sub>ckmin</sub> ≤ R <sub>ck</sub> ≤ R <sub>ck0</sub>
ordinario	30	45	15	20	20	25	25	30	30	35
aggressivo	37	50	25	30	30	35	35	40	40	45
molto ag.	45	55	35	40	40	45	5	50	50	50

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Elemento		Fondazioni - Muri gettati in opera	Elevazioni - Muri gettati in opera	Cordoli
Tipo di armatura (1=barre da c.a.; 2=cavi da c.a.p.)		1	1	1
Elemento a piastra		SI	SI	SI
Classe di esposizione		XC2 - XA1	XC4 - XD1 - XF2	XC4 - XD3 - XF4
Ambiente		aggressivo	aggressivo	molto ag.
Rck	Mpa	40	40	45
Check Rck min		OK	OK	OK
copriferro minimo (Tab. C4.1.IV NTC)	mm	30	30	40
incremento Per Vn=100 (tipo di costruzione 3)	mm	0	0	0
elem. prefabbricato con ver. Copriferri*		NO	NO	NO
riduzione per produzioni con ver. Copriferri		0	0	0
Tolleranza di posa		10	10	10
copriferro nominale	mm	40	40	50
<i>* Elemento prefabbricato prodotto con sistema sottoposto a controllo di qualità che comprenda la verifica dei copriferri</i>				
<b>copriferro nominale di progetto</b>	mm	<b>40</b>	<b>40</b>	<b>50</b>

Tabella 5.3 – Valori dei copriferri nominali in base alle NTC2018

### 4.1.3 Resistenze di progetto

#### Calcestruzzo C32/40 e C35/45

Caratteristiche Calcestruzzo	Var	unità	C32/40	C35/45
Resistenza a compressione caratteristica cubica	$R_{ck}$	Mpa	40	45
Resistenza a compressione caratteristica cilindrica	$f_{ck} = 0.83 R_{ck}$	Mpa	32	35
Resistenza media a compressione cilindrica	$f_{cm} = f_{ck} + 8$	Mpa	40.00	43.00
Resistenza media a trazione semplice	$f_{ctm}$	Mpa	3.02	3.21
Resistenza caratteristica a trazione semplice	$f_{ctk5\%} = 0.7 f_{ctm}$	Mpa	2.12	2.25
Resistenza caratteristica a trazione semplice	$f_{ctk95\%} = 1.3 f_{ctm}$	Mpa	3.93	4.17
Resistenza media a trazione per flessione	$f_{cfm} = 1.2 f_{ctm}$	Mpa	3.63	3.85
Modulo elastico	$E_{cm} = 22000 \times (f_{cm}/10)^{0.3}$	Mpa	33346	34077

STATI LIMITE ULTIMI	Var	unità		
coefficiente $\gamma_c$	$\gamma_c$		1.50	1.50
coefficiente $\alpha_{cc}$	$\alpha_{cc}$		0.85	0.85
Resistenza a compressione di calcolo	$f_{cd} = \alpha_{cc} f_{ck} / \gamma_c$	Mpa	18.13	19.83
Resistenza a trazione di calcolo	$f_{ctd} = f_{ctk} / \gamma_c$	Mpa	1.41	1.50

STATI LIMITE DI ESERCIZIO	Var	unità		
$\sigma_{c, max}$ - combinazione di carico caratteristica	$\sigma_{c, max} = 0.60 f_{ck}$	Mpa	19.20	21.00
$\sigma_{c, max}$ - combinazione di carico quasi permanente	$\sigma_{c, max} = 0.45 f_{ck}$	Mpa	14.40	15.75
$\sigma_t$ - stato limite di formazione delle fessure	$\sigma_t = f_{ctm} / 1.2$	Mpa	2.52	2.67

ANCORAGGIO DELLE BARRE	Var	unità		
Tensione tan. ultima di ad. $\phi \leq 32$ mm - buona ad.	$f_{bd} = 2.25 \times 1.0 \times 1.0 \times f_{ctk} / g_c$	Mpa	3.18	3.37
Tensione tan. ultima di ad. $\phi \leq 32$ mm - non buona ad.	$f_{bd} = 2.25 \times 0.7 \times 1.0 \times f_{ctk} / g_c$	MPa	2.22	2.36

### 4.1.4 Verifiche a fessurazione

Le condizioni ambientali, ai fini della protezione contro la corrosione delle armature, sono suddivise in ordinarie, aggressive e molto aggressive in relazione a quanto indicato dalla Tab. 4.1.III delle NTC2018:



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Tab. 4.1.III – Descrizione delle condizioni ambientali

Condizioni ambientali	Classe di esposizione
Ordinarie	X0, XC1, XC2, XC3, XF1
Aggressive	XC4, XD1, XS1, XA1, XA2, XF2, XF3
Molto aggressive	XD2, XD3, XS2, XS3, XA3, XF4

Nel caso in esame si considerano:

- Condizioni **aggressive**: per le verifiche a fessurazione delle strutture in fondazione ed in elevazione.
- Condizioni **molto aggressive**: per le verifiche a fessurazione relative ai soli cordoli.

La Tab. 4.1.IV stabilisce i criteri per la scelta degli stati limite di fessurazione in funzione delle condizioni ambientali e del tipo di armatura:

Tab. 4.1.IV - Criteri di scelta dello stato limite di fessurazione

Gruppi di Esigenze	Condizioni ambientali	Combinazione di azioni	Armatura			
			Sensibile Stato limite	$w_k$	Poco sensibile Stato limite	$w_k$
A	Ordinarie	frequente	apertura fessure	$\leq w_2$	apertura fessure	$\leq w_3$
		quasi permanente	apertura fessure	$\leq w_1$	apertura fessure	$\leq w_2$
B	Aggressive	frequente	apertura fessure	$\leq w_1$	apertura fessure	$\leq w_2$
		quasi permanente	decompressione	-	apertura fessure	$\leq w_1$
C	Molto aggressive	frequente	formazione fessure	-	apertura fessure	$\leq w_1$
		quasi permanente	decompressione	-	apertura fessure	$\leq w_1$

Pertanto, nel caso in esame si ha:

- Verifiche a fessurazione – condizioni ambientali **Aggressive** – Armatura poco sensibile:
  - o Combinazione di azioni frequente:  $w_k \leq w_2 = 0.3 \text{ mm}$
  - o Combinazione di azioni quasi permanente:  $w_k \leq w_1 = 0.2 \text{ mm}$
- Verifiche a fessurazione – condizioni ambientali **Molto aggressive** – Armatura poco sensibile:
  - o Combinazione di azioni frequente:  $w_k \leq w_1 = 0.2 \text{ mm}$
  - o Combinazione di azioni quasi permanente:  $w_k \leq w_1 = 0.2 \text{ mm}$

## 4.2 Acciaio in barre per cemento armato

### 4.2.1 Qualità dell'acciaio

Acciaio in barre B450C in accordo a DM 17/01/2018 (Capitolo 11).

**4.2.2 Resistenze di progetto**

<b>Caratteristiche Acciaio per Calcestruzzo armato</b>	<b>Var</b>	<b>unità</b>		
Qualità dell'acciaio			B450C	B450A
Tensione caratteristica di snervamento nominale	$f_{yk}$	Mpa	450	450
Tensione caratteristica a carico ultimo nominale	$f_{tk}$	Mpa	540	450
Modulo elastico	Es	Mpa	210000	210000
diametro minimo della barra impiegabile	$\phi_{min}$	mm	6	5
diametro massimo della barra impiegabile	$\phi_{max}$	mm	40	10
<b>STATI LIMITE ULTIMI</b>	<b>Var</b>	<b>unità</b>		
coefficiente $\gamma_s$	$\gamma_s$		1.15	1.15
Resistenza di calcolo	$f_{yd}=f_{yk}/\gamma_s$	Mpa	391.3	391.3
<b>STATI LIMITE DI ESERCIZIO</b>	<b>Var</b>	<b>unità</b>		
$\sigma_{s,max}$ - combinazione di carico caratteristica	$\sigma_{s,max}=0.8 f_{yk}$	Mpa	360.0	360.0

## 5 PARAMETRI GEOTECNICI DI PROGETTO

Sono stati adottati i seguenti parametri geotecnici:

### Rilevato stradale


Peso di volume – $\gamma$ (kN/mc)	19,0
Angolo di attrito – $\varphi'$ (°)	35
Coesione drenata – $c'$ (kPa)	0

### Terreno di fondazione (ALG)

Peso di volume – $\gamma$ (kN/mc)	20,0
Angolo di attrito – $\varphi'$ (°)	36
Coesione drenata – $c'$ (kPa)	0

Il terreno di fondazione più frequentemente presente per i muri in oggetto è rappresentato dall'unità ghiaiosa "ALG". Le caratteristiche di tale materiale risultano essere anche quelle più cautelative tra i diversi terreni riscontrati e pertanto viene assunto come terreno di fondazione per le analisi di tutte le opere.

A favore di sicurezza, è stata assunta la quota della falda coincidente con la quota testa pali.

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## 6 CRITERI DI CALCOLO

### 6.1 Modello di calcolo

Per l'analisi ed il calcolo dei muri di sostegno è stato utilizzato il software di calcolo MAX 15 prodotto dalla Aztec Informatica s.r.l., Corso Umberto 43 – 87050 Casole Bruzio (CS).

#### 6.1.1 Calcolo della spinta sul muro

Effettuando il calcolo tramite gli Eurocodici è necessario fare la distinzione fra i parametri caratteristici ed i valori di calcolo (o di progetto) sia delle azioni che delle resistenze.

I valori di calcolo si ottengono dai valori caratteristici mediante l'applicazione di opportuni coefficienti di sicurezza parziali  $\gamma$ . In particolare si distinguono combinazioni di carico di tipo A1 - M1 nelle quali vengono incrementati i carichi e lasciati inalterati i parametri di resistenza del terreno e combinazioni di carico di tipo A2 - M2 nelle quali vengono ridotti i parametri di resistenza del terreno e incrementati i soli carichi variabili.

#### 6.1.2 Metodo di Culmann

Il metodo di Culmann adotta le stesse ipotesi di base del metodo di Coulomb. La differenza sostanziale è che, mentre Coulomb considera un terrapieno con superficie a pendenza costante e carico uniformemente distribuito (il che permette di ottenere una espressione in forma chiusa per il coefficiente di spinta), il metodo di Culmann consente di analizzare situazioni con profilo di forma generica e carichi sia concentrati che distribuiti comunque disposti. Inoltre, rispetto al metodo di Coulomb, risulta più immediato e lineare tener conto della coesione del masso spingente. Il metodo di Culmann, nato come metodo essenzialmente grafico, si è evoluto per essere trattato mediante analisi numerica (noto in questa forma come metodo del cuneo di tentativo). Come il metodo di Coulomb anche questo metodo considera una superficie di rottura rettilinea.

I passi del procedimento risolutivo sono i seguenti:

- si impone una superficie di rottura (angolo di inclinazione  $\rho$  rispetto all'orizzontale) e si considera il cuneo di spinta delimitato dalla superficie di rottura stessa, dalla parete su cui si calcola la spinta e dal profilo del terreno;
- si valutano tutte le forze agenti sul cuneo di spinta e cioè peso proprio ( $W$ ), carichi sul terrapieno, resistenza per attrito e per coesione lungo la superficie di rottura ( $R$  e  $C$ ) e resistenza per coesione lungo la parete ( $A$ );
- dalle equazioni di equilibrio si ricava il valore della spinta  $S$  sulla parete.

Questo processo viene iterato fino a trovare l'angolo di rottura per cui la spinta risulta massima.

La convergenza non si raggiunge se il terrapieno risulta inclinato di un angolo maggiore dell'angolo d'attrito del terreno.

Nei casi in cui è applicabile il metodo di Coulomb (profilo a monte rettilineo e carico uniformemente distribuito) i risultati ottenuti col metodo di Culmann coincidono con quelli del metodo di Coulomb.

Le pressioni sulla parete di spinta si ricavano derivando l'espressione della spinta  $S$  rispetto all'ordinata  $z$ . Noto il diagramma delle pressioni è possibile ricavare il punto di applicazione della spinta.

#### 6.1.3 Spinta in presenza di sisma

Per tener conto dell'incremento di spinta dovuta al sisma si fa riferimento al metodo di Mononobe-Okabe (cui fa riferimento la Normativa Italiana).

La Normativa Italiana suggerisce di tener conto di un incremento di spinta dovuto al sisma nel modo seguente.

Detta  $\varepsilon$  l'inclinazione del terrapieno rispetto all'orizzontale e  $\beta$  l'inclinazione della parete rispetto alla verticale, si calcola la spinta  $S'$  considerando un'inclinazione del terrapieno e della parte pari a:

$$\varepsilon' = \varepsilon + \theta$$

$$\beta' = \beta + \theta$$

Avendo posto

$$\theta = \arctan\left(\frac{k_h}{1 \pm k_v}\right)$$

Dove  $k_h$  e  $k_v$  sono, rispettivamente, il coefficiente sismico orizzontale e verticale.

In presenza di falda a monte,  $\theta$  assume le seguenti espressioni:

Terreno a bassa permeabilità

$$\theta = \arctan\left[\left(\frac{\gamma}{\gamma_{sat} - \gamma_w}\right) \cdot \left(\frac{k_h}{1 \pm k_v}\right)\right]$$

Terreno a permeabilità elevata

$$\theta = \arctan\left[\left(\frac{\gamma}{\gamma_{sat} - \gamma_w}\right) \cdot \left(\frac{k_h}{1 \pm k_v}\right)\right]$$

Detta  $S$  la spinta calcolata in condizioni statiche, l'incremento di spinta da applicare è espresso da:

$$\Delta S = \Delta S' - S$$

dove il coefficiente  $A$  vale

$$A = \frac{\cos^2(\beta + \theta)}{\cos^2(\beta) \cos(\theta)}$$

In presenza di falda a monte, nel coefficiente  $A$  si tiene conto dell'influenza dei pesi di volume nel calcolo di  $\theta$ . Adottando il metodo di Mononobe-Okabe per il calcolo della spinta, il coefficiente  $A$  viene posto pari a 1. Tale incremento di spinta è applicato a metà altezza della parete di spinta nel caso di forma rettangolare del diagramma di incremento sismico, allo stesso punto di applicazione della spinta statica nel caso in cui la forma del diagramma di incremento sismico è uguale a quella del diagramma statico.

Oltre a questo incremento bisogna tener conto delle forze d'inerzia orizzontali e verticali che si destano per effetto del sisma. Tali forze vengono valutate come

$$F_{iH} = k_h W \quad F_{iV} = \pm k_v W$$

dove  $W$  è il peso del muro, del terreno soprastante la mensola di monte ed i relativi sovraccarichi e va applicata nel baricentro dei pesi.

Il metodo di Culmann tiene conto automaticamente dell'incremento di spinta. Basta inserire nell'equazione risolutiva la forza d'inerzia del cuneo di spinta. La superficie di rottura nel caso di sisma risulta meno inclinata della corrispondente superficie in assenza di sisma.

#### 6.1.4 Verifica a ribaltamento

La verifica a ribaltamento consiste nel determinare il momento risultante di tutte le forze che tendono a fare ribaltare il muro (momento ribaltante  $M_r$ ) ed il momento risultante di tutte le forze che tendono a stabilizzare il muro (momento stabilizzante  $M_s$ ) rispetto allo spigolo a valle della fondazione e verificare che il rapporto  $M_s/M_r$  sia maggiore di un determinato coefficiente di sicurezza  $\eta_r$ .

Eseguendo il calcolo mediante gli Eurocodici si può impostare  $\eta_r \geq 1.00$ .

Deve quindi essere verificata la seguente disequaglianza

$$\frac{M_s}{M_r} \geq \eta_r$$

Il momento ribaltante  $M_r$  è dato dalla componente orizzontale della spinta  $S$ , dalle forze di inerzia del muro e del terreno gravante sulla fondazione di monte (caso di presenza di sisma) per i rispettivi bracci. Nel momento stabilizzante interviene il peso del muro (applicato nel baricentro) ed il peso del terreno gravante sulla fondazione di monte. Per quanto riguarda invece la componente verticale della spinta essa sarà stabilizzante se l'angolo d'attrito terra-muro  $\delta$  è positivo, ribaltante se  $\delta$  è negativo. Il valore di  $\delta$  è positivo quando è il terrapieno che scorre rispetto al muro, negativo quando è il muro che tende a scorrere rispetto al terrapieno (questo può essere il caso di una spalla da ponte gravata da carichi notevoli). Se sono presenti dei tiranti essi contribuiscono al momento stabilizzante.

Questa verifica ha significato solo per fondazione superficiale e non per fondazione su pali.

#### 6.1.5 Verifica a scorrimento

Per la verifica a scorrimento del muro lungo il piano di fondazione deve risultare che la somma di tutte le forze parallele al piano di posa che tendono a fare scorrere il muro deve essere minore di tutte le forze, parallele al piano di scorrimento, che si oppongono allo scivolamento, secondo un certo coefficiente di sicurezza. La verifica a scorrimento risulta soddisfatta se il rapporto fra la risultante delle forze resistenti allo scivolamento  $F_r$  e la risultante delle forze che tendono a fare scorrere il muro  $F_s$  risulta maggiore di un determinato coefficiente di sicurezza  $\eta_s$ .

Eseguendo il calcolo mediante gli Eurocodici si può impostare  $\eta_s \geq 1.00$ .

$$\frac{F_r}{F_s} \geq \eta_s$$

Le forze che intervengono nella  $F_s$  sono: la componente della spinta parallela al piano di fondazione e la componente delle forze d'inerzia parallela al piano di fondazione.

La forza resistente è data dalla resistenza d'attrito e dalla resistenza per adesione lungo la base della fondazione. Detta  $N$  la componente normale al piano di fondazione del carico totale gravante in fondazione e indicando con  $\delta_f$  l'angolo

d'attrito terreno-fondazione, con  $c_a$  l'adesione terreno-fondazione e con  $B_r$  la larghezza della fondazione reagente, la forza resistente può esprimersi come

$$F_r = N \tan \delta_f + c_a B_r$$

La Normativa consente di computare, nelle forze resistenti, una aliquota dell'eventuale spinta dovuta al terreno posto a valle del muro. In tal caso, però, il coefficiente di sicurezza deve essere aumentato opportunamente. L'aliquota di spinta passiva che si può considerare ai fini della verifica a scorrimento non può comunque superare il 50 per cento.

Per quanto riguarda l'angolo d'attrito terra-fondazione  $\delta_f$  diversi autori suggeriscono di assumere un valore pari all'angolo d'attrito del terreno di fondazione.

### 6.1.6 Verifica al carico limite

Il rapporto fra il carico limite in fondazione e la componente normale della risultante dei carichi trasmessi dal muro sul terreno di fondazione deve essere superiore a  $\eta_q$ . Cioè, detto  $Q_u$ , il carico limite ed  $R$  la risultante verticale dei carichi in fondazione, deve essere:

$$\frac{Q_u}{R} \geq \eta_q$$

Eseguendo il calcolo mediante gli Eurocodici si può impostare  $\eta_q \geq 1.00$ .

Si adotta per il calcolo del carico limite in fondazione il metodo di MEYERHOF.

L'espressione del carico ultimo è data dalla relazione:

$$Q_u = c N_c d_c i_c + q N_q d_q i_q + 0.5 \gamma B N_\gamma d_\gamma i_\gamma$$

In questa espressione

- c coesione del terreno in fondazione;
- $\varphi$  angolo di attrito del terreno in fondazione;
- $\gamma$  peso di volume del terreno in fondazione;
- B larghezza della fondazione;
- D profondità del piano di posa;
- q pressione geostatica alla quota del piano di posa.

I vari fattori che compaiono nella formula sono dati da:

$$A = e^{\pi \tan \varphi}$$

$$N_q = A \tan^2 \left( 45^\circ + \frac{\varphi}{2} \right)$$

$$N_c = (N_q - 1) \cot(\varphi)$$

$$N_\gamma = (N_q - 1) \tan(1.4\varphi)$$

Indichiamo con  $K_p$  il coefficiente di spinta passiva espresso da:

$$K_p = \tan^2\left(45 + \frac{\varphi}{2}\right)$$

I fattori  $d$  e  $i$  che compaiono nella formula sono rispettivamente i fattori di profondità ed i fattori di inclinazione del carico espressi dalle seguenti relazioni:

#### Fattori di profondità

$$d_q = 1 + 0.2 \frac{D}{B} \sqrt{K_p}$$

$$d_q = d_\gamma = 1 \quad \text{per } \varphi = 0$$

$$d_q = d_\gamma = 1 + 0.1 \frac{D}{B} \sqrt{K_p} \quad \text{per } \varphi > 0$$

#### Fattori di inclinazione

Indicando con  $\theta$  l'angolo che la risultante dei carichi forma con la verticale (espresso in gradi) e con  $\varphi$  l'angolo d'attrito del terreno di posa abbiamo:

$$i_c = i_q = \left(1 - \frac{\theta}{90}\right)^2$$

$$i_\gamma = \left(1 - \frac{\theta}{\varphi}\right)^2 \quad \text{per } \varphi > 0$$

$$i_\gamma = 0 \quad \text{per } \varphi = 0$$

### **6.1.7 Verifica alla stabilità globale**

La verifica alla stabilità globale del complesso muro + terreno deve fornire un coefficiente di sicurezza non inferiore a  $\eta_g$ .

Eseguendo il calcolo mediante gli Eurocodici si può impostare  $\eta_g \geq 1.00$ .

Viene usata la tecnica della suddivisione a strisce della superficie di scorrimento da analizzare. La superficie di scorrimento viene supposta circolare e determinata in modo tale da non avere intersezione con il profilo del muro o con i pali di fondazione. Si determina il minimo coefficiente di sicurezza su una maglia di centri di dimensioni 10x10 posta in prossimità della sommità del muro. Il numero di strisce è pari a 50.



Si adotta per la verifica di stabilità globale il metodo di Bishop. Il coefficiente di sicurezza nel metodo di Bishop si esprime secondo la seguente formula:

$$\eta = \frac{\sum_i \left( \frac{c_i b_i + (W_i - u_i b_i) \tan \varphi_i}{m} \right)}{\sum_i W_i \sin \alpha_i}$$

dove il termine  $m$  è espresso da

$$m = \left( 1 + \frac{\tan \varphi_i \cdot \tan \alpha_i}{\eta} \right) \cos \alpha_i$$

In questa espressione  $\eta$  è il numero delle strisce considerate,  $b_i$  e  $\alpha_i$  sono la larghezza e l'inclinazione della base della striscia  $i$ -esima rispetto all'orizzontale,  $W_i$  è il peso della striscia  $i$ -esima,  $c_i$  e  $\varphi_i$  sono le caratteristiche del terreno (coesione ed angolo di attrito) lungo la base della striscia ed  $u_i$  è la pressione neutra lungo la base della striscia.

L'espressione del coefficiente di sicurezza di Bishop contiene al secondo membro il termine  $m$  che è funzione di  $\eta$ . Quindi essa viene risolta per successive approssimazioni assumendo un valore iniziale per  $\eta$  da inserire nell'espressione di  $m$  ed iterare fino a quando il valore calcolato coincide con il valore assunto.

## 7 AZIONI E COMBINAZIONI DI PROGETTO

### 7.1 Analisi dei carichi

#### 7.1.1 Carichi permanenti

##### 7.1.1.1 Carichi permanenti strutturali

Il peso proprio degli elementi strutturali di tutti i muri, è automaticamente valutato dal programma di calcolo utilizzato per l'analisi.

##### 7.1.1.2 Spinta delle terre

Il calcolo della spinta del terreno è stata effettuato con riferimento al coefficiente di [spinta attiva  \$K\_A\$](#) .

#### 7.1.2 Sovraccarico accidentale a tergo del muro

E' stato considerato un sovraccarico da traffico a tergo dei muri di sostegno, secondo quanto riportato dal capitolo C5.1.3.3.5 delle NTC18.

Si riportano successivamente le azioni equivalenti considerate nelle analisi, calcolate per tipologia di altezza dei paramenti frontali:

##### Diffusione carichi da traffico (C5.1.3.3.5.1)

Lunghezza impronta in dir. Longitudinale	L	2.20	m
Lunghezza impronta in dir. Trasversale	B	3.00	m
Angolo di diffusione in rilevato	$\beta$	30	deg

##### TIPOLOGICO MURO

			H=3	H=4	H=5	H=6	H=7	H=8	H=9	H=10
Altezza paramento	H	m	3	4	5	6	7	8	9	10
Altezza rilevato a monte	Hr	m	0	0	0	0	0	0	0	0
Distanza piattaforma dal paramento	Dr	m	0	0	0	0	0	0	0	0
Altezza applicazione carico da spiccato	Htot	m	3	4	5	6	7	8	9	10
Larghezza diffusione impronta	B <sub>diff</sub>	m	5.7	6.8	8.0	9.1	10.3	11.4	12.6	13.7
Area diffusione carichi	A <sub>diff</sub>	m <sup>2</sup>	17.0	20.5	23.9	27.4	30.8	34.3	37.8	41.2
Carico equivalente C1	q <sub>diff</sub> C1	kN/m <sup>2</sup>	44.3	38.3	34.1	30.9	28.4	26.5	24.9	23.5
Carico equivalente C2	q <sub>diff</sub> C2	kN/m <sup>2</sup>	26.0	22.1	19.2	17.1	15.5	14.2	13.1	12.2
Carico equivalente C3	q <sub>diff</sub> C3	kN/m <sup>2</sup>	14.3	12.3	10.9	9.8	9.0	8.3	7.8	7.3
Carico equivalente R	q <sub>diff</sub> R	kN/m <sup>2</sup>	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5

#### 7.1.3 Urto veicolo in svio

In accordo con quanto previsto dalle NTC2018 (par. 3.6.3.3.2) si è tenuto conto delle forze causate da urti attraverso un carico pari a 100 kN (azione eccezionale).

Tale azione è considerata agente trasversalmente ed orizzontalmente 1.0 m sopra il livello del piano di marcia.

Si riportano successivamente le azioni equivalenti considerate nelle analisi, per tipologia di altezza dei paramenti frontali:

TIPOLOGICO			H=2	H=3	H=4	H=5	H=6	H=7	H=8	H=9	H=10
Tipologia barriera (P=Puntuale, D=Diffusa)			P	P	P	P	P	P	P	P	P
Diffusione dei carichi (B=bordo, C=centrale)			B	B	B	B	B	B	B	B	B
Forza d'urto	Fu	kN	100	100	100	100	100	100	100	100	100
Altezza applicazione	Hp1	m	1	1	1	1	1	1	1	1	1
Spessore pavimentazione	Hp2	m	0	0	0	0	0	0	0	0	0
Altezza applicazione	Hp	m	1	1	1	1	1	1	1	1	1
Altezza paramento	H	m	2	3	4	5	6	7	8	9	10
Altezza applicazione carico da spiccato	Ht	m	2	3	4	5	6	7	8	9	10
Larghezza di diffusione	Bdiff	m	2	3	4	5	6	7	8	9	10
Forza in testa al muro	Ft	kN	100	100	100	100	100	100	100	100	100
Momento in testa al muro	Mt	kNm	100	100	100	100	100	100	100	100	100
Forza alla base del muro	Fb	kN	100	100	100	100	100	100	100	100	100
Momento alla base del muro	Mb	kNm	300	400	500	600	700	800	900	1000	1100
Forza alla base del concio di muro	Fb*	kN/m	50.0	33.3	25.0	20.0	16.7	14.3	12.5	11.1	10.0
Momento alla base del concio di muro	Mb*	kNm/m	150.0	133.3	125.0	120.0	116.7	114.3	112.5	111.1	110.0
Forza equivalente in testa al concio	Ft*	kN/m	50.0	33.3	25.0	20.0	16.7	14.3	12.5	11.1	10.0
Momento equivalente in testa al concio	Mt*	kNm/m	50.0	33.3	25.0	20.0	16.7	14.3	12.5	11.1	10.0

## 7.2 Azione sismica

L'analisi del muro in fase sismica è stato effettuato con gli usuali metodi pseudo statici in accordo a quanto previsto dalle NTC2018 (par. 7.11.6.2). L'incremento di spinta delle terre in fase sismica è stato valutato in accordo alla teoria di [Mononobe-Okabe](#).

I coefficienti sismici orizzontale  $k_h$  e verticale  $k_v$  sono valutati come illustrato successivamente.

### 7.2.1 Parametri sismici fondamentali

I parametri sismici fondamentali sono stati determinati con l'ausilio del software-free SPETTRI-NTC ver. 1.0.3 (prodotto dal Consiglio Superiore dei Lavori Pubblici [www.cslp.it](http://www.cslp.it)).

I parametri utilizzati sono riassunti nel seguito.


#### TUTTE LE OPERE

Vita Nominale	$V_N =$	50	anni
Classe d'uso	CI =	IV	
Coefficiente d'uso	C.u. =	2.0	
Periodo di riferimento	$V_R =$	100	anni

ED50	
Lon	Lat
12.28941865	46.20644751

#### PARAMETRI SISMICI

STATO LIMITE	$T_R$ [anni]	$a_g$ [g]	$F_0$ [-]	$T^*_C$ [s]
SLO	60	0.084	2.462	0.260
SLD	101	0.110	2.432	0.278
SLV	949	0.295	2.423	0.343
SLC	1950	0.392	2.409	0.364

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Nel dettaglio, in favore di sicurezza sono stati considerati per le analisi i parametri più gravosi che interessano i muri in esame.

L'azione sismica viene considerata mediante spettri di risposta elastici in accelerazione delle componenti orizzontali e verticale, definiti in base al §3.2 delle NTC 2018.

Relativamente alle categorie di sottosuolo si ricade nella categoria di sottosuolo C.

La categoria topografica per i muri è la T1.

Quindi:

- Coefficiente sismico orizzontale:  $k_h = S \times a_g/g \times \beta_m = 1.271 \times 0.295 \times 0.38 = 0.143$
- Coefficiente sismico verticale:  $k_v = k_h / 2 = \pm 0.071$

### 7.3 Combinazioni di Carico

In accordo al par. 2.5.3 delle NTC2018 ai fini delle verifiche degli stati limite sono state considerate le seguenti combinazioni delle azioni:

- Combinazione fondamentale, impiegata per gli stati limite ultimi (SLU):  
 $\gamma_{G1} \cdot G_1 + \gamma_{G2} \cdot G_2 + \gamma_P \cdot P + \gamma_{Q1} \cdot Q_{k1} + \gamma_{Q2} \cdot Q_{k2} + \gamma_{Q3} \cdot Q_{k3} + \dots$
- Combinazione caratteristica, cosiddetta rara, impiegata per gli stati limite di esercizio (SLE) irreversibili:  
 $G_1 + G_2 + P + Q_{k1} + \psi_{02} \cdot Q_{k2} + \psi_{03} \cdot Q_{k3} + \dots$
- Combinazione frequente, impiegata per gli stati limite di esercizio (SLE) reversibili:  
 $G_1 + G_2 + P + \psi_{11} \cdot Q_{k1} + \psi_{22} \cdot Q_{k2} + \psi_{23} \cdot Q_{k3} + \dots$
- Combinazione quasi permanente (SLE), impiegata per gli effetti a lungo termine:  
 $G_1 + G_2 + P + \psi_{21} \cdot Q_{k1} + \psi_{22} \cdot Q_{k2} + \psi_{23} \cdot Q_{k3} + \dots$
- Combinazione sismica, impiegata per gli stati limite ultimi e di esercizio connessi all'azione sismica E:  
 $E + G_1 + G_2 + P + \psi_{21} \cdot Q_{k1} + \psi_{22} \cdot Q_{k2} + \dots$
- Combinazione eccezionale, impiegata per gli stati limite ultimi connessi alle azioni eccezionali  $A_d$ :  
 $G_1 + G_2 + P + A_d + \psi_{21} \cdot Q_{k1} + \psi_{22} \cdot Q_{k2} + \dots$

Dove:

- $G_1$  rappresenta il peso proprio di tutti gli elementi strutturali;
- $G_2$  rappresenta il peso proprio di tutti gli elementi non strutturali;
- $P$  rappresenta le azioni di pretensione e precompressione (ove presenti);
- $Q_{ki}$  rappresenta il valore caratteristico della i-esima azione variabile;
- $E$  rappresenta l'azione sismica per lo stato limite in esame;
- $A_d$  rappresenta le azioni eccezionali.
- $\psi_{0j}, \psi_{1j}, \psi_{2j}$  sono i coefficienti di combinazione per tenere conto della ridotta probabilità di concomitanza delle azioni variabili con i rispettivi valori caratteristici.

I valori dei coefficienti parziali delle azioni da assumere nell'analisi per la determinazione degli effetti delle azioni nelle verifiche SLU sono quelli già indicati al paragrafo

I valori dei coefficienti  $\psi_{0j}$ ,  $\psi_{1j}$  e  $\psi_{2j}$  per le diverse categorie di azioni sono riportati nella tabella 5.1.VI delle NTC2018.

La verifica di stabilità globale è stata condotta secondo:

**L'Approccio 1 – Combinazione 2 (A2+M2+R2),**

tenendo conto dei coefficienti parziali riportati nelle tabelle 6.2.I, 6.2.II e 6.8.I delle NTC2018.

Le rimanenti verifiche sono state condotte secondo:

**L'Approccio 2 (A1+M1+R3),**

tenendo conto dei coefficienti parziali riportati nelle tabelle 6.2.I, 6.2.II e 6.5.I delle NTC2018.

Di seguito si riportano le tabelle che esplicitano i coefficienti parziali sopra illustrati:

**Tab. 6.2.I – Coefficienti parziali per le azioni o per l'effetto delle azioni**

	Effetto	Coefficiente Parziale $\gamma_F$ (o $\gamma_E$ )	EQU	(A1)	(A2)
Carichi permanenti $G_1$	Favorevole	$\gamma_{G1}$	0,9	1,0	1,0
	Sfavorevole		1,1	1,3	1,0
Carichi permanenti $G_2^{(1)}$	Favorevole	$\gamma_{G2}$	0,8	0,8	0,8
	Sfavorevole		1,5	1,5	1,3
Azioni variabili Q	Favorevole	$\gamma_{Qi}$	0,0	0,0	0,0
	Sfavorevole		1,5	1,5	1,3

<sup>(1)</sup> Per i carichi permanenti  $G_2$  si applica quanto indicato alla Tabella 2.6.I. Per la spinta delle terre si fa riferimento ai coefficienti  $\gamma_{ci}$

**Tab. 6.2.II – Coefficienti parziali per i parametri geotecnici del terreno**

Parametro	Grandezza alla quale applicare il coefficiente parziale	Coefficiente parziale $\gamma_M$	(M1)	(M2)
Tangente dell'angolo di resistenza al taglio	$\tan \varphi'_k$	$\gamma_{\varphi'}$	1,0	1,25
Coesione efficace	$c'_k$	$\gamma_{c'}$	1,0	1,25
Resistenza non drenata	$c_{uk}$	$\gamma_{cu}$	1,0	1,4
Peso dell'unità di volume	$\gamma_\gamma$	$\gamma_\gamma$	1,0	1,0

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta****Tab. 6.5.I - Coefficienti parziali  $\gamma_R$  per le verifiche agli stati limite ultimi di muri di sostegno**

Verifica	Coefficiente parziale (R3)
Capacità portante della fondazione	$\gamma_R = 1,4$
Scorrimento	$\gamma_R = 1,1$
Ribaltamento	$\gamma_R = 1,15$
Resistenza del terreno a valle	$\gamma_R = 1,4$

**Tab. 6.8.I - Coefficienti parziali per le verifiche di sicurezza di opere di materiali sciolti e di fronti di scavo**

COEFFICIENTE	R2
$\gamma_R$	1,1


## 8 SEZIONI DI ANALISI E RISULTATI

Di seguito si riporta una breve descrizione delle sezioni esaminate, rimandando per i dettagli ed i risultati delle verifiche effettuate ai tabulati allegati. Come è possibile evincere tutte le verifiche geotecniche e strutturali sono ampiamente soddisfatte.

### 8.1 Sezioni di analisi – Muri di sostegno

Sono state esaminate le seguenti sezioni tipo:

- Muro di sostegno tipo H3 ("MSTD – H3"): con altezza del paramento  $H = 3.0$  m;
- Muro di sostegno tipo H4 ("MSTD – H4"): con altezza del paramento  $H = 4.0$  m;
- Muro di sostegno tipo H5 ("MSTD – H5"): con altezza del paramento  $H = 5.0$  m;
- Muro di sostegno tipo H6 ("MSTD – H6"): con altezza del paramento  $H = 6.0$  m;
- Muro di sostegno tipo H7 ("MSTD – H7"): con altezza del paramento  $H = 7.0$  m;
- Muro di sostegno tipo H8 ("MSTD – H8"): con altezza del paramento  $H = 8.0$  m;
- Muro di sostegno tipo H9 ("MSTD – H9"): con altezza del paramento  $H = 9.0$  m;
- Muro di sostegno tipo H10 ("MSTD – H10"): con altezza del paramento  $H = 10.0$  m;

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## **9 DICHIARAZIONE ACCETTABILITÀ RISULTATI (PAR. 10.2 N.T.C. 2018)**

### **9.1 Tipo di analisi svolte**

Le analisi strutturali e le verifiche con il dimensionamento delle strutture sono state condotte con l'ausilio di codici di calcolo automatico. La verifica della sicurezza degli elementi strutturali è stata valutata con i metodi della scienza delle costruzioni.

Il calcolo dei muri di sostegno viene eseguito secondo le seguenti fasi:

- Calcolo della spinta del terreno
- Calcolo delle sollecitazioni sia del muro che della fondazione, progetto delle armature e relative verifiche dei materiali.

L'analisi strutturale sotto le azioni sismiche è condotta con il metodo dell'analisi statica equivalente secondo le disposizioni del capitolo 7 del D.M. 17/07/2018.

La verifica delle sezioni degli elementi strutturali è eseguita con il metodo degli Stati Limite. Le combinazioni di carico adottate sono esaustive relativamente agli scenari di carico più gravosi cui le opere saranno soggette.

### **9.2 Origine e caratteristiche dei codici di calcolo**

Nome del Software: MAX – Analisi e Calcolo Muri di Sostegno – Versione 15.0

Produttore Aztec Informatica srl, Casali del Manco - loc. Casole Bruzio (CS)

Licenza concessa a VIA INGEGNERIA s.r.l. – Licenza N° AIU4132SQ

### **9.3 Affidabilità dei codici di calcolo**

Un attento esame preliminare della documentazione a corredo del software ha consentito di valutarne l'affidabilità. La documentazione fornita dai produttori del software contiene esaurienti descrizioni delle basi teoriche e degli algoritmi impiegati con l'individuazione dei campi d'impiego.

### **9.4 Modalità di presentazione dei risultati**

Le relazioni di calcolo strutturale presentano i dati di calcolo tale da garantirne la leggibilità, la corretta interpretazione e la riproducibilità. Le relazioni di calcolo illustrano in modo esaustivo i dati in ingresso ed i risultati delle analisi in forma tabellare.


### **9.5 Informazioni generali sull'elaborazione**

Il software consente di visualizzare e controllare, sia in forma grafica che tabellare, i dati del modello strutturale, in modo da avere una visione consapevole del comportamento corretto del modello strutturale.

### **9.6 Giudizio motivato di accettabilità dei risultati**

I risultati delle elaborazioni sono stati sottoposti a controlli dal sottoscritto utente del software. Tale valutazione ha compreso il confronto con i risultati di semplici calcoli, eseguiti con metodi tradizionali. Inoltre sulla base di considerazioni riguardanti gli stati tensionali e deformativi determinati, si è valutata la validità delle scelte oconate in sede di schematizzazione e di modellazione della struttura e delle azioni.



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In base a quanto sopra, il Progettista delle Strutture asserisce che l'elaborazione è corretta ed idonea al caso specifico, contanto i risultati di calcolo sono da ritenersi validi ed accettabili.

## 10 ALLEGATO 1 – TABULATI DI CALCOLO - MURO DI SOSTEGNO H3

### Geometria profilo terreno a monte del muro

#### Simbologia adottata

(Sistema di riferimento con origine in testa al muro, ascissa X positiva verso monte, ordinata Y positiva verso l'alto)

n°	numero ordine del punto
X	ascissa del punto espressa in [m]
Y	ordinata del punto espressa in [m]
A	inclinazione del tratto espressa in [°]

n°	X	Y	A
	[m]	[m]	[°]
1	0.00	0.00	0.000
2	1.75	0.00	0.000
3	20.00	0.00	0.000

Inclinazione terreno a valle del muro rispetto all'orizzontale 0.000 [°]

### Falda

#### Simbologia adottata

(Sistema di riferimento con origine in testa al muro, ascissa X positiva verso monte, ordinata Y positiva verso l'alto)

n°	numero ordine del punto
X	ascissa del punto espressa in [m]
Y	ordinata del punto espressa in [m]
A	inclinazione del tratto espressa in [°]

n°	X	Y	A
	[m]	[m]	[°]
1	-4.00	-3.95	0.000
2	20.00	-3.95	0.000

### Geometria muro

#### *Geometria paramento e fondazione*

##### Paramento

Materiale	C32/40	
Altezza paramento	3.00	[m]
Altezza paramento libero	3.00	[m]
Spessore in sommità	0.50	[m]
Spessore all'attacco con la fondazione	0.75	[m]

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

Inclinazione paramento esterno	0.00	[°]
Inclinazione paramento interno	4.80	[°]
Spessore rivestimento	0.20	[m]
Peso sp. rivestimento	20.0000	[kN/mc]

Mensola di marciapiede

Posizione rispetto alla testa del muro	0.00	[m]
Lunghezza	0.25	[m]
Spessore all'estremità libera	0.50	[m]
Spessore all'incastro	0.50	[m]

Fondazione

Materiale	C32/40	
Lunghezza mensola di valle	0.75	[m]
Lunghezza mensola di monte	1.50	[m]
Lunghezza totale	3.00	[m]
Inclinazione piano di posa	0.00	[°]
Spessore	0.75	[m]
Spessore magrone	0.20	[m]

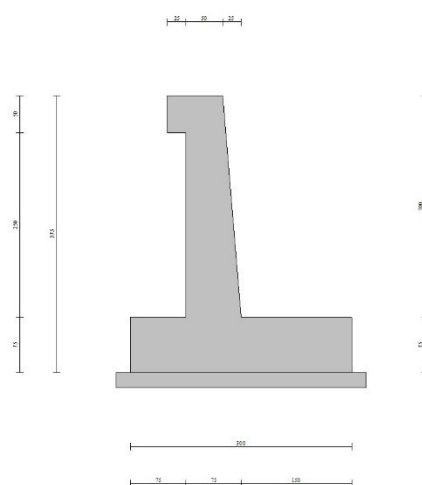


Fig. 1 - Sezione quotata del muro

Descrizione terreniParametri di resistenza

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta****Simbologia adottata**

n°	Indice del terreno
Descr	Descrizione terreno
$\gamma$	Peso di volume del terreno espresso in [kN/mc]
$\gamma_s$	Peso di volume saturo del terreno espresso in [kN/mc]
$\phi$	Angolo d'attrito interno espresso in [°]
$\delta$	Angolo d'attrito terra-muro espresso in [°]
c	Coesione espressa in [kPa]
$c_a$	Adesione terra-muro espressa in [kPa]

**Per calcolo portanza con il metodo di Bustamante-Doix**

Cesp	Coeff. di espansione laterale (solo per il metodo di Bustamante-Doix)
$\tau_l$	Tensione tangenziale limite, espressa in [kPa]

n°	Descr	$\gamma$ [kN/mc]	$\gamma_{sat}$ [kN/mc]	$\phi$ [°]	$\delta$ [°]	c [kPa]	$c_a$ [kPa]	Cesp	$\tau_l$ [kPa]
1	Rilevato	19.0000	19.0000	35.000	23.330	0	0		
2	Terreno	20.0000	20.0000	36.000	24.000	0	0		

**Stratigrafia****Simbologia adottata**

n°	Indice dello strato
H	Spessore dello strato espresso in [m]
$\alpha$	Inclinazione espressa in [°]
Terreno	Terreno dello strato
Kwn, Kwt	Costante di Winkler normale e tangenziale alla superficie espressa in Kg/cm <sup>2</sup> /cm

**Per calcolo pali (solo se presenti)**

Kw	Costante di Winkler orizzontale espressa in Kg/cm <sup>2</sup> /cm
Ks	Coefficiente di spinta
Cesp	Coefficiente di espansione laterale (per tutti i metodi tranne il metodo di Bustamante-Doix)

**Per calcolo della spinta con coeff. di spinta definiti (usati solo se attiva l'opzione 'Usa coeff. di spinta da strato')**

$K_{st_{sta}}$ , $K_{st_{sis}}$	Coeff. di spinta statico e sismico
---------------------------------	------------------------------------

n°	H [m]	$\alpha$ [°]	Terreno	Kwn [Kg/cm <sup>2</sup> ]	Kwt [Kg/cm <sup>2</sup> ]	Kw [Kg/cm <sup>2</sup> ]	Ks	Cesp	$K_{st_{sta}}$	$K_{st_{sis}}$
1	3.75	0.000	Rilevato	0.000	0.000	4.219	0.000	1.000	0.000	0.000
2	20.00	0.000	Terreno	0.000	0.000	2.203	1.000	1.000	0.000	0.000

**Condizioni di carico****Simbologia adottata**

	Carichi verticali positivi verso il basso.
	Carichi orizzontali positivi verso sinistra.
	Momento positivo senso antiorario.
X	Ascissa del punto di applicazione del carico concentrato espressa in [m]
$F_x$	Componente orizzontale del carico concentrato espressa in [kN]
$F_y$	Componente verticale del carico concentrato espressa in [kN]
M	Momento espresso in [kNm]

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**X<sub>i</sub> Ascissa del punto iniziale del carico ripartito espressa in [m]X<sub>f</sub> Ascissa del punto finale del carico ripartito espressa in [m]Q<sub>i</sub> Intensità del carico per x=X<sub>i</sub> espressa in [kN]Q<sub>f</sub> Intensità del carico per x=X<sub>f</sub> espressa in [kN]Condizione n° 1 (Q) - VARIABILECoeff. di combinazione  $\Psi_0=0.75 - \Psi_1=0.75 - \Psi_2=0.00$ *Carichi sul terreno*

n°	Tipo	X	Fx	Fy	M	Xi	Xf	Qi	Qf
		[m]	[kN]	[kN]	[kNm]	[m]	[m]	[kN]	[kN]
1	Distribuito					0.00	3.00	44.3000	44.3000
2	Distribuito					3.00	6.00	26.0000	26.0000
3	Distribuito					6.00	9.00	14.3000	14.3000
4	Distribuito					9.00	20.00	2.5000	2.5000

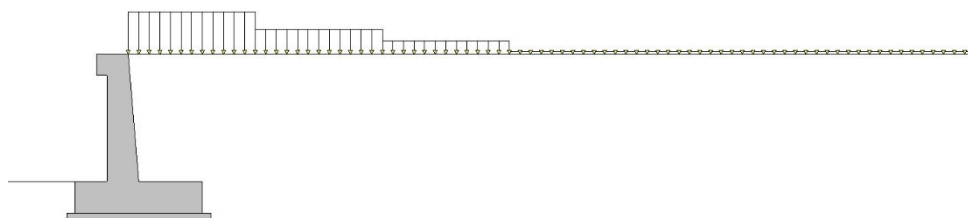


Fig. 2 - Carichi sul terreno

Condizione n° 2 (Urto) - ECCEZIONALE*Carichi sul muro*

n°	Tipo	Dest	X; Y	Fx	Fy	M	Xi	Xf	Qi	Qf
			[m]	[kN]	[kN]	[kNm]	[m]	[m]	[kN]	[kN]
1	Concentrato	Paramento	-0.50; 0.00	33.3000	0.0000	33.3000				

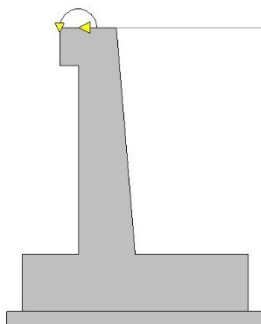


Fig. 3 - Carichi sul muro

Normativa

Normativa usata: **Norme Tecniche sulle Costruzioni 2018 (D.M. 17.01.2018) + Circolare C.S.LL.PP. 21/01/2019 n.7**

Coeff. parziali per le azioni o per l'effetto delle azioni

Carichi	Effetto		Combinazioni statiche					Combinazioni sismiche		
			HYD	UPL	EQU	A1	A2	EQU	A1	A2
Permanenti strutturali	Favorevoli	$\gamma_{G1, fav}$	1.00	0.90	1.00	1.00	1.00	1.00	1.00	1.00
Permanenti strutturali	Sfavorevoli	$\gamma_{G1, sfav}$	1.00	1.10	1.30	1.30	1.00	1.00	1.00	1.00
Permanenti non strutturali	Favorevoli	$\gamma_{G2, fav}$	0.00	0.80	0.80	0.80	0.80	0.00	0.00	0.00
Permanenti non strutturali	Sfavorevoli	$\gamma_{G2, sfav}$	1.00	1.50	1.50	1.50	1.30	1.00	1.00	1.00
Variabili	Favorevoli	$\gamma_{Q, fav}$	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Variabili	Sfavorevoli	$\gamma_{Q, sfav}$	1.00	1.50	1.50	1.50	1.30	1.00	1.00	1.00
Variabili da traffico	Favorevoli	$\gamma_{QT, fav}$	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Variabili da traffico	Sfavorevoli	$\gamma_{QT, sfav}$	1.00	1.50	1.35	1.35	1.15	1.00	1.00	1.00

Coeff. parziali per i parametri geotecnici del terreno

Parametro		Combinazioni statiche		Combinazioni sismiche	
		M1	M2	M1	M2
Tangente dell'angolo di attrito	$\gamma_{\tan(\phi')}$	1.00	1.25	1.00	1.00
Coesione efficace	$\gamma_c$	1.00	1.25	1.00	1.00
Resistenza non drenata	$\gamma_{cu}$	1.00	1.40	1.00	1.00
Peso nell'unità di volume	$\gamma_\gamma$	1.00	1.00	1.00	1.00

Coeff. parziali  $\gamma_R$  per le verifiche agli stati limite ultimi STR e GEO

Verifica	Combinazioni statiche			Combinazioni sismiche		
	R1	R2	R3	R1	R2	R3
Capacità portante	--	--	1.40	--	--	1.20
Scorrimento	--	--	1.10	--	--	1.00
Resistenza terreno a valle	--	--	1.40	--	--	1.20
Ribaltamento	--	--	1.15	--	--	1.00
Stabilità fronte di scavo	--	1.10	--	--	1.20	--

Descrizione combinazioni di carico

Con riferimento alle azioni elementari prima determinate, si sono considerate le seguenti combinazioni di carico:

- Combinazione fondamentale, impiegata per gli stati limite ultimi (SLU):

$$\gamma_{G1} G_1 + \gamma_{G2} G_2 + \gamma_{Q1} Q_{k1} + \gamma_{Q2} Q_{k2} + \gamma_{Q3} Q_{k3} + \dots$$

- Combinazione caratteristica, cosiddetta rara, impiegata per gli stati limite di esercizio (SLE) irreversibili:

$$G_1 + G_2 + Q_{k1} + \Psi_{0,2} Q_{k2} + \Psi_{0,3} Q_{k3} + \dots$$

- Combinazione frequente, impiegata per gli stati limite di esercizio (SLE) reversibili:

$$G_1 + G_2 + \Psi_{1,1} Q_{k1} + \Psi_{2,2} Q_{k2} + \Psi_{2,3} Q_{k3} + \dots$$

- Combinazione quasi permanente, impiegata per gli effetti di lungo periodo:

$$G_1 + G_2 + \Psi_{2,1} Q_{k1} + \Psi_{2,2} Q_{k2} + \Psi_{2,3} Q_{k3} + \dots$$

- Combinazione sismica, impiegata per gli stati limite ultimi connessi all'azione sismica E:

$$E + G_1 + G_2 + \Psi_{2,1} Q_{k1} + \Psi_{2,2} Q_{k2} + \Psi_{2,3} Q_{k3} + \dots$$

- Combinazione eccezionale, impiegata per gli stati limite ultimi connessi alle azioni eccezionali Ad:

$$G_1 + G_2 + A_d + \Psi_{2,1} Q_{k1} + \Psi_{2,2} Q_{k2} + \Psi_{2,3} Q_{k3} + \dots$$

I valori dei coeff.  $\Psi_{0,j}$ ,  $\Psi_{1,j}$ ,  $\Psi_{2,j}$  sono definiti nelle singole condizioni variabili. I valori dei coeff.  $\gamma_G$  e  $\gamma_Q$ , sono definiti nella tabella normativa.

In particolare si sono considerate le seguenti combinazioni:

## Simbologia adottata

$\gamma$	Coefficiente di partecipazione della condizione
$\Psi$	Coefficiente di combinazione della condizione

Combinazione n° 1 - STR (A1-M1-R3)

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Favorevole
Peso terrapieno	1.00	--	Favorevole
Spinta terreno	1.30	--	Sfavorevole

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**Combinazione n° 2 - STR (A1-M1-R3) H + V

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Favorevole
Peso terrapieno	1.00	--	Favorevole
Spinta terreno	1.00	--	Sfavorevole

Combinazione n° 3 - STR (A1-M1-R3)

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Favorevole
Peso terrapieno	1.00	--	Favorevole
Spinta terreno	1.30	--	Sfavorevole
Q	1.50	1.00	Sfavorevole

Combinazione n° 4 - STR (A1-M1-R3) H - V

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Sfavorevole
Peso terrapieno	1.00	--	Sfavorevole
Spinta terreno	1.00	--	Sfavorevole

Combinazione n° 5 - GEO (A2-M2-R2)

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Sfavorevole
Peso terrapieno	1.00	--	Sfavorevole
Spinta terreno	1.00	--	Sfavorevole

Combinazione n° 6 - GEO (A2-M2-R2) H + V

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Sfavorevole
Peso terrapieno	1.00	--	Sfavorevole
Spinta terreno	1.00	--	Sfavorevole

Combinazione n° 7 - GEO (A2-M2-R2)

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Sfavorevole
Peso terrapieno	1.00	--	Sfavorevole
Spinta terreno	1.00	--	Sfavorevole
Q	1.30	1.00	Sfavorevole

Combinazione n° 8 - GEO (A2-M2-R2) H - V

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Sfavorevole
Peso terrapieno	1.00	--	Sfavorevole
Spinta terreno	1.00	--	Sfavorevole

Combinazione n° 9 - EQU (A1-M1-R3)



VE407

**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Favorevole
Peso terrapieno	1.00	--	Favorevole
Spinta terreno	1.30	--	Sfavorevole

Combinazione n° 10 - EQU (A1-M1-R3) H + V

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Favorevole
Peso terrapieno	1.00	--	Favorevole
Spinta terreno	1.00	--	Sfavorevole

Combinazione n° 11 - EQU (A1-M1-R3)

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Favorevole
Peso terrapieno	1.00	--	Favorevole
Spinta terreno	1.30	--	Sfavorevole
Q	1.50	1.00	Sfavorevole

Combinazione n° 12 - EQU (A1-M1-R3) H - V

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Favorevole
Peso terrapieno	1.00	--	Favorevole
Spinta terreno	1.00	--	Sfavorevole

Combinazione n° 13 - ECC

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Sfavorevole
Peso terrapieno	1.00	--	Sfavorevole
Spinta terreno	1.00	--	Sfavorevole
Urto	1.00	1.00	Sfavorevole

Combinazione n° 14 - SLER

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Sfavorevole
Peso terrapieno	1.00	--	Sfavorevole
Spinta terreno	1.00	--	Sfavorevole
Q	1.00	0.75	Sfavorevole

Combinazione n° 15 - SLEF

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Sfavorevole
Peso terrapieno	1.00	--	Sfavorevole
Spinta terreno	1.00	--	Sfavorevole

Combinazione n° 16 - SLEQ

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Sfavorevole
Peso terrapieno	1.00	--	Sfavorevole

VE407

**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

Condizione	$\gamma$	$\Psi$	Effetto
Spinta terreno	1.00	--	Sfavorevole

Dati sismici

Comune	
Provincia	
Regione	
Latitudine	42.716470
Longitudine	12.111569
Indice punti di interpolazione	-1 - -1 - -1 - -1
Vita nominale	50 anni
Classe d'uso	II
Tipo costruzione	Normali affollamenti
Vita di riferimento	50 anni

	Simbolo	U.M.	SLU	SLE
Accelerazione al suolo	$a_g$	[m/s <sup>2</sup> ]	2.894	0.000
Accelerazione al suolo	$a_g/g$	[%]	0.295	0.000
Massimo fattore amplificazione spettro orizzontale	F0		2.423	0.000
Periodo inizio tratto spettro a velocità costante	Tc*		0.343	0.000
Tipo di sottosuolo - Coefficiente stratigrafico	Ss		C	1.271
Categoria topografica - Coefficiente amplificazione topografica	St		T1	1.000

Stato limite ...	Coeff. di riduzione $\beta_m$	kh	kv
Ultimo	0.380	14.248	7.124
Ultimo - Ribaltamento	0.570	21.372	10.686
Esercizio	0.470	0.000	0.000

Forma diagramma incremento sismico  **Rettangolare****Opzioni di calcolo**Spinta

Metodo di calcolo della spinta	Culmann
Tipo di spinta	Spinta attiva
Terreno a bassa permeabilità	NO
Superficie di spinta limitata	NO

Capacità portante

Metodo di calcolo della portanza	Hansen
Criterio di media calcolo del terreno equivalente (terreni stratificati)	Ponderata
Criterio di riduzione per eccentricità della portanza	Bowles
Criterio di riduzione per rottura locale (punzonamento)	Nessuna
Larghezza fondazione nel terzo termine della formula del carico limite ( $0.5B\gamma N_\gamma$ )	Larghezza effettiva (B)

Fattori di forma e inclinazione del carico Solo i fattori di inclinazione

Se la fondazione ha larghezza superiore a 2.0 m viene applicato il fattore di riduzione per comportamento a piastra

Stabilità globale

Metodo di calcolo della stabilità globale Bishop

Altro

Partecipazione spinta passiva terreno antistante 0.00

Partecipazione resistenza passiva dente di fondazione 50.00

Componente verticale della spinta nel calcolo delle sollecitazioni NO

Considera terreno sulla fondazione di valle NO

Considera spinta e peso acqua fondazione di valle NO

Spostamenti

Non è stato richiesto il calcolo degli spostamenti

Cedimenti

Non è stato richiesto il calcolo dei cedimenti

Specifiche per le verifiche nelle combinazioni allo Stato Limite Ultimo (SLU)

	SLU	Eccezionale
Coefficiente di sicurezza calcestruzzo a compressione	1.50	1.00
Coefficiente di sicurezza acciaio	1.15	1.00
Fattore di riduzione da resistenza cubica a cilindrica	0.83	0.83
Fattore di riduzione per carichi di lungo periodo	0.85	0.85
Coefficiente di sicurezza per la sezione	1.00	1.00

Specifiche per le verifiche nelle combinazioni allo Stato Limite di Esercizio (SLE)**Paramento e fondazione muro**

Condizioni ambientali Aggressive

Armatura ad aderenza migliorata SI

*Verifica a fessurazione*

Sensibilità armatura Poco sensibile

Metodo di calcolo aperture delle fessure NTC 2018 - CIRCOLARE 21 gennaio 2019, n. 7 C.S.LL.PP.

Valori limite aperture delle fessure:

$$w_1=0.20$$

$$w_2=0.30$$

$$w_3=0.40$$

*Verifica delle tensioni*

Valori limite delle tensioni nei materiali:

Combinazione	Calcestruzzo	Acciaio
Rara	0.60 $f_{ck}$	0.80 $f_{yk}$
Frequente	1.00 $f_{ck}$	1.00 $f_{yk}$
Quasi permanente	0.45 $f_{ck}$	1.00 $f_{yk}$

## Risultati per combinazione

### Spinta e forze

#### Simbologia adottata

Ic	Indice della combinazione
A	Tipo azione
I	Inclinazione della spinta, espressa in [°]
V	Valore dell'azione, espressa in [kN]
C <sub>x</sub> , C <sub>y</sub>	Componente in direzione X ed Y dell'azione, espressa in [kN]
P <sub>x</sub> , P <sub>y</sub>	Coordinata X ed Y del punto di applicazione dell'azione, espressa in [m]

Ic	A	V [kN]	I [°]	C <sub>x</sub> [kN]	C <sub>y</sub> [kN]	P <sub>x</sub> [m]	P <sub>y</sub> [m]
1	Spinta statica	42.49	23.33	39.01	16.83	1.75	-2.50
	Peso/Inerzia muro			0.00	104.30/0.00	0.03	-2.50
	Peso/Inerzia rivestimento			0.00	12.00	0.00	0.00
	Peso/Inerzia terrapieno			0.00	92.68/0.00	0.94	-1.46
	Peso dell'acqua sulla fondazione di valle				0.00	0.00	0.00
2	Spinta statica	32.68	23.33	30.01	12.94	1.75	-2.50
	Incremento di spinta sismica		14.55	13.36	5.76	1.75	-1.88
	Peso/Inerzia muro			14.86	104.30/7.43	0.03	-2.50
	Peso/Inerzia rivestimento			1.71	12.00	0.00	0.00
	Peso/Inerzia terrapieno			13.21	92.68/6.60	0.94	-1.46
3	Spinta statica	93.02	23.33	85.41	36.84	1.75	-2.03
	Peso/Inerzia muro			0.00	104.30/0.00	0.03	-2.50
	Peso/Inerzia rivestimento			0.00	12.00	0.00	0.00
	Peso/Inerzia terrapieno			0.00	209.09/0.00	0.91	-1.44
	Peso dell'acqua sulla fondazione di valle				0.00	0.00	0.00
4	Spinta statica	32.68	23.33	30.01	12.94	1.75	-2.50
	Incremento di spinta sismica		10.21	9.38	4.04	1.75	-1.88
	Peso/Inerzia muro			14.86	104.30/-7.43	0.03	-2.50
	Peso/Inerzia rivestimento			1.71	12.00	0.00	0.00
	Peso/Inerzia terrapieno			13.21	92.68/-6.60	0.94	-1.46
13	Spinta statica	32.68	23.33	30.01	12.94	1.75	-2.50
	Peso/Inerzia muro			0.00	104.30/0.00	0.03	-2.50
	Peso/Inerzia rivestimento			0.00	12.00	0.00	0.00
	Peso/Inerzia terrapieno			0.00	92.68/0.00	0.94	-1.46
	Peso dell'acqua sulla fondazione di valle				0.00	0.00	0.00
	Risultante forze sul muro			33.30	0.00	--	--
14	Spinta statica	57.85	23.33	53.12	22.91	1.75	-2.12
	Peso/Inerzia muro			0.00	104.30/0.00	0.03	-2.50
	Peso/Inerzia rivestimento			0.00	12.00	0.00	0.00
	Peso/Inerzia terrapieno			0.00	150.89/0.00	0.92	-1.45
	Peso dell'acqua sulla fondazione di valle				0.00	0.00	0.00
15	Spinta statica	32.68	23.33	30.01	12.94	1.75	-2.50
	Peso/Inerzia muro			0.00	104.30/0.00	0.03	-2.50
	Peso/Inerzia rivestimento			0.00	12.00	0.00	0.00
	Peso/Inerzia terrapieno			0.00	92.68/0.00	0.94	-1.46
	Peso dell'acqua sulla fondazione di valle				0.00	0.00	0.00
16	Spinta statica	32.68	23.33	30.01	12.94	1.75	-2.50
	Peso/Inerzia muro			0.00	104.30/0.00	0.03	-2.50
	Peso/Inerzia rivestimento			0.00	12.00	0.00	0.00
	Peso/Inerzia terrapieno			0.00	92.68/0.00	0.94	-1.46
	Peso dell'acqua sulla fondazione di valle				0.00	0.00	0.00

Risultanti globali

## Simbologia adottata

Cmb	Indice/Tipo combinazione
N	Componente normale al piano di posa, espressa in [kN]
T	Componente parallela al piano di posa, espressa in [kN]
M <sub>r</sub>	Momento ribaltante, espresso in [kNm]
M <sub>s</sub>	Momento stabilizzante, espresso in [kNm]
ecc	Eccentricità risultante, espressa in [m]

Ic	N [kN]	T [kN]	M <sub>r</sub> [kNm]	M <sub>s</sub> [kNm]	ecc [m]
1 - STR (A1-M1-R3)	225.81	39.01	48.79	402.13	-0.064
2 - STR (A1-M1-R3)	241.72	73.15	117.80	431.75	0.202
3 - STR (A1-M1-R3)	362.24	85.41	146.69	710.40	-0.055
4 - STR (A1-M1-R3)	211.94	69.16	134.30	402.61	0.235
13 - ECC	221.93	63.31	195.71	390.47	0.623

Verifiche geotecniche*Quadro riassuntivo coeff. di sicurezza calcolati*

## Simbologia adottata

Cmb	Indice/Tipo combinazione
S	Sisma (H: componente orizzontale, V: componente verticale)
FS <sub>SCO</sub>	Coeff. di sicurezza allo scorrimento
FS <sub>RIB</sub>	Coeff. di sicurezza al ribaltamento
FS <sub>QLIM</sub>	Coeff. di sicurezza a carico limite
FS <sub>STAB</sub>	Coeff. di sicurezza a stabilità globale
FS <sub>HYD</sub>	Coeff. di sicurezza a sifonamento
FS <sub>SUPL</sub>	Coeff. di sicurezza a sollevamento

Cmb	Sismica	FS <sub>SCO</sub>	FS <sub>RIB</sub>	FS <sub>QLIM</sub>	FS <sub>STAB</sub>	FS <sub>HYD</sub>	FS <sub>SUPL</sub>
1 - STR (A1-M1-R3)		2.577		9.041			
2 - STR (A1-M1-R3)	H + V	1.471		4.884			
3 - STR (A1-M1-R3)		1.888		4.584			
4 - STR (A1-M1-R3)	H - V	1.364		4.986			
5 - GEO (A2-M2-R2)					1.958		
6 - GEO (A2-M2-R2)	H + V				1.837		
7 - GEO (A2-M2-R2)					1.467		
8 - GEO (A2-M2-R2)	H - V				1.747		
9 - EQU (A1-M1-R3)			8.242				
10 - EQU (A1-M1-R3)	H + V		2.831				
11 - EQU (A1-M1-R3)			4.843				
12 - EQU (A1-M1-R3)	H - V		2.205				
13 - ECC		1.561	1.995	3.823	2.447		

*Verifica a scorrimento fondazione*

**Simbologia adottata**

n°	Indice combinazione
Rsa	Resistenza allo scorrimento per attrito, espresso in [kN]
Rpt	Resistenza passiva terreno antistante, espresso in [kN]
Rps	Resistenza passiva sperone, espresso in [kN]
Rp	Resistenza a carichi orizzontali pali (solo per fondazione mista), espresso in [kN]
Rt	Resistenza a carichi orizzontali tiranti (solo se presenti), espresso in [kN]
R	Resistenza allo scorrimento (somma di Rsa+Rpt+Rps+Rp), espresso in [kN]
T	Carico parallelo al piano di posa, espresso in [kN]
FS	Fattore di sicurezza (rapporto R/T)

n°	Rsa	Rpt	Rps	Rp	Rt	R	T	FS
	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	
1 - STR (A1-M1-R3)	100.54	0.00	0.00	--	--	100.54	39.01	2.577
2 - STR (A1-M1-R3) H + V	107.62	0.00	0.00	--	--	107.62	73.15	1.471
3 - STR (A1-M1-R3)	161.28	0.00	0.00	--	--	161.28	85.41	1.888
4 - STR (A1-M1-R3) H - V	94.36	0.00	0.00	--	--	94.36	69.16	1.364
13 - ECC	98.81	0.00	0.00	--	--	98.81	63.31	1.561

**Verifica a carico limite****Simbologia adottata**

n°	Indice combinazione
N	Carico normale totale al piano di posa, espresso in [kN]
Qu	carico limite del terreno, espresso in [kN]
Qd	Portanza di progetto, espresso in [kN]
FS	Fattore di sicurezza (rapporto tra il carico limite e carico agente al piano di posa)

n°	N	Qu	Qd	FS
	[kN]	[kN]	[kN]	
1 - STR (A1-M1-R3)	225.81	2041.54	1458.25	9.041
2 - STR (A1-M1-R3) H + V	241.72	1180.69	983.91	4.884
3 - STR (A1-M1-R3)	362.24	1660.56	1186.11	4.584
4 - STR (A1-M1-R3) H - V	211.94	1056.78	880.65	4.986
13 - ECC	221.93	848.48	606.06	3.823

**Verifica a ribaltamento****Simbologia adottata**

n°	Indice combinazione
Ms	Momento stabilizzante, espresso in [kNm]
Mr	Momento ribaltante, espresso in [kNm]
FS	Fattore di sicurezza (rapporto tra momento stabilizzante e momento ribaltante)

La verifica viene eseguita rispetto allo spigolo inferiore esterno della fondazione

n°	Ms	Mr	FS
	[kNm]	[kNm]	
9 - EQU (A1-M1-R3)	402.13	48.79	8.242
10 - EQU (A1-M1-R3) H + V	454.12	160.43	2.831
11 - EQU (A1-M1-R3)	710.40	146.69	4.843
12 - EQU (A1-M1-R3) H - V	411.35	186.56	2.205
13 - ECC	390.47	195.71	1.995

## Verifica stabilità globale muro + terreno

## Simbologia adottata

Ic	Indice/Tipo combinazione
C	Centro superficie di scorrimento, espresso in [m]
R	Raggio, espresso in [m]
FS	Fattore di sicurezza

Ic	C [m]	R [m]	FS
5 - GEO (A2-M2-R2)	-1.12; 1.12	5.66	1.958
6 - GEO (A2-M2-R2) H + V	-1.68; 3.36	7.90	1.837
7 - GEO (A2-M2-R2)	-1.68; 1.12	5.97	1.467
8 - GEO (A2-M2-R2) H - V	-1.68; 3.36	7.90	1.747
13 - ECC	-1.12; 1.12	5.66	2.447

## Sollecitazioni

## Elementi calcolati a trave

## Simbologia adottata

N	Sforzo normale, espresso in [kN]. Positivo se di compressione.
T	Taglio, espresso in [kN]. Positivo se diretto da monte verso valle
M	Momento, espresso in [kNm]. Positivo se tende le fibre contro terra (a monte)

## Paramento

## Combinazione n° 1 - STR (A1-M1-R3)

n°	X [m]	N [kN]	T [kN]	M [kNm]
1	0.00	3.06	0.00	0.38
2	-0.10	4.30	0.03	0.39
3	-0.20	5.56	0.12	0.40
4	-0.30	6.83	0.28	0.43
5	-0.40	8.13	0.49	0.49
6	-0.50	9.45	0.76	0.58
7	-0.60	10.79	1.10	0.70
8	-0.70	12.15	1.49	0.86
9	-0.80	13.53	1.95	1.08
10	-0.90	14.93	2.46	1.34
11	-1.00	16.35	3.04	1.67
12	-1.10	17.79	3.68	2.06
13	-1.20	19.26	4.38	2.53
14	-1.30	20.74	5.14	3.08
15	-1.40	22.24	5.96	3.71
16	-1.50	23.77	6.84	4.43
17	-1.60	25.31	7.78	5.25
18	-1.70	26.88	8.79	6.18
19	-1.80	28.47	9.85	7.21
20	-1.90	30.07	10.97	8.36
21	-2.00	31.70	12.16	9.64
22	-2.10	33.35	13.41	11.04
23	-2.20	35.02	14.71	12.57



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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
24	-2.30	36.70	16.08	14.25
25	-2.40	38.41	17.51	16.08
26	-2.50	40.14	19.00	18.05
27	-2.60	41.90	20.55	20.19
28	-2.70	43.67	22.16	22.49
29	-2.80	45.46	23.83	24.96
30	-2.90	47.27	25.56	27.61
31	-3.00	49.10	27.36	30.45

Combinazione n° 2 - STR (A1-M1-R3) H + V

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	0.00	3.28	0.00	0.41
2	-0.10	4.52	0.49	0.44
3	-0.20	5.78	1.04	0.52
4	-0.30	7.05	1.63	0.67
5	-0.40	8.35	2.27	0.88
6	-0.50	9.67	2.97	1.17
7	-0.60	11.01	3.71	1.53
8	-0.70	12.37	4.50	1.97
9	-0.80	13.75	5.34	2.51
10	-0.90	15.15	6.23	3.13
11	-1.00	16.57	7.17	3.86
12	-1.10	18.01	8.16	4.68
13	-1.20	19.48	9.20	5.61
14	-1.30	20.96	10.29	6.66
15	-1.40	22.46	11.43	7.82
16	-1.50	23.99	12.62	9.11
17	-1.60	25.53	13.86	10.52
18	-1.70	27.10	15.15	12.07
19	-1.80	28.68	16.49	13.75
20	-1.90	30.29	17.88	15.58
21	-2.00	31.92	19.31	17.56
22	-2.10	33.57	20.80	19.69
23	-2.20	35.23	22.34	21.97
24	-2.30	36.92	23.92	24.42
25	-2.40	38.63	25.56	27.04
26	-2.50	40.36	27.25	29.83
27	-2.60	42.11	28.98	32.81
28	-2.70	43.89	30.77	35.96
29	-2.80	45.68	32.60	39.30
30	-2.90	47.49	34.49	42.84
31	-3.00	49.32	36.42	46.57

Combinazione n° 3 - STR (A1-M1-R3)

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	0.00	3.06	0.00	0.38
2	-0.10	4.30	1.67	0.47
3	-0.20	5.56	3.39	0.73
4	-0.30	6.83	5.18	1.17
5	-0.40	8.13	7.03	1.80
6	-0.50	9.45	8.94	2.62
7	-0.60	10.79	10.91	3.64
8	-0.70	12.15	12.94	4.87
9	-0.80	13.53	15.03	6.31
10	-0.90	14.93	17.18	7.97
11	-1.00	16.35	19.39	9.85
12	-1.10	17.79	21.67	11.96
13	-1.20	19.26	24.00	14.31
14	-1.30	20.74	26.40	16.90
15	-1.40	22.24	28.85	19.74
16	-1.50	23.77	31.37	22.83

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
17	-1.60	25.31	33.95	26.19
18	-1.70	26.88	36.58	29.81
19	-1.80	28.47	39.28	33.70
20	-1.90	30.07	42.04	37.88
21	-2.00	31.70	44.86	42.34
22	-2.10	33.35	47.75	47.10
23	-2.20	35.02	50.69	52.15
24	-2.30	36.70	53.69	57.50
25	-2.40	38.41	56.75	63.17
26	-2.50	40.14	59.88	69.15
27	-2.60	41.90	63.06	75.46
28	-2.70	43.67	66.31	82.09
29	-2.80	45.46	69.62	89.06
30	-2.90	47.27	72.98	96.37
31	-3.00	49.10	76.41	104.03

Combinazione n° 4 - STR (A1-M1-R3) H - V

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	0.00	3.06	0.00	0.38
2	-0.10	4.30	0.40	0.41
3	-0.20	5.56	0.85	0.48
4	-0.30	6.83	1.35	0.60
5	-0.40	8.13	1.90	0.78
6	-0.50	9.45	2.50	1.02
7	-0.60	10.79	3.15	1.33
8	-0.70	12.15	3.84	1.72
9	-0.80	13.53	4.59	2.18
10	-0.90	14.93	5.39	2.73
11	-1.00	16.35	6.23	3.36
12	-1.10	17.79	7.13	4.09
13	-1.20	19.26	8.08	4.91
14	-1.30	20.74	9.07	5.84
15	-1.40	22.24	10.12	6.87
16	-1.50	23.77	11.21	8.02
17	-1.60	25.31	12.36	9.29
18	-1.70	26.88	13.55	10.68
19	-1.80	28.47	14.80	12.21
20	-1.90	30.07	16.09	13.86
21	-2.00	31.70	17.44	15.65
22	-2.10	33.35	18.83	17.59
23	-2.20	35.02	20.27	19.67
24	-2.30	36.70	21.76	21.91
25	-2.40	38.41	23.31	24.31
26	-2.50	40.14	24.90	26.87
27	-2.60	41.90	26.54	29.60
28	-2.70	43.67	28.23	32.51
29	-2.80	45.46	29.97	35.59
30	-2.90	47.27	31.76	38.86
31	-3.00	49.10	33.60	42.32

Combinazione n° 13 - ECC

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	0.00	3.06	33.30	33.68
2	-0.10	4.30	33.32	37.02
3	-0.20	5.56	33.39	40.36
4	-0.30	6.83	33.51	43.72
5	-0.40	8.13	33.68	47.10
6	-0.50	9.45	33.89	50.50
7	-0.60	10.79	34.14	53.93
8	-0.70	12.15	34.45	57.39
9	-0.80	13.53	34.80	60.90

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
10	-0.90	14.93	35.20	64.44
11	-1.00	16.35	35.64	68.04
12	-1.10	17.79	36.13	71.68
13	-1.20	19.26	36.67	75.39
14	-1.30	20.74	37.25	79.15
15	-1.40	22.24	37.88	82.99
16	-1.50	23.77	38.56	86.89
17	-1.60	25.31	39.29	90.88
18	-1.70	26.88	40.06	94.94
19	-1.80	28.47	40.88	99.09
20	-1.90	30.07	41.74	103.33
21	-2.00	31.70	42.65	107.67
22	-2.10	33.35	43.61	112.10
23	-2.20	35.02	44.62	116.64
24	-2.30	36.70	45.67	121.30
25	-2.40	38.41	46.77	126.06
26	-2.50	40.14	47.91	130.95
27	-2.60	41.90	49.11	135.96
28	-2.70	43.67	50.34	141.10
29	-2.80	45.46	51.63	146.37
30	-2.90	47.27	52.96	151.78
31	-3.00	49.10	54.34	157.33

Combinazione n° 14 - SLER

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	0.00	3.06	0.00	0.38
2	-0.10	4.30	0.84	0.43
3	-0.20	5.56	1.73	0.56
4	-0.30	6.83	2.67	0.80
5	-0.40	8.13	3.65	1.13
6	-0.50	9.45	4.67	1.57
7	-0.60	10.79	5.75	2.12
8	-0.70	12.15	6.87	2.79
9	-0.80	13.53	8.04	3.57
10	-0.90	14.93	9.25	4.48
11	-1.00	16.35	10.52	5.52
12	-1.10	17.79	11.82	6.70
13	-1.20	19.26	13.18	8.01
14	-1.30	20.74	14.58	9.47
15	-1.40	22.24	16.03	11.08
16	-1.50	23.77	17.53	12.84
17	-1.60	25.31	19.07	14.76
18	-1.70	26.88	20.66	16.84
19	-1.80	28.47	22.29	19.09
20	-1.90	30.07	23.98	21.52
21	-2.00	31.70	25.71	24.12
22	-2.10	33.35	27.48	26.90
23	-2.20	35.02	29.30	29.87
24	-2.30	36.70	31.17	33.03
25	-2.40	38.41	33.09	36.39
26	-2.50	40.14	35.05	39.95
27	-2.60	41.90	37.06	43.71
28	-2.70	43.67	39.12	47.69
29	-2.80	45.46	41.22	51.88
30	-2.90	47.27	43.37	56.29
31	-3.00	49.10	45.57	60.93

Combinazione n° 15 - SLEF

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	0.00	3.06	0.00	0.38
2	-0.10	4.30	0.02	0.39

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
3	-0.20	5.56	0.09	0.40
4	-0.30	6.83	0.21	0.43
5	-0.40	8.13	0.38	0.48
6	-0.50	9.45	0.59	0.55
7	-0.60	10.79	0.84	0.65
8	-0.70	12.15	1.15	0.78
9	-0.80	13.53	1.50	0.96
10	-0.90	14.93	1.90	1.17
11	-1.00	16.35	2.34	1.44
12	-1.10	17.79	2.83	1.75
13	-1.20	19.26	3.37	2.13
14	-1.30	20.74	3.95	2.56
15	-1.40	22.24	4.58	3.07
16	-1.50	23.77	5.26	3.64
17	-1.60	25.31	5.99	4.30
18	-1.70	26.88	6.76	5.03
19	-1.80	28.47	7.58	5.85
20	-1.90	30.07	8.44	6.76
21	-2.00	31.70	9.35	7.77
22	-2.10	33.35	10.31	8.87
23	-2.20	35.02	11.32	10.08
24	-2.30	36.70	12.37	11.41
25	-2.40	38.41	13.47	12.84
26	-2.50	40.14	14.61	14.40
27	-2.60	41.90	15.81	16.08
28	-2.70	43.67	17.04	17.89
29	-2.80	45.46	18.33	19.83
30	-2.90	47.27	19.66	21.91
31	-3.00	49.10	21.04	24.13

Combinazione n° 16 - SLEQ

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	0.00	3.06	0.00	0.38
2	-0.10	4.30	0.02	0.39
3	-0.20	5.56	0.09	0.40
4	-0.30	6.83	0.21	0.43
5	-0.40	8.13	0.38	0.48
6	-0.50	9.45	0.59	0.55
7	-0.60	10.79	0.84	0.65
8	-0.70	12.15	1.15	0.78
9	-0.80	13.53	1.50	0.96
10	-0.90	14.93	1.90	1.17
11	-1.00	16.35	2.34	1.44
12	-1.10	17.79	2.83	1.75
13	-1.20	19.26	3.37	2.13
14	-1.30	20.74	3.95	2.56
15	-1.40	22.24	4.58	3.07
16	-1.50	23.77	5.26	3.64
17	-1.60	25.31	5.99	4.30
18	-1.70	26.88	6.76	5.03
19	-1.80	28.47	7.58	5.85
20	-1.90	30.07	8.44	6.76
21	-2.00	31.70	9.35	7.77
22	-2.10	33.35	10.31	8.87
23	-2.20	35.02	11.32	10.08
24	-2.30	36.70	12.37	11.41
25	-2.40	38.41	13.47	12.84
26	-2.50	40.14	14.61	14.40
27	-2.60	41.90	15.81	16.08
28	-2.70	43.67	17.04	17.89
29	-2.80	45.46	18.33	19.83
30	-2.90	47.27	19.66	21.91
31	-3.00	49.10	21.04	24.13

*Mensola valle*Combinazione n° 1 - STR (A1-M1-R3)

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-0.75	0.00	0.00	0.00
2	-0.67	0.00	1.02	0.04
3	-0.58	0.00	2.04	0.17
4	-0.50	0.00	3.06	0.38

Combinazione n° 2 - STR (A1-M1-R3) H + V

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-0.75	0.00	0.00	0.00
2	-0.67	0.00	1.09	0.05
3	-0.58	0.00	2.19	0.18
4	-0.50	0.00	3.28	0.41

Combinazione n° 3 - STR (A1-M1-R3)

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-0.75	0.00	0.00	0.00
2	-0.67	0.00	1.02	0.04
3	-0.58	0.00	2.04	0.17
4	-0.50	0.00	3.06	0.38

Combinazione n° 4 - STR (A1-M1-R3) H - V

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-0.75	0.00	0.00	0.00
2	-0.67	0.00	1.02	0.04
3	-0.58	0.00	2.04	0.17
4	-0.50	0.00	3.06	0.38

Combinazione n° 13 - ECC

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-0.75	0.00	0.00	0.00
2	-0.67	0.00	1.02	0.04
3	-0.58	0.00	2.04	0.17
4	-0.50	0.00	3.06	0.38

Combinazione n° 14 - SLER

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-0.75	0.00	0.00	0.00
2	-0.67	0.00	1.02	0.04
3	-0.58	0.00	2.04	0.17
4	-0.50	0.00	3.06	0.38

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**Combinazione n° 15 - SLEF

n°	X [m]	N [kN]	T [kN]	M [kNm]
1	-0.75	0.00	0.00	0.00
2	-0.67	0.00	1.02	0.04
3	-0.58	0.00	2.04	0.17
4	-0.50	0.00	3.06	0.38

Combinazione n° 16 - SLEQ

n°	X [m]	N [kN]	T [kN]	M [kNm]
1	-0.75	0.00	0.00	0.00
2	-0.67	0.00	1.02	0.04
3	-0.58	0.00	2.04	0.17
4	-0.50	0.00	3.06	0.38

*Fondazione*Combinazione n° 1 - STR (A1-M1-R3)

n°	X [m]	N [kN]	T [kN]	M [kNm]
1	-1.25	0.00	0.00	0.00
2	-1.16	0.00	4.46	0.21
3	-1.06	0.00	8.97	0.84
4	-0.97	0.00	13.54	1.89
5	-0.88	0.00	18.16	3.38
6	-0.78	0.00	22.85	5.30
7	-0.69	0.00	27.58	7.66
8	-0.59	0.00	32.38	10.47
9	-0.50	0.00	37.23	13.74
10	0.25	0.00	-18.70	-12.23
11	0.35	0.00	-17.01	-10.44
12	0.45	0.00	-15.38	-8.82
13	0.55	0.00	-13.81	-7.37
14	0.65	0.00	-12.31	-6.06
15	0.75	0.00	-10.87	-4.90
16	0.85	0.00	-9.49	-3.88
17	0.95	0.00	-8.18	-3.00
18	1.05	0.00	-6.94	-2.25
19	1.15	0.00	-5.75	-1.61
20	1.25	0.00	-4.64	-1.09
21	1.35	0.00	-3.58	-0.68
22	1.45	0.00	-2.59	-0.37
23	1.55	0.00	-1.66	-0.16
24	1.65	0.00	-0.80	-0.04
25	1.75	0.00	0.00	0.00

Combinazione n° 2 - STR (A1-M1-R3) H + V

n°	X [m]	N [kN]	T [kN]	M [kNm]
1	-1.25	0.00	0.00	0.00
2	-1.16	0.00	8.78	0.41
3	-1.06	0.00	17.37	1.64
4	-0.97	0.00	25.77	3.66
5	-0.88	0.00	33.98	6.47

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
6	-0.78	0.00	41.99	10.03
7	-0.69	0.00	49.82	14.33
8	-0.59	0.00	57.46	19.36
9	-0.50	0.00	64.90	25.10
10	0.25	0.00	-16.71	-18.63
11	0.35	0.00	-17.12	-16.94
12	0.45	0.00	-17.30	-15.21
13	0.55	0.00	-17.27	-13.48
14	0.65	0.00	-17.02	-11.77
15	0.75	0.00	-16.56	-10.09
16	0.85	0.00	-15.88	-8.46
17	0.95	0.00	-14.98	-6.92
18	1.05	0.00	-13.87	-5.47
19	1.15	0.00	-12.54	-4.15
20	1.25	0.00	-10.99	-2.97
21	1.35	0.00	-9.23	-1.96
22	1.45	0.00	-7.24	-1.14
23	1.55	0.00	-5.05	-0.52
24	1.65	0.00	-2.63	-0.13
25	1.75	0.00	0.00	0.00

Combinazione n° 3 - STR (A1-M1-R3)

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-1.25	0.00	0.00	0.00
2	-1.16	0.00	8.38	0.39
3	-1.06	0.00	16.84	1.57
4	-0.97	0.00	25.37	3.55
5	-0.88	0.00	33.98	6.33
6	-0.78	0.00	42.67	9.93
7	-0.69	0.00	51.44	14.34
8	-0.59	0.00	60.29	19.57
9	-0.50	0.00	69.21	25.64
10	0.25	0.00	-47.40	-33.06
11	0.35	0.00	-43.62	-28.51
12	0.45	0.00	-39.93	-24.33
13	0.55	0.00	-36.32	-20.52
14	0.65	0.00	-32.81	-17.06
15	0.75	0.00	-29.38	-13.95
16	0.85	0.00	-26.05	-11.18
17	0.95	0.00	-22.80	-8.74
18	1.05	0.00	-19.64	-6.62
19	1.15	0.00	-16.56	-4.81
20	1.25	0.00	-13.58	-3.30
21	1.35	0.00	-10.69	-2.09
22	1.45	0.00	-7.88	-1.16
23	1.55	0.00	-5.17	-0.51
24	1.65	0.00	-2.54	-0.13
25	1.75	0.00	0.00	0.00

Combinazione n° 4 - STR (A1-M1-R3) H - V

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-1.25	0.00	0.00	0.00
2	-1.16	0.00	7.91	0.37
3	-1.06	0.00	15.62	1.48
4	-0.97	0.00	23.14	3.29
5	-0.88	0.00	30.46	5.81
6	-0.78	0.00	37.59	9.00
7	-0.69	0.00	44.53	12.85
8	-0.59	0.00	51.27	17.34
9	-0.50	0.00	57.81	22.46
10	0.25	0.00	-32.07	-30.26

VE407

**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
11	0.35	0.00	-31.47	-27.08
12	0.45	0.00	-30.66	-23.97
13	0.55	0.00	-29.63	-20.96
14	0.65	0.00	-28.37	-18.06
15	0.75	0.00	-26.90	-15.29
16	0.85	0.00	-25.20	-12.68
17	0.95	0.00	-23.29	-10.26
18	1.05	0.00	-21.15	-8.03
19	1.15	0.00	-18.79	-6.03
20	1.25	0.00	-16.21	-4.28
21	1.35	0.00	-13.41	-2.80
22	1.45	0.00	-10.39	-1.61
23	1.55	0.00	-7.15	-0.73
24	1.65	0.00	-3.68	-0.19
25	1.75	0.00	0.00	0.00

Combinazione n° 13 - ECC

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-1.25	0.00	0.00	0.00
2	-1.16	0.00	13.80	0.65
3	-1.06	0.00	27.04	2.57
4	-0.97	0.00	39.71	5.70
5	-0.88	0.00	51.82	10.00
6	-0.78	0.00	63.37	15.40
7	-0.69	0.00	74.35	21.86
8	-0.59	0.00	84.78	29.33
9	-0.50	0.00	94.64	37.74
10	0.25	0.00	-72.13	-69.38
11	0.35	0.00	-71.52	-62.19
12	0.45	0.00	-70.26	-55.09
13	0.55	0.00	-68.36	-48.16
14	0.65	0.00	-65.82	-41.44
15	0.75	0.00	-62.64	-35.01
16	0.85	0.00	-58.82	-28.93
17	0.95	0.00	-54.37	-23.27
18	1.05	0.00	-49.27	-18.08
19	1.15	0.00	-43.53	-13.44
20	1.25	0.00	-37.15	-9.40
21	1.35	0.00	-30.12	-6.03
22	1.45	0.00	-22.62	-3.39
23	1.55	0.00	-15.08	-1.51
24	1.65	0.00	-7.54	-0.38
25	1.75	0.00	0.00	0.00

Combinazione n° 14 - SLER

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-1.25	0.00	0.00	0.00
2	-1.16	0.00	5.96	0.28
3	-1.06	0.00	12.01	1.12
4	-0.97	0.00	18.15	2.53
5	-0.88	0.00	24.37	4.53
6	-0.78	0.00	30.69	7.11
7	-0.69	0.00	37.09	10.28
8	-0.59	0.00	43.59	14.06
9	-0.50	0.00	50.17	18.46
10	0.25	0.00	-6.60	-2.11
11	0.35	0.00	-5.45	-1.51
12	0.45	0.00	-4.41	-1.02
13	0.55	0.00	-3.46	-0.62
14	0.65	0.00	-2.62	-0.32
15	0.75	0.00	-1.88	-0.10



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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
16	0.85	0.00	-1.23	0.06
17	0.95	0.00	-0.69	0.15
18	1.05	0.00	-0.25	0.20
19	1.15	0.00	0.08	0.21
20	1.25	0.00	0.32	0.19
21	1.35	0.00	0.46	0.15
22	1.45	0.00	0.50	0.10
23	1.55	0.00	0.43	0.05
24	1.65	0.00	0.27	0.01
25	1.75	0.00	0.00	0.00

Combinazione n° 15 - SLEF

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-1.25	0.00	0.00	0.00
2	-1.16	0.00	4.01	0.19
3	-1.06	0.00	8.09	0.75
4	-0.97	0.00	12.25	1.71
5	-0.88	0.00	16.49	3.05
6	-0.78	0.00	20.81	4.80
7	-0.69	0.00	25.20	6.96
8	-0.59	0.00	29.67	9.53
9	-0.50	0.00	34.22	12.52
10	0.25	0.00	7.72	8.27
11	0.35	0.00	7.82	7.49
12	0.45	0.00	7.84	6.71
13	0.55	0.00	7.76	5.92
14	0.65	0.00	7.60	5.16
15	0.75	0.00	7.35	4.41
16	0.85	0.00	7.01	3.69
17	0.95	0.00	6.58	3.01
18	1.05	0.00	6.07	2.38
19	1.15	0.00	5.47	1.80
20	1.25	0.00	4.77	1.29
21	1.35	0.00	4.00	0.85
22	1.45	0.00	3.13	0.49
23	1.55	0.00	2.17	0.22
24	1.65	0.00	1.13	0.06
25	1.75	0.00	0.00	0.00

Combinazione n° 16 - SLEQ

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-1.25	0.00	0.00	0.00
2	-1.16	0.00	4.01	0.19
3	-1.06	0.00	8.09	0.75
4	-0.97	0.00	12.25	1.71
5	-0.88	0.00	16.49	3.05
6	-0.78	0.00	20.81	4.80
7	-0.69	0.00	25.20	6.96
8	-0.59	0.00	29.67	9.53
9	-0.50	0.00	34.22	12.52
10	0.25	0.00	7.72	8.27
11	0.35	0.00	7.82	7.49
12	0.45	0.00	7.84	6.71
13	0.55	0.00	7.76	5.92
14	0.65	0.00	7.60	5.16
15	0.75	0.00	7.35	4.41
16	0.85	0.00	7.01	3.69
17	0.95	0.00	6.58	3.01
18	1.05	0.00	6.07	2.38
19	1.15	0.00	5.47	1.80
20	1.25	0.00	4.77	1.29

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
21	1.35	0.00	4.00	0.85
22	1.45	0.00	3.13	0.49
23	1.55	0.00	2.17	0.22
24	1.65	0.00	1.13	0.06
25	1.75	0.00	0.00	0.00

Verifiche strutturali*Verifiche a flessione*Elementi calcolati a trave

## Simbologia adottata

n°	indice sezione
Y	ordinata sezione espressa in [m]
B	larghezza sezione espresso in [cm]
H	altezza sezione espressa in [cm]
Afi	area ferri inferiori espresso in [cmq]
Afs	area ferri superiori espressa in [cmq]
M	momento agente espressa in [kNm]
N	sforzo normale agente espressa in [kN]
Mu	momento ultimi espresso in [kNm]
Nu	sforzo normale ultimo espressa in [kN]
FS	fattore di sicurezza (rapporto tra sollecitazione ultima e sollecitazione agente)

**Paramento**Combinazione n° 1 - STR (A1-M1-R3)

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
1	0.00	100	50	12.06	20.11	0.38	3.06	0.00	0.00	1000.000
2	-0.10	100	51	12.06	20.11	0.39	4.30	0.00	0.00	1000.000
3	-0.20	100	52	12.06	20.11	0.40	5.56	0.00	0.00	1000.000
4	-0.30	100	53	12.06	20.11	0.43	6.83	0.00	0.00	1000.000
5	-0.40	100	53	12.06	20.11	0.49	8.13	0.00	0.00	1000.000
6	-0.50	100	54	12.06	20.11	0.58	9.45	518.96	8504.11	899.789
7	-0.60	100	55	12.06	20.11	0.70	10.79	551.88	8521.00	789.690
8	-0.70	100	56	12.06	20.11	0.86	12.15	600.35	8451.12	695.567
9	-0.80	100	57	12.06	20.11	1.08	13.53	661.18	8316.73	614.678
10	-0.90	100	58	12.06	20.11	1.34	14.93	729.23	8109.49	543.128
11	-1.00	100	58	12.06	20.11	1.67	16.35	803.48	7866.21	481.040
12	-1.10	100	59	12.06	20.11	2.06	17.79	878.93	7574.93	425.689
13	-1.20	100	60	12.06	20.11	2.53	19.26	956.13	7271.49	377.600
14	-1.30	100	61	12.06	20.11	3.08	20.74	1029.58	6936.18	334.429
15	-1.40	100	62	12.06	20.11	3.71	22.24	1102.25	6608.02	297.068
16	-1.50	100	63	12.06	20.11	4.43	23.77	1170.03	6272.39	263.895
17	-1.60	100	63	12.06	20.11	5.25	25.31	1234.47	5946.97	234.933
18	-1.70	100	64	12.06	20.11	6.18	26.88	1285.23	5590.66	207.994
19	-1.80	100	65	12.06	24.13	7.21	28.47	1365.21	5387.04	189.251
20	-1.90	100	66	12.06	24.13	8.36	30.07	1394.37	5013.01	166.701
21	-2.00	100	67	12.06	24.13	9.64	31.70	1407.81	4630.51	146.077
22	-2.10	100	68	12.06	24.13	11.04	33.35	1408.12	4253.73	127.559

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
23	-2.20	100	68	12.06	24.13	12.57	35.02	1399.51	3897.00	111.294
24	-2.30	100	69	12.06	24.13	14.25	36.70	1388.32	3575.53	97.414
25	-2.40	100	70	12.06	24.13	16.08	38.41	1365.90	3263.97	84.968
26	-2.50	100	71	12.06	24.13	18.05	40.14	1346.55	2994.45	74.592
27	-2.60	100	72	12.06	24.13	20.19	41.90	1321.32	2742.02	65.449
28	-2.70	100	73	12.06	24.13	22.49	43.67	1296.53	2517.36	57.649
29	-2.80	100	74	12.06	24.13	24.96	45.46	1277.49	2326.36	51.175
30	-2.90	100	74	12.06	24.13	27.61	47.27	1252.27	2143.72	45.349
31	-3.00	100	75	12.06	24.13	30.45	49.10	1228.87	1981.79	40.359

Combinazione n° 2 - STR (A1-M1-R3) H + V

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
1	0.00	100	50	12.06	20.11	0.41	3.28	0.00	0.00	1000.000
2	-0.10	100	51	12.06	20.11	0.44	4.52	0.00	0.00	1000.000
3	-0.20	100	52	12.06	20.11	0.52	5.78	0.00	0.00	1000.000
4	-0.30	100	53	12.06	20.11	0.67	7.05	0.00	0.00	1000.000
5	-0.40	100	53	12.06	20.11	0.88	8.35	723.52	6859.34	821.374
6	-0.50	100	54	12.06	20.11	1.17	9.67	792.28	6567.27	679.170
7	-0.60	100	55	12.06	20.11	1.53	11.01	862.24	6205.91	563.731
8	-0.70	100	56	12.06	20.11	1.97	12.37	931.42	5833.42	471.643
9	-0.80	100	57	12.06	20.11	2.51	13.75	997.04	5466.61	397.614
10	-0.90	100	58	12.06	20.11	3.13	15.15	1050.99	5082.39	335.484
11	-1.00	100	58	12.06	20.11	3.86	16.57	1093.18	4698.56	283.544
12	-1.10	100	59	12.06	20.11	4.68	18.01	1105.18	4253.12	236.116
13	-1.20	100	60	12.06	20.11	5.61	19.48	1101.63	3821.96	196.245
14	-1.30	100	61	12.06	20.11	6.66	20.96	1087.25	3421.99	163.273
15	-1.40	100	62	12.06	20.11	7.82	22.46	1068.24	3067.52	136.562
16	-1.50	100	63	12.06	20.11	9.11	23.99	1044.78	2751.40	114.705
17	-1.60	100	63	12.06	20.11	10.52	25.53	1017.76	2469.52	96.724
18	-1.70	100	64	12.06	20.11	12.07	27.10	992.67	2228.71	82.248
19	-1.80	100	65	12.06	24.13	13.75	28.68	1088.91	2270.89	79.171
20	-1.90	100	66	12.06	24.13	15.58	30.29	1073.65	2087.13	68.905
21	-2.00	100	67	12.06	24.13	17.56	31.92	1057.98	1923.28	60.258
22	-2.10	100	68	12.06	24.13	19.69	33.57	1040.38	1773.84	52.847
23	-2.20	100	68	12.06	24.13	21.97	35.23	1026.99	1646.74	46.737
24	-2.30	100	69	12.06	24.13	24.42	36.92	1016.99	1537.43	41.639
25	-2.40	100	70	12.06	24.13	27.04	38.63	1003.86	1434.10	37.121
26	-2.50	100	71	12.06	24.13	29.83	40.36	990.33	1339.81	33.194
27	-2.60	100	72	12.06	24.13	32.81	42.11	979.65	1257.63	29.863
28	-2.70	100	73	12.06	24.13	35.96	43.89	971.30	1185.40	27.011
29	-2.80	100	74	12.06	24.13	39.30	45.68	964.90	1121.44	24.551
30	-2.90	100	74	12.06	24.13	42.84	47.49	960.14	1064.42	22.414
31	-3.00	100	75	12.06	24.13	46.57	49.32	956.77	1013.29	20.544

Combinazione n° 3 - STR (A1-M1-R3)

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
1	0.00	100	50	12.06	20.11	0.38	3.06	0.00	0.00	1000.000
2	-0.10	100	51	12.06	20.11	0.47	4.30	0.00	0.00	1000.000
3	-0.20	100	52	12.06	20.11	0.73	5.56	0.00	0.00	1000.000
4	-0.30	100	53	12.06	20.11	1.17	6.83	867.00	5064.18	740.937
5	-0.40	100	53	12.06	20.11	1.80	8.13	932.08	4214.15	518.172
6	-0.50	100	54	12.06	20.11	2.62	9.45	912.28	3289.94	348.097
7	-0.60	100	55	12.06	20.11	3.64	10.79	856.64	2537.83	235.195
8	-0.70	100	56	12.06	20.11	4.87	12.15	798.22	1991.70	163.927
9	-0.80	100	57	12.06	20.11	6.31	13.53	747.51	1603.27	118.495
10	-0.90	100	58	12.06	20.11	7.97	14.93	707.13	1325.53	88.777
11	-1.00	100	58	12.06	20.11	9.85	16.35	670.62	1113.75	68.109
12	-1.10	100	59	12.06	20.11	11.96	17.79	645.30	960.28	53.965
13	-1.20	100	60	12.06	20.11	14.31	19.26	628.19	845.61	43.912
14	-1.30	100	61	12.06	20.11	16.90	20.74	616.56	756.84	36.491
15	-1.40	100	62	12.06	20.11	19.74	22.24	608.77	686.16	30.847

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
16	-1.50	100	63	12.06	20.11	22.83	23.77	603.78	628.61	26.447
17	-1.60	100	63	12.06	20.11	26.19	25.31	600.88	580.88	22.947
18	-1.70	100	64	12.06	20.11	29.81	26.88	599.60	540.68	20.115
19	-1.80	100	65	12.06	24.13	33.70	28.47	709.18	598.94	21.041
20	-1.90	100	66	12.06	24.13	37.88	30.07	710.23	563.83	18.749
21	-2.00	100	67	12.06	24.13	42.34	31.70	712.25	533.23	16.821
22	-2.10	100	68	12.06	24.13	47.10	33.35	715.07	506.32	15.183
23	-2.20	100	68	12.06	24.13	52.15	35.02	718.54	482.48	13.779
24	-2.30	100	69	12.06	24.13	57.50	36.70	722.58	461.23	12.566
25	-2.40	100	70	12.06	24.13	63.17	38.41	727.10	442.16	11.510
26	-2.50	100	71	12.06	24.13	69.15	40.14	732.04	424.96	10.586
27	-2.60	100	72	12.06	24.13	75.46	41.90	737.33	409.37	9.771
28	-2.70	100	73	12.06	24.13	82.09	43.67	742.93	395.17	9.050
29	-2.80	100	74	12.06	24.13	89.06	45.46	748.37	381.97	8.403
30	-2.90	100	74	12.06	24.13	96.37	47.27	753.71	369.69	7.821
31	-3.00	100	75	12.06	24.13	104.03	49.10	759.27	358.38	7.298

Combinazione n° 4 - STR (A1-M1-R3) H - V

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
1	0.00	100	50	12.06	20.11	0.38	3.06	0.00	0.00	1000.000
2	-0.10	100	51	12.06	20.11	0.41	4.30	0.00	0.00	1000.000
3	-0.20	100	52	12.06	20.11	0.48	5.56	0.00	0.00	1000.000
4	-0.30	100	53	12.06	20.11	0.60	6.83	0.00	0.00	1000.000
5	-0.40	100	53	12.06	20.11	0.78	8.13	686.26	7169.70	881.585
6	-0.50	100	54	12.06	20.11	1.02	9.45	748.98	6927.26	732.949
7	-0.60	100	55	12.06	20.11	1.33	10.79	818.91	6627.92	614.248
8	-0.70	100	56	12.06	20.11	1.72	12.15	888.14	6282.97	517.118
9	-0.80	100	57	12.06	20.11	2.18	13.53	955.92	5933.59	438.543
10	-0.90	100	58	12.06	20.11	2.73	14.93	1020.23	5589.91	374.381
11	-1.00	100	58	12.06	20.11	3.36	16.35	1074.89	5233.47	320.041
12	-1.10	100	59	12.06	20.11	4.09	17.79	1123.04	4891.77	274.903
13	-1.20	100	60	12.06	20.11	4.91	19.26	1137.76	4462.20	231.716
14	-1.30	100	61	12.06	20.11	5.84	20.74	1139.40	4047.69	195.160
15	-1.40	100	62	12.06	20.11	6.87	22.24	1132.20	3663.34	164.688
16	-1.50	100	63	12.06	20.11	8.02	23.77	1118.97	3314.29	139.441
17	-1.60	100	63	12.06	20.11	9.29	25.31	1094.89	2982.38	117.818
18	-1.70	100	64	12.06	20.11	10.68	26.88	1075.36	2705.18	100.643
19	-1.80	100	65	12.06	24.13	12.21	28.47	1162.26	2710.60	95.225
20	-1.90	100	66	12.06	24.13	13.86	30.07	1143.88	2481.96	82.534
21	-2.00	100	67	12.06	24.13	15.65	31.70	1125.29	2278.98	71.894
22	-2.10	100	68	12.06	24.13	17.59	33.35	1111.68	2107.70	63.205
23	-2.20	100	68	12.06	24.13	19.67	35.02	1094.55	1948.09	55.635
24	-2.30	100	69	12.06	24.13	21.91	36.70	1077.77	1805.29	49.184
25	-2.40	100	70	12.06	24.13	24.31	38.41	1064.88	1682.65	43.803
26	-2.50	100	71	12.06	24.13	26.87	40.14	1055.13	1576.23	39.264
27	-2.60	100	72	12.06	24.13	29.60	41.90	1041.40	1473.80	35.178
28	-2.70	100	73	12.06	24.13	32.51	43.67	1027.65	1380.37	31.611
29	-2.80	100	74	12.06	24.13	35.59	45.46	1016.64	1298.45	28.563
30	-2.90	100	74	12.06	24.13	38.86	47.27	1007.93	1226.07	25.937
31	-3.00	100	75	12.06	24.13	42.32	49.10	1001.13	1161.67	23.657

Combinazione n° 13 - ECC

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
1	0.00	100	50	12.06	20.11	33.68	3.06	404.35	36.79	12.005
2	-0.10	100	51	12.06	20.11	37.02	4.30	414.43	48.15	11.196
3	-0.20	100	52	12.06	20.11	40.36	5.56	424.37	58.44	10.515
4	-0.30	100	53	12.06	20.11	43.72	6.83	434.20	67.88	9.932
5	-0.40	100	53	12.06	20.11	47.10	8.13	443.95	76.66	9.427
6	-0.50	100	54	12.06	20.11	50.50	9.45	453.64	84.91	8.984
7	-0.60	100	55	12.06	20.11	53.93	10.79	463.30	92.70	8.591
8	-0.70	100	56	12.06	20.11	57.39	12.15	472.92	100.12	8.240

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
9	-0.80	100	57	12.06	20.11	60.90	13.53	482.52	107.21	7.924
10	-0.90	100	58	12.06	20.11	64.44	14.93	492.11	114.02	7.637
11	-1.00	100	58	12.06	20.11	68.04	16.35	501.69	120.58	7.374
12	-1.10	100	59	12.06	20.11	71.68	17.79	511.26	126.91	7.132
13	-1.20	100	60	12.06	20.11	75.39	19.26	520.83	133.04	6.909
14	-1.30	100	61	12.06	20.11	79.15	20.74	530.39	138.97	6.701
15	-1.40	100	62	12.06	20.11	82.99	22.24	539.95	144.73	6.506
16	-1.50	100	63	12.06	20.11	86.89	23.77	549.51	150.31	6.324
17	-1.60	100	63	12.06	20.11	90.88	25.31	559.07	155.73	6.152
18	-1.70	100	64	12.06	20.11	94.94	26.88	568.63	160.99	5.989
19	-1.80	100	65	12.06	24.13	99.09	28.47	690.82	198.45	6.972
20	-1.90	100	66	12.06	24.13	103.33	30.07	702.26	204.38	6.796
21	-2.00	100	67	12.06	24.13	107.67	31.70	713.69	210.13	6.629
22	-2.10	100	68	12.06	24.13	112.10	33.35	725.11	215.70	6.468
23	-2.20	100	68	12.06	24.13	116.64	35.02	736.53	221.10	6.314
24	-2.30	100	69	12.06	24.13	121.30	36.70	747.93	226.33	6.166
25	-2.40	100	70	12.06	24.13	126.06	38.41	759.33	231.39	6.023
26	-2.50	100	71	12.06	24.13	130.95	40.14	770.71	236.27	5.886
27	-2.60	100	72	12.06	24.13	135.96	41.90	782.07	241.00	5.752
28	-2.70	100	73	12.06	24.13	141.10	43.67	793.42	245.55	5.623
29	-2.80	100	74	12.06	24.13	146.37	45.46	804.75	249.94	5.498
30	-2.90	100	74	12.06	24.13	151.78	47.27	816.07	254.16	5.377
31	-3.00	100	75	12.06	24.13	157.33	49.10	827.36	258.22	5.259

**Mensola valle**Combinazione n° 1 - STR (A1-M1-R3)

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
1	-0.75	100	50	8.04	8.04	0.00	0.00	0.00	0.00	1000.000
2	-0.67	100	50	8.04	8.04	-0.04	0.00	0.00	0.00	1000.000
3	-0.58	100	50	8.04	8.04	-0.17	0.00	-140.19	0.00	823.421
4	-0.50	100	50	8.04	8.04	-0.38	0.00	-140.19	0.00	365.965

Combinazione n° 2 - STR (A1-M1-R3) H + V

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
1	-0.75	100	50	8.04	8.04	0.00	0.00	0.00	0.00	1000.000
2	-0.67	100	50	8.04	8.04	-0.05	0.00	0.00	0.00	1000.000
3	-0.58	100	50	8.04	8.04	-0.18	0.00	-140.19	0.00	768.661
4	-0.50	100	50	8.04	8.04	-0.41	0.00	-140.19	0.00	341.627

Combinazione n° 3 - STR (A1-M1-R3)

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
1	-0.75	100	50	8.04	8.04	0.00	0.00	0.00	0.00	1000.000
2	-0.67	100	50	8.04	8.04	-0.04	0.00	0.00	0.00	1000.000
3	-0.58	100	50	8.04	8.04	-0.17	0.00	-140.19	0.00	823.421
4	-0.50	100	50	8.04	8.04	-0.38	0.00	-140.19	0.00	365.965

Combinazione n° 4 - STR (A1-M1-R3) H - V

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
1	-0.75	100	50	8.04	8.04	0.00	0.00	0.00	0.00	1000.000
2	-0.67	100	50	8.04	8.04	-0.04	0.00	0.00	0.00	1000.000
3	-0.58	100	50	8.04	8.04	-0.17	0.00	-140.19	0.00	823.421
4	-0.50	100	50	8.04	8.04	-0.38	0.00	-140.19	0.00	365.965

Combinazione n° 13 - ECC

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
1	-0.75	100	50	8.04	8.04	0.00	0.00	0.00	0.00	1000.000
2	-0.67	100	50	8.04	8.04	-0.04	0.00	0.00	0.00	1000.000
3	-0.58	100	50	8.04	8.04	-0.17	0.00	-162.29	0.00	953.202
4	-0.50	100	50	8.04	8.04	-0.38	0.00	-162.29	0.00	423.645

**Fondazione**Combinazione n° 1 - STR (A1-M1-R3)

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
1	-1.25	100	75	16.08	16.08	0.00	0.00	0.00	0.00	1000.000
2	-1.16	100	75	16.08	16.08	0.21	0.00	0.00	0.00	1000.000
3	-1.06	100	75	16.08	16.08	0.84	0.00	430.45	0.00	514.006
4	-0.97	100	75	16.08	16.08	1.89	0.00	430.45	0.00	227.494
5	-0.88	100	75	16.08	16.08	3.38	0.00	430.45	0.00	127.433
6	-0.78	100	75	16.08	16.08	5.30	0.00	430.45	0.00	81.220
7	-0.69	100	75	16.08	16.08	7.66	0.00	430.45	0.00	56.170
8	-0.59	100	75	16.08	16.08	10.47	0.00	430.45	0.00	41.098
9	-0.50	100	75	16.08	16.08	13.74	0.00	430.45	0.00	31.337
10	0.25	100	75	16.08	16.08	-12.23	0.00	-430.45	0.00	35.201
11	0.35	100	75	16.08	16.08	-10.44	0.00	-430.45	0.00	41.218
12	0.45	100	75	16.08	16.08	-8.82	0.00	-430.45	0.00	48.778
13	0.55	100	75	16.08	16.08	-7.37	0.00	-430.45	0.00	58.438
14	0.65	100	75	16.08	16.08	-6.06	0.00	-430.45	0.00	71.025
15	0.75	100	75	16.08	16.08	-4.90	0.00	-430.45	0.00	87.808
16	0.85	100	75	16.08	16.08	-3.88	0.00	-430.45	0.00	110.813
17	0.95	100	75	16.08	16.08	-3.00	0.00	-430.45	0.00	143.433
18	1.05	100	75	16.08	16.08	-2.25	0.00	-430.45	0.00	191.696
19	1.15	100	75	16.08	16.08	-1.61	0.00	-430.45	0.00	267.129
20	1.25	100	75	16.08	16.08	-1.09	0.00	-430.45	0.00	394.042
21	1.35	100	75	16.08	16.08	-0.68	0.00	-430.45	0.00	631.074
22	1.45	100	75	16.08	16.08	-0.37	0.00	0.00	0.00	1000.000
23	1.55	100	75	16.08	16.08	-0.16	0.00	0.00	0.00	1000.000
24	1.65	100	75	16.08	16.08	-0.04	0.00	0.00	0.00	1000.000
25	1.75	100	75	16.08	16.08	0.00	0.00	0.00	0.00	1000.000

Combinazione n° 2 - STR (A1-M1-R3) H + V

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
1	-1.25	100	75	16.08	16.08	0.00	0.00	0.00	0.00	1000.000
2	-1.16	100	75	16.08	16.08	0.41	0.00	0.00	0.00	1000.000
3	-1.06	100	75	16.08	16.08	1.64	0.00	430.45	0.00	262.425
4	-0.97	100	75	16.08	16.08	3.66	0.00	430.45	0.00	117.486
5	-0.88	100	75	16.08	16.08	6.47	0.00	430.45	0.00	66.573
6	-0.78	100	75	16.08	16.08	10.03	0.00	430.45	0.00	42.923
7	-0.69	100	75	16.08	16.08	14.33	0.00	430.45	0.00	30.030
8	-0.59	100	75	16.08	16.08	19.36	0.00	430.45	0.00	22.229
9	-0.50	100	75	16.08	16.08	25.10	0.00	430.45	0.00	17.148
10	0.25	100	75	16.08	16.08	-18.63	0.00	-430.45	0.00	23.105

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
11	0.35	100	75	16.08	16.08	-16.94	0.00	-430.45	0.00	25.414
12	0.45	100	75	16.08	16.08	-15.21	0.00	-430.45	0.00	28.292
13	0.55	100	75	16.08	16.08	-13.48	0.00	-430.45	0.00	31.923
14	0.65	100	75	16.08	16.08	-11.77	0.00	-430.45	0.00	36.580
15	0.75	100	75	16.08	16.08	-10.09	0.00	-430.45	0.00	42.676
16	0.85	100	75	16.08	16.08	-8.46	0.00	-430.45	0.00	50.865
17	0.95	100	75	16.08	16.08	-6.92	0.00	-430.45	0.00	62.224
18	1.05	100	75	16.08	16.08	-5.47	0.00	-430.45	0.00	78.644
19	1.15	100	75	16.08	16.08	-4.15	0.00	-430.45	0.00	103.690
20	1.25	100	75	16.08	16.08	-2.97	0.00	-430.45	0.00	144.778
21	1.35	100	75	16.08	16.08	-1.96	0.00	-430.45	0.00	219.547
22	1.45	100	75	16.08	16.08	-1.14	0.00	-430.45	0.00	379.129
23	1.55	100	75	16.08	16.08	-0.52	0.00	-430.45	0.00	829.293
24	1.65	100	75	16.08	16.08	-0.13	0.00	0.00	0.00	1000.000
25	1.75	100	75	16.08	16.08	0.00	0.00	0.00	0.00	1000.000

Combinazione n° 3 - STR (A1-M1-R3)

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
1	-1.25	100	75	16.08	16.08	0.00	0.00	0.00	0.00	1000.000
2	-1.16	100	75	16.08	16.08	0.39	0.00	0.00	0.00	1000.000
3	-1.06	100	75	16.08	16.08	1.57	0.00	430.45	0.00	273.575
4	-0.97	100	75	16.08	16.08	3.55	0.00	430.45	0.00	121.213
5	-0.88	100	75	16.08	16.08	6.33	0.00	430.45	0.00	67.972
6	-0.78	100	75	16.08	16.08	9.93	0.00	430.45	0.00	43.369
7	-0.69	100	75	16.08	16.08	14.34	0.00	430.45	0.00	30.025
8	-0.59	100	75	16.08	16.08	19.57	0.00	430.45	0.00	21.992
9	-0.50	100	75	16.08	16.08	25.64	0.00	430.45	0.00	16.786
10	0.25	100	75	16.08	16.08	-33.06	0.00	-430.45	0.00	13.022
11	0.35	100	75	16.08	16.08	-28.51	0.00	-430.45	0.00	15.101
12	0.45	100	75	16.08	16.08	-24.33	0.00	-430.45	0.00	17.693
13	0.55	100	75	16.08	16.08	-20.52	0.00	-430.45	0.00	20.980
14	0.65	100	75	16.08	16.08	-17.06	0.00	-430.45	0.00	25.231
15	0.75	100	75	16.08	16.08	-13.95	0.00	-430.45	0.00	30.853
16	0.85	100	75	16.08	16.08	-11.18	0.00	-430.45	0.00	38.498
17	0.95	100	75	16.08	16.08	-8.74	0.00	-430.45	0.00	49.252
18	1.05	100	75	16.08	16.08	-6.62	0.00	-430.45	0.00	65.034
19	1.15	100	75	16.08	16.08	-4.81	0.00	-430.45	0.00	89.499
20	1.25	100	75	16.08	16.08	-3.30	0.00	-430.45	0.00	130.322
21	1.35	100	75	16.08	16.08	-2.09	0.00	-430.45	0.00	205.934
22	1.45	100	75	16.08	16.08	-1.16	0.00	-430.45	0.00	370.299
23	1.55	100	75	16.08	16.08	-0.51	0.00	-430.45	0.00	842.829
24	1.65	100	75	16.08	16.08	-0.13	0.00	0.00	0.00	1000.000
25	1.75	100	75	16.08	16.08	0.00	0.00	0.00	0.00	1000.000

Combinazione n° 4 - STR (A1-M1-R3) H - V

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
1	-1.25	100	75	16.08	16.08	0.00	0.00	0.00	0.00	1000.000
2	-1.16	100	75	16.08	16.08	0.37	0.00	0.00	0.00	1000.000
3	-1.06	100	75	16.08	16.08	1.48	0.00	430.45	0.00	291.554
4	-0.97	100	75	16.08	16.08	3.29	0.00	430.45	0.00	130.654
5	-0.88	100	75	16.08	16.08	5.81	0.00	430.45	0.00	74.107
6	-0.78	100	75	16.08	16.08	9.00	0.00	430.45	0.00	47.828
7	-0.69	100	75	16.08	16.08	12.85	0.00	430.45	0.00	33.496
8	-0.59	100	75	16.08	16.08	17.34	0.00	430.45	0.00	24.820
9	-0.50	100	75	16.08	16.08	22.46	0.00	430.45	0.00	19.167
10	0.25	100	75	16.08	16.08	-30.26	0.00	-430.45	0.00	14.224
11	0.35	100	75	16.08	16.08	-27.08	0.00	-430.45	0.00	15.893
12	0.45	100	75	16.08	16.08	-23.97	0.00	-430.45	0.00	17.954
13	0.55	100	75	16.08	16.08	-20.96	0.00	-430.45	0.00	20.538
14	0.65	100	75	16.08	16.08	-18.06	0.00	-430.45	0.00	23.839
15	0.75	100	75	16.08	16.08	-15.29	0.00	-430.45	0.00	28.150

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
16	0.85	100	75	16.08	16.08	-12.68	0.00	-430.45	0.00	33.936
17	0.95	100	75	16.08	16.08	-10.26	0.00	-430.45	0.00	41.964
18	1.05	100	75	16.08	16.08	-8.03	0.00	-430.45	0.00	53.579
19	1.15	100	75	16.08	16.08	-6.03	0.00	-430.45	0.00	71.326
20	1.25	100	75	16.08	16.08	-4.28	0.00	-430.45	0.00	100.502
21	1.35	100	75	16.08	16.08	-2.80	0.00	-430.45	0.00	153.730
22	1.45	100	75	16.08	16.08	-1.61	0.00	-430.45	0.00	267.666
23	1.55	100	75	16.08	16.08	-0.73	0.00	-430.45	0.00	590.090
24	1.65	100	75	16.08	16.08	-0.19	0.00	0.00	0.00	1000.000
25	1.75	100	75	16.08	16.08	0.00	0.00	0.00	0.00	1000.000

Combinazione n° 13 - ECC

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
1	-1.25	100	75	16.08	16.08	0.00	0.00	0.00	0.00	1000.000
2	-1.16	100	75	16.08	16.08	0.65	0.00	497.27	0.00	763.569
3	-1.06	100	75	16.08	16.08	2.57	0.00	497.27	0.00	193.505
4	-0.97	100	75	16.08	16.08	5.70	0.00	497.27	0.00	87.196
5	-0.88	100	75	16.08	16.08	10.00	0.00	497.27	0.00	49.738
6	-0.78	100	75	16.08	16.08	15.40	0.00	497.27	0.00	32.287
7	-0.69	100	75	16.08	16.08	21.86	0.00	497.27	0.00	22.746
8	-0.59	100	75	16.08	16.08	29.33	0.00	497.27	0.00	16.957
9	-0.50	100	75	16.08	16.08	37.74	0.00	497.27	0.00	13.176
10	0.25	100	75	16.08	16.08	-69.38	0.00	-497.27	0.00	7.168
11	0.35	100	75	16.08	16.08	-62.19	0.00	-497.27	0.00	7.996
12	0.45	100	75	16.08	16.08	-55.09	0.00	-497.27	0.00	9.026
13	0.55	100	75	16.08	16.08	-48.16	0.00	-497.27	0.00	10.326
14	0.65	100	75	16.08	16.08	-41.44	0.00	-497.27	0.00	11.999
15	0.75	100	75	16.08	16.08	-35.01	0.00	-497.27	0.00	14.202
16	0.85	100	75	16.08	16.08	-28.93	0.00	-497.27	0.00	17.186
17	0.95	100	75	16.08	16.08	-23.27	0.00	-497.27	0.00	21.369
18	1.05	100	75	16.08	16.08	-18.08	0.00	-497.27	0.00	27.499
19	1.15	100	75	16.08	16.08	-13.44	0.00	-497.27	0.00	37.004
20	1.25	100	75	16.08	16.08	-9.40	0.00	-497.27	0.00	52.904
21	1.35	100	75	16.08	16.08	-6.03	0.00	-497.27	0.00	82.456
22	1.45	100	75	16.08	16.08	-3.39	0.00	-497.27	0.00	146.581
23	1.55	100	75	16.08	16.08	-1.51	0.00	-497.27	0.00	329.807
24	1.65	100	75	16.08	16.08	-0.38	0.00	0.00	0.00	1000.000
25	1.75	100	75	16.08	16.08	0.00	0.00	0.00	0.00	1000.000

*Verifiche a taglio*

## Simbologia adottata

Is	indice sezione
Y	ordinata sezione espressa in [m]
B	larghezza sezione espressa in [cm]
H	altezza sezione espressa in [cm]
A <sub>sw</sub>	area ferri a taglio espresso in [cmq]
cotgθ	inclinazione delle bielle compresse, θ inclinazione dei puntoni di calcestruzzo
V <sub>Rcd</sub>	resistenza di progetto a 'taglio compressione' espressa in [kN]
V <sub>Rsd</sub>	resistenza di progetto a 'taglio trazione' espressa in [kN]
V <sub>Rd</sub>	resistenza di progetto a taglio espresso in [kN]. Per elementi con armature trasversali resistenti al taglio (A <sub>sw</sub> >0.0) V <sub>Rd</sub> =min(V <sub>Rcd</sub> , V <sub>Rsd</sub> ).
T	taglio agente espressa in [kN]
FS	fattore di sicurezza (rapporto tra sollecitazione resistente e sollecitazione agente)



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## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

## Paramento

## Combinazione n° 1 - STR (A1-M1-R3)

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
1	0.00	100	50	0.00	0.00	--	0.00	0.00	263.62	0.00	100.000
2	-0.10	100	51	0.00	0.00	--	0.00	0.00	266.04	0.03	8646.000
3	-0.20	100	52	0.00	0.00	--	0.00	0.00	268.43	0.12	2180.991
4	-0.30	100	53	0.00	0.00	--	0.00	0.00	270.82	0.28	980.628
5	-0.40	100	53	0.00	0.00	--	0.00	0.00	273.20	0.49	558.353
6	-0.50	100	54	0.00	0.00	--	0.00	0.00	275.56	0.76	361.241
7	-0.60	100	55	0.00	0.00	--	0.00	0.00	277.91	1.10	253.310
8	-0.70	100	56	0.00	0.00	--	0.00	0.00	280.25	1.49	187.810
9	-0.80	100	57	0.00	0.00	--	0.00	0.00	282.58	1.95	145.056
10	-0.90	100	58	0.00	0.00	--	0.00	0.00	284.90	2.46	115.591
11	-1.00	100	58	0.00	0.00	--	0.00	0.00	287.21	3.04	94.410
12	-1.10	100	59	0.00	0.00	--	0.00	0.00	289.51	3.68	78.663
13	-1.20	100	60	0.00	0.00	--	0.00	0.00	291.80	4.38	66.630
14	-1.30	100	61	0.00	0.00	--	0.00	0.00	294.08	5.14	57.223
15	-1.40	100	62	0.00	0.00	--	0.00	0.00	296.35	5.96	49.726
16	-1.50	100	63	0.00	0.00	--	0.00	0.00	298.62	6.84	43.651
17	-1.60	100	63	0.00	0.00	--	0.00	0.00	300.87	7.78	38.657
18	-1.70	100	64	0.00	0.00	--	0.00	0.00	303.12	8.79	34.500
19	-1.80	100	65	0.00	0.00	--	0.00	0.00	317.42	9.85	32.226
20	-1.90	100	66	0.00	0.00	--	0.00	0.00	319.74	10.97	29.135
21	-2.00	100	67	0.00	0.00	--	0.00	0.00	322.04	12.16	26.484
22	-2.10	100	68	0.00	0.00	--	0.00	0.00	324.33	13.41	24.194
23	-2.20	100	68	0.00	0.00	--	0.00	0.00	326.62	14.71	22.201
24	-2.30	100	69	0.00	0.00	--	0.00	0.00	328.90	16.08	20.454
25	-2.40	100	70	0.00	0.00	--	0.00	0.00	331.18	17.51	18.915
26	-2.50	100	71	0.00	0.00	--	0.00	0.00	333.44	19.00	17.552
27	-2.60	100	72	0.00	0.00	--	0.00	0.00	335.70	20.55	16.338
28	-2.70	100	73	0.00	0.00	--	0.00	0.00	337.96	22.16	15.252
29	-2.80	100	74	0.00	0.00	--	0.00	0.00	340.21	23.83	14.276
30	-2.90	100	74	0.00	0.00	--	0.00	0.00	342.45	25.56	13.397
31	-3.00	100	75	0.00	0.00	--	0.00	0.00	344.68	27.36	12.600

## Combinazione n° 2 - STR (A1-M1-R3) H + V

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
1	0.00	100	50	0.00	0.00	--	0.00	0.00	263.65	0.00	100.000
2	-0.10	100	51	0.00	0.00	--	0.00	0.00	266.07	0.49	538.819
3	-0.20	100	52	0.00	0.00	--	0.00	0.00	268.46	1.04	258.671
4	-0.30	100	53	0.00	0.00	--	0.00	0.00	270.85	1.63	166.002
5	-0.40	100	53	0.00	0.00	--	0.00	0.00	273.23	2.27	120.127
6	-0.50	100	54	0.00	0.00	--	0.00	0.00	275.59	2.97	92.893
7	-0.60	100	55	0.00	0.00	--	0.00	0.00	277.94	3.71	74.943
8	-0.70	100	56	0.00	0.00	--	0.00	0.00	280.28	4.50	62.280
9	-0.80	100	57	0.00	0.00	--	0.00	0.00	282.61	5.34	52.907
10	-0.90	100	58	0.00	0.00	--	0.00	0.00	284.93	6.23	45.716
11	-1.00	100	58	0.00	0.00	--	0.00	0.00	287.24	7.17	40.042
12	-1.10	100	59	0.00	0.00	--	0.00	0.00	289.54	8.16	35.466
13	-1.20	100	60	0.00	0.00	--	0.00	0.00	291.83	9.20	31.707
14	-1.30	100	61	0.00	0.00	--	0.00	0.00	294.11	10.29	28.572
15	-1.40	100	62	0.00	0.00	--	0.00	0.00	296.38	11.43	25.923
16	-1.50	100	63	0.00	0.00	--	0.00	0.00	298.65	12.62	23.660
17	-1.60	100	63	0.00	0.00	--	0.00	0.00	300.90	13.86	21.708
18	-1.70	100	64	0.00	0.00	--	0.00	0.00	303.15	15.15	20.010
19	-1.80	100	65	0.00	0.00	--	0.00	0.00	317.45	16.49	19.254
20	-1.90	100	66	0.00	0.00	--	0.00	0.00	319.77	17.88	17.888
21	-2.00	100	67	0.00	0.00	--	0.00	0.00	322.07	19.31	16.676
22	-2.10	100	68	0.00	0.00	--	0.00	0.00	324.37	20.80	15.594
23	-2.20	100	68	0.00	0.00	--	0.00	0.00	326.65	22.34	14.623
24	-2.30	100	69	0.00	0.00	--	0.00	0.00	328.93	23.92	13.749
25	-2.40	100	70	0.00	0.00	--	0.00	0.00	331.21	25.56	12.958

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## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

n°	Y	B	H	A <sub>sw</sub>	s	cotθ	V <sub>Rcd</sub>	V <sub>Rsd</sub>	V <sub>Rd</sub>	T	FS
	[m]	[cm]	[cm]	[cmq]	[cm]		[kN]	[kN]	[kN]	[kN]	
26	-2.50	100	71	0.00	0.00	--	0.00	0.00	333.48	27.25	12.239
27	-2.60	100	72	0.00	0.00	--	0.00	0.00	335.74	28.98	11.584
28	-2.70	100	73	0.00	0.00	--	0.00	0.00	337.99	30.77	10.985
29	-2.80	100	74	0.00	0.00	--	0.00	0.00	340.24	32.60	10.436
30	-2.90	100	74	0.00	0.00	--	0.00	0.00	342.48	34.49	9.930
31	-3.00	100	75	0.00	0.00	--	0.00	0.00	344.71	36.42	9.464

## Combinazione n° 3 - STR (A1-M1-R3)

n°	Y	B	H	A <sub>sw</sub>	s	cotθ	V <sub>Rcd</sub>	V <sub>Rsd</sub>	V <sub>Rd</sub>	T	FS
	[m]	[cm]	[cm]	[cmq]	[cm]		[kN]	[kN]	[kN]	[kN]	
1	0.00	100	50	0.00	0.00	--	0.00	0.00	263.62	0.00	100.000
2	-0.10	100	51	0.00	0.00	--	0.00	0.00	266.04	1.67	159.689
3	-0.20	100	52	0.00	0.00	--	0.00	0.00	268.43	3.39	79.103
4	-0.30	100	53	0.00	0.00	--	0.00	0.00	270.82	5.18	52.264
5	-0.40	100	53	0.00	0.00	--	0.00	0.00	273.20	7.03	38.861
6	-0.50	100	54	0.00	0.00	--	0.00	0.00	275.56	8.94	30.827
7	-0.60	100	55	0.00	0.00	--	0.00	0.00	277.91	10.91	25.477
8	-0.70	100	56	0.00	0.00	--	0.00	0.00	280.25	12.94	21.660
9	-0.80	100	57	0.00	0.00	--	0.00	0.00	282.58	15.03	18.801
10	-0.90	100	58	0.00	0.00	--	0.00	0.00	284.90	17.18	16.582
11	-1.00	100	58	0.00	0.00	--	0.00	0.00	287.21	19.39	14.809
12	-1.10	100	59	0.00	0.00	--	0.00	0.00	289.51	21.67	13.361
13	-1.20	100	60	0.00	0.00	--	0.00	0.00	291.80	24.00	12.157
14	-1.30	100	61	0.00	0.00	--	0.00	0.00	294.08	26.40	11.141
15	-1.40	100	62	0.00	0.00	--	0.00	0.00	296.35	28.85	10.271
16	-1.50	100	63	0.00	0.00	--	0.00	0.00	298.62	31.37	9.519
17	-1.60	100	63	0.00	0.00	--	0.00	0.00	300.87	33.95	8.863
18	-1.70	100	64	0.00	0.00	--	0.00	0.00	303.12	36.58	8.285
19	-1.80	100	65	0.00	0.00	--	0.00	0.00	317.42	39.28	8.080
20	-1.90	100	66	0.00	0.00	--	0.00	0.00	319.74	42.04	7.605
21	-2.00	100	67	0.00	0.00	--	0.00	0.00	322.04	44.86	7.178
22	-2.10	100	68	0.00	0.00	--	0.00	0.00	324.33	47.75	6.793
23	-2.20	100	68	0.00	0.00	--	0.00	0.00	326.62	50.69	6.444
24	-2.30	100	69	0.00	0.00	--	0.00	0.00	328.90	53.69	6.126
25	-2.40	100	70	0.00	0.00	--	0.00	0.00	331.18	56.75	5.835
26	-2.50	100	71	0.00	0.00	--	0.00	0.00	333.44	59.88	5.569
27	-2.60	100	72	0.00	0.00	--	0.00	0.00	335.70	63.06	5.323
28	-2.70	100	73	0.00	0.00	--	0.00	0.00	337.96	66.31	5.097
29	-2.80	100	74	0.00	0.00	--	0.00	0.00	340.21	69.62	4.887
30	-2.90	100	74	0.00	0.00	--	0.00	0.00	342.45	72.98	4.692
31	-3.00	100	75	0.00	0.00	--	0.00	0.00	344.68	76.41	4.511

## Combinazione n° 4 - STR (A1-M1-R3) H - V

n°	Y	B	H	A <sub>sw</sub>	s	cotθ	V <sub>Rcd</sub>	V <sub>Rsd</sub>	V <sub>Rd</sub>	T	FS
	[m]	[cm]	[cm]	[cmq]	[cm]		[kN]	[kN]	[kN]	[kN]	
1	0.00	100	50	0.00	0.00	--	0.00	0.00	263.62	0.00	100.000
2	-0.10	100	51	0.00	0.00	--	0.00	0.00	266.04	0.40	665.279
3	-0.20	100	52	0.00	0.00	--	0.00	0.00	268.43	0.85	315.789
4	-0.30	100	53	0.00	0.00	--	0.00	0.00	270.82	1.35	200.625
5	-0.40	100	53	0.00	0.00	--	0.00	0.00	273.20	1.90	143.875
6	-0.50	100	54	0.00	0.00	--	0.00	0.00	275.56	2.50	110.347
7	-0.60	100	55	0.00	0.00	--	0.00	0.00	277.91	3.15	88.359
8	-0.70	100	56	0.00	0.00	--	0.00	0.00	280.25	3.84	72.926
9	-0.80	100	57	0.00	0.00	--	0.00	0.00	282.58	4.59	61.559
10	-0.90	100	58	0.00	0.00	--	0.00	0.00	284.90	5.39	52.882
11	-1.00	100	58	0.00	0.00	--	0.00	0.00	287.21	6.23	46.069
12	-1.10	100	59	0.00	0.00	--	0.00	0.00	289.51	7.13	40.600
13	-1.20	100	60	0.00	0.00	--	0.00	0.00	291.80	8.08	36.127
14	-1.30	100	61	0.00	0.00	--	0.00	0.00	294.08	9.07	32.413
15	-1.40	100	62	0.00	0.00	--	0.00	0.00	296.35	10.12	29.289
16	-1.50	100	63	0.00	0.00	--	0.00	0.00	298.62	11.21	26.630
17	-1.60	100	63	0.00	0.00	--	0.00	0.00	300.87	12.36	24.345
18	-1.70	100	64	0.00	0.00	--	0.00	0.00	303.12	13.55	22.365

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
19	-1.80	100	65	0.00	0.00	--	0.00	0.00	317.42	14.80	21.451
20	-1.90	100	66	0.00	0.00	--	0.00	0.00	319.74	16.09	19.870
21	-2.00	100	67	0.00	0.00	--	0.00	0.00	322.04	17.44	18.471
22	-2.10	100	68	0.00	0.00	--	0.00	0.00	324.33	18.83	17.226
23	-2.20	100	68	0.00	0.00	--	0.00	0.00	326.62	20.27	16.112
24	-2.30	100	69	0.00	0.00	--	0.00	0.00	328.90	21.76	15.112
25	-2.40	100	70	0.00	0.00	--	0.00	0.00	331.18	23.31	14.209
26	-2.50	100	71	0.00	0.00	--	0.00	0.00	333.44	24.90	13.392
27	-2.60	100	72	0.00	0.00	--	0.00	0.00	335.70	26.54	12.649
28	-2.70	100	73	0.00	0.00	--	0.00	0.00	337.96	28.23	11.971
29	-2.80	100	74	0.00	0.00	--	0.00	0.00	340.21	29.97	11.350
30	-2.90	100	74	0.00	0.00	--	0.00	0.00	342.45	31.76	10.781
31	-3.00	100	75	0.00	0.00	--	0.00	0.00	344.68	33.60	10.257

Combinazione n° 13 - ECC

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
1	0.00	100	50	0.00	0.00	--	0.00	0.00	263.62	33.30	7.917
2	-0.10	100	51	0.00	0.00	--	0.00	0.00	266.04	33.32	7.983
3	-0.20	100	52	0.00	0.00	--	0.00	0.00	268.43	33.39	8.038
4	-0.30	100	53	0.00	0.00	--	0.00	0.00	270.82	33.51	8.081
5	-0.40	100	53	0.00	0.00	--	0.00	0.00	273.20	33.68	8.112
6	-0.50	100	54	0.00	0.00	--	0.00	0.00	275.56	33.89	8.132
7	-0.60	100	55	0.00	0.00	--	0.00	0.00	277.91	34.14	8.139
8	-0.70	100	56	0.00	0.00	--	0.00	0.00	280.25	34.45	8.135
9	-0.80	100	57	0.00	0.00	--	0.00	0.00	282.58	34.80	8.120
10	-0.90	100	58	0.00	0.00	--	0.00	0.00	284.90	35.20	8.095
11	-1.00	100	58	0.00	0.00	--	0.00	0.00	287.21	35.64	8.059
12	-1.10	100	59	0.00	0.00	--	0.00	0.00	289.51	36.13	8.013
13	-1.20	100	60	0.00	0.00	--	0.00	0.00	291.80	36.67	7.958
14	-1.30	100	61	0.00	0.00	--	0.00	0.00	294.08	37.25	7.894
15	-1.40	100	62	0.00	0.00	--	0.00	0.00	296.35	37.88	7.823
16	-1.50	100	63	0.00	0.00	--	0.00	0.00	298.62	38.56	7.744
17	-1.60	100	63	0.00	0.00	--	0.00	0.00	300.87	39.29	7.658
18	-1.70	100	64	0.00	0.00	--	0.00	0.00	303.12	40.06	7.567
19	-1.80	100	65	0.00	0.00	--	0.00	0.00	317.42	40.88	7.765
20	-1.90	100	66	0.00	0.00	--	0.00	0.00	319.74	41.74	7.660
21	-2.00	100	67	0.00	0.00	--	0.00	0.00	322.04	42.65	7.550
22	-2.10	100	68	0.00	0.00	--	0.00	0.00	324.33	43.61	7.437
23	-2.20	100	68	0.00	0.00	--	0.00	0.00	326.62	44.62	7.321
24	-2.30	100	69	0.00	0.00	--	0.00	0.00	328.90	45.67	7.202
25	-2.40	100	70	0.00	0.00	--	0.00	0.00	331.18	46.77	7.081
26	-2.50	100	71	0.00	0.00	--	0.00	0.00	333.44	47.91	6.959
27	-2.60	100	72	0.00	0.00	--	0.00	0.00	335.70	49.11	6.836
28	-2.70	100	73	0.00	0.00	--	0.00	0.00	337.96	50.34	6.713
29	-2.80	100	74	0.00	0.00	--	0.00	0.00	340.21	51.63	6.589
30	-2.90	100	74	0.00	0.00	--	0.00	0.00	342.45	52.96	6.466
31	-3.00	100	75	0.00	0.00	--	0.00	0.00	344.68	54.34	6.343

**Mensola valle**Combinazione n° 1 - STR (A1-M1-R3)

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
1	-0.75	100	50	0.00	0.00	--	0.00	0.00	208.90	0.00	100.000
2	-0.67	100	50	0.00	0.00	--	0.00	0.00	208.90	1.02	204.497
3	-0.58	100	50	0.00	0.00	--	0.00	0.00	208.90	2.04	102.249
4	-0.50	100	50	0.00	0.00	--	0.00	0.00	208.90	3.06	68.166

VE407

**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**Combinazione n° 2 - STR (A1-M1-R3) H + V

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
1	-0.75	100	50	0.00	0.00	--	0.00	0.00	208.90	0.00	100.000
2	-0.67	100	50	0.00	0.00	--	0.00	0.00	208.90	1.09	190.898
3	-0.58	100	50	0.00	0.00	--	0.00	0.00	208.90	2.19	95.449
4	-0.50	100	50	0.00	0.00	--	0.00	0.00	208.90	3.28	63.633

Combinazione n° 3 - STR (A1-M1-R3)

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
1	-0.75	100	50	0.00	0.00	--	0.00	0.00	208.90	0.00	100.000
2	-0.67	100	50	0.00	0.00	--	0.00	0.00	208.90	1.02	204.497
3	-0.58	100	50	0.00	0.00	--	0.00	0.00	208.90	2.04	102.249
4	-0.50	100	50	0.00	0.00	--	0.00	0.00	208.90	3.06	68.166

Combinazione n° 4 - STR (A1-M1-R3) H - V

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
1	-0.75	100	50	0.00	0.00	--	0.00	0.00	208.90	0.00	100.000
2	-0.67	100	50	0.00	0.00	--	0.00	0.00	208.90	1.02	204.497
3	-0.58	100	50	0.00	0.00	--	0.00	0.00	208.90	2.04	102.249
4	-0.50	100	50	0.00	0.00	--	0.00	0.00	208.90	3.06	68.166

Combinazione n° 13 - ECC

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
1	-0.75	100	50	0.00	0.00	--	0.00	0.00	208.90	0.00	100.000
2	-0.67	100	50	0.00	0.00	--	0.00	0.00	208.90	1.02	204.497
3	-0.58	100	50	0.00	0.00	--	0.00	0.00	208.90	2.04	102.249
4	-0.50	100	50	0.00	0.00	--	0.00	0.00	208.90	3.06	68.166

**Fondazione**Combinazione n° 1 - STR (A1-M1-R3)

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
1	-1.25	100	75	0.00	0.00	--	0.00	0.00	324.27	0.00	100.000
2	-1.16	100	75	0.00	0.00	--	0.00	0.00	324.27	-4.46	72.757
3	-1.06	100	75	0.00	0.00	--	0.00	0.00	324.27	-8.97	36.151
4	-0.97	100	75	0.00	0.00	--	0.00	0.00	324.27	-13.54	23.950
5	-0.88	100	75	0.00	0.00	--	0.00	0.00	324.27	-18.16	17.852
6	-0.78	100	75	0.00	0.00	--	0.00	0.00	324.27	-22.85	14.194
7	-0.69	100	75	0.00	0.00	--	0.00	0.00	324.27	-27.58	11.756
8	-0.59	100	75	0.00	0.00	--	0.00	0.00	324.27	-32.38	10.015
9	-0.50	100	75	0.00	0.00	--	0.00	0.00	324.27	-37.23	8.710
10	0.25	100	75	0.00	0.00	--	0.00	0.00	324.27	-18.70	17.340
11	0.35	100	75	0.00	0.00	--	0.00	0.00	324.27	-17.01	19.068
12	0.45	100	75	0.00	0.00	--	0.00	0.00	324.27	-15.38	21.089
13	0.55	100	75	0.00	0.00	--	0.00	0.00	324.27	-13.81	23.481
14	0.65	100	75	0.00	0.00	--	0.00	0.00	324.27	-12.31	26.347
15	0.75	100	75	0.00	0.00	--	0.00	0.00	324.27	-10.87	29.834
16	0.85	100	75	0.00	0.00	--	0.00	0.00	324.27	-9.49	34.153
17	0.95	100	75	0.00	0.00	--	0.00	0.00	324.27	-8.18	39.622

VE407

**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
18	1.05	100	75	0.00	0.00	--	0.00	0.00	324.27	-6.94	46.742
19	1.15	100	75	0.00	0.00	--	0.00	0.00	324.27	-5.75	56.349
20	1.25	100	75	0.00	0.00	--	0.00	0.00	324.27	-4.64	69.949
21	1.35	100	75	0.00	0.00	--	0.00	0.00	324.27	-3.58	90.558
22	1.45	100	75	0.00	0.00	--	0.00	0.00	324.27	-2.59	125.213
23	1.55	100	75	0.00	0.00	--	0.00	0.00	324.27	-1.66	195.040
24	1.65	100	75	0.00	0.00	--	0.00	0.00	324.27	-0.80	405.673
25	1.75	100	75	0.00	0.00	--	0.00	0.00	324.27	0.00	100.000

Combinazione n° 2 - STR (A1-M1-R3) H + V

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
1	-1.25	100	75	0.00	0.00	--	0.00	0.00	324.27	0.00	100.000
2	-1.16	100	75	0.00	0.00	--	0.00	0.00	324.27	-8.78	36.934
3	-1.06	100	75	0.00	0.00	--	0.00	0.00	324.27	-17.37	18.670
4	-0.97	100	75	0.00	0.00	--	0.00	0.00	324.27	-25.77	12.584
5	-0.88	100	75	0.00	0.00	--	0.00	0.00	324.27	-33.98	9.544
6	-0.78	100	75	0.00	0.00	--	0.00	0.00	324.27	-41.99	7.722
7	-0.69	100	75	0.00	0.00	--	0.00	0.00	324.27	-49.82	6.509
8	-0.59	100	75	0.00	0.00	--	0.00	0.00	324.27	-57.46	5.644
9	-0.50	100	75	0.00	0.00	--	0.00	0.00	324.27	-64.90	4.996
10	0.25	100	75	0.00	0.00	--	0.00	0.00	324.27	-16.71	19.403
11	0.35	100	75	0.00	0.00	--	0.00	0.00	324.27	-17.12	18.946
12	0.45	100	75	0.00	0.00	--	0.00	0.00	324.27	-17.30	18.742
13	0.55	100	75	0.00	0.00	--	0.00	0.00	324.27	-17.27	18.775
14	0.65	100	75	0.00	0.00	--	0.00	0.00	324.27	-17.02	19.048
15	0.75	100	75	0.00	0.00	--	0.00	0.00	324.27	-16.56	19.581
16	0.85	100	75	0.00	0.00	--	0.00	0.00	324.27	-15.88	20.421
17	0.95	100	75	0.00	0.00	--	0.00	0.00	324.27	-14.98	21.644
18	1.05	100	75	0.00	0.00	--	0.00	0.00	324.27	-13.87	23.383
19	1.15	100	75	0.00	0.00	--	0.00	0.00	324.27	-12.54	25.865
20	1.25	100	75	0.00	0.00	--	0.00	0.00	324.27	-10.99	29.508
21	1.35	100	75	0.00	0.00	--	0.00	0.00	324.27	-9.23	35.151
22	1.45	100	75	0.00	0.00	--	0.00	0.00	324.27	-7.24	44.765
23	1.55	100	75	0.00	0.00	--	0.00	0.00	324.27	-5.05	64.263
24	1.65	100	75	0.00	0.00	--	0.00	0.00	324.27	-2.63	123.233
25	1.75	100	75	0.00	0.00	--	0.00	0.00	324.27	0.00	100.000

Combinazione n° 3 - STR (A1-M1-R3)

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
1	-1.25	100	75	0.00	0.00	--	0.00	0.00	324.27	0.00	100.000
2	-1.16	100	75	0.00	0.00	--	0.00	0.00	324.27	-8.38	38.703
3	-1.06	100	75	0.00	0.00	--	0.00	0.00	324.27	-16.84	19.262
4	-0.97	100	75	0.00	0.00	--	0.00	0.00	324.27	-25.37	12.782
5	-0.88	100	75	0.00	0.00	--	0.00	0.00	324.27	-33.98	9.542
6	-0.78	100	75	0.00	0.00	--	0.00	0.00	324.27	-42.67	7.599
7	-0.69	100	75	0.00	0.00	--	0.00	0.00	324.27	-51.44	6.304
8	-0.59	100	75	0.00	0.00	--	0.00	0.00	324.27	-60.29	5.379
9	-0.50	100	75	0.00	0.00	--	0.00	0.00	324.27	-69.21	4.685
10	0.25	100	75	0.00	0.00	--	0.00	0.00	324.27	-47.40	6.841
11	0.35	100	75	0.00	0.00	--	0.00	0.00	324.27	-43.62	7.434
12	0.45	100	75	0.00	0.00	--	0.00	0.00	324.27	-39.93	8.121
13	0.55	100	75	0.00	0.00	--	0.00	0.00	324.27	-36.32	8.927
14	0.65	100	75	0.00	0.00	--	0.00	0.00	324.27	-32.81	9.884
15	0.75	100	75	0.00	0.00	--	0.00	0.00	324.27	-29.38	11.036
16	0.85	100	75	0.00	0.00	--	0.00	0.00	324.27	-26.05	12.450
17	0.95	100	75	0.00	0.00	--	0.00	0.00	324.27	-22.80	14.225
18	1.05	100	75	0.00	0.00	--	0.00	0.00	324.27	-19.64	16.514
19	1.15	100	75	0.00	0.00	--	0.00	0.00	324.27	-16.56	19.577
20	1.25	100	75	0.00	0.00	--	0.00	0.00	324.27	-13.58	23.876
21	1.35	100	75	0.00	0.00	--	0.00	0.00	324.27	-10.69	30.341
22	1.45	100	75	0.00	0.00	--	0.00	0.00	324.27	-7.88	41.137

VE407

**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
23	1.55	100	75	0.00	0.00	--	0.00	0.00	324.27	-5.17	62.767
24	1.65	100	75	0.00	0.00	--	0.00	0.00	324.27	-2.54	127.728
25	1.75	100	75	0.00	0.00	--	0.00	0.00	324.27	0.00	100.000

Combinazione n° 4 - STR (A1-M1-R3) H - V

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
1	-1.25	100	75	0.00	0.00	--	0.00	0.00	324.27	0.00	100.000
2	-1.16	100	75	0.00	0.00	--	0.00	0.00	324.27	-7.91	41.014
3	-1.06	100	75	0.00	0.00	--	0.00	0.00	324.27	-15.62	20.762
4	-0.97	100	75	0.00	0.00	--	0.00	0.00	324.27	-23.14	14.016
5	-0.88	100	75	0.00	0.00	--	0.00	0.00	324.27	-30.46	10.646
6	-0.78	100	75	0.00	0.00	--	0.00	0.00	324.27	-37.59	8.627
7	-0.69	100	75	0.00	0.00	--	0.00	0.00	324.27	-44.53	7.283
8	-0.59	100	75	0.00	0.00	--	0.00	0.00	324.27	-51.27	6.325
9	-0.50	100	75	0.00	0.00	--	0.00	0.00	324.27	-57.81	5.609
10	0.25	100	75	0.00	0.00	--	0.00	0.00	324.27	-32.07	10.113
11	0.35	100	75	0.00	0.00	--	0.00	0.00	324.27	-31.47	10.303
12	0.45	100	75	0.00	0.00	--	0.00	0.00	324.27	-30.66	10.576
13	0.55	100	75	0.00	0.00	--	0.00	0.00	324.27	-29.63	10.944
14	0.65	100	75	0.00	0.00	--	0.00	0.00	324.27	-28.37	11.428
15	0.75	100	75	0.00	0.00	--	0.00	0.00	324.27	-26.90	12.055
16	0.85	100	75	0.00	0.00	--	0.00	0.00	324.27	-25.20	12.866
17	0.95	100	75	0.00	0.00	--	0.00	0.00	324.27	-23.29	13.925
18	1.05	100	75	0.00	0.00	--	0.00	0.00	324.27	-21.15	15.332
19	1.15	100	75	0.00	0.00	--	0.00	0.00	324.27	-18.79	17.257
20	1.25	100	75	0.00	0.00	--	0.00	0.00	324.27	-16.21	20.003
21	1.35	100	75	0.00	0.00	--	0.00	0.00	324.27	-13.41	24.180
22	1.45	100	75	0.00	0.00	--	0.00	0.00	324.27	-10.39	31.211
23	1.55	100	75	0.00	0.00	--	0.00	0.00	324.27	-7.15	45.370
24	1.65	100	75	0.00	0.00	--	0.00	0.00	324.27	-3.68	88.020
25	1.75	100	75	0.00	0.00	--	0.00	0.00	324.27	0.00	100.000

Combinazione n° 13 - ECC

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
1	-1.25	100	75	0.00	0.00	--	0.00	0.00	324.27	0.00	100.000
2	-1.16	100	75	0.00	0.00	--	0.00	0.00	324.27	-13.80	23.499
3	-1.06	100	75	0.00	0.00	--	0.00	0.00	324.27	-27.04	11.994
4	-0.97	100	75	0.00	0.00	--	0.00	0.00	324.27	-39.71	8.166
5	-0.88	100	75	0.00	0.00	--	0.00	0.00	324.27	-51.82	6.258
6	-0.78	100	75	0.00	0.00	--	0.00	0.00	324.27	-63.37	5.117
7	-0.69	100	75	0.00	0.00	--	0.00	0.00	324.27	-74.35	4.361
8	-0.59	100	75	0.00	0.00	--	0.00	0.00	324.27	-84.78	3.825
9	-0.50	100	75	0.00	0.00	--	0.00	0.00	324.27	-94.64	3.426
10	0.25	100	75	0.00	0.00	--	0.00	0.00	324.27	-72.13	4.495
11	0.35	100	75	0.00	0.00	--	0.00	0.00	324.27	-71.52	4.534
12	0.45	100	75	0.00	0.00	--	0.00	0.00	324.27	-70.26	4.615
13	0.55	100	75	0.00	0.00	--	0.00	0.00	324.27	-68.36	4.744
14	0.65	100	75	0.00	0.00	--	0.00	0.00	324.27	-65.82	4.926
15	0.75	100	75	0.00	0.00	--	0.00	0.00	324.27	-62.64	5.176
16	0.85	100	75	0.00	0.00	--	0.00	0.00	324.27	-58.82	5.513
17	0.95	100	75	0.00	0.00	--	0.00	0.00	324.27	-54.37	5.965
18	1.05	100	75	0.00	0.00	--	0.00	0.00	324.27	-49.27	6.582
19	1.15	100	75	0.00	0.00	--	0.00	0.00	324.27	-43.53	7.450
20	1.25	100	75	0.00	0.00	--	0.00	0.00	324.27	-37.15	8.730
21	1.35	100	75	0.00	0.00	--	0.00	0.00	324.27	-30.12	10.764
22	1.45	100	75	0.00	0.00	--	0.00	0.00	324.27	-22.62	14.338
23	1.55	100	75	0.00	0.00	--	0.00	0.00	324.27	-15.08	21.507
24	1.65	100	75	0.00	0.00	--	0.00	0.00	324.27	-7.54	43.014
25	1.75	100	75	0.00	0.00	--	0.00	0.00	324.27	0.00	100.000

## Verifica a fessurazione

## Simbologia adottata

n°	indice sezione
Y	ordinata sezione espressa in [m]
B	larghezza sezione espressa in [cm]
H	altezza sezione espressa in [cm]
Af	area ferri zona tesa espresso in [cmq]
Aeff	area efficace espressa in [cmq]
M	momento agente espressa in [kNm]
Mpf	momento di prima fessurazione espressa in [kNm]
$\varepsilon$	deformazione espresso in %
Sm	spaziatura tra le fessure espressa in [mm]
w	apertura delle fessure espressa in [mm]

## Combinazioni SLEF

## Paramento

## Combinazione n° 15 - SLEF

Apertura limite fessure  $w_{lim}=0.30$ 

n°	Y	B	H	Af	Aeff	M	Mpf	$\varepsilon$	Sm	w
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kNm]	[%]	[mm]	[mm]
1	0.00	100	50	20.11	1000.00	0.38	547.80	0.0000	0.00	0.000
2	-0.10	100	51	0.00	0.00	0.39	82752.14	0.0000	0.00	0.000
3	-0.20	100	52	0.00	0.00	0.40	624.38	0.0000	0.00	0.000
4	-0.30	100	53	0.00	0.00	0.43	360.81	0.0000	0.00	0.000
5	-0.40	100	53	0.00	0.00	0.48	292.97	0.0000	0.00	0.000
6	-0.50	100	54	0.00	0.00	0.55	282.78	0.0000	0.00	0.000
7	-0.60	100	55	0.00	0.00	0.65	307.28	0.0000	0.00	0.000
8	-0.70	100	56	0.00	0.00	0.78	367.17	0.0000	0.00	0.000
9	-0.80	100	57	0.00	0.00	0.96	479.78	0.0000	0.00	0.000
10	-0.90	100	58	0.00	0.00	1.17	697.20	0.0000	0.00	0.000
11	-1.00	100	58	0.00	0.00	1.44	1206.15	0.0000	0.00	0.000
12	-1.10	100	59	0.00	0.00	1.75	3406.72	0.0000	0.00	0.000
13	-1.20	100	60	0.00	0.00	2.13	6027.63	0.0000	0.00	0.000
14	-1.30	100	61	20.11	1000.00	2.56	1810.01	0.0000	0.00	0.000
15	-1.40	100	62	20.11	1000.00	3.07	1144.56	0.0000	0.00	0.000
16	-1.50	100	63	20.11	1000.00	3.64	878.49	0.0000	0.00	0.000
17	-1.60	100	63	20.11	1000.00	4.30	738.06	0.0000	0.00	0.000
18	-1.70	100	64	20.11	1000.00	5.03	653.09	0.0000	0.00	0.000
19	-1.80	100	65	24.13	1000.00	5.85	609.56	0.0000	0.00	0.000
20	-1.90	100	66	24.13	1000.00	6.76	570.83	0.0000	0.00	0.000
21	-2.00	100	67	24.13	1000.00	7.77	543.29	0.0000	0.00	0.000
22	-2.10	100	68	24.13	1000.00	8.87	523.36	0.0000	0.00	0.000
23	-2.20	100	68	24.13	1000.00	10.08	508.86	0.0000	0.00	0.000
24	-2.30	100	69	24.13	1000.00	11.41	498.34	0.0000	0.00	0.000
25	-2.40	100	70	24.13	1000.00	12.84	490.85	0.0000	0.00	0.000
26	-2.50	100	71	24.13	1000.00	14.40	485.72	0.0000	0.00	0.000
27	-2.60	100	72	24.13	1000.00	16.08	482.45	0.0000	0.00	0.000
28	-2.70	100	73	24.13	1000.00	17.89	480.71	0.0000	0.00	0.000
29	-2.80	100	74	24.13	1000.00	19.83	480.20	0.0000	0.00	0.000
30	-2.90	100	74	24.13	1000.00	21.91	480.73	0.0000	0.00	0.000

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	Y	B	H	Af	Aeff	M	Mpf	ε	Sm	w
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kNm]	[%]	[mm]	[mm]
31	-3.00	100	75	24.13	1000.00	24.13	482.14	0.0000	0.00	0.000

Mensola valleCombinazione n° 15 - SLEFApertura limite fessure  $w_{lim}=0.30$ 

n°	Y	B	H	Af	Aeff	M	Mpf	ε	Sm	w
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kNm]	[%]	[mm]	[mm]
1	-0.75	100	50	0.00	0.00	0.00	0.00	0.0000	0.00	0.000
2	-0.67	100	50	0.00	0.00	-0.04	0.00	0.0000	0.00	0.000
3	-0.58	100	50	8.04	1000.00	-0.17	-143.66	0.0000	0.00	0.000
4	-0.50	100	50	8.04	1000.00	-0.38	-143.66	0.0000	0.00	0.000

FondazioneCombinazione n° 15 - SLEFApertura limite fessure  $w_{lim}=0.30$ 

n°	Y	B	H	Af	Aeff	M	Mpf	ε	Sm	w
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kNm]	[%]	[mm]	[mm]
1	-1.25	100	75	0.00	0.00	0.00	0.00	0.0000	0.00	0.000
2	-1.16	100	75	16.08	1000.00	0.19	338.46	0.0000	0.00	0.000
3	-1.06	100	75	16.08	1000.00	0.75	338.46	0.0000	0.00	0.000
4	-0.97	100	75	16.08	1000.00	1.71	338.46	0.0000	0.00	0.000
5	-0.88	100	75	16.08	1000.00	3.05	338.46	0.0000	0.00	0.000
6	-0.78	100	75	16.08	1000.00	4.80	338.46	0.0000	0.00	0.000
7	-0.69	100	75	16.08	1000.00	6.96	338.46	0.0000	0.00	0.000
8	-0.59	100	75	16.08	1000.00	9.53	338.46	0.0000	0.00	0.000
9	-0.50	100	75	16.08	1000.00	12.52	338.46	0.0000	0.00	0.000
10	0.25	100	75	16.08	1000.00	8.27	338.46	0.0000	0.00	0.000
11	0.35	100	75	16.08	1000.00	7.49	338.46	0.0000	0.00	0.000
12	0.45	100	75	16.08	1000.00	6.71	338.46	0.0000	0.00	0.000
13	0.55	100	75	16.08	1000.00	5.92	338.46	0.0000	0.00	0.000
14	0.65	100	75	16.08	1000.00	5.16	338.46	0.0000	0.00	0.000
15	0.75	100	75	16.08	1000.00	4.41	338.46	0.0000	0.00	0.000
16	0.85	100	75	16.08	1000.00	3.69	338.46	0.0000	0.00	0.000
17	0.95	100	75	16.08	1000.00	3.01	338.46	0.0000	0.00	0.000
18	1.05	100	75	16.08	1000.00	2.38	338.46	0.0000	0.00	0.000
19	1.15	100	75	16.08	1000.00	1.80	338.46	0.0000	0.00	0.000
20	1.25	100	75	16.08	1000.00	1.29	338.46	0.0000	0.00	0.000
21	1.35	100	75	16.08	1000.00	0.85	338.46	0.0000	0.00	0.000
22	1.45	100	75	16.08	1000.00	0.49	338.46	0.0000	0.00	0.000
23	1.55	100	75	16.08	1000.00	0.22	338.46	0.0000	0.00	0.000
24	1.65	100	75	0.00	0.00	0.06	0.00	0.0000	0.00	0.000
25	1.75	100	75	0.00	0.00	0.00	0.00	0.0000	0.00	0.000

**Combinazioni SLEQ**



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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**ParamentoCombinazione n° 16 - SLEQApertura limite fessure  $w_{lim}=0.20$ 

n°	Y	B	H	Af	Aeff	M	Mpf	$\varepsilon$	Sm	w
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kNm]	[%]	[mm]	[mm]
1	0.00	100	50	20.11	1000.00	0.38	547.80	0.0000	0.00	0.000
2	-0.10	100	51	0.00	0.00	0.39	82752.14	0.0000	0.00	0.000
3	-0.20	100	52	0.00	0.00	0.40	624.38	0.0000	0.00	0.000
4	-0.30	100	53	0.00	0.00	0.43	360.81	0.0000	0.00	0.000
5	-0.40	100	53	0.00	0.00	0.48	292.97	0.0000	0.00	0.000
6	-0.50	100	54	0.00	0.00	0.55	282.78	0.0000	0.00	0.000
7	-0.60	100	55	0.00	0.00	0.65	307.28	0.0000	0.00	0.000
8	-0.70	100	56	0.00	0.00	0.78	367.17	0.0000	0.00	0.000
9	-0.80	100	57	0.00	0.00	0.96	479.78	0.0000	0.00	0.000
10	-0.90	100	58	0.00	0.00	1.17	697.20	0.0000	0.00	0.000
11	-1.00	100	58	0.00	0.00	1.44	1206.15	0.0000	0.00	0.000
12	-1.10	100	59	0.00	0.00	1.75	3406.72	0.0000	0.00	0.000
13	-1.20	100	60	0.00	0.00	2.13	6027.63	0.0000	0.00	0.000
14	-1.30	100	61	20.11	1000.00	2.56	1810.01	0.0000	0.00	0.000
15	-1.40	100	62	20.11	1000.00	3.07	1144.56	0.0000	0.00	0.000
16	-1.50	100	63	20.11	1000.00	3.64	878.49	0.0000	0.00	0.000
17	-1.60	100	63	20.11	1000.00	4.30	738.06	0.0000	0.00	0.000
18	-1.70	100	64	20.11	1000.00	5.03	653.09	0.0000	0.00	0.000
19	-1.80	100	65	24.13	1000.00	5.85	609.56	0.0000	0.00	0.000
20	-1.90	100	66	24.13	1000.00	6.76	570.83	0.0000	0.00	0.000
21	-2.00	100	67	24.13	1000.00	7.77	543.29	0.0000	0.00	0.000
22	-2.10	100	68	24.13	1000.00	8.87	523.36	0.0000	0.00	0.000
23	-2.20	100	68	24.13	1000.00	10.08	508.86	0.0000	0.00	0.000
24	-2.30	100	69	24.13	1000.00	11.41	498.34	0.0000	0.00	0.000
25	-2.40	100	70	24.13	1000.00	12.84	490.85	0.0000	0.00	0.000
26	-2.50	100	71	24.13	1000.00	14.40	485.72	0.0000	0.00	0.000
27	-2.60	100	72	24.13	1000.00	16.08	482.45	0.0000	0.00	0.000
28	-2.70	100	73	24.13	1000.00	17.89	480.71	0.0000	0.00	0.000
29	-2.80	100	74	24.13	1000.00	19.83	480.20	0.0000	0.00	0.000
30	-2.90	100	74	24.13	1000.00	21.91	480.73	0.0000	0.00	0.000
31	-3.00	100	75	24.13	1000.00	24.13	482.14	0.0000	0.00	0.000

Mensola valleCombinazione n° 16 - SLEQApertura limite fessure  $w_{lim}=0.20$ 

n°	Y	B	H	Af	Aeff	M	Mpf	$\varepsilon$	Sm	w
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kNm]	[%]	[mm]	[mm]
1	-0.75	100	50	0.00	0.00	0.00	0.00	0.0000	0.00	0.000
2	-0.67	100	50	0.00	0.00	-0.04	0.00	0.0000	0.00	0.000
3	-0.58	100	50	8.04	1000.00	-0.17	-143.66	0.0000	0.00	0.000
4	-0.50	100	50	8.04	1000.00	-0.38	-143.66	0.0000	0.00	0.000

FondazioneCombinazione n° 16 - SLEQ

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**Apertura limite fessure  $w_{lim}=0.20$ 

n°	Y	B	H	Af	Aeff	M	Mpf	$\varepsilon$	Sm	w
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kNm]	[%]	[mm]	[mm]
1	-1.25	100	75	0.00	0.00	0.00	0.00	0.0000	0.00	0.000
2	-1.16	100	75	16.08	1000.00	0.19	338.46	0.0000	0.00	0.000
3	-1.06	100	75	16.08	1000.00	0.75	338.46	0.0000	0.00	0.000
4	-0.97	100	75	16.08	1000.00	1.71	338.46	0.0000	0.00	0.000
5	-0.88	100	75	16.08	1000.00	3.05	338.46	0.0000	0.00	0.000
6	-0.78	100	75	16.08	1000.00	4.80	338.46	0.0000	0.00	0.000
7	-0.69	100	75	16.08	1000.00	6.96	338.46	0.0000	0.00	0.000
8	-0.59	100	75	16.08	1000.00	9.53	338.46	0.0000	0.00	0.000
9	-0.50	100	75	16.08	1000.00	12.52	338.46	0.0000	0.00	0.000
10	0.25	100	75	16.08	1000.00	8.27	338.46	0.0000	0.00	0.000
11	0.35	100	75	16.08	1000.00	7.49	338.46	0.0000	0.00	0.000
12	0.45	100	75	16.08	1000.00	6.71	338.46	0.0000	0.00	0.000
13	0.55	100	75	16.08	1000.00	5.92	338.46	0.0000	0.00	0.000
14	0.65	100	75	16.08	1000.00	5.16	338.46	0.0000	0.00	0.000
15	0.75	100	75	16.08	1000.00	4.41	338.46	0.0000	0.00	0.000
16	0.85	100	75	16.08	1000.00	3.69	338.46	0.0000	0.00	0.000
17	0.95	100	75	16.08	1000.00	3.01	338.46	0.0000	0.00	0.000
18	1.05	100	75	16.08	1000.00	2.38	338.46	0.0000	0.00	0.000
19	1.15	100	75	16.08	1000.00	1.80	338.46	0.0000	0.00	0.000
20	1.25	100	75	16.08	1000.00	1.29	338.46	0.0000	0.00	0.000
21	1.35	100	75	16.08	1000.00	0.85	338.46	0.0000	0.00	0.000
22	1.45	100	75	16.08	1000.00	0.49	338.46	0.0000	0.00	0.000
23	1.55	100	75	16.08	1000.00	0.22	338.46	0.0000	0.00	0.000
24	1.65	100	75	0.00	0.00	0.06	0.00	0.0000	0.00	0.000
25	1.75	100	75	0.00	0.00	0.00	0.00	0.0000	0.00	0.000

**Elenco ferri**

## Simbologia adottata

n°	Indice del ferro
nf	numero ferri
D	diametro ferro espresso in [mm]
L	Lunghezza ferro espresso in [m]
P <sub>ferro</sub>	Peso ferro espresso in [kN]

*Paramento*

n°	Tipo	nf	D [mm]	L [m]	P <sub>f</sub> [kN]	P <sub>gf</sub> [kN]	V <sub>cls</sub> [mc]
1	Diritto inferiore	6	16.00	1.98	0.0307	0.1841	
2	Diritto superiore	10	16.00	1.99	0.0308	0.3075	
3	Diritto inferiore	6	16.00	3.59	0.0556	0.3336	
4	Diritto superiore	2	16.00	2.55	0.0394	0.0789	
5	Diritto superiore	10	16.00	3.60	0.0557	0.5572	
6	Ripartitore	21	10.00	1.00	0.0060	0.1270	
	<b>Totale al metro</b>					<b>1.7153</b>	<b>2.00</b>
	<b>Totale</b>					<b>1619.58</b>	<b>20.03</b>

*Fondazione*

n°	Tipo	nf	D [mm]	L [m]	P <sub>f</sub> [kN]	P <sub>gf</sub> [kN]	V <sub>cls</sub> [mc]
1	Diritto superiore	8	16.00	4.19	0.0648	0.5183	
2	Diritto inferiore	8	16.00	4.19	0.0648	0.5183	
3	Ripartitore	12	10.00	1.00	0.0060	0.0726	
	<b>Totale al metro</b>					<b>1.1818</b>	<b>2.25</b>
	<b>Totale</b>					<b>1131.07</b>	<b>22.51</b>

*Mensola valle*

n°	Tipo	nf	D [mm]	L [m]	P <sub>f</sub> [kN]	P <sub>gf</sub> [kN]	V <sub>cls</sub> [mc]
1	Diritto inferiore	4	16.00	1.53	0.0237	0.0947	
2	Diritto superiore	4	16.00	1.53	0.0237	0.0947	
3	Ripartitore	2	10.00	1.00	0.0060	0.0121	
	<b>Totale al metro</b>					<b>1.1818</b>	<b>2.25</b>
	<b>Totale</b>					<b>1131.07</b>	<b>22.51</b>

## 11 ALLEGATO 2 – TABULATI DI CALCOLO - MURO DI SOSTEGNO H4

### Geometria profilo terreno a monte del muro

#### Simbologia adottata

(Sistema di riferimento con origine in testa al muro, ascissa X positiva verso monte, ordinata Y positiva verso l'alto)

n°	numero ordine del punto
X	ascissa del punto espressa in [m]
Y	ordinata del punto espressa in [m]
A	inclinazione del tratto espressa in [°]

n°	X	Y	A
	[m]	[m]	[°]
1	0.00	0.00	0.000
2	1.75	0.00	0.000
3	20.00	0.00	0.000

Inclinazione terreno a valle del muro rispetto all'orizzontale 0.000 [°]

### Falda

#### Simbologia adottata

(Sistema di riferimento con origine in testa al muro, ascissa X positiva verso monte, ordinata Y positiva verso l'alto)

n°	numero ordine del punto
X	ascissa del punto espressa in [m]
Y	ordinata del punto espressa in [m]
A	inclinazione del tratto espressa in [°]

n°	X	Y	A
	[m]	[m]	[°]
1	-4.00	-5.05	0.000
2	20.00	-5.05	0.000

### Geometria muro

#### *Geometria paramento e fondazione*

##### Paramento

Materiale	C32/40	
Altezza paramento	4.00	[m]
Altezza paramento libero	4.00	[m]
Spessore in sommità	0.50	[m]
Spessore all'attacco con la fondazione	0.85	[m]

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

Inclinazione paramento esterno	0.00	[°]
Inclinazione paramento interno	5.00	[°]
Spessore rivestimento	0.20	[m]
Peso sp. rivestimento	20.0000	[kN/mc]

Mensola di marciapiede

Posizione rispetto alla testa del muro	0.00	[m]
Lunghezza	0.25	[m]
Spessore all'estremità libera	0.50	[m]
Spessore all'incastro	0.50	[m]

Fondazione

Materiale	C32/40	
Lunghezza mensola di valle	0.85	[m]
Lunghezza mensola di monte	1.80	[m]
Lunghezza totale	3.50	[m]
Inclinazione piano di posa	0.00	[°]
Spessore	0.85	[m]
Spessore magrone	0.20	[m]

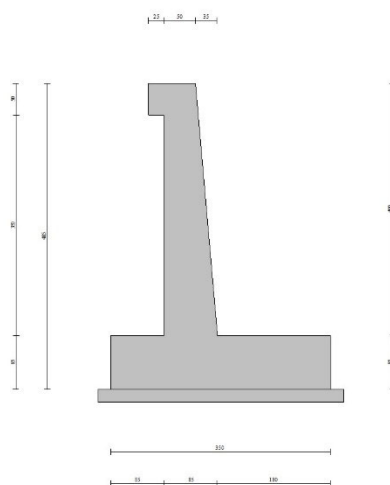


Fig. 1 - Sezione quotata del muro

Descrizione terreniParametri di resistenza

VE407

**Relazione Tecnica e di Calcolo - Muri su fondazione diretta****Simbologia adottata**

n°	Indice del terreno
Descr	Descrizione terreno
$\gamma$	Peso di volume del terreno espresso in [kN/mc]
$\gamma_s$	Peso di volume saturo del terreno espresso in [kN/mc]
$\phi$	Angolo d'attrito interno espresso in [°]
$\delta$	Angolo d'attrito terra-muro espresso in [°]
c	Coesione espressa in [kPa]
$c_a$	Adesione terra-muro espressa in [kPa]

**Per calcolo portanza con il metodo di Bustamante-Doix**

Cesp	Coeff. di espansione laterale (solo per il metodo di Bustamante-Doix)
$\tau_l$	Tensione tangenziale limite, espressa in [kPa]

n°	Descr	$\gamma$ [kN/mc]	$\gamma_{sat}$ [kN/mc]	$\phi$ [°]	$\delta$ [°]	c [kPa]	$c_a$ [kPa]	Cesp	$\tau_l$ [kPa]
1	Rilevato	19.0000	19.0000	35.000	23.330	0	0		
2	Terreno	20.0000	20.0000	36.000	32.000	0	0		

**Stratigrafia****Simbologia adottata**

n°	Indice dello strato
H	Spessore dello strato espresso in [m]
$\alpha$	Inclinazione espressa in [°]
Terreno	Terreno dello strato
Kwn, Kwt	Costante di Winkler normale e tangenziale alla superficie espressa in Kg/cm <sup>2</sup> /cm

**Per calcolo pali (solo se presenti)**

Kw	Costante di Winkler orizzontale espressa in Kg/cm <sup>2</sup> /cm
Ks	Coefficiente di spinta
Cesp	Coefficiente di espansione laterale (per tutti i metodi tranne il metodo di Bustamante-Doix)

**Per calcolo della spinta con coeff. di spinta definiti (usati solo se attiva l'opzione 'Usa coeff. di spinta da strato')**

$K_{st_{sta}}$ , $K_{st_{sis}}$	Coeff. di spinta statico e sismico
---------------------------------	------------------------------------

n°	H [m]	$\alpha$ [°]	Terreno	Kwn [Kg/cm <sup>2</sup> ]	Kwt [Kg/cm <sup>2</sup> ]	Kw [Kg/cm <sup>2</sup> ]	Ks	Cesp	$K_{st_{sta}}$	$K_{st_{sis}}$
1	4.85	0.000	Rilevato	0.000	0.000	4.219	0.000	1.000	0.000	0.000
2	20.00	0.000	Terreno	0.000	0.000	2.203	1.000	1.000	0.000	0.000

**Condizioni di carico****Simbologia adottata**

	Carichi verticali positivi verso il basso.
	Carichi orizzontali positivi verso sinistra.
	Momento positivo senso antiorario.
X	Ascissa del punto di applicazione del carico concentrato espressa in [m]
$F_x$	Componente orizzontale del carico concentrato espressa in [kN]
$F_y$	Componente verticale del carico concentrato espressa in [kN]
M	Momento espresso in [kNm]

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**X<sub>i</sub> Ascissa del punto iniziale del carico ripartito espressa in [m]X<sub>f</sub> Ascissa del punto finale del carico ripartito espressa in [m]Q<sub>i</sub> Intensità del carico per x=X<sub>i</sub> espressa in [kN]Q<sub>f</sub> Intensità del carico per x=X<sub>f</sub> espressa in [kN]**Condizione n° 1 (Q) - VARIABILE**Coeff. di combinazione  $\Psi_0=0.75 - \Psi_1=0.75 - \Psi_2=0.00$ **Carichi sul terreno**

n°	Tipo	X	Fx	Fy	M	Xi	Xf	Qi	Qf
		[m]	[kN]	[kN]	[kNm]	[m]	[m]	[kN]	[kN]
1	Distribuito					0.00	3.00	38.3000	38.3000
2	Distribuito					3.00	6.00	22.1000	22.1000
3	Distribuito					6.00	9.00	12.3000	12.3000
4	Distribuito					9.00	20.00	2.5000	2.5000

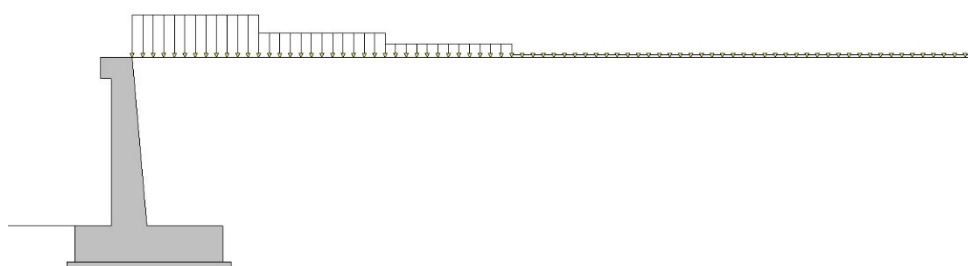


Fig. 2 - Carichi sul terreno

**Condizione n° 2 (Urto) - ECCEZIONALE****Carichi sul muro**

n°	Tipo	Dest	X; Y	Fx	Fy	M	Xi	Xf	Qi	Qf
			[m]	[kN]	[kN]	[kNm]	[m]	[m]	[kN]	[kN]
1	Concentrato	Paramento	0.00; 0.00	25.0000	0.0000	25.0000				

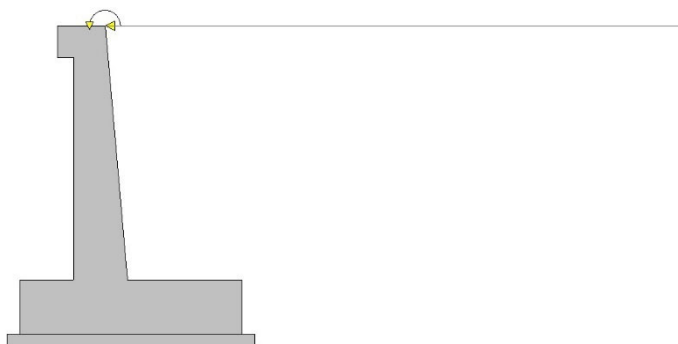


Fig. 3 - Carichi sul muro

## Normativa

Normativa usata: **Norme Tecniche sulle Costruzioni 2018 (D.M. 17.01.2018) + Circolare C.S.LL.PP. 21/01/2019 n.7**

### Coeff. parziali per le azioni o per l'effetto delle azioni

Carichi	Effetto		Combinazioni statiche					Combinazioni sismiche		
			HYD	UPL	EQU	A1	A2	EQU	A1	A2
Permanenti strutturali	Favorevoli	$\gamma_{G1, fav}$	1.00	0.90	1.00	1.00	1.00	1.00	1.00	1.00
Permanenti strutturali	Sfavorevoli	$\gamma_{G1, sfav}$	1.00	1.10	1.30	1.30	1.00	1.00	1.00	1.00
Permanenti non strutturali	Favorevoli	$\gamma_{G2, fav}$	0.00	0.80	0.80	0.80	0.80	0.00	0.00	0.00
Permanenti non strutturali	Sfavorevoli	$\gamma_{G2, sfav}$	1.00	1.50	1.50	1.50	1.30	1.00	1.00	1.00
Variabili	Favorevoli	$\gamma_{Q, fav}$	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Variabili	Sfavorevoli	$\gamma_{Q, sfav}$	1.00	1.50	1.50	1.50	1.30	1.00	1.00	1.00
Variabili da traffico	Favorevoli	$\gamma_{QT, fav}$	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Variabili da traffico	Sfavorevoli	$\gamma_{QT, sfav}$	1.00	1.50	1.35	1.35	1.15	1.00	1.00	1.00

### Coeff. parziali per i parametri geotecnici del terreno

Parametro		Combinazioni statiche		Combinazioni sismiche	
		M1	M2	M1	M2
Tangente dell'angolo di attrito	$\gamma_{\tan(\phi')}$	1.00	1.25	1.00	1.00
Coesione efficace	$\gamma_c$	1.00	1.25	1.00	1.00
Resistenza non drenata	$\gamma_{cu}$	1.00	1.40	1.00	1.00
Peso nell'unità di volume	$\gamma_r$	1.00	1.00	1.00	1.00

### Coeff. parziali $\gamma_R$ per le verifiche agli stati limite ultimi STR e GEO

Verifica	Combinazioni statiche			Combinazioni sismiche		
	R1	R2	R3	R1	R2	R3
Capacità portante	--	--	1.40	--	--	1.20
Scorrimento	--	--	1.10	--	--	1.00
Resistenza terreno a valle	--	--	1.40	--	--	1.20
Ribaltamento	--	--	1.15	--	--	1.00
Stabilità fronte di scavo	--	1.10	--	--	1.20	--



Descrizione combinazioni di carico

Con riferimento alle azioni elementari prima determinate, si sono considerate le seguenti combinazioni di carico:

- Combinazione fondamentale, impiegata per gli stati limite ultimi (SLU):

$$\gamma_{G1} G_1 + \gamma_{G2} G_2 + \gamma_{Q1} Q_{k1} + \gamma_{Q2} Q_{k2} + \gamma_{Q3} Q_{k3} + \dots$$

- Combinazione caratteristica, cosiddetta rara, impiegata per gli stati limite di esercizio (SLE) irreversibili:

$$G_1 + G_2 + Q_{k1} + \Psi_{0,2} Q_{k2} + \Psi_{0,3} Q_{k3} + \dots$$

- Combinazione frequente, impiegata per gli stati limite di esercizio (SLE) reversibili:

$$G_1 + G_2 + \Psi_{1,1} Q_{k1} + \Psi_{2,2} Q_{k2} + \Psi_{2,3} Q_{k3} + \dots$$

- Combinazione quasi permanente, impiegata per gli effetti di lungo periodo:

$$G_1 + G_2 + \Psi_{2,1} Q_{k1} + \Psi_{2,2} Q_{k2} + \Psi_{2,3} Q_{k3} + \dots$$

- Combinazione sismica, impiegata per gli stati limite ultimi connessi all'azione sismica E:

$$E + G_1 + G_2 + \Psi_{2,1} Q_{k1} + \Psi_{2,2} Q_{k2} + \Psi_{2,3} Q_{k3} + \dots$$

- Combinazione eccezionale, impiegata per gli stati limite ultimi connessi alle azioni eccezionali Ad:

$$G_1 + G_2 + A_d + \Psi_{2,1} Q_{k1} + \Psi_{2,2} Q_{k2} + \Psi_{2,3} Q_{k3} + \dots$$

I valori dei coeff.  $\Psi_{0,j}$ ,  $\Psi_{1,j}$ ,  $\Psi_{2,j}$  sono definiti nelle singole condizioni variabili. per I valori dei coeff.  $\gamma_G$  e  $\gamma_Q$ , sono definiti nella tabella normativa.

In particolare si sono considerate le seguenti combinazioni:

## Simbologia adottata

$\gamma$	Coefficiente di partecipazione della condizione
$\Psi$	Coefficiente di combinazione della condizione

Combinazione n° 1 - STR (A1-M1-R3)

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Favorevole
Peso terrapieno	1.00	--	Favorevole
Spinta terreno	1.30	--	Sfavorevole

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Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Favorevole
Peso terrapieno	1.00	--	Favorevole
Spinta terreno	1.00	--	Sfavorevole

Combinazione n° 3 - STR (A1-M1-R3)

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Favorevole
Peso terrapieno	1.00	--	Favorevole
Spinta terreno	1.30	--	Sfavorevole
Q	1.50	1.00	Sfavorevole

Combinazione n° 4 - STR (A1-M1-R3) H - V

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Sfavorevole
Peso terrapieno	1.00	--	Sfavorevole
Spinta terreno	1.00	--	Sfavorevole

Combinazione n° 5 - GEO (A2-M2-R2)

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Sfavorevole
Peso terrapieno	1.00	--	Sfavorevole
Spinta terreno	1.00	--	Sfavorevole

Combinazione n° 6 - GEO (A2-M2-R2) H + V

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Sfavorevole
Peso terrapieno	1.00	--	Sfavorevole
Spinta terreno	1.00	--	Sfavorevole

Combinazione n° 7 - GEO (A2-M2-R2)

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Sfavorevole
Peso terrapieno	1.00	--	Sfavorevole
Spinta terreno	1.00	--	Sfavorevole
Q	1.30	1.00	Sfavorevole

Combinazione n° 8 - GEO (A2-M2-R2) H - V

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Sfavorevole
Peso terrapieno	1.00	--	Sfavorevole
Spinta terreno	1.00	--	Sfavorevole

Combinazione n° 9 - EQU (A1-M1-R3)

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Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Favorevole
Peso terrapieno	1.00	--	Favorevole
Spinta terreno	1.30	--	Sfavorevole

Combinazione n° 10 - EQU (A1-M1-R3) H + V

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Favorevole
Peso terrapieno	1.00	--	Favorevole
Spinta terreno	1.00	--	Sfavorevole

Combinazione n° 11 - EQU (A1-M1-R3)

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Favorevole
Peso terrapieno	1.00	--	Favorevole
Spinta terreno	1.30	--	Sfavorevole
Q	1.50	1.00	Sfavorevole

Combinazione n° 12 - EQU (A1-M1-R3) H - V

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Favorevole
Peso terrapieno	1.00	--	Favorevole
Spinta terreno	1.00	--	Sfavorevole

Combinazione n° 13 - ECC

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Sfavorevole
Peso terrapieno	1.00	--	Sfavorevole
Spinta terreno	1.00	--	Sfavorevole
Urto	1.00	1.00	Sfavorevole

Combinazione n° 14 - SLER

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Sfavorevole
Peso terrapieno	1.00	--	Sfavorevole
Spinta terreno	1.00	--	Sfavorevole
Q	1.00	0.75	Sfavorevole

Combinazione n° 15 - SLEF

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Sfavorevole
Peso terrapieno	1.00	--	Sfavorevole
Spinta terreno	1.00	--	Sfavorevole

Combinazione n° 16 - SLEQ

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Sfavorevole
Peso terrapieno	1.00	--	Sfavorevole

Condizione	$\gamma$	$\Psi$	Effetto
Spinta terreno	1.00	--	Sfavorevole

Dati sismici

Comune	
Provincia	
Regione	
Latitudine	42.716470
Longitudine	12.111569
Indice punti di interpolazione	-1 - -1 - -1 - -1
Vita nominale	50 anni
Classe d'uso	II
Tipo costruzione	Normali affollamenti
Vita di riferimento	50 anni

	Simbolo	U.M.	SLU	SLE
Accelerazione al suolo	$a_g$	[m/s <sup>2</sup> ]	2.894	0.000
Accelerazione al suolo	$a_g/g$	[%]	0.295	0.000
Massimo fattore amplificazione spettro orizzontale	F0		2.423	0.000
Periodo inizio tratto spettro a velocità costante	Tc*		0.343	0.000
Tipo di sottosuolo - Coefficiente stratigrafico	Ss		C	1.271
Categoria topografica - Coefficiente amplificazione topografica	St		T1	1.000

Stato limite ...	Coeff. di riduzione $\beta_m$	kh	kv
Ultimo	0.380	14.248	7.124
Ultimo - Ribaltamento	0.570	21.372	10.686
Esercizio	0.470	0.000	0.000

Forma diagramma incremento sismico  **Rettangolare**

**Opzioni di calcolo**Spinta

Metodo di calcolo della spinta	Culmann
Tipo di spinta	Spinta attiva
Terreno a bassa permeabilità	NO
Superficie di spinta limitata	NO

Capacità portante

Metodo di calcolo della portanza	Hansen
Criterio di media calcolo del terreno equivalente (terreni stratificati)	Ponderata
Criterio di riduzione per eccentricità della portanza	Bowles
Criterio di riduzione per rottura locale (punzonamento)	Nessuna
Larghezza fondazione nel terzo termine della formula del carico limite ( $0.5B\gamma N_\gamma$ )	Larghezza effettiva (B)

Fattori di forma e inclinazione del carico Solo i fattori di inclinazione

Se la fondazione ha larghezza superiore a 2.0 m viene applicato il fattore di riduzione per comportamento a piastra

Stabilità globale

Metodo di calcolo della stabilità globale Bishop

Altro

Partecipazione spinta passiva terreno antistante 0.00

Partecipazione resistenza passiva dente di fondazione 50.00

Componente verticale della spinta nel calcolo delle sollecitazioni NO

Considera terreno sulla fondazione di valle NO

Considera spinta e peso acqua fondazione di valle NO

Spostamenti

Non è stato richiesto il calcolo degli spostamenti

Cedimenti

Non è stato richiesto il calcolo dei cedimenti

Specifiche per le verifiche nelle combinazioni allo Stato Limite Ultimo (SLU)

	SLU	Eccezionale
Coefficiente di sicurezza calcestruzzo a compressione	1.50	1.00
Coefficiente di sicurezza acciaio	1.15	1.00
Fattore di riduzione da resistenza cubica a cilindrica	0.83	0.83
Fattore di riduzione per carichi di lungo periodo	0.85	0.85
Coefficiente di sicurezza per la sezione	1.00	1.00

Specifiche per le verifiche nelle combinazioni allo Stato Limite di Esercizio (SLE)**Paramento e fondazione muro**

Condizioni ambientali Aggressive

Armatura ad aderenza migliorata SI

*Verifica a fessurazione*

Sensibilità armatura Poco sensibile

Metodo di calcolo aperture delle fessure NTC 2018 - CIRCOLARE 21 gennaio 2019, n. 7 C.S.LL.PP.

Valori limite aperture delle fessure:

$$w_1=0.20$$

$$w_2=0.30$$

$$w_3=0.40$$

*Verifica delle tensioni*

S.S. 51 "Alemagna" – Variante di Longarone

Progetto Fattibilità Tecnica ed Economica



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Valori limite delle tensioni nei materiali:

Combinazione	Calcestruzzo	Acciaio
Rara	0.60 $f_{ck}$	0.80 $f_{yk}$
Frequente	1.00 $f_{ck}$	1.00 $f_{yk}$
Quasi permanente	0.45 $f_{ck}$	1.00 $f_{yk}$

## Risultati per combinazione

### Spinta e forze

#### Simbologia adottata

Ic	Indice della combinazione
A	Tipo azione
I	Inclinazione della spinta, espressa in [°]
V	Valore dell'azione, espressa in [kN]
C <sub>x</sub> , C <sub>y</sub>	Componente in direzione X ed Y dell'azione, espressa in [kN]
P <sub>x</sub> , P <sub>y</sub>	Coordinata X ed Y del punto di applicazione dell'azione, espressa in [m]

Ic	A	V [kN]	I [°]	C <sub>x</sub> [kN]	C <sub>y</sub> [kN]	P <sub>x</sub> [m]	P <sub>y</sub> [m]
1	Spinta statica	71.00	23.33	65.20	28.12	2.15	-3.23
	Peso/Inerzia muro			0.00	142.20/0.00	0.12	-3.29
	Peso/Inerzia rivestimento			0.00	16.00	0.00	0.00
	Peso/Inerzia terrapieno			0.00	150.10/0.00	1.16	-1.94
	Peso dell'acqua sulla fondazione di valle				0.00	0.00	0.00
2	Spinta statica	54.62	23.33	50.15	21.63	2.15	-3.23
	Incremento di spinta sismica		24.34	22.35	9.64	2.15	-2.42
	Peso/Inerzia muro			20.26	142.20/10.13	0.12	-3.29
	Peso/Inerzia rivestimento			2.28	16.00	0.00	0.00
	Peso/Inerzia terrapieno			21.39	150.10/10.69	1.16	-1.94
3	Spinta statica	118.91	23.33	109.18	47.09	2.15	-2.78
	Peso/Inerzia muro			0.00	142.20/0.00	0.12	-3.29
	Peso/Inerzia rivestimento			0.00	16.00	0.00	0.00
	Peso/Inerzia terrapieno			0.00	273.61/0.00	1.13	-1.92
	Peso dell'acqua sulla fondazione di valle				0.00	0.00	0.00
4	Spinta statica	54.62	23.33	50.15	21.63	2.15	-3.23
	Incremento di spinta sismica		17.08	15.68	6.76	2.15	-2.42
	Peso/Inerzia muro			20.26	142.20/-10.13	0.12	-3.29
	Peso/Inerzia rivestimento			2.28	16.00	0.00	0.00
	Peso/Inerzia terrapieno			21.39	150.10/-10.69	1.16	-1.94
13	Spinta statica	54.62	23.33	50.15	21.63	2.15	-3.23
	Peso/Inerzia muro			0.00	142.20/0.00	0.12	-3.29
	Peso/Inerzia rivestimento			0.00	16.00	0.00	0.00
	Peso/Inerzia terrapieno			0.00	150.10/0.00	1.16	-1.94
	Peso dell'acqua sulla fondazione di valle				0.00	0.00	0.00
	Risultante forze sul muro			25.00	0.00	--	--
14	Spinta statica	78.54	23.33	72.12	31.10	2.15	-2.89
	Peso/Inerzia muro			0.00	142.20/0.00	0.12	-3.29
	Peso/Inerzia rivestimento			0.00	16.00	0.00	0.00
	Peso/Inerzia terrapieno			0.00	211.86/0.00	1.14	-1.93
	Peso dell'acqua sulla fondazione di valle				0.00	0.00	0.00
15	Spinta statica	54.62	23.33	50.15	21.63	2.15	-3.23
	Peso/Inerzia muro			0.00	142.20/0.00	0.12	-3.29
	Peso/Inerzia rivestimento			0.00	16.00	0.00	0.00
	Peso/Inerzia terrapieno			0.00	150.10/0.00	1.16	-1.94
	Peso dell'acqua sulla fondazione di valle				0.00	0.00	0.00
16	Spinta statica	54.62	23.33	50.15	21.63	2.15	-3.23
	Peso/Inerzia muro			0.00	142.20/0.00	0.12	-3.29
	Peso/Inerzia rivestimento			0.00	16.00	0.00	0.00
	Peso/Inerzia terrapieno			0.00	150.10/0.00	1.16	-1.94
	Peso dell'acqua sulla fondazione di valle				0.00	0.00	0.00

## Risultanti globali

### Simbologia adottata

Cmb	Indice/Tipo combinazione
N	Componente normale al piano di posa, espressa in [kN]
T	Componente parallela al piano di posa, espressa in [kN]
M <sub>r</sub>	Momento ribaltante, espresso in [kNm]
M <sub>s</sub>	Momento stabilizzante, espresso in [kNm]
ecc	Eccentricità risultante, espressa in [m]

Ic	N [kN]	T [kN]	M <sub>r</sub> [kNm]	M <sub>s</sub> [kNm]	ecc [m]
1 - STR (A1-M1-R3)	336.41	65.20	105.41	705.71	-0.034
2 - STR (A1-M1-R3)	360.39	116.43	240.23	758.46	0.312
3 - STR (A1-M1-R3)	478.90	109.18	226.36	1072.80	-0.018
4 - STR (A1-M1-R3)	315.87	109.76	265.79	706.67	0.354
13 - ECC	329.92	75.15	227.34	683.00	0.369

## Verifiche geotecniche

### Quadro riassuntivo coeff. di sicurezza calcolati

### Simbologia adottata

Cmb	Indice/Tipo combinazione
S	Sisma (H: componente orizzontale, V: componente verticale)
FS <sub>SCO</sub>	Coeff. di sicurezza allo scorrimento
FS <sub>RIB</sub>	Coeff. di sicurezza al ribaltamento
FS <sub>QLIM</sub>	Coeff. di sicurezza a carico limite
FS <sub>STAB</sub>	Coeff. di sicurezza a stabilità globale
FS <sub>HYD</sub>	Coeff. di sicurezza a sifonamento
FS <sub>SUPL</sub>	Coeff. di sicurezza a sollevamento

Cmb	Sismica	FS <sub>SCO</sub>	FS <sub>RIB</sub>	FS <sub>QLIM</sub>	FS <sub>STAB</sub>	FS <sub>HYD</sub>	FS <sub>SUPL</sub>
1 - STR (A1-M1-R3)		3.224		7.655			
2 - STR (A1-M1-R3)	H + V	1.934		3.819			
3 - STR (A1-M1-R3)		2.741		4.837			
4 - STR (A1-M1-R3)	H - V	1.798		3.870			
5 - GEO (A2-M2-R2)					1.810		
6 - GEO (A2-M2-R2)	H + V				1.732		
7 - GEO (A2-M2-R2)					1.504		
8 - GEO (A2-M2-R2)	H - V				1.648		
9 - EQU (A1-M1-R3)			6.695				
10 - EQU (A1-M1-R3)	H + V		2.459				
11 - EQU (A1-M1-R3)			4.739				
12 - EQU (A1-M1-R3)	H - V		1.975				
13 - ECC		2.743	3.004	5.601	2.262		

### Verifica a scorrimento fondazione



## Simbologia adottata

n°	Indice combinazione
Rsa	Resistenza allo scorrimento per attrito, espresso in [kN]
Rpt	Resistenza passiva terreno antistante, espresso in [kN]
Rps	Resistenza passiva sperone, espresso in [kN]
Rp	Resistenza a carichi orizzontali pali (solo per fondazione mista), espresso in [kN]
Rt	Resistenza a carichi orizzontali tiranti (solo se presenti), espresso in [kN]
R	Resistenza allo scorrimento (somma di Rsa+Rpt+Rps+Rp), espresso in [kN]
T	Carico parallelo al piano di posa, espresso in [kN]
FS	Fattore di sicurezza (rapporto R/T)

n°	Rsa	Rpt	Rps	Rp	Rt	R	T	FS
	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	
1 - STR (A1-M1-R3)	210.21	0.00	0.00	--	--	210.21	65.20	3.224
2 - STR (A1-M1-R3) H + V	225.19	0.00	0.00	--	--	225.19	116.43	1.934
3 - STR (A1-M1-R3)	299.25	0.00	0.00	--	--	299.25	109.18	2.741
4 - STR (A1-M1-R3) H - V	197.37	0.00	0.00	--	--	197.37	109.76	1.798
13 - ECC	206.16	0.00	0.00	--	--	206.16	75.15	2.743

## Verifica a carico limite

## Simbologia adottata

n°	Indice combinazione
N	Carico normale totale al piano di posa, espresso in [kN]
Qu	carico limite del terreno, espresso in [kN]
Qd	Portanza di progetto, espresso in [kN]
FS	Fattore di sicurezza (rapporto tra il carico limite e carico agente al piano di posa)

n°	N	Qu	Qd	FS
	[kN]	[kN]	[kN]	
1 - STR (A1-M1-R3)	336.41	2575.08	1839.34	7.655
2 - STR (A1-M1-R3) H + V	360.39	1376.41	1147.01	3.819
3 - STR (A1-M1-R3)	478.90	2316.35	1654.53	4.837
4 - STR (A1-M1-R3) H - V	315.87	1222.27	1018.56	3.870
13 - ECC	329.92	1847.83	1319.88	5.601

## Verifica a ribaltamento

## Simbologia adottata

n°	Indice combinazione
Ms	Momento stabilizzante, espresso in [kNm]
Mr	Momento ribaltante, espresso in [kNm]
FS	Fattore di sicurezza (rapporto tra momento stabilizzante e momento ribaltante)

La verifica viene eseguita rispetto allo spigolo inferiore esterno della fondazione

n°	Ms	Mr	FS
	[kNm]	[kNm]	
9 - EQU (A1-M1-R3)	705.71	105.41	6.695
10 - EQU (A1-M1-R3) H + V	799.55	325.20	2.459
11 - EQU (A1-M1-R3)	1072.80	226.36	4.739
12 - EQU (A1-M1-R3) H - V	723.72	366.50	1.975
13 - ECC	683.00	227.34	3.004

### Verifica stabilità globale muro + terreno

#### Simbologia adottata

Ic	Indice/Tipo combinazione
C	Centro superficie di scorrimento, espresso in [m]
R	Raggio, espresso in [m]
FS	Fattore di sicurezza

Ic	C [m]	R [m]	FS
5 - GEO (A2-M2-R2)	-1.68; 1.12	7.10	1.810
6 - GEO (A2-M2-R2) H + V	-1.68; 2.80	8.56	1.732
7 - GEO (A2-M2-R2)	-1.68; 1.12	7.10	1.504
8 - GEO (A2-M2-R2) H - V	-2.24; 3.92	9.81	1.648
13 - ECC	-1.68; 1.12	7.10	2.262

### Sollecitazioni

#### Elementi calcolati a trave

#### Simbologia adottata

N	Sforzo normale, espresso in [kN]. Positivo se di compressione.
T	Taglio, espresso in [kN]. Positivo se diretto da monte verso valle
M	Momento, espresso in [kNm]. Positivo se tende le fibre contro terra (a monte)

### Paramento

#### Combinazione n° 1 - STR (A1-M1-R3)

n°	X [m]	N [kN]	T [kN]	M [kNm]
1	0.00	3.06	0.00	0.38
2	-0.10	4.30	0.03	0.39
3	-0.20	5.56	0.12	0.40
4	-0.30	6.84	0.28	0.44
5	-0.40	8.14	0.49	0.49
6	-0.50	9.46	0.77	0.58
7	-0.60	10.81	1.10	0.70
8	-0.70	12.17	1.50	0.87
9	-0.80	13.56	1.95	1.08
10	-0.90	14.97	2.47	1.35
11	-1.00	16.40	3.05	1.69
12	-1.10	17.85	3.69	2.08
13	-1.20	19.32	4.39	2.56
14	-1.30	20.81	5.16	3.11
15	-1.40	22.33	5.98	3.74
16	-1.50	23.87	6.86	4.47
17	-1.60	25.42	7.81	5.30
18	-1.70	27.00	8.82	6.23
19	-1.80	28.60	9.88	7.28
20	-1.90	30.23	11.01	8.44
21	-2.00	31.87	12.20	9.72
22	-2.10	33.54	13.45	11.13
23	-2.20	35.22	14.76	12.68

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
24	-2.30	36.93	16.14	14.37
25	-2.40	38.66	17.57	16.20
26	-2.50	40.41	19.06	18.19
27	-2.60	42.19	20.62	20.34
28	-2.70	43.98	22.23	22.66
29	-2.80	45.80	23.91	25.15
30	-2.90	47.63	25.65	27.82
31	-3.00	49.49	27.45	30.67
32	-3.10	51.37	29.31	33.72
33	-3.20	53.27	31.23	36.96
34	-3.30	55.20	33.21	40.40
35	-3.40	57.14	35.26	44.06
36	-3.50	59.11	37.36	47.93
37	-3.60	61.09	39.52	52.02
38	-3.70	63.10	41.75	56.35
39	-3.80	65.13	44.04	60.90
40	-3.90	67.19	46.39	65.70
41	-4.00	69.26	48.80	70.74

Combinazione n° 2 - STR (A1-M1-R3) H + V

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	0.00	3.28	0.00	0.41
2	-0.10	4.52	0.59	0.44
3	-0.20	5.78	1.24	0.54
4	-0.30	7.06	1.93	0.71
5	-0.40	8.36	2.67	0.96
6	-0.50	9.68	3.46	1.29
7	-0.60	11.02	4.30	1.71
8	-0.70	12.39	5.20	2.22
9	-0.80	13.78	6.14	2.83
10	-0.90	15.18	7.13	3.54
11	-1.00	16.61	8.17	4.36
12	-1.10	18.07	9.26	5.30
13	-1.20	19.54	10.41	6.35
14	-1.30	21.03	11.60	7.52
15	-1.40	22.55	12.84	8.82
16	-1.50	24.08	14.13	10.26
17	-1.60	25.64	15.47	11.83
18	-1.70	27.22	16.86	13.55
19	-1.80	28.82	18.31	15.42
20	-1.90	30.45	19.80	17.44
21	-2.00	32.09	21.34	19.62
22	-2.10	33.76	22.93	21.96
23	-2.20	35.44	24.57	24.47
24	-2.30	37.15	26.26	27.16
25	-2.40	38.88	28.01	30.02
26	-2.50	40.63	29.80	33.07
27	-2.60	42.41	31.64	36.31
28	-2.70	44.20	33.53	39.74
29	-2.80	46.02	35.47	43.38
30	-2.90	47.85	37.46	47.21
31	-3.00	49.71	39.50	51.26
32	-3.10	51.59	41.59	55.52
33	-3.20	53.49	43.74	60.00
34	-3.30	55.42	45.93	64.71
35	-3.40	57.36	48.17	69.65
36	-3.50	59.33	50.46	74.82
37	-3.60	61.31	52.80	80.23
38	-3.70	63.32	55.19	85.89
39	-3.80	65.35	57.63	91.80
40	-3.90	67.40	60.12	97.96
41	-4.00	69.48	62.66	104.38

Combinazione n° 3 - STR (A1-M1-R3)

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	0.00	3.06	0.00	0.38
2	-0.10	4.30	1.45	0.46
3	-0.20	5.56	2.96	0.69
4	-0.30	6.84	4.53	1.07
5	-0.40	8.14	6.17	1.63
6	-0.50	9.46	7.86	2.35
7	-0.60	10.81	9.61	3.26
8	-0.70	12.17	11.43	4.35
9	-0.80	13.56	13.30	5.62
10	-0.90	14.97	15.24	7.10
11	-1.00	16.40	17.24	8.78
12	-1.10	17.85	19.30	10.67
13	-1.20	19.32	21.42	12.77
14	-1.30	20.81	23.60	15.09
15	-1.40	22.33	25.84	17.65
16	-1.50	23.87	28.14	20.43
17	-1.60	25.42	30.51	23.46
18	-1.70	27.00	32.93	26.73
19	-1.80	28.60	35.42	30.26
20	-1.90	30.23	37.96	34.04
21	-2.00	31.87	40.57	38.09
22	-2.10	33.54	43.24	42.41
23	-2.20	35.22	45.97	47.01
24	-2.30	36.93	48.76	51.89
25	-2.40	38.66	51.61	57.06
26	-2.50	40.41	54.53	62.52
27	-2.60	42.19	57.50	68.29
28	-2.70	43.98	60.54	74.37
29	-2.80	45.80	63.63	80.76
30	-2.90	47.63	66.79	87.47
31	-3.00	49.49	70.01	94.51
32	-3.10	51.37	73.29	101.88
33	-3.20	53.27	76.62	109.59
34	-3.30	55.20	80.03	117.65
35	-3.40	57.14	83.49	126.05
36	-3.50	59.11	87.01	134.82
37	-3.60	61.09	90.59	143.95
38	-3.70	63.10	94.24	153.45
39	-3.80	65.13	97.94	163.32
40	-3.90	67.19	101.71	173.58
41	-4.00	69.26	105.54	184.23

Combinazione n° 4 - STR (A1-M1-R3) H - V

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	0.00	3.06	0.00	0.38
2	-0.10	4.30	0.47	0.41
3	-0.20	5.56	0.98	0.49
4	-0.30	6.84	1.55	0.63
5	-0.40	8.14	2.17	0.83
6	-0.50	9.46	2.83	1.11
7	-0.60	10.81	3.55	1.46
8	-0.70	12.17	4.32	1.89
9	-0.80	13.56	5.13	2.40
10	-0.90	14.97	6.00	3.01
11	-1.00	16.40	6.92	3.71
12	-1.10	17.85	7.88	4.51
13	-1.20	19.32	8.90	5.42
14	-1.30	20.81	9.96	6.43
15	-1.40	22.33	11.08	7.57
16	-1.50	23.87	12.25	8.82
17	-1.60	25.42	13.46	10.20
18	-1.70	27.00	14.73	11.71
19	-1.80	28.60	16.04	13.36
20	-1.90	30.23	17.41	15.14

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
21	-2.00	31.87	18.83	17.08
22	-2.10	33.54	20.29	19.16
23	-2.20	35.22	21.81	21.40
24	-2.30	36.93	23.37	23.81
25	-2.40	38.66	24.99	26.38
26	-2.50	40.41	26.65	29.12
27	-2.60	42.19	28.37	32.03
28	-2.70	43.98	30.14	35.13
29	-2.80	45.80	31.95	38.42
30	-2.90	47.63	33.82	41.90
31	-3.00	49.49	35.73	45.58
32	-3.10	51.37	37.70	49.45
33	-3.20	53.27	39.71	53.54
34	-3.30	55.20	41.78	57.84
35	-3.40	57.14	43.89	62.35
36	-3.50	59.11	46.06	67.09
37	-3.60	61.09	48.28	72.06
38	-3.70	63.10	50.54	77.26
39	-3.80	65.13	52.86	82.69
40	-3.90	67.19	55.22	88.37
41	-4.00	69.26	57.64	94.30

Combinazione n° 13 - ECC

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	0.00	3.06	25.00	25.38
2	-0.10	4.30	25.02	27.89
3	-0.20	5.56	25.10	30.40
4	-0.30	6.84	25.21	32.93
5	-0.40	8.14	25.38	35.48
6	-0.50	9.46	25.59	38.05
7	-0.60	10.81	25.85	40.65
8	-0.70	12.17	26.15	43.29
9	-0.80	13.56	26.50	45.96
10	-0.90	14.97	26.90	48.68
11	-1.00	16.40	27.35	51.45
12	-1.10	17.85	27.84	54.27
13	-1.20	19.32	28.38	57.15
14	-1.30	20.81	28.97	60.09
15	-1.40	22.33	29.60	63.10
16	-1.50	23.87	30.28	66.18
17	-1.60	25.42	31.01	69.34
18	-1.70	27.00	31.78	72.58
19	-1.80	28.60	32.60	75.91
20	-1.90	30.23	33.47	79.33
21	-2.00	31.87	34.39	82.84
22	-2.10	33.54	35.35	86.46
23	-2.20	35.22	36.36	90.18
24	-2.30	36.93	37.41	94.01
25	-2.40	38.66	38.51	97.96
26	-2.50	40.41	39.66	102.03
27	-2.60	42.19	40.86	106.22
28	-2.70	43.98	42.10	110.54
29	-2.80	45.80	43.39	115.00
30	-2.90	47.63	44.73	119.60
31	-3.00	49.49	46.11	124.34
32	-3.10	51.37	47.55	129.23
33	-3.20	53.27	49.02	134.27
34	-3.30	55.20	50.55	139.47
35	-3.40	57.14	52.12	144.84
36	-3.50	59.11	53.74	150.37
37	-3.60	61.09	55.40	156.08
38	-3.70	63.10	57.12	161.96
39	-3.80	65.13	58.88	168.03
40	-3.90	67.19	60.68	174.28
41	-4.00	69.26	62.53	180.73

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**Combinazione n° 14 - SLER

n°	X [m]	N [kN]	T [kN]	M [kNm]
1	0.00	3.06	0.00	0.38
2	-0.10	4.30	0.73	0.42
3	-0.20	5.56	1.51	0.54
4	-0.30	6.84	2.34	0.75
5	-0.40	8.14	3.21	1.04
6	-0.50	9.46	4.14	1.44
7	-0.60	10.81	5.10	1.93
8	-0.70	12.17	6.12	2.53
9	-0.80	13.56	7.18	3.23
10	-0.90	14.97	8.29	4.06
11	-1.00	16.40	9.44	5.00
12	-1.10	17.85	10.64	6.06
13	-1.20	19.32	11.89	7.26
14	-1.30	20.81	13.19	8.58
15	-1.40	22.33	14.53	10.05
16	-1.50	23.87	15.92	11.66
17	-1.60	25.42	17.36	13.42
18	-1.70	27.00	18.84	15.33
19	-1.80	28.60	20.37	17.40
20	-1.90	30.23	21.95	19.63
21	-2.00	31.87	23.57	22.03
22	-2.10	33.54	25.24	24.60
23	-2.20	35.22	26.96	27.34
24	-2.30	36.93	28.73	30.27
25	-2.40	38.66	30.54	33.39
26	-2.50	40.41	32.40	36.69
27	-2.60	42.19	34.30	40.19
28	-2.70	43.98	36.25	43.90
29	-2.80	45.80	38.25	47.80
30	-2.90	47.63	40.30	51.92
31	-3.00	49.49	42.39	56.26
32	-3.10	51.37	44.53	60.81
33	-3.20	53.27	46.72	65.59
34	-3.30	55.20	48.95	70.59
35	-3.40	57.14	51.24	75.83
36	-3.50	59.11	53.56	81.32
37	-3.60	61.09	55.94	87.04
38	-3.70	63.10	58.36	93.01
39	-3.80	65.13	60.83	99.24
40	-3.90	67.19	63.34	105.72
41	-4.00	69.26	65.91	112.47

Combinazione n° 15 - SLEF

n°	X [m]	N [kN]	T [kN]	M [kNm]
1	0.00	3.06	0.00	0.38
2	-0.10	4.30	0.02	0.39
3	-0.20	5.56	0.10	0.40
4	-0.30	6.84	0.21	0.43
5	-0.40	8.14	0.38	0.48
6	-0.50	9.46	0.59	0.55
7	-0.60	10.81	0.85	0.65
8	-0.70	12.17	1.15	0.79
9	-0.80	13.56	1.50	0.96
10	-0.90	14.97	1.90	1.18
11	-1.00	16.40	2.35	1.45
12	-1.10	17.85	2.84	1.77
13	-1.20	19.32	3.38	2.15
14	-1.30	20.81	3.97	2.59
15	-1.40	22.33	4.60	3.10
16	-1.50	23.87	5.28	3.68
17	-1.60	25.42	6.01	4.34

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
18	-1.70	27.00	6.78	5.08
19	-1.80	28.60	7.60	5.91
20	-1.90	30.23	8.47	6.83
21	-2.00	31.87	9.39	7.84
22	-2.10	33.54	10.35	8.96
23	-2.20	35.22	11.36	10.18
24	-2.30	36.93	12.41	11.51
25	-2.40	38.66	13.51	12.96
26	-2.50	40.41	14.66	14.53
27	-2.60	42.19	15.86	16.22
28	-2.70	43.98	17.10	18.04
29	-2.80	45.80	18.39	20.00
30	-2.90	47.63	19.73	22.10
31	-3.00	49.49	21.11	24.34
32	-3.10	51.37	22.55	26.73
33	-3.20	53.27	24.02	29.27
34	-3.30	55.20	25.55	31.97
35	-3.40	57.14	27.12	34.84
36	-3.50	59.11	28.74	37.87
37	-3.60	61.09	30.40	41.08
38	-3.70	63.10	32.12	44.46
39	-3.80	65.13	33.88	48.03
40	-3.90	67.19	35.68	51.78
41	-4.00	69.26	37.53	55.73

Combinazione n° 16 - SLEQ

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	0.00	3.06	0.00	0.38
2	-0.10	4.30	0.02	0.39
3	-0.20	5.56	0.10	0.40
4	-0.30	6.84	0.21	0.43
5	-0.40	8.14	0.38	0.48
6	-0.50	9.46	0.59	0.55
7	-0.60	10.81	0.85	0.65
8	-0.70	12.17	1.15	0.79
9	-0.80	13.56	1.50	0.96
10	-0.90	14.97	1.90	1.18
11	-1.00	16.40	2.35	1.45
12	-1.10	17.85	2.84	1.77
13	-1.20	19.32	3.38	2.15
14	-1.30	20.81	3.97	2.59
15	-1.40	22.33	4.60	3.10
16	-1.50	23.87	5.28	3.68
17	-1.60	25.42	6.01	4.34
18	-1.70	27.00	6.78	5.08
19	-1.80	28.60	7.60	5.91
20	-1.90	30.23	8.47	6.83
21	-2.00	31.87	9.39	7.84
22	-2.10	33.54	10.35	8.96
23	-2.20	35.22	11.36	10.18
24	-2.30	36.93	12.41	11.51
25	-2.40	38.66	13.51	12.96
26	-2.50	40.41	14.66	14.53
27	-2.60	42.19	15.86	16.22
28	-2.70	43.98	17.10	18.04
29	-2.80	45.80	18.39	20.00
30	-2.90	47.63	19.73	22.10
31	-3.00	49.49	21.11	24.34
32	-3.10	51.37	22.55	26.73
33	-3.20	53.27	24.02	29.27
34	-3.30	55.20	25.55	31.97
35	-3.40	57.14	27.12	34.84
36	-3.50	59.11	28.74	37.87
37	-3.60	61.09	30.40	41.08
38	-3.70	63.10	32.12	44.46

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
39	-3.80	65.13	33.88	48.03
40	-3.90	67.19	35.68	51.78
41	-4.00	69.26	37.53	55.73

*Mensola valle*Combinazione n° 1 - STR (A1-M1-R3)

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-0.75	0.00	0.00	0.00
2	-0.67	0.00	1.02	0.04
3	-0.58	0.00	2.04	0.17
4	-0.50	0.00	3.06	0.38

Combinazione n° 2 - STR (A1-M1-R3) H + V

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-0.75	0.00	0.00	0.00
2	-0.67	0.00	1.09	0.05
3	-0.58	0.00	2.19	0.18
4	-0.50	0.00	3.28	0.41

Combinazione n° 3 - STR (A1-M1-R3)

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-0.75	0.00	0.00	0.00
2	-0.67	0.00	1.02	0.04
3	-0.58	0.00	2.04	0.17
4	-0.50	0.00	3.06	0.38

Combinazione n° 4 - STR (A1-M1-R3) H - V

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-0.75	0.00	0.00	0.00
2	-0.67	0.00	1.02	0.04
3	-0.58	0.00	2.04	0.17
4	-0.50	0.00	3.06	0.38

Combinazione n° 13 - ECC

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-0.75	0.00	0.00	0.00
2	-0.67	0.00	1.02	0.04
3	-0.58	0.00	2.04	0.17
4	-0.50	0.00	3.06	0.38

Combinazione n° 14 - SLER



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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-0.75	0.00	0.00	0.00
2	-0.67	0.00	1.02	0.04
3	-0.58	0.00	2.04	0.17
4	-0.50	0.00	3.06	0.38

Combinazione n° 15 - SLEF

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-0.75	0.00	0.00	0.00
2	-0.67	0.00	1.02	0.04
3	-0.58	0.00	2.04	0.17
4	-0.50	0.00	3.06	0.38

Combinazione n° 16 - SLEQ

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-0.75	0.00	0.00	0.00
2	-0.67	0.00	1.02	0.04
3	-0.58	0.00	2.04	0.17
4	-0.50	0.00	3.06	0.38

*Fondazione*Combinazione n° 1 - STR (A1-M1-R3)

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-1.35	0.00	0.00	0.00
2	-1.26	0.00	6.59	0.31
3	-1.16	0.00	13.21	1.25
4	-1.07	0.00	19.85	2.81
5	-0.97	0.00	26.53	5.00
6	-0.88	0.00	33.23	7.82
7	-0.78	0.00	39.96	11.27
8	-0.69	0.00	46.73	15.37
9	-0.59	0.00	53.52	20.10
10	-0.50	0.00	60.34	25.48
11	0.35	0.00	-37.38	-32.06
12	0.44	0.00	-35.15	-28.63
13	0.54	0.00	-32.95	-25.40
14	0.63	0.00	-30.78	-22.38
15	0.73	0.00	-28.63	-19.57
16	0.82	0.00	-26.52	-16.96
17	0.92	0.00	-24.44	-14.54
18	1.01	0.00	-22.38	-12.33
19	1.11	0.00	-20.36	-10.30
20	1.20	0.00	-18.36	-8.47
21	1.30	0.00	-16.40	-6.82
22	1.39	0.00	-14.46	-5.36
23	1.49	0.00	-12.55	-4.08
24	1.58	0.00	-10.67	-2.98
25	1.68	0.00	-8.82	-2.06
26	1.77	0.00	-7.00	-1.31
27	1.87	0.00	-5.20	-0.73
28	1.96	0.00	-3.44	-0.32
29	2.06	0.00	-1.71	-0.08
30	2.15	0.00	0.00	0.00

## Combinazione n° 2 - STR (A1-M1-R3) H + V

n°	X [m]	N [kN]	T [kN]	M [kNm]
1	-1.35	0.00	0.00	0.00
2	-1.26	0.00	12.82	0.61
3	-1.16	0.00	25.35	2.41
4	-1.07	0.00	37.61	5.39
5	-0.97	0.00	49.59	9.51
6	-0.88	0.00	61.28	14.75
7	-0.78	0.00	72.69	21.07
8	-0.69	0.00	83.83	28.47
9	-0.59	0.00	94.68	36.90
10	-0.50	0.00	105.25	46.34
11	0.35	0.00	-37.11	-48.70
12	0.44	0.00	-37.70	-45.15
13	0.54	0.00	-38.01	-41.56
14	0.63	0.00	-38.03	-37.96
15	0.73	0.00	-37.77	-34.37
16	0.82	0.00	-37.23	-30.81
17	0.92	0.00	-36.41	-27.32
18	1.01	0.00	-35.30	-23.92
19	1.11	0.00	-33.91	-20.64
20	1.20	0.00	-32.24	-17.50
21	1.30	0.00	-30.29	-14.54
22	1.39	0.00	-28.05	-11.77
23	1.49	0.00	-25.54	-9.23
24	1.58	0.00	-22.74	-6.94
25	1.68	0.00	-19.65	-4.93
26	1.77	0.00	-16.29	-3.23
27	1.87	0.00	-12.64	-1.86
28	1.96	0.00	-8.71	-0.84
29	2.06	0.00	-4.50	-0.22
30	2.15	0.00	0.00	0.00

## Combinazione n° 3 - STR (A1-M1-R3)

n°	X [m]	N [kN]	T [kN]	M [kNm]
1	-1.35	0.00	0.00	0.00
2	-1.26	0.00	10.58	0.50
3	-1.16	0.00	21.18	2.00
4	-1.07	0.00	31.79	4.50
5	-0.97	0.00	42.43	8.00
6	-0.88	0.00	53.10	12.52
7	-0.78	0.00	63.78	18.03
8	-0.69	0.00	74.48	24.56
9	-0.59	0.00	85.20	32.10
10	-0.50	0.00	95.95	40.66
11	0.35	0.00	-68.88	-60.85
12	0.44	0.00	-65.06	-54.51
13	0.54	0.00	-61.27	-48.52
14	0.63	0.00	-57.50	-42.90
15	0.73	0.00	-53.75	-37.63
16	0.82	0.00	-50.02	-32.71
17	0.92	0.00	-46.31	-28.15
18	1.01	0.00	-42.62	-23.94
19	1.11	0.00	-38.95	-20.07
20	1.20	0.00	-35.30	-16.56
21	1.30	0.00	-31.68	-13.38
22	1.39	0.00	-28.07	-10.55
23	1.49	0.00	-24.49	-8.06
24	1.58	0.00	-20.93	-5.91
25	1.68	0.00	-17.39	-4.10
26	1.77	0.00	-13.87	-2.62
27	1.87	0.00	-10.37	-1.47
28	1.96	0.00	-6.89	-0.65

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
29	2.06	0.00	-3.44	-0.16
30	2.15	0.00	0.00	0.00

Combinazione n° 4 - STR (A1-M1-R3) H - V

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-1.35	0.00	0.00	0.00
2	-1.26	0.00	11.59	0.55
3	-1.16	0.00	22.90	2.18
4	-1.07	0.00	33.93	4.87
5	-0.97	0.00	44.69	8.58
6	-0.88	0.00	55.16	13.30
7	-0.78	0.00	65.36	18.99
8	-0.69	0.00	75.27	25.64
9	-0.59	0.00	84.91	33.20
10	-0.50	0.00	94.26	41.66
11	0.35	0.00	-59.77	-69.01
12	0.44	0.00	-59.15	-63.38
13	0.54	0.00	-58.26	-57.81
14	0.63	0.00	-57.08	-52.35
15	0.73	0.00	-55.62	-47.01
16	0.82	0.00	-53.88	-41.82
17	0.92	0.00	-51.86	-36.81
18	1.01	0.00	-49.55	-32.00
19	1.11	0.00	-46.97	-27.43
20	1.20	0.00	-44.10	-23.11
21	1.30	0.00	-40.96	-19.08
22	1.39	0.00	-37.53	-15.36
23	1.49	0.00	-33.82	-11.98
24	1.58	0.00	-29.84	-8.96
25	1.68	0.00	-25.57	-6.33
26	1.77	0.00	-21.01	-4.12
27	1.87	0.00	-16.18	-2.36
28	1.96	0.00	-11.07	-1.07
29	2.06	0.00	-5.68	-0.27
30	2.15	0.00	0.00	0.00

Combinazione n° 13 - ECC

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-1.35	0.00	0.00	0.00
2	-1.26	0.00	12.41	0.59
3	-1.16	0.00	24.52	2.34
4	-1.07	0.00	36.33	5.21
5	-0.97	0.00	47.83	9.19
6	-0.88	0.00	59.02	14.24
7	-0.78	0.00	69.92	20.33
8	-0.69	0.00	80.51	27.43
9	-0.59	0.00	90.79	35.52
10	-0.50	0.00	100.77	44.57
11	0.35	0.00	-56.75	-67.63
12	0.44	0.00	-56.51	-62.26
13	0.54	0.00	-55.97	-56.93
14	0.63	0.00	-55.12	-51.66
15	0.73	0.00	-53.97	-46.49
16	0.82	0.00	-52.51	-41.45
17	0.92	0.00	-50.75	-36.55
18	1.01	0.00	-48.68	-31.84
19	1.11	0.00	-46.31	-27.34
20	1.20	0.00	-43.62	-23.08
21	1.30	0.00	-40.64	-19.08
22	1.39	0.00	-37.35	-15.39
23	1.49	0.00	-33.75	-12.02

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
24	1.58	0.00	-29.84	-9.00
25	1.68	0.00	-25.63	-6.37
26	1.77	0.00	-21.12	-4.16
27	1.87	0.00	-16.30	-2.38
28	1.96	0.00	-11.17	-1.08
29	2.06	0.00	-5.74	-0.27
30	2.15	0.00	0.00	0.00

Combinazione n° 14 - SLER

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-1.35	0.00	0.00	0.00
2	-1.26	0.00	7.82	0.37
3	-1.16	0.00	15.69	1.48
4	-1.07	0.00	23.63	3.33
5	-0.97	0.00	31.62	5.94
6	-0.88	0.00	39.66	9.31
7	-0.78	0.00	47.77	13.44
8	-0.69	0.00	55.93	18.33
9	-0.59	0.00	64.15	24.00
10	-0.50	0.00	72.43	30.45
11	0.35	0.00	-9.82	-5.69
12	0.44	0.00	-8.78	-4.81
13	0.54	0.00	-7.80	-4.03
14	0.63	0.00	-6.87	-3.33
15	0.73	0.00	-6.01	-2.72
16	0.82	0.00	-5.20	-2.19
17	0.92	0.00	-4.45	-1.74
18	1.01	0.00	-3.76	-1.35
19	1.11	0.00	-3.13	-1.02
20	1.20	0.00	-2.56	-0.75
21	1.30	0.00	-2.04	-0.54
22	1.39	0.00	-1.58	-0.36
23	1.49	0.00	-1.18	-0.23
24	1.58	0.00	-0.84	-0.14
25	1.68	0.00	-0.55	-0.07
26	1.77	0.00	-0.33	-0.03
27	1.87	0.00	-0.16	-0.01
28	1.96	0.00	-0.05	0.00
29	2.06	0.00	0.01	0.00
30	2.15	0.00	0.00	0.00

Combinazione n° 15 - SLEF

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-1.35	0.00	0.00	0.00
2	-1.26	0.00	5.83	0.27
3	-1.16	0.00	11.72	1.10
4	-1.07	0.00	17.67	2.49
5	-0.97	0.00	23.69	4.44
6	-0.88	0.00	29.76	6.97
7	-0.78	0.00	35.90	10.07
8	-0.69	0.00	42.09	13.75
9	-0.59	0.00	48.35	18.02
10	-0.50	0.00	54.67	22.88
11	0.35	0.00	5.88	8.63
12	0.44	0.00	6.13	8.06
13	0.54	0.00	6.31	7.47
14	0.63	0.00	6.43	6.87
15	0.73	0.00	6.49	6.26
16	0.82	0.00	6.49	5.64
17	0.92	0.00	6.43	5.03
18	1.01	0.00	6.30	4.42

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
19	1.11	0.00	6.12	3.84
20	1.20	0.00	5.87	3.27
21	1.30	0.00	5.56	2.73
22	1.39	0.00	5.19	2.22
23	1.49	0.00	4.76	1.74
24	1.58	0.00	4.26	1.32
25	1.68	0.00	3.71	0.94
26	1.77	0.00	3.09	0.62
27	1.87	0.00	2.41	0.36
28	1.96	0.00	1.67	0.16
29	2.06	0.00	0.86	0.04
30	2.15	0.00	0.00	0.00

Combinazione n° 16 - SLEQ

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-1.35	0.00	0.00	0.00
2	-1.26	0.00	5.83	0.27
3	-1.16	0.00	11.72	1.10
4	-1.07	0.00	17.67	2.49
5	-0.97	0.00	23.69	4.44
6	-0.88	0.00	29.76	6.97
7	-0.78	0.00	35.90	10.07
8	-0.69	0.00	42.09	13.75
9	-0.59	0.00	48.35	18.02
10	-0.50	0.00	54.67	22.88
11	0.35	0.00	5.88	8.63
12	0.44	0.00	6.13	8.06
13	0.54	0.00	6.31	7.47
14	0.63	0.00	6.43	6.87
15	0.73	0.00	6.49	6.26
16	0.82	0.00	6.49	5.64
17	0.92	0.00	6.43	5.03
18	1.01	0.00	6.30	4.42
19	1.11	0.00	6.12	3.84
20	1.20	0.00	5.87	3.27
21	1.30	0.00	5.56	2.73
22	1.39	0.00	5.19	2.22
23	1.49	0.00	4.76	1.74
24	1.58	0.00	4.26	1.32
25	1.68	0.00	3.71	0.94
26	1.77	0.00	3.09	0.62
27	1.87	0.00	2.41	0.36
28	1.96	0.00	1.67	0.16
29	2.06	0.00	0.86	0.04
30	2.15	0.00	0.00	0.00

Verifiche strutturali*Verifiche a flessione*Elementi calcolati a trave

## Simbologia adottata

n°	indice sezione
Y	ordinata sezione espressa in [m]
B	larghezza sezione espressa in [cm]
H	altezza sezione espressa in [cm]

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

Afi	area ferri inferiori espresso in [cmq]
Afs	area ferri superiori espressa in [cmq]
M	momento agente espressa in [kNm]
N	sforzio normale agente espressa in [kN]
Mu	momento ultimi espresso in [kNm]
Nu	sforzio normale ultimo espressa in [kN]
FS	fattore di sicurezza (rapporto tra sollecitazione ultima e sollecitazione agente)

**Paramento**Combinazione n° 1 - STR (A1-M1-R3)

n°	Y [m]	B [cm]	H [cm]	Afi [cmq]	Afs [cmq]	M [kNm]	N [kN]	Mu [kNm]	Nu [kN]	FS
1	0.00	100	50	10.05	10.05	0.38	3.06	0.00	0.00	1000.000
2	-0.10	100	51	10.05	10.05	0.39	4.30	0.00	0.00	1000.000
3	-0.20	100	52	10.05	10.05	0.40	5.56	0.00	0.00	1000.000
4	-0.30	100	53	10.05	10.05	0.44	6.84	0.00	0.00	1000.000
5	-0.40	100	53	10.05	10.05	0.49	8.14	0.00	0.00	1000.000
6	-0.50	100	54	10.05	10.05	0.58	9.46	514.72	8396.53	887.395
7	-0.60	100	55	10.05	10.05	0.70	10.81	548.09	8415.56	778.799
8	-0.70	100	56	10.05	10.05	0.87	12.17	596.68	8347.38	685.836
9	-0.80	100	57	10.05	10.05	1.08	13.56	656.96	8209.54	605.521
10	-0.90	100	58	10.05	10.05	1.35	14.97	723.74	7994.84	534.200
11	-1.00	100	59	10.05	10.05	1.69	16.40	795.50	7736.94	471.891
12	-1.10	100	60	10.05	10.05	2.08	17.85	867.58	7429.59	416.301
13	-1.20	100	60	10.05	10.05	2.56	19.32	937.50	7086.65	366.819
14	-1.30	100	61	10.05	10.05	3.11	20.81	1004.78	6730.48	323.376
15	-1.40	100	62	10.05	10.05	3.74	22.33	1065.01	6350.80	284.424
16	-1.50	100	63	10.05	10.05	4.47	23.87	1115.37	5949.94	249.312
17	-1.60	100	64	10.05	10.05	5.30	25.42	1153.23	5530.51	217.533
18	-1.70	100	65	10.05	10.05	6.23	27.00	1164.88	5046.31	186.876
19	-1.80	100	66	10.05	10.05	7.28	28.60	1155.23	4541.56	158.769
20	-1.90	100	67	10.05	10.05	8.44	30.23	1128.12	4042.40	133.733
21	-2.00	100	67	10.05	10.05	9.72	31.87	1086.71	3563.95	111.822
22	-2.10	100	68	10.05	10.05	11.13	33.54	1037.54	3126.33	93.220
23	-2.20	100	69	10.05	10.05	12.68	35.22	977.84	2716.98	77.134
24	-2.30	100	70	10.05	10.05	14.37	36.93	913.11	2347.46	63.561
25	-2.40	100	71	10.05	10.05	16.20	38.66	855.25	2040.80	52.785
26	-2.50	100	72	10.05	10.05	18.19	40.41	781.28	1735.52	42.944
27	-2.60	100	73	10.05	10.05	20.34	42.19	724.38	1502.13	35.607
28	-2.70	100	74	10.05	10.05	22.66	43.98	681.75	1323.15	30.084
29	-2.80	100	74	10.05	10.05	25.15	45.80	648.96	1181.69	25.803
30	-2.90	100	75	10.05	10.05	27.82	47.63	623.27	1067.20	22.404
31	-3.00	100	76	10.05	10.05	30.67	49.49	602.84	972.72	19.654
32	-3.10	100	77	10.05	10.05	33.72	51.37	581.17	885.49	17.237
33	-3.20	100	78	10.05	10.05	36.96	53.27	562.24	810.43	15.213
34	-3.30	100	79	10.05	10.05	40.40	55.20	546.72	746.88	13.531
35	-3.40	100	80	10.05	10.05	44.06	57.14	533.90	692.42	12.118
36	-3.50	100	81	10.05	10.05	47.93	59.11	523.25	645.26	10.917
37	-3.60	100	81	10.05	10.05	52.02	61.09	514.37	604.05	9.887
38	-3.70	100	82	10.05	10.05	56.35	63.10	506.94	567.74	8.997
39	-3.80	100	83	10.05	10.05	60.90	65.13	500.74	535.54	8.222
40	-3.90	100	84	10.05	10.05	65.70	67.19	495.57	506.78	7.543
41	-4.00	100	85	10.05	10.05	70.74	69.26	491.32	481.01	6.945

Combinazione n° 2 - STR (A1-M1-R3) H + V

n°	Y [m]	B [cm]	H [cm]	Afi [cmq]	Afs [cmq]	M [kNm]	N [kN]	Mu [kNm]	Nu [kN]	FS
1	0.00	100	50	10.05	10.05	0.41	3.28	0.00	0.00	1000.000
2	-0.10	100	51	10.05	10.05	0.44	4.52	0.00	0.00	1000.000

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## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
3	-0.20	100	52	10.05	10.05	0.54	5.78	0.00	0.00	1000.000
4	-0.30	100	53	10.05	10.05	0.71	7.06	675.71	6689.30	947.892
5	-0.40	100	53	10.05	10.05	0.96	8.36	736.00	6396.24	765.287
6	-0.50	100	54	10.05	10.05	1.29	9.68	800.70	5994.36	619.231
7	-0.60	100	55	10.05	10.05	1.71	11.02	860.02	5538.23	502.373
8	-0.70	100	56	10.05	10.05	2.22	12.39	904.84	5042.06	406.965
9	-0.80	100	57	10.05	10.05	2.83	13.78	920.20	4475.35	324.863
10	-0.90	100	58	10.05	10.05	3.54	15.18	908.68	3892.63	256.359
11	-1.00	100	59	10.05	10.05	4.36	16.61	874.28	3328.09	200.319
12	-1.10	100	60	10.05	10.05	5.30	18.07	825.72	2815.90	155.876
13	-1.20	100	60	10.05	10.05	6.35	19.54	766.26	2358.25	120.704
14	-1.30	100	61	10.05	10.05	7.52	21.03	705.53	1972.57	93.791
15	-1.40	100	62	10.05	10.05	8.82	22.55	648.64	1657.26	73.503
16	-1.50	100	63	10.05	10.05	10.26	24.08	591.45	1388.27	57.643
17	-1.60	100	64	10.05	10.05	11.83	25.64	551.57	1195.09	46.607
18	-1.70	100	65	10.05	10.05	13.55	27.22	522.65	1049.82	38.565
19	-1.80	100	66	10.05	10.05	15.42	28.82	501.10	936.74	32.500
20	-1.90	100	67	10.05	10.05	17.44	30.45	484.73	846.29	27.797
21	-2.00	100	67	10.05	10.05	19.62	32.09	470.03	768.88	23.960
22	-2.10	100	68	10.05	10.05	21.96	33.76	456.18	701.21	20.773
23	-2.20	100	69	10.05	10.05	24.47	35.44	445.22	644.81	18.193
24	-2.30	100	70	10.05	10.05	27.16	37.15	436.48	597.09	16.072
25	-2.40	100	71	10.05	10.05	30.02	38.88	429.50	556.22	14.306
26	-2.50	100	72	10.05	10.05	33.07	40.63	423.93	520.84	12.818
27	-2.60	100	73	10.05	10.05	36.31	42.41	419.50	489.91	11.553
28	-2.70	100	74	10.05	10.05	39.74	44.20	416.01	462.66	10.468
29	-2.80	100	74	10.05	10.05	43.38	46.02	413.32	438.47	9.529
30	-2.90	100	75	10.05	10.05	47.21	47.85	411.29	416.86	8.711
31	-3.00	100	76	10.05	10.05	51.26	49.71	409.82	397.44	7.995
32	-3.10	100	77	10.05	10.05	55.52	51.59	408.84	379.90	7.364
33	-3.20	100	78	10.05	10.05	60.00	53.49	408.28	363.97	6.804
34	-3.30	100	79	10.05	10.05	64.71	55.42	408.07	349.46	6.306
35	-3.40	100	80	10.05	10.05	69.65	57.36	408.19	336.18	5.861
36	-3.50	100	81	10.05	10.05	74.82	59.33	408.59	323.98	5.461
37	-3.60	100	81	10.05	10.05	80.23	61.31	409.24	312.74	5.101
38	-3.70	100	82	10.05	10.05	85.89	63.32	410.10	302.35	4.775
39	-3.80	100	83	10.05	10.05	91.80	65.35	411.16	292.72	4.479
40	-3.90	100	84	10.05	10.05	97.96	67.40	412.40	283.76	4.210
41	-4.00	100	85	10.05	10.05	104.38	69.48	413.85	275.45	3.965

## Combinazione n° 3 - STR (A1-M1-R3)

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
1	0.00	100	50	10.05	10.05	0.38	3.06	0.00	0.00	1000.000
2	-0.10	100	51	10.05	10.05	0.46	4.30	0.00	0.00	1000.000
3	-0.20	100	52	10.05	10.05	0.69	5.56	0.00	0.00	1000.000
4	-0.30	100	53	10.05	10.05	1.07	6.84	794.61	5060.89	740.036
5	-0.40	100	53	10.05	10.05	1.63	8.14	814.77	4074.90	500.625
6	-0.50	100	54	10.05	10.05	2.35	9.46	755.48	3037.65	321.036
7	-0.60	100	55	10.05	10.05	3.26	10.81	655.95	2176.14	201.386
8	-0.70	100	56	10.05	10.05	4.35	12.17	558.06	1563.05	128.423
9	-0.80	100	57	10.05	10.05	5.62	13.56	471.90	1137.54	83.903
10	-0.90	100	58	10.05	10.05	7.10	14.97	424.52	894.84	59.791
11	-1.00	100	59	10.05	10.05	8.78	16.40	395.53	738.72	45.056
12	-1.10	100	60	10.05	10.05	10.67	17.85	374.56	626.70	35.116
13	-1.20	100	60	10.05	10.05	12.77	19.32	357.99	541.60	28.035
14	-1.30	100	61	10.05	10.05	15.09	20.81	346.40	477.65	22.949
15	-1.40	100	62	10.05	10.05	17.65	22.33	338.17	427.89	19.163
16	-1.50	100	63	10.05	10.05	20.43	23.87	332.29	388.11	16.263
17	-1.60	100	64	10.05	10.05	23.46	25.42	328.13	355.61	13.987
18	-1.70	100	65	10.05	10.05	26.73	27.00	325.27	328.57	12.168
19	-1.80	100	66	10.05	10.05	30.26	28.60	323.40	305.73	10.688
20	-1.90	100	67	10.05	10.05	34.04	30.23	322.31	286.20	9.468
21	-2.00	100	67	10.05	10.05	38.09	31.87	321.84	269.30	8.450
22	-2.10	100	68	10.05	10.05	42.41	33.54	321.89	254.54	7.590
23	-2.20	100	69	10.05	10.05	47.01	35.22	322.35	241.55	6.858

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
24	-2.30	100	70	10.05	10.05	51.89	36.93	323.16	230.02	6.228
25	-2.40	100	71	10.05	10.05	57.06	38.66	324.26	219.72	5.683
26	-2.50	100	72	10.05	10.05	62.52	40.41	325.61	210.47	5.208
27	-2.60	100	73	10.05	10.05	68.29	42.19	327.18	202.11	4.791
28	-2.70	100	74	10.05	10.05	74.37	43.98	328.93	194.53	4.423
29	-2.80	100	74	10.05	10.05	80.76	45.80	330.83	187.61	4.097
30	-2.90	100	75	10.05	10.05	87.47	47.63	332.88	181.28	3.806
31	-3.00	100	76	10.05	10.05	94.51	49.49	335.05	175.46	3.545
32	-3.10	100	77	10.05	10.05	101.88	51.37	337.33	170.10	3.311
33	-3.20	100	78	10.05	10.05	109.59	53.27	339.70	165.14	3.100
34	-3.30	100	79	10.05	10.05	117.65	55.20	342.16	160.53	2.908
35	-3.40	100	80	10.05	10.05	126.05	57.14	344.70	156.26	2.735
36	-3.50	100	81	10.05	10.05	134.82	59.11	347.30	152.26	2.576
37	-3.60	100	81	10.05	10.05	143.95	61.09	349.97	148.54	2.431
38	-3.70	100	82	10.05	10.05	153.45	63.10	352.70	145.04	2.298
39	-3.80	100	83	10.05	10.05	163.32	65.13	355.47	141.76	2.176
40	-3.90	100	84	10.05	10.05	173.58	67.19	358.30	138.68	2.064
41	-4.00	100	85	10.05	10.05	184.23	69.26	361.21	135.79	1.961

Combinazione n° 4 - STR (A1-M1-R3) H - V

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
1	0.00	100	50	10.05	10.05	0.38	3.06	0.00	0.00	1000.000
2	-0.10	100	51	10.05	10.05	0.41	4.30	0.00	0.00	1000.000
3	-0.20	100	52	10.05	10.05	0.49	5.56	0.00	0.00	1000.000
4	-0.30	100	53	10.05	10.05	0.63	6.84	0.00	0.00	1000.000
5	-0.40	100	53	10.05	10.05	0.83	8.14	696.57	6799.24	835.326
6	-0.50	100	54	10.05	10.05	1.11	9.46	759.76	6484.32	685.302
7	-0.60	100	55	10.05	10.05	1.46	10.81	823.86	6104.36	564.914
8	-0.70	100	56	10.05	10.05	1.89	12.17	881.68	5683.35	466.954
9	-0.80	100	57	10.05	10.05	2.40	13.56	927.72	5234.06	386.055
10	-0.90	100	58	10.05	10.05	3.01	14.97	951.64	4734.43	316.346
11	-1.00	100	59	10.05	10.05	3.71	16.40	948.85	4194.73	255.844
12	-1.10	100	60	10.05	10.05	4.51	17.85	926.49	3666.56	205.448
13	-1.20	100	60	10.05	10.05	5.42	19.32	888.09	3167.85	163.974
14	-1.30	100	61	10.05	10.05	6.43	20.81	840.15	2718.21	130.600
15	-1.40	100	62	10.05	10.05	7.57	22.33	790.10	2331.83	104.433
16	-1.50	100	63	10.05	10.05	8.82	23.87	730.16	1975.89	82.793
17	-1.60	100	64	10.05	10.05	10.20	25.42	675.25	1683.33	66.211
18	-1.70	100	65	10.05	10.05	11.71	27.00	620.65	1431.38	53.007
19	-1.80	100	66	10.05	10.05	13.36	28.60	581.46	1245.41	43.539
20	-1.90	100	67	10.05	10.05	15.14	30.23	552.38	1102.66	36.479
21	-2.00	100	67	10.05	10.05	17.08	31.87	530.29	989.74	31.054
22	-2.10	100	68	10.05	10.05	19.16	33.54	513.22	898.26	26.784
23	-2.20	100	69	10.05	10.05	21.40	35.22	498.95	821.15	23.312
24	-2.30	100	70	10.05	10.05	23.81	36.93	483.92	750.75	20.328
25	-2.40	100	71	10.05	10.05	26.38	38.66	471.86	691.68	17.890
26	-2.50	100	72	10.05	10.05	29.12	40.41	462.12	641.42	15.871
27	-2.60	100	73	10.05	10.05	32.03	42.19	454.22	598.17	14.179
28	-2.70	100	74	10.05	10.05	35.13	43.98	447.81	560.57	12.746
29	-2.80	100	74	10.05	10.05	38.42	45.80	442.62	527.58	11.520
30	-2.90	100	75	10.05	10.05	41.90	47.63	438.44	498.43	10.464
31	-3.00	100	76	10.05	10.05	45.58	49.49	435.10	472.48	9.547
32	-3.10	100	77	10.05	10.05	49.45	51.37	432.48	449.25	8.745
33	-3.20	100	78	10.05	10.05	53.54	53.27	430.47	428.32	8.040
34	-3.30	100	79	10.05	10.05	57.84	55.20	428.98	409.39	7.417
35	-3.40	100	80	10.05	10.05	62.35	57.14	427.95	392.17	6.863
36	-3.50	100	81	10.05	10.05	67.09	59.11	427.32	376.46	6.369
37	-3.60	100	81	10.05	10.05	72.06	61.09	427.03	362.06	5.926
38	-3.70	100	82	10.05	10.05	77.26	63.10	427.06	348.82	5.528
39	-3.80	100	83	10.05	10.05	82.69	65.13	427.35	336.60	5.168
40	-3.90	100	84	10.05	10.05	88.37	67.19	427.89	325.30	4.842
41	-4.00	100	85	10.05	10.05	94.30	69.26	428.69	314.85	4.546

Combinazione n° 13 - ECC



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## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

n°	Y [m]	B [cm]	H [cm]	Afi [cmq]	Afs [cmq]	M [kNm]	N [kN]	Mu [kNm]	Nu [kN]	FS
1	0.00	100	50	10.05	10.05	25.38	3.06	207.19	25.01	8.162
2	-0.10	100	51	10.05	10.05	27.89	4.30	212.90	32.84	7.635
3	-0.20	100	52	10.05	10.05	30.40	5.56	218.52	39.96	7.188
4	-0.30	100	53	10.05	10.05	32.93	6.84	224.07	46.54	6.805
5	-0.40	100	53	10.05	10.05	35.48	8.14	229.58	52.67	6.471
6	-0.50	100	54	10.05	10.05	38.05	9.46	235.05	58.45	6.177
7	-0.60	100	55	10.05	10.05	40.65	10.81	240.50	63.93	5.916
8	-0.70	100	56	10.05	10.05	43.29	12.17	245.92	69.14	5.681
9	-0.80	100	57	10.05	10.05	45.96	13.56	251.34	74.14	5.468
10	-0.90	100	58	10.05	10.05	48.68	14.97	256.75	78.93	5.274
11	-1.00	100	59	10.05	10.05	51.45	16.40	262.14	83.54	5.095
12	-1.10	100	60	10.05	10.05	54.27	17.85	267.54	87.98	4.930
13	-1.20	100	60	10.05	10.05	57.15	19.32	272.93	92.26	4.776
14	-1.30	100	61	10.05	10.05	60.09	20.81	278.31	96.40	4.631
15	-1.40	100	62	10.05	10.05	63.10	22.33	283.69	100.39	4.496
16	-1.50	100	63	10.05	10.05	66.18	23.87	289.06	104.24	4.368
17	-1.60	100	64	10.05	10.05	69.34	25.42	294.42	107.95	4.246
18	-1.70	100	65	10.05	10.05	72.58	27.00	299.78	111.54	4.130
19	-1.80	100	66	10.05	10.05	75.91	28.60	305.13	114.99	4.020
20	-1.90	100	67	10.05	10.05	79.33	30.23	310.47	118.31	3.914
21	-2.00	100	67	10.05	10.05	82.84	31.87	315.80	121.50	3.812
22	-2.10	100	68	10.05	10.05	86.46	33.54	321.12	124.56	3.714
23	-2.20	100	69	10.05	10.05	90.18	35.22	326.45	127.51	3.620
24	-2.30	100	70	10.05	10.05	94.01	36.93	331.83	130.36	3.530
25	-2.40	100	71	10.05	10.05	97.96	38.66	337.20	133.09	3.442
26	-2.50	100	72	10.05	10.05	102.03	40.41	342.56	135.69	3.358
27	-2.60	100	73	10.05	10.05	106.22	42.19	347.90	138.18	3.275
28	-2.70	100	74	10.05	10.05	110.54	43.98	353.23	140.54	3.195
29	-2.80	100	74	10.05	10.05	115.00	45.80	358.54	142.78	3.118
30	-2.90	100	75	10.05	10.05	119.60	47.63	363.84	144.91	3.042
31	-3.00	100	76	10.05	10.05	124.34	49.49	369.11	146.93	2.969
32	-3.10	100	77	10.05	10.05	129.23	51.37	374.37	148.83	2.897
33	-3.20	100	78	10.05	10.05	134.27	53.27	379.60	150.61	2.827
34	-3.30	100	79	10.05	10.05	139.47	55.20	384.82	152.29	2.759
35	-3.40	100	80	10.05	10.05	144.84	57.14	390.01	153.87	2.693
36	-3.50	100	81	10.05	10.05	150.37	59.11	395.19	155.34	2.628
37	-3.60	100	81	10.05	10.05	156.08	61.09	400.34	156.71	2.565
38	-3.70	100	82	10.05	10.05	161.96	63.10	405.47	157.98	2.504
39	-3.80	100	83	10.05	10.05	168.03	65.13	410.58	159.16	2.444
40	-3.90	100	84	10.05	10.05	174.28	67.19	415.67	160.24	2.385
41	-4.00	100	85	10.05	10.05	180.73	69.26	420.73	161.23	2.328

## Mensola valle

## Combinazione n° 1 - STR (A1-M1-R3)

n°	Y [m]	B [cm]	H [cm]	Afi [cmq]	Afs [cmq]	M [kNm]	N [kN]	Mu [kNm]	Nu [kN]	FS
1	-0.75	100	50	8.04	8.04	0.00	0.00	0.00	0.00	1000.000
2	-0.67	100	50	8.04	8.04	-0.04	0.00	0.00	0.00	1000.000
3	-0.58	100	50	8.04	8.04	-0.17	0.00	-140.19	0.00	823.421
4	-0.50	100	50	8.04	8.04	-0.38	0.00	-140.19	0.00	365.965

## Combinazione n° 2 - STR (A1-M1-R3) H + V

n°	Y [m]	B [cm]	H [cm]	Afi [cmq]	Afs [cmq]	M [kNm]	N [kN]	Mu [kNm]	Nu [kN]	FS
1	-0.75	100	50	8.04	8.04	0.00	0.00	0.00	0.00	1000.000
2	-0.67	100	50	8.04	8.04	-0.05	0.00	0.00	0.00	1000.000
3	-0.58	100	50	8.04	8.04	-0.18	0.00	-140.19	0.00	768.661
4	-0.50	100	50	8.04	8.04	-0.41	0.00	-140.19	0.00	341.627

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**Combinazione n° 3 - STR (A1-M1-R3)

n°	Y [m]	B [cm]	H [cm]	Afi [cmq]	Afs [cmq]	M [kNm]	N [kN]	Mu [kNm]	Nu [kN]	FS
1	-0.75	100	50	8.04	8.04	0.00	0.00	0.00	0.00	1000.000
2	-0.67	100	50	8.04	8.04	-0.04	0.00	0.00	0.00	1000.000
3	-0.58	100	50	8.04	8.04	-0.17	0.00	-140.19	0.00	823.421
4	-0.50	100	50	8.04	8.04	-0.38	0.00	-140.19	0.00	365.965

Combinazione n° 4 - STR (A1-M1-R3) H - V

n°	Y [m]	B [cm]	H [cm]	Afi [cmq]	Afs [cmq]	M [kNm]	N [kN]	Mu [kNm]	Nu [kN]	FS
1	-0.75	100	50	8.04	8.04	0.00	0.00	0.00	0.00	1000.000
2	-0.67	100	50	8.04	8.04	-0.04	0.00	0.00	0.00	1000.000
3	-0.58	100	50	8.04	8.04	-0.17	0.00	-140.19	0.00	823.421
4	-0.50	100	50	8.04	8.04	-0.38	0.00	-140.19	0.00	365.965

Combinazione n° 13 - ECC

n°	Y [m]	B [cm]	H [cm]	Afi [cmq]	Afs [cmq]	M [kNm]	N [kN]	Mu [kNm]	Nu [kN]	FS
1	-0.75	100	50	8.04	8.04	0.00	0.00	0.00	0.00	1000.000
2	-0.67	100	50	8.04	8.04	-0.04	0.00	0.00	0.00	1000.000
3	-0.58	100	50	8.04	8.04	-0.17	0.00	-162.29	0.00	953.202
4	-0.50	100	50	8.04	8.04	-0.38	0.00	-162.29	0.00	423.645

**Fondazione**Combinazione n° 1 - STR (A1-M1-R3)

n°	Y [m]	B [cm]	H [cm]	Afi [cmq]	Afs [cmq]	M [kNm]	N [kN]	Mu [kNm]	Nu [kN]	FS
1	-1.35	100	85	18.10	18.10	0.00	0.00	0.00	0.00	1000.000
2	-1.26	100	85	18.10	18.10	0.31	0.00	0.00	0.00	1000.000
3	-1.16	100	85	18.10	18.10	1.25	0.00	553.35	0.00	444.320
4	-1.07	100	85	18.10	18.10	2.81	0.00	553.35	0.00	197.187
5	-0.97	100	85	18.10	18.10	5.00	0.00	553.35	0.00	110.756
6	-0.88	100	85	18.10	18.10	7.82	0.00	553.35	0.00	70.781
7	-0.78	100	85	18.10	18.10	11.27	0.00	553.35	0.00	49.082
8	-0.69	100	85	18.10	18.10	15.37	0.00	553.35	0.00	36.008
9	-0.59	100	85	18.10	18.10	20.10	0.00	553.35	0.00	27.529
10	-0.50	100	85	18.10	18.10	25.48	0.00	553.35	0.00	21.719
11	0.35	100	85	18.10	18.10	-32.06	0.00	-553.35	0.00	17.258
12	0.44	100	85	18.10	18.10	-28.63	0.00	-553.35	0.00	19.329
13	0.54	100	85	18.10	18.10	-25.40	0.00	-553.35	0.00	21.783
14	0.63	100	85	18.10	18.10	-22.38	0.00	-553.35	0.00	24.720
15	0.73	100	85	18.10	18.10	-19.57	0.00	-553.35	0.00	28.275
16	0.82	100	85	18.10	18.10	-16.96	0.00	-553.35	0.00	32.630
17	0.92	100	85	18.10	18.10	-14.54	0.00	-553.35	0.00	38.046
18	1.01	100	85	18.10	18.10	-12.33	0.00	-553.35	0.00	44.890
19	1.11	100	85	18.10	18.10	-10.30	0.00	-553.35	0.00	53.712
20	1.20	100	85	18.10	18.10	-8.47	0.00	-553.35	0.00	65.343
21	1.30	100	85	18.10	18.10	-6.82	0.00	-553.35	0.00	81.111
22	1.39	100	85	18.10	18.10	-5.36	0.00	-553.35	0.00	103.219
23	1.49	100	85	18.10	18.10	-4.08	0.00	-553.35	0.00	135.560
24	1.58	100	85	18.10	18.10	-2.98	0.00	-553.35	0.00	185.536
25	1.68	100	85	18.10	18.10	-2.06	0.00	-553.35	0.00	268.661
26	1.77	100	85	18.10	18.10	-1.31	0.00	-553.35	0.00	422.136

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	Y [m]	B [cm]	H [cm]	Afi [cmq]	Afs [cmq]	M [kNm]	N [kN]	Mu [kNm]	Nu [kN]	FS
27	1.87	100	85	18.10	18.10	-0.73	0.00	-553.35	0.00	754.696
28	1.96	100	85	18.10	18.10	-0.32	0.00	0.00	0.00	1000.000
29	2.06	100	85	18.10	18.10	-0.08	0.00	0.00	0.00	1000.000
30	2.15	100	85	18.10	18.10	0.00	0.00	0.00	0.00	1000.000

Combinazione n° 2 - STR (A1-M1-R3) H + V

n°	Y [m]	B [cm]	H [cm]	Afi [cmq]	Afs [cmq]	M [kNm]	N [kN]	Mu [kNm]	Nu [kN]	FS
1	-1.35	100	85	18.10	18.10	0.00	0.00	0.00	0.00	1000.000
2	-1.26	100	85	18.10	18.10	0.61	0.00	553.35	0.00	910.905
3	-1.16	100	85	18.10	18.10	2.41	0.00	553.35	0.00	229.395
4	-1.07	100	85	18.10	18.10	5.39	0.00	553.35	0.00	102.706
5	-0.97	100	85	18.10	18.10	9.51	0.00	553.35	0.00	58.202
6	-0.88	100	85	18.10	18.10	14.75	0.00	553.35	0.00	37.528
7	-0.78	100	85	18.10	18.10	21.07	0.00	553.35	0.00	26.258
8	-0.69	100	85	18.10	18.10	28.47	0.00	553.35	0.00	19.438
9	-0.59	100	85	18.10	18.10	36.90	0.00	553.35	0.00	14.996
10	-0.50	100	85	18.10	18.10	46.34	0.00	553.35	0.00	11.941
11	0.35	100	85	18.10	18.10	-48.70	0.00	-553.35	0.00	11.363
12	0.44	100	85	18.10	18.10	-45.15	0.00	-553.35	0.00	12.256
13	0.54	100	85	18.10	18.10	-41.56	0.00	-553.35	0.00	13.314
14	0.63	100	85	18.10	18.10	-37.96	0.00	-553.35	0.00	14.578
15	0.73	100	85	18.10	18.10	-34.37	0.00	-553.35	0.00	16.102
16	0.82	100	85	18.10	18.10	-30.81	0.00	-553.35	0.00	17.960
17	0.92	100	85	18.10	18.10	-27.32	0.00	-553.35	0.00	20.255
18	1.01	100	85	18.10	18.10	-23.92	0.00	-553.35	0.00	23.133
19	1.11	100	85	18.10	18.10	-20.64	0.00	-553.35	0.00	26.811
20	1.20	100	85	18.10	18.10	-17.50	0.00	-553.35	0.00	31.614
21	1.30	100	85	18.10	18.10	-14.54	0.00	-553.35	0.00	38.060
22	1.39	100	85	18.10	18.10	-11.77	0.00	-553.35	0.00	47.002
23	1.49	100	85	18.10	18.10	-9.23	0.00	-553.35	0.00	59.938
24	1.58	100	85	18.10	18.10	-6.94	0.00	-553.35	0.00	79.696
25	1.68	100	85	18.10	18.10	-4.93	0.00	-553.35	0.00	112.168
26	1.77	100	85	18.10	18.10	-3.23	0.00	-553.35	0.00	171.389
27	1.87	100	85	18.10	18.10	-1.86	0.00	-553.35	0.00	298.104
28	1.96	100	85	18.10	18.10	-0.84	0.00	-553.35	0.00	656.539
29	2.06	100	85	18.10	18.10	-0.22	0.00	0.00	0.00	1000.000
30	2.15	100	85	18.10	18.10	0.00	0.00	0.00	0.00	1000.000

Combinazione n° 3 - STR (A1-M1-R3)

n°	Y [m]	B [cm]	H [cm]	Afi [cmq]	Afs [cmq]	M [kNm]	N [kN]	Mu [kNm]	Nu [kN]	FS
1	-1.35	100	85	18.10	18.10	0.00	0.00	0.00	0.00	1000.000
2	-1.26	100	85	18.10	18.10	0.50	0.00	0.00	0.00	1000.000
3	-1.16	100	85	18.10	18.10	2.00	0.00	553.35	0.00	276.871
4	-1.07	100	85	18.10	18.10	4.50	0.00	553.35	0.00	122.973
5	-0.97	100	85	18.10	18.10	8.00	0.00	553.35	0.00	69.126
6	-0.88	100	85	18.10	18.10	12.52	0.00	553.35	0.00	44.212
7	-0.78	100	85	18.10	18.10	18.03	0.00	553.35	0.00	30.682
8	-0.69	100	85	18.10	18.10	24.56	0.00	553.35	0.00	22.527
9	-0.59	100	85	18.10	18.10	32.10	0.00	553.35	0.00	17.236
10	-0.50	100	85	18.10	18.10	40.66	0.00	553.35	0.00	13.610
11	0.35	100	85	18.10	18.10	-60.85	0.00	-553.35	0.00	9.094
12	0.44	100	85	18.10	18.10	-54.51	0.00	-553.35	0.00	10.152
13	0.54	100	85	18.10	18.10	-48.52	0.00	-553.35	0.00	11.404
14	0.63	100	85	18.10	18.10	-42.90	0.00	-553.35	0.00	12.900
15	0.73	100	85	18.10	18.10	-37.63	0.00	-553.35	0.00	14.707
16	0.82	100	85	18.10	18.10	-32.71	0.00	-553.35	0.00	16.916
17	0.92	100	85	18.10	18.10	-28.15	0.00	-553.35	0.00	19.658
18	1.01	100	85	18.10	18.10	-23.94	0.00	-553.35	0.00	23.117
19	1.11	100	85	18.10	18.10	-20.07	0.00	-553.35	0.00	27.566
20	1.20	100	85	18.10	18.10	-16.56	0.00	-553.35	0.00	33.422
21	1.30	100	85	18.10	18.10	-13.38	0.00	-553.35	0.00	41.345

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	Y [m]	B [cm]	H [cm]	Afi [cmq]	Afs [cmq]	M [kNm]	N [kN]	Mu [kNm]	Nu [kN]	FS
22	1.39	100	85	18.10	18.10	-10.55	0.00	-553.35	0.00	52.432
23	1.49	100	85	18.10	18.10	-8.06	0.00	-553.35	0.00	68.621
24	1.58	100	85	18.10	18.10	-5.91	0.00	-553.35	0.00	93.590
25	1.68	100	85	18.10	18.10	-4.10	0.00	-553.35	0.00	135.043
26	1.77	100	85	18.10	18.10	-2.62	0.00	-553.35	0.00	211.434
27	1.87	100	85	18.10	18.10	-1.47	0.00	-553.35	0.00	376.649
28	1.96	100	85	18.10	18.10	-0.65	0.00	-553.35	0.00	849.189
29	2.06	100	85	18.10	18.10	-0.16	0.00	0.00	0.00	1000.000
30	2.15	100	85	18.10	18.10	0.00	0.00	0.00	0.00	1000.000

Combinazione n° 4 - STR (A1-M1-R3) H - V

n°	Y [m]	B [cm]	H [cm]	Afi [cmq]	Afs [cmq]	M [kNm]	N [kN]	Mu [kNm]	Nu [kN]	FS
1	-1.35	100	85	18.10	18.10	0.00	0.00	0.00	0.00	1000.000
2	-1.26	100	85	18.10	18.10	0.55	0.00	0.00	0.00	1000.000
3	-1.16	100	85	18.10	18.10	2.18	0.00	553.35	0.00	253.764
4	-1.07	100	85	18.10	18.10	4.87	0.00	553.35	0.00	113.701
5	-0.97	100	85	18.10	18.10	8.58	0.00	553.35	0.00	64.481
6	-0.88	100	85	18.10	18.10	13.30	0.00	553.35	0.00	41.609
7	-0.78	100	85	18.10	18.10	18.99	0.00	553.35	0.00	29.136
8	-0.69	100	85	18.10	18.10	25.64	0.00	553.35	0.00	21.586
9	-0.59	100	85	18.10	18.10	33.20	0.00	553.35	0.00	16.667
10	-0.50	100	85	18.10	18.10	41.66	0.00	553.35	0.00	13.281
11	0.35	100	85	18.10	18.10	-69.01	0.00	-553.35	0.00	8.018
12	0.44	100	85	18.10	18.10	-63.38	0.00	-553.35	0.00	8.731
13	0.54	100	85	18.10	18.10	-57.81	0.00	-553.35	0.00	9.572
14	0.63	100	85	18.10	18.10	-52.35	0.00	-553.35	0.00	10.571
15	0.73	100	85	18.10	18.10	-47.01	0.00	-553.35	0.00	11.772
16	0.82	100	85	18.10	18.10	-41.82	0.00	-553.35	0.00	13.233
17	0.92	100	85	18.10	18.10	-36.81	0.00	-553.35	0.00	15.034
18	1.01	100	85	18.10	18.10	-32.00	0.00	-553.35	0.00	17.292
19	1.11	100	85	18.10	18.10	-27.43	0.00	-553.35	0.00	20.176
20	1.20	100	85	18.10	18.10	-23.11	0.00	-553.35	0.00	23.944
21	1.30	100	85	18.10	18.10	-19.08	0.00	-553.35	0.00	29.003
22	1.39	100	85	18.10	18.10	-15.36	0.00	-553.35	0.00	36.029
23	1.49	100	85	18.10	18.10	-11.98	0.00	-553.35	0.00	46.204
24	1.58	100	85	18.10	18.10	-8.96	0.00	-553.35	0.00	61.767
25	1.68	100	85	18.10	18.10	-6.33	0.00	-553.35	0.00	87.386
26	1.77	100	85	18.10	18.10	-4.12	0.00	-553.35	0.00	134.190
27	1.87	100	85	18.10	18.10	-2.36	0.00	-553.35	0.00	234.522
28	1.96	100	85	18.10	18.10	-1.07	0.00	-553.35	0.00	518.893
29	2.06	100	85	18.10	18.10	-0.27	0.00	0.00	0.00	1000.000
30	2.15	100	85	18.10	18.10	0.00	0.00	0.00	0.00	1000.000

Combinazione n° 13 - ECC

n°	Y [m]	B [cm]	H [cm]	Afi [cmq]	Afs [cmq]	M [kNm]	N [kN]	Mu [kNm]	Nu [kN]	FS
1	-1.35	100	85	18.10	18.10	0.00	0.00	0.00	0.00	1000.000
2	-1.26	100	85	18.10	18.10	0.59	0.00	0.00	0.00	1000.000
3	-1.16	100	85	18.10	18.10	2.34	0.00	638.85	0.00	273.596
4	-1.07	100	85	18.10	18.10	5.21	0.00	638.85	0.00	122.603
5	-0.97	100	85	18.10	18.10	9.19	0.00	638.85	0.00	69.538
6	-0.88	100	85	18.10	18.10	14.24	0.00	638.85	0.00	44.878
7	-0.78	100	85	18.10	18.10	20.33	0.00	638.85	0.00	31.430
8	-0.69	100	85	18.10	18.10	27.43	0.00	638.85	0.00	23.288
9	-0.59	100	85	18.10	18.10	35.52	0.00	638.85	0.00	17.984
10	-0.50	100	85	18.10	18.10	44.57	0.00	638.85	0.00	14.333
11	0.35	100	85	18.10	18.10	-67.63	0.00	-638.85	0.00	9.447
12	0.44	100	85	18.10	18.10	-62.26	0.00	-638.85	0.00	10.261
13	0.54	100	85	18.10	18.10	-56.93	0.00	-638.85	0.00	11.222
14	0.63	100	85	18.10	18.10	-51.66	0.00	-638.85	0.00	12.365
15	0.73	100	85	18.10	18.10	-46.49	0.00	-638.85	0.00	13.740
16	0.82	100	85	18.10	18.10	-41.45	0.00	-638.85	0.00	15.413

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
17	0.92	100	85	18.10	18.10	-36.55	0.00	-638.85	0.00	17.477
18	1.01	100	85	18.10	18.10	-31.84	0.00	-638.85	0.00	20.063
19	1.11	100	85	18.10	18.10	-27.34	0.00	-638.85	0.00	23.367
20	1.20	100	85	18.10	18.10	-23.08	0.00	-638.85	0.00	27.683
21	1.30	100	85	18.10	18.10	-19.08	0.00	-638.85	0.00	33.476
22	1.39	100	85	18.10	18.10	-15.39	0.00	-638.85	0.00	41.517
23	1.49	100	85	18.10	18.10	-12.02	0.00	-638.85	0.00	53.159
24	1.58	100	85	18.10	18.10	-9.00	0.00	-638.85	0.00	70.959
25	1.68	100	85	18.10	18.10	-6.37	0.00	-638.85	0.00	100.246
26	1.77	100	85	18.10	18.10	-4.16	0.00	-638.85	0.00	153.724
27	1.87	100	85	18.10	18.10	-2.38	0.00	-638.85	0.00	268.301
28	1.96	100	85	18.10	18.10	-1.08	0.00	-638.85	0.00	592.860
29	2.06	100	85	18.10	18.10	-0.27	0.00	0.00	0.00	1000.000
30	2.15	100	85	18.10	18.10	0.00	0.00	0.00	0.00	1000.000

**Verifiche a taglio****Simbologia adottata**

Is	indice sezione
Y	ordinata sezione espressa in [m]
B	larghezza sezione espressa in [cm]
H	altezza sezione espressa in [cm]
A <sub>sw</sub>	area ferri a taglio espresso in [cmq]
cotgθ	inclinazione delle bielle compresse, θ inclinazione dei puntoni di calcestruzzo
V <sub>Rcd</sub>	resistenza di progetto a 'taglio compressione' espressa in [kN]
V <sub>Rsd</sub>	resistenza di progetto a 'taglio trazione' espressa in [kN]
V <sub>Rd</sub>	resistenza di progetto a taglio espresso in [kN]. Per elementi con armature trasversali resistenti al taglio (A <sub>sw</sub> >0.0) V <sub>Rd</sub> =min(V <sub>Rcd</sub> , V <sub>Rsd</sub> ).
T	taglio agente espressa in [kN]
FS	fattore di sicurezza (rapporto tra sollecitazione resistente e sollecitazione agente)

**Paramento****Combinazione n° 1 - STR (A1-M1-R3)**

n°	Y	B	H	A <sub>sw</sub>	s	cotθ	V <sub>Rcd</sub>	V <sub>Rsd</sub>	V <sub>Rd</sub>	T	FS
	[m]	[cm]	[cm]	[cmq]	[cm]		[kN]	[kN]	[kN]	[kN]	
1	0.00	100	50	0.00	0.00	--	0.00	0.00	225.46	0.00	100.000
2	-0.10	100	51	0.00	0.00	--	0.00	0.00	227.62	0.03	7372.414
3	-0.20	100	52	0.00	0.00	--	0.00	0.00	229.78	0.12	1860.556
4	-0.30	100	53	0.00	0.00	--	0.00	0.00	231.92	0.28	836.917
5	-0.40	100	53	0.00	0.00	--	0.00	0.00	234.06	0.49	476.730
6	-0.50	100	54	0.00	0.00	--	0.00	0.00	236.18	0.77	308.562
7	-0.60	100	55	0.00	0.00	--	0.00	0.00	238.29	1.10	216.459
8	-0.70	100	56	0.00	0.00	--	0.00	0.00	240.40	1.50	160.552
9	-0.80	100	57	0.00	0.00	--	0.00	0.00	242.49	1.95	124.052
10	-0.90	100	58	0.00	0.00	--	0.00	0.00	244.57	2.47	98.892
11	-1.00	100	59	0.00	0.00	--	0.00	0.00	246.65	3.05	80.801
12	-1.10	100	60	0.00	0.00	--	0.00	0.00	248.72	3.69	67.349
13	-1.20	100	60	0.00	0.00	--	0.00	0.00	250.78	4.39	57.068
14	-1.30	100	61	0.00	0.00	--	0.00	0.00	252.83	5.16	49.029
15	-1.40	100	62	0.00	0.00	--	0.00	0.00	254.87	5.98	42.620
16	-1.50	100	63	0.00	0.00	--	0.00	0.00	256.91	6.86	37.425
17	-1.60	100	64	0.00	0.00	--	0.00	0.00	258.93	7.81	33.155
18	-1.70	100	65	0.00	0.00	--	0.00	0.00	260.96	8.82	29.600
19	-1.80	100	66	0.00	0.00	--	0.00	0.00	262.97	9.88	26.607

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## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
20	-1.90	100	67	0.00	0.00	--	0.00	0.00	264.98	11.01	24.063
21	-2.00	100	67	0.00	0.00	--	0.00	0.00	266.98	12.20	21.882
22	-2.10	100	68	0.00	0.00	--	0.00	0.00	268.97	13.45	19.996
23	-2.20	100	69	0.00	0.00	--	0.00	0.00	270.96	14.76	18.355
24	-2.30	100	70	0.00	0.00	--	0.00	0.00	272.95	16.14	16.916
25	-2.40	100	71	0.00	0.00	--	0.00	0.00	274.92	17.57	15.649
26	-2.50	100	72	0.00	0.00	--	0.00	0.00	276.90	19.06	14.526
27	-2.60	100	73	0.00	0.00	--	0.00	0.00	278.86	20.62	13.525
28	-2.70	100	74	0.00	0.00	--	0.00	0.00	280.82	22.23	12.630
29	-2.80	100	74	0.00	0.00	--	0.00	0.00	282.78	23.91	11.826
30	-2.90	100	75	0.00	0.00	--	0.00	0.00	284.73	25.65	11.101
31	-3.00	100	76	0.00	0.00	--	0.00	0.00	286.68	27.45	10.444
32	-3.10	100	77	0.00	0.00	--	0.00	0.00	288.62	29.31	9.847
33	-3.20	100	78	0.00	0.00	--	0.00	0.00	290.56	31.23	9.304
34	-3.30	100	79	0.00	0.00	--	0.00	0.00	292.90	33.21	8.819
35	-3.40	100	80	0.00	0.00	--	0.00	0.00	295.66	35.26	8.386
36	-3.50	100	81	0.00	0.00	--	0.00	0.00	298.41	37.36	7.988
37	-3.60	100	81	0.00	0.00	--	0.00	0.00	301.17	39.52	7.620
38	-3.70	100	82	0.00	0.00	--	0.00	0.00	303.93	41.75	7.280
39	-3.80	100	83	0.00	0.00	--	0.00	0.00	306.68	44.04	6.964
40	-3.90	100	84	0.00	0.00	--	0.00	0.00	309.44	46.39	6.671
41	-4.00	100	85	0.00	0.00	--	0.00	0.00	312.20	48.80	6.398

## Combinazione n° 2 - STR (A1-M1-R3) H + V

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
1	0.00	100	50	0.00	0.00	--	0.00	0.00	225.49	0.00	100.000
2	-0.10	100	51	0.00	0.00	--	0.00	0.00	227.65	0.59	384.294
3	-0.20	100	52	0.00	0.00	--	0.00	0.00	229.81	1.24	186.028
4	-0.30	100	53	0.00	0.00	--	0.00	0.00	231.95	1.93	120.291
5	-0.40	100	53	0.00	0.00	--	0.00	0.00	234.09	2.67	87.654
6	-0.50	100	54	0.00	0.00	--	0.00	0.00	236.21	3.46	68.218
7	-0.60	100	55	0.00	0.00	--	0.00	0.00	238.32	4.30	55.366
8	-0.70	100	56	0.00	0.00	--	0.00	0.00	240.43	5.20	46.267
9	-0.80	100	57	0.00	0.00	--	0.00	0.00	242.52	6.14	39.509
10	-0.90	100	58	0.00	0.00	--	0.00	0.00	244.60	7.13	34.305
11	-1.00	100	59	0.00	0.00	--	0.00	0.00	246.68	8.17	30.186
12	-1.10	100	60	0.00	0.00	--	0.00	0.00	248.75	9.26	26.851
13	-1.20	100	60	0.00	0.00	--	0.00	0.00	250.81	10.41	24.103
14	-1.30	100	61	0.00	0.00	--	0.00	0.00	252.86	11.60	21.803
15	-1.40	100	62	0.00	0.00	--	0.00	0.00	254.90	12.84	19.853
16	-1.50	100	63	0.00	0.00	--	0.00	0.00	256.94	14.13	18.183
17	-1.60	100	64	0.00	0.00	--	0.00	0.00	258.97	15.47	16.737
18	-1.70	100	65	0.00	0.00	--	0.00	0.00	260.99	16.86	15.476
19	-1.80	100	66	0.00	0.00	--	0.00	0.00	263.00	18.31	14.367
20	-1.90	100	67	0.00	0.00	--	0.00	0.00	265.01	19.80	13.386
21	-2.00	100	67	0.00	0.00	--	0.00	0.00	267.01	21.34	12.513
22	-2.10	100	68	0.00	0.00	--	0.00	0.00	269.01	22.93	11.731
23	-2.20	100	69	0.00	0.00	--	0.00	0.00	270.99	24.57	11.029
24	-2.30	100	70	0.00	0.00	--	0.00	0.00	272.98	26.26	10.394
25	-2.40	100	71	0.00	0.00	--	0.00	0.00	274.96	28.01	9.818
26	-2.50	100	72	0.00	0.00	--	0.00	0.00	276.93	29.80	9.294
27	-2.60	100	73	0.00	0.00	--	0.00	0.00	278.89	31.64	8.815
28	-2.70	100	74	0.00	0.00	--	0.00	0.00	280.85	33.53	8.376
29	-2.80	100	74	0.00	0.00	--	0.00	0.00	282.81	35.47	7.973
30	-2.90	100	75	0.00	0.00	--	0.00	0.00	284.76	37.46	7.601
31	-3.00	100	76	0.00	0.00	--	0.00	0.00	286.71	39.50	7.258
32	-3.10	100	77	0.00	0.00	--	0.00	0.00	288.65	41.59	6.940
33	-3.20	100	78	0.00	0.00	--	0.00	0.00	290.59	43.74	6.644
34	-3.30	100	79	0.00	0.00	--	0.00	0.00	292.93	45.93	6.378
35	-3.40	100	80	0.00	0.00	--	0.00	0.00	295.69	48.17	6.139
36	-3.50	100	81	0.00	0.00	--	0.00	0.00	298.44	50.46	5.915
37	-3.60	100	81	0.00	0.00	--	0.00	0.00	301.20	52.80	5.705
38	-3.70	100	82	0.00	0.00	--	0.00	0.00	303.96	55.19	5.507
39	-3.80	100	83	0.00	0.00	--	0.00	0.00	306.72	57.63	5.322
40	-3.90	100	84	0.00	0.00	--	0.00	0.00	309.47	60.12	5.147

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## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
41	-4.00	100	85	0.00	0.00	--	0.00	0.00	312.23	62.66	4.983

## Combinazione n° 3 - STR (A1-M1-R3)

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
1	0.00	100	50	0.00	0.00	--	0.00	0.00	225.46	0.00	100.000
2	-0.10	100	51	0.00	0.00	--	0.00	0.00	227.62	1.45	157.043
3	-0.20	100	52	0.00	0.00	--	0.00	0.00	229.78	2.96	77.611
4	-0.30	100	53	0.00	0.00	--	0.00	0.00	231.92	4.53	51.165
5	-0.40	100	53	0.00	0.00	--	0.00	0.00	234.06	6.17	37.964
6	-0.50	100	54	0.00	0.00	--	0.00	0.00	236.18	7.86	30.055
7	-0.60	100	55	0.00	0.00	--	0.00	0.00	238.29	9.61	24.790
8	-0.70	100	56	0.00	0.00	--	0.00	0.00	240.40	11.43	21.037
9	-0.80	100	57	0.00	0.00	--	0.00	0.00	242.49	13.30	18.228
10	-0.90	100	58	0.00	0.00	--	0.00	0.00	244.57	15.24	16.048
11	-1.00	100	59	0.00	0.00	--	0.00	0.00	246.65	17.24	14.308
12	-1.10	100	60	0.00	0.00	--	0.00	0.00	248.72	19.30	12.889
13	-1.20	100	60	0.00	0.00	--	0.00	0.00	250.78	21.42	11.709
14	-1.30	100	61	0.00	0.00	--	0.00	0.00	252.83	23.60	10.714
15	-1.40	100	62	0.00	0.00	--	0.00	0.00	254.87	25.84	9.863
16	-1.50	100	63	0.00	0.00	--	0.00	0.00	256.91	28.14	9.129
17	-1.60	100	64	0.00	0.00	--	0.00	0.00	258.93	30.51	8.488
18	-1.70	100	65	0.00	0.00	--	0.00	0.00	260.96	32.93	7.924
19	-1.80	100	66	0.00	0.00	--	0.00	0.00	262.97	35.42	7.425
20	-1.90	100	67	0.00	0.00	--	0.00	0.00	264.98	37.96	6.980
21	-2.00	100	67	0.00	0.00	--	0.00	0.00	266.98	40.57	6.580
22	-2.10	100	68	0.00	0.00	--	0.00	0.00	268.97	43.24	6.220
23	-2.20	100	69	0.00	0.00	--	0.00	0.00	270.96	45.97	5.894
24	-2.30	100	70	0.00	0.00	--	0.00	0.00	272.95	48.76	5.597
25	-2.40	100	71	0.00	0.00	--	0.00	0.00	274.92	51.61	5.327
26	-2.50	100	72	0.00	0.00	--	0.00	0.00	276.90	54.53	5.078
27	-2.60	100	73	0.00	0.00	--	0.00	0.00	278.86	57.50	4.850
28	-2.70	100	74	0.00	0.00	--	0.00	0.00	280.82	60.54	4.639
29	-2.80	100	74	0.00	0.00	--	0.00	0.00	282.78	63.63	4.444
30	-2.90	100	75	0.00	0.00	--	0.00	0.00	284.73	66.79	4.263
31	-3.00	100	76	0.00	0.00	--	0.00	0.00	286.68	70.01	4.095
32	-3.10	100	77	0.00	0.00	--	0.00	0.00	288.62	73.29	3.938
33	-3.20	100	78	0.00	0.00	--	0.00	0.00	290.56	76.62	3.792
34	-3.30	100	79	0.00	0.00	--	0.00	0.00	292.50	80.03	3.660
35	-3.40	100	80	0.00	0.00	--	0.00	0.00	295.66	83.49	3.541
36	-3.50	100	81	0.00	0.00	--	0.00	0.00	298.41	87.01	3.430
37	-3.60	100	81	0.00	0.00	--	0.00	0.00	301.17	90.59	3.324
38	-3.70	100	82	0.00	0.00	--	0.00	0.00	303.93	94.24	3.225
39	-3.80	100	83	0.00	0.00	--	0.00	0.00	306.68	97.94	3.131
40	-3.90	100	84	0.00	0.00	--	0.00	0.00	309.44	101.71	3.042
41	-4.00	100	85	0.00	0.00	--	0.00	0.00	312.20	105.54	2.958

## Combinazione n° 4 - STR (A1-M1-R3) H - V

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
1	0.00	100	50	0.00	0.00	--	0.00	0.00	225.46	0.00	100.000
2	-0.10	100	51	0.00	0.00	--	0.00	0.00	227.62	0.47	487.723
3	-0.20	100	52	0.00	0.00	--	0.00	0.00	229.78	0.98	233.523
4	-0.30	100	53	0.00	0.00	--	0.00	0.00	231.92	1.55	149.512
5	-0.40	100	53	0.00	0.00	--	0.00	0.00	234.06	2.17	107.968
6	-0.50	100	54	0.00	0.00	--	0.00	0.00	236.18	2.83	83.334
7	-0.60	100	55	0.00	0.00	--	0.00	0.00	238.29	3.55	67.117
8	-0.70	100	56	0.00	0.00	--	0.00	0.00	240.40	4.32	55.690
9	-0.80	100	57	0.00	0.00	--	0.00	0.00	242.49	5.13	47.243
10	-0.90	100	58	0.00	0.00	--	0.00	0.00	244.57	6.00	40.769
11	-1.00	100	59	0.00	0.00	--	0.00	0.00	246.65	6.92	35.668
12	-1.10	100	60	0.00	0.00	--	0.00	0.00	248.72	7.88	31.558
13	-1.20	100	60	0.00	0.00	--	0.00	0.00	250.78	8.90	28.185

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## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

n°	Y	B	H	A <sub>sw</sub>	s	cotθ	V <sub>Rcd</sub>	V <sub>Rsd</sub>	V <sub>Rd</sub>	T	FS
	[m]	[cm]	[cm]	[cmq]	[cm]		[kN]	[kN]	[kN]	[kN]	
14	-1.30	100	61	0.00	0.00	--	0.00	0.00	252.83	9.96	25.375
15	-1.40	100	62	0.00	0.00	--	0.00	0.00	254.87	11.08	23.004
16	-1.50	100	63	0.00	0.00	--	0.00	0.00	256.91	12.25	20.979
17	-1.60	100	64	0.00	0.00	--	0.00	0.00	258.93	13.46	19.235
18	-1.70	100	65	0.00	0.00	--	0.00	0.00	260.96	14.73	17.719
19	-1.80	100	66	0.00	0.00	--	0.00	0.00	262.97	16.04	16.391
20	-1.90	100	67	0.00	0.00	--	0.00	0.00	264.98	17.41	15.220
21	-2.00	100	67	0.00	0.00	--	0.00	0.00	266.98	18.83	14.182
22	-2.10	100	68	0.00	0.00	--	0.00	0.00	268.97	20.29	13.256
23	-2.20	100	69	0.00	0.00	--	0.00	0.00	270.96	21.81	12.426
24	-2.30	100	70	0.00	0.00	--	0.00	0.00	272.95	23.37	11.678
25	-2.40	100	71	0.00	0.00	--	0.00	0.00	274.92	24.99	11.002
26	-2.50	100	72	0.00	0.00	--	0.00	0.00	276.90	26.65	10.388
27	-2.60	100	73	0.00	0.00	--	0.00	0.00	278.86	28.37	9.829
28	-2.70	100	74	0.00	0.00	--	0.00	0.00	280.82	30.14	9.319
29	-2.80	100	74	0.00	0.00	--	0.00	0.00	282.78	31.95	8.850
30	-2.90	100	75	0.00	0.00	--	0.00	0.00	284.73	33.82	8.420
31	-3.00	100	76	0.00	0.00	--	0.00	0.00	286.68	35.73	8.023
32	-3.10	100	77	0.00	0.00	--	0.00	0.00	288.62	37.70	7.656
33	-3.20	100	78	0.00	0.00	--	0.00	0.00	290.56	39.71	7.316
34	-3.30	100	79	0.00	0.00	--	0.00	0.00	292.50	41.78	7.011
35	-3.40	100	80	0.00	0.00	--	0.00	0.00	295.66	43.89	6.736
36	-3.50	100	81	0.00	0.00	--	0.00	0.00	298.41	46.06	6.479
37	-3.60	100	81	0.00	0.00	--	0.00	0.00	301.17	48.28	6.239
38	-3.70	100	82	0.00	0.00	--	0.00	0.00	303.93	50.54	6.013
39	-3.80	100	83	0.00	0.00	--	0.00	0.00	306.68	52.86	5.802
40	-3.90	100	84	0.00	0.00	--	0.00	0.00	309.44	55.22	5.604
41	-4.00	100	85	0.00	0.00	--	0.00	0.00	312.20	57.64	5.417

## Combinazione n° 13 - ECC

n°	Y	B	H	A <sub>sw</sub>	s	cotθ	V <sub>Rcd</sub>	V <sub>Rsd</sub>	V <sub>Rd</sub>	T	FS
	[m]	[cm]	[cm]	[cmq]	[cm]		[kN]	[kN]	[kN]	[kN]	
1	0.00	100	50	0.00	0.00	--	0.00	0.00	225.46	25.00	9.018
2	-0.10	100	51	0.00	0.00	--	0.00	0.00	227.62	25.02	9.096
3	-0.20	100	52	0.00	0.00	--	0.00	0.00	229.78	25.10	9.156
4	-0.30	100	53	0.00	0.00	--	0.00	0.00	231.92	25.21	9.198
5	-0.40	100	53	0.00	0.00	--	0.00	0.00	234.06	25.38	9.223
6	-0.50	100	54	0.00	0.00	--	0.00	0.00	236.18	25.59	9.230
7	-0.60	100	55	0.00	0.00	--	0.00	0.00	238.29	25.85	9.219
8	-0.70	100	56	0.00	0.00	--	0.00	0.00	240.40	26.15	9.192
9	-0.80	100	57	0.00	0.00	--	0.00	0.00	242.49	26.50	9.149
10	-0.90	100	58	0.00	0.00	--	0.00	0.00	244.57	26.90	9.091
11	-1.00	100	59	0.00	0.00	--	0.00	0.00	246.65	27.35	9.019
12	-1.10	100	60	0.00	0.00	--	0.00	0.00	248.72	27.84	8.934
13	-1.20	100	60	0.00	0.00	--	0.00	0.00	250.78	28.38	8.836
14	-1.30	100	61	0.00	0.00	--	0.00	0.00	252.83	28.97	8.728
15	-1.40	100	62	0.00	0.00	--	0.00	0.00	254.87	29.60	8.610
16	-1.50	100	63	0.00	0.00	--	0.00	0.00	256.91	30.28	8.484
17	-1.60	100	64	0.00	0.00	--	0.00	0.00	258.93	31.01	8.351
18	-1.70	100	65	0.00	0.00	--	0.00	0.00	260.96	31.78	8.211
19	-1.80	100	66	0.00	0.00	--	0.00	0.00	262.97	32.60	8.066
20	-1.90	100	67	0.00	0.00	--	0.00	0.00	264.98	33.47	7.917
21	-2.00	100	67	0.00	0.00	--	0.00	0.00	266.98	34.39	7.764
22	-2.10	100	68	0.00	0.00	--	0.00	0.00	268.97	35.35	7.609
23	-2.20	100	69	0.00	0.00	--	0.00	0.00	270.96	36.36	7.453
24	-2.30	100	70	0.00	0.00	--	0.00	0.00	272.95	37.41	7.296
25	-2.40	100	71	0.00	0.00	--	0.00	0.00	274.92	38.51	7.138
26	-2.50	100	72	0.00	0.00	--	0.00	0.00	276.90	39.66	6.981
27	-2.60	100	73	0.00	0.00	--	0.00	0.00	278.86	40.86	6.825
28	-2.70	100	74	0.00	0.00	--	0.00	0.00	280.82	42.10	6.670
29	-2.80	100	74	0.00	0.00	--	0.00	0.00	282.78	43.39	6.517
30	-2.90	100	75	0.00	0.00	--	0.00	0.00	284.73	44.73	6.365
31	-3.00	100	76	0.00	0.00	--	0.00	0.00	286.68	46.11	6.217
32	-3.10	100	77	0.00	0.00	--	0.00	0.00	288.62	47.55	6.070
33	-3.20	100	78	0.00	0.00	--	0.00	0.00	290.56	49.02	5.927
34	-3.30	100	79	0.00	0.00	--	0.00	0.00	292.50	50.55	5.794



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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
35	-3.40	100	80	0.00	0.00	--	0.00	0.00	295.66	52.12	5.673
36	-3.50	100	81	0.00	0.00	--	0.00	0.00	298.41	53.74	5.553
37	-3.60	100	81	0.00	0.00	--	0.00	0.00	301.17	55.40	5.436
38	-3.70	100	82	0.00	0.00	--	0.00	0.00	303.93	57.12	5.321
39	-3.80	100	83	0.00	0.00	--	0.00	0.00	306.68	58.88	5.209
40	-3.90	100	84	0.00	0.00	--	0.00	0.00	309.44	60.68	5.099
41	-4.00	100	85	0.00	0.00	--	0.00	0.00	312.20	62.53	4.992

**Mensola valle**Combinazione n° 1 - STR (A1-M1-R3)

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
1	-0.75	100	50	0.00	0.00	--	0.00	0.00	208.90	0.00	100.000
2	-0.67	100	50	0.00	0.00	--	0.00	0.00	208.90	1.02	204.497
3	-0.58	100	50	0.00	0.00	--	0.00	0.00	208.90	2.04	102.249
4	-0.50	100	50	0.00	0.00	--	0.00	0.00	208.90	3.06	68.166

Combinazione n° 2 - STR (A1-M1-R3) H + V

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
1	-0.75	100	50	0.00	0.00	--	0.00	0.00	208.90	0.00	100.000
2	-0.67	100	50	0.00	0.00	--	0.00	0.00	208.90	1.09	190.898
3	-0.58	100	50	0.00	0.00	--	0.00	0.00	208.90	2.19	95.449
4	-0.50	100	50	0.00	0.00	--	0.00	0.00	208.90	3.28	63.633

Combinazione n° 3 - STR (A1-M1-R3)

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
1	-0.75	100	50	0.00	0.00	--	0.00	0.00	208.90	0.00	100.000
2	-0.67	100	50	0.00	0.00	--	0.00	0.00	208.90	1.02	204.497
3	-0.58	100	50	0.00	0.00	--	0.00	0.00	208.90	2.04	102.249
4	-0.50	100	50	0.00	0.00	--	0.00	0.00	208.90	3.06	68.166

Combinazione n° 4 - STR (A1-M1-R3) H - V

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
1	-0.75	100	50	0.00	0.00	--	0.00	0.00	208.90	0.00	100.000
2	-0.67	100	50	0.00	0.00	--	0.00	0.00	208.90	1.02	204.497
3	-0.58	100	50	0.00	0.00	--	0.00	0.00	208.90	2.04	102.249
4	-0.50	100	50	0.00	0.00	--	0.00	0.00	208.90	3.06	68.166

Combinazione n° 13 - ECC

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
1	-0.75	100	50	0.00	0.00	--	0.00	0.00	208.90	0.00	100.000
2	-0.67	100	50	0.00	0.00	--	0.00	0.00	208.90	1.02	204.497
3	-0.58	100	50	0.00	0.00	--	0.00	0.00	208.90	2.04	102.249
4	-0.50	100	50	0.00	0.00	--	0.00	0.00	208.90	3.06	68.166

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## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

## Fondazione

## Combinazione n° 1 - STR (A1-M1-R3)

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
1	-1.35	100	85	0.00	0.00	--	0.00	0.00	360.08	0.00	100.000
2	-1.26	100	85	0.00	0.00	--	0.00	0.00	360.08	-6.59	54.654
3	-1.16	100	85	0.00	0.00	--	0.00	0.00	360.08	-13.21	27.267
4	-1.07	100	85	0.00	0.00	--	0.00	0.00	360.08	-19.85	18.138
5	-0.97	100	85	0.00	0.00	--	0.00	0.00	360.08	-26.53	13.574
6	-0.88	100	85	0.00	0.00	--	0.00	0.00	360.08	-33.23	10.836
7	-0.78	100	85	0.00	0.00	--	0.00	0.00	360.08	-39.96	9.010
8	-0.69	100	85	0.00	0.00	--	0.00	0.00	360.08	-46.73	7.706
9	-0.59	100	85	0.00	0.00	--	0.00	0.00	360.08	-53.52	6.728
10	-0.50	100	85	0.00	0.00	--	0.00	0.00	360.08	-60.34	5.968
11	0.35	100	85	0.00	0.00	--	0.00	0.00	360.08	-37.38	9.634
12	0.44	100	85	0.00	0.00	--	0.00	0.00	360.08	-35.15	10.245
13	0.54	100	85	0.00	0.00	--	0.00	0.00	360.08	-32.95	10.929
14	0.63	100	85	0.00	0.00	--	0.00	0.00	360.08	-30.78	11.700
15	0.73	100	85	0.00	0.00	--	0.00	0.00	360.08	-28.63	12.575
16	0.82	100	85	0.00	0.00	--	0.00	0.00	360.08	-26.52	13.577
17	0.92	100	85	0.00	0.00	--	0.00	0.00	360.08	-24.44	14.734
18	1.01	100	85	0.00	0.00	--	0.00	0.00	360.08	-22.38	16.086
19	1.11	100	85	0.00	0.00	--	0.00	0.00	360.08	-20.36	17.687
20	1.20	100	85	0.00	0.00	--	0.00	0.00	360.08	-18.36	19.610
21	1.30	100	85	0.00	0.00	--	0.00	0.00	360.08	-16.40	21.962
22	1.39	100	85	0.00	0.00	--	0.00	0.00	360.08	-14.46	24.907
23	1.49	100	85	0.00	0.00	--	0.00	0.00	360.08	-12.55	28.696
24	1.58	100	85	0.00	0.00	--	0.00	0.00	360.08	-10.67	33.752
25	1.68	100	85	0.00	0.00	--	0.00	0.00	360.08	-8.82	40.837
26	1.77	100	85	0.00	0.00	--	0.00	0.00	360.08	-7.00	51.471
27	1.87	100	85	0.00	0.00	--	0.00	0.00	360.08	-5.20	69.203
28	1.96	100	85	0.00	0.00	--	0.00	0.00	360.08	-3.44	104.683
29	2.06	100	85	0.00	0.00	--	0.00	0.00	360.08	-1.71	211.151
30	2.15	100	85	0.00	0.00	--	0.00	0.00	360.08	0.00	100.000

## Combinazione n° 2 - STR (A1-M1-R3) H + V

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
1	-1.35	100	85	0.00	0.00	--	0.00	0.00	360.08	0.00	100.000
2	-1.26	100	85	0.00	0.00	--	0.00	0.00	360.08	-12.82	28.093
3	-1.16	100	85	0.00	0.00	--	0.00	0.00	360.08	-25.35	14.202
4	-1.07	100	85	0.00	0.00	--	0.00	0.00	360.08	-37.61	9.574
5	-0.97	100	85	0.00	0.00	--	0.00	0.00	360.08	-49.59	7.262
6	-0.88	100	85	0.00	0.00	--	0.00	0.00	360.08	-61.28	5.876
7	-0.78	100	85	0.00	0.00	--	0.00	0.00	360.08	-72.69	4.953
8	-0.69	100	85	0.00	0.00	--	0.00	0.00	360.08	-83.83	4.296
9	-0.59	100	85	0.00	0.00	--	0.00	0.00	360.08	-94.68	3.803
10	-0.50	100	85	0.00	0.00	--	0.00	0.00	360.08	-105.25	3.421
11	0.35	100	85	0.00	0.00	--	0.00	0.00	360.08	-37.11	9.702
12	0.44	100	85	0.00	0.00	--	0.00	0.00	360.08	-37.70	9.551
13	0.54	100	85	0.00	0.00	--	0.00	0.00	360.08	-38.01	9.474
14	0.63	100	85	0.00	0.00	--	0.00	0.00	360.08	-38.03	9.468
15	0.73	100	85	0.00	0.00	--	0.00	0.00	360.08	-37.77	9.533
16	0.82	100	85	0.00	0.00	--	0.00	0.00	360.08	-37.23	9.671
17	0.92	100	85	0.00	0.00	--	0.00	0.00	360.08	-36.41	9.890
18	1.01	100	85	0.00	0.00	--	0.00	0.00	360.08	-35.30	10.200
19	1.11	100	85	0.00	0.00	--	0.00	0.00	360.08	-33.91	10.617
20	1.20	100	85	0.00	0.00	--	0.00	0.00	360.08	-32.24	11.168
21	1.30	100	85	0.00	0.00	--	0.00	0.00	360.08	-30.29	11.888
22	1.39	100	85	0.00	0.00	--	0.00	0.00	360.08	-28.05	12.835
23	1.49	100	85	0.00	0.00	--	0.00	0.00	360.08	-25.54	14.101

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## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
24	1.58	100	85	0.00	0.00	--	0.00	0.00	360.08	-22.74	15.838
25	1.68	100	85	0.00	0.00	--	0.00	0.00	360.08	-19.65	18.323
26	1.77	100	85	0.00	0.00	--	0.00	0.00	360.08	-16.29	22.109
27	1.87	100	85	0.00	0.00	--	0.00	0.00	360.08	-12.64	28.490
28	1.96	100	85	0.00	0.00	--	0.00	0.00	360.08	-8.71	41.349
29	2.06	100	85	0.00	0.00	--	0.00	0.00	360.08	-4.50	80.101
30	2.15	100	85	0.00	0.00	--	0.00	0.00	360.08	0.00	100.000

## Combinazione n° 3 - STR (A1-M1-R3)

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
1	-1.35	100	85	0.00	0.00	--	0.00	0.00	360.08	0.00	100.000
2	-1.26	100	85	0.00	0.00	--	0.00	0.00	360.08	-10.58	34.043
3	-1.16	100	85	0.00	0.00	--	0.00	0.00	360.08	-21.18	17.005
4	-1.07	100	85	0.00	0.00	--	0.00	0.00	360.08	-31.79	11.325
5	-0.97	100	85	0.00	0.00	--	0.00	0.00	360.08	-42.43	8.486
6	-0.88	100	85	0.00	0.00	--	0.00	0.00	360.08	-53.10	6.782
7	-0.78	100	85	0.00	0.00	--	0.00	0.00	360.08	-63.78	5.646
8	-0.69	100	85	0.00	0.00	--	0.00	0.00	360.08	-74.48	4.835
9	-0.59	100	85	0.00	0.00	--	0.00	0.00	360.08	-85.20	4.226
10	-0.50	100	85	0.00	0.00	--	0.00	0.00	360.08	-95.95	3.753
11	0.35	100	85	0.00	0.00	--	0.00	0.00	360.08	-68.88	5.228
12	0.44	100	85	0.00	0.00	--	0.00	0.00	360.08	-65.06	5.534
13	0.54	100	85	0.00	0.00	--	0.00	0.00	360.08	-61.27	5.877
14	0.63	100	85	0.00	0.00	--	0.00	0.00	360.08	-57.50	6.263
15	0.73	100	85	0.00	0.00	--	0.00	0.00	360.08	-53.75	6.700
16	0.82	100	85	0.00	0.00	--	0.00	0.00	360.08	-50.02	7.200
17	0.92	100	85	0.00	0.00	--	0.00	0.00	360.08	-46.31	7.776
18	1.01	100	85	0.00	0.00	--	0.00	0.00	360.08	-42.62	8.449
19	1.11	100	85	0.00	0.00	--	0.00	0.00	360.08	-38.95	9.245
20	1.20	100	85	0.00	0.00	--	0.00	0.00	360.08	-35.30	10.200
21	1.30	100	85	0.00	0.00	--	0.00	0.00	360.08	-31.68	11.367
22	1.39	100	85	0.00	0.00	--	0.00	0.00	360.08	-28.07	12.826
23	1.49	100	85	0.00	0.00	--	0.00	0.00	360.08	-24.49	14.702
24	1.58	100	85	0.00	0.00	--	0.00	0.00	360.08	-20.93	17.205
25	1.68	100	85	0.00	0.00	--	0.00	0.00	360.08	-17.39	20.708
26	1.77	100	85	0.00	0.00	--	0.00	0.00	360.08	-13.87	25.963
27	1.87	100	85	0.00	0.00	--	0.00	0.00	360.08	-10.37	34.723
28	1.96	100	85	0.00	0.00	--	0.00	0.00	360.08	-6.89	52.244
29	2.06	100	85	0.00	0.00	--	0.00	0.00	360.08	-3.44	104.809
30	2.15	100	85	0.00	0.00	--	0.00	0.00	360.08	0.00	100.000

## Combinazione n° 4 - STR (A1-M1-R3) H - V

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
1	-1.35	100	85	0.00	0.00	--	0.00	0.00	360.08	0.00	100.000
2	-1.26	100	85	0.00	0.00	--	0.00	0.00	360.08	-11.59	31.066
3	-1.16	100	85	0.00	0.00	--	0.00	0.00	360.08	-22.90	15.723
4	-1.07	100	85	0.00	0.00	--	0.00	0.00	360.08	-33.93	10.611
5	-0.97	100	85	0.00	0.00	--	0.00	0.00	360.08	-44.69	8.058
6	-0.88	100	85	0.00	0.00	--	0.00	0.00	360.08	-55.16	6.528
7	-0.78	100	85	0.00	0.00	--	0.00	0.00	360.08	-65.36	5.510
8	-0.69	100	85	0.00	0.00	--	0.00	0.00	360.08	-75.27	4.784
9	-0.59	100	85	0.00	0.00	--	0.00	0.00	360.08	-84.91	4.241
10	-0.50	100	85	0.00	0.00	--	0.00	0.00	360.08	-94.26	3.820
11	0.35	100	85	0.00	0.00	--	0.00	0.00	360.08	-59.77	6.024
12	0.44	100	85	0.00	0.00	--	0.00	0.00	360.08	-59.15	6.087
13	0.54	100	85	0.00	0.00	--	0.00	0.00	360.08	-58.26	6.181
14	0.63	100	85	0.00	0.00	--	0.00	0.00	360.08	-57.08	6.309
15	0.73	100	85	0.00	0.00	--	0.00	0.00	360.08	-55.62	6.474
16	0.82	100	85	0.00	0.00	--	0.00	0.00	360.08	-53.88	6.683
17	0.92	100	85	0.00	0.00	--	0.00	0.00	360.08	-51.86	6.944
18	1.01	100	85	0.00	0.00	--	0.00	0.00	360.08	-49.55	7.267

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## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
19	1.11	100	85	0.00	0.00	--	0.00	0.00	360.08	-46.97	7.666
20	1.20	100	85	0.00	0.00	--	0.00	0.00	360.08	-44.10	8.164
21	1.30	100	85	0.00	0.00	--	0.00	0.00	360.08	-40.96	8.791
22	1.39	100	85	0.00	0.00	--	0.00	0.00	360.08	-37.53	9.594
23	1.49	100	85	0.00	0.00	--	0.00	0.00	360.08	-33.82	10.646
24	1.58	100	85	0.00	0.00	--	0.00	0.00	360.08	-29.84	12.069
25	1.68	100	85	0.00	0.00	--	0.00	0.00	360.08	-25.57	14.085
26	1.77	100	85	0.00	0.00	--	0.00	0.00	360.08	-21.01	17.135
27	1.87	100	85	0.00	0.00	--	0.00	0.00	360.08	-16.18	22.252
28	1.96	100	85	0.00	0.00	--	0.00	0.00	360.08	-11.07	32.530
29	2.06	100	85	0.00	0.00	--	0.00	0.00	360.08	-5.68	63.449
30	2.15	100	85	0.00	0.00	--	0.00	0.00	360.08	0.00	100.000

## Combinazione n° 13 - ECC

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
1	-1.35	100	85	0.00	0.00	--	0.00	0.00	360.08	0.00	100.000
2	-1.26	100	85	0.00	0.00	--	0.00	0.00	360.08	-12.41	29.010
3	-1.16	100	85	0.00	0.00	--	0.00	0.00	360.08	-24.52	14.685
4	-1.07	100	85	0.00	0.00	--	0.00	0.00	360.08	-36.33	9.913
5	-0.97	100	85	0.00	0.00	--	0.00	0.00	360.08	-47.83	7.529
6	-0.88	100	85	0.00	0.00	--	0.00	0.00	360.08	-59.02	6.101
7	-0.78	100	85	0.00	0.00	--	0.00	0.00	360.08	-69.92	5.150
8	-0.69	100	85	0.00	0.00	--	0.00	0.00	360.08	-80.51	4.473
9	-0.59	100	85	0.00	0.00	--	0.00	0.00	360.08	-90.79	3.966
10	-0.50	100	85	0.00	0.00	--	0.00	0.00	360.08	-100.77	3.573
11	0.35	100	85	0.00	0.00	--	0.00	0.00	360.08	-56.75	6.345
12	0.44	100	85	0.00	0.00	--	0.00	0.00	360.08	-56.51	6.372
13	0.54	100	85	0.00	0.00	--	0.00	0.00	360.08	-55.97	6.433
14	0.63	100	85	0.00	0.00	--	0.00	0.00	360.08	-55.12	6.532
15	0.73	100	85	0.00	0.00	--	0.00	0.00	360.08	-53.97	6.672
16	0.82	100	85	0.00	0.00	--	0.00	0.00	360.08	-52.51	6.857
17	0.92	100	85	0.00	0.00	--	0.00	0.00	360.08	-50.75	7.095
18	1.01	100	85	0.00	0.00	--	0.00	0.00	360.08	-48.68	7.397
19	1.11	100	85	0.00	0.00	--	0.00	0.00	360.08	-46.31	7.776
20	1.20	100	85	0.00	0.00	--	0.00	0.00	360.08	-43.62	8.254
21	1.30	100	85	0.00	0.00	--	0.00	0.00	360.08	-40.64	8.861
22	1.39	100	85	0.00	0.00	--	0.00	0.00	360.08	-37.35	9.642
23	1.49	100	85	0.00	0.00	--	0.00	0.00	360.08	-33.75	10.670
24	1.58	100	85	0.00	0.00	--	0.00	0.00	360.08	-29.84	12.066
25	1.68	100	85	0.00	0.00	--	0.00	0.00	360.08	-25.63	14.047
26	1.77	100	85	0.00	0.00	--	0.00	0.00	360.08	-21.12	17.051
27	1.87	100	85	0.00	0.00	--	0.00	0.00	360.08	-16.30	22.095
28	1.96	100	85	0.00	0.00	--	0.00	0.00	360.08	-11.17	32.235
29	2.06	100	85	0.00	0.00	--	0.00	0.00	360.08	-5.74	62.753
30	2.15	100	85	0.00	0.00	--	0.00	0.00	360.08	0.00	100.000

## Verifica a fessurazione

## Simbologia adottata

n°	indice sezione
Y	ordinata sezione espressa in [m]
B	larghezza sezione espressa in [cm]
H	altezza sezione espressa in [cm]
A <sub>f</sub>	area ferri zona tesa espressa in [cmq]
A <sub>eff</sub>	area efficace espressa in [cmq]
M	momento agente espressa in [kNm]
M <sub>pf</sub>	momento di prima fessurazione espressa in [kNm]

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

- $\varepsilon$  deformazione espresso in %  
 $S_m$  spaziatura tra le fessure espressa in [mm]  
 $w$  apertura delle fessure espressa in [mm]

**Combinazioni SLEF**ParamentoCombinazione n° 15 - SLEFApertura limite fessure  $w_{lim}=0.30$ 

n°	Y [m]	B [cm]	H [cm]	Af [cmq]	Aeff [cmq]	M [kNm]	Mpf [kNm]	$\varepsilon$ [%]	$S_m$ [mm]	w [mm]
1	0.00	100	50	10.05	1000.00	0.38	505.15	0.0000	0.00	0.000
2	-0.10	100	51	0.00	0.00	0.39	48313.91	0.0000	0.00	0.000
3	-0.20	100	52	0.00	0.00	0.40	574.54	0.0000	0.00	0.000
4	-0.30	100	53	0.00	0.00	0.43	333.90	0.0000	0.00	0.000
5	-0.40	100	53	0.00	0.00	0.48	272.39	0.0000	0.00	0.000
6	-0.50	100	54	0.00	0.00	0.55	264.07	0.0000	0.00	0.000
7	-0.60	100	55	0.00	0.00	0.65	288.17	0.0000	0.00	0.000
8	-0.70	100	56	0.00	0.00	0.79	345.75	0.0000	0.00	0.000
9	-0.80	100	57	0.00	0.00	0.96	453.71	0.0000	0.00	0.000
10	-0.90	100	58	0.00	0.00	1.18	662.66	0.0000	0.00	0.000
11	-1.00	100	59	0.00	0.00	1.45	1155.73	0.0000	0.00	0.000
12	-1.10	100	60	0.00	0.00	1.77	3355.90	0.0000	0.00	0.000
13	-1.20	100	60	0.00	0.00	2.15	5352.72	0.0000	0.00	0.000
14	-1.30	100	61	10.05	1000.00	2.59	1685.63	0.0000	0.00	0.000
15	-1.40	100	62	10.05	1000.00	3.10	1075.60	0.0000	0.00	0.000
16	-1.50	100	63	10.05	1000.00	3.68	829.31	0.0000	0.00	0.000
17	-1.60	100	64	10.05	1000.00	4.34	698.88	0.0000	0.00	0.000
18	-1.70	100	65	10.05	1000.00	5.08	619.90	0.0000	0.00	0.000
19	-1.80	100	66	10.05	1000.00	5.91	568.22	0.0000	0.00	0.000
20	-1.90	100	67	10.05	1000.00	6.83	532.73	0.0000	0.00	0.000
21	-2.00	100	67	10.05	1000.00	7.84	507.65	0.0000	0.00	0.000
22	-2.10	100	68	10.05	1000.00	8.96	489.64	0.0000	0.00	0.000
23	-2.20	100	69	10.05	1000.00	10.18	476.66	0.0000	0.00	0.000
24	-2.30	100	70	10.05	1000.00	11.51	467.40	0.0000	0.00	0.000
25	-2.40	100	71	10.05	1000.00	12.96	460.95	0.0000	0.00	0.000
26	-2.50	100	72	10.05	1000.00	14.53	456.70	0.0000	0.00	0.000
27	-2.60	100	73	10.05	1000.00	16.22	454.19	0.0000	0.00	0.000
28	-2.70	100	74	10.05	1000.00	18.04	453.10	0.0000	0.00	0.000
29	-2.80	100	74	10.05	1000.00	20.00	453.17	0.0000	0.00	0.000
30	-2.90	100	75	10.05	1000.00	22.10	454.22	0.0000	0.00	0.000
31	-3.00	100	76	10.05	1000.00	24.34	456.09	0.0000	0.00	0.000
32	-3.10	100	77	10.05	1000.00	26.73	458.66	0.0000	0.00	0.000
33	-3.20	100	78	10.05	1000.00	29.27	461.85	0.0000	0.00	0.000
34	-3.30	100	79	10.05	1000.00	31.97	465.57	0.0000	0.00	0.000
35	-3.40	100	80	10.05	1000.00	34.84	469.76	0.0000	0.00	0.000
36	-3.50	100	81	10.05	1000.00	37.87	474.38	0.0000	0.00	0.000
37	-3.60	100	81	10.05	1000.00	41.08	479.37	0.0000	0.00	0.000
38	-3.70	100	82	10.05	1000.00	44.46	484.70	0.0000	0.00	0.000
39	-3.80	100	83	10.05	1000.00	48.03	490.34	0.0000	0.00	0.000
40	-3.90	100	84	10.05	1000.00	51.78	496.27	0.0000	0.00	0.000
41	-4.00	100	85	10.05	1000.00	55.73	502.46	0.0000	0.00	0.000

Mensola valle

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**Combinazione n° 15 - SLEFApertura limite fessure  $w_{lim}=0.30$ 

n°	Y [m]	B [cm]	H [cm]	Af [cmq]	Aeff [cmq]	M [kNm]	Mpf [kNm]	$\varepsilon$ [%]	Sm [mm]	w [mm]
1	-0.75	100	50	0.00	0.00	0.00	0.00	0.0000	0.00	0.000
2	-0.67	100	50	0.00	0.00	-0.04	0.00	0.0000	0.00	0.000
3	-0.58	100	50	8.04	1000.00	-0.17	-143.66	0.0000	0.00	0.000
4	-0.50	100	50	8.04	1000.00	-0.38	-143.66	0.0000	0.00	0.000

FondazioneCombinazione n° 15 - SLEFApertura limite fessure  $w_{lim}=0.30$ 

n°	Y [m]	B [cm]	H [cm]	Af [cmq]	Aeff [cmq]	M [kNm]	Mpf [kNm]	$\varepsilon$ [%]	Sm [mm]	w [mm]
1	-1.35	100	85	0.00	0.00	0.00	0.00	0.0000	0.00	0.000
2	-1.26	100	85	18.10	1000.00	0.27	435.93	0.0000	0.00	0.000
3	-1.16	100	85	18.10	1000.00	1.10	435.93	0.0000	0.00	0.000
4	-1.07	100	85	18.10	1000.00	2.49	435.93	0.0000	0.00	0.000
5	-0.97	100	85	18.10	1000.00	4.44	435.93	0.0000	0.00	0.000
6	-0.88	100	85	18.10	1000.00	6.97	435.93	0.0000	0.00	0.000
7	-0.78	100	85	18.10	1000.00	10.07	435.93	0.0000	0.00	0.000
8	-0.69	100	85	18.10	1000.00	13.75	435.93	0.0000	0.00	0.000
9	-0.59	100	85	18.10	1000.00	18.02	435.93	0.0000	0.00	0.000
10	-0.50	100	85	18.10	1000.00	22.88	435.93	0.0000	0.00	0.000
11	0.35	100	85	18.10	1000.00	8.63	435.93	0.0000	0.00	0.000
12	0.44	100	85	18.10	1000.00	8.06	435.93	0.0000	0.00	0.000
13	0.54	100	85	18.10	1000.00	7.47	435.93	0.0000	0.00	0.000
14	0.63	100	85	18.10	1000.00	6.87	435.93	0.0000	0.00	0.000
15	0.73	100	85	18.10	1000.00	6.26	435.93	0.0000	0.00	0.000
16	0.82	100	85	18.10	1000.00	5.64	435.93	0.0000	0.00	0.000
17	0.92	100	85	18.10	1000.00	5.03	435.93	0.0000	0.00	0.000
18	1.01	100	85	18.10	1000.00	4.42	435.93	0.0000	0.00	0.000
19	1.11	100	85	18.10	1000.00	3.84	435.93	0.0000	0.00	0.000
20	1.20	100	85	18.10	1000.00	3.27	435.93	0.0000	0.00	0.000
21	1.30	100	85	18.10	1000.00	2.73	435.93	0.0000	0.00	0.000
22	1.39	100	85	18.10	1000.00	2.22	435.93	0.0000	0.00	0.000
23	1.49	100	85	18.10	1000.00	1.74	435.93	0.0000	0.00	0.000
24	1.58	100	85	18.10	1000.00	1.32	435.93	0.0000	0.00	0.000
25	1.68	100	85	18.10	1000.00	0.94	435.93	0.0000	0.00	0.000
26	1.77	100	85	18.10	1000.00	0.62	435.93	0.0000	0.00	0.000
27	1.87	100	85	18.10	1000.00	0.36	435.93	0.0000	0.00	0.000
28	1.96	100	85	18.10	1000.00	0.16	435.93	0.0000	0.00	0.000
29	2.06	100	85	0.00	0.00	0.04	0.00	0.0000	0.00	0.000
30	2.15	100	85	0.00	0.00	0.00	0.00	0.0000	0.00	0.000

**Combinazioni SLEQ**ParamentoCombinazione n° 16 - SLEQ

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**Apertura limite fessure  $w_{lim}=0.20$ 

n°	Y	B	H	Af	Aeff	M	Mpf	$\varepsilon$	Sm	w
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kNm]	[%]	[mm]	[mm]
1	0.00	100	50	10.05	1000.00	0.38	505.15	0.0000	0.00	0.000
2	-0.10	100	51	0.00	0.00	0.39	48313.91	0.0000	0.00	0.000
3	-0.20	100	52	0.00	0.00	0.40	574.54	0.0000	0.00	0.000
4	-0.30	100	53	0.00	0.00	0.43	333.90	0.0000	0.00	0.000
5	-0.40	100	53	0.00	0.00	0.48	272.39	0.0000	0.00	0.000
6	-0.50	100	54	0.00	0.00	0.55	264.07	0.0000	0.00	0.000
7	-0.60	100	55	0.00	0.00	0.65	288.17	0.0000	0.00	0.000
8	-0.70	100	56	0.00	0.00	0.79	345.75	0.0000	0.00	0.000
9	-0.80	100	57	0.00	0.00	0.96	453.71	0.0000	0.00	0.000
10	-0.90	100	58	0.00	0.00	1.18	662.66	0.0000	0.00	0.000
11	-1.00	100	59	0.00	0.00	1.45	1155.73	0.0000	0.00	0.000
12	-1.10	100	60	0.00	0.00	1.77	3355.90	0.0000	0.00	0.000
13	-1.20	100	60	0.00	0.00	2.15	5352.72	0.0000	0.00	0.000
14	-1.30	100	61	10.05	1000.00	2.59	1685.63	0.0000	0.00	0.000
15	-1.40	100	62	10.05	1000.00	3.10	1075.60	0.0000	0.00	0.000
16	-1.50	100	63	10.05	1000.00	3.68	829.31	0.0000	0.00	0.000
17	-1.60	100	64	10.05	1000.00	4.34	698.88	0.0000	0.00	0.000
18	-1.70	100	65	10.05	1000.00	5.08	619.90	0.0000	0.00	0.000
19	-1.80	100	66	10.05	1000.00	5.91	568.22	0.0000	0.00	0.000
20	-1.90	100	67	10.05	1000.00	6.83	532.73	0.0000	0.00	0.000
21	-2.00	100	67	10.05	1000.00	7.84	507.65	0.0000	0.00	0.000
22	-2.10	100	68	10.05	1000.00	8.96	489.64	0.0000	0.00	0.000
23	-2.20	100	69	10.05	1000.00	10.18	476.66	0.0000	0.00	0.000
24	-2.30	100	70	10.05	1000.00	11.51	467.40	0.0000	0.00	0.000
25	-2.40	100	71	10.05	1000.00	12.96	460.95	0.0000	0.00	0.000
26	-2.50	100	72	10.05	1000.00	14.53	456.70	0.0000	0.00	0.000
27	-2.60	100	73	10.05	1000.00	16.22	454.19	0.0000	0.00	0.000
28	-2.70	100	74	10.05	1000.00	18.04	453.10	0.0000	0.00	0.000
29	-2.80	100	74	10.05	1000.00	20.00	453.17	0.0000	0.00	0.000
30	-2.90	100	75	10.05	1000.00	22.10	454.22	0.0000	0.00	0.000
31	-3.00	100	76	10.05	1000.00	24.34	456.09	0.0000	0.00	0.000
32	-3.10	100	77	10.05	1000.00	26.73	458.66	0.0000	0.00	0.000
33	-3.20	100	78	10.05	1000.00	29.27	461.85	0.0000	0.00	0.000
34	-3.30	100	79	10.05	1000.00	31.97	465.57	0.0000	0.00	0.000
35	-3.40	100	80	10.05	1000.00	34.84	469.76	0.0000	0.00	0.000
36	-3.50	100	81	10.05	1000.00	37.87	474.38	0.0000	0.00	0.000
37	-3.60	100	81	10.05	1000.00	41.08	479.37	0.0000	0.00	0.000
38	-3.70	100	82	10.05	1000.00	44.46	484.70	0.0000	0.00	0.000
39	-3.80	100	83	10.05	1000.00	48.03	490.34	0.0000	0.00	0.000
40	-3.90	100	84	10.05	1000.00	51.78	496.27	0.0000	0.00	0.000
41	-4.00	100	85	10.05	1000.00	55.73	502.46	0.0000	0.00	0.000

Mensola valleCombinazione n° 16 - SLEQApertura limite fessure  $w_{lim}=0.20$ 

n°	Y	B	H	Af	Aeff	M	Mpf	$\varepsilon$	Sm	w
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kNm]	[%]	[mm]	[mm]
1	-0.75	100	50	0.00	0.00	0.00	0.00	0.0000	0.00	0.000
2	-0.67	100	50	0.00	0.00	-0.04	0.00	0.0000	0.00	0.000
3	-0.58	100	50	8.04	1000.00	-0.17	-143.66	0.0000	0.00	0.000
4	-0.50	100	50	8.04	1000.00	-0.38	-143.66	0.0000	0.00	0.000

Fondazione

## Combinazione n° 16 - SLEQ

Apertura limite fessure  $w_{lim}=0.20$ 

n°	Y	B	H	Af	Aeff	M	Mpf	$\varepsilon$	Sm	w
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kNm]	[%]	[mm]	[mm]
1	-1.35	100	85	0.00	0.00	0.00	0.00	0.0000	0.00	0.000
2	-1.26	100	85	18.10	1000.00	0.27	435.93	0.0000	0.00	0.000
3	-1.16	100	85	18.10	1000.00	1.10	435.93	0.0000	0.00	0.000
4	-1.07	100	85	18.10	1000.00	2.49	435.93	0.0000	0.00	0.000
5	-0.97	100	85	18.10	1000.00	4.44	435.93	0.0000	0.00	0.000
6	-0.88	100	85	18.10	1000.00	6.97	435.93	0.0000	0.00	0.000
7	-0.78	100	85	18.10	1000.00	10.07	435.93	0.0000	0.00	0.000
8	-0.69	100	85	18.10	1000.00	13.75	435.93	0.0000	0.00	0.000
9	-0.59	100	85	18.10	1000.00	18.02	435.93	0.0000	0.00	0.000
10	-0.50	100	85	18.10	1000.00	22.88	435.93	0.0000	0.00	0.000
11	0.35	100	85	18.10	1000.00	8.63	435.93	0.0000	0.00	0.000
12	0.44	100	85	18.10	1000.00	8.06	435.93	0.0000	0.00	0.000
13	0.54	100	85	18.10	1000.00	7.47	435.93	0.0000	0.00	0.000
14	0.63	100	85	18.10	1000.00	6.87	435.93	0.0000	0.00	0.000
15	0.73	100	85	18.10	1000.00	6.26	435.93	0.0000	0.00	0.000
16	0.82	100	85	18.10	1000.00	5.64	435.93	0.0000	0.00	0.000
17	0.92	100	85	18.10	1000.00	5.03	435.93	0.0000	0.00	0.000
18	1.01	100	85	18.10	1000.00	4.42	435.93	0.0000	0.00	0.000
19	1.11	100	85	18.10	1000.00	3.84	435.93	0.0000	0.00	0.000
20	1.20	100	85	18.10	1000.00	3.27	435.93	0.0000	0.00	0.000
21	1.30	100	85	18.10	1000.00	2.73	435.93	0.0000	0.00	0.000
22	1.39	100	85	18.10	1000.00	2.22	435.93	0.0000	0.00	0.000
23	1.49	100	85	18.10	1000.00	1.74	435.93	0.0000	0.00	0.000
24	1.58	100	85	18.10	1000.00	1.32	435.93	0.0000	0.00	0.000
25	1.68	100	85	18.10	1000.00	0.94	435.93	0.0000	0.00	0.000
26	1.77	100	85	18.10	1000.00	0.62	435.93	0.0000	0.00	0.000
27	1.87	100	85	18.10	1000.00	0.36	435.93	0.0000	0.00	0.000
28	1.96	100	85	18.10	1000.00	0.16	435.93	0.0000	0.00	0.000
29	2.06	100	85	0.00	0.00	0.04	0.00	0.0000	0.00	0.000
30	2.15	100	85	0.00	0.00	0.00	0.00	0.0000	0.00	0.000



**Elenco ferri**

## Simbologia adottata

n°	Indice del ferro
nf	numero ferri
D	diametro ferro espresso in [mm]
L	Lunghezza ferro espresso in [m]
P <sub>ferro</sub>	Peso ferro espresso in [kN]

*Paramento*

n°	Tipo	nf	D [mm]	L [m]	P <sub>f</sub> [kN]	P <sub>gf</sub> [kN]	V <sub>cls</sub> [mc]
1	Diritto inferiore	5	16.00	2.08	0.0322	0.1611	
2	Diritto superiore	5	16.00	2.09	0.0323	0.1616	
3	Diritto inferiore	5	16.00	4.59	0.0711	0.3554	
4	Diritto superiore	5	16.00	4.60	0.0713	0.3564	
5	Ripartitore	32	10.00	1.00	0.0060	0.1935	
<b>Totale al metro</b>						<b>1.4214</b>	<b>2.82</b>
<b>Totale</b>						<b>1252.11</b>	<b>28.25</b>

*Fondazione*

n°	Tipo	nf	D [mm]	L [m]	P <sub>f</sub> [kN]	P <sub>gf</sub> [kN]	V <sub>cls</sub> [mc]
1	Diritto superiore	9	16.00	4.68	0.0725	0.6525	
2	Diritto inferiore	9	16.00	4.68	0.0725	0.6525	
3	Ripartitore	13	10.00	1.00	0.0060	0.0786	
<b>Totale al metro</b>						<b>1.4622</b>	<b>2.97</b>
<b>Totale</b>						<b>1410.86</b>	<b>29.75</b>

*Mensola valle*

n°	Tipo	nf	D [mm]	L [m]	P <sub>f</sub> [kN]	P <sub>gf</sub> [kN]	V <sub>cls</sub> [mc]
1	Diritto inferiore	4	16.00	1.53	0.0237	0.0947	
2	Diritto superiore	4	16.00	1.53	0.0237	0.0947	
3	Ripartitore	2	10.00	1.00	0.0060	0.0121	
<b>Totale al metro</b>						<b>1.4622</b>	<b>2.97</b>
<b>Totale</b>						<b>1410.86</b>	<b>29.75</b>

## 12 ALLEGATO 3 – TABULATI DI CALCOLO - MURO DI SOSTEGNO H5

### Geometria profilo terreno a monte del muro

#### Simbologia adottata

(Sistema di riferimento con origine in testa al muro, ascissa X positiva verso monte, ordinata Y positiva verso l'alto)

n°	numero ordine del punto
X	ascissa del punto espressa in [m]
Y	ordinata del punto espressa in [m]
A	inclinazione del tratto espressa in [°]

n°	X	Y	A
	[m]	[m]	[°]
1	0.00	0.00	0.000
2	1.75	0.00	0.000
3	20.00	0.00	0.000

Inclinazione terreno a valle del muro rispetto all'orizzontale 0.000 [°]

### Falda

#### Simbologia adottata

(Sistema di riferimento con origine in testa al muro, ascissa X positiva verso monte, ordinata Y positiva verso l'alto)

n°	numero ordine del punto
X	ascissa del punto espressa in [m]
Y	ordinata del punto espressa in [m]
A	inclinazione del tratto espressa in [°]

n°	X	Y	A
	[m]	[m]	[°]
1	-4.00	-5.95	0.000
2	20.00	-5.95	0.000

### Geometria muro

#### *Geometria paramento e fondazione*

##### Paramento

Materiale	C32/40	
Altezza paramento	5.00	[m]
Altezza paramento libero	5.00	[m]
Spessore in sommità	0.50	[m]
Spessore all'attacco con la fondazione	0.95	[m]

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

Inclinazione paramento esterno	0.00	[°]
Inclinazione paramento interno	5.10	[°]
Spessore rivestimento	0.20	[m]
Peso sp. rivestimento	20.0000	[kN/mc]

Mensola di marciapiede

Posizione rispetto alla testa del muro	0.00	[m]
Lunghezza	0.25	[m]
Spessore all'estremità libera	0.50	[m]
Spessore all'incastro	0.50	[m]

Fondazione

Materiale	C32/40	
Lunghezza mensola di valle	0.95	[m]
Lunghezza mensola di monte	2.60	[m]
Lunghezza totale	4.50	[m]
Inclinazione piano di posa	0.00	[°]
Spessore	0.95	[m]
Spessore magrone	0.20	[m]

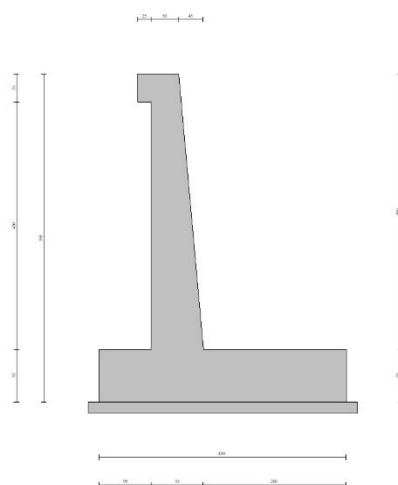


Fig. 1 - Sezione quotata del muro

Descrizione terreniParametri di resistenza

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta****Simbologia adottata**

n°	Indice del terreno
Descr	Descrizione terreno
$\gamma$	Peso di volume del terreno espresso in [kN/mc]
$\gamma_s$	Peso di volume saturo del terreno espresso in [kN/mc]
$\phi$	Angolo d'attrito interno espresso in [°]
$\delta$	Angolo d'attrito terra-muro espresso in [°]
c	Coesione espressa in [kPa]
$c_a$	Adesione terra-muro espressa in [kPa]

**Per calcolo portanza con il metodo di Bustamante-Doix**

Cesp	Coeff. di espansione laterale (solo per il metodo di Bustamante-Doix)
$\tau_l$	Tensione tangenziale limite, espressa in [kPa]

n°	Descr	$\gamma$ [kN/mc]	$\gamma_{sat}$ [kN/mc]	$\phi$ [°]	$\delta$ [°]	c [kPa]	$c_a$ [kPa]	Cesp	$\tau_l$ [kPa]
1	Rilevato	19.0000	19.0000	35.000	23.330	0	0		
2	Terreno	20.0000	20.0000	36.000	24.000	0	0		

**Stratigrafia****Simbologia adottata**

n°	Indice dello strato
H	Spessore dello strato espresso in [m]
$\alpha$	Inclinazione espressa in [°]
Terreno	Terreno dello strato
Kwn, Kwt	Costante di Winkler normale e tangenziale alla superficie espressa in Kg/cm <sup>2</sup> /cm

**Per calcolo pali (solo se presenti)**

Kw	Costante di Winkler orizzontale espressa in Kg/cm <sup>2</sup> /cm
Ks	Coefficiente di spinta
Cesp	Coefficiente di espansione laterale (per tutti i metodi tranne il metodo di Bustamante-Doix)

**Per calcolo della spinta con coeff. di spinta definiti (usati solo se attiva l'opzione 'Usa coeff. di spinta da strato')**

$K_{st_{sta}}$ , $K_{st_{sis}}$	Coeff. di spinta statico e sismico
---------------------------------	------------------------------------

n°	H [m]	$\alpha$ [°]	Terreno	Kwn [Kg/cm <sup>2</sup> ]	Kwt [Kg/cm <sup>2</sup> ]	Kw [Kg/cm <sup>2</sup> ]	Ks	Cesp	$K_{st_{sta}}$	$K_{st_{sis}}$
1	5.95	0.000	Rilevato	0.000	0.000	4.219	0.000	1.000	0.000	0.000
2	20.00	0.000	Terreno	0.000	0.000	2.203	1.000	1.000	0.000	0.000

**Condizioni di carico****Simbologia adottata**

Carichi verticali positivi verso il basso.

Carichi orizzontali positivi verso sinistra.

Momento positivo senso antiorario.

X	Ascissa del punto di applicazione del carico concentrato espressa in [m]
$F_x$	Componente orizzontale del carico concentrato espressa in [kN]
$F_y$	Componente verticale del carico concentrato espressa in [kN]
M	Momento espresso in [kNm]

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**X<sub>i</sub> Ascissa del punto iniziale del carico ripartito espressa in [m]X<sub>f</sub> Ascissa del punto finale del carico ripartito espressa in [m]Q<sub>i</sub> Intensità del carico per x=X<sub>i</sub> espressa in [kN]Q<sub>f</sub> Intensità del carico per x=X<sub>f</sub> espressa in [kN]**Condizione n° 1 (Q) - VARIABILE**Coeff. di combinazione  $\Psi_0=0.75 - \Psi_1=0.75 - \Psi_2=0.00$ **Carichi sul terreno**

n°	Tipo	X	Fx	Fy	M	Xi	Xf	Qi	Qf
		[m]	[kN]	[kN]	[kNm]	[m]	[m]	[kN]	[kN]
1	Distribuito					0.00	3.00	34.1000	34.1000
2	Distribuito					3.00	6.00	19.2000	19.2000
3	Distribuito					6.00	9.00	10.9000	10.9000
4	Distribuito					9.00	20.00	2.5000	2.5000

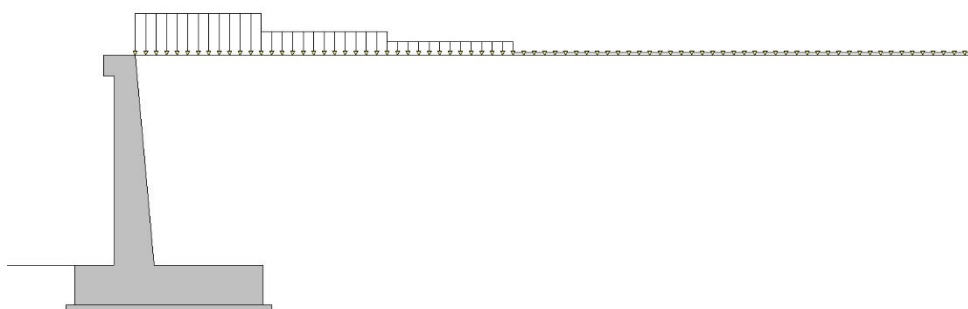


Fig. 2 - Carichi sul terreno

**Condizione n° 2 (Urto) - ECCEZIONALE****Carichi sul muro**

n°	Tipo	Dest	X; Y	Fx	Fy	M	Xi	Xf	Qi	Qf
			[m]	[kN]	[kN]	[kNm]	[m]	[m]	[kN]	[kN]
1	Concentrato	Paramento	0.00; 0.00	20.0000	0.0000	20.0000				

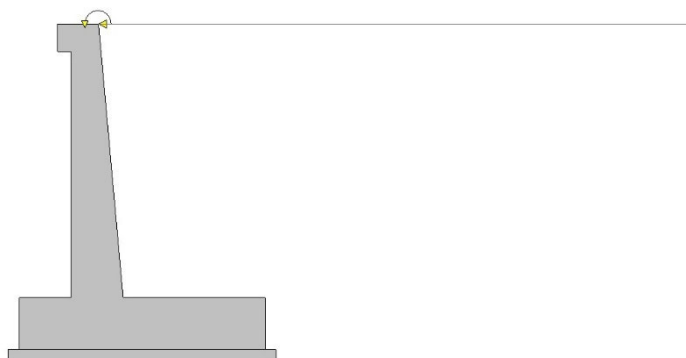


Fig. 3 - Carichi sul muro

NormativaNormativa usata: **Norme Tecniche sulle Costruzioni 2018 (D.M. 17.01.2018) + Circolare C.S.LL.PP. 21/01/2019 n.7**Coeff. parziali per le azioni o per l'effetto delle azioni

Carichi	Effetto		Combinazioni statiche					Combinazioni sismiche		
			HYD	UPL	EQU	A1	A2	EQU	A1	A2
Permanenti strutturali	Favorevoli	$\gamma_{G1, fav}$	1.00	0.90	1.00	1.00	1.00	1.00	1.00	1.00
Permanenti strutturali	Sfavorevoli	$\gamma_{G1, sfav}$	1.00	1.10	1.30	1.30	1.00	1.00	1.00	1.00
Permanenti non strutturali	Favorevoli	$\gamma_{G2, fav}$	0.00	0.80	0.80	0.80	0.80	0.00	0.00	0.00
Permanenti non strutturali	Sfavorevoli	$\gamma_{G2, sfav}$	1.00	1.50	1.50	1.50	1.30	1.00	1.00	1.00
Variabili	Favorevoli	$\gamma_{Q, fav}$	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Variabili	Sfavorevoli	$\gamma_{Q, sfav}$	1.00	1.50	1.50	1.50	1.30	1.00	1.00	1.00
Variabili da traffico	Favorevoli	$\gamma_{QT, fav}$	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Variabili da traffico	Sfavorevoli	$\gamma_{QT, sfav}$	1.00	1.50	1.35	1.35	1.15	1.00	1.00	1.00

Coeff. parziali per i parametri geotecnici del terreno

Parametro		Combinazioni statiche		Combinazioni sismiche	
		M1	M2	M1	M2
Tangente dell'angolo di attrito	$\gamma_{\tan(\phi')}$	1.00	1.25	1.00	1.00
Coesione efficace	$\gamma_c$	1.00	1.25	1.00	1.00
Resistenza non drenata	$\gamma_{cu}$	1.00	1.40	1.00	1.00
Peso nell'unità di volume	$\gamma_r$	1.00	1.00	1.00	1.00

Coeff. parziali  $\gamma_R$  per le verifiche agli stati limite ultimi STR e GEO

Verifica	Combinazioni statiche			Combinazioni sismiche		
	R1	R2	R3	R1	R2	R3
Capacità portante	--	--	1.40	--	--	1.20
Scorrimento	--	--	1.10	--	--	1.00
Resistenza terreno a valle	--	--	1.40	--	--	1.20
Ribaltamento	--	--	1.15	--	--	1.00
Stabilità fronte di scavo	--	1.10	--	--	1.20	--

Descrizione combinazioni di carico

Con riferimento alle azioni elementari prima determinate, si sono considerate le seguenti combinazioni di carico:

- Combinazione fondamentale, impiegata per gli stati limite ultimi (SLU):

$$\gamma_{G1} G_1 + \gamma_{G2} G_2 + \gamma_{Q1} Q_{k1} + \gamma_{Q2} Q_{k2} + \gamma_{Q3} Q_{k3} + \dots$$

- Combinazione caratteristica, cosiddetta rara, impiegata per gli stati limite di esercizio (SLE) irreversibili:

$$G_1 + G_2 + Q_{k1} + \Psi_{0,2} Q_{k2} + \Psi_{0,3} Q_{k3} + \dots$$

- Combinazione frequente, impiegata per gli stati limite di esercizio (SLE) reversibili:

$$G_1 + G_2 + \Psi_{1,1} Q_{k1} + \Psi_{2,2} Q_{k2} + \Psi_{2,3} Q_{k3} + \dots$$

- Combinazione quasi permanente, impiegata per gli effetti di lungo periodo:

$$G_1 + G_2 + \Psi_{2,1} Q_{k1} + \Psi_{2,2} Q_{k2} + \Psi_{2,3} Q_{k3} + \dots$$

- Combinazione sismica, impiegata per gli stati limite ultimi connessi all'azione sismica E:

$$E + G_1 + G_2 + \Psi_{2,1} Q_{k1} + \Psi_{2,2} Q_{k2} + \Psi_{2,3} Q_{k3} + \dots$$

- Combinazione eccezionale, impiegata per gli stati limite ultimi connessi alle azioni eccezionali Ad:

$$G_1 + G_2 + A_d + \Psi_{2,1} Q_{k1} + \Psi_{2,2} Q_{k2} + \Psi_{2,3} Q_{k3} + \dots$$

I valori dei coeff.  $\Psi_{0,j}$ ,  $\Psi_{1,j}$ ,  $\Psi_{2,j}$  sono definiti nelle singole condizioni variabili. Per i valori dei coeff.  $\gamma_G$  e  $\gamma_Q$ , sono definiti nella tabella normativa.

In particolare si sono considerate le seguenti combinazioni:

## Simbologia adottata

$\gamma$	Coefficiente di partecipazione della condizione
$\Psi$	Coefficiente di combinazione della condizione

Combinazione n° 1 - STR (A1-M1-R3)

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Favorevole
Peso terrapieno	1.00	--	Favorevole
Spinta terreno	1.30	--	Sfavorevole

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**Combinazione n° 2 - STR (A1-M1-R3) H + V

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Favorevole
Peso terrapieno	1.00	--	Favorevole
Spinta terreno	1.00	--	Sfavorevole

Combinazione n° 3 - STR (A1-M1-R3)

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Favorevole
Peso terrapieno	1.00	--	Favorevole
Spinta terreno	1.30	--	Sfavorevole
Q	1.50	1.00	Sfavorevole

Combinazione n° 4 - STR (A1-M1-R3) H - V

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Sfavorevole
Peso terrapieno	1.00	--	Sfavorevole
Spinta terreno	1.00	--	Sfavorevole

Combinazione n° 5 - GEO (A2-M2-R2)

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Sfavorevole
Peso terrapieno	1.00	--	Sfavorevole
Spinta terreno	1.00	--	Sfavorevole

Combinazione n° 6 - GEO (A2-M2-R2) H + V

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Sfavorevole
Peso terrapieno	1.00	--	Sfavorevole
Spinta terreno	1.00	--	Sfavorevole

Combinazione n° 7 - GEO (A2-M2-R2)

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Sfavorevole
Peso terrapieno	1.00	--	Sfavorevole
Spinta terreno	1.00	--	Sfavorevole
Q	1.30	1.00	Sfavorevole

Combinazione n° 8 - GEO (A2-M2-R2) H - V

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Sfavorevole
Peso terrapieno	1.00	--	Sfavorevole
Spinta terreno	1.00	--	Sfavorevole

Combinazione n° 9 - EQU (A1-M1-R3)



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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Favorevole
Peso terrapieno	1.00	--	Favorevole
Spinta terreno	1.30	--	Sfavorevole

Combinazione n° 10 - EQU (A1-M1-R3) H + V

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Favorevole
Peso terrapieno	1.00	--	Favorevole
Spinta terreno	1.00	--	Sfavorevole

Combinazione n° 11 - EQU (A1-M1-R3)

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Favorevole
Peso terrapieno	1.00	--	Favorevole
Spinta terreno	1.30	--	Sfavorevole
Q	1.50	1.00	Sfavorevole

Combinazione n° 12 - EQU (A1-M1-R3) H - V

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Favorevole
Peso terrapieno	1.00	--	Favorevole
Spinta terreno	1.00	--	Sfavorevole

Combinazione n° 13 - ECC

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Sfavorevole
Peso terrapieno	1.00	--	Sfavorevole
Spinta terreno	1.00	--	Sfavorevole
Urto	1.00	1.00	Sfavorevole

Combinazione n° 14 - SLER

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Sfavorevole
Peso terrapieno	1.00	--	Sfavorevole
Spinta terreno	1.00	--	Sfavorevole
Q	1.00	0.75	Sfavorevole

Combinazione n° 15 - SLEF

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Sfavorevole
Peso terrapieno	1.00	--	Sfavorevole
Spinta terreno	1.00	--	Sfavorevole

Combinazione n° 16 - SLEQ

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Sfavorevole
Peso terrapieno	1.00	--	Sfavorevole

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

Condizione	$\gamma$	$\Psi$	Effetto
Spinta terreno	1.00	--	Sfavorevole

Dati sismici

Comune	
Provincia	
Regione	
Latitudine	42.716470
Longitudine	12.111569
Indice punti di interpolazione	-1 - -1 - -1 - -1
Vita nominale	50 anni
Classe d'uso	II
Tipo costruzione	Normali affollamenti
Vita di riferimento	50 anni

	Simbolo	U.M.		SLU	SLE
Accelerazione al suolo	$a_g$	[m/s <sup>2</sup> ]		2.894	0.000
Accelerazione al suolo	$a_g/g$	[%]		0.295	0.000
Massimo fattore amplificazione spettro orizzontale	F0			2.423	0.000
Periodo inizio tratto spettro a velocità costante	Tc*			0.343	0.000
Tipo di sottosuolo - Coefficiente stratigrafico	Ss		C	1.271	1.500
Categoria topografica - Coefficiente amplificazione topografica	St		T1	1.000	

Stato limite ...	Coeff. di riduzione $\beta_m$	kh	kv
Ultimo	0.380	14.248	7.124
Ultimo - Ribaltamento	0.570	21.372	10.686
Esercizio	0.470	0.000	0.000

Forma diagramma incremento sismico  **Rettangolare**

**Opzioni di calcolo**Spinta

Metodo di calcolo della spinta	Culmann
Tipo di spinta	Spinta attiva
Terreno a bassa permeabilità	NO
Superficie di spinta limitata	NO

Capacità portante

Metodo di calcolo della portanza	Hansen
Criterio di media calcolo del terreno equivalente (terreni stratificati)	Ponderata
Criterio di riduzione per eccentricità della portanza	Bowles
Criterio di riduzione per rottura locale (punzonamento)	Nessuna
Larghezza fondazione nel terzo termine della formula del carico limite ( $0.5B\gamma N_r$ )	Larghezza effettiva (B)
Fattori di forma e inclinazione del carico	Solo i fattori di inclinazione
Se la fondazione ha larghezza superiore a 2.0 m viene applicato il fattore di riduzione per comportamento a piastra	

Stabilità globale

Metodo di calcolo della stabilità globale	Bishop
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Altro

Partecipazione spinta passiva terreno antistante	0.00
Partecipazione resistenza passiva dente di fondazione	50.00
Componente verticale della spinta nel calcolo delle sollecitazioni	NO
Considera terreno sulla fondazione di valle	NO
Considera spinta e peso acqua fondazione di valle	NO

Spostamenti

Non è stato richiesto il calcolo degli spostamenti

Cedimenti

Non è stato richiesto il calcolo dei cedimenti

Specifiche per le verifiche nelle combinazioni allo Stato Limite Ultimo (SLU)

	SLU	Eccezionale
Coefficiente di sicurezza calcestruzzo a compressione	1.50	1.00
Coefficiente di sicurezza acciaio	1.15	1.00
Fattore di riduzione da resistenza cubica a cilindrica	0.83	0.83
Fattore di riduzione per carichi di lungo periodo	0.85	0.85
Coefficiente di sicurezza per la sezione	1.00	1.00

Specifiche per le verifiche nelle combinazioni allo Stato Limite di Esercizio (SLE)**Paramento e fondazione muro**

Condizioni ambientali      Aggressive

Armatura ad aderenza migliorata      SI

*Verifica a fessurazione*

Sensibilità armatura      Poco sensibile

Metodo di calcolo aperture delle fessure      NTC 2018 - CIRCOLARE 21 gennaio 2019, n. 7 C.S.LL.PP.

Valori limite aperture delle fessure:

$w_1=0.20$

$w_2=0.30$

$w_3=0.40$

*Verifica delle tensioni*

Valori limite delle tensioni nei materiali:

Combinazione	Calcestruzzo	Acciaio
Rara	$0.60 f_{ck}$	$0.80 f_{yk}$
Frequente	$1.00 f_{ck}$	$1.00 f_{yk}$
Quasi permanente	$0.45 f_{ck}$	$1.00 f_{yk}$

## Risultati per combinazione

### Spinta e forze

#### Simbologia adottata

Ic	Indice della combinazione
A	Tipo azione
I	Inclinazione della spinta, espressa in [°]
V	Valore dell'azione, espressa in [kN]
C <sub>x</sub> , C <sub>y</sub>	Componente in direzione X ed Y dell'azione, espressa in [kN]
P <sub>x</sub> , P <sub>y</sub>	Coordinata X ed Y del punto di applicazione dell'azione, espressa in [m]

Ic	A	V	I	C <sub>x</sub>	C <sub>y</sub>	P <sub>x</sub>	P <sub>y</sub>
		[kN]	[°]	[kN]	[kN]	[m]	[m]
1	Spinta statica	106.86	23.33	98.13	42.32	3.05	-3.97
	Peso/Inerzia muro			0.00	196.43/0.00	0.36	-4.17
	Peso/Inerzia rivestimento			0.00	20.00	0.00	0.00
	Peso/Inerzia terrapieno			0.00	268.20/0.00	1.63	-2.43
	Peso dell'acqua sulla fondazione di valle				0.00	0.00	0.00
2	Spinta statica	82.20	23.33	75.48	32.55	3.05	-3.97
	Incremento di spinta sismica		36.63	33.63	14.51	3.05	-2.98
	Peso/Inerzia muro			27.99	196.43/13.99	0.36	-4.17
	Peso/Inerzia rivestimento			2.85	20.00	0.00	0.00
	Peso/Inerzia terrapieno			38.21	268.20/19.11	1.63	-2.43
3	Spinta statica	146.16	23.33	134.21	57.88	3.05	-3.65
	Peso/Inerzia muro			0.00	196.43/0.00	0.36	-4.17
	Peso/Inerzia rivestimento			0.00	20.00	0.00	0.00
	Peso/Inerzia terrapieno			0.00	422.98/0.00	1.60	-2.41
	Peso dell'acqua sulla fondazione di valle				0.00	0.00	0.00
4	Spinta statica	82.20	23.33	75.48	32.55	3.05	-3.97
	Incremento di spinta sismica		25.71	23.60	10.18	3.05	-2.98
	Peso/Inerzia muro			27.99	196.43/-13.99	0.36	-4.17
	Peso/Inerzia rivestimento			2.85	20.00	0.00	0.00
	Peso/Inerzia terrapieno			38.21	268.20/-19.11	1.63	-2.43
13	Spinta statica	82.20	23.33	75.48	32.55	3.05	-3.97
	Peso/Inerzia muro			0.00	196.43/0.00	0.36	-4.17
	Peso/Inerzia rivestimento			0.00	20.00	0.00	0.00
	Peso/Inerzia terrapieno			0.00	268.20/0.00	1.63	-2.43
	Peso dell'acqua sulla fondazione di valle				0.00	0.00	0.00
	Risultante forze sul muro			20.00	0.00	--	--
14	Spinta statica	101.76	23.33	93.44	40.30	3.05	-3.74
	Peso/Inerzia muro			0.00	196.43/0.00	0.36	-4.17
	Peso/Inerzia rivestimento			0.00	20.00	0.00	0.00
	Peso/Inerzia terrapieno			0.00	345.59/0.00	1.61	-2.42
	Peso dell'acqua sulla fondazione di valle				0.00	0.00	0.00
15	Spinta statica	82.20	23.33	75.48	32.55	3.05	-3.97
	Peso/Inerzia muro			0.00	196.43/0.00	0.36	-4.17
	Peso/Inerzia rivestimento			0.00	20.00	0.00	0.00
	Peso/Inerzia terrapieno			0.00	268.20/0.00	1.63	-2.43
	Peso dell'acqua sulla fondazione di valle				0.00	0.00	0.00
16	Spinta statica	82.20	23.33	75.48	32.55	3.05	-3.97
	Peso/Inerzia muro			0.00	196.43/0.00	0.36	-4.17
	Peso/Inerzia rivestimento			0.00	20.00	0.00	0.00
	Peso/Inerzia terrapieno			0.00	268.20/0.00	1.63	-2.43
	Peso dell'acqua sulla fondazione di valle				0.00	0.00	0.00

Risultanti globali

## Simbologia adottata

Cmb	Indice/Tipo combinazione
N	Componente normale al piano di posa, espressa in [kN]
T	Componente parallela al piano di posa, espressa in [kN]
M <sub>r</sub>	Momento ribaltante, espresso in [kNm]
M <sub>s</sub>	Momento stabilizzante, espresso in [kNm]
ecc	Eccentricità risultante, espressa in [m]

Ic	N [kN]	T [kN]	M <sub>r</sub> [kNm]	M <sub>s</sub> [kNm]	ecc [m]
1 - STR (A1-M1-R3)	526.95	98.13	194.63	1401.03	-0.041
2 - STR (A1-M1-R3)	564.79	178.17	450.98	1506.53	0.379
3 - STR (A1-M1-R3)	697.29	134.21	308.04	1932.66	-0.082
4 - STR (A1-M1-R3)	494.26	168.14	505.33	1402.89	0.432
13 - ECC	517.18	95.48	288.71	1357.12	0.182

Verifiche geotecniche*Quadro riassuntivo coeff. di sicurezza calcolati*

## Simbologia adottata

Cmb	Indice/Tipo combinazione
S	Sisma (H: componente orizzontale, V: componente verticale)
FS <sub>SCO</sub>	Coeff. di sicurezza allo scorrimento
FS <sub>RIB</sub>	Coeff. di sicurezza al ribaltamento
FS <sub>QLIM</sub>	Coeff. di sicurezza a carico limite
FS <sub>STAB</sub>	Coeff. di sicurezza a stabilità globale
FS <sub>HYD</sub>	Coeff. di sicurezza a sifonamento
FS <sub>UPL</sub>	Coeff. di sicurezza a sollevamento

Cmb	Sismica	FS <sub>SCO</sub>	FS <sub>RIB</sub>	FS <sub>QLIM</sub>	FS <sub>STAB</sub>	FS <sub>HYD</sub>	FS <sub>UPL</sub>
1 - STR (A1-M1-R3)		2.391		7.365			
2 - STR (A1-M1-R3)	H + V	1.411		3.708			
3 - STR (A1-M1-R3)		2.313		5.350			
4 - STR (A1-M1-R3)	H - V	1.309		3.762			
5 - GEO (A2-M2-R2)					1.743		
6 - GEO (A2-M2-R2)	H + V				1.669		
7 - GEO (A2-M2-R2)					1.560		
8 - GEO (A2-M2-R2)	H - V				1.577		
9 - EQU (A1-M1-R3)			7.199				
10 - EQU (A1-M1-R3)	H + V		2.596				
11 - EQU (A1-M1-R3)			6.274				
12 - EQU (A1-M1-R3)	H - V		2.055				
13 - ECC		2.412	4.701	7.063	2.178		

*Verifica a scorrimento fondazione*

**Simbologia adottata**

n°	Indice combinazione
Rsa	Resistenza allo scorrimento per attrito, espresso in [kN]
Rpt	Resistenza passiva terreno antistante, espresso in [kN]
Rps	Resistenza passiva sperone, espresso in [kN]
Rp	Resistenza a carichi orizzontali pali (solo per fondazione mista), espresso in [kN]
Rt	Resistenza a carichi orizzontali tiranti (solo se presenti), espresso in [kN]
R	Resistenza allo scorrimento (somma di Rsa+Rpt+Rps+Rp), espresso in [kN]
T	Carico parallelo al piano di posa, espresso in [kN]
FS	Fattore di sicurezza (rapporto R/T)

n°	Rsa	Rpt	Rps	Rp	Rt	R	T	FS
	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	
1 - STR (A1-M1-R3)	234.61	0.00	0.00	--	--	234.61	98.13	2.391
2 - STR (A1-M1-R3) H + V	251.46	0.00	0.00	--	--	251.46	178.17	1.411
3 - STR (A1-M1-R3)	310.46	0.00	0.00	--	--	310.46	134.21	2.313
4 - STR (A1-M1-R3) H - V	220.06	0.00	0.00	--	--	220.06	168.14	1.309
13 - ECC	230.26	0.00	0.00	--	--	230.26	95.48	2.412

**Verifica a carico limite****Simbologia adottata**

n°	Indice combinazione
N	Carico normale totale al piano di posa, espresso in [kN]
Qu	carico limite del terreno, espresso in [kN]
Qd	Portanza di progetto, espresso in [kN]
FS	Fattore di sicurezza (rapporto tra il carico limite e carico agente al piano di posa)

n°	N	Qu	Qd	FS
	[kN]	[kN]	[kN]	
1 - STR (A1-M1-R3)	526.95	3881.23	2772.31	7.365
2 - STR (A1-M1-R3) H + V	564.79	2094.49	1745.41	3.708
3 - STR (A1-M1-R3)	697.29	3730.65	2664.75	5.350
4 - STR (A1-M1-R3) H - V	494.26	1859.60	1549.66	3.762
13 - ECC	517.18	3652.77	2609.12	7.063

**Verifica a ribaltamento****Simbologia adottata**

n°	Indice combinazione
Ms	Momento stabilizzante, espresso in [kNm]
Mr	Momento ribaltante, espresso in [kNm]
FS	Fattore di sicurezza (rapporto tra momento stabilizzante e momento ribaltante)

La verifica viene eseguita rispetto allo spigolo inferiore esterno della fondazione

n°	Ms	Mr	FS
	[kNm]	[kNm]	
9 - EQU (A1-M1-R3)	1401.03	194.63	7.199
10 - EQU (A1-M1-R3) H + V	1587.73	611.59	2.596
11 - EQU (A1-M1-R3)	1932.66	308.04	6.274
12 - EQU (A1-M1-R3) H - V	1435.84	698.58	2.055
13 - ECC	1357.12	288.71	4.701

*Verifica stabilità globale muro + terreno*

## Simbologia adottata

Ic	Indice/Tipo combinazione
C	Centro superficie di scorrimento, espresso in [m]
R	Raggio, espresso in [m]
FS	Fattore di sicurezza

Ic	C [m]	R [m]	FS
5 - GEO (A2-M2-R2)	-1.68; 1.68	8.98	1.743
6 - GEO (A2-M2-R2) H + V	-2.24; 3.92	11.20	1.669
7 - GEO (A2-M2-R2)	-2.24; 1.12	8.83	1.560
8 - GEO (A2-M2-R2) H - V	-2.80; 4.47	11.96	1.577
13 - ECC	-1.68; 1.68	8.98	2.178

SollecitazioniElementi calcolati a trave

## Simbologia adottata

N	Sforzo normale, espresso in [kN]. Positivo se di compressione.
T	Taglio, espresso in [kN]. Positivo se diretto da monte verso valle
M	Momento, espresso in [kNm]. Positivo se tende le fibre contro terra (a monte)

*Paramento*Combinazione n° 1 - STR (A1-M1-R3)

n°	X [m]	N [kN]	T [kN]	M [kNm]
1	0.00	3.06	0.00	0.38
2	-0.10	4.30	0.03	0.39
3	-0.20	5.56	0.12	0.40
4	-0.30	6.84	0.28	0.44
5	-0.40	8.14	0.49	0.49
6	-0.50	9.47	0.77	0.58
7	-0.60	10.81	1.10	0.71
8	-0.70	12.18	1.50	0.87
9	-0.80	13.57	1.96	1.09
10	-0.90	14.98	2.48	1.36
11	-1.00	16.42	3.06	1.69
12	-1.10	17.87	3.70	2.09
13	-1.20	19.35	4.40	2.57
14	-1.30	20.85	5.17	3.12
15	-1.40	22.37	5.99	3.76
16	-1.50	23.91	6.88	4.49
17	-1.60	25.48	7.82	5.32
18	-1.70	27.07	8.83	6.26
19	-1.80	28.67	9.90	7.31
20	-1.90	30.31	11.03	8.47
21	-2.00	31.96	12.22	9.76
22	-2.10	33.63	13.47	11.18
23	-2.20	35.33	14.79	12.73



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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
24	-2.30	37.05	16.16	14.42
25	-2.40	38.79	17.60	16.27
26	-2.50	40.55	19.09	18.26
27	-2.60	42.33	20.65	20.42
28	-2.70	44.14	22.27	22.75
29	-2.80	45.97	23.95	25.24
30	-2.90	47.82	25.69	27.92
31	-3.00	49.69	27.50	30.78
32	-3.10	51.58	29.36	33.84
33	-3.20	53.49	31.28	37.09
34	-3.30	55.43	33.27	40.55
35	-3.40	57.39	35.32	44.21
36	-3.50	59.37	37.42	48.10
37	-3.60	61.37	39.59	52.20
38	-3.70	63.40	41.82	56.54
39	-3.80	65.44	44.11	61.11
40	-3.90	67.51	46.47	65.92
41	-4.00	69.60	48.88	70.98
42	-4.10	71.72	51.35	76.29
43	-4.20	73.85	53.89	81.86
44	-4.30	76.01	56.48	87.70
45	-4.40	78.18	59.14	93.81
46	-4.50	80.38	61.86	100.20
47	-4.60	82.60	64.64	106.88
48	-4.70	84.85	67.48	113.84
49	-4.80	87.11	70.38	121.11
50	-4.90	89.40	73.35	128.67
51	-5.00	91.71	76.37	136.55

Combinazione n° 2 - STR (A1-M1-R3) H + V

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	0.00	3.28	0.00	0.41
2	-0.10	4.52	0.69	0.45
3	-0.20	5.78	1.43	0.56
4	-0.30	7.06	2.22	0.76
5	-0.40	8.36	3.07	1.04
6	-0.50	9.69	3.96	1.42
7	-0.60	11.03	4.90	1.89
8	-0.70	12.40	5.89	2.47
9	-0.80	13.79	6.93	3.15
10	-0.90	15.20	8.02	3.95
11	-1.00	16.64	9.16	4.86
12	-1.10	18.09	10.35	5.90
13	-1.20	19.57	11.60	7.07
14	-1.30	21.07	12.89	8.37
15	-1.40	22.59	14.23	9.81
16	-1.50	24.13	15.62	11.39
17	-1.60	25.70	17.07	13.12
18	-1.70	27.28	18.56	15.00
19	-1.80	28.89	20.10	17.05
20	-1.90	30.52	21.69	19.25
21	-2.00	32.18	23.34	21.63
22	-2.10	33.85	25.03	24.18
23	-2.20	35.55	26.77	26.91
24	-2.30	37.27	28.56	29.83
25	-2.40	39.01	30.41	32.93
26	-2.50	40.77	32.30	36.23
27	-2.60	42.55	34.24	39.73
28	-2.70	44.36	36.24	43.43
29	-2.80	46.18	38.28	47.34
30	-2.90	48.03	40.37	51.47
31	-3.00	49.90	42.52	55.82
32	-3.10	51.80	44.71	60.39
33	-3.20	53.71	46.96	65.19
34	-3.30	55.65	49.25	70.23

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X [m]	N [kN]	T [kN]	M [kNm]
35	-3.40	57.61	51.60	75.51
36	-3.50	59.59	53.99	81.04
37	-3.60	61.59	56.43	86.82
38	-3.70	63.62	58.93	92.85
39	-3.80	65.66	61.47	99.14
40	-3.90	67.73	64.07	105.70
41	-4.00	69.82	66.71	112.53
42	-4.10	71.93	69.41	119.64
43	-4.20	74.07	72.15	127.03
44	-4.30	76.22	74.95	134.70
45	-4.40	78.40	77.79	142.67
46	-4.50	80.60	80.69	150.93
47	-4.60	82.82	83.64	159.50
48	-4.70	85.07	86.63	168.37
49	-4.80	87.33	89.68	177.56
50	-4.90	89.62	92.77	187.06
51	-5.00	91.93	95.92	196.89

Combinazione n° 3 - STR (A1-M1-R3)

n°	X [m]	N [kN]	T [kN]	M [kNm]
1	0.00	3.06	0.00	0.38
2	-0.10	4.30	1.30	0.45
3	-0.20	5.56	2.65	0.66
4	-0.30	6.84	4.07	1.01
5	-0.40	8.14	5.55	1.51
6	-0.50	9.47	7.09	2.16
7	-0.60	10.81	8.69	2.98
8	-0.70	12.18	10.36	3.97
9	-0.80	13.57	12.08	5.14
10	-0.90	14.98	13.86	6.48
11	-1.00	16.42	15.71	8.02
12	-1.10	17.87	17.62	9.75
13	-1.20	19.35	19.58	11.68
14	-1.30	20.85	21.61	13.81
15	-1.40	22.37	23.70	16.16
16	-1.50	23.91	25.85	18.73
17	-1.60	25.48	28.07	21.52
18	-1.70	27.07	30.34	24.54
19	-1.80	28.67	32.67	27.80
20	-1.90	30.31	35.07	31.31
21	-2.00	31.96	37.53	35.06
22	-2.10	33.63	40.04	39.07
23	-2.20	35.33	42.62	43.35
24	-2.30	37.05	45.26	47.89
25	-2.40	38.79	47.96	52.70
26	-2.50	40.55	50.72	57.80
27	-2.60	42.33	53.55	63.18
28	-2.70	44.14	56.43	68.86
29	-2.80	45.97	59.38	74.84
30	-2.90	47.82	62.38	81.12
31	-3.00	49.69	65.45	87.72
32	-3.10	51.58	68.58	94.63
33	-3.20	53.49	71.77	101.87
34	-3.30	55.43	75.02	109.44
35	-3.40	57.39	78.33	117.34
36	-3.50	59.37	81.70	125.59
37	-3.60	61.37	85.14	134.19
38	-3.70	63.40	88.63	143.14
39	-3.80	65.44	92.19	152.45
40	-3.90	67.51	95.81	162.14
41	-4.00	69.60	99.49	172.19
42	-4.10	71.72	103.22	182.63
43	-4.20	73.85	107.03	193.45
44	-4.30	76.01	110.89	204.67
45	-4.40	78.18	114.81	216.28

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
46	-4.50	80.38	118.79	228.30
47	-4.60	82.60	122.81	240.73
48	-4.70	84.85	126.85	253.57
49	-4.80	87.11	130.90	266.83
50	-4.90	89.40	134.95	280.50
51	-5.00	91.71	139.00	294.59

Combinazione n° 4 - STR (A1-M1-R3) H - V

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	0.00	3.06	0.00	0.38
2	-0.10	4.30	0.53	0.41
3	-0.20	5.56	1.12	0.50
4	-0.30	6.84	1.75	0.66
5	-0.40	8.14	2.44	0.89
6	-0.50	9.47	3.17	1.19
7	-0.60	10.81	3.95	1.58
8	-0.70	12.18	4.79	2.06
9	-0.80	13.57	5.67	2.62
10	-0.90	14.98	6.60	3.28
11	-1.00	16.42	7.59	4.05
12	-1.10	17.87	8.62	4.92
13	-1.20	19.35	9.71	5.91
14	-1.30	20.85	10.84	7.01
15	-1.40	22.37	12.03	8.24
16	-1.50	23.91	13.26	9.59
17	-1.60	25.48	14.55	11.08
18	-1.70	27.07	15.88	12.70
19	-1.80	28.67	17.27	14.47
20	-1.90	30.31	18.70	16.39
21	-2.00	31.96	20.19	18.46
22	-2.10	33.63	21.72	20.68
23	-2.20	35.33	23.31	23.07
24	-2.30	37.05	24.94	25.63
25	-2.40	38.79	26.63	28.37
26	-2.50	40.55	28.37	31.28
27	-2.60	42.33	30.15	34.38
28	-2.70	44.14	31.99	37.66
29	-2.80	45.97	33.87	41.14
30	-2.90	47.82	35.81	44.82
31	-3.00	49.69	37.80	48.71
32	-3.10	51.58	39.83	52.80
33	-3.20	53.49	41.92	57.11
34	-3.30	55.43	44.06	61.64
35	-3.40	57.39	46.24	66.39
36	-3.50	59.37	48.48	71.37
37	-3.60	61.37	50.77	76.59
38	-3.70	63.40	53.10	82.05
39	-3.80	65.44	55.49	87.75
40	-3.90	67.51	57.93	93.70
41	-4.00	69.60	60.42	99.91
42	-4.10	71.72	62.95	106.38
43	-4.20	73.85	65.54	113.12
44	-4.30	76.01	68.18	120.12
45	-4.40	78.18	70.87	127.41
46	-4.50	80.38	73.61	134.97
47	-4.60	82.60	76.39	142.82
48	-4.70	84.85	79.23	150.96
49	-4.80	87.11	82.12	159.40
50	-4.90	89.40	85.06	168.14
51	-5.00	91.71	88.05	177.18

Combinazione n° 13 - ECC

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	0.00	3.06	20.00	20.38
2	-0.10	4.30	20.02	22.39
3	-0.20	5.56	20.10	24.40
4	-0.30	6.84	20.21	26.43
5	-0.40	8.14	20.38	28.48
6	-0.50	9.47	20.59	30.55
7	-0.60	10.81	20.85	32.66
8	-0.70	12.18	21.15	34.79
9	-0.80	13.57	21.51	36.97
10	-0.90	14.98	21.91	39.19
11	-1.00	16.42	22.35	41.46
12	-1.10	17.87	22.85	43.78
13	-1.20	19.35	23.39	46.16
14	-1.30	20.85	23.97	48.60
15	-1.40	22.37	24.61	51.12
16	-1.50	23.91	25.29	53.70
17	-1.60	25.48	26.02	56.36
18	-1.70	27.07	26.79	59.11
19	-1.80	28.67	27.62	61.94
20	-1.90	30.31	28.49	64.86
21	-2.00	31.96	29.40	67.88
22	-2.10	33.63	30.36	71.00
23	-2.20	35.33	31.38	74.22
24	-2.30	37.05	32.43	77.56
25	-2.40	38.79	33.54	81.02
26	-2.50	40.55	34.69	84.59
27	-2.60	42.33	35.89	88.29
28	-2.70	44.14	37.13	92.12
29	-2.80	45.97	38.42	96.08
30	-2.90	47.82	39.76	100.19
31	-3.00	49.69	41.15	104.44
32	-3.10	51.58	42.58	108.84
33	-3.20	53.49	44.06	113.39
34	-3.30	55.43	45.59	118.10
35	-3.40	57.39	47.17	122.98
36	-3.50	59.37	48.79	128.02
37	-3.60	61.37	50.46	133.24
38	-3.70	63.40	52.17	138.63
39	-3.80	65.44	53.93	144.21
40	-3.90	67.51	55.74	149.98
41	-4.00	69.60	57.60	155.94
42	-4.10	71.72	59.50	162.09
43	-4.20	73.85	61.45	168.45
44	-4.30	76.01	63.45	175.02
45	-4.40	78.18	65.49	181.80
46	-4.50	80.38	67.59	188.79
47	-4.60	82.60	69.72	196.00
48	-4.70	84.85	71.91	203.45
49	-4.80	87.11	74.14	211.12
50	-4.90	89.40	76.42	219.03
51	-5.00	91.71	78.75	227.17

Combinazione n° 14 - SLER

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	0.00	3.06	0.00	0.38
2	-0.10	4.30	0.66	0.42
3	-0.20	5.56	1.36	0.53
4	-0.30	6.84	2.11	0.71
5	-0.40	8.14	2.91	0.98
6	-0.50	9.47	3.75	1.34
7	-0.60	10.81	4.64	1.79
8	-0.70	12.18	5.58	2.34
9	-0.80	13.57	6.57	2.99
10	-0.90	14.98	7.60	3.75
11	-1.00	16.42	8.68	4.62

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
12	-1.10	17.87	9.80	5.61
13	-1.20	19.35	10.98	6.72
14	-1.30	20.85	12.20	7.95
15	-1.40	22.37	13.46	9.32
16	-1.50	23.91	14.78	10.82
17	-1.60	25.48	16.14	12.46
18	-1.70	27.07	17.55	14.25
19	-1.80	28.67	19.00	16.18
20	-1.90	30.31	20.50	18.28
21	-2.00	31.96	22.05	20.53
22	-2.10	33.63	23.65	22.95
23	-2.20	35.33	25.29	25.53
24	-2.30	37.05	26.98	28.29
25	-2.40	38.79	28.72	31.23
26	-2.50	40.55	30.50	34.36
27	-2.60	42.33	32.33	37.67
28	-2.70	44.14	34.21	41.18
29	-2.80	45.97	36.14	44.88
30	-2.90	47.82	38.11	48.79
31	-3.00	49.69	40.13	52.90
32	-3.10	51.58	42.19	57.23
33	-3.20	53.49	44.31	61.78
34	-3.30	55.43	46.47	66.55
35	-3.40	57.39	48.67	71.54
36	-3.50	59.37	50.93	76.77
37	-3.60	61.37	53.23	82.23
38	-3.70	63.40	55.58	87.93
39	-3.80	65.44	57.97	93.89
40	-3.90	67.51	60.41	100.09
41	-4.00	69.60	62.90	106.54
42	-4.10	71.72	65.44	113.26
43	-4.20	73.85	68.02	120.25
44	-4.30	76.01	70.65	127.50
45	-4.40	78.18	73.33	135.03
46	-4.50	80.38	76.05	142.84
47	-4.60	82.60	78.80	150.93
48	-4.70	84.85	81.58	159.31
49	-4.80	87.11	84.37	167.98
50	-4.90	89.40	87.16	176.93
51	-5.00	91.71	89.97	186.18

Combinazione n° 15 - SLEF

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	0.00	3.06	0.00	0.38
2	-0.10	4.30	0.02	0.39
3	-0.20	5.56	0.10	0.40
4	-0.30	6.84	0.21	0.43
5	-0.40	8.14	0.38	0.48
6	-0.50	9.47	0.59	0.55
7	-0.60	10.81	0.85	0.66
8	-0.70	12.18	1.15	0.79
9	-0.80	13.57	1.51	0.97
10	-0.90	14.98	1.91	1.19
11	-1.00	16.42	2.35	1.46
12	-1.10	17.87	2.85	1.78
13	-1.20	19.35	3.39	2.16
14	-1.30	20.85	3.97	2.60
15	-1.40	22.37	4.61	3.12
16	-1.50	23.91	5.29	3.70
17	-1.60	25.48	6.02	4.36
18	-1.70	27.07	6.79	5.11
19	-1.80	28.67	7.62	5.94
20	-1.90	30.31	8.49	6.86
21	-2.00	31.96	9.40	7.88
22	-2.10	33.63	10.36	9.00

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
23	-2.20	35.33	11.38	10.22
24	-2.30	37.05	12.43	11.56
25	-2.40	38.79	13.54	13.02
26	-2.50	40.55	14.69	14.59
27	-2.60	42.33	15.89	16.29
28	-2.70	44.14	17.13	18.12
29	-2.80	45.97	18.42	20.08
30	-2.90	47.82	19.76	22.19
31	-3.00	49.69	21.15	24.44
32	-3.10	51.58	22.58	26.84
33	-3.20	53.49	24.06	29.39
34	-3.30	55.43	25.59	32.10
35	-3.40	57.39	27.17	34.98
36	-3.50	59.37	28.79	38.02
37	-3.60	61.37	30.46	41.24
38	-3.70	63.40	32.17	44.63
39	-3.80	65.44	33.93	48.21
40	-3.90	67.51	35.74	51.98
41	-4.00	69.60	37.60	55.94
42	-4.10	71.72	39.50	60.09
43	-4.20	73.85	41.45	64.45
44	-4.30	76.01	43.45	69.02
45	-4.40	78.18	45.49	73.80
46	-4.50	80.38	47.59	78.79
47	-4.60	82.60	49.72	84.00
48	-4.70	84.85	51.91	89.45
49	-4.80	87.11	54.14	95.12
50	-4.90	89.40	56.42	101.03
51	-5.00	91.71	58.75	107.17

Combinazione n° 16 - SLEQ

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	0.00	3.06	0.00	0.38
2	-0.10	4.30	0.02	0.39
3	-0.20	5.56	0.10	0.40
4	-0.30	6.84	0.21	0.43
5	-0.40	8.14	0.38	0.48
6	-0.50	9.47	0.59	0.55
7	-0.60	10.81	0.85	0.66
8	-0.70	12.18	1.15	0.79
9	-0.80	13.57	1.51	0.97
10	-0.90	14.98	1.91	1.19
11	-1.00	16.42	2.35	1.46
12	-1.10	17.87	2.85	1.78
13	-1.20	19.35	3.39	2.16
14	-1.30	20.85	3.97	2.60
15	-1.40	22.37	4.61	3.12
16	-1.50	23.91	5.29	3.70
17	-1.60	25.48	6.02	4.36
18	-1.70	27.07	6.79	5.11
19	-1.80	28.67	7.62	5.94
20	-1.90	30.31	8.49	6.86
21	-2.00	31.96	9.40	7.88
22	-2.10	33.63	10.36	9.00
23	-2.20	35.33	11.38	10.22
24	-2.30	37.05	12.43	11.56
25	-2.40	38.79	13.54	13.02
26	-2.50	40.55	14.69	14.59
27	-2.60	42.33	15.89	16.29
28	-2.70	44.14	17.13	18.12
29	-2.80	45.97	18.42	20.08
30	-2.90	47.82	19.76	22.19
31	-3.00	49.69	21.15	24.44
32	-3.10	51.58	22.58	26.84
33	-3.20	53.49	24.06	29.39

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
34	-3.30	55.43	25.59	32.10
35	-3.40	57.39	27.17	34.98
36	-3.50	59.37	28.79	38.02
37	-3.60	61.37	30.46	41.24
38	-3.70	63.40	32.17	44.63
39	-3.80	65.44	33.93	48.21
40	-3.90	67.51	35.74	51.98
41	-4.00	69.60	37.60	55.94
42	-4.10	71.72	39.50	60.09
43	-4.20	73.85	41.45	64.45
44	-4.30	76.01	43.45	69.02
45	-4.40	78.18	45.49	73.80
46	-4.50	80.38	47.59	78.79
47	-4.60	82.60	49.72	84.00
48	-4.70	84.85	51.91	89.45
49	-4.80	87.11	54.14	95.12
50	-4.90	89.40	56.42	101.03
51	-5.00	91.71	58.75	107.17

*Mensola valle*Combinazione n° 1 - STR (A1-M1-R3)

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-0.75	0.00	0.00	0.00
2	-0.67	0.00	1.02	0.04
3	-0.58	0.00	2.04	0.17
4	-0.50	0.00	3.06	0.38

Combinazione n° 2 - STR (A1-M1-R3) H + V

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-0.75	0.00	0.00	0.00
2	-0.67	0.00	1.09	0.05
3	-0.58	0.00	2.19	0.18
4	-0.50	0.00	3.28	0.41

Combinazione n° 3 - STR (A1-M1-R3)

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-0.75	0.00	0.00	0.00
2	-0.67	0.00	1.02	0.04
3	-0.58	0.00	2.04	0.17
4	-0.50	0.00	3.06	0.38

Combinazione n° 4 - STR (A1-M1-R3) H - V

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-0.75	0.00	0.00	0.00
2	-0.67	0.00	1.02	0.04
3	-0.58	0.00	2.04	0.17
4	-0.50	0.00	3.06	0.38

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**Combinazione n° 13 - ECC

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-0.75	0.00	0.00	0.00
2	-0.67	0.00	1.02	0.04
3	-0.58	0.00	2.04	0.17
4	-0.50	0.00	3.06	0.38

Combinazione n° 14 - SLER

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-0.75	0.00	0.00	0.00
2	-0.67	0.00	1.02	0.04
3	-0.58	0.00	2.04	0.17
4	-0.50	0.00	3.06	0.38

Combinazione n° 15 - SLEF

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-0.75	0.00	0.00	0.00
2	-0.67	0.00	1.02	0.04
3	-0.58	0.00	2.04	0.17
4	-0.50	0.00	3.06	0.38

Combinazione n° 16 - SLEQ

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-0.75	0.00	0.00	0.00
2	-0.67	0.00	1.02	0.04
3	-0.58	0.00	2.04	0.17
4	-0.50	0.00	3.06	0.38

*Fondazione*Combinazione n° 1 - STR (A1-M1-R3)

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-1.45	0.00	0.00	0.00
2	-1.35	0.00	8.32	0.40
3	-1.26	0.00	16.67	1.58
4	-1.17	0.00	25.04	3.56
5	-1.07	0.00	33.44	6.34
6	-0.97	0.00	41.86	9.92
7	-0.88	0.00	50.31	14.29
8	-0.78	0.00	58.79	19.48
9	-0.69	0.00	67.29	25.47
10	-0.59	0.00	75.82	32.26
11	-0.50	0.00	84.37	39.87
12	0.45	0.00	-69.86	-86.61
13	0.55	0.00	-66.82	-79.78
14	0.65	0.00	-63.80	-73.25
15	0.75	0.00	-60.81	-67.02
16	0.85	0.00	-57.85	-61.09
17	0.95	0.00	-54.92	-55.45



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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X [m]	N [kN]	T [kN]	M [kNm]
18	1.05	0.00	-52.02	-50.10
19	1.15	0.00	-49.14	-45.04
20	1.25	0.00	-46.30	-40.27
21	1.35	0.00	-43.48	-35.78
22	1.45	0.00	-40.69	-31.57
23	1.55	0.00	-37.93	-27.64
24	1.65	0.00	-35.20	-23.99
25	1.75	0.00	-32.50	-20.60
26	1.85	0.00	-29.83	-17.48
27	1.95	0.00	-27.19	-14.63
28	2.05	0.00	-24.57	-12.05
29	2.15	0.00	-21.98	-9.72
30	2.25	0.00	-19.43	-7.65
31	2.35	0.00	-16.90	-5.83
32	2.45	0.00	-14.40	-4.27
33	2.55	0.00	-11.93	-2.95
34	2.65	0.00	-9.48	-1.88
35	2.75	0.00	-7.07	-1.05
36	2.85	0.00	-4.68	-0.47
37	2.95	0.00	-2.33	-0.12
38	3.05	0.00	0.00	0.00

Combinazione n° 2 - STR (A1-M1-R3) H + V

n°	X [m]	N [kN]	T [kN]	M [kNm]
1	-1.45	0.00	0.00	0.00
2	-1.35	0.00	15.63	0.74
3	-1.26	0.00	31.01	2.96
4	-1.17	0.00	46.13	6.63
5	-1.07	0.00	60.99	11.72
6	-0.97	0.00	75.61	18.21
7	-0.88	0.00	89.96	26.08
8	-0.78	0.00	104.06	35.29
9	-0.69	0.00	117.91	45.84
10	-0.59	0.00	131.50	57.69
11	-0.50	0.00	144.83	70.82
12	0.45	0.00	-50.66	-107.27
13	0.55	0.00	-52.25	-102.12
14	0.65	0.00	-53.55	-96.83
15	0.75	0.00	-54.57	-91.42
16	0.85	0.00	-55.31	-85.92
17	0.95	0.00	-55.76	-80.37
18	1.05	0.00	-55.93	-74.78
19	1.15	0.00	-55.82	-69.19
20	1.25	0.00	-55.43	-63.63
21	1.35	0.00	-54.75	-58.12
22	1.45	0.00	-53.79	-52.69
23	1.55	0.00	-52.55	-47.37
24	1.65	0.00	-51.03	-42.18
25	1.75	0.00	-49.22	-37.17
26	1.85	0.00	-47.13	-32.35
27	1.95	0.00	-44.76	-27.75
28	2.05	0.00	-42.10	-23.41
29	2.15	0.00	-39.17	-19.34
30	2.25	0.00	-35.94	-15.58
31	2.35	0.00	-32.44	-12.16
32	2.45	0.00	-28.65	-9.11
33	2.55	0.00	-24.59	-6.44
34	2.65	0.00	-20.23	-4.20
35	2.75	0.00	-15.60	-2.40
36	2.85	0.00	-10.68	-1.09
37	2.95	0.00	-5.48	-0.28
38	3.05	0.00	0.00	0.00

Combinazione n° 3 - STR (A1-M1-R3)

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X [m]	N [kN]	T [kN]	M [kNm]
1	-1.45	0.00	0.00	0.00
2	-1.35	0.00	10.95	0.52
3	-1.26	0.00	21.96	2.08
4	-1.17	0.00	33.04	4.69
5	-1.07	0.00	44.19	8.36
6	-0.97	0.00	55.41	13.09
7	-0.88	0.00	66.70	18.89
8	-0.78	0.00	78.05	25.77
9	-0.69	0.00	89.47	33.72
10	-0.59	0.00	100.96	42.77
11	-0.50	0.00	112.52	52.91
12	0.45	0.00	-91.84	-108.36
13	0.55	0.00	-87.32	-99.35
14	0.65	0.00	-82.89	-90.79
15	0.75	0.00	-78.52	-82.67
16	0.85	0.00	-74.24	-74.98
17	0.95	0.00	-70.03	-67.72
18	1.05	0.00	-65.89	-60.87
19	1.15	0.00	-61.83	-54.43
20	1.25	0.00	-57.84	-48.40
21	1.35	0.00	-53.93	-42.76
22	1.45	0.00	-50.10	-37.51
23	1.55	0.00	-46.33	-32.63
24	1.65	0.00	-42.65	-28.13
25	1.75	0.00	-39.04	-24.00
26	1.85	0.00	-35.51	-20.22
27	1.95	0.00	-32.05	-16.79
28	2.05	0.00	-28.66	-13.70
29	2.15	0.00	-25.35	-10.95
30	2.25	0.00	-22.12	-8.53
31	2.35	0.00	-18.96	-6.42
32	2.45	0.00	-15.88	-4.63
33	2.55	0.00	-12.87	-3.14
34	2.65	0.00	-9.94	-1.95
35	2.75	0.00	-7.09	-1.05
36	2.85	0.00	-4.30	-0.43
37	2.95	0.00	-1.60	-0.08
38	3.05	0.00	0.00	0.00

Combinazione n° 4 - STR (A1-M1-R3) H - V

n°	X [m]	N [kN]	T [kN]	M [kNm]
1	-1.45	0.00	0.00	0.00
2	-1.35	0.00	14.13	0.67
3	-1.26	0.00	28.00	2.68
4	-1.17	0.00	41.61	5.98
5	-1.07	0.00	54.98	10.57
6	-0.97	0.00	68.08	16.42
7	-0.88	0.00	80.94	23.50
8	-0.78	0.00	93.54	31.79
9	-0.69	0.00	105.88	41.27
10	-0.59	0.00	117.97	51.90
11	-0.50	0.00	129.80	63.67
12	0.45	0.00	-91.26	-159.94
13	0.55	0.00	-91.27	-150.81
14	0.65	0.00	-91.01	-141.69
15	0.75	0.00	-90.46	-132.62
16	0.85	0.00	-89.63	-123.61
17	0.95	0.00	-88.51	-114.70
18	1.05	0.00	-87.12	-105.92
19	1.15	0.00	-85.44	-97.29
20	1.25	0.00	-83.48	-88.84
21	1.35	0.00	-81.24	-80.60
22	1.45	0.00	-78.72	-72.60
23	1.55	0.00	-75.91	-64.87

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X [m]	N [kN]	T [kN]	M [kNm]
24	1.65	0.00	-72.83	-57.43
25	1.75	0.00	-69.46	-50.31
26	1.85	0.00	-65.81	-43.54
27	1.95	0.00	-61.87	-37.16
28	2.05	0.00	-57.66	-31.18
29	2.15	0.00	-53.16	-25.64
30	2.25	0.00	-48.38	-20.56
31	2.35	0.00	-43.32	-15.97
32	2.45	0.00	-37.98	-11.90
33	2.55	0.00	-32.35	-8.38
34	2.65	0.00	-26.45	-5.44
35	2.75	0.00	-20.26	-3.10
36	2.85	0.00	-13.79	-1.40
37	2.95	0.00	-7.03	-0.35
38	3.05	0.00	0.00	0.00

Combinazione n° 13 - ECC

n°	X [m]	N [kN]	T [kN]	M [kNm]
1	-1.45	0.00	0.00	0.00
2	-1.35	0.00	11.32	0.54
3	-1.26	0.00	22.52	2.15
4	-1.17	0.00	33.61	4.81
5	-1.07	0.00	44.59	8.53
6	-0.97	0.00	55.46	13.28
7	-0.88	0.00	66.22	19.06
8	-0.78	0.00	76.86	25.86
9	-0.69	0.00	87.39	33.66
10	-0.59	0.00	97.81	42.46
11	-0.50	0.00	108.11	52.24
12	0.45	0.00	-39.17	-69.16
13	0.55	0.00	-39.22	-65.23
14	0.65	0.00	-39.15	-61.32
15	0.75	0.00	-38.95	-57.41
16	0.85	0.00	-38.62	-53.53
17	0.95	0.00	-38.17	-49.69
18	1.05	0.00	-37.60	-45.90
19	1.15	0.00	-36.90	-42.17
20	1.25	0.00	-36.08	-38.52
21	1.35	0.00	-35.14	-34.96
22	1.45	0.00	-34.06	-31.50
23	1.55	0.00	-32.87	-28.15
24	1.65	0.00	-31.55	-24.93
25	1.75	0.00	-30.10	-21.85
26	1.85	0.00	-28.54	-18.91
27	1.95	0.00	-26.84	-16.14
28	2.05	0.00	-25.02	-13.55
29	2.15	0.00	-23.08	-11.14
30	2.25	0.00	-21.01	-8.94
31	2.35	0.00	-18.82	-6.94
32	2.45	0.00	-16.51	-5.18
33	2.55	0.00	-14.07	-3.65
34	2.65	0.00	-11.50	-2.37
35	2.75	0.00	-8.81	-1.35
36	2.85	0.00	-6.00	-0.61
37	2.95	0.00	-3.06	-0.15
38	3.05	0.00	0.00	0.00

Combinazione n° 14 - SLER

n°	X [m]	N [kN]	T [kN]	M [kNm]
1	-1.45	0.00	0.00	0.00
2	-1.35	0.00	8.79	0.42

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
3	-1.26	0.00	17.66	1.67
4	-1.17	0.00	26.60	3.77
5	-1.07	0.00	35.62	6.73
6	-0.97	0.00	44.71	10.54
7	-0.88	0.00	53.87	15.23
8	-0.78	0.00	63.11	20.78
9	-0.69	0.00	72.42	27.22
10	-0.59	0.00	81.81	34.55
11	-0.50	0.00	91.27	42.77
12	0.45	0.00	-4.95	5.62
13	0.55	0.00	-3.71	6.08
14	0.65	0.00	-2.55	6.42
15	0.75	0.00	-1.48	6.64
16	0.85	0.00	-0.49	6.77
17	0.95	0.00	0.42	6.79
18	1.05	0.00	1.25	6.74
19	1.15	0.00	1.99	6.60
20	1.25	0.00	2.66	6.39
21	1.35	0.00	3.24	6.12
22	1.45	0.00	3.74	5.80
23	1.55	0.00	4.15	5.43
24	1.65	0.00	4.49	5.02
25	1.75	0.00	4.74	4.59
26	1.85	0.00	4.91	4.13
27	1.95	0.00	4.99	3.66
28	2.05	0.00	5.00	3.18
29	2.15	0.00	4.92	2.71
30	2.25	0.00	4.76	2.26
31	2.35	0.00	4.52	1.82
32	2.45	0.00	4.19	1.41
33	2.55	0.00	3.79	1.03
34	2.65	0.00	3.30	0.70
35	2.75	0.00	2.73	0.43
36	2.85	0.00	2.07	0.21
37	2.95	0.00	1.34	0.07
38	3.05	0.00	0.00	0.00

Combinazione n° 15 - SLEF

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-1.45	0.00	0.00	0.00
2	-1.35	0.00	7.48	0.35
3	-1.26	0.00	15.01	1.42
4	-1.17	0.00	22.60	3.21
5	-1.07	0.00	30.24	5.72
6	-0.97	0.00	37.94	8.96
7	-0.88	0.00	45.68	12.93
8	-0.78	0.00	53.48	17.64
9	-0.69	0.00	61.34	23.09
10	-0.59	0.00	69.24	29.29
11	-0.50	0.00	77.20	36.25
12	0.45	0.00	6.06	16.53
13	0.55	0.00	6.57	15.90
14	0.65	0.00	7.01	15.22
15	0.75	0.00	7.40	14.50
16	0.85	0.00	7.73	13.74
17	0.95	0.00	8.00	12.95
18	1.05	0.00	8.21	12.14
19	1.15	0.00	8.36	11.31
20	1.25	0.00	8.45	10.47
21	1.35	0.00	8.48	9.63
22	1.45	0.00	8.45	8.78
23	1.55	0.00	8.37	7.94
24	1.65	0.00	8.22	7.11
25	1.75	0.00	8.02	6.29
26	1.85	0.00	7.76	5.50

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
27	1.95	0.00	7.44	4.74
28	2.05	0.00	7.05	4.02
29	2.15	0.00	6.62	3.34
30	2.25	0.00	6.12	2.70
31	2.35	0.00	5.56	2.11
32	2.45	0.00	4.94	1.59
33	2.55	0.00	4.27	1.13
34	2.65	0.00	3.53	0.74
35	2.75	0.00	2.74	0.42
36	2.85	0.00	1.88	0.19
37	2.95	0.00	0.97	0.05
38	3.05	0.00	0.00	0.00

Combinazione n° 16 - SLEQ

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-1.45	0.00	0.00	0.00
2	-1.35	0.00	7.48	0.35
3	-1.26	0.00	15.01	1.42
4	-1.17	0.00	22.60	3.21
5	-1.07	0.00	30.24	5.72
6	-0.97	0.00	37.94	8.96
7	-0.88	0.00	45.68	12.93
8	-0.78	0.00	53.48	17.64
9	-0.69	0.00	61.34	23.09
10	-0.59	0.00	69.24	29.29
11	-0.50	0.00	77.20	36.25
12	0.45	0.00	6.06	16.53
13	0.55	0.00	6.57	15.90
14	0.65	0.00	7.01	15.22
15	0.75	0.00	7.40	14.50
16	0.85	0.00	7.73	13.74
17	0.95	0.00	8.00	12.95
18	1.05	0.00	8.21	12.14
19	1.15	0.00	8.36	11.31
20	1.25	0.00	8.45	10.47
21	1.35	0.00	8.48	9.63
22	1.45	0.00	8.45	8.78
23	1.55	0.00	8.37	7.94
24	1.65	0.00	8.22	7.11
25	1.75	0.00	8.02	6.29
26	1.85	0.00	7.76	5.50
27	1.95	0.00	7.44	4.74
28	2.05	0.00	7.05	4.02
29	2.15	0.00	6.62	3.34
30	2.25	0.00	6.12	2.70
31	2.35	0.00	5.56	2.11
32	2.45	0.00	4.94	1.59
33	2.55	0.00	4.27	1.13
34	2.65	0.00	3.53	0.74
35	2.75	0.00	2.74	0.42
36	2.85	0.00	1.88	0.19
37	2.95	0.00	0.97	0.05
38	3.05	0.00	0.00	0.00

Verifiche strutturali*Verifiche a flessione*

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**Elementi calcolati a trave

## Simbologia adottata

n°	indice sezione
Y	ordinata sezione espressa in [m]
B	larghezza sezione espressa in [cm]
H	altezza sezione espressa in [cm]
Afi	area ferri inferiori espressa in [cmq]
Afs	area ferri superiori espressa in [cmq]
M	momento agente espressa in [kNm]
N	sforzamento normale agente espressa in [kN]
Mu	momento ultimi espresso in [kNm]
Nu	sforzamento normale ultimo espressa in [kN]
FS	fattore di sicurezza (rapporto tra sollecitazione ultima e sollecitazione agente)

**Paramento**Combinazione n° 1 - STR (A1-M1-R3)

n°	Y [m]	B [cm]	H [cm]	Afi [cmq]	Afs [cmq]	M [kNm]	N [kN]	Mu [kNm]	Nu [kN]	FS
1	0.00	100	50	10.05	10.05	0.38	3.06	0.00	0.00	1000.000
2	-0.10	100	51	10.05	10.05	0.39	4.30	0.00	0.00	1000.000
3	-0.20	100	52	10.05	10.05	0.40	5.56	0.00	0.00	1000.000
4	-0.30	100	53	10.05	10.05	0.44	6.84	0.00	0.00	1000.000
5	-0.40	100	54	10.05	10.05	0.49	8.14	0.00	0.00	1000.000
6	-0.50	100	54	10.05	10.05	0.58	9.47	516.57	8407.62	888.061
7	-0.60	100	55	10.05	10.05	0.71	10.81	550.44	8428.43	779.430
8	-0.70	100	56	10.05	10.05	0.87	12.18	599.59	8362.12	686.452
9	-0.80	100	57	10.05	10.05	1.09	13.57	660.43	8225.91	606.111
10	-0.90	100	58	10.05	10.05	1.36	14.98	727.83	8013.29	534.809
11	-1.00	100	59	10.05	10.05	1.69	16.42	800.21	7757.27	472.509
12	-1.10	100	60	10.05	10.05	2.09	17.87	872.97	7452.09	416.952
13	-1.20	100	61	10.05	10.05	2.57	19.35	943.59	7111.18	367.498
14	-1.30	100	62	10.05	10.05	3.12	20.85	1011.64	6757.16	324.090
15	-1.40	100	62	10.05	10.05	3.76	22.37	1072.62	6379.21	285.157
16	-1.50	100	63	10.05	10.05	4.49	23.91	1123.85	5980.47	250.082
17	-1.60	100	64	10.05	10.05	5.32	25.48	1162.83	5564.05	218.378
18	-1.70	100	65	10.05	10.05	6.26	27.07	1175.10	5080.16	187.696
19	-1.80	100	66	10.05	10.05	7.31	28.67	1166.36	4576.87	159.614
20	-1.90	100	67	10.05	10.05	8.47	30.31	1140.20	4078.93	134.595
21	-2.00	100	68	10.05	10.05	9.76	31.96	1099.76	3601.50	112.696
22	-2.10	100	69	10.05	10.05	11.18	33.63	1051.65	3164.87	94.102
23	-2.20	100	70	10.05	10.05	12.73	35.33	991.17	2751.06	77.871
24	-2.30	100	71	10.05	10.05	14.42	37.05	927.12	2381.35	64.280
25	-2.40	100	71	10.05	10.05	16.27	38.79	868.17	2070.13	53.372
26	-2.50	100	72	10.05	10.05	18.26	40.55	794.82	1764.64	43.519
27	-2.60	100	73	10.05	10.05	20.42	42.33	736.49	1526.67	36.064
28	-2.70	100	74	10.05	10.05	22.75	44.14	692.84	1344.39	30.459
29	-2.80	100	75	10.05	10.05	25.24	45.97	659.31	1200.47	26.117
30	-2.90	100	76	10.05	10.05	27.92	47.82	633.06	1084.08	22.672
31	-3.00	100	77	10.05	10.05	30.78	49.69	612.21	988.10	19.887
32	-3.10	100	78	10.05	10.05	33.84	51.58	590.53	900.11	17.451
33	-3.20	100	79	10.05	10.05	37.09	53.49	571.14	823.71	15.398
34	-3.30	100	79	10.05	10.05	40.55	55.43	555.25	759.06	13.694
35	-3.40	100	80	10.05	10.05	44.21	57.39	542.13	703.68	12.261
36	-3.50	100	81	10.05	10.05	48.10	59.37	531.24	655.75	11.045
37	-3.60	100	82	10.05	10.05	52.20	61.37	522.16	613.88	10.002
38	-3.70	100	83	10.05	10.05	56.54	63.40	514.58	577.00	9.101
39	-3.80	100	84	10.05	10.05	61.11	65.44	508.24	544.30	8.317
40	-3.90	100	85	10.05	10.05	65.92	67.51	502.99	515.14	7.630
41	-4.00	100	86	10.05	10.05	70.98	69.60	498.68	489.01	7.026

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
42	-4.10	100	87	10.05	10.05	76.29	71.72	495.14	465.44	6.490
43	-4.20	100	87	10.05	10.05	81.86	73.85	492.27	444.07	6.013
44	-4.30	100	88	10.05	10.05	87.70	76.01	489.99	424.63	5.587
45	-4.40	100	89	10.05	10.05	93.81	78.18	488.21	406.86	5.204
46	-4.50	100	90	10.05	10.05	100.20	80.38	486.89	390.57	4.859
47	-4.60	100	91	10.05	10.05	106.88	82.60	485.96	375.59	4.547
48	-4.70	100	92	10.05	10.05	113.84	84.85	485.39	361.76	4.264
49	-4.80	100	93	10.05	10.05	121.11	87.11	485.13	348.96	4.006
50	-4.90	100	94	10.05	10.05	128.67	89.40	485.16	337.08	3.770
51	-5.00	100	95	10.05	10.05	136.55	91.71	485.45	326.03	3.555

Combinazione n° 2 - STR (A1-M1-R3) H + V

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
1	0.00	100	50	10.05	10.05	0.41	3.28	0.00	0.00	1000.000
2	-0.10	100	51	10.05	10.05	0.45	4.52	0.00	0.00	1000.000
3	-0.20	100	52	10.05	10.05	0.56	5.78	0.00	0.00	1000.000
4	-0.30	100	53	10.05	10.05	0.76	7.06	697.63	6499.34	920.720
5	-0.40	100	54	10.05	10.05	1.04	8.36	761.88	6116.49	731.515
6	-0.50	100	54	10.05	10.05	1.42	9.69	825.93	5642.43	582.552
7	-0.60	100	55	10.05	10.05	1.89	11.03	878.03	5120.63	464.165
8	-0.70	100	56	10.05	10.05	2.47	12.40	901.30	4528.17	365.175
9	-0.80	100	57	10.05	10.05	3.15	13.79	891.09	3897.96	282.667
10	-0.90	100	58	10.05	10.05	3.95	15.20	856.06	3294.91	216.745
11	-1.00	100	59	10.05	10.05	4.86	16.64	803.09	2746.19	165.080
12	-1.10	100	60	10.05	10.05	5.90	18.09	741.34	2271.94	125.583
13	-1.20	100	61	10.05	10.05	7.07	19.57	676.29	1871.95	95.661
14	-1.30	100	62	10.05	10.05	8.37	21.07	614.13	1545.90	73.377
15	-1.40	100	62	10.05	10.05	9.81	22.59	561.37	1292.95	57.237
16	-1.50	100	63	10.05	10.05	11.39	24.13	524.93	1112.21	46.088
17	-1.60	100	64	10.05	10.05	13.12	25.70	498.73	976.81	38.012
18	-1.70	100	65	10.05	10.05	15.00	27.28	479.39	871.72	31.950
19	-1.80	100	66	10.05	10.05	17.05	28.89	464.86	787.87	27.269
20	-1.90	100	67	10.05	10.05	19.25	30.52	449.43	712.46	23.341
21	-2.00	100	68	10.05	10.05	21.63	32.18	437.36	650.58	20.219
22	-2.10	100	69	10.05	10.05	24.18	33.85	427.91	599.01	17.696
23	-2.20	100	70	10.05	10.05	26.91	35.55	420.47	555.39	15.624
24	-2.30	100	71	10.05	10.05	29.83	37.27	414.61	518.03	13.901
25	-2.40	100	71	10.05	10.05	32.93	39.01	410.02	485.68	12.452
26	-2.50	100	72	10.05	10.05	36.23	40.77	406.46	457.40	11.220
27	-2.60	100	73	10.05	10.05	39.73	42.55	403.76	432.48	10.164
28	-2.70	100	74	10.05	10.05	43.43	44.36	401.77	410.36	9.251
29	-2.80	100	75	10.05	10.05	47.34	46.18	400.37	390.59	8.457
30	-2.90	100	76	10.05	10.05	51.47	48.03	399.49	372.82	7.762
31	-3.00	100	77	10.05	10.05	55.82	49.90	399.04	356.77	7.149
32	-3.10	100	78	10.05	10.05	60.39	51.80	398.97	342.20	6.606
33	-3.20	100	79	10.05	10.05	65.19	53.71	399.22	328.92	6.124
34	-3.30	100	79	10.05	10.05	70.23	55.65	399.76	316.76	5.692
35	-3.40	100	80	10.05	10.05	75.51	57.61	400.56	305.58	5.304
36	-3.50	100	81	10.05	10.05	81.04	59.59	401.58	295.29	4.955
37	-3.60	100	82	10.05	10.05	86.82	61.59	402.79	285.76	4.640
38	-3.70	100	83	10.05	10.05	92.85	63.62	404.18	276.93	4.353
39	-3.80	100	84	10.05	10.05	99.14	65.66	405.73	268.72	4.092
40	-3.90	100	85	10.05	10.05	105.70	67.73	407.46	261.09	3.855
41	-4.00	100	86	10.05	10.05	112.53	69.82	409.36	253.99	3.638
42	-4.10	100	87	10.05	10.05	119.64	71.93	411.38	247.34	3.438
43	-4.20	100	87	10.05	10.05	127.03	74.07	413.51	241.11	3.255
44	-4.30	100	88	10.05	10.05	134.70	76.22	415.73	235.25	3.086
45	-4.40	100	89	10.05	10.05	142.67	78.40	418.05	229.73	2.930
46	-4.50	100	90	10.05	10.05	150.93	80.60	420.45	224.53	2.786
47	-4.60	100	91	10.05	10.05	159.50	82.82	422.93	219.61	2.652
48	-4.70	100	92	10.05	10.05	168.37	85.07	425.48	214.96	2.527
49	-4.80	100	93	10.05	10.05	177.56	87.33	428.10	210.56	2.411
50	-4.90	100	94	10.05	10.05	187.06	89.62	430.77	206.38	2.303
51	-5.00	100	95	10.05	10.05	196.89	91.93	433.51	202.41	2.202

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## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

## Combinazione n° 3 - STR (A1-M1-R3)

n°	Y [m]	B [cm]	H [cm]	Afi [cmq]	Afs [cmq]	M [kNm]	N [kN]	Mu [kNm]	Nu [kN]	FS
1	0.00	100	50	10.05	10.05	0.38	3.06	0.00	0.00	1000.000
2	-0.10	100	51	10.05	10.05	0.45	4.30	0.00	0.00	1000.000
3	-0.20	100	52	10.05	10.05	0.66	5.56	0.00	0.00	1000.000
4	-0.30	100	53	10.05	10.05	1.01	6.84	784.05	5335.38	779.953
5	-0.40	100	54	10.05	10.05	1.51	8.14	829.29	4484.72	550.740
6	-0.50	100	54	10.05	10.05	2.16	9.47	799.55	3499.39	369.626
7	-0.60	100	55	10.05	10.05	2.98	10.81	723.96	2623.97	242.655
8	-0.70	100	56	10.05	10.05	3.97	12.18	627.74	1924.68	157.998
9	-0.80	100	57	10.05	10.05	5.14	13.57	535.94	1415.61	104.307
10	-0.90	100	58	10.05	10.05	6.48	14.98	469.24	1084.20	72.360
11	-1.00	100	59	10.05	10.05	8.02	16.42	429.70	879.68	53.583
12	-1.10	100	60	10.05	10.05	9.75	17.87	404.35	741.38	41.481
13	-1.20	100	61	10.05	10.05	11.68	19.35	384.84	637.75	32.958
14	-1.30	100	62	10.05	10.05	13.81	20.85	369.30	557.46	26.737
15	-1.40	100	62	10.05	10.05	16.16	22.37	358.21	495.88	22.166
16	-1.50	100	63	10.05	10.05	18.73	23.91	350.19	447.18	18.700
17	-1.60	100	64	10.05	10.05	21.52	25.48	344.38	407.75	16.004
18	-1.70	100	65	10.05	10.05	24.54	27.07	340.21	375.19	13.862
19	-1.80	100	66	10.05	10.05	27.80	28.67	337.29	347.86	12.131
20	-1.90	100	67	10.05	10.05	31.31	30.31	335.34	324.61	10.711
21	-2.00	100	68	10.05	10.05	35.06	31.96	334.17	304.58	9.531
22	-2.10	100	69	10.05	10.05	39.07	33.63	333.62	287.17	8.538
23	-2.20	100	70	10.05	10.05	43.35	35.33	333.58	271.88	7.696
24	-2.30	100	71	10.05	10.05	47.89	37.05	333.96	258.36	6.974
25	-2.40	100	71	10.05	10.05	52.70	38.79	334.70	246.32	6.351
26	-2.50	100	72	10.05	10.05	57.80	40.55	335.74	235.53	5.809
27	-2.60	100	73	10.05	10.05	63.18	42.33	337.03	225.80	5.334
28	-2.70	100	74	10.05	10.05	68.86	44.14	338.54	216.99	4.916
29	-2.80	100	75	10.05	10.05	74.84	45.97	340.25	208.98	4.546
30	-2.90	100	76	10.05	10.05	81.12	47.82	342.12	201.65	4.217
31	-3.00	100	77	10.05	10.05	87.72	49.69	344.13	194.93	3.923
32	-3.10	100	78	10.05	10.05	94.63	51.58	346.28	188.74	3.659
33	-3.20	100	79	10.05	10.05	101.87	53.49	348.53	183.03	3.421
34	-3.30	100	79	10.05	10.05	109.44	55.43	350.89	177.73	3.206
35	-3.40	100	80	10.05	10.05	117.34	57.39	353.34	172.82	3.011
36	-3.50	100	81	10.05	10.05	125.59	59.37	355.87	168.24	2.834
37	-3.60	100	82	10.05	10.05	134.19	61.37	358.48	163.96	2.671
38	-3.70	100	83	10.05	10.05	143.14	63.40	361.15	159.96	2.523
39	-3.80	100	84	10.05	10.05	152.45	65.44	363.88	156.20	2.387
40	-3.90	100	85	10.05	10.05	162.14	67.51	366.70	152.69	2.262
41	-4.00	100	86	10.05	10.05	172.19	69.60	369.61	149.40	2.147
42	-4.10	100	87	10.05	10.05	182.63	71.72	372.57	146.30	2.040
43	-4.20	100	87	10.05	10.05	193.45	73.85	375.58	143.38	1.941
44	-4.30	100	88	10.05	10.05	204.67	76.01	378.63	140.61	1.850
45	-4.40	100	89	10.05	10.05	216.28	78.18	381.71	137.98	1.765
46	-4.50	100	90	10.05	10.05	228.30	80.38	384.83	135.49	1.686
47	-4.60	100	91	10.05	10.05	240.73	82.60	387.99	133.13	1.612
48	-4.70	100	92	10.05	10.05	253.57	84.85	391.17	130.89	1.543
49	-4.80	100	93	10.05	10.05	266.83	87.11	394.39	128.75	1.478
50	-4.90	100	94	10.05	10.05	280.50	89.40	397.63	126.73	1.418
51	-5.00	100	95	10.05	10.05	294.59	91.71	400.90	124.80	1.361

## Combinazione n° 4 - STR (A1-M1-R3) H - V

n°	Y [m]	B [cm]	H [cm]	Afi [cmq]	Afs [cmq]	M [kNm]	N [kN]	Mu [kNm]	Nu [kN]	FS
1	0.00	100	50	10.05	10.05	0.38	3.06	0.00	0.00	1000.000
2	-0.10	100	51	10.05	10.05	0.41	4.30	0.00	0.00	1000.000
3	-0.20	100	52	10.05	10.05	0.50	5.56	0.00	0.00	1000.000
4	-0.30	100	53	10.05	10.05	0.66	6.84	0.00	0.00	1000.000
5	-0.40	100	54	10.05	10.05	0.89	8.14	720.24	6602.53	810.815
6	-0.50	100	54	10.05	10.05	1.19	9.47	784.92	6225.18	657.540
7	-0.60	100	55	10.05	10.05	1.58	10.81	847.30	5795.28	535.926
8	-0.70	100	56	10.05	10.05	2.06	12.18	900.47	5337.29	438.141



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## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
9	-0.80	100	57	10.05	10.05	2.62	13.57	934.34	4837.24	356.423
10	-0.90	100	58	10.05	10.05	3.28	14.98	935.36	4266.56	284.752
11	-1.00	100	59	10.05	10.05	4.05	16.42	914.84	3707.98	225.860
12	-1.10	100	60	10.05	10.05	4.92	17.87	876.56	3181.99	178.036
13	-1.20	100	61	10.05	10.05	5.91	19.35	827.39	2709.44	140.021
14	-1.30	100	62	10.05	10.05	7.01	20.85	775.16	2304.83	110.545
15	-1.40	100	62	10.05	10.05	8.24	22.37	713.79	1938.37	86.647
16	-1.50	100	63	10.05	10.05	9.59	23.91	656.57	1636.99	68.453
17	-1.60	100	64	10.05	10.05	11.08	25.48	603.16	1387.24	54.447
18	-1.70	100	65	10.05	10.05	12.70	27.07	565.21	1204.32	44.496
19	-1.80	100	66	10.05	10.05	14.47	28.67	537.30	1064.72	37.131
20	-1.90	100	67	10.05	10.05	16.39	30.31	516.26	954.79	31.506
21	-2.00	100	68	10.05	10.05	18.46	31.96	500.14	866.06	27.100
22	-2.10	100	69	10.05	10.05	20.68	33.63	485.48	789.43	23.472
23	-2.20	100	70	10.05	10.05	23.07	35.33	471.49	721.88	20.433
24	-2.30	100	71	10.05	10.05	25.63	37.05	460.34	665.28	17.958
25	-2.40	100	71	10.05	10.05	28.37	38.79	451.40	617.18	15.912
26	-2.50	100	72	10.05	10.05	31.28	40.55	444.22	575.83	14.201
27	-2.60	100	73	10.05	10.05	34.38	42.33	438.44	539.90	12.754
28	-2.70	100	74	10.05	10.05	37.66	44.14	433.83	508.41	11.519
29	-2.80	100	75	10.05	10.05	41.14	45.97	430.17	480.59	10.455
30	-2.90	100	76	10.05	10.05	44.82	47.82	427.31	455.84	9.533
31	-3.00	100	77	10.05	10.05	48.71	49.69	425.13	433.69	8.729
32	-3.10	100	78	10.05	10.05	52.80	51.58	423.53	413.75	8.021
33	-3.20	100	79	10.05	10.05	57.11	53.49	422.43	395.70	7.397
34	-3.30	100	79	10.05	10.05	61.64	55.43	421.75	379.30	6.843
35	-3.40	100	80	10.05	10.05	66.39	57.39	421.45	364.33	6.348
36	-3.50	100	81	10.05	10.05	71.37	59.37	421.48	350.62	5.905
37	-3.60	100	82	10.05	10.05	76.59	61.37	421.80	338.01	5.507
38	-3.70	100	83	10.05	10.05	82.05	63.40	422.37	326.37	5.148
39	-3.80	100	84	10.05	10.05	87.75	65.44	423.17	315.61	4.823
40	-3.90	100	85	10.05	10.05	93.70	67.51	424.21	305.65	4.527
41	-4.00	100	86	10.05	10.05	99.91	69.60	425.48	296.41	4.259
42	-4.10	100	87	10.05	10.05	106.38	71.72	426.92	287.80	4.013
43	-4.20	100	87	10.05	10.05	113.12	73.85	428.50	279.75	3.788
44	-4.30	100	88	10.05	10.05	120.12	76.01	430.23	272.21	3.582
45	-4.40	100	89	10.05	10.05	127.41	78.18	432.08	265.14	3.391
46	-4.50	100	90	10.05	10.05	134.97	80.38	434.05	258.50	3.216
47	-4.60	100	91	10.05	10.05	142.82	82.60	436.12	252.24	3.054
48	-4.70	100	92	10.05	10.05	150.96	84.85	438.29	246.34	2.903
49	-4.80	100	93	10.05	10.05	159.40	87.11	440.55	240.76	2.764
50	-4.90	100	94	10.05	10.05	168.14	89.40	442.89	235.49	2.634
51	-5.00	100	95	10.05	10.05	177.18	91.71	445.30	230.49	2.513

## Combinazione n° 13 - ECC

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
1	0.00	100	50	10.05	10.05	20.38	3.06	208.57	31.36	10.232
2	-0.10	100	51	10.05	10.05	22.39	4.30	214.85	41.28	9.597
3	-0.20	100	52	10.05	10.05	24.40	5.56	221.03	50.37	9.058
4	-0.30	100	53	10.05	10.05	26.43	6.84	227.13	58.79	8.594
5	-0.40	100	54	10.05	10.05	28.48	8.14	233.18	66.68	8.188
6	-0.50	100	54	10.05	10.05	30.55	9.47	239.19	74.12	7.829
7	-0.60	100	55	10.05	10.05	32.66	10.81	245.17	81.19	7.508
8	-0.70	100	56	10.05	10.05	34.79	12.18	251.13	87.93	7.218
9	-0.80	100	57	10.05	10.05	36.97	13.57	257.08	94.38	6.954
10	-0.90	100	58	10.05	10.05	39.19	14.98	263.01	100.56	6.711
11	-1.00	100	59	10.05	10.05	41.46	16.42	268.93	106.49	6.487
12	-1.10	100	60	10.05	10.05	43.78	17.87	274.84	112.20	6.278
13	-1.20	100	61	10.05	10.05	46.16	19.35	280.73	117.68	6.082
14	-1.30	100	62	10.05	10.05	48.60	20.85	286.62	122.95	5.897
15	-1.40	100	62	10.05	10.05	51.12	22.37	292.49	128.01	5.722
16	-1.50	100	63	10.05	10.05	53.70	23.91	298.35	132.86	5.556
17	-1.60	100	64	10.05	10.05	56.36	25.48	304.18	137.51	5.397
18	-1.70	100	65	10.05	10.05	59.11	27.07	310.01	141.96	5.245
19	-1.80	100	66	10.05	10.05	61.94	28.67	315.80	146.21	5.099

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## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
20	-1.90	100	67	10.05	10.05	64.86	30.31	321.58	150.26	4.958
21	-2.00	100	68	10.05	10.05	67.88	31.96	327.33	154.11	4.822
22	-2.10	100	69	10.05	10.05	71.00	33.63	333.06	157.77	4.691
23	-2.20	100	70	10.05	10.05	74.22	35.33	338.82	161.26	4.565
24	-2.30	100	71	10.05	10.05	77.56	37.05	344.58	164.58	4.443
25	-2.40	100	71	10.05	10.05	81.02	38.79	350.31	167.71	4.324
26	-2.50	100	72	10.05	10.05	84.59	40.55	356.02	170.66	4.209
27	-2.60	100	73	10.05	10.05	88.29	42.33	361.69	173.42	4.097
28	-2.70	100	74	10.05	10.05	92.12	44.14	367.33	176.00	3.988
29	-2.80	100	75	10.05	10.05	96.08	45.97	372.94	178.41	3.881
30	-2.90	100	76	10.05	10.05	100.19	47.82	378.51	180.64	3.778
31	-3.00	100	77	10.05	10.05	104.44	49.69	384.04	182.71	3.677
32	-3.10	100	78	10.05	10.05	108.84	51.58	389.54	184.61	3.579
33	-3.20	100	79	10.05	10.05	113.39	53.49	395.00	186.35	3.484
34	-3.30	100	79	10.05	10.05	118.10	55.43	400.43	187.95	3.391
35	-3.40	100	80	10.05	10.05	122.98	57.39	405.82	189.39	3.300
36	-3.50	100	81	10.05	10.05	128.02	59.37	411.18	190.69	3.212
37	-3.60	100	82	10.05	10.05	133.24	61.37	416.50	191.85	3.126
38	-3.70	100	83	10.05	10.05	138.63	63.40	421.78	192.88	3.042
39	-3.80	100	84	10.05	10.05	144.21	65.44	427.03	193.79	2.961
40	-3.90	100	85	10.05	10.05	149.98	67.51	432.24	194.57	2.882
41	-4.00	100	86	10.05	10.05	155.94	69.60	437.42	195.24	2.805
42	-4.10	100	87	10.05	10.05	162.09	71.72	442.57	195.81	2.730
43	-4.20	100	87	10.05	10.05	168.45	73.85	447.68	196.26	2.658
44	-4.30	100	88	10.05	10.05	175.02	76.01	452.77	196.62	2.587
45	-4.40	100	89	10.05	10.05	181.80	78.18	457.82	196.89	2.518
46	-4.50	100	90	10.05	10.05	188.79	80.38	462.85	197.07	2.452
47	-4.60	100	91	10.05	10.05	196.00	82.60	467.84	197.17	2.387
48	-4.70	100	92	10.05	10.05	203.45	84.85	472.81	197.19	2.324
49	-4.80	100	93	10.05	10.05	211.12	87.11	477.75	197.13	2.263
50	-4.90	100	94	10.05	10.05	219.03	89.40	482.67	197.01	2.204
51	-5.00	100	95	10.05	10.05	227.17	91.71	487.56	196.83	2.146

## Mensola valle

## Combinazione n° 1 - STR (A1-M1-R3)

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
1	-0.75	100	50	8.04	8.04	0.00	0.00	0.00	0.00	1000.000
2	-0.67	100	50	8.04	8.04	-0.04	0.00	0.00	0.00	1000.000
3	-0.58	100	50	8.04	8.04	-0.17	0.00	-140.19	0.00	823.421
4	-0.50	100	50	8.04	8.04	-0.38	0.00	-140.19	0.00	365.965

## Combinazione n° 2 - STR (A1-M1-R3) H + V

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
1	-0.75	100	50	8.04	8.04	0.00	0.00	0.00	0.00	1000.000
2	-0.67	100	50	8.04	8.04	-0.05	0.00	0.00	0.00	1000.000
3	-0.58	100	50	8.04	8.04	-0.18	0.00	-140.19	0.00	768.661
4	-0.50	100	50	8.04	8.04	-0.41	0.00	-140.19	0.00	341.627

## Combinazione n° 3 - STR (A1-M1-R3)

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
1	-0.75	100	50	8.04	8.04	0.00	0.00	0.00	0.00	1000.000
2	-0.67	100	50	8.04	8.04	-0.04	0.00	0.00	0.00	1000.000
3	-0.58	100	50	8.04	8.04	-0.17	0.00	-140.19	0.00	823.421

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
4	-0.50	100	50	8.04	8.04	-0.38	0.00	-140.19	0.00	365.965

Combinazione n° 4 - STR (A1-M1-R3) H - V

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
1	-0.75	100	50	8.04	8.04	0.00	0.00	0.00	0.00	1000.000
2	-0.67	100	50	8.04	8.04	-0.04	0.00	0.00	0.00	1000.000
3	-0.58	100	50	8.04	8.04	-0.17	0.00	-140.19	0.00	823.421
4	-0.50	100	50	8.04	8.04	-0.38	0.00	-140.19	0.00	365.965

Combinazione n° 13 - ECC

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
1	-0.75	100	50	8.04	8.04	0.00	0.00	0.00	0.00	1000.000
2	-0.67	100	50	8.04	8.04	-0.04	0.00	0.00	0.00	1000.000
3	-0.58	100	50	8.04	8.04	-0.17	0.00	-162.29	0.00	953.202
4	-0.50	100	50	8.04	8.04	-0.38	0.00	-162.29	0.00	423.645

**Fondazione**Combinazione n° 1 - STR (A1-M1-R3)

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
1	-1.45	100	95	20.11	20.11	0.00	0.00	0.00	0.00	1000.000
2	-1.35	100	95	20.11	20.11	0.40	0.00	0.00	0.00	1000.000
3	-1.26	100	95	20.11	20.11	1.58	0.00	691.78	0.00	437.361
4	-1.17	100	95	20.11	20.11	3.56	0.00	691.78	0.00	194.181
5	-1.07	100	95	20.11	20.11	6.34	0.00	691.78	0.00	109.114
6	-0.97	100	95	20.11	20.11	9.92	0.00	691.78	0.00	69.761
7	-0.88	100	95	20.11	20.11	14.29	0.00	691.78	0.00	48.395
8	-0.78	100	95	20.11	20.11	19.48	0.00	691.78	0.00	35.519
9	-0.69	100	95	20.11	20.11	25.47	0.00	691.78	0.00	27.166
10	-0.59	100	95	20.11	20.11	32.26	0.00	691.78	0.00	21.442
11	-0.50	100	95	20.11	20.11	39.87	0.00	691.78	0.00	17.350
12	0.45	100	95	20.11	20.11	-86.61	0.00	-691.78	0.00	7.987
13	0.55	100	95	20.11	20.11	-79.78	0.00	-691.78	0.00	8.671
14	0.65	100	95	20.11	20.11	-73.25	0.00	-691.78	0.00	9.444
15	0.75	100	95	20.11	20.11	-67.02	0.00	-691.78	0.00	10.322
16	0.85	100	95	20.11	20.11	-61.09	0.00	-691.78	0.00	11.325
17	0.95	100	95	20.11	20.11	-55.45	0.00	-691.78	0.00	12.476
18	1.05	100	95	20.11	20.11	-50.10	0.00	-691.78	0.00	13.808
19	1.15	100	95	20.11	20.11	-45.04	0.00	-691.78	0.00	15.358
20	1.25	100	95	20.11	20.11	-40.27	0.00	-691.78	0.00	17.178
21	1.35	100	95	20.11	20.11	-35.78	0.00	-691.78	0.00	19.333
22	1.45	100	95	20.11	20.11	-31.57	0.00	-691.78	0.00	21.910
23	1.55	100	95	20.11	20.11	-27.64	0.00	-691.78	0.00	25.026
24	1.65	100	95	20.11	20.11	-23.99	0.00	-691.78	0.00	28.841
25	1.75	100	95	20.11	20.11	-20.60	0.00	-691.78	0.00	33.580
26	1.85	100	95	20.11	20.11	-17.48	0.00	-691.78	0.00	39.565
27	1.95	100	95	20.11	20.11	-14.63	0.00	-691.78	0.00	47.272
28	2.05	100	95	20.11	20.11	-12.05	0.00	-691.78	0.00	57.427
29	2.15	100	95	20.11	20.11	-9.72	0.00	-691.78	0.00	71.180
30	2.25	100	95	20.11	20.11	-7.65	0.00	-691.78	0.00	90.449
31	2.35	100	95	20.11	20.11	-5.83	0.00	-691.78	0.00	118.612
32	2.45	100	95	20.11	20.11	-4.27	0.00	-691.78	0.00	162.096
33	2.55	100	95	20.11	20.11	-2.95	0.00	-691.78	0.00	234.365
34	2.65	100	95	20.11	20.11	-1.88	0.00	-691.78	0.00	367.687

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
35	2.75	100	95	20.11	20.11	-1.05	0.00	-691.78	0.00	656.338
36	2.85	100	95	20.11	20.11	-0.47	0.00	0.00	0.00	1000.000
37	2.95	100	95	20.11	20.11	-0.12	0.00	0.00	0.00	1000.000
38	3.05	100	95	20.11	20.11	0.00	0.00	0.00	0.00	1000.000

Combinazione n° 2 - STR (A1-M1-R3) H + V

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
1	-1.45	100	95	20.11	20.11	0.00	0.00	0.00	0.00	1000.000
2	-1.35	100	95	20.11	20.11	0.74	0.00	691.78	0.00	929.172
3	-1.26	100	95	20.11	20.11	2.96	0.00	691.78	0.00	233.560
4	-1.17	100	95	20.11	20.11	6.63	0.00	691.78	0.00	104.374
5	-1.07	100	95	20.11	20.11	11.72	0.00	691.78	0.00	59.034
6	-0.97	100	95	20.11	20.11	18.21	0.00	691.78	0.00	37.992
7	-0.88	100	95	20.11	20.11	26.08	0.00	691.78	0.00	26.530
8	-0.78	100	95	20.11	20.11	35.29	0.00	691.78	0.00	19.601
9	-0.69	100	95	20.11	20.11	45.84	0.00	691.78	0.00	15.092
10	-0.59	100	95	20.11	20.11	57.69	0.00	691.78	0.00	11.992
11	-0.50	100	95	20.11	20.11	70.82	0.00	691.78	0.00	9.769
12	0.45	100	95	20.11	20.11	-107.27	0.00	-691.78	0.00	6.449
13	0.55	100	95	20.11	20.11	-102.12	0.00	-691.78	0.00	6.774
14	0.65	100	95	20.11	20.11	-96.83	0.00	-691.78	0.00	7.144
15	0.75	100	95	20.11	20.11	-91.42	0.00	-691.78	0.00	7.567
16	0.85	100	95	20.11	20.11	-85.92	0.00	-691.78	0.00	8.051
17	0.95	100	95	20.11	20.11	-80.37	0.00	-691.78	0.00	8.608
18	1.05	100	95	20.11	20.11	-74.78	0.00	-691.78	0.00	9.251
19	1.15	100	95	20.11	20.11	-69.19	0.00	-691.78	0.00	9.998
20	1.25	100	95	20.11	20.11	-63.63	0.00	-691.78	0.00	10.872
21	1.35	100	95	20.11	20.11	-58.12	0.00	-691.78	0.00	11.904
22	1.45	100	95	20.11	20.11	-52.69	0.00	-691.78	0.00	13.130
23	1.55	100	95	20.11	20.11	-47.37	0.00	-691.78	0.00	14.605
24	1.65	100	95	20.11	20.11	-42.18	0.00	-691.78	0.00	16.399
25	1.75	100	95	20.11	20.11	-37.17	0.00	-691.78	0.00	18.611
26	1.85	100	95	20.11	20.11	-32.35	0.00	-691.78	0.00	21.384
27	1.95	100	95	20.11	20.11	-27.75	0.00	-691.78	0.00	24.926
28	2.05	100	95	20.11	20.11	-23.41	0.00	-691.78	0.00	29.554
29	2.15	100	95	20.11	20.11	-19.34	0.00	-691.78	0.00	35.766
30	2.25	100	95	20.11	20.11	-15.58	0.00	-691.78	0.00	44.390
31	2.35	100	95	20.11	20.11	-12.16	0.00	-691.78	0.00	56.878
32	2.45	100	95	20.11	20.11	-9.11	0.00	-691.78	0.00	75.975
33	2.55	100	95	20.11	20.11	-6.44	0.00	-691.78	0.00	107.403
34	2.65	100	95	20.11	20.11	-4.20	0.00	-691.78	0.00	164.804
35	2.75	100	95	20.11	20.11	-2.40	0.00	-691.78	0.00	287.815
36	2.85	100	95	20.11	20.11	-1.09	0.00	-691.78	0.00	636.354
37	2.95	100	95	20.11	20.11	-0.28	0.00	0.00	0.00	1000.000
38	3.05	100	95	20.11	20.11	0.00	0.00	0.00	0.00	1000.000

Combinazione n° 3 - STR (A1-M1-R3)

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
1	-1.45	100	95	20.11	20.11	0.00	0.00	0.00	0.00	1000.000
2	-1.35	100	95	20.11	20.11	0.52	0.00	0.00	0.00	1000.000
3	-1.26	100	95	20.11	20.11	2.08	0.00	691.78	0.00	332.272
4	-1.17	100	95	20.11	20.11	4.69	0.00	691.78	0.00	147.372
5	-1.07	100	95	20.11	20.11	8.36	0.00	691.78	0.00	82.726
6	-0.97	100	95	20.11	20.11	13.09	0.00	691.78	0.00	52.836
7	-0.88	100	95	20.11	20.11	18.89	0.00	691.78	0.00	36.616
8	-0.78	100	95	20.11	20.11	25.77	0.00	691.78	0.00	26.847
9	-0.69	100	95	20.11	20.11	33.72	0.00	691.78	0.00	20.513
10	-0.59	100	95	20.11	20.11	42.77	0.00	691.78	0.00	16.174
11	-0.50	100	95	20.11	20.11	52.91	0.00	691.78	0.00	13.075
12	0.45	100	95	20.11	20.11	-108.36	0.00	-691.78	0.00	6.384
13	0.55	100	95	20.11	20.11	-99.35	0.00	-691.78	0.00	6.963

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## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
14	0.65	100	95	20.11	20.11	-90.79	0.00	-691.78	0.00	7.619
15	0.75	100	95	20.11	20.11	-82.67	0.00	-691.78	0.00	8.368
16	0.85	100	95	20.11	20.11	-74.98	0.00	-691.78	0.00	9.226
17	0.95	100	95	20.11	20.11	-67.72	0.00	-691.78	0.00	10.216
18	1.05	100	95	20.11	20.11	-60.87	0.00	-691.78	0.00	11.365
19	1.15	100	95	20.11	20.11	-54.43	0.00	-691.78	0.00	12.709
20	1.25	100	95	20.11	20.11	-48.40	0.00	-691.78	0.00	14.293
21	1.35	100	95	20.11	20.11	-42.76	0.00	-691.78	0.00	16.179
22	1.45	100	95	20.11	20.11	-37.51	0.00	-691.78	0.00	18.444
23	1.55	100	95	20.11	20.11	-32.63	0.00	-691.78	0.00	21.198
24	1.65	100	95	20.11	20.11	-28.13	0.00	-691.78	0.00	24.589
25	1.75	100	95	20.11	20.11	-24.00	0.00	-691.78	0.00	28.827
26	1.85	100	95	20.11	20.11	-20.22	0.00	-691.78	0.00	34.213
27	1.95	100	95	20.11	20.11	-16.79	0.00	-691.78	0.00	41.200
28	2.05	100	95	20.11	20.11	-13.70	0.00	-691.78	0.00	50.479
29	2.15	100	95	20.11	20.11	-10.95	0.00	-691.78	0.00	63.163
30	2.25	100	95	20.11	20.11	-8.53	0.00	-691.78	0.00	81.124
31	2.35	100	95	20.11	20.11	-6.42	0.00	-691.78	0.00	107.718
32	2.45	100	95	20.11	20.11	-4.63	0.00	-691.78	0.00	149.449
33	2.55	100	95	20.11	20.11	-3.14	0.00	-691.78	0.00	220.308
34	2.65	100	95	20.11	20.11	-1.95	0.00	-691.78	0.00	355.083
35	2.75	100	95	20.11	20.11	-1.05	0.00	-691.78	0.00	661.465
36	2.85	100	95	20.11	20.11	-0.43	0.00	0.00	0.00	1000.000
37	2.95	100	95	20.11	20.11	-0.08	0.00	0.00	0.00	1000.000
38	3.05	100	95	20.11	20.11	0.00	0.00	0.00	0.00	1000.000

## Combinazione n° 4 - STR (A1-M1-R3) H - V

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
1	-1.45	100	95	20.11	20.11	0.00	0.00	0.00	0.00	1000.000
2	-1.35	100	95	20.11	20.11	0.67	0.00	0.00	0.00	1000.000
3	-1.26	100	95	20.11	20.11	2.68	0.00	691.78	0.00	258.530
4	-1.17	100	95	20.11	20.11	5.98	0.00	691.78	0.00	115.598
5	-1.07	100	95	20.11	20.11	10.57	0.00	691.78	0.00	65.421
6	-0.97	100	95	20.11	20.11	16.42	0.00	691.78	0.00	42.126
7	-0.88	100	95	20.11	20.11	23.50	0.00	691.78	0.00	29.435
8	-0.78	100	95	20.11	20.11	31.79	0.00	691.78	0.00	21.760
9	-0.69	100	95	20.11	20.11	41.27	0.00	691.78	0.00	16.764
10	-0.59	100	95	20.11	20.11	51.90	0.00	691.78	0.00	13.329
11	-0.50	100	95	20.11	20.11	63.67	0.00	691.78	0.00	10.865
12	0.45	100	95	20.11	20.11	-159.94	0.00	-691.78	0.00	4.325
13	0.55	100	95	20.11	20.11	-150.81	0.00	-691.78	0.00	4.587
14	0.65	100	95	20.11	20.11	-141.69	0.00	-691.78	0.00	4.882
15	0.75	100	95	20.11	20.11	-132.62	0.00	-691.78	0.00	5.216
16	0.85	100	95	20.11	20.11	-123.61	0.00	-691.78	0.00	5.596
17	0.95	100	95	20.11	20.11	-114.70	0.00	-691.78	0.00	6.031
18	1.05	100	95	20.11	20.11	-105.92	0.00	-691.78	0.00	6.531
19	1.15	100	95	20.11	20.11	-97.29	0.00	-691.78	0.00	7.111
20	1.25	100	95	20.11	20.11	-88.84	0.00	-691.78	0.00	7.787
21	1.35	100	95	20.11	20.11	-80.60	0.00	-691.78	0.00	8.583
22	1.45	100	95	20.11	20.11	-72.60	0.00	-691.78	0.00	9.529
23	1.55	100	95	20.11	20.11	-64.87	0.00	-691.78	0.00	10.665
24	1.65	100	95	20.11	20.11	-57.43	0.00	-691.78	0.00	12.046
25	1.75	100	95	20.11	20.11	-50.31	0.00	-691.78	0.00	13.750
26	1.85	100	95	20.11	20.11	-43.54	0.00	-691.78	0.00	15.887
27	1.95	100	95	20.11	20.11	-37.16	0.00	-691.78	0.00	18.617
28	2.05	100	95	20.11	20.11	-31.18	0.00	-691.78	0.00	22.187
29	2.15	100	95	20.11	20.11	-25.64	0.00	-691.78	0.00	26.985
30	2.25	100	95	20.11	20.11	-20.56	0.00	-691.78	0.00	33.653
31	2.35	100	95	20.11	20.11	-15.97	0.00	-691.78	0.00	43.321
32	2.45	100	95	20.11	20.11	-11.90	0.00	-691.78	0.00	58.127
33	2.55	100	95	20.11	20.11	-8.38	0.00	-691.78	0.00	82.529
34	2.65	100	95	20.11	20.11	-5.44	0.00	-691.78	0.00	127.169
35	2.75	100	95	20.11	20.11	-3.10	0.00	-691.78	0.00	222.996
36	2.85	100	95	20.11	20.11	-1.40	0.00	-691.78	0.00	494.991
37	2.95	100	95	20.11	20.11	-0.35	0.00	0.00	0.00	1000.000

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## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
38	3.05	100	95	20.11	20.11	0.00	0.00	0.00	0.00	1000.000

## Combinazione n° 13 - ECC

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
1	-1.45	100	95	20.11	20.11	0.00	0.00	0.00	0.00	1000.000
2	-1.35	100	95	20.11	20.11	0.54	0.00	0.00	0.00	1000.000
3	-1.26	100	95	20.11	20.11	2.15	0.00	798.26	0.00	371.865
4	-1.17	100	95	20.11	20.11	4.81	0.00	798.26	0.00	165.823
5	-1.07	100	95	20.11	20.11	8.53	0.00	798.26	0.00	93.586
6	-0.97	100	95	20.11	20.11	13.28	0.00	798.26	0.00	60.096
7	-0.88	100	95	20.11	20.11	19.06	0.00	798.26	0.00	41.873
8	-0.78	100	95	20.11	20.11	25.86	0.00	798.26	0.00	30.868
9	-0.69	100	95	20.11	20.11	33.66	0.00	798.26	0.00	23.713
10	-0.59	100	95	20.11	20.11	42.46	0.00	798.26	0.00	18.800
11	-0.50	100	95	20.11	20.11	52.24	0.00	798.26	0.00	15.280
12	0.45	100	95	20.11	20.11	-69.16	0.00	-798.26	0.00	11.543
13	0.55	100	95	20.11	20.11	-65.23	0.00	-798.26	0.00	12.237
14	0.65	100	95	20.11	20.11	-61.32	0.00	-798.26	0.00	13.019
15	0.75	100	95	20.11	20.11	-57.41	0.00	-798.26	0.00	13.905
16	0.85	100	95	20.11	20.11	-53.53	0.00	-798.26	0.00	14.912
17	0.95	100	95	20.11	20.11	-49.69	0.00	-798.26	0.00	16.065
18	1.05	100	95	20.11	20.11	-45.90	0.00	-798.26	0.00	17.392
19	1.15	100	95	20.11	20.11	-42.17	0.00	-798.26	0.00	18.928
20	1.25	100	95	20.11	20.11	-38.52	0.00	-798.26	0.00	20.722
21	1.35	100	95	20.11	20.11	-34.96	0.00	-798.26	0.00	22.833
22	1.45	100	95	20.11	20.11	-31.50	0.00	-798.26	0.00	25.342
23	1.55	100	95	20.11	20.11	-28.15	0.00	-798.26	0.00	28.355
24	1.65	100	95	20.11	20.11	-24.93	0.00	-798.26	0.00	32.020
25	1.75	100	95	20.11	20.11	-21.85	0.00	-798.26	0.00	36.540
26	1.85	100	95	20.11	20.11	-18.91	0.00	-798.26	0.00	42.206
27	1.95	100	95	20.11	20.11	-16.14	0.00	-798.26	0.00	49.448
28	2.05	100	95	20.11	20.11	-13.55	0.00	-798.26	0.00	58.916
29	2.15	100	95	20.11	20.11	-11.14	0.00	-798.26	0.00	71.638
30	2.25	100	95	20.11	20.11	-8.94	0.00	-798.26	0.00	89.320
31	2.35	100	95	20.11	20.11	-6.94	0.00	-798.26	0.00	114.956
32	2.45	100	95	20.11	20.11	-5.18	0.00	-798.26	0.00	154.210
33	2.55	100	95	20.11	20.11	-3.65	0.00	-798.26	0.00	218.905
34	2.65	100	95	20.11	20.11	-2.37	0.00	-798.26	0.00	337.242
35	2.75	100	95	20.11	20.11	-1.35	0.00	-798.26	0.00	591.251
36	2.85	100	95	20.11	20.11	-0.61	0.00	0.00	0.00	1000.000
37	2.95	100	95	20.11	20.11	-0.15	0.00	0.00	0.00	1000.000
38	3.05	100	95	20.11	20.11	0.00	0.00	0.00	0.00	1000.000

## Verifiche a taglio

## Simbologia adottata

Is	indice sezione
Y	ordinata sezione espressa in [m]
B	larghezza sezione espressa in [cm]
H	altezza sezione espressa in [cm]
A <sub>sw</sub>	area ferri a taglio espresso in [cmq]
cotgθ	inclinazione delle bielle compresse, θ inclinazione dei puntoni di calcestruzzo
V <sub>Rcd</sub>	resistenza di progetto a 'taglio compressione' espressa in [kN]
V <sub>Rsd</sub>	resistenza di progetto a 'taglio trazione' espressa in [kN]
V <sub>Rd</sub>	resistenza di progetto a taglio espresso in [kN]. Per elementi con armature trasversali resistenti al taglio (A <sub>sw</sub> >0.0) V <sub>Rd</sub> =min(V <sub>Rcd</sub> , V <sub>Rsd</sub> ).
T	taglio agente espressa in [kN]

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

FS fattore di sicurezza (rapporto tra sollecitazione resistente e sollecitazione agente)

## Paramento

### Combinazione n° 1 - STR (A1-M1-R3)

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
1	0.00	100	50	0.00	0.00	--	0.00	0.00	225.46	0.00	100.000
2	-0.10	100	51	0.00	0.00	--	0.00	0.00	227.66	0.03	7361.224
3	-0.20	100	52	0.00	0.00	--	0.00	0.00	229.86	0.12	1858.048
4	-0.30	100	53	0.00	0.00	--	0.00	0.00	232.04	0.28	835.927
5	-0.40	100	54	0.00	0.00	--	0.00	0.00	234.21	0.49	476.241
6	-0.50	100	54	0.00	0.00	--	0.00	0.00	236.37	0.77	308.293
7	-0.60	100	55	0.00	0.00	--	0.00	0.00	238.52	1.10	216.303
8	-0.70	100	56	0.00	0.00	--	0.00	0.00	240.67	1.50	160.460
9	-0.80	100	57	0.00	0.00	--	0.00	0.00	242.80	1.96	123.999
10	-0.90	100	58	0.00	0.00	--	0.00	0.00	244.92	2.48	98.862
11	-1.00	100	59	0.00	0.00	--	0.00	0.00	247.03	3.06	80.788
12	-1.10	100	60	0.00	0.00	--	0.00	0.00	249.13	3.70	67.347
13	-1.20	100	61	0.00	0.00	--	0.00	0.00	251.23	4.40	57.073
14	-1.30	100	62	0.00	0.00	--	0.00	0.00	253.31	5.17	49.039
15	-1.40	100	62	0.00	0.00	--	0.00	0.00	255.39	5.99	42.634
16	-1.50	100	63	0.00	0.00	--	0.00	0.00	257.46	6.88	37.443
17	-1.60	100	64	0.00	0.00	--	0.00	0.00	259.52	7.82	33.174
18	-1.70	100	65	0.00	0.00	--	0.00	0.00	261.58	8.83	29.620
19	-1.80	100	66	0.00	0.00	--	0.00	0.00	263.63	9.90	26.628
20	-1.90	100	67	0.00	0.00	--	0.00	0.00	265.67	11.03	24.085
21	-2.00	100	68	0.00	0.00	--	0.00	0.00	267.70	12.22	21.903
22	-2.10	100	69	0.00	0.00	--	0.00	0.00	269.73	13.47	20.018
23	-2.20	100	70	0.00	0.00	--	0.00	0.00	271.75	14.79	18.377
24	-2.30	100	71	0.00	0.00	--	0.00	0.00	273.77	16.16	16.938
25	-2.40	100	71	0.00	0.00	--	0.00	0.00	275.77	17.60	15.671
26	-2.50	100	72	0.00	0.00	--	0.00	0.00	277.78	19.09	14.547
27	-2.60	100	73	0.00	0.00	--	0.00	0.00	279.78	20.65	13.547
28	-2.70	100	74	0.00	0.00	--	0.00	0.00	281.77	22.27	12.651
29	-2.80	100	75	0.00	0.00	--	0.00	0.00	283.76	23.95	11.847
30	-2.90	100	76	0.00	0.00	--	0.00	0.00	285.74	25.69	11.121
31	-3.00	100	77	0.00	0.00	--	0.00	0.00	287.72	27.50	10.464
32	-3.10	100	78	0.00	0.00	--	0.00	0.00	289.69	29.36	9.867
33	-3.20	100	79	0.00	0.00	--	0.00	0.00	291.77	31.28	9.327
34	-3.30	100	79	0.00	0.00	--	0.00	0.00	294.58	33.27	8.854
35	-3.40	100	80	0.00	0.00	--	0.00	0.00	297.39	35.32	8.421
36	-3.50	100	81	0.00	0.00	--	0.00	0.00	300.19	37.42	8.022
37	-3.60	100	82	0.00	0.00	--	0.00	0.00	303.00	39.59	7.653
38	-3.70	100	83	0.00	0.00	--	0.00	0.00	305.81	41.82	7.312
39	-3.80	100	84	0.00	0.00	--	0.00	0.00	308.61	44.11	6.996
40	-3.90	100	85	0.00	0.00	--	0.00	0.00	311.42	46.47	6.702
41	-4.00	100	86	0.00	0.00	--	0.00	0.00	314.22	48.88	6.429
42	-4.10	100	87	0.00	0.00	--	0.00	0.00	317.02	51.35	6.173
43	-4.20	100	87	0.00	0.00	--	0.00	0.00	319.83	53.89	5.935
44	-4.30	100	88	0.00	0.00	--	0.00	0.00	322.63	56.48	5.712
45	-4.40	100	89	0.00	0.00	--	0.00	0.00	325.43	59.14	5.503
46	-4.50	100	90	0.00	0.00	--	0.00	0.00	328.24	61.86	5.306
47	-4.60	100	91	0.00	0.00	--	0.00	0.00	331.04	64.64	5.121
48	-4.70	100	92	0.00	0.00	--	0.00	0.00	333.84	67.48	4.947
49	-4.80	100	93	0.00	0.00	--	0.00	0.00	336.64	70.38	4.783
50	-4.90	100	94	0.00	0.00	--	0.00	0.00	339.45	73.35	4.628
51	-5.00	100	95	0.00	0.00	--	0.00	0.00	342.25	76.37	4.481

### Combinazione n° 2 - STR (A1-M1-R3) H + V

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
1	0.00	100	50	0.00	0.00	--	0.00	0.00	225.49	0.00	100.000

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## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
2	-0.10	100	51	0.00	0.00	--	0.00	0.00	227.69	0.69	329.577
3	-0.20	100	52	0.00	0.00	--	0.00	0.00	229.89	1.43	160.488
4	-0.30	100	53	0.00	0.00	--	0.00	0.00	232.07	2.22	104.344
5	-0.40	100	54	0.00	0.00	--	0.00	0.00	234.24	3.07	76.418
6	-0.50	100	54	0.00	0.00	--	0.00	0.00	236.40	3.96	59.753
7	-0.60	100	55	0.00	0.00	--	0.00	0.00	238.56	4.90	48.710
8	-0.70	100	56	0.00	0.00	--	0.00	0.00	240.70	5.89	40.874
9	-0.80	100	57	0.00	0.00	--	0.00	0.00	242.83	6.93	35.039
10	-0.90	100	58	0.00	0.00	--	0.00	0.00	244.95	8.02	30.536
11	-1.00	100	59	0.00	0.00	--	0.00	0.00	247.06	9.16	26.962
12	-1.10	100	60	0.00	0.00	--	0.00	0.00	249.16	10.35	24.062
13	-1.20	100	61	0.00	0.00	--	0.00	0.00	251.26	11.60	21.666
14	-1.30	100	62	0.00	0.00	--	0.00	0.00	253.34	12.89	19.656
15	-1.40	100	62	0.00	0.00	--	0.00	0.00	255.42	14.23	17.949
16	-1.50	100	63	0.00	0.00	--	0.00	0.00	257.49	15.62	16.482
17	-1.60	100	64	0.00	0.00	--	0.00	0.00	259.55	17.07	15.210
18	-1.70	100	65	0.00	0.00	--	0.00	0.00	261.61	18.56	14.097
19	-1.80	100	66	0.00	0.00	--	0.00	0.00	263.66	20.10	13.117
20	-1.90	100	67	0.00	0.00	--	0.00	0.00	265.70	21.69	12.248
21	-2.00	100	68	0.00	0.00	--	0.00	0.00	267.73	23.34	11.473
22	-2.10	100	69	0.00	0.00	--	0.00	0.00	269.76	25.03	10.778
23	-2.20	100	70	0.00	0.00	--	0.00	0.00	271.78	26.77	10.152
24	-2.30	100	71	0.00	0.00	--	0.00	0.00	273.80	28.56	9.585
25	-2.40	100	71	0.00	0.00	--	0.00	0.00	275.81	30.41	9.070
26	-2.50	100	72	0.00	0.00	--	0.00	0.00	277.81	32.30	8.601
27	-2.60	100	73	0.00	0.00	--	0.00	0.00	279.81	34.24	8.171
28	-2.70	100	74	0.00	0.00	--	0.00	0.00	281.80	36.24	7.776
29	-2.80	100	75	0.00	0.00	--	0.00	0.00	283.79	38.28	7.413
30	-2.90	100	76	0.00	0.00	--	0.00	0.00	285.77	40.37	7.078
31	-3.00	100	77	0.00	0.00	--	0.00	0.00	287.75	42.52	6.768
32	-3.10	100	78	0.00	0.00	--	0.00	0.00	289.72	44.71	6.480
33	-3.20	100	79	0.00	0.00	--	0.00	0.00	291.80	46.96	6.214
34	-3.30	100	79	0.00	0.00	--	0.00	0.00	294.61	49.25	5.982
35	-3.40	100	80	0.00	0.00	--	0.00	0.00	297.42	51.60	5.764
36	-3.50	100	81	0.00	0.00	--	0.00	0.00	300.22	53.99	5.561
37	-3.60	100	82	0.00	0.00	--	0.00	0.00	303.03	56.43	5.370
38	-3.70	100	83	0.00	0.00	--	0.00	0.00	305.84	58.93	5.190
39	-3.80	100	84	0.00	0.00	--	0.00	0.00	308.64	61.47	5.021
40	-3.90	100	85	0.00	0.00	--	0.00	0.00	311.45	64.07	4.861
41	-4.00	100	86	0.00	0.00	--	0.00	0.00	314.25	66.71	4.710
42	-4.10	100	87	0.00	0.00	--	0.00	0.00	317.06	69.41	4.568
43	-4.20	100	87	0.00	0.00	--	0.00	0.00	319.86	72.15	4.433
44	-4.30	100	88	0.00	0.00	--	0.00	0.00	322.66	74.95	4.305
45	-4.40	100	89	0.00	0.00	--	0.00	0.00	325.47	77.79	4.184
46	-4.50	100	90	0.00	0.00	--	0.00	0.00	328.27	80.69	4.068
47	-4.60	100	91	0.00	0.00	--	0.00	0.00	331.07	83.64	3.958
48	-4.70	100	92	0.00	0.00	--	0.00	0.00	333.87	86.63	3.854
49	-4.80	100	93	0.00	0.00	--	0.00	0.00	336.68	89.68	3.754
50	-4.90	100	94	0.00	0.00	--	0.00	0.00	339.48	92.77	3.659
51	-5.00	100	95	0.00	0.00	--	0.00	0.00	342.28	95.92	3.568

## Combinazione n° 3 - STR (A1-M1-R3)

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
1	0.00	100	50	0.00	0.00	--	0.00	0.00	225.46	0.00	100.000
2	-0.10	100	51	0.00	0.00	--	0.00	0.00	227.66	1.30	175.657
3	-0.20	100	52	0.00	0.00	--	0.00	0.00	229.86	2.65	86.608
4	-0.30	100	53	0.00	0.00	--	0.00	0.00	232.04	4.07	56.970
5	-0.40	100	54	0.00	0.00	--	0.00	0.00	234.21	5.55	42.182
6	-0.50	100	54	0.00	0.00	--	0.00	0.00	236.37	7.09	33.327
7	-0.60	100	55	0.00	0.00	--	0.00	0.00	238.52	8.69	27.437
8	-0.70	100	56	0.00	0.00	--	0.00	0.00	240.67	10.36	23.239
9	-0.80	100	57	0.00	0.00	--	0.00	0.00	242.80	12.08	20.100
10	-0.90	100	58	0.00	0.00	--	0.00	0.00	244.92	13.86	17.666
11	-1.00	100	59	0.00	0.00	--	0.00	0.00	247.03	15.71	15.725
12	-1.10	100	60	0.00	0.00	--	0.00	0.00	249.13	17.62	14.142



VE407

## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
13	-1.20	100	61	0.00	0.00	--	0.00	0.00	251.23	19.58	12.828
14	-1.30	100	62	0.00	0.00	--	0.00	0.00	253.31	21.61	11.721
15	-1.40	100	62	0.00	0.00	--	0.00	0.00	255.39	23.70	10.775
16	-1.50	100	63	0.00	0.00	--	0.00	0.00	257.46	25.85	9.958
17	-1.60	100	64	0.00	0.00	--	0.00	0.00	259.52	28.07	9.247
18	-1.70	100	65	0.00	0.00	--	0.00	0.00	261.58	30.34	8.622
19	-1.80	100	66	0.00	0.00	--	0.00	0.00	263.63	32.67	8.069
20	-1.90	100	67	0.00	0.00	--	0.00	0.00	265.67	35.07	7.576
21	-2.00	100	68	0.00	0.00	--	0.00	0.00	267.70	37.53	7.134
22	-2.10	100	69	0.00	0.00	--	0.00	0.00	269.73	40.04	6.736
23	-2.20	100	70	0.00	0.00	--	0.00	0.00	271.75	42.62	6.376
24	-2.30	100	71	0.00	0.00	--	0.00	0.00	273.77	45.26	6.049
25	-2.40	100	71	0.00	0.00	--	0.00	0.00	275.77	47.96	5.750
26	-2.50	100	72	0.00	0.00	--	0.00	0.00	277.78	50.72	5.476
27	-2.60	100	73	0.00	0.00	--	0.00	0.00	279.78	53.55	5.225
28	-2.70	100	74	0.00	0.00	--	0.00	0.00	281.77	56.43	4.993
29	-2.80	100	75	0.00	0.00	--	0.00	0.00	283.76	59.38	4.779
30	-2.90	100	76	0.00	0.00	--	0.00	0.00	285.74	62.38	4.580
31	-3.00	100	77	0.00	0.00	--	0.00	0.00	287.72	65.45	4.396
32	-3.10	100	78	0.00	0.00	--	0.00	0.00	289.69	68.58	4.224
33	-3.20	100	79	0.00	0.00	--	0.00	0.00	291.77	71.77	4.065
34	-3.30	100	79	0.00	0.00	--	0.00	0.00	294.58	75.02	3.927
35	-3.40	100	80	0.00	0.00	--	0.00	0.00	297.39	78.33	3.797
36	-3.50	100	81	0.00	0.00	--	0.00	0.00	300.19	81.70	3.674
37	-3.60	100	82	0.00	0.00	--	0.00	0.00	303.00	85.14	3.559
38	-3.70	100	83	0.00	0.00	--	0.00	0.00	305.81	88.63	3.450
39	-3.80	100	84	0.00	0.00	--	0.00	0.00	308.61	92.19	3.348
40	-3.90	100	85	0.00	0.00	--	0.00	0.00	311.42	95.81	3.250
41	-4.00	100	86	0.00	0.00	--	0.00	0.00	314.22	99.49	3.158
42	-4.10	100	87	0.00	0.00	--	0.00	0.00	317.02	103.22	3.071
43	-4.20	100	87	0.00	0.00	--	0.00	0.00	319.83	107.03	2.988
44	-4.30	100	88	0.00	0.00	--	0.00	0.00	322.63	110.89	2.910
45	-4.40	100	89	0.00	0.00	--	0.00	0.00	325.43	114.81	2.835
46	-4.50	100	90	0.00	0.00	--	0.00	0.00	328.24	118.79	2.763
47	-4.60	100	91	0.00	0.00	--	0.00	0.00	331.04	122.81	2.696
48	-4.70	100	92	0.00	0.00	--	0.00	0.00	333.84	126.85	2.632
49	-4.80	100	93	0.00	0.00	--	0.00	0.00	336.64	130.90	2.572
50	-4.90	100	94	0.00	0.00	--	0.00	0.00	339.45	134.95	2.515
51	-5.00	100	95	0.00	0.00	--	0.00	0.00	342.25	139.00	2.462

## Combinazione n° 4 - STR (A1-M1-R3) H - V

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
1	0.00	100	50	0.00	0.00	--	0.00	0.00	225.46	0.00	100.000
2	-0.10	100	51	0.00	0.00	--	0.00	0.00	227.66	0.53	426.769
3	-0.20	100	52	0.00	0.00	--	0.00	0.00	229.86	1.12	205.669
4	-0.30	100	53	0.00	0.00	--	0.00	0.00	232.04	1.75	132.453
5	-0.40	100	54	0.00	0.00	--	0.00	0.00	234.21	2.44	96.159
6	-0.50	100	54	0.00	0.00	--	0.00	0.00	236.37	3.17	74.583
7	-0.60	100	55	0.00	0.00	--	0.00	0.00	238.52	3.95	60.340
8	-0.70	100	56	0.00	0.00	--	0.00	0.00	240.67	4.79	50.276
9	-0.80	100	57	0.00	0.00	--	0.00	0.00	242.80	5.67	42.815
10	-0.90	100	58	0.00	0.00	--	0.00	0.00	244.92	6.60	37.081
11	-1.00	100	59	0.00	0.00	--	0.00	0.00	247.03	7.59	32.551
12	-1.10	100	60	0.00	0.00	--	0.00	0.00	249.13	8.62	28.890
13	-1.20	100	61	0.00	0.00	--	0.00	0.00	251.23	9.71	25.879
14	-1.30	100	62	0.00	0.00	--	0.00	0.00	253.31	10.84	23.363
15	-1.40	100	62	0.00	0.00	--	0.00	0.00	255.39	12.03	21.235
16	-1.50	100	63	0.00	0.00	--	0.00	0.00	257.46	13.26	19.414
17	-1.60	100	64	0.00	0.00	--	0.00	0.00	259.52	14.55	17.841
18	-1.70	100	65	0.00	0.00	--	0.00	0.00	261.58	15.88	16.471
19	-1.80	100	66	0.00	0.00	--	0.00	0.00	263.63	17.27	15.268
20	-1.90	100	67	0.00	0.00	--	0.00	0.00	265.67	18.70	14.205
21	-2.00	100	68	0.00	0.00	--	0.00	0.00	267.70	20.19	13.261
22	-2.10	100	69	0.00	0.00	--	0.00	0.00	269.73	21.72	12.417
23	-2.20	100	70	0.00	0.00	--	0.00	0.00	271.75	23.31	11.659

VE407

## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
24	-2.30	100	71	0.00	0.00	--	0.00	0.00	273.77	24.94	10.975
25	-2.40	100	71	0.00	0.00	--	0.00	0.00	275.77	26.63	10.356
26	-2.50	100	72	0.00	0.00	--	0.00	0.00	277.78	28.37	9.793
27	-2.60	100	73	0.00	0.00	--	0.00	0.00	279.78	30.15	9.279
28	-2.70	100	74	0.00	0.00	--	0.00	0.00	281.77	31.99	8.809
29	-2.80	100	75	0.00	0.00	--	0.00	0.00	283.76	33.87	8.377
30	-2.90	100	76	0.00	0.00	--	0.00	0.00	285.74	35.81	7.979
31	-3.00	100	77	0.00	0.00	--	0.00	0.00	287.72	37.80	7.612
32	-3.10	100	78	0.00	0.00	--	0.00	0.00	289.69	39.83	7.273
33	-3.20	100	79	0.00	0.00	--	0.00	0.00	291.77	41.92	6.960
34	-3.30	100	79	0.00	0.00	--	0.00	0.00	294.58	44.06	6.686
35	-3.40	100	80	0.00	0.00	--	0.00	0.00	297.39	46.24	6.431
36	-3.50	100	81	0.00	0.00	--	0.00	0.00	300.19	48.48	6.192
37	-3.60	100	82	0.00	0.00	--	0.00	0.00	303.00	50.77	5.968
38	-3.70	100	83	0.00	0.00	--	0.00	0.00	305.81	53.10	5.759
39	-3.80	100	84	0.00	0.00	--	0.00	0.00	308.61	55.49	5.561
40	-3.90	100	85	0.00	0.00	--	0.00	0.00	311.42	57.93	5.376
41	-4.00	100	86	0.00	0.00	--	0.00	0.00	314.22	60.42	5.201
42	-4.10	100	87	0.00	0.00	--	0.00	0.00	317.02	62.95	5.036
43	-4.20	100	87	0.00	0.00	--	0.00	0.00	319.83	65.54	4.880
44	-4.30	100	88	0.00	0.00	--	0.00	0.00	322.63	68.18	4.732
45	-4.40	100	89	0.00	0.00	--	0.00	0.00	325.43	70.87	4.592
46	-4.50	100	90	0.00	0.00	--	0.00	0.00	328.24	73.61	4.459
47	-4.60	100	91	0.00	0.00	--	0.00	0.00	331.04	76.39	4.333
48	-4.70	100	92	0.00	0.00	--	0.00	0.00	333.84	79.23	4.213
49	-4.80	100	93	0.00	0.00	--	0.00	0.00	336.64	82.12	4.099
50	-4.90	100	94	0.00	0.00	--	0.00	0.00	339.45	85.06	3.991
51	-5.00	100	95	0.00	0.00	--	0.00	0.00	342.25	88.05	3.887

## Combinazione n° 13 - ECC

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
1	0.00	100	50	0.00	0.00	--	0.00	0.00	225.46	20.00	11.273
2	-0.10	100	51	0.00	0.00	--	0.00	0.00	227.66	20.02	11.370
3	-0.20	100	52	0.00	0.00	--	0.00	0.00	229.86	20.10	11.438
4	-0.30	100	53	0.00	0.00	--	0.00	0.00	232.04	20.21	11.480
5	-0.40	100	54	0.00	0.00	--	0.00	0.00	234.21	20.38	11.493
6	-0.50	100	54	0.00	0.00	--	0.00	0.00	236.37	20.59	11.480
7	-0.60	100	55	0.00	0.00	--	0.00	0.00	238.52	20.85	11.441
8	-0.70	100	56	0.00	0.00	--	0.00	0.00	240.67	21.15	11.377
9	-0.80	100	57	0.00	0.00	--	0.00	0.00	242.80	21.51	11.290
10	-0.90	100	58	0.00	0.00	--	0.00	0.00	244.92	21.91	11.181
11	-1.00	100	59	0.00	0.00	--	0.00	0.00	247.03	22.35	11.052
12	-1.10	100	60	0.00	0.00	--	0.00	0.00	249.13	22.85	10.905
13	-1.20	100	61	0.00	0.00	--	0.00	0.00	251.23	23.39	10.743
14	-1.30	100	62	0.00	0.00	--	0.00	0.00	253.31	23.97	10.566
15	-1.40	100	62	0.00	0.00	--	0.00	0.00	255.39	24.61	10.378
16	-1.50	100	63	0.00	0.00	--	0.00	0.00	257.46	25.29	10.181
17	-1.60	100	64	0.00	0.00	--	0.00	0.00	259.52	26.02	9.975
18	-1.70	100	65	0.00	0.00	--	0.00	0.00	261.58	26.79	9.763
19	-1.80	100	66	0.00	0.00	--	0.00	0.00	263.63	27.62	9.546
20	-1.90	100	67	0.00	0.00	--	0.00	0.00	265.67	28.49	9.327
21	-2.00	100	68	0.00	0.00	--	0.00	0.00	267.70	29.40	9.105
22	-2.10	100	69	0.00	0.00	--	0.00	0.00	269.73	30.36	8.883
23	-2.20	100	70	0.00	0.00	--	0.00	0.00	271.75	31.38	8.661
24	-2.30	100	71	0.00	0.00	--	0.00	0.00	273.77	32.43	8.441
25	-2.40	100	71	0.00	0.00	--	0.00	0.00	275.77	33.54	8.223
26	-2.50	100	72	0.00	0.00	--	0.00	0.00	277.78	34.69	8.008
27	-2.60	100	73	0.00	0.00	--	0.00	0.00	279.78	35.89	7.796
28	-2.70	100	74	0.00	0.00	--	0.00	0.00	281.77	37.13	7.588
29	-2.80	100	75	0.00	0.00	--	0.00	0.00	283.76	38.42	7.385
30	-2.90	100	76	0.00	0.00	--	0.00	0.00	285.74	39.76	7.186
31	-3.00	100	77	0.00	0.00	--	0.00	0.00	287.72	41.15	6.992
32	-3.10	100	78	0.00	0.00	--	0.00	0.00	289.69	42.58	6.803
33	-3.20	100	79	0.00	0.00	--	0.00	0.00	291.77	44.06	6.621
34	-3.30	100	79	0.00	0.00	--	0.00	0.00	294.58	45.59	6.461

VE407

**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
35	-3.40	100	80	0.00	0.00	--	0.00	0.00	297.39	47.17	6.305
36	-3.50	100	81	0.00	0.00	--	0.00	0.00	300.19	48.79	6.153
37	-3.60	100	82	0.00	0.00	--	0.00	0.00	303.00	50.46	6.005
38	-3.70	100	83	0.00	0.00	--	0.00	0.00	305.81	52.17	5.862
39	-3.80	100	84	0.00	0.00	--	0.00	0.00	308.61	53.93	5.722
40	-3.90	100	85	0.00	0.00	--	0.00	0.00	311.42	55.74	5.587
41	-4.00	100	86	0.00	0.00	--	0.00	0.00	314.22	57.60	5.455
42	-4.10	100	87	0.00	0.00	--	0.00	0.00	317.02	59.50	5.328
43	-4.20	100	87	0.00	0.00	--	0.00	0.00	319.83	61.45	5.204
44	-4.30	100	88	0.00	0.00	--	0.00	0.00	322.63	63.45	5.085
45	-4.40	100	89	0.00	0.00	--	0.00	0.00	325.43	65.49	4.969
46	-4.50	100	90	0.00	0.00	--	0.00	0.00	328.24	67.59	4.857
47	-4.60	100	91	0.00	0.00	--	0.00	0.00	331.04	69.72	4.748
48	-4.70	100	92	0.00	0.00	--	0.00	0.00	333.84	71.91	4.643
49	-4.80	100	93	0.00	0.00	--	0.00	0.00	336.64	74.14	4.541
50	-4.90	100	94	0.00	0.00	--	0.00	0.00	339.45	76.42	4.442
51	-5.00	100	95	0.00	0.00	--	0.00	0.00	342.25	78.75	4.346

**Mensola valle**Combinazione n° 1 - STR (A1-M1-R3)

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
1	-0.75	100	50	0.00	0.00	--	0.00	0.00	208.90	0.00	100.000
2	-0.67	100	50	0.00	0.00	--	0.00	0.00	208.90	1.02	204.497
3	-0.58	100	50	0.00	0.00	--	0.00	0.00	208.90	2.04	102.249
4	-0.50	100	50	0.00	0.00	--	0.00	0.00	208.90	3.06	68.166

Combinazione n° 2 - STR (A1-M1-R3) H + V

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
1	-0.75	100	50	0.00	0.00	--	0.00	0.00	208.90	0.00	100.000
2	-0.67	100	50	0.00	0.00	--	0.00	0.00	208.90	1.09	190.898
3	-0.58	100	50	0.00	0.00	--	0.00	0.00	208.90	2.19	95.449
4	-0.50	100	50	0.00	0.00	--	0.00	0.00	208.90	3.28	63.633

Combinazione n° 3 - STR (A1-M1-R3)

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
1	-0.75	100	50	0.00	0.00	--	0.00	0.00	208.90	0.00	100.000
2	-0.67	100	50	0.00	0.00	--	0.00	0.00	208.90	1.02	204.497
3	-0.58	100	50	0.00	0.00	--	0.00	0.00	208.90	2.04	102.249
4	-0.50	100	50	0.00	0.00	--	0.00	0.00	208.90	3.06	68.166

Combinazione n° 4 - STR (A1-M1-R3) H - V

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
1	-0.75	100	50	0.00	0.00	--	0.00	0.00	208.90	0.00	100.000
2	-0.67	100	50	0.00	0.00	--	0.00	0.00	208.90	1.02	204.497
3	-0.58	100	50	0.00	0.00	--	0.00	0.00	208.90	2.04	102.249
4	-0.50	100	50	0.00	0.00	--	0.00	0.00	208.90	3.06	68.166

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**Combinazione n° 13 - ECC

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
1	-0.75	100	50	0.00	0.00	--	0.00	0.00	208.90	0.00	100.000
2	-0.67	100	50	0.00	0.00	--	0.00	0.00	208.90	1.02	204.497
3	-0.58	100	50	0.00	0.00	--	0.00	0.00	208.90	2.04	102.249
4	-0.50	100	50	0.00	0.00	--	0.00	0.00	208.90	3.06	68.166

**Fondazione**Combinazione n° 1 - STR (A1-M1-R3)

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
1	-1.45	100	95	0.00	0.00	--	0.00	0.00	395.49	0.00	100.000
2	-1.35	100	95	0.00	0.00	--	0.00	0.00	395.49	-8.32	47.532
3	-1.26	100	95	0.00	0.00	--	0.00	0.00	395.49	-16.67	23.729
4	-1.17	100	95	0.00	0.00	--	0.00	0.00	395.49	-25.04	15.795
5	-1.07	100	95	0.00	0.00	--	0.00	0.00	395.49	-33.44	11.828
6	-0.97	100	95	0.00	0.00	--	0.00	0.00	395.49	-41.86	9.447
7	-0.88	100	95	0.00	0.00	--	0.00	0.00	395.49	-50.31	7.861
8	-0.78	100	95	0.00	0.00	--	0.00	0.00	395.49	-58.79	6.727
9	-0.69	100	95	0.00	0.00	--	0.00	0.00	395.49	-67.29	5.877
10	-0.59	100	95	0.00	0.00	--	0.00	0.00	395.49	-75.82	5.216
11	-0.50	100	95	0.00	0.00	--	0.00	0.00	395.49	-84.37	4.687
12	0.45	100	95	0.00	0.00	--	0.00	0.00	395.49	-69.86	5.661
13	0.55	100	95	0.00	0.00	--	0.00	0.00	395.49	-66.82	5.919
14	0.65	100	95	0.00	0.00	--	0.00	0.00	395.49	-63.80	6.199
15	0.75	100	95	0.00	0.00	--	0.00	0.00	395.49	-60.81	6.504
16	0.85	100	95	0.00	0.00	--	0.00	0.00	395.49	-57.85	6.836
17	0.95	100	95	0.00	0.00	--	0.00	0.00	395.49	-54.92	7.201
18	1.05	100	95	0.00	0.00	--	0.00	0.00	395.49	-52.02	7.603
19	1.15	100	95	0.00	0.00	--	0.00	0.00	395.49	-49.14	8.048
20	1.25	100	95	0.00	0.00	--	0.00	0.00	395.49	-46.30	8.542
21	1.35	100	95	0.00	0.00	--	0.00	0.00	395.49	-43.48	9.096
22	1.45	100	95	0.00	0.00	--	0.00	0.00	395.49	-40.69	9.719
23	1.55	100	95	0.00	0.00	--	0.00	0.00	395.49	-37.93	10.426
24	1.65	100	95	0.00	0.00	--	0.00	0.00	395.49	-35.20	11.234
25	1.75	100	95	0.00	0.00	--	0.00	0.00	395.49	-32.50	12.168
26	1.85	100	95	0.00	0.00	--	0.00	0.00	395.49	-29.83	13.258
27	1.95	100	95	0.00	0.00	--	0.00	0.00	395.49	-27.19	14.547
28	2.05	100	95	0.00	0.00	--	0.00	0.00	395.49	-24.57	16.095
29	2.15	100	95	0.00	0.00	--	0.00	0.00	395.49	-21.98	17.989
30	2.25	100	95	0.00	0.00	--	0.00	0.00	395.49	-19.43	20.357
31	2.35	100	95	0.00	0.00	--	0.00	0.00	395.49	-16.90	23.404
32	2.45	100	95	0.00	0.00	--	0.00	0.00	395.49	-14.40	27.468
33	2.55	100	95	0.00	0.00	--	0.00	0.00	395.49	-11.93	33.160
34	2.65	100	95	0.00	0.00	--	0.00	0.00	395.49	-9.48	41.701
35	2.75	100	95	0.00	0.00	--	0.00	0.00	395.49	-7.07	55.941
36	2.85	100	95	0.00	0.00	--	0.00	0.00	395.49	-4.68	84.425
37	2.95	100	95	0.00	0.00	--	0.00	0.00	395.49	-2.33	169.893
38	3.05	100	95	0.00	0.00	--	0.00	0.00	395.49	0.00	100.000

Combinazione n° 2 - STR (A1-M1-R3) H + V

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
1	-1.45	100	95	0.00	0.00	--	0.00	0.00	395.49	0.00	100.000
2	-1.35	100	95	0.00	0.00	--	0.00	0.00	395.49	-15.63	25.301
3	-1.26	100	95	0.00	0.00	--	0.00	0.00	395.49	-31.01	12.754
4	-1.17	100	95	0.00	0.00	--	0.00	0.00	395.49	-46.13	8.574
5	-1.07	100	95	0.00	0.00	--	0.00	0.00	395.49	-60.99	6.484

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## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
6	-0.97	100	95	0.00	0.00	--	0.00	0.00	395.49	-75.61	5.231
7	-0.88	100	95	0.00	0.00	--	0.00	0.00	395.49	-89.96	4.396
8	-0.78	100	95	0.00	0.00	--	0.00	0.00	395.49	-104.06	3.801
9	-0.69	100	95	0.00	0.00	--	0.00	0.00	395.49	-117.91	3.354
10	-0.59	100	95	0.00	0.00	--	0.00	0.00	395.49	-131.50	3.008
11	-0.50	100	95	0.00	0.00	--	0.00	0.00	395.49	-144.83	2.731
12	0.45	100	95	0.00	0.00	--	0.00	0.00	395.49	-50.66	7.807
13	0.55	100	95	0.00	0.00	--	0.00	0.00	395.49	-52.25	7.570
14	0.65	100	95	0.00	0.00	--	0.00	0.00	395.49	-53.55	7.386
15	0.75	100	95	0.00	0.00	--	0.00	0.00	395.49	-54.57	7.248
16	0.85	100	95	0.00	0.00	--	0.00	0.00	395.49	-55.31	7.151
17	0.95	100	95	0.00	0.00	--	0.00	0.00	395.49	-55.76	7.093
18	1.05	100	95	0.00	0.00	--	0.00	0.00	395.49	-55.93	7.071
19	1.15	100	95	0.00	0.00	--	0.00	0.00	395.49	-55.82	7.085
20	1.25	100	95	0.00	0.00	--	0.00	0.00	395.49	-55.43	7.135
21	1.35	100	95	0.00	0.00	--	0.00	0.00	395.49	-54.75	7.223
22	1.45	100	95	0.00	0.00	--	0.00	0.00	395.49	-53.79	7.352
23	1.55	100	95	0.00	0.00	--	0.00	0.00	395.49	-52.55	7.526
24	1.65	100	95	0.00	0.00	--	0.00	0.00	395.49	-51.03	7.750
25	1.75	100	95	0.00	0.00	--	0.00	0.00	395.49	-49.22	8.035
26	1.85	100	95	0.00	0.00	--	0.00	0.00	395.49	-47.13	8.391
27	1.95	100	95	0.00	0.00	--	0.00	0.00	395.49	-44.76	8.836
28	2.05	100	95	0.00	0.00	--	0.00	0.00	395.49	-42.10	9.393
29	2.15	100	95	0.00	0.00	--	0.00	0.00	395.49	-39.17	10.098
30	2.25	100	95	0.00	0.00	--	0.00	0.00	395.49	-35.94	11.003
31	2.35	100	95	0.00	0.00	--	0.00	0.00	395.49	-32.44	12.191
32	2.45	100	95	0.00	0.00	--	0.00	0.00	395.49	-28.65	13.802
33	2.55	100	95	0.00	0.00	--	0.00	0.00	395.49	-24.59	16.086
34	2.65	100	95	0.00	0.00	--	0.00	0.00	395.49	-20.23	19.546
35	2.75	100	95	0.00	0.00	--	0.00	0.00	395.49	-15.60	25.352
36	2.85	100	95	0.00	0.00	--	0.00	0.00	395.49	-10.68	37.022
37	2.95	100	95	0.00	0.00	--	0.00	0.00	395.49	-5.48	72.135
38	3.05	100	95	0.00	0.00	--	0.00	0.00	395.49	0.00	100.000

## Combinazione n° 3 - STR (A1-M1-R3)

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
1	-1.45	100	95	0.00	0.00	--	0.00	0.00	395.49	0.00	100.000
2	-1.35	100	95	0.00	0.00	--	0.00	0.00	395.49	-10.95	36.129
3	-1.26	100	95	0.00	0.00	--	0.00	0.00	395.49	-21.96	18.009
4	-1.17	100	95	0.00	0.00	--	0.00	0.00	395.49	-33.04	11.969
5	-1.07	100	95	0.00	0.00	--	0.00	0.00	395.49	-44.19	8.949
6	-0.97	100	95	0.00	0.00	--	0.00	0.00	395.49	-55.41	7.137
7	-0.88	100	95	0.00	0.00	--	0.00	0.00	395.49	-66.70	5.930
8	-0.78	100	95	0.00	0.00	--	0.00	0.00	395.49	-78.05	5.067
9	-0.69	100	95	0.00	0.00	--	0.00	0.00	395.49	-89.47	4.420
10	-0.59	100	95	0.00	0.00	--	0.00	0.00	395.49	-100.96	3.917
11	-0.50	100	95	0.00	0.00	--	0.00	0.00	395.49	-112.52	3.515
12	0.45	100	95	0.00	0.00	--	0.00	0.00	395.49	-91.84	4.306
13	0.55	100	95	0.00	0.00	--	0.00	0.00	395.49	-87.32	4.529
14	0.65	100	95	0.00	0.00	--	0.00	0.00	395.49	-82.89	4.771
15	0.75	100	95	0.00	0.00	--	0.00	0.00	395.49	-78.52	5.036
16	0.85	100	95	0.00	0.00	--	0.00	0.00	395.49	-74.24	5.327
17	0.95	100	95	0.00	0.00	--	0.00	0.00	395.49	-70.03	5.648
18	1.05	100	95	0.00	0.00	--	0.00	0.00	395.49	-65.89	6.002
19	1.15	100	95	0.00	0.00	--	0.00	0.00	395.49	-61.83	6.397
20	1.25	100	95	0.00	0.00	--	0.00	0.00	395.49	-57.84	6.837
21	1.35	100	95	0.00	0.00	--	0.00	0.00	395.49	-53.93	7.333
22	1.45	100	95	0.00	0.00	--	0.00	0.00	395.49	-50.10	7.895
23	1.55	100	95	0.00	0.00	--	0.00	0.00	395.49	-46.33	8.535
24	1.65	100	95	0.00	0.00	--	0.00	0.00	395.49	-42.65	9.273
25	1.75	100	95	0.00	0.00	--	0.00	0.00	395.49	-39.04	10.130
26	1.85	100	95	0.00	0.00	--	0.00	0.00	395.49	-35.51	11.139
27	1.95	100	95	0.00	0.00	--	0.00	0.00	395.49	-32.05	12.341
28	2.05	100	95	0.00	0.00	--	0.00	0.00	395.49	-28.66	13.798
29	2.15	100	95	0.00	0.00	--	0.00	0.00	395.49	-25.35	15.598

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## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
30	2.25	100	95	0.00	0.00	--	0.00	0.00	395.49	-22.12	17.878
31	2.35	100	95	0.00	0.00	--	0.00	0.00	395.49	-18.96	20.855
32	2.45	100	95	0.00	0.00	--	0.00	0.00	395.49	-15.88	24.903
33	2.55	100	95	0.00	0.00	--	0.00	0.00	395.49	-12.87	30.720
34	2.65	100	95	0.00	0.00	--	0.00	0.00	395.49	-9.94	39.780
35	2.75	100	95	0.00	0.00	--	0.00	0.00	395.49	-7.09	55.819
36	2.85	100	95	0.00	0.00	--	0.00	0.00	395.49	-4.30	91.895
37	2.95	100	95	0.00	0.00	--	0.00	0.00	395.49	-1.60	247.569
38	3.05	100	95	0.00	0.00	--	0.00	0.00	395.49	0.00	100.000

## Combinazione n° 4 - STR (A1-M1-R3) H - V

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
1	-1.45	100	95	0.00	0.00	--	0.00	0.00	395.49	0.00	100.000
2	-1.35	100	95	0.00	0.00	--	0.00	0.00	395.49	-14.13	27.998
3	-1.26	100	95	0.00	0.00	--	0.00	0.00	395.49	-28.00	14.126
4	-1.17	100	95	0.00	0.00	--	0.00	0.00	395.49	-41.61	9.504
5	-1.07	100	95	0.00	0.00	--	0.00	0.00	395.49	-54.98	7.194
6	-0.97	100	95	0.00	0.00	--	0.00	0.00	395.49	-68.08	5.809
7	-0.88	100	95	0.00	0.00	--	0.00	0.00	395.49	-80.94	4.886
8	-0.78	100	95	0.00	0.00	--	0.00	0.00	395.49	-93.54	4.228
9	-0.69	100	95	0.00	0.00	--	0.00	0.00	395.49	-105.88	3.735
10	-0.59	100	95	0.00	0.00	--	0.00	0.00	395.49	-117.97	3.352
11	-0.50	100	95	0.00	0.00	--	0.00	0.00	395.49	-129.80	3.047
12	0.45	100	95	0.00	0.00	--	0.00	0.00	395.49	-91.26	4.334
13	0.55	100	95	0.00	0.00	--	0.00	0.00	395.49	-91.27	4.333
14	0.65	100	95	0.00	0.00	--	0.00	0.00	395.49	-91.01	4.346
15	0.75	100	95	0.00	0.00	--	0.00	0.00	395.49	-90.46	4.372
16	0.85	100	95	0.00	0.00	--	0.00	0.00	395.49	-89.63	4.413
17	0.95	100	95	0.00	0.00	--	0.00	0.00	395.49	-88.51	4.468
18	1.05	100	95	0.00	0.00	--	0.00	0.00	395.49	-87.12	4.540
19	1.15	100	95	0.00	0.00	--	0.00	0.00	395.49	-85.44	4.629
20	1.25	100	95	0.00	0.00	--	0.00	0.00	395.49	-83.48	4.737
21	1.35	100	95	0.00	0.00	--	0.00	0.00	395.49	-81.24	4.868
22	1.45	100	95	0.00	0.00	--	0.00	0.00	395.49	-78.72	5.024
23	1.55	100	95	0.00	0.00	--	0.00	0.00	395.49	-75.91	5.210
24	1.65	100	95	0.00	0.00	--	0.00	0.00	395.49	-72.83	5.431
25	1.75	100	95	0.00	0.00	--	0.00	0.00	395.49	-69.46	5.694
26	1.85	100	95	0.00	0.00	--	0.00	0.00	395.49	-65.81	6.010
27	1.95	100	95	0.00	0.00	--	0.00	0.00	395.49	-61.87	6.392
28	2.05	100	95	0.00	0.00	--	0.00	0.00	395.49	-57.66	6.859
29	2.15	100	95	0.00	0.00	--	0.00	0.00	395.49	-53.16	7.439
30	2.25	100	95	0.00	0.00	--	0.00	0.00	395.49	-48.38	8.174
31	2.35	100	95	0.00	0.00	--	0.00	0.00	395.49	-43.32	9.129
32	2.45	100	95	0.00	0.00	--	0.00	0.00	395.49	-37.98	10.413
33	2.55	100	95	0.00	0.00	--	0.00	0.00	395.49	-32.35	12.224
34	2.65	100	95	0.00	0.00	--	0.00	0.00	395.49	-26.45	14.954
35	2.75	100	95	0.00	0.00	--	0.00	0.00	395.49	-20.26	19.522
36	2.85	100	95	0.00	0.00	--	0.00	0.00	395.49	-13.79	28.684
37	2.95	100	95	0.00	0.00	--	0.00	0.00	395.49	-7.03	56.219
38	3.05	100	95	0.00	0.00	--	0.00	0.00	395.49	0.00	100.000

## Combinazione n° 13 - ECC

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
1	-1.45	100	95	0.00	0.00	--	0.00	0.00	395.49	0.00	100.000
2	-1.35	100	95	0.00	0.00	--	0.00	0.00	395.49	-11.32	34.947
3	-1.26	100	95	0.00	0.00	--	0.00	0.00	395.49	-22.52	17.561
4	-1.17	100	95	0.00	0.00	--	0.00	0.00	395.49	-33.61	11.766
5	-1.07	100	95	0.00	0.00	--	0.00	0.00	395.49	-44.59	8.869
6	-0.97	100	95	0.00	0.00	--	0.00	0.00	395.49	-55.46	7.131
7	-0.88	100	95	0.00	0.00	--	0.00	0.00	395.49	-66.22	5.973
8	-0.78	100	95	0.00	0.00	--	0.00	0.00	395.49	-76.86	5.146

VE407

**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	Y	B	H	A <sub>sw</sub>	s	cotθ	V <sub>Rcd</sub>	V <sub>Rsd</sub>	V <sub>Rd</sub>	T	FS
	[m]	[cm]	[cm]	[cmq]	[cm]		[kN]	[kN]	[kN]	[kN]	
9	-0.69	100	95	0.00	0.00	--	0.00	0.00	395.49	-87.39	4.526
10	-0.59	100	95	0.00	0.00	--	0.00	0.00	395.49	-97.81	4.044
11	-0.50	100	95	0.00	0.00	--	0.00	0.00	395.49	-108.11	3.658
12	0.45	100	95	0.00	0.00	--	0.00	0.00	395.49	-39.17	10.096
13	0.55	100	95	0.00	0.00	--	0.00	0.00	395.49	-39.22	10.083
14	0.65	100	95	0.00	0.00	--	0.00	0.00	395.49	-39.15	10.103
15	0.75	100	95	0.00	0.00	--	0.00	0.00	395.49	-38.95	10.154
16	0.85	100	95	0.00	0.00	--	0.00	0.00	395.49	-38.62	10.240
17	0.95	100	95	0.00	0.00	--	0.00	0.00	395.49	-38.17	10.360
18	1.05	100	95	0.00	0.00	--	0.00	0.00	395.49	-37.60	10.518
19	1.15	100	95	0.00	0.00	--	0.00	0.00	395.49	-36.90	10.717
20	1.25	100	95	0.00	0.00	--	0.00	0.00	395.49	-36.08	10.961
21	1.35	100	95	0.00	0.00	--	0.00	0.00	395.49	-35.14	11.256
22	1.45	100	95	0.00	0.00	--	0.00	0.00	395.49	-34.06	11.610
23	1.55	100	95	0.00	0.00	--	0.00	0.00	395.49	-32.87	12.032
24	1.65	100	95	0.00	0.00	--	0.00	0.00	395.49	-31.55	12.536
25	1.75	100	95	0.00	0.00	--	0.00	0.00	395.49	-30.10	13.137
26	1.85	100	95	0.00	0.00	--	0.00	0.00	395.49	-28.54	13.860
27	1.95	100	95	0.00	0.00	--	0.00	0.00	395.49	-26.84	14.734
28	2.05	100	95	0.00	0.00	--	0.00	0.00	395.49	-25.02	15.804
29	2.15	100	95	0.00	0.00	--	0.00	0.00	395.49	-23.08	17.134
30	2.25	100	95	0.00	0.00	--	0.00	0.00	395.49	-21.01	18.819
31	2.35	100	95	0.00	0.00	--	0.00	0.00	395.49	-18.82	21.010
32	2.45	100	95	0.00	0.00	--	0.00	0.00	395.49	-16.51	23.957
33	2.55	100	95	0.00	0.00	--	0.00	0.00	395.49	-14.07	28.113
34	2.65	100	95	0.00	0.00	--	0.00	0.00	395.49	-11.50	34.381
35	2.75	100	95	0.00	0.00	--	0.00	0.00	395.49	-8.81	44.870
36	2.85	100	95	0.00	0.00	--	0.00	0.00	395.49	-6.00	65.909
37	2.95	100	95	0.00	0.00	--	0.00	0.00	395.49	-3.06	129.138
38	3.05	100	95	0.00	0.00	--	0.00	0.00	395.49	0.00	100.000

**Verifica a fessurazione****Simbologia adottata**

n°	indice sezione
Y	ordinata sezione espressa in [m]
B	larghezza sezione espresso in [cm]
H	altezza sezione espressa in [cm]
A <sub>f</sub>	area ferri zona tesa espresso in [cmq]
A <sub>eff</sub>	area efficace espressa in [cmq]
M	momento agente espressa in [kNm]
M <sub>pf</sub>	momento di prima fessurazione espressa in [kNm]
ε	deformazione espresso in %
S <sub>m</sub>	spaziatura tra le fessure espressa in [mm]
w	apertura delle fessure espressa in [mm]

**Combinazioni SLEF****Paramento****Combinazione n° 15 - SLEF**

VE407

**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**Apertura limite fessure  $w_{lim}=0.30$ 

n°	Y	B	H	Af	Aeff	M	Mpf	$\varepsilon$	Sm	w
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kNm]	[%]	[mm]	[mm]
1	0.00	100	50	10.05	1000.00	0.38	505.15	0.0000	0.00	0.000
2	-0.10	100	51	0.00	0.00	0.39	44825.25	0.0000	0.00	0.000
3	-0.20	100	52	0.00	0.00	0.40	574.63	0.0000	0.00	0.000
4	-0.30	100	53	0.00	0.00	0.43	334.53	0.0000	0.00	0.000
5	-0.40	100	54	0.00	0.00	0.48	273.33	0.0000	0.00	0.000
6	-0.50	100	54	0.00	0.00	0.55	265.39	0.0000	0.00	0.000
7	-0.60	100	55	0.00	0.00	0.66	290.02	0.0000	0.00	0.000
8	-0.70	100	56	0.00	0.00	0.79	348.40	0.0000	0.00	0.000
9	-0.80	100	57	0.00	0.00	0.97	457.71	0.0000	0.00	0.000
10	-0.90	100	58	0.00	0.00	1.19	669.25	0.0000	0.00	0.000
11	-1.00	100	59	0.00	0.00	1.46	1168.89	0.0000	0.00	0.000
12	-1.10	100	60	0.00	0.00	1.78	3407.41	0.0000	0.00	0.000
13	-1.20	100	61	0.00	0.00	2.16	5366.97	0.0000	0.00	0.000
14	-1.30	100	62	10.05	1000.00	2.60	1700.20	0.0000	0.00	0.000
15	-1.40	100	62	10.05	1000.00	3.12	1086.34	0.0000	0.00	0.000
16	-1.50	100	63	10.05	1000.00	3.70	838.23	0.0000	0.00	0.000
17	-1.60	100	64	10.05	1000.00	4.36	706.80	0.0000	0.00	0.000
18	-1.70	100	65	10.05	1000.00	5.11	627.22	0.0000	0.00	0.000
19	-1.80	100	66	10.05	1000.00	5.94	575.16	0.0000	0.00	0.000
20	-1.90	100	67	10.05	1000.00	6.86	539.44	0.0000	0.00	0.000
21	-2.00	100	68	10.05	1000.00	7.88	514.23	0.0000	0.00	0.000
22	-2.10	100	69	10.05	1000.00	9.00	496.15	0.0000	0.00	0.000
23	-2.20	100	70	10.05	1000.00	10.22	483.15	0.0000	0.00	0.000
24	-2.30	100	71	10.05	1000.00	11.56	473.91	0.0000	0.00	0.000
25	-2.40	100	71	10.05	1000.00	13.02	467.51	0.0000	0.00	0.000
26	-2.50	100	72	10.05	1000.00	14.59	463.33	0.0000	0.00	0.000
27	-2.60	100	73	10.05	1000.00	16.29	460.92	0.0000	0.00	0.000
28	-2.70	100	74	10.05	1000.00	18.12	459.94	0.0000	0.00	0.000
29	-2.80	100	75	10.05	1000.00	20.08	460.13	0.0000	0.00	0.000
30	-2.90	100	76	10.05	1000.00	22.19	461.31	0.0000	0.00	0.000
31	-3.00	100	77	10.05	1000.00	24.44	463.33	0.0000	0.00	0.000
32	-3.10	100	78	10.05	1000.00	26.84	466.06	0.0000	0.00	0.000
33	-3.20	100	79	10.05	1000.00	29.39	469.42	0.0000	0.00	0.000
34	-3.30	100	79	10.05	1000.00	32.10	473.31	0.0000	0.00	0.000
35	-3.40	100	80	10.05	1000.00	34.98	477.69	0.0000	0.00	0.000
36	-3.50	100	81	10.05	1000.00	38.02	482.49	0.0000	0.00	0.000
37	-3.60	100	82	10.05	1000.00	41.24	487.68	0.0000	0.00	0.000
38	-3.70	100	83	10.05	1000.00	44.63	493.21	0.0000	0.00	0.000
39	-3.80	100	84	10.05	1000.00	48.21	499.06	0.0000	0.00	0.000
40	-3.90	100	85	10.05	1000.00	51.98	505.20	0.0000	0.00	0.000
41	-4.00	100	86	10.05	1000.00	55.94	511.61	0.0000	0.00	0.000
42	-4.10	100	87	10.05	1000.00	60.09	518.27	0.0000	0.00	0.000
43	-4.20	100	87	10.05	1000.00	64.45	525.16	0.0000	0.00	0.000
44	-4.30	100	88	10.05	1000.00	69.02	532.26	0.0000	0.00	0.000
45	-4.40	100	89	10.05	1000.00	73.80	539.57	0.0000	0.00	0.000
46	-4.50	100	90	10.05	1000.00	78.79	547.08	0.0000	0.00	0.000
47	-4.60	100	91	10.05	1000.00	84.00	554.77	0.0000	0.00	0.000
48	-4.70	100	92	10.05	1000.00	89.45	562.63	0.0000	0.00	0.000
49	-4.80	100	93	10.05	1000.00	95.12	570.66	0.0000	0.00	0.000
50	-4.90	100	94	10.05	1000.00	101.03	578.84	0.0000	0.00	0.000
51	-5.00	100	95	10.05	1000.00	107.17	587.19	0.0000	0.00	0.000

Mensola valleCombinazione n° 15 - SLEFApertura limite fessure  $w_{lim}=0.30$



VE407

**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	Y	B	H	Af	Aeff	M	Mpf	ε	Sm	w
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kNm]	[%]	[mm]	[mm]
1	-0.75	100	50	0.00	0.00	0.00	0.00	0.0000	0.00	0.000
2	-0.67	100	50	0.00	0.00	-0.04	0.00	0.0000	0.00	0.000
3	-0.58	100	50	8.04	1000.00	-0.17	-143.66	0.0000	0.00	0.000
4	-0.50	100	50	8.04	1000.00	-0.38	-143.66	0.0000	0.00	0.000

FondazioneCombinazione n° 15 - SLEFApertura limite fessure  $w_{lim}=0.30$ 

n°	Y	B	H	Af	Aeff	M	Mpf	ε	Sm	w
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kNm]	[%]	[mm]	[mm]
1	-1.45	100	95	0.00	0.00	0.00	0.00	0.0000	0.00	0.000
2	-1.35	100	95	20.11	1000.00	0.35	545.72	0.0000	0.00	0.000
3	-1.26	100	95	20.11	1000.00	1.42	545.72	0.0000	0.00	0.000
4	-1.17	100	95	20.11	1000.00	3.21	545.72	0.0000	0.00	0.000
5	-1.07	100	95	20.11	1000.00	5.72	545.72	0.0000	0.00	0.000
6	-0.97	100	95	20.11	1000.00	8.96	545.72	0.0000	0.00	0.000
7	-0.88	100	95	20.11	1000.00	12.93	545.72	0.0000	0.00	0.000
8	-0.78	100	95	20.11	1000.00	17.64	545.72	0.0000	0.00	0.000
9	-0.69	100	95	20.11	1000.00	23.09	545.72	0.0000	0.00	0.000
10	-0.59	100	95	20.11	1000.00	29.29	545.72	0.0000	0.00	0.000
11	-0.50	100	95	20.11	1000.00	36.25	545.72	0.0000	0.00	0.000
12	0.45	100	95	20.11	1000.00	16.53	545.72	0.0000	0.00	0.000
13	0.55	100	95	20.11	1000.00	15.90	545.72	0.0000	0.00	0.000
14	0.65	100	95	20.11	1000.00	15.22	545.72	0.0000	0.00	0.000
15	0.75	100	95	20.11	1000.00	14.50	545.72	0.0000	0.00	0.000
16	0.85	100	95	20.11	1000.00	13.74	545.72	0.0000	0.00	0.000
17	0.95	100	95	20.11	1000.00	12.95	545.72	0.0000	0.00	0.000
18	1.05	100	95	20.11	1000.00	12.14	545.72	0.0000	0.00	0.000
19	1.15	100	95	20.11	1000.00	11.31	545.72	0.0000	0.00	0.000
20	1.25	100	95	20.11	1000.00	10.47	545.72	0.0000	0.00	0.000
21	1.35	100	95	20.11	1000.00	9.63	545.72	0.0000	0.00	0.000
22	1.45	100	95	20.11	1000.00	8.78	545.72	0.0000	0.00	0.000
23	1.55	100	95	20.11	1000.00	7.94	545.72	0.0000	0.00	0.000
24	1.65	100	95	20.11	1000.00	7.11	545.72	0.0000	0.00	0.000
25	1.75	100	95	20.11	1000.00	6.29	545.72	0.0000	0.00	0.000
26	1.85	100	95	20.11	1000.00	5.50	545.72	0.0000	0.00	0.000
27	1.95	100	95	20.11	1000.00	4.74	545.72	0.0000	0.00	0.000
28	2.05	100	95	20.11	1000.00	4.02	545.72	0.0000	0.00	0.000
29	2.15	100	95	20.11	1000.00	3.34	545.72	0.0000	0.00	0.000
30	2.25	100	95	20.11	1000.00	2.70	545.72	0.0000	0.00	0.000
31	2.35	100	95	20.11	1000.00	2.11	545.72	0.0000	0.00	0.000
32	2.45	100	95	20.11	1000.00	1.59	545.72	0.0000	0.00	0.000
33	2.55	100	95	20.11	1000.00	1.13	545.72	0.0000	0.00	0.000
34	2.65	100	95	20.11	1000.00	0.74	545.72	0.0000	0.00	0.000
35	2.75	100	95	20.11	1000.00	0.42	545.72	0.0000	0.00	0.000
36	2.85	100	95	20.11	1000.00	0.19	545.72	0.0000	0.00	0.000
37	2.95	100	95	0.00	0.00	0.05	0.00	0.0000	0.00	0.000
38	3.05	100	95	0.00	0.00	0.00	0.00	0.0000	0.00	0.000

**Combinazioni SLEQ**Paramento

VE407

**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

Combinazione n° 16 - SLEQ

Apertura limite fessure  $w_{lim}=0.20$ 

n°	Y [m]	B [cm]	H [cm]	Af [cmq]	Aeff [cmq]	M [kNm]	Mpf [kNm]	ε [%]	Sm [mm]	w [mm]
1	0.00	100	50	10.05	1000.00	0.38	505.15	0.0000	0.00	0.000
2	-0.10	100	51	0.00	0.00	0.39	44825.25	0.0000	0.00	0.000
3	-0.20	100	52	0.00	0.00	0.40	574.63	0.0000	0.00	0.000
4	-0.30	100	53	0.00	0.00	0.43	334.53	0.0000	0.00	0.000
5	-0.40	100	54	0.00	0.00	0.48	273.33	0.0000	0.00	0.000
6	-0.50	100	54	0.00	0.00	0.55	265.39	0.0000	0.00	0.000
7	-0.60	100	55	0.00	0.00	0.66	290.02	0.0000	0.00	0.000
8	-0.70	100	56	0.00	0.00	0.79	348.40	0.0000	0.00	0.000
9	-0.80	100	57	0.00	0.00	0.97	457.71	0.0000	0.00	0.000
10	-0.90	100	58	0.00	0.00	1.19	669.25	0.0000	0.00	0.000
11	-1.00	100	59	0.00	0.00	1.46	1168.89	0.0000	0.00	0.000
12	-1.10	100	60	0.00	0.00	1.78	3407.41	0.0000	0.00	0.000
13	-1.20	100	61	0.00	0.00	2.16	5366.97	0.0000	0.00	0.000
14	-1.30	100	62	10.05	1000.00	2.60	1700.20	0.0000	0.00	0.000
15	-1.40	100	62	10.05	1000.00	3.12	1086.34	0.0000	0.00	0.000
16	-1.50	100	63	10.05	1000.00	3.70	838.23	0.0000	0.00	0.000
17	-1.60	100	64	10.05	1000.00	4.36	706.80	0.0000	0.00	0.000
18	-1.70	100	65	10.05	1000.00	5.11	627.22	0.0000	0.00	0.000
19	-1.80	100	66	10.05	1000.00	5.94	575.16	0.0000	0.00	0.000
20	-1.90	100	67	10.05	1000.00	6.86	539.44	0.0000	0.00	0.000
21	-2.00	100	68	10.05	1000.00	7.88	514.23	0.0000	0.00	0.000
22	-2.10	100	69	10.05	1000.00	9.00	496.15	0.0000	0.00	0.000
23	-2.20	100	70	10.05	1000.00	10.22	483.15	0.0000	0.00	0.000
24	-2.30	100	71	10.05	1000.00	11.56	473.91	0.0000	0.00	0.000
25	-2.40	100	71	10.05	1000.00	13.02	467.51	0.0000	0.00	0.000
26	-2.50	100	72	10.05	1000.00	14.59	463.33	0.0000	0.00	0.000
27	-2.60	100	73	10.05	1000.00	16.29	460.92	0.0000	0.00	0.000
28	-2.70	100	74	10.05	1000.00	18.12	459.94	0.0000	0.00	0.000
29	-2.80	100	75	10.05	1000.00	20.08	460.13	0.0000	0.00	0.000
30	-2.90	100	76	10.05	1000.00	22.19	461.31	0.0000	0.00	0.000
31	-3.00	100	77	10.05	1000.00	24.44	463.33	0.0000	0.00	0.000
32	-3.10	100	78	10.05	1000.00	26.84	466.06	0.0000	0.00	0.000
33	-3.20	100	79	10.05	1000.00	29.39	469.42	0.0000	0.00	0.000
34	-3.30	100	79	10.05	1000.00	32.10	473.31	0.0000	0.00	0.000
35	-3.40	100	80	10.05	1000.00	34.98	477.69	0.0000	0.00	0.000
36	-3.50	100	81	10.05	1000.00	38.02	482.49	0.0000	0.00	0.000
37	-3.60	100	82	10.05	1000.00	41.24	487.68	0.0000	0.00	0.000
38	-3.70	100	83	10.05	1000.00	44.63	493.21	0.0000	0.00	0.000
39	-3.80	100	84	10.05	1000.00	48.21	499.06	0.0000	0.00	0.000
40	-3.90	100	85	10.05	1000.00	51.98	505.20	0.0000	0.00	0.000
41	-4.00	100	86	10.05	1000.00	55.94	511.61	0.0000	0.00	0.000
42	-4.10	100	87	10.05	1000.00	60.09	518.27	0.0000	0.00	0.000
43	-4.20	100	87	10.05	1000.00	64.45	525.16	0.0000	0.00	0.000
44	-4.30	100	88	10.05	1000.00	69.02	532.26	0.0000	0.00	0.000
45	-4.40	100	89	10.05	1000.00	73.80	539.57	0.0000	0.00	0.000
46	-4.50	100	90	10.05	1000.00	78.79	547.08	0.0000	0.00	0.000
47	-4.60	100	91	10.05	1000.00	84.00	554.77	0.0000	0.00	0.000
48	-4.70	100	92	10.05	1000.00	89.45	562.63	0.0000	0.00	0.000
49	-4.80	100	93	10.05	1000.00	95.12	570.66	0.0000	0.00	0.000
50	-4.90	100	94	10.05	1000.00	101.03	578.84	0.0000	0.00	0.000
51	-5.00	100	95	10.05	1000.00	107.17	587.19	0.0000	0.00	0.000

Mensola valle

Combinazione n° 16 - SLEQ

Apertura limite fessure  $w_{lim}=0.20$

VE407

## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

n°	Y	B	H	Af	Aeff	M	Mpf	ε	Sm	w
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kNm]	[%]	[mm]	[mm]
1	-0.75	100	50	0.00	0.00	0.00	0.00	0.0000	0.00	0.000
2	-0.67	100	50	0.00	0.00	-0.04	0.00	0.0000	0.00	0.000
3	-0.58	100	50	8.04	1000.00	-0.17	-143.66	0.0000	0.00	0.000
4	-0.50	100	50	8.04	1000.00	-0.38	-143.66	0.0000	0.00	0.000

## Fondazione

Combinazione n° 16 - SLEQ

Apertura limite fessure  $w_{lim}=0.20$ 

n°	Y	B	H	Af	Aeff	M	Mpf	ε	Sm	w
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kNm]	[%]	[mm]	[mm]
1	-1.45	100	95	0.00	0.00	0.00	0.00	0.0000	0.00	0.000
2	-1.35	100	95	20.11	1000.00	0.35	545.72	0.0000	0.00	0.000
3	-1.26	100	95	20.11	1000.00	1.42	545.72	0.0000	0.00	0.000
4	-1.17	100	95	20.11	1000.00	3.21	545.72	0.0000	0.00	0.000
5	-1.07	100	95	20.11	1000.00	5.72	545.72	0.0000	0.00	0.000
6	-0.97	100	95	20.11	1000.00	8.96	545.72	0.0000	0.00	0.000
7	-0.88	100	95	20.11	1000.00	12.93	545.72	0.0000	0.00	0.000
8	-0.78	100	95	20.11	1000.00	17.64	545.72	0.0000	0.00	0.000
9	-0.69	100	95	20.11	1000.00	23.09	545.72	0.0000	0.00	0.000
10	-0.59	100	95	20.11	1000.00	29.29	545.72	0.0000	0.00	0.000
11	-0.50	100	95	20.11	1000.00	36.25	545.72	0.0000	0.00	0.000
12	0.45	100	95	20.11	1000.00	16.53	545.72	0.0000	0.00	0.000
13	0.55	100	95	20.11	1000.00	15.90	545.72	0.0000	0.00	0.000
14	0.65	100	95	20.11	1000.00	15.22	545.72	0.0000	0.00	0.000
15	0.75	100	95	20.11	1000.00	14.50	545.72	0.0000	0.00	0.000
16	0.85	100	95	20.11	1000.00	13.74	545.72	0.0000	0.00	0.000
17	0.95	100	95	20.11	1000.00	12.95	545.72	0.0000	0.00	0.000
18	1.05	100	95	20.11	1000.00	12.14	545.72	0.0000	0.00	0.000
19	1.15	100	95	20.11	1000.00	11.31	545.72	0.0000	0.00	0.000
20	1.25	100	95	20.11	1000.00	10.47	545.72	0.0000	0.00	0.000
21	1.35	100	95	20.11	1000.00	9.63	545.72	0.0000	0.00	0.000
22	1.45	100	95	20.11	1000.00	8.78	545.72	0.0000	0.00	0.000
23	1.55	100	95	20.11	1000.00	7.94	545.72	0.0000	0.00	0.000
24	1.65	100	95	20.11	1000.00	7.11	545.72	0.0000	0.00	0.000
25	1.75	100	95	20.11	1000.00	6.29	545.72	0.0000	0.00	0.000
26	1.85	100	95	20.11	1000.00	5.50	545.72	0.0000	0.00	0.000
27	1.95	100	95	20.11	1000.00	4.74	545.72	0.0000	0.00	0.000
28	2.05	100	95	20.11	1000.00	4.02	545.72	0.0000	0.00	0.000
29	2.15	100	95	20.11	1000.00	3.34	545.72	0.0000	0.00	0.000
30	2.25	100	95	20.11	1000.00	2.70	545.72	0.0000	0.00	0.000
31	2.35	100	95	20.11	1000.00	2.11	545.72	0.0000	0.00	0.000
32	2.45	100	95	20.11	1000.00	1.59	545.72	0.0000	0.00	0.000
33	2.55	100	95	20.11	1000.00	1.13	545.72	0.0000	0.00	0.000
34	2.65	100	95	20.11	1000.00	0.74	545.72	0.0000	0.00	0.000
35	2.75	100	95	20.11	1000.00	0.42	545.72	0.0000	0.00	0.000
36	2.85	100	95	20.11	1000.00	0.19	545.72	0.0000	0.00	0.000
37	2.95	100	95	0.00	0.00	0.05	0.00	0.0000	0.00	0.000
38	3.05	100	95	0.00	0.00	0.00	0.00	0.0000	0.00	0.000

**Elenco ferri**

## Simbologia adottata

n°	Indice del ferro
nf	numero ferri
D	diametro ferro espresso in [mm]
L	Lunghezza ferro espresso in [m]
P <sub>ferro</sub>	Peso ferro espresso in [kN]

*Paramento*

n°	Tipo	nf	D [mm]	L [m]	P <sub>f</sub> [kN]	P <sub>gf</sub> [kN]	V <sub>cls</sub> [mc]
1	Diritto superiore	5	16.00	2.19	0.0339	0.1693	
2	Diritto inferiore	5	16.00	2.18	0.0338	0.1689	
3	Diritto inferiore	5	16.00	5.59	0.0866	0.4328	
4	Diritto superiore	5	16.00	5.61	0.0868	0.4341	
5	Ripartitore	20	10.00	1.00	0.0060	0.1209	
<b>Totale al metro</b>						<b>1.4469</b>	<b>3.74</b>
<b>Totale</b>						<b>1352.14</b>	<b>37.41</b>

*Fondazione*

n°	Tipo	nf	D [mm]	L [m]	P <sub>f</sub> [kN]	P <sub>gf</sub> [kN]	V <sub>cls</sub> [mc]
1	Diritto superiore	10	16.00	5.68	0.0879	0.8792	
2	Diritto inferiore	10	16.00	5.68	0.0879	0.8792	
3	Ripartitore	22	10.00	1.00	0.0060	0.1330	
<b>Totale al metro</b>						<b>2.0245</b>	<b>4.27</b>
<b>Totale</b>						<b>1928.70</b>	<b>42.71</b>

*Mensola valle*

n°	Tipo	nf	D [mm]	L [m]	P <sub>f</sub> [kN]	P <sub>gf</sub> [kN]	V <sub>cls</sub> [mc]
1	Diritto inferiore	4	16.00	1.53	0.0237	0.0947	
2	Diritto superiore	4	16.00	1.53	0.0237	0.0947	
3	Ripartitore	2	10.00	1.00	0.0060	0.0121	
<b>Totale al metro</b>						<b>2.0245</b>	<b>4.27</b>
<b>Totale</b>						<b>1928.70</b>	<b>42.71</b>

## 13 ALLEGATO 4 – TABULATI DI CALCOLO - MURO DI SOSTEGNO H6

### Geometria profilo terreno a monte del muro

#### Simbologia adottata

(Sistema di riferimento con origine in testa al muro, ascissa X positiva verso monte, ordinata Y positiva verso l'alto)

n°	numero ordine del punto
X	ascissa del punto espressa in [m]
Y	ordinata del punto espressa in [m]
A	inclinazione del tratto espressa in [°]

n°	X	Y	A
	[m]	[m]	[°]
1	0.00	0.00	0.000
2	1.75	0.00	0.000
3	20.00	0.00	0.000

Inclinazione terreno a valle del muro rispetto all'orizzontale 0.000 [°]

### Falda

#### Simbologia adottata

(Sistema di riferimento con origine in testa al muro, ascissa X positiva verso monte, ordinata Y positiva verso l'alto)

n°	numero ordine del punto
X	ascissa del punto espressa in [m]
Y	ordinata del punto espressa in [m]
A	inclinazione del tratto espressa in [°]

n°	X	Y	A
	[m]	[m]	[°]
1	-4.00	-7.05	0.000
2	20.00	-7.05	0.000

### Geometria muro

#### Geometria paramento e fondazione

##### Paramento

Materiale	C32/40	
Altezza paramento	6.00	[m]
Altezza paramento libero	6.00	[m]
Spessore in sommità	0.50	[m]
Spessore all'attacco con la fondazione	1.05	[m]

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Inclinazione paramento esterno	0.00	[°]
Inclinazione paramento interno	5.20	[°]
Spessore rivestimento	0.20	[m]
Peso sp. rivestimento	20.0000	[kN/mc]

Mensola di marciapiede

Posizione rispetto alla testa del muro	0.00	[m]
Lunghezza	0.25	[m]
Spessore all'estremità libera	0.50	[m]
Spessore all'incastro	0.50	[m]

Fondazione

Materiale	C32/40	
Lunghezza mensola di valle	1.05	[m]
Lunghezza mensola di monte	2.90	[m]
Lunghezza totale	5.00	[m]
Inclinazione piano di posa	0.00	[°]
Spessore	1.05	[m]
Spessore magrone	0.20	[m]

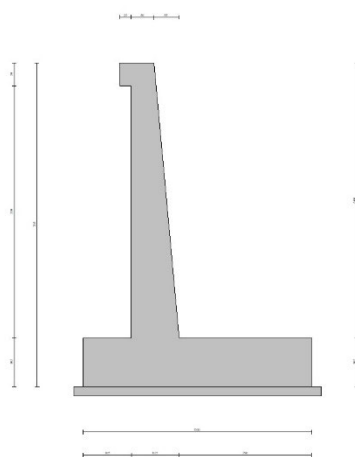


Fig. 1 - Sezione quotata del muro

Descrizione terreniParametri di resistenza

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta****Simbologia adottata**

n°	Indice del terreno
Descr	Descrizione terreno
$\gamma$	Peso di volume del terreno espresso in [kN/mc]
$\gamma_s$	Peso di volume saturo del terreno espresso in [kN/mc]
$\phi$	Angolo d'attrito interno espresso in [°]
$\delta$	Angolo d'attrito terra-muro espresso in [°]
c	Coesione espressa in [kPa]
$c_a$	Adesione terra-muro espressa in [kPa]

**Per calcolo portanza con il metodo di Bustamante-Doix**

Cesp	Coeff. di espansione laterale (solo per il metodo di Bustamante-Doix)
$\tau_l$	Tensione tangenziale limite, espressa in [kPa]

n°	Descr	$\gamma$ [kN/mc]	$\gamma_{sat}$ [kN/mc]	$\phi$ [°]	$\delta$ [°]	c [kPa]	$c_a$ [kPa]	Cesp	$\tau_l$ [kPa]
1	Rilevato	19.0000	19.0000	35.000	23.333	0	0		
2	Terreno	20.0000	20.0000	36.000	24.000	0	0		

**Stratigrafia****Simbologia adottata**

n°	Indice dello strato
H	Spessore dello strato espresso in [m]
$\alpha$	Inclinazione espressa in [°]
Terreno	Terreno dello strato
Kwn, Kwt	Costante di Winkler normale e tangenziale alla superficie espressa in Kg/cm <sup>2</sup> /cm

**Per calcolo pali (solo se presenti)**

Kw	Costante di Winkler orizzontale espressa in Kg/cm <sup>2</sup> /cm
Ks	Coefficiente di spinta
Cesp	Coefficiente di espansione laterale (per tutti i metodi tranne il metodo di Bustamante-Doix)

**Per calcolo della spinta con coeff. di spinta definiti (usati solo se attiva l'opzione 'Usa coeff. di spinta da strato')**

$K_{st_{sta}}$ , $K_{st_{sis}}$	Coeff. di spinta statico e sismico
---------------------------------	------------------------------------

n°	H [m]	$\alpha$ [°]	Terreno	Kwn [Kg/cm <sup>2</sup> ]	Kwt [Kg/cm <sup>2</sup> ]	Kw [Kg/cm <sup>2</sup> ]	Ks	Cesp	$K_{st_{sta}}$	$K_{st_{sis}}$
1	7.05	0.000	Rilevato	0.000	0.000	4.219	0.000	1.000	0.000	0.000
2	20.00	0.000	Terreno	0.000	0.000	2.203	1.000	1.000	0.000	0.000

**Condizioni di carico****Simbologia adottata**

	Carichi verticali positivi verso il basso.
	Carichi orizzontali positivi verso sinistra.
	Momento positivo senso antiorario.
X	Ascissa del punto di applicazione del carico concentrato espressa in [m]
$F_x$	Componente orizzontale del carico concentrato espressa in [kN]
$F_y$	Componente verticale del carico concentrato espressa in [kN]
M	Momento espresso in [kNm]

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**X<sub>i</sub> Ascissa del punto iniziale del carico ripartito espressa in [m]X<sub>f</sub> Ascissa del punto finale del carico ripartito espressa in [m]Q<sub>i</sub> Intensità del carico per x=X<sub>i</sub> espressa in [kN]Q<sub>f</sub> Intensità del carico per x=X<sub>f</sub> espressa in [kN]Condizione n° 1 (Q) - VARIABILECoeff. di combinazione  $\Psi_0=0.75 - \Psi_1=0.75 - \Psi_2=0.00$ *Carichi sul terreno*

n°	Tipo	X	F <sub>x</sub>	F <sub>y</sub>	M	X <sub>i</sub>	X <sub>f</sub>	Q <sub>i</sub>	Q <sub>f</sub>
		[m]	[kN]	[kN]	[kNm]	[m]	[m]	[kN]	[kN]
1	Distribuito					0.00	3.00	30.9000	30.9000
2	Distribuito					3.00	6.00	17.1000	17.1000
3	Distribuito					6.00	9.00	9.8000	9.8000
4	Distribuito					9.00	20.00	2.5000	2.5000

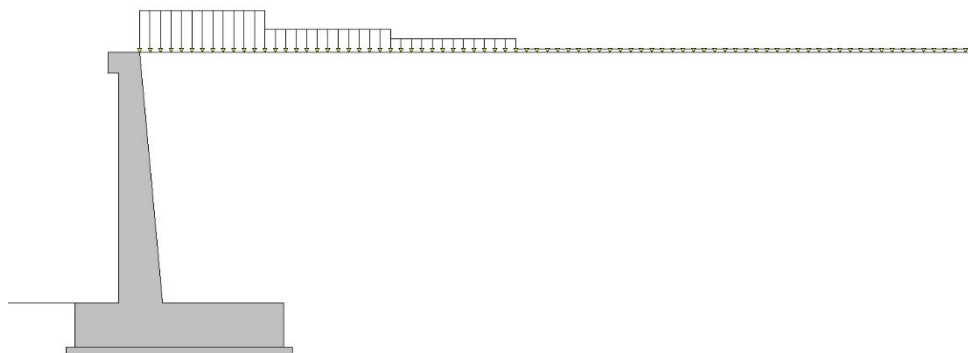


Fig. 2 - Carichi sul terreno

Condizione n° 2 (Urto) - ECCEZIONALE*Carichi sul muro*

n°	Tipo	Dest	X; Y	F <sub>x</sub>	F <sub>y</sub>	M	X <sub>i</sub>	X <sub>f</sub>	Q <sub>i</sub>	Q <sub>f</sub>
			[m]	[kN]	[kN]	[kNm]	[m]	[m]	[kN]	[kN]
1	Concentrato	Paramento	0.00; 0.00	16.7000	0.0000	16.7000				



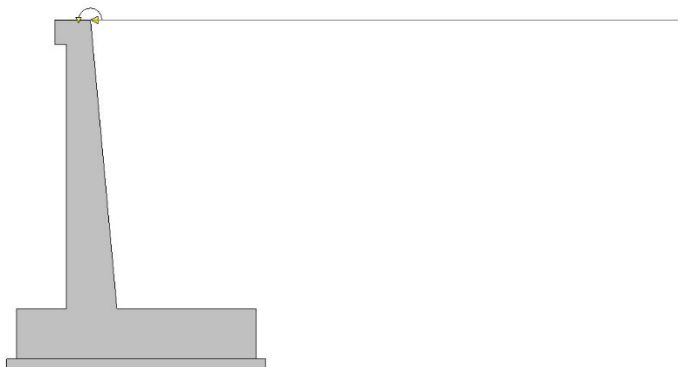


Fig. 3 - Carichi sul muro

NormativaNormativa usata: **Norme Tecniche sulle Costruzioni 2018 (D.M. 17.01.2018) + Circolare C.S.LL.PP. 21/01/2019 n.7**Coeff. parziali per le azioni o per l'effetto delle azioni


Carichi	Effetto		Combinazioni statiche					Combinazioni sismiche		
			HYD	UPL	EQU	A1	A2	EQU	A1	A2
Permanenti strutturali	Favorevoli	$\gamma_{G1, fav}$	1.00	0.90	1.00	1.00	1.00	1.00	1.00	1.00
Permanenti strutturali	Sfavorevoli	$\gamma_{G1, sfav}$	1.00	1.10	1.30	1.30	1.00	1.00	1.00	1.00
Permanenti non strutturali	Favorevoli	$\gamma_{G2, fav}$	0.00	0.80	0.80	0.80	0.80	0.00	0.00	0.00
Permanenti non strutturali	Sfavorevoli	$\gamma_{G2, sfav}$	1.00	1.50	1.50	1.50	1.30	1.00	1.00	1.00
Variabili	Favorevoli	$\gamma_{Q, fav}$	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Variabili	Sfavorevoli	$\gamma_{Q, sfav}$	1.00	1.50	1.50	1.50	1.30	1.00	1.00	1.00
Variabili da traffico	Favorevoli	$\gamma_{QT, fav}$	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Variabili da traffico	Sfavorevoli	$\gamma_{QT, sfav}$	1.00	1.50	1.35	1.35	1.15	1.00	1.00	1.00

Coeff. parziali per i parametri geotecnici del terreno

Parametro		Combinazioni statiche		Combinazioni sismiche	
		M1	M2	M1	M2
Tangente dell'angolo di attrito	$\gamma_{\tan(\phi')}$	1.00	1.25	1.00	1.00
Coesione efficace	$\gamma_c$	1.00	1.25	1.00	1.00
Resistenza non drenata	$\gamma_{cu}$	1.00	1.40	1.00	1.00
Peso nell'unità di volume	$\gamma_\gamma$	1.00	1.00	1.00	1.00

Coeff. parziali  $\gamma_R$  per le verifiche agli stati limite ultimi STR e GEO

Verifica	Combinazioni statiche			Combinazioni sismiche		
	R1	R2	R3	R1	R2	R3
Capacità portante	--	--	1.40	--	--	1.20
Scorrimento	--	--	1.10	--	--	1.00
Resistenza terreno a valle	--	--	1.40	--	--	1.20
Ribaltamento	--	--	1.15	--	--	1.00
Stabilità fronte di scavo	--	1.10	--	--	1.20	--

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<b>VE407</b>	<b>Relazione Tecnica e di Calcolo - Muri su fondazione diretta</b>	

### Descrizione combinazioni di carico

Con riferimento alle azioni elementari prima determinate, si sono considerate le seguenti combinazioni di carico:

- Combinazione fondamentale, impiegata per gli stati limite ultimi (SLU):

$$\gamma_{G1} G_1 + \gamma_{G2} G_2 + \gamma_{Q1} Q_{k1} + \gamma_{Q2} Q_{k2} + \gamma_{Q3} Q_{k3} + \dots$$

- Combinazione caratteristica, cosiddetta rara, impiegata per gli stati limite di esercizio (SLE) irreversibili:

$$G_1 + G_2 + Q_{k1} + \Psi_{0,2} Q_{k2} + \Psi_{0,3} Q_{k3} + \dots$$

- Combinazione frequente, impiegata per gli stati limite di esercizio (SLE) reversibili:

$$G_1 + G_2 + \Psi_{1,1} Q_{k1} + \Psi_{2,2} Q_{k2} + \Psi_{2,3} Q_{k3} + \dots$$

- Combinazione quasi permanente, impiegata per gli effetti di lungo periodo:

$$G_1 + G_2 + \Psi_{2,1} Q_{k1} + \Psi_{2,2} Q_{k2} + \Psi_{2,3} Q_{k3} + \dots$$

- Combinazione sismica, impiegata per gli stati limite ultimi connessi all'azione sismica E:

$$E + G_1 + G_2 + \Psi_{2,1} Q_{k1} + \Psi_{2,2} Q_{k2} + \Psi_{2,3} Q_{k3} + \dots$$

- Combinazione eccezionale, impiegata per gli stati limite ultimi connessi alle azioni eccezionali Ad:

$$G_1 + G_2 + A_d + \Psi_{2,1} Q_{k1} + \Psi_{2,2} Q_{k2} + \Psi_{2,3} Q_{k3} + \dots$$

I valori dei coeff.  $\Psi_{0,j}$ ,  $\Psi_{1,j}$ ,  $\Psi_{2,j}$  sono definiti nelle singole condizioni variabili. per I valori dei coeff.  $\gamma_G$  e  $\gamma_Q$ , sono definiti nella tabella normativa.

In particolare si sono considerate le seguenti combinazioni:

#### Simbologia adottata

$\gamma$	Coefficiente di partecipazione della condizione
$\Psi$	Coefficiente di combinazione della condizione

#### Combinazione n° 1 - STR (A1-M1-R3)

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Favorevole
Peso terrapieno	1.00	--	Favorevole
Spinta terreno	1.30	--	Sfavorevole

Combinazione n° 2 - STR (A1-M1-R3) H + V

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Favorevole
Peso terrapieno	1.00	--	Favorevole
Spinta terreno	1.00	--	Sfavorevole

Combinazione n° 3 - STR (A1-M1-R3)

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Favorevole
Peso terrapieno	1.00	--	Favorevole
Spinta terreno	1.30	--	Sfavorevole
Q	1.50	1.00	Sfavorevole

Combinazione n° 4 - STR (A1-M1-R3) H - V

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Sfavorevole
Peso terrapieno	1.00	--	Sfavorevole
Spinta terreno	1.00	--	Sfavorevole

Combinazione n° 5 - GEO (A2-M2-R2)

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Sfavorevole
Peso terrapieno	1.00	--	Sfavorevole
Spinta terreno	1.00	--	Sfavorevole

Combinazione n° 6 - GEO (A2-M2-R2) H + V

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Sfavorevole
Peso terrapieno	1.00	--	Sfavorevole
Spinta terreno	1.00	--	Sfavorevole

Combinazione n° 7 - GEO (A2-M2-R2)

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Sfavorevole
Peso terrapieno	1.00	--	Sfavorevole
Spinta terreno	1.00	--	Sfavorevole
Q	1.30	1.00	Sfavorevole

Combinazione n° 8 - GEO (A2-M2-R2) H - V

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Sfavorevole
Peso terrapieno	1.00	--	Sfavorevole
Spinta terreno	1.00	--	Sfavorevole

Combinazione n° 9 - EQU (A1-M1-R3)

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Favorevole
Peso terrapieno	1.00	--	Favorevole
Spinta terreno	1.30	--	Sfavorevole

Combinazione n° 10 - EQU (A1-M1-R3) H + V

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Favorevole
Peso terrapieno	1.00	--	Favorevole
Spinta terreno	1.00	--	Sfavorevole

Combinazione n° 11 - EQU (A1-M1-R3)

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Favorevole
Peso terrapieno	1.00	--	Favorevole
Spinta terreno	1.30	--	Sfavorevole
Q	1.50	1.00	Sfavorevole

Combinazione n° 12 - EQU (A1-M1-R3) H - V

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Favorevole
Peso terrapieno	1.00	--	Favorevole
Spinta terreno	1.00	--	Sfavorevole

Combinazione n° 13 - ECC

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Sfavorevole
Peso terrapieno	1.00	--	Sfavorevole
Spinta terreno	1.00	--	Sfavorevole
Urto	1.00	1.00	Sfavorevole

Combinazione n° 14 - SLER

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Sfavorevole
Peso terrapieno	1.00	--	Sfavorevole
Spinta terreno	1.00	--	Sfavorevole
Q	1.00	0.75	Sfavorevole

Combinazione n° 15 - SLEF

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Sfavorevole
Peso terrapieno	1.00	--	Sfavorevole
Spinta terreno	1.00	--	Sfavorevole

Combinazione n° 16 - SLEQ

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Sfavorevole
Peso terrapieno	1.00	--	Sfavorevole

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Condizione	$\gamma$	$\Psi$	Effetto
Spinta terreno	1.00	--	Sfavorevole

Dati sismici

Comune	
Provincia	
Regione	
Latitudine	42.716470
Longitudine	12.111569
Indice punti di interpolazione	-1 - -1 - -1 - -1
Vita nominale	50 anni
Classe d'uso	II
Tipo costruzione	Normali affollamenti
Vita di riferimento	50 anni

	Simbolo	U.M.		SLU	SLE
Accelerazione al suolo	$a_g$	[m/s <sup>2</sup> ]		2.894	0.000
Accelerazione al suolo	$a_g/g$	[%]		0.295	0.000
Massimo fattore amplificazione spettro orizzontale	F0			2.423	0.000
Periodo inizio tratto spettro a velocità costante	Tc*			0.343	0.000
Tipo di sottosuolo - Coefficiente stratigrafico	Ss		C	1.271	1.500
Categoria topografica - Coefficiente amplificazione topografica	St		T1	1.000	

Stato limite ...	Coeff. di riduzione $\beta_m$	kh	kv
Ultimo	0.380	14.248	7.124
Ultimo - Ribaltamento	0.570	21.372	10.686
Esercizio	0.470	0.000	0.000

Forma diagramma incremento sismico  **Rettangolare****Opzioni di calcolo**Spinta

Metodo di calcolo della spinta	Culmann
Tipo di spinta	Spinta attiva
Terreno a bassa permeabilità	NO
Superficie di spinta limitata	NO

Capacità portante

Metodo di calcolo della portanza	Hansen
Criterio di media calcolo del terreno equivalente (terreni stratificati)	Ponderata
Criterio di riduzione per eccentricità della portanza	Bowles
Criterio di riduzione per rottura locale (punzonamento)	Nessuna
Larghezza fondazione nel terzo termine della formula del carico limite ( $0.5B\gamma N_\gamma$ )	Larghezza effettiva (B)

Fattori di forma e inclinazione del carico Solo i fattori di inclinazione

Se la fondazione ha larghezza superiore a 2.0 m viene applicato il fattore di riduzione per comportamento a piastra

Stabilità globale

Metodo di calcolo della stabilità globale Bishop

Altro

Partecipazione spinta passiva terreno antistante 0.00

Partecipazione resistenza passiva dente di fondazione 50.00

Componente verticale della spinta nel calcolo delle sollecitazioni NO

Considera terreno sulla fondazione di valle NO

Considera spinta e peso acqua fondazione di valle NO

Spostamenti

Non è stato richiesto il calcolo degli spostamenti

Cedimenti

Non è stato richiesto il calcolo dei cedimenti

Specifiche per le verifiche nelle combinazioni allo Stato Limite Ultimo (SLU)

	SLU	Eccezionale
Coefficiente di sicurezza calcestruzzo a compressione	1.50	1.00
Coefficiente di sicurezza acciaio	1.15	1.00
Fattore di riduzione da resistenza cubica a cilindrica	0.83	0.83
Fattore di riduzione per carichi di lungo periodo	0.85	0.85
Coefficiente di sicurezza per la sezione	1.00	1.00

Specifiche per le verifiche nelle combinazioni allo Stato Limite di Esercizio (SLE)**Paramento e fondazione muro**

Condizioni ambientali Aggressive

Armatura ad aderenza migliorata SI

*Verifica a fessurazione*

Sensibilità armatura Poco sensibile

Metodo di calcolo aperture delle fessure NTC 2018 - CIRCOLARE 21 gennaio 2019, n. 7 C.S.LL.PP.

Valori limite aperture delle fessure:

$$w_1=0.20$$

$$w_2=0.30$$

$$w_3=0.40$$

*Verifica delle tensioni*

Valori limite delle tensioni nei materiali:

Combinazione	Calcestruzzo	Acciaio
Rara	0.60 $f_{ck}$	0.80 $f_{yk}$
Frequente	1.00 $f_{ck}$	1.00 $f_{yk}$
Quasi permanente	0.45 $f_{ck}$	1.00 $f_{yk}$

## Risultati per combinazione

### Spinta e forze

#### Simbologia adottata

Ic	Indice della combinazione
A	Tipo azione
I	Inclinazione della spinta, espressa in [°]
V	Valore dell'azione, espressa in [kN]
C <sub>x</sub> , C <sub>y</sub>	Componente in direzione X ed Y dell'azione, espressa in [kN]
P <sub>x</sub> , P <sub>y</sub>	Coordinata X ed Y del punto di applicazione dell'azione, espressa in [m]

Ic	A	V [kN]	I [°]	C <sub>x</sub> [kN]	C <sub>y</sub> [kN]	P <sub>x</sub> [m]	P <sub>y</sub> [m]
1	Spinta statica	150.03	23.33	137.76	59.42	3.45	-4.70
	Peso/Inerzia muro			0.00	245.39/0.00	0.44	-4.98
	Peso/Inerzia rivestimento			0.00	24.00	0.00	0.00
	Peso/Inerzia terrapieno			0.00	361.72/0.00	1.86	-2.91
	Peso dell'acqua sulla fondazione di valle				0.00	0.00	0.00
2	Spinta statica	115.41	23.33	105.97	45.71	3.45	-4.70
	Incremento di spinta sismica		51.42	47.22	20.37	3.45	-3.52
	Peso/Inerzia muro			34.96	245.39/17.48	0.44	-4.98
	Peso/Inerzia rivestimento			3.42	24.00	0.00	0.00
	Peso/Inerzia terrapieno			51.54	361.72/25.77	1.86	-2.91
3	Spinta statica	186.96	23.33	171.67	74.05	3.45	-4.38
	Peso/Inerzia muro			0.00	245.39/0.00	0.44	-4.98
	Peso/Inerzia rivestimento			0.00	24.00	0.00	0.00
	Peso/Inerzia terrapieno			0.00	512.22/0.00	1.82	-2.89
	Peso dell'acqua sulla fondazione di valle				0.00	0.00	0.00
4	Spinta statica	115.41	23.33	105.97	45.71	3.45	-4.70
	Incremento di spinta sismica		36.09	33.14	14.29	3.45	-3.52
	Peso/Inerzia muro			34.96	245.39/-17.48	0.44	-4.98
	Peso/Inerzia rivestimento			3.42	24.00	0.00	0.00
	Peso/Inerzia terrapieno			51.54	361.72/-25.77	1.86	-2.91
13	Spinta statica	115.41	23.33	105.97	45.71	3.45	-4.70
	Peso/Inerzia muro			0.00	245.39/0.00	0.44	-4.98
	Peso/Inerzia rivestimento			0.00	24.00	0.00	0.00
	Peso/Inerzia terrapieno			0.00	361.72/0.00	1.86	-2.91
	Peso dell'acqua sulla fondazione di valle				0.00	0.00	0.00
	Risultante forze sul muro			16.70	0.00	--	--
14	Spinta statica	133.83	23.33	122.89	53.01	3.45	-4.48
	Peso/Inerzia muro			0.00	245.39/0.00	0.44	-4.98
	Peso/Inerzia rivestimento			0.00	24.00	0.00	0.00
	Peso/Inerzia terrapieno			0.00	436.97/0.00	1.83	-2.90
	Peso dell'acqua sulla fondazione di valle				0.00	0.00	0.00
15	Spinta statica	115.41	23.33	105.97	45.71	3.45	-4.70
	Peso/Inerzia muro			0.00	245.39/0.00	0.44	-4.98
	Peso/Inerzia rivestimento			0.00	24.00	0.00	0.00
	Peso/Inerzia terrapieno			0.00	361.72/0.00	1.86	-2.91
	Peso dell'acqua sulla fondazione di valle				0.00	0.00	0.00
16	Spinta statica	115.41	23.33	105.97	45.71	3.45	-4.70
	Peso/Inerzia muro			0.00	245.39/0.00	0.44	-4.98
	Peso/Inerzia rivestimento			0.00	24.00	0.00	0.00
	Peso/Inerzia terrapieno			0.00	361.72/0.00	1.86	-2.91
	Peso dell'acqua sulla fondazione di valle				0.00	0.00	0.00



## Risultanti globali

### Simbologia adottata

Cmb	Indice/Tipo combinazione
N	Componente normale al piano di posa, espressa in [kN]
T	Componente parallela al piano di posa, espressa in [kN]
M <sub>r</sub>	Momento ribaltante, espresso in [kNm]
M <sub>s</sub>	Momento stabilizzante, espresso in [kNm]
ecc	Eccentricità risultante, espressa in [m]

Ic	N [kN]	T [kN]	M <sub>r</sub> [kNm]	M <sub>s</sub> [kNm]	ecc [m]
1 - STR (A1-M1-R3)	690.54	137.76	323.74	2055.26	-0.009
2 - STR (A1-M1-R3)	740.44	243.11	725.24	2211.13	0.491
3 - STR (A1-M1-R3)	855.66	171.67	458.04	2620.69	-0.029
4 - STR (A1-M1-R3)	647.87	229.03	798.22	2058.17	0.553
13 - ECC	676.82	122.67	383.47	1986.75	0.129

## Verifiche geotecniche

### Quadro riassuntivo coeff. di sicurezza calcolati

### Simbologia adottata

Cmb	Indice/Tipo combinazione
S	Sisma (H: componente orizzontale, V: componente verticale)
FS <sub>SCO</sub>	Coeff. di sicurezza allo scorrimento
FS <sub>RIB</sub>	Coeff. di sicurezza al ribaltamento
FS <sub>QLIM</sub>	Coeff. di sicurezza a carico limite
FS <sub>STAB</sub>	Coeff. di sicurezza a stabilità globale
FS <sub>HYD</sub>	Coeff. di sicurezza a sifonamento
FS <sub>SUPL</sub>	Coeff. di sicurezza a sollevamento

Cmb	Sismica	FS <sub>SCO</sub>	FS <sub>RIB</sub>	FS <sub>QLIM</sub>	FS <sub>STAB</sub>	FS <sub>HYD</sub>	FS <sub>SUPL</sub>
1 - STR (A1-M1-R3)		2.232		6.675			
2 - STR (A1-M1-R3)	H + V	1.356		3.193			
3 - STR (A1-M1-R3)		2.219		5.323			
4 - STR (A1-M1-R3)	H - V	1.259		3.224			
5 - GEO (A2-M2-R2)					1.680		
6 - GEO (A2-M2-R2)	H + V				1.626		
7 - GEO (A2-M2-R2)					1.560		
8 - GEO (A2-M2-R2)	H - V				1.537		
9 - EQU (A1-M1-R3)			6.348				
10 - EQU (A1-M1-R3)	H + V		2.381				
11 - EQU (A1-M1-R3)			5.722				
12 - EQU (A1-M1-R3)	H - V		1.920				
13 - ECC		2.457	5.181	6.893	2.100		

### Verifica a scorrimento fondazione

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## Simbologia adottata

n°	Indice combinazione
Rsa	Resistenza allo scorrimento per attrito, espresso in [kN]
Rpt	Resistenza passiva terreno antistante, espresso in [kN]
Rps	Resistenza passiva sperone, espresso in [kN]
Rp	Resistenza a carichi orizzontali pali (solo per fondazione mista), espresso in [kN]
Rt	Resistenza a carichi orizzontali tiranti (solo se presenti), espresso in [kN]
R	Resistenza allo scorrimento (somma di Rsa+Rpt+Rps+Rp), espresso in [kN]
T	Carico parallelo al piano di posa, espresso in [kN]
FS	Fattore di sicurezza (rapporto R/T)

n°	Rsa	Rpt	Rps	Rp	Rt	R	T	FS
	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	
1 - STR (A1-M1-R3)	307.45	0.00	0.00	--	--	307.45	137.76	2.232
2 - STR (A1-M1-R3) H + V	329.67	0.00	0.00	--	--	329.67	243.11	1.356
3 - STR (A1-M1-R3)	380.96	0.00	0.00	--	--	380.96	171.67	2.219
4 - STR (A1-M1-R3) H - V	288.45	0.00	0.00	--	--	288.45	229.03	1.259
13 - ECC	301.34	0.00	0.00	--	--	301.34	122.67	2.457

## Verifica a carico limite

## Simbologia adottata

n°	Indice combinazione
N	Carico normale totale al piano di posa, espresso in [kN]
Qu	carico limite del terreno, espresso in [kN]
Qd	Portanza di progetto, espresso in [kN]
FS	Fattore di sicurezza (rapporto tra il carico limite e carico agente al piano di posa)

n°	N	Qu	Qd	FS
	[kN]	[kN]	[kN]	
1 - STR (A1-M1-R3)	690.54	4609.31	3292.36	6.675
2 - STR (A1-M1-R3) H + V	740.44	2364.36	1970.30	3.193
3 - STR (A1-M1-R3)	855.66	4554.75	3253.39	5.323
4 - STR (A1-M1-R3) H - V	647.87	2088.77	1740.64	3.224
13 - ECC	676.82	4665.34	3332.39	6.893

## Verifica a ribaltamento

## Simbologia adottata

n°	Indice combinazione
Ms	Momento stabilizzante, espresso in [kNm]
Mr	Momento ribaltante, espresso in [kNm]
FS	Fattore di sicurezza (rapporto tra momento stabilizzante e momento ribaltante)

La verifica viene eseguita rispetto allo spigolo inferiore esterno della fondazione

n°	Ms	Mr	FS
	[kNm]	[kNm]	
9 - EQU (A1-M1-R3)	2055.26	323.74	6.348
10 - EQU (A1-M1-R3) H + V	2333.46	979.93	2.381
11 - EQU (A1-M1-R3)	2620.69	458.04	5.722
12 - EQU (A1-M1-R3) H - V	2109.58	1098.50	1.920
13 - ECC	1986.75	383.47	5.181

*Verifica stabilità globale muro + terreno*

## Simbologia adottata

Ic	Indice/Tipo combinazione
C	Centro superficie di scorrimento, espresso in [m]
R	Raggio, espresso in [m]
FS	Fattore di sicurezza

Ic	C [m]	R [m]	FS
5 - GEO (A2-M2-R2)	-1.68; 1.12	9.65	1.680
6 - GEO (A2-M2-R2) H + V	-2.80; 3.92	12.63	1.626
7 - GEO (A2-M2-R2)	-2.24; 1.12	9.96	1.560
8 - GEO (A2-M2-R2) H - V	-3.36; 5.03	13.88	1.537
13 - ECC	-1.68; 1.12	9.65	2.100

SollecitazioniElementi calcolati a trave

## Simbologia adottata

N	Sforzo normale, espresso in [kN]. Positivo se di compressione.
T	Taglio, espresso in [kN]. Positivo se diretto da monte verso valle
M	Momento, espresso in [kNm]. Positivo se tende le fibre contro terra (a monte)

*Paramento*Combinazione n° 1 - STR (A1-M1-R3)

n°	X [m]	N [kN]	T [kN]	M [kNm]
1	0.00	3.06	0.00	0.38
2	-0.10	4.30	0.03	0.39
3	-0.20	5.56	0.12	0.40
4	-0.30	6.84	0.28	0.44
5	-0.40	8.15	0.49	0.49
6	-0.50	9.47	0.77	0.58
7	-0.60	10.82	1.10	0.71
8	-0.70	12.19	1.50	0.88
9	-0.80	13.59	1.96	1.09
10	-0.90	15.00	2.48	1.37
11	-1.00	16.44	3.06	1.70
12	-1.10	17.90	3.71	2.10
13	-1.20	19.38	4.41	2.58
14	-1.30	20.89	5.17	3.14
15	-1.40	22.41	6.00	3.78
16	-1.50	23.96	6.89	4.51
17	-1.60	25.53	7.84	5.35
18	-1.70	27.13	8.85	6.29
19	-1.80	28.74	9.92	7.34
20	-1.90	30.38	11.05	8.51
21	-2.00	32.04	12.24	9.80
22	-2.10	33.73	13.50	11.22
23	-2.20	35.43	14.81	12.78

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n°	X [m]	N [kN]	T [kN]	M [kNm]
24	-2.30	37.16	16.19	14.48
25	-2.40	38.91	17.63	16.33
26	-2.50	40.68	19.13	18.33
27	-2.60	42.48	20.69	20.50
28	-2.70	44.30	22.31	22.83
29	-2.80	46.13	23.99	25.34
30	-2.90	48.00	25.74	28.02
31	-3.00	49.88	27.54	30.90
32	-3.10	51.79	29.41	33.96
33	-3.20	53.72	31.34	37.22
34	-3.30	55.67	33.32	40.69
35	-3.40	57.64	35.37	44.37
36	-3.50	59.64	37.49	48.26
37	-3.60	61.65	39.66	52.38
38	-3.70	63.69	41.89	56.73
39	-3.80	65.76	44.19	61.32
40	-3.90	67.84	46.54	66.14
41	-4.00	69.95	48.96	71.22
42	-4.10	72.08	51.44	76.54
43	-4.20	74.23	53.98	82.13
44	-4.30	76.40	56.58	87.99
45	-4.40	78.60	59.24	94.12
46	-4.50	80.82	61.96	100.53
47	-4.60	83.06	64.75	107.22
48	-4.70	85.32	67.59	114.21
49	-4.80	87.61	70.50	121.49
50	-4.90	89.92	73.47	129.08
51	-5.00	92.25	76.50	136.98
52	-5.10	94.60	79.59	145.19
53	-5.20	96.98	82.74	153.73
54	-5.30	99.37	85.95	162.60
55	-5.40	101.79	89.23	171.80
56	-5.50	104.23	92.56	181.34
57	-5.60	106.70	95.96	191.23
58	-5.70	109.18	99.42	201.48
59	-5.80	111.69	102.93	212.08
60	-5.90	114.22	106.51	223.06
61	-6.00	116.78	110.16	234.40

Combinazione n° 2 - STR (A1-M1-R3) H + V

n°	X [m]	N [kN]	T [kN]	M [kNm]
1	0.00	3.28	0.00	0.41
2	-0.10	4.52	0.79	0.45
3	-0.20	5.78	1.63	0.58
4	-0.30	7.06	2.52	0.80
5	-0.40	8.36	3.46	1.12
6	-0.50	9.69	4.45	1.54
7	-0.60	11.04	5.49	2.07
8	-0.70	12.41	6.58	2.71
9	-0.80	13.80	7.72	3.47
10	-0.90	15.22	8.91	4.36
11	-1.00	16.66	10.16	5.37
12	-1.10	18.12	11.45	6.51
13	-1.20	19.60	12.79	7.79
14	-1.30	21.10	14.18	9.22
15	-1.40	22.63	15.62	10.79
16	-1.50	24.18	17.12	12.52
17	-1.60	25.75	18.66	14.41
18	-1.70	27.35	20.25	16.46
19	-1.80	28.96	21.90	18.68
20	-1.90	30.60	23.59	21.07
21	-2.00	32.26	25.33	23.65
22	-2.10	33.95	27.13	26.40
23	-2.20	35.65	28.97	29.35
24	-2.30	37.38	30.87	32.50

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n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
25	-2.40	39.13	32.81	35.84
26	-2.50	40.90	34.81	39.39
27	-2.60	42.70	36.85	43.14
28	-2.70	44.51	38.95	47.12
29	-2.80	46.35	41.09	51.31
30	-2.90	48.21	43.29	55.73
31	-3.00	50.10	45.54	60.38
32	-3.10	52.01	47.83	65.26
33	-3.20	53.93	50.18	70.39
34	-3.30	55.89	52.58	75.76
35	-3.40	57.86	55.03	81.39
36	-3.50	59.85	57.52	87.27
37	-3.60	61.87	60.07	93.41
38	-3.70	63.91	62.67	99.82
39	-3.80	65.97	65.32	106.50
40	-3.90	68.06	68.02	113.45
41	-4.00	70.17	70.77	120.69
42	-4.10	72.30	73.57	128.22
43	-4.20	74.45	76.41	136.03
44	-4.30	76.62	79.31	144.15
45	-4.40	78.82	82.26	152.57
46	-4.50	81.04	85.26	161.29
47	-4.60	83.28	88.32	170.33
48	-4.70	85.54	91.42	179.68
49	-4.80	87.83	94.57	189.36
50	-4.90	90.14	97.77	199.37
51	-5.00	92.47	101.02	209.71
52	-5.10	94.82	104.32	220.38
53	-5.20	97.19	107.67	231.41
54	-5.30	99.59	111.08	242.78
55	-5.40	102.01	114.53	254.50
56	-5.50	104.45	118.03	266.58
57	-5.60	106.92	121.58	279.03
58	-5.70	109.40	125.19	291.84
59	-5.80	111.91	128.84	305.03
60	-5.90	114.44	132.55	318.60
61	-6.00	117.00	136.30	332.56

Combinazione n° 3 - STR (A1-M1-R3)

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	0.00	3.06	0.00	0.38
2	-0.10	4.30	1.18	0.44
3	-0.20	5.56	2.42	0.63
4	-0.30	6.84	3.72	0.95
5	-0.40	8.15	5.09	1.41
6	-0.50	9.47	6.51	2.02
7	-0.60	10.82	7.99	2.78
8	-0.70	12.19	9.54	3.69
9	-0.80	13.59	11.15	4.77
10	-0.90	15.00	12.82	6.02
11	-1.00	16.44	14.55	7.44
12	-1.10	17.90	16.34	9.05
13	-1.20	19.38	18.19	10.85
14	-1.30	20.89	20.10	12.84
15	-1.40	22.41	22.08	15.03
16	-1.50	23.96	24.11	17.43
17	-1.60	25.53	26.21	20.05
18	-1.70	27.13	28.37	22.88
19	-1.80	28.74	30.59	25.94
20	-1.90	30.38	32.87	29.23
21	-2.00	32.04	35.21	32.77
22	-2.10	33.73	37.61	36.54
23	-2.20	35.43	40.08	40.57
24	-2.30	37.16	42.60	44.85
25	-2.40	38.91	45.19	49.40

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
26	-2.50	40.68	47.84	54.22
27	-2.60	42.48	50.54	59.31
28	-2.70	44.30	53.31	64.69
29	-2.80	46.13	56.15	70.35
30	-2.90	48.00	59.04	76.31
31	-3.00	49.88	61.99	82.57
32	-3.10	51.79	65.01	89.14
33	-3.20	53.72	68.08	96.02
34	-3.30	55.67	71.22	103.22
35	-3.40	57.64	74.42	110.74
36	-3.50	59.64	77.68	118.60
37	-3.60	61.65	81.00	126.80
38	-3.70	63.69	84.38	135.34
39	-3.80	65.76	87.82	144.23
40	-3.90	67.84	91.33	153.47
41	-4.00	69.95	94.89	163.08
42	-4.10	72.08	98.52	173.06
43	-4.20	74.23	102.21	183.42
44	-4.30	76.40	105.96	194.15
45	-4.40	78.60	109.77	205.28
46	-4.50	80.82	113.63	216.80
47	-4.60	83.06	117.54	228.71
48	-4.70	85.32	121.47	241.03
49	-4.80	87.61	125.40	253.76
50	-4.90	89.92	129.33	266.88
51	-5.00	92.25	133.24	280.41
52	-5.10	94.60	137.13	294.34
53	-5.20	96.98	141.01	308.67
54	-5.30	99.37	144.89	323.40
55	-5.40	101.79	148.79	338.53
56	-5.50	104.23	152.72	354.06
57	-5.60	106.70	156.71	369.99
58	-5.70	109.18	160.75	386.34
59	-5.80	111.69	164.86	403.11
60	-5.90	114.22	169.04	420.31
61	-6.00	116.78	173.27	437.93

Combinazione n° 4 - STR (A1-M1-R3) H - V

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	0.00	3.06	0.00	0.38
2	-0.10	4.30	0.60	0.42
3	-0.20	5.56	1.25	0.52
4	-0.30	6.84	1.95	0.69
5	-0.40	8.15	2.70	0.94
6	-0.50	9.47	3.50	1.28
7	-0.60	10.82	4.36	1.70
8	-0.70	12.19	5.26	2.22
9	-0.80	13.59	6.21	2.84
10	-0.90	15.00	7.21	3.56
11	-1.00	16.44	8.26	4.39
12	-1.10	17.90	9.37	5.34
13	-1.20	19.38	10.52	6.40
14	-1.30	20.89	11.72	7.59
15	-1.40	22.41	12.97	8.91
16	-1.50	23.96	14.28	10.36
17	-1.60	25.53	15.63	11.96
18	-1.70	27.13	17.04	13.70
19	-1.80	28.74	18.49	15.59
20	-1.90	30.38	19.99	17.63
21	-2.00	32.04	21.55	19.83
22	-2.10	33.73	23.15	22.20
23	-2.20	35.43	24.81	24.75
24	-2.30	37.16	26.51	27.46
25	-2.40	38.91	28.27	30.36
26	-2.50	40.68	30.08	33.44

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
27	-2.60	42.48	31.93	36.72
28	-2.70	44.30	33.84	40.19
29	-2.80	46.13	35.80	43.86
30	-2.90	48.00	37.80	47.74
31	-3.00	49.88	39.86	51.84
32	-3.10	51.79	41.97	56.14
33	-3.20	53.72	44.13	60.67
34	-3.30	55.67	46.33	65.43
35	-3.40	57.64	48.59	70.42
36	-3.50	59.64	50.90	75.65
37	-3.60	61.65	53.26	81.12
38	-3.70	63.69	55.67	86.84
39	-3.80	65.76	58.13	92.81
40	-3.90	67.84	60.64	99.03
41	-4.00	69.95	63.20	105.52
42	-4.10	72.08	65.81	112.28
43	-4.20	74.23	68.47	119.31
44	-4.30	76.40	71.18	126.63
45	-4.40	78.60	73.94	134.22
46	-4.50	80.82	76.75	142.10
47	-4.60	83.06	79.61	150.28
48	-4.70	85.32	82.52	158.75
49	-4.80	87.61	85.48	167.53
50	-4.90	89.92	88.50	176.62
51	-5.00	92.25	91.56	186.02
52	-5.10	94.60	94.67	195.75
53	-5.20	96.98	97.83	205.79
54	-5.30	99.37	101.05	216.17
55	-5.40	101.79	104.31	226.88
56	-5.50	104.23	107.62	237.93
57	-5.60	106.70	110.99	249.33
58	-5.70	109.18	114.40	261.07
59	-5.80	111.69	117.87	273.18
60	-5.90	114.22	121.38	285.64
61	-6.00	116.78	124.94	298.46

Combinazione n° 13 - ECC

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	0.00	3.06	16.70	17.08
2	-0.10	4.30	16.72	18.76
3	-0.20	5.56	16.80	20.44
4	-0.30	6.84	16.91	22.14
5	-0.40	8.15	17.08	23.86
6	-0.50	9.47	17.29	25.60
7	-0.60	10.82	17.55	27.38
8	-0.70	12.19	17.86	29.19
9	-0.80	13.59	18.21	31.03
10	-0.90	15.00	18.61	32.92
11	-1.00	16.44	19.06	34.87
12	-1.10	17.90	19.55	36.86
13	-1.20	19.38	20.09	38.91
14	-1.30	20.89	20.68	41.03
15	-1.40	22.41	21.32	43.21
16	-1.50	23.96	22.00	45.47
17	-1.60	25.53	22.73	47.80
18	-1.70	27.13	23.50	50.22
19	-1.80	28.74	24.33	52.72
20	-1.90	30.38	25.20	55.32
21	-2.00	32.04	26.12	58.01
22	-2.10	33.73	27.08	60.81
23	-2.20	35.43	28.09	63.71
24	-2.30	37.16	29.15	66.73
25	-2.40	38.91	30.26	69.85
26	-2.50	40.68	31.41	73.10
27	-2.60	42.48	32.61	76.48

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
28	-2.70	44.30	33.86	79.99
29	-2.80	46.13	35.16	83.63
30	-2.90	48.00	36.50	87.41
31	-3.00	49.88	37.89	91.34
32	-3.10	51.79	39.32	95.42
33	-3.20	53.72	40.80	99.65
34	-3.30	55.67	42.33	104.04
35	-3.40	57.64	43.91	108.60
36	-3.50	59.64	45.53	113.32
37	-3.60	61.65	47.21	118.22
38	-3.70	63.69	48.92	123.30
39	-3.80	65.76	50.69	128.56
40	-3.90	67.84	52.50	134.01
41	-4.00	69.95	54.36	139.65
42	-4.10	72.08	56.27	145.49
43	-4.20	74.23	58.22	151.53
44	-4.30	76.40	60.22	157.78
45	-4.40	78.60	62.27	164.25
46	-4.50	80.82	64.36	170.93
47	-4.60	83.06	66.51	177.83
48	-4.70	85.32	68.70	184.96
49	-4.80	87.61	70.93	192.32
50	-4.90	89.92	73.21	199.91
51	-5.00	92.25	75.54	207.75
52	-5.10	94.60	77.92	215.84
53	-5.20	96.98	80.35	224.17
54	-5.30	99.37	82.82	232.76
55	-5.40	101.79	85.34	241.61
56	-5.50	104.23	87.90	250.73
57	-5.60	106.70	90.51	260.11
58	-5.70	109.18	93.17	269.78
59	-5.80	111.69	95.88	279.72
60	-5.90	114.22	98.63	289.94
61	-6.00	116.78	101.43	300.46

Combinazione n° 14 - SLER

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	0.00	3.06	0.00	0.38
2	-0.10	4.30	0.60	0.42
3	-0.20	5.56	1.24	0.52
4	-0.30	6.84	1.94	0.69
5	-0.40	8.15	2.68	0.94
6	-0.50	9.47	3.46	1.27
7	-0.60	10.82	4.29	1.69
8	-0.70	12.19	5.17	2.20
9	-0.80	13.59	6.10	2.81
10	-0.90	15.00	7.08	3.52
11	-1.00	16.44	8.10	4.34
12	-1.10	17.90	9.17	5.26
13	-1.20	19.38	10.28	6.31
14	-1.30	20.89	11.44	7.47
15	-1.40	22.41	12.65	8.76
16	-1.50	23.96	13.91	10.18
17	-1.60	25.53	15.21	11.73
18	-1.70	27.13	16.57	13.43
19	-1.80	28.74	17.96	15.27
20	-1.90	30.38	19.41	17.26
21	-2.00	32.04	20.90	19.40
22	-2.10	33.73	22.44	21.70
23	-2.20	35.43	24.03	24.17
24	-2.30	37.16	25.66	26.80
25	-2.40	38.91	27.34	29.61
26	-2.50	40.68	29.07	32.60
27	-2.60	42.48	30.84	35.77
28	-2.70	44.30	32.66	39.13



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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
29	-2.80	46.13	34.53	42.68
30	-2.90	48.00	36.45	46.43
31	-3.00	49.88	38.41	50.38
32	-3.10	51.79	40.42	54.54
33	-3.20	53.72	42.48	58.91
34	-3.30	55.67	44.58	63.49
35	-3.40	57.64	46.73	68.30
36	-3.50	59.64	48.93	73.34
37	-3.60	61.65	51.18	78.61
38	-3.70	63.69	53.47	84.11
39	-3.80	65.76	55.81	89.85
40	-3.90	67.84	58.19	95.84
41	-4.00	69.95	60.63	102.08
42	-4.10	72.08	63.11	108.58
43	-4.20	74.23	65.64	115.33
44	-4.30	76.40	68.21	122.36
45	-4.40	78.60	70.83	129.65
46	-4.50	80.82	73.50	137.21
47	-4.60	83.06	76.20	145.05
48	-4.70	85.32	78.92	153.18
49	-4.80	87.61	81.65	161.59
50	-4.90	89.92	84.38	170.28
51	-5.00	92.25	87.11	179.25
52	-5.10	94.60	89.85	188.51
53	-5.20	96.98	92.60	198.06
54	-5.30	99.37	95.38	207.89
55	-5.40	101.79	98.20	218.01
56	-5.50	104.23	101.06	228.43
57	-5.60	106.70	103.98	239.15
58	-5.70	109.18	106.94	250.17
59	-5.80	111.69	109.94	261.50
60	-5.90	114.22	113.00	273.15
61	-6.00	116.78	116.10	285.11

Combinazione n° 15 - SLEF

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	0.00	3.06	0.00	0.38
2	-0.10	4.30	0.02	0.39
3	-0.20	5.56	0.10	0.40
4	-0.30	6.84	0.21	0.43
5	-0.40	8.15	0.38	0.48
6	-0.50	9.47	0.59	0.55
7	-0.60	10.82	0.85	0.66
8	-0.70	12.19	1.16	0.80
9	-0.80	13.59	1.51	0.97
10	-0.90	15.00	1.91	1.19
11	-1.00	16.44	2.36	1.47
12	-1.10	17.90	2.85	1.79
13	-1.20	19.38	3.39	2.17
14	-1.30	20.89	3.98	2.62
15	-1.40	22.41	4.62	3.13
16	-1.50	23.96	5.30	3.72
17	-1.60	25.53	6.03	4.38
18	-1.70	27.13	6.80	5.13
19	-1.80	28.74	7.63	5.96
20	-1.90	30.38	8.50	6.89
21	-2.00	32.04	9.42	7.91
22	-2.10	33.73	10.38	9.04
23	-2.20	35.43	11.39	10.27
24	-2.30	37.16	12.45	11.62
25	-2.40	38.91	13.56	13.07
26	-2.50	40.68	14.71	14.65
27	-2.60	42.48	15.91	16.36
28	-2.70	44.30	17.16	18.20
29	-2.80	46.13	18.46	20.17

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
30	-2.90	48.00	19.80	22.28
31	-3.00	49.88	21.19	24.54
32	-3.10	51.79	22.62	26.95
33	-3.20	53.72	24.10	29.51
34	-3.30	55.67	25.63	32.23
35	-3.40	57.64	27.21	35.12
36	-3.50	59.64	28.83	38.17
37	-3.60	61.65	30.51	41.40
38	-3.70	63.69	32.22	44.81
39	-3.80	65.76	33.99	48.40
40	-3.90	67.84	35.80	52.18
41	-4.00	69.95	37.66	56.15
42	-4.10	72.08	39.57	60.32
43	-4.20	74.23	41.52	64.69
44	-4.30	76.40	43.52	69.27
45	-4.40	78.60	45.57	74.07
46	-4.50	80.82	47.66	79.08
47	-4.60	83.06	49.81	84.31
48	-4.70	85.32	52.00	89.77
49	-4.80	87.61	54.23	95.46
50	-4.90	89.92	56.51	101.38
51	-5.00	92.25	58.84	107.55
52	-5.10	94.60	61.22	113.97
53	-5.20	96.98	63.65	120.63
54	-5.30	99.37	66.12	127.55
55	-5.40	101.79	68.64	134.73
56	-5.50	104.23	71.20	142.18
57	-5.60	106.70	73.81	149.89
58	-5.70	109.18	76.47	157.89
59	-5.80	111.69	79.18	166.16
60	-5.90	114.22	81.93	174.71
61	-6.00	116.78	84.73	183.56

Combinazione n° 16 - SLEQ

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	0.00	3.06	0.00	0.38
2	-0.10	4.30	0.02	0.39
3	-0.20	5.56	0.10	0.40
4	-0.30	6.84	0.21	0.43
5	-0.40	8.15	0.38	0.48
6	-0.50	9.47	0.59	0.55
7	-0.60	10.82	0.85	0.66
8	-0.70	12.19	1.16	0.80
9	-0.80	13.59	1.51	0.97
10	-0.90	15.00	1.91	1.19
11	-1.00	16.44	2.36	1.47
12	-1.10	17.90	2.85	1.79
13	-1.20	19.38	3.39	2.17
14	-1.30	20.89	3.98	2.62
15	-1.40	22.41	4.62	3.13
16	-1.50	23.96	5.30	3.72
17	-1.60	25.53	6.03	4.38
18	-1.70	27.13	6.80	5.13
19	-1.80	28.74	7.63	5.96
20	-1.90	30.38	8.50	6.89
21	-2.00	32.04	9.42	7.91
22	-2.10	33.73	10.38	9.04
23	-2.20	35.43	11.39	10.27
24	-2.30	37.16	12.45	11.62
25	-2.40	38.91	13.56	13.07
26	-2.50	40.68	14.71	14.65
27	-2.60	42.48	15.91	16.36
28	-2.70	44.30	17.16	18.20
29	-2.80	46.13	18.46	20.17
30	-2.90	48.00	19.80	22.28

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
31	-3.00	49.88	21.19	24.54
32	-3.10	51.79	22.62	26.95
33	-3.20	53.72	24.10	29.51
34	-3.30	55.67	25.63	32.23
35	-3.40	57.64	27.21	35.12
36	-3.50	59.64	28.83	38.17
37	-3.60	61.65	30.51	41.40
38	-3.70	63.69	32.22	44.81
39	-3.80	65.76	33.99	48.40
40	-3.90	67.84	35.80	52.18
41	-4.00	69.95	37.66	56.15
42	-4.10	72.08	39.57	60.32
43	-4.20	74.23	41.52	64.69
44	-4.30	76.40	43.52	69.27
45	-4.40	78.60	45.57	74.07
46	-4.50	80.82	47.66	79.08
47	-4.60	83.06	49.81	84.31
48	-4.70	85.32	52.00	89.77
49	-4.80	87.61	54.23	95.46
50	-4.90	89.92	56.51	101.38
51	-5.00	92.25	58.84	107.55
52	-5.10	94.60	61.22	113.97
53	-5.20	96.98	63.65	120.63
54	-5.30	99.37	66.12	127.55
55	-5.40	101.79	68.64	134.73
56	-5.50	104.23	71.20	142.18
57	-5.60	106.70	73.81	149.89
58	-5.70	109.18	76.47	157.89
59	-5.80	111.69	79.18	166.16
60	-5.90	114.22	81.93	174.71
61	-6.00	116.78	84.73	183.56

*Mensola valle*Combinazione n° 1 - STR (A1-M1-R3)

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-0.75	0.00	0.00	0.00
2	-0.67	0.00	1.02	0.04
3	-0.58	0.00	2.04	0.17
4	-0.50	0.00	3.06	0.38

Combinazione n° 2 - STR (A1-M1-R3) H + V

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-0.75	0.00	0.00	0.00
2	-0.67	0.00	1.09	0.05
3	-0.58	0.00	2.19	0.18
4	-0.50	0.00	3.28	0.41

Combinazione n° 3 - STR (A1-M1-R3)

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-0.75	0.00	0.00	0.00
2	-0.67	0.00	1.02	0.04
3	-0.58	0.00	2.04	0.17
4	-0.50	0.00	3.06	0.38

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**Combinazione n° 4 - STR (A1-M1-R3) H - V

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-0.75	0.00	0.00	0.00
2	-0.67	0.00	1.02	0.04
3	-0.58	0.00	2.04	0.17
4	-0.50	0.00	3.06	0.38

Combinazione n° 13 - ECC

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-0.75	0.00	0.00	0.00
2	-0.67	0.00	1.02	0.04
3	-0.58	0.00	2.04	0.17
4	-0.50	0.00	3.06	0.38

Combinazione n° 14 - SLER

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-0.75	0.00	0.00	0.00
2	-0.67	0.00	1.02	0.04
3	-0.58	0.00	2.04	0.17
4	-0.50	0.00	3.06	0.38

Combinazione n° 15 - SLEF

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-0.75	0.00	0.00	0.00
2	-0.67	0.00	1.02	0.04
3	-0.58	0.00	2.04	0.17
4	-0.50	0.00	3.06	0.38

Combinazione n° 16 - SLEQ

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-0.75	0.00	0.00	0.00
2	-0.67	0.00	1.02	0.04
3	-0.58	0.00	2.04	0.17
4	-0.50	0.00	3.06	0.38

*Fondazione*Combinazione n° 1 - STR (A1-M1-R3)

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-1.55	0.00	0.00	0.00
2	-1.45	0.00	10.59	0.51
3	-1.36	0.00	21.18	2.02

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X [m]	N [kN]	T [kN]	M [kNm]
4	-1.26	0.00	31.78	4.55
5	-1.17	0.00	42.39	8.09
6	-1.07	0.00	53.00	12.64
7	-0.98	0.00	63.62	18.21
8	-0.88	0.00	74.24	24.79
9	-0.79	0.00	84.87	32.38
10	-0.69	0.00	95.51	40.99
11	-0.60	0.00	106.15	50.62
12	-0.50	0.00	116.79	61.26
13	0.55	0.00	-101.69	-146.17
14	0.65	0.00	-98.10	-136.18
15	0.75	0.00	-94.51	-126.55
16	0.85	0.00	-90.93	-117.28
17	0.95	0.00	-87.35	-108.37
18	1.05	0.00	-83.78	-99.81
19	1.15	0.00	-80.22	-91.61
20	1.25	0.00	-76.66	-83.77
21	1.35	0.00	-73.11	-76.28
22	1.45	0.00	-69.57	-69.15
23	1.55	0.00	-66.03	-62.37
24	1.65	0.00	-62.50	-55.94
25	1.75	0.00	-58.97	-49.87
26	1.85	0.00	-55.45	-44.15
27	1.95	0.00	-51.94	-38.78
28	2.05	0.00	-48.43	-33.76
29	2.15	0.00	-44.93	-29.09
30	2.25	0.00	-41.44	-24.77
31	2.35	0.00	-37.95	-20.80
32	2.45	0.00	-34.47	-17.18
33	2.55	0.00	-30.99	-13.91
34	2.65	0.00	-27.52	-10.98
35	2.75	0.00	-24.06	-8.40
36	2.85	0.00	-20.61	-6.17
37	2.95	0.00	-17.16	-4.28
38	3.05	0.00	-13.71	-2.74
39	3.15	0.00	-10.27	-1.54
40	3.25	0.00	-6.84	-0.68
41	3.35	0.00	-3.42	-0.17
42	3.45	0.00	0.00	0.00

Combinazione n° 2 - STR (A1-M1-R3) H + V

n°	X [m]	N [kN]	T [kN]	M [kNm]
1	-1.55	0.00	0.00	0.00
2	-1.45	0.00	19.88	0.95
3	-1.36	0.00	39.43	3.78
4	-1.26	0.00	58.67	8.47
5	-1.17	0.00	77.59	14.98
6	-1.07	0.00	96.19	23.27
7	-0.98	0.00	114.48	33.33
8	-0.88	0.00	132.44	45.12
9	-0.79	0.00	150.08	58.60
10	-0.69	0.00	167.41	73.76
11	-0.60	0.00	184.41	90.55
12	-0.50	0.00	201.10	108.96
13	0.55	0.00	-81.84	-189.81
14	0.65	0.00	-83.92	-181.52
15	0.75	0.00	-85.65	-173.04
16	0.85	0.00	-87.03	-164.40
17	0.95	0.00	-88.05	-155.65
18	1.05	0.00	-88.73	-146.80
19	1.15	0.00	-89.06	-137.91
20	1.25	0.00	-89.04	-129.00
21	1.35	0.00	-88.67	-120.11
22	1.45	0.00	-87.95	-111.28
23	1.55	0.00	-86.87	-102.54

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
24	1.65	0.00	-85.45	-93.92
25	1.75	0.00	-83.68	-85.46
26	1.85	0.00	-81.56	-77.19
27	1.95	0.00	-79.09	-69.16
28	2.05	0.00	-76.26	-61.39
29	2.15	0.00	-73.09	-53.92
30	2.25	0.00	-69.57	-46.78
31	2.35	0.00	-65.70	-40.02
32	2.45	0.00	-61.47	-33.65
33	2.55	0.00	-56.90	-27.73
34	2.65	0.00	-51.98	-22.29
35	2.75	0.00	-46.71	-17.35
36	2.85	0.00	-41.09	-12.96
37	2.95	0.00	-35.11	-9.14
38	3.05	0.00	-28.79	-5.94
39	3.15	0.00	-22.12	-3.40
40	3.25	0.00	-15.10	-1.53
41	3.35	0.00	-7.72	-0.39
42	3.45	0.00	0.00	0.00

Combinazione n° 3 - STR (A1-M1-R3)

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-1.55	0.00	0.00	0.00
2	-1.45	0.00	13.32	0.64
3	-1.36	0.00	26.67	2.54
4	-1.26	0.00	40.04	5.73
5	-1.17	0.00	53.43	10.19
6	-1.07	0.00	66.84	15.93
7	-0.98	0.00	80.27	22.95
8	-0.88	0.00	93.73	31.25
9	-0.79	0.00	107.21	40.84
10	-0.69	0.00	120.71	51.72
11	-0.60	0.00	134.23	63.89
12	-0.50	0.00	147.78	77.35
13	0.55	0.00	-125.57	-177.15
14	0.65	0.00	-120.58	-164.38
15	0.75	0.00	-115.62	-152.11
16	0.85	0.00	-110.68	-140.33
17	0.95	0.00	-105.76	-129.05
18	1.05	0.00	-100.87	-118.25
19	1.15	0.00	-96.01	-107.95
20	1.25	0.00	-91.16	-98.13
21	1.35	0.00	-86.35	-88.79
22	1.45	0.00	-81.55	-79.94
23	1.55	0.00	-76.78	-71.56
24	1.65	0.00	-72.04	-63.66
25	1.75	0.00	-67.32	-56.23
26	1.85	0.00	-62.62	-49.27
27	1.95	0.00	-57.95	-42.78
28	2.05	0.00	-53.30	-36.75
29	2.15	0.00	-48.67	-31.19
30	2.25	0.00	-44.07	-26.10
31	2.35	0.00	-39.50	-21.46
32	2.45	0.00	-34.95	-17.27
33	2.55	0.00	-30.42	-13.54
34	2.65	0.00	-25.92	-10.26
35	2.75	0.00	-21.44	-7.43
36	2.85	0.00	-16.98	-5.05
37	2.95	0.00	-12.55	-3.11
38	3.05	0.00	-9.10	-1.81
39	3.15	0.00	-6.79	-1.01
40	3.25	0.00	-4.50	-0.45
41	3.35	0.00	-2.24	-0.11
42	3.45	0.00	0.00	0.00

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

Combinazione n° 4 - STR (A1-M1-R3) H - V

n°	X [m]	N [kN]	T [kN]	M [kNm]
1	-1.55	0.00	0.00	0.00
2	-1.45	0.00	17.99	0.86
3	-1.36	0.00	35.66	3.42
4	-1.26	0.00	53.02	7.66
5	-1.17	0.00	70.07	13.54
6	-1.07	0.00	86.80	21.03
7	-0.98	0.00	103.22	30.10
8	-0.88	0.00	119.32	40.72
9	-0.79	0.00	135.11	52.87
10	-0.69	0.00	150.58	66.50
11	-0.60	0.00	165.74	81.60
12	-0.50	0.00	180.59	98.14
13	0.55	0.00	-134.02	-264.44
14	0.65	0.00	-134.23	-251.02
15	0.75	0.00	-134.09	-237.60
16	0.85	0.00	-133.61	-224.22
17	0.95	0.00	-132.78	-210.89
18	1.05	0.00	-131.61	-197.67
19	1.15	0.00	-130.10	-184.58
20	1.25	0.00	-128.23	-171.66
21	1.35	0.00	-126.03	-158.95
22	1.45	0.00	-123.47	-146.47
23	1.55	0.00	-120.58	-134.26
24	1.65	0.00	-117.34	-122.37
25	1.75	0.00	-113.75	-110.81
26	1.85	0.00	-109.82	-99.63
27	1.95	0.00	-105.54	-88.86
28	2.05	0.00	-100.92	-78.53
29	2.15	0.00	-95.95	-68.68
30	2.25	0.00	-90.64	-59.35
31	2.35	0.00	-84.98	-50.57
32	2.45	0.00	-78.98	-42.37
33	2.55	0.00	-72.64	-34.78
34	2.65	0.00	-65.95	-27.85
35	2.75	0.00	-58.91	-21.60
36	2.85	0.00	-51.53	-16.08
37	2.95	0.00	-43.80	-11.31
38	3.05	0.00	-35.73	-7.33
39	3.15	0.00	-27.32	-4.18
40	3.25	0.00	-18.56	-1.88
41	3.35	0.00	-9.45	-0.48
42	3.45	0.00	0.00	0.00

Combinazione n° 13 - ECC

n°	X [m]	N [kN]	T [kN]	M [kNm]
1	-1.55	0.00	0.00	0.00
2	-1.45	0.00	12.44	0.59
3	-1.36	0.00	24.81	2.37
4	-1.26	0.00	37.10	5.33
5	-1.17	0.00	49.31	9.45
6	-1.07	0.00	61.44	14.74
7	-0.98	0.00	73.50	21.18
8	-0.88	0.00	85.48	28.77
9	-0.79	0.00	97.39	37.50
10	-0.69	0.00	109.22	47.36
11	-0.60	0.00	120.97	58.35
12	-0.50	0.00	132.65	70.45
13	0.55	0.00	-37.96	-72.14
14	0.65	0.00	-37.83	-68.35
15	0.75	0.00	-37.61	-64.58
16	0.85	0.00	-37.31	-60.83
17	0.95	0.00	-36.93	-57.12

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
18	1.05	0.00	-36.46	-53.45
19	1.15	0.00	-35.91	-49.83
20	1.25	0.00	-35.27	-46.27
21	1.35	0.00	-34.55	-42.78
22	1.45	0.00	-33.75	-39.36
23	1.55	0.00	-32.86	-36.03
24	1.65	0.00	-31.89	-32.79
25	1.75	0.00	-30.83	-29.65
26	1.85	0.00	-29.69	-26.63
27	1.95	0.00	-28.47	-23.72
28	2.05	0.00	-27.16	-20.94
29	2.15	0.00	-25.77	-18.29
30	2.25	0.00	-24.29	-15.78
31	2.35	0.00	-22.73	-13.43
32	2.45	0.00	-21.08	-11.24
33	2.55	0.00	-19.35	-9.22
34	2.65	0.00	-17.54	-7.37
35	2.75	0.00	-15.64	-5.71
36	2.85	0.00	-13.66	-4.25
37	2.95	0.00	-11.59	-2.99
38	3.05	0.00	-9.44	-1.93
39	3.15	0.00	-7.21	-1.10
40	3.25	0.00	-4.89	-0.49
41	3.35	0.00	-2.49	-0.13
42	3.45	0.00	0.00	0.00

Combinazione n° 14 - SLER

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-1.55	0.00	0.00	0.00
2	-1.45	0.00	10.78	0.51
3	-1.36	0.00	21.61	2.06
4	-1.26	0.00	32.49	4.64
5	-1.17	0.00	43.42	8.26
6	-1.07	0.00	54.40	12.93
7	-0.98	0.00	65.43	18.65
8	-0.88	0.00	76.51	25.43
9	-0.79	0.00	87.64	33.26
10	-0.69	0.00	98.81	42.16
11	-0.60	0.00	110.04	52.12
12	-0.50	0.00	121.31	63.17
13	0.55	0.00	-10.56	-4.28
14	0.65	0.00	-9.28	-3.05
15	0.75	0.00	-8.05	-1.96
16	0.85	0.00	-6.87	-0.98
17	0.95	0.00	-5.75	-0.12
18	1.05	0.00	-4.68	0.63
19	1.15	0.00	-3.67	1.28
20	1.25	0.00	-2.72	1.83
21	1.35	0.00	-1.81	2.29
22	1.45	0.00	-0.96	2.66
23	1.55	0.00	-0.17	2.94
24	1.65	0.00	0.57	3.15
25	1.75	0.00	1.26	3.29
26	1.85	0.00	1.89	3.37
27	1.95	0.00	2.47	3.38
28	2.05	0.00	2.99	3.34
29	2.15	0.00	3.46	3.24
30	2.25	0.00	3.88	3.11
31	2.35	0.00	4.24	2.93
32	2.45	0.00	4.54	2.72
33	2.55	0.00	4.79	2.49
34	2.65	0.00	4.99	2.23
35	2.75	0.00	5.13	1.95
36	2.85	0.00	5.22	1.66
37	2.95	0.00	5.26	1.37



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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
38	3.05	0.00	4.76	0.98
39	3.15	0.00	3.65	0.56
40	3.25	0.00	2.49	0.25
41	3.35	0.00	1.27	0.06
42	3.45	0.00	0.00	0.00

Combinazione n° 15 - SLEF

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-1.55	0.00	0.00	0.00
2	-1.45	0.00	9.42	0.45
3	-1.36	0.00	18.87	1.80
4	-1.26	0.00	28.37	4.05
5	-1.17	0.00	37.91	7.22
6	-1.07	0.00	47.49	11.29
7	-0.98	0.00	57.12	16.29
8	-0.88	0.00	66.78	22.20
9	-0.79	0.00	76.48	29.04
10	-0.69	0.00	86.23	36.80
11	-0.60	0.00	96.02	45.50
12	-0.50	0.00	105.85	55.13
13	0.55	0.00	1.36	11.16
14	0.65	0.00	1.95	11.00
15	0.75	0.00	2.49	10.78
16	0.85	0.00	2.98	10.50
17	0.95	0.00	3.43	10.18
18	1.05	0.00	3.84	9.82
19	1.15	0.00	4.20	9.41
20	1.25	0.00	4.51	8.98
21	1.35	0.00	4.78	8.51
22	1.45	0.00	5.01	8.02
23	1.55	0.00	5.19	7.51
24	1.65	0.00	5.32	6.99
25	1.75	0.00	5.41	6.45
26	1.85	0.00	5.45	5.91
27	1.95	0.00	5.45	5.36
28	2.05	0.00	5.40	4.82
29	2.15	0.00	5.31	4.28
30	2.25	0.00	5.18	3.76
31	2.35	0.00	4.99	3.25
32	2.45	0.00	4.77	2.76
33	2.55	0.00	4.49	2.30
34	2.65	0.00	4.17	1.86
35	2.75	0.00	3.81	1.46
36	2.85	0.00	3.40	1.10
37	2.95	0.00	2.95	0.78
38	3.05	0.00	2.45	0.51
39	3.15	0.00	1.90	0.30
40	3.25	0.00	1.31	0.13
41	3.35	0.00	0.68	0.03
42	3.45	0.00	0.00	0.00

Combinazione n° 16 - SLEQ

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-1.55	0.00	0.00	0.00
2	-1.45	0.00	9.42	0.45
3	-1.36	0.00	18.87	1.80
4	-1.26	0.00	28.37	4.05
5	-1.17	0.00	37.91	7.22
6	-1.07	0.00	47.49	11.29
7	-0.98	0.00	57.12	16.29
8	-0.88	0.00	66.78	22.20

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
9	-0.79	0.00	76.48	29.04
10	-0.69	0.00	86.23	36.80
11	-0.60	0.00	96.02	45.50
12	-0.50	0.00	105.85	55.13
13	0.55	0.00	1.36	11.16
14	0.65	0.00	1.95	11.00
15	0.75	0.00	2.49	10.78
16	0.85	0.00	2.98	10.50
17	0.95	0.00	3.43	10.18
18	1.05	0.00	3.84	9.82
19	1.15	0.00	4.20	9.41
20	1.25	0.00	4.51	8.98
21	1.35	0.00	4.78	8.51
22	1.45	0.00	5.01	8.02
23	1.55	0.00	5.19	7.51
24	1.65	0.00	5.32	6.99
25	1.75	0.00	5.41	6.45
26	1.85	0.00	5.45	5.91
27	1.95	0.00	5.45	5.36
28	2.05	0.00	5.40	4.82
29	2.15	0.00	5.31	4.28
30	2.25	0.00	5.18	3.76
31	2.35	0.00	4.99	3.25
32	2.45	0.00	4.77	2.76
33	2.55	0.00	4.49	2.30
34	2.65	0.00	4.17	1.86
35	2.75	0.00	3.81	1.46
36	2.85	0.00	3.40	1.10
37	2.95	0.00	2.95	0.78
38	3.05	0.00	2.45	0.51
39	3.15	0.00	1.90	0.30
40	3.25	0.00	1.31	0.13
41	3.35	0.00	0.68	0.03
42	3.45	0.00	0.00	0.00

Verifiche strutturali*Verifiche a flessione*Elementi calcolati a trave

## Simbologia adottata

n°	indice sezione
Y	ordinata sezione espressa in [m]
B	larghezza sezione espresso in [cm]
H	altezza sezione espressa in [cm]
Afi	area ferri inferiori espresso in [cmq]
Afs	area ferri superiori espressa in [cmq]
M	momento agente espressa in [kNm]
N	sforzo normale agente espressa in [kN]
Mu	momento ultimi espresso in [kNm]
Nu	sforzo normale ultimo espressa in [kN]
FS	fattore di sicurezza (rapporto tra sollecitazione ultima e sollecitazione agente)

**Paramento**

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**Combinazione n° 1 - STR (A1-M1-R3)

n°	Y [m]	B [cm]	H [cm]	Afi [cmq]	Afs [cmq]	M [kNm]	N [kN]	Mu [kNm]	Nu [kN]	FS
1	0.00	100	50	10.05	10.05	0.38	3.06	0.00	0.00	1000.000
2	-0.10	100	51	10.05	10.05	0.39	4.30	0.00	0.00	1000.000
3	-0.20	100	52	10.05	10.05	0.40	5.56	0.00	0.00	1000.000
4	-0.30	100	53	10.05	10.05	0.44	6.84	0.00	0.00	1000.000
5	-0.40	100	54	10.05	10.05	0.49	8.15	0.00	0.00	1000.000
6	-0.50	100	55	10.05	10.05	0.58	9.47	518.42	8418.73	888.728
7	-0.60	100	55	10.05	10.05	0.71	10.82	552.80	8441.33	780.063
8	-0.70	100	56	10.05	10.05	0.88	12.19	602.49	8376.91	687.070
9	-0.80	100	57	10.05	10.05	1.09	13.59	663.90	8242.33	606.704
10	-0.90	100	58	10.05	10.05	1.37	15.00	731.91	8031.81	535.421
11	-1.00	100	59	10.05	10.05	1.70	16.44	804.92	7777.68	473.131
12	-1.10	100	60	10.05	10.05	2.10	17.90	878.37	7474.69	417.606
13	-1.20	100	61	10.05	10.05	2.58	19.38	949.69	7135.82	368.181
14	-1.30	100	62	10.05	10.05	3.14	20.89	1018.51	6783.96	324.808
15	-1.40	100	63	10.05	10.05	3.78	22.41	1080.24	6407.75	285.893
16	-1.50	100	64	10.05	10.05	4.51	23.96	1132.35	6011.16	250.857
17	-1.60	100	65	10.05	10.05	5.35	25.53	1172.49	5597.81	219.228
18	-1.70	100	65	10.05	10.05	6.29	27.13	1185.37	5114.23	188.521
19	-1.80	100	66	10.05	10.05	7.34	28.74	1177.56	4612.45	160.464
20	-1.90	100	67	10.05	10.05	8.51	30.38	1152.37	4115.82	135.464
21	-2.00	100	68	10.05	10.05	9.80	32.04	1112.95	3639.51	113.578
22	-2.10	100	69	10.05	10.05	11.22	33.73	1065.96	3203.98	94.996
23	-2.20	100	70	10.05	10.05	12.78	35.43	1004.68	2785.63	78.617
24	-2.30	100	71	10.05	10.05	14.48	37.16	941.38	2415.87	65.011
25	-2.40	100	72	10.05	10.05	16.33	38.91	881.29	2099.98	53.969
26	-2.50	100	73	10.05	10.05	18.33	40.68	808.66	1794.44	44.107
27	-2.60	100	74	10.05	10.05	20.50	42.48	748.84	1551.73	36.530
28	-2.70	100	75	10.05	10.05	22.83	44.30	704.15	1366.07	30.840
29	-2.80	100	75	10.05	10.05	25.34	46.13	669.85	1219.63	26.436
30	-2.90	100	76	10.05	10.05	28.02	48.00	643.02	1101.28	22.945
31	-3.00	100	77	10.05	10.05	30.90	49.88	621.73	1003.74	20.123
32	-3.10	100	78	10.05	10.05	33.96	51.79	600.06	915.03	17.669
33	-3.20	100	79	10.05	10.05	37.22	53.72	580.19	837.24	15.587
34	-3.30	100	80	10.05	10.05	40.69	55.67	563.92	771.47	13.859
35	-3.40	100	81	10.05	10.05	44.37	57.64	550.50	715.15	12.407
36	-3.50	100	82	10.05	10.05	48.26	59.64	539.36	666.43	11.175
37	-3.60	100	83	10.05	10.05	52.38	61.65	530.07	623.88	10.119
38	-3.70	100	84	10.05	10.05	56.73	63.69	522.32	586.42	9.207
39	-3.80	100	85	10.05	10.05	61.32	65.76	515.86	553.23	8.413
40	-3.90	100	85	10.05	10.05	66.14	67.84	510.54	523.66	7.719
41	-4.00	100	86	10.05	10.05	71.22	69.95	506.14	497.14	7.107
42	-4.10	100	87	10.05	10.05	76.54	72.08	502.53	473.21	6.565
43	-4.20	100	88	10.05	10.05	82.13	74.23	499.61	451.54	6.083
44	-4.30	100	89	10.05	10.05	87.99	76.40	497.29	431.81	5.652
45	-4.40	100	90	10.05	10.05	94.12	78.60	495.49	413.79	5.264
46	-4.50	100	91	10.05	10.05	100.53	80.82	494.14	397.27	4.916
47	-4.60	100	92	10.05	10.05	107.22	83.06	493.21	382.07	4.600
48	-4.70	100	93	10.05	10.05	114.21	85.32	492.63	368.04	4.314
49	-4.80	100	94	10.05	10.05	121.49	87.61	492.38	355.06	4.053
50	-4.90	100	95	10.05	10.05	129.08	89.92	492.42	343.02	3.815
51	-5.00	100	96	10.05	10.05	136.98	92.25	492.71	331.82	3.597
52	-5.10	100	96	10.05	10.05	145.19	94.60	493.25	321.38	3.397
53	-5.20	100	97	10.05	20.11	153.73	96.98	971.15	612.62	6.317
54	-5.30	100	98	10.05	20.11	162.60	99.37	973.01	594.67	5.984
55	-5.40	100	99	10.05	10.05	171.80	101.79	496.05	293.91	2.887
56	-5.50	100	100	10.05	10.05	181.34	104.23	497.33	285.86	2.743
57	-5.60	100	101	10.05	10.05	191.23	106.70	498.76	278.28	2.608
58	-5.70	100	102	10.05	10.05	201.48	109.18	500.32	271.13	2.483
59	-5.80	100	103	10.05	10.05	212.08	111.69	502.01	264.38	2.367
60	-5.90	100	104	10.05	10.05	223.06	114.22	503.82	258.00	2.259
61	-6.00	100	105	10.05	10.05	234.40	116.78	505.73	251.95	2.158

Combinazione n° 2 - STR (A1-M1-R3) H + V

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## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

n°	Y [m]	B [cm]	H [cm]	Afi [cmq]	Afs [cmq]	M [kNm]	N [kN]	Mu [kNm]	Nu [kN]	FS
1	0.00	100	50	10.05	10.05	0.41	3.28	0.00	0.00	1000.000
2	-0.10	100	51	10.05	10.05	0.45	4.52	0.00	0.00	1000.000
3	-0.20	100	52	10.05	10.05	0.58	5.78	0.00	0.00	1000.000
4	-0.30	100	53	10.05	10.05	0.80	7.06	716.60	6304.29	892.844
5	-0.40	100	54	10.05	10.05	1.12	8.36	784.59	5852.64	699.670
6	-0.50	100	55	10.05	10.05	1.54	9.69	846.95	5320.65	549.023
7	-0.60	100	55	10.05	10.05	2.07	11.04	885.52	4719.12	427.469
8	-0.70	100	56	10.05	10.05	2.71	12.41	880.09	4025.71	324.378
9	-0.80	100	57	10.05	10.05	3.47	13.80	847.29	3367.94	243.987
10	-0.90	100	58	10.05	10.05	4.36	15.22	793.60	2773.27	182.221
11	-1.00	100	59	10.05	10.05	5.37	16.66	728.26	2260.74	135.723
12	-1.10	100	60	10.05	10.05	6.51	18.12	660.13	1837.23	101.408
13	-1.20	100	61	10.05	10.05	7.79	19.60	594.49	1495.37	76.296
14	-1.30	100	62	10.05	10.05	9.22	21.10	542.11	1241.21	58.813
15	-1.40	100	63	10.05	10.05	10.79	22.63	506.57	1062.30	46.939
16	-1.50	100	64	10.05	10.05	12.52	24.18	481.40	929.75	38.450
17	-1.60	100	65	10.05	10.05	14.41	25.75	463.08	827.74	32.142
18	-1.70	100	65	10.05	10.05	16.46	27.35	447.92	744.25	27.215
19	-1.80	100	66	10.05	10.05	18.68	28.96	433.62	672.37	23.215
20	-1.90	100	67	10.05	10.05	21.07	30.60	422.63	613.73	20.056
21	-2.00	100	68	10.05	10.05	23.65	32.26	414.12	565.01	17.513
22	-2.10	100	69	10.05	10.05	26.40	33.95	407.52	523.90	15.434
23	-2.20	100	70	10.05	10.05	29.35	35.65	402.42	488.77	13.710
24	-2.30	100	71	10.05	10.05	32.50	37.38	398.51	458.40	12.264
25	-2.40	100	72	10.05	10.05	35.84	39.13	395.57	431.90	11.038
26	-2.50	100	73	10.05	10.05	39.39	40.90	393.43	408.58	9.989
27	-2.60	100	74	10.05	10.05	43.14	42.70	391.96	387.90	9.085
28	-2.70	100	75	10.05	10.05	47.12	44.51	391.04	369.44	8.299
29	-2.80	100	75	10.05	10.05	51.31	46.35	390.60	352.86	7.612
30	-2.90	100	76	10.05	10.05	55.73	48.21	390.56	337.89	7.008
31	-3.00	100	77	10.05	10.05	60.38	50.10	390.87	324.32	6.474
32	-3.10	100	78	10.05	10.05	65.26	52.01	391.48	311.95	5.998
33	-3.20	100	79	10.05	10.05	70.39	53.93	392.36	300.63	5.574
34	-3.30	100	80	10.05	10.05	75.76	55.89	393.47	290.23	5.193
35	-3.40	100	81	10.05	10.05	81.39	57.86	394.79	280.66	4.851
36	-3.50	100	82	10.05	10.05	87.27	59.85	396.29	271.81	4.541
37	-3.60	100	83	10.05	10.05	93.41	61.87	397.96	263.60	4.260
38	-3.70	100	84	10.05	10.05	99.82	63.91	399.77	255.97	4.005
39	-3.80	100	85	10.05	10.05	106.50	65.97	401.72	248.87	3.772
40	-3.90	100	85	10.05	10.05	113.45	68.06	403.86	242.28	3.560
41	-4.00	100	86	10.05	10.05	120.69	70.17	406.11	236.10	3.365
42	-4.10	100	87	10.05	10.05	128.22	72.30	408.46	230.32	3.186
43	-4.20	100	88	10.05	10.05	136.03	74.45	410.90	224.88	3.021
44	-4.30	100	89	10.05	10.05	144.15	76.62	413.43	219.76	2.868
45	-4.40	100	90	10.05	10.05	152.57	78.82	416.03	214.93	2.727
46	-4.50	100	91	10.05	10.05	161.29	81.04	418.70	210.37	2.596
47	-4.60	100	92	10.05	10.05	170.33	83.28	421.44	206.05	2.474
48	-4.70	100	93	10.05	10.05	179.68	85.54	424.24	201.97	2.361
49	-4.80	100	94	10.05	10.05	189.36	87.83	427.09	198.09	2.255
50	-4.90	100	95	10.05	10.05	199.37	90.14	430.00	194.41	2.157
51	-5.00	100	96	10.05	10.05	209.71	92.47	432.95	190.90	2.065
52	-5.10	100	96	10.05	10.05	220.38	94.82	435.95	187.57	1.978
53	-5.20	100	97	10.05	20.11	231.41	97.19	864.57	363.13	3.736
54	-5.30	100	98	10.05	20.11	242.78	99.59	870.55	357.11	3.586
55	-5.40	100	99	10.05	10.05	254.50	102.01	445.20	178.45	1.749
56	-5.50	100	100	10.05	10.05	266.58	104.45	448.36	175.67	1.682
57	-5.60	100	101	10.05	10.05	279.03	106.92	451.54	173.02	1.618
58	-5.70	100	102	10.05	10.05	291.84	109.40	454.76	170.48	1.558
59	-5.80	100	103	10.05	10.05	305.03	111.91	458.01	168.04	1.502
60	-5.90	100	104	10.05	10.05	318.60	114.44	461.29	165.70	1.448
61	-6.00	100	105	10.05	10.05	332.56	117.00	464.59	163.45	1.397

Combinazione n° 3 - STR (A1-M1-R3)

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## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
1	0.00	100	50	10.05	10.05	0.38	3.06	0.00	0.00	1000.000
2	-0.10	100	51	10.05	10.05	0.44	4.30	0.00	0.00	1000.000
3	-0.20	100	52	10.05	10.05	0.63	5.56	0.00	0.00	1000.000
4	-0.30	100	53	10.05	10.05	0.95	6.84	772.80	5547.37	810.712
5	-0.40	100	54	10.05	10.05	1.41	8.15	833.16	4802.39	589.501
6	-0.50	100	55	10.05	10.05	2.02	9.47	828.67	3888.49	410.491
7	-0.60	100	55	10.05	10.05	2.78	10.82	772.36	3011.16	278.261
8	-0.70	100	56	10.05	10.05	3.69	12.19	687.48	2271.31	186.292
9	-0.80	100	57	10.05	10.05	4.77	13.59	600.40	1710.37	125.898
10	-0.90	100	58	10.05	10.05	6.02	15.00	518.63	1292.83	86.183
11	-1.00	100	59	10.05	10.05	7.44	16.44	466.15	1029.56	62.630
12	-1.10	100	60	10.05	10.05	9.05	17.90	433.20	856.69	47.863
13	-1.20	100	61	10.05	10.05	10.85	19.38	411.26	734.81	37.913
14	-1.30	100	62	10.05	10.05	12.84	20.89	392.85	639.06	30.597
15	-1.40	100	63	10.05	10.05	15.03	22.41	378.56	564.43	25.183
16	-1.50	100	64	10.05	10.05	17.43	23.96	368.19	506.10	21.121
17	-1.60	100	65	10.05	10.05	20.05	25.53	360.59	459.29	17.987
18	-1.70	100	65	10.05	10.05	22.88	27.13	355.02	420.92	15.516
19	-1.80	100	66	10.05	10.05	25.94	28.74	350.99	388.91	13.530
20	-1.90	100	67	10.05	10.05	29.23	30.38	348.14	361.82	11.909
21	-2.00	100	68	10.05	10.05	32.77	32.04	346.23	338.60	10.567
22	-2.10	100	69	10.05	10.05	36.54	33.73	345.06	318.48	9.443
23	-2.20	100	70	10.05	10.05	40.57	35.43	344.51	300.89	8.492
24	-2.30	100	71	10.05	10.05	44.85	37.16	344.45	285.38	7.679
25	-2.40	100	72	10.05	10.05	49.40	38.91	344.82	271.59	6.980
26	-2.50	100	73	10.05	10.05	54.22	40.68	345.54	259.27	6.373
27	-2.60	100	74	10.05	10.05	59.31	42.48	346.56	248.19	5.843
28	-2.70	100	75	10.05	10.05	64.69	44.30	347.84	238.18	5.377
29	-2.80	100	75	10.05	10.05	70.35	46.13	349.34	229.08	4.965
30	-2.90	100	76	10.05	10.05	76.31	48.00	351.03	220.78	4.600
31	-3.00	100	77	10.05	10.05	82.57	49.88	352.89	213.18	4.274
32	-3.10	100	78	10.05	10.05	89.14	51.79	354.90	206.19	3.981
33	-3.20	100	79	10.05	10.05	96.02	53.72	357.05	199.74	3.719
34	-3.30	100	80	10.05	10.05	103.22	55.67	359.31	193.78	3.481
35	-3.40	100	81	10.05	10.05	110.74	57.64	361.67	188.24	3.266
36	-3.50	100	82	10.05	10.05	118.60	59.64	364.13	183.10	3.070
37	-3.60	100	83	10.05	10.05	126.80	61.65	366.67	178.29	2.892
38	-3.70	100	84	10.05	10.05	135.34	63.69	369.29	173.80	2.729
39	-3.80	100	85	10.05	10.05	144.23	65.76	372.00	169.60	2.579
40	-3.90	100	85	10.05	10.05	153.47	67.84	374.83	165.69	2.442
41	-4.00	100	86	10.05	10.05	163.08	69.95	377.72	162.01	2.316
42	-4.10	100	87	10.05	10.05	173.06	72.08	380.66	158.54	2.200
43	-4.20	100	88	10.05	10.05	183.42	74.23	383.66	155.27	2.092
44	-4.30	100	89	10.05	10.05	194.15	76.40	386.70	152.17	1.992
45	-4.40	100	90	10.05	10.05	205.28	78.60	389.78	149.25	1.899
46	-4.50	100	91	10.05	10.05	216.80	80.82	392.91	146.47	1.812
47	-4.60	100	92	10.05	10.05	228.71	83.06	396.07	143.84	1.732
48	-4.70	100	93	10.05	10.05	241.03	85.32	399.27	141.34	1.656
49	-4.80	100	94	10.05	10.05	253.76	87.61	402.50	138.96	1.586
50	-4.90	100	95	10.05	10.05	266.88	89.92	405.77	136.71	1.520
51	-5.00	100	96	10.05	10.05	280.41	92.25	409.06	134.57	1.459
52	-5.10	100	96	10.05	10.05	294.34	94.60	412.40	132.54	1.401
53	-5.20	100	97	10.05	20.11	308.67	96.98	419.42	129.44	1.348
54	-5.30	100	98	10.05	20.11	323.40	99.37	425.99	126.44	1.299
55	-5.40	100	99	10.05	10.05	338.53	101.79	422.57	123.57	1.254
56	-5.50	100	100	10.05	10.05	354.06	104.23	426.02	120.82	1.212
57	-5.60	100	101	10.05	10.05	369.99	106.70	429.49	118.20	1.171
58	-5.70	100	102	10.05	10.05	386.34	109.18	432.99	115.70	1.131
59	-5.80	100	103	10.05	10.05	403.11	111.69	436.50	113.30	1.091
60	-5.90	100	104	10.05	10.05	420.31	114.22	440.04	111.00	1.051
61	-6.00	100	105	10.05	10.05	437.93	116.78	443.60	108.80	1.011

## Combinazione n° 4 - STR (A1-M1-R3) H - V

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
1	0.00	100	50	10.05	10.05	0.38	3.06	0.00	0.00	1000.000

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## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
2	-0.10	100	51	10.05	10.05	0.42	4.30	0.00	0.00	1000.000
3	-0.20	100	52	10.05	10.05	0.52	5.56	0.00	0.00	1000.000
4	-0.30	100	53	10.05	10.05	0.69	6.84	677.10	6713.15	981.084
5	-0.40	100	54	10.05	10.05	0.94	8.15	740.64	6400.41	785.662
6	-0.50	100	55	10.05	10.05	1.28	9.47	807.53	5981.78	631.470
7	-0.60	100	55	10.05	10.05	1.70	10.82	868.75	5518.27	509.943
8	-0.70	100	56	10.05	10.05	2.22	12.19	913.61	5012.49	411.121
9	-0.80	100	57	10.05	10.05	2.84	13.59	926.68	4433.19	326.319
10	-0.90	100	58	10.05	10.05	3.56	15.00	910.42	3834.70	255.631
11	-1.00	100	59	10.05	10.05	4.39	16.44	873.90	3270.68	198.962
12	-1.10	100	60	10.05	10.05	5.34	17.90	824.62	2765.31	154.496
13	-1.20	100	61	10.05	10.05	6.40	19.38	767.14	2322.41	119.827
14	-1.30	100	62	10.05	10.05	7.59	20.89	705.12	1940.01	92.885
15	-1.40	100	63	10.05	10.05	8.91	22.41	646.68	1626.70	72.578
16	-1.50	100	64	10.05	10.05	10.36	23.96	592.00	1368.76	57.121
17	-1.60	100	65	10.05	10.05	11.96	25.53	553.74	1182.45	46.308
18	-1.70	100	65	10.05	10.05	13.70	27.13	525.95	1041.73	38.400
19	-1.80	100	66	10.05	10.05	15.59	28.74	505.23	931.82	32.417
20	-1.90	100	67	10.05	10.05	17.63	30.38	489.53	843.67	27.768
21	-2.00	100	68	10.05	10.05	19.83	32.04	474.64	766.81	23.930
22	-2.10	100	69	10.05	10.05	22.20	33.73	461.25	700.60	20.772
23	-2.20	100	70	10.05	10.05	24.75	35.43	450.67	645.30	18.212
24	-2.30	100	71	10.05	10.05	27.46	37.16	442.27	598.44	16.104
25	-2.40	100	72	10.05	10.05	30.36	38.91	435.58	558.24	14.347
26	-2.50	100	73	10.05	10.05	33.44	40.68	430.27	523.39	12.865
27	-2.60	100	74	10.05	10.05	36.72	42.48	426.08	492.89	11.603
28	-2.70	100	75	10.05	10.05	40.19	44.30	422.82	465.99	10.520
29	-2.80	100	75	10.05	10.05	43.86	46.13	420.34	442.09	9.583
30	-2.90	100	76	10.05	10.05	47.74	48.00	418.51	420.72	8.766
31	-3.00	100	77	10.05	10.05	51.84	49.88	417.24	401.50	8.049
32	-3.10	100	78	10.05	10.05	56.14	51.79	416.44	384.12	7.417
33	-3.20	100	79	10.05	10.05	60.67	53.72	416.06	368.34	6.857
34	-3.30	100	80	10.05	10.05	65.43	55.67	416.04	353.95	6.358
35	-3.40	100	81	10.05	10.05	70.42	57.64	416.33	340.77	5.912
36	-3.50	100	82	10.05	10.05	75.65	59.64	416.90	328.65	5.511
37	-3.60	100	83	10.05	10.05	81.12	61.65	417.72	317.48	5.149
38	-3.70	100	84	10.05	10.05	86.84	63.69	418.75	307.15	4.822
39	-3.80	100	85	10.05	10.05	92.81	65.76	419.99	297.58	4.526
40	-3.90	100	85	10.05	10.05	99.03	67.84	421.47	288.72	4.256
41	-4.00	100	86	10.05	10.05	105.52	69.95	423.11	280.47	4.010
42	-4.10	100	87	10.05	10.05	112.28	72.08	424.90	272.76	3.784
43	-4.20	100	88	10.05	10.05	119.31	74.23	426.81	265.54	3.577
44	-4.30	100	89	10.05	10.05	126.63	76.40	428.85	258.76	3.387
45	-4.40	100	90	10.05	10.05	134.22	78.60	431.00	252.40	3.211
46	-4.50	100	91	10.05	10.05	142.10	80.82	433.25	246.40	3.049
47	-4.60	100	92	10.05	10.05	150.28	83.06	435.59	240.75	2.899
48	-4.70	100	93	10.05	10.05	158.75	85.32	438.01	235.41	2.759
49	-4.80	100	94	10.05	10.05	167.53	87.61	440.51	230.36	2.629
50	-4.90	100	95	10.05	10.05	176.62	89.92	443.09	225.57	2.509
51	-5.00	100	96	10.05	10.05	186.02	92.25	445.73	221.03	2.396
52	-5.10	100	96	10.05	10.05	195.75	94.60	448.44	216.72	2.291
53	-5.20	100	97	10.05	20.11	205.79	96.98	888.26	418.57	4.316
54	-5.30	100	98	10.05	20.11	216.17	99.37	893.72	410.84	4.134
55	-5.40	100	99	10.05	10.05	226.88	101.79	456.89	204.99	2.014
56	-5.50	100	100	10.05	10.05	237.93	104.23	459.80	201.43	1.933
57	-5.60	100	101	10.05	10.05	249.33	106.70	462.76	198.04	1.856
58	-5.70	100	102	10.05	10.05	261.07	109.18	465.77	194.79	1.784
59	-5.80	100	103	10.05	10.05	273.18	111.69	468.81	191.68	1.716
60	-5.90	100	104	10.05	10.05	285.64	114.22	471.89	188.71	1.652
61	-6.00	100	105	10.05	10.05	298.46	116.78	475.00	185.85	1.591

## Combinazione n° 13 - ECC

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
1	0.00	100	50	10.05	10.05	17.08	3.06	209.94	37.66	12.289
2	-0.10	100	51	10.05	10.05	18.76	4.30	216.80	49.72	11.559

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
3	-0.20	100	52	10.05	10.05	20.44	5.56	223.55	60.82	10.937
4	-0.30	100	53	10.05	10.05	22.14	6.84	230.22	71.15	10.398
5	-0.40	100	54	10.05	10.05	23.86	8.15	236.84	80.87	9.926
6	-0.50	100	55	10.05	10.05	25.60	9.47	243.41	90.06	9.507
7	-0.60	100	55	10.05	10.05	27.38	10.82	249.95	98.80	9.130
8	-0.70	100	56	10.05	10.05	29.19	12.19	256.47	107.14	8.788
9	-0.80	100	57	10.05	10.05	31.03	13.59	262.97	115.12	8.474
10	-0.90	100	58	10.05	10.05	32.92	15.00	269.45	122.76	8.184
11	-1.00	100	59	10.05	10.05	34.87	16.44	275.92	130.09	7.914
12	-1.10	100	60	10.05	10.05	36.86	17.90	282.36	137.11	7.661
13	-1.20	100	61	10.05	10.05	38.91	19.38	288.79	143.84	7.422
14	-1.30	100	62	10.05	10.05	41.03	20.89	295.19	150.27	7.195
15	-1.40	100	63	10.05	10.05	43.21	22.41	301.57	156.42	6.979
16	-1.50	100	64	10.05	10.05	45.47	23.96	307.92	162.28	6.772
17	-1.60	100	65	10.05	10.05	47.80	25.53	314.25	167.85	6.574
18	-1.70	100	65	10.05	10.05	50.22	27.13	320.53	173.15	6.382
19	-1.80	100	66	10.05	10.05	52.72	28.74	326.78	178.15	6.198
20	-1.90	100	67	10.05	10.05	55.32	30.38	332.99	182.88	6.019
21	-2.00	100	68	10.05	10.05	58.01	32.04	339.15	187.33	5.846
22	-2.10	100	69	10.05	10.05	60.81	33.73	345.27	191.50	5.678
23	-2.20	100	70	10.05	10.05	63.71	35.43	351.44	195.45	5.516
24	-2.30	100	71	10.05	10.05	66.73	37.16	357.56	199.13	5.359
25	-2.40	100	72	10.05	10.05	69.85	38.91	363.63	202.55	5.205
26	-2.50	100	73	10.05	10.05	73.10	40.68	369.64	205.71	5.056
27	-2.60	100	74	10.05	10.05	76.48	42.48	375.61	208.62	4.911
28	-2.70	100	75	10.05	10.05	79.99	44.30	381.52	211.28	4.770
29	-2.80	100	75	10.05	10.05	83.63	46.13	387.38	213.70	4.632
30	-2.90	100	76	10.05	10.05	87.41	48.00	393.18	215.89	4.498
31	-3.00	100	77	10.05	10.05	91.34	49.88	398.93	217.85	4.367
32	-3.10	100	78	10.05	10.05	95.42	51.79	404.62	219.60	4.241
33	-3.20	100	79	10.05	10.05	99.65	53.72	410.26	221.15	4.117
34	-3.30	100	80	10.05	10.05	104.04	55.67	415.84	222.50	3.997
35	-3.40	100	81	10.05	10.05	108.60	57.64	421.37	223.65	3.880
36	-3.50	100	82	10.05	10.05	113.32	59.64	426.86	224.63	3.767
37	-3.60	100	83	10.05	10.05	118.22	61.65	432.29	225.44	3.657
38	-3.70	100	84	10.05	10.05	123.30	63.69	437.67	226.09	3.550
39	-3.80	100	85	10.05	10.05	128.56	65.76	443.00	226.59	3.446
40	-3.90	100	85	10.05	10.05	134.01	67.84	448.29	226.95	3.345
41	-4.00	100	86	10.05	10.05	139.65	69.95	453.53	227.17	3.248
42	-4.10	100	87	10.05	10.05	145.49	72.08	458.73	227.26	3.153
43	-4.20	100	88	10.05	10.05	151.53	74.23	463.88	227.24	3.061
44	-4.30	100	89	10.05	10.05	157.78	76.40	469.00	227.11	2.972
45	-4.40	100	90	10.05	10.05	164.25	78.60	474.08	226.87	2.886
46	-4.50	100	91	10.05	10.05	170.93	80.82	479.12	226.54	2.803
47	-4.60	100	92	10.05	10.05	177.83	83.06	484.13	226.13	2.722
48	-4.70	100	93	10.05	10.05	184.96	85.32	489.11	225.63	2.644
49	-4.80	100	94	10.05	10.05	192.32	87.61	494.05	225.06	2.569
50	-4.90	100	95	10.05	10.05	199.91	89.92	498.97	224.42	2.496
51	-5.00	100	96	10.05	10.05	207.75	92.25	503.85	223.72	2.425
52	-5.10	100	96	10.05	10.05	215.84	94.60	508.71	222.97	2.357
53	-5.20	100	97	10.05	20.11	224.17	96.98	1005.54	434.99	4.486
54	-5.30	100	98	10.05	20.11	232.76	99.37	1014.70	433.20	4.359
55	-5.40	100	99	10.05	10.05	241.61	101.79	523.15	220.41	2.165
56	-5.50	100	100	10.05	10.05	250.73	104.23	527.78	219.41	2.105
57	-5.60	100	101	10.05	10.05	260.11	106.70	532.31	218.35	2.046
58	-5.70	100	102	10.05	10.05	269.78	109.18	536.83	217.27	1.990
59	-5.80	100	103	10.05	10.05	279.72	111.69	541.32	216.15	1.935
60	-5.90	100	104	10.05	10.05	289.94	114.22	545.80	215.02	1.882
61	-6.00	100	105	10.05	10.05	300.46	116.78	550.25	213.86	1.831

**Mensola valle**

Combinazione n° 1 - STR (A1-M1-R3)

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	Y [m]	B [cm]	H [cm]	Afi [cmq]	Afs [cmq]	M [kNm]	N [kN]	Mu [kNm]	Nu [kN]	FS
1	-0.75	100	50	8.04	8.04	0.00	0.00	0.00	0.00	1000.000
2	-0.67	100	50	8.04	8.04	-0.04	0.00	0.00	0.00	1000.000
3	-0.58	100	50	8.04	8.04	-0.17	0.00	-140.19	0.00	823.421
4	-0.50	100	50	8.04	8.04	-0.38	0.00	-140.19	0.00	365.965

Combinazione n° 2 - STR (A1-M1-R3) H + V

n°	Y [m]	B [cm]	H [cm]	Afi [cmq]	Afs [cmq]	M [kNm]	N [kN]	Mu [kNm]	Nu [kN]	FS
1	-0.75	100	50	8.04	8.04	0.00	0.00	0.00	0.00	1000.000
2	-0.67	100	50	8.04	8.04	-0.05	0.00	0.00	0.00	1000.000
3	-0.58	100	50	8.04	8.04	-0.18	0.00	-140.19	0.00	768.661
4	-0.50	100	50	8.04	8.04	-0.41	0.00	-140.19	0.00	341.627

Combinazione n° 3 - STR (A1-M1-R3)

n°	Y [m]	B [cm]	H [cm]	Afi [cmq]	Afs [cmq]	M [kNm]	N [kN]	Mu [kNm]	Nu [kN]	FS
1	-0.75	100	50	8.04	8.04	0.00	0.00	0.00	0.00	1000.000
2	-0.67	100	50	8.04	8.04	-0.04	0.00	0.00	0.00	1000.000
3	-0.58	100	50	8.04	8.04	-0.17	0.00	-140.19	0.00	823.421
4	-0.50	100	50	8.04	8.04	-0.38	0.00	-140.19	0.00	365.965

Combinazione n° 4 - STR (A1-M1-R3) H - V

n°	Y [m]	B [cm]	H [cm]	Afi [cmq]	Afs [cmq]	M [kNm]	N [kN]	Mu [kNm]	Nu [kN]	FS
1	-0.75	100	50	8.04	8.04	0.00	0.00	0.00	0.00	1000.000
2	-0.67	100	50	8.04	8.04	-0.04	0.00	0.00	0.00	1000.000
3	-0.58	100	50	8.04	8.04	-0.17	0.00	-140.19	0.00	823.421
4	-0.50	100	50	8.04	8.04	-0.38	0.00	-140.19	0.00	365.965

Combinazione n° 13 - ECC

n°	Y [m]	B [cm]	H [cm]	Afi [cmq]	Afs [cmq]	M [kNm]	N [kN]	Mu [kNm]	Nu [kN]	FS
1	-0.75	100	50	8.04	8.04	0.00	0.00	0.00	0.00	1000.000
2	-0.67	100	50	8.04	8.04	-0.04	0.00	0.00	0.00	1000.000
3	-0.58	100	50	8.04	8.04	-0.17	0.00	-162.29	0.00	953.202
4	-0.50	100	50	8.04	8.04	-0.38	0.00	-162.29	0.00	423.645

**Fondazione**Combinazione n° 1 - STR (A1-M1-R3)

n°	Y [m]	B [cm]	H [cm]	Afi [cmq]	Afs [cmq]	M [kNm]	N [kN]	Mu [kNm]	Nu [kN]	FS
1	-1.55	100	105	22.12	22.12	0.00	0.00	0.00	0.00	1000.000
2	-1.45	100	105	22.12	22.12	0.51	0.00	0.00	0.00	1000.000
3	-1.36	100	105	22.12	22.12	2.02	0.00	845.72	0.00	418.320
4	-1.26	100	105	22.12	22.12	4.55	0.00	845.72	0.00	185.886
5	-1.17	100	105	22.12	22.12	8.09	0.00	845.72	0.00	104.542
6	-1.07	100	105	22.12	22.12	12.64	0.00	845.72	0.00	66.895
7	-0.98	100	105	22.12	22.12	18.21	0.00	845.72	0.00	46.446
8	-0.88	100	105	22.12	22.12	24.79	0.00	845.72	0.00	34.118



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## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
9	-0.79	100	105	22.12	22.12	32.38	0.00	845.72	0.00	26.117
10	-0.69	100	105	22.12	22.12	40.99	0.00	845.72	0.00	20.632
11	-0.60	100	105	22.12	22.12	50.62	0.00	845.72	0.00	16.709
12	-0.50	100	105	22.12	22.12	61.26	0.00	845.72	0.00	13.806
13	0.55	100	105	22.12	22.12	-146.17	0.00	-845.72	0.00	5.786
14	0.65	100	105	22.12	22.12	-136.18	0.00	-845.72	0.00	6.210
15	0.75	100	105	22.12	22.12	-126.55	0.00	-845.72	0.00	6.683
16	0.85	100	105	22.12	22.12	-117.28	0.00	-845.72	0.00	7.211
17	0.95	100	105	22.12	22.12	-108.37	0.00	-845.72	0.00	7.804
18	1.05	100	105	22.12	22.12	-99.81	0.00	-845.72	0.00	8.473
19	1.15	100	105	22.12	22.12	-91.61	0.00	-845.72	0.00	9.232
20	1.25	100	105	22.12	22.12	-83.77	0.00	-845.72	0.00	10.096
21	1.35	100	105	22.12	22.12	-76.28	0.00	-845.72	0.00	11.087
22	1.45	100	105	22.12	22.12	-69.15	0.00	-845.72	0.00	12.231
23	1.55	100	105	22.12	22.12	-62.37	0.00	-845.72	0.00	13.560
24	1.65	100	105	22.12	22.12	-55.94	0.00	-845.72	0.00	15.118
25	1.75	100	105	22.12	22.12	-49.87	0.00	-845.72	0.00	16.959
26	1.85	100	105	22.12	22.12	-44.15	0.00	-845.72	0.00	19.157
27	1.95	100	105	22.12	22.12	-38.78	0.00	-845.72	0.00	21.810
28	2.05	100	105	22.12	22.12	-33.76	0.00	-845.72	0.00	25.052
29	2.15	100	105	22.12	22.12	-29.09	0.00	-845.72	0.00	29.072
30	2.25	100	105	22.12	22.12	-24.77	0.00	-845.72	0.00	34.140
31	2.35	100	105	22.12	22.12	-20.80	0.00	-845.72	0.00	40.655
32	2.45	100	105	22.12	22.12	-17.18	0.00	-845.72	0.00	49.222
33	2.55	100	105	22.12	22.12	-13.91	0.00	-845.72	0.00	60.805
34	2.65	100	105	22.12	22.12	-10.98	0.00	-845.72	0.00	77.004
35	2.75	100	105	22.12	22.12	-8.40	0.00	-845.72	0.00	100.638
36	2.85	100	105	22.12	22.12	-6.17	0.00	-845.72	0.00	137.064
37	2.95	100	105	22.12	22.12	-4.28	0.00	-845.72	0.00	197.492
38	3.05	100	105	22.12	22.12	-2.74	0.00	-845.72	0.00	308.771
39	3.15	100	105	22.12	22.12	-1.54	0.00	-845.72	0.00	549.263
40	3.25	100	105	22.12	22.12	-0.68	0.00	0.00	0.00	1000.000
41	3.35	100	105	22.12	22.12	-0.17	0.00	0.00	0.00	1000.000
42	3.45	100	105	22.12	22.12	0.00	0.00	0.00	0.00	1000.000

## Combinazione n° 2 - STR (A1-M1-R3) H + V

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
1	-1.55	100	105	22.12	22.12	0.00	0.00	0.00	0.00	1000.000
2	-1.45	100	105	22.12	22.12	0.95	0.00	845.72	0.00	889.111
3	-1.36	100	105	22.12	22.12	3.78	0.00	845.72	0.00	223.470
4	-1.26	100	105	22.12	22.12	8.47	0.00	845.72	0.00	99.855
5	-1.17	100	105	22.12	22.12	14.98	0.00	845.72	0.00	56.473
6	-1.07	100	105	22.12	22.12	23.27	0.00	845.72	0.00	36.340
7	-0.98	100	105	22.12	22.12	33.33	0.00	845.72	0.00	25.374
8	-0.88	100	105	22.12	22.12	45.12	0.00	845.72	0.00	18.745
9	-0.79	100	105	22.12	22.12	58.60	0.00	845.72	0.00	14.431
10	-0.69	100	105	22.12	22.12	73.76	0.00	845.72	0.00	11.466
11	-0.60	100	105	22.12	22.12	90.55	0.00	845.72	0.00	9.339
12	-0.50	100	105	22.12	22.12	108.96	0.00	845.72	0.00	7.762
13	0.55	100	105	22.12	22.12	-189.81	0.00	-845.72	0.00	4.456
14	0.65	100	105	22.12	22.12	-181.52	0.00	-845.72	0.00	4.659
15	0.75	100	105	22.12	22.12	-173.04	0.00	-845.72	0.00	4.887
16	0.85	100	105	22.12	22.12	-164.40	0.00	-845.72	0.00	5.144
17	0.95	100	105	22.12	22.12	-155.65	0.00	-845.72	0.00	5.434
18	1.05	100	105	22.12	22.12	-146.80	0.00	-845.72	0.00	5.761
19	1.15	100	105	22.12	22.12	-137.91	0.00	-845.72	0.00	6.132
20	1.25	100	105	22.12	22.12	-129.00	0.00	-845.72	0.00	6.556
21	1.35	100	105	22.12	22.12	-120.11	0.00	-845.72	0.00	7.041
22	1.45	100	105	22.12	22.12	-111.28	0.00	-845.72	0.00	7.600
23	1.55	100	105	22.12	22.12	-102.54	0.00	-845.72	0.00	8.248
24	1.65	100	105	22.12	22.12	-93.92	0.00	-845.72	0.00	9.005
25	1.75	100	105	22.12	22.12	-85.46	0.00	-845.72	0.00	9.896
26	1.85	100	105	22.12	22.12	-77.19	0.00	-845.72	0.00	10.956
27	1.95	100	105	22.12	22.12	-69.16	0.00	-845.72	0.00	12.229
28	2.05	100	105	22.12	22.12	-61.39	0.00	-845.72	0.00	13.777

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## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
29	2.15	100	105	22.12	22.12	-53.92	0.00	-845.72	0.00	15.685
30	2.25	100	105	22.12	22.12	-46.78	0.00	-845.72	0.00	18.078
31	2.35	100	105	22.12	22.12	-40.02	0.00	-845.72	0.00	21.135
32	2.45	100	105	22.12	22.12	-33.65	0.00	-845.72	0.00	25.130
33	2.55	100	105	22.12	22.12	-27.73	0.00	-845.72	0.00	30.496
34	2.65	100	105	22.12	22.12	-22.29	0.00	-845.72	0.00	37.950
35	2.75	100	105	22.12	22.12	-17.35	0.00	-845.72	0.00	48.750
36	2.85	100	105	22.12	22.12	-12.96	0.00	-845.72	0.00	65.278
37	2.95	100	105	22.12	22.12	-9.14	0.00	-845.72	0.00	92.501
38	3.05	100	105	22.12	22.12	-5.94	0.00	-845.72	0.00	142.264
39	3.15	100	105	22.12	22.12	-3.40	0.00	-845.72	0.00	249.004
40	3.25	100	105	22.12	22.12	-1.53	0.00	-845.72	0.00	551.730
41	3.35	100	105	22.12	22.12	-0.39	0.00	0.00	0.00	1000.000
42	3.45	100	105	22.12	22.12	0.00	0.00	0.00	0.00	1000.000

## Combinazione n° 3 - STR (A1-M1-R3)

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
1	-1.55	100	105	22.12	22.12	0.00	0.00	0.00	0.00	1000.000
2	-1.45	100	105	22.12	22.12	0.64	0.00	0.00	0.00	1000.000
3	-1.36	100	105	22.12	22.12	2.54	0.00	845.72	0.00	332.395
4	-1.26	100	105	22.12	22.12	5.73	0.00	845.72	0.00	147.649
5	-1.17	100	105	22.12	22.12	10.19	0.00	845.72	0.00	83.007
6	-1.07	100	105	22.12	22.12	15.93	0.00	845.72	0.00	53.095
7	-0.98	100	105	22.12	22.12	22.95	0.00	845.72	0.00	36.851
8	-0.88	100	105	22.12	22.12	31.25	0.00	845.72	0.00	27.059
9	-0.79	100	105	22.12	22.12	40.84	0.00	845.72	0.00	20.706
10	-0.69	100	105	22.12	22.12	51.72	0.00	845.72	0.00	16.351
11	-0.60	100	105	22.12	22.12	63.89	0.00	845.72	0.00	13.237
12	-0.50	100	105	22.12	22.12	77.35	0.00	845.72	0.00	10.934
13	0.55	100	105	22.12	22.12	-177.15	0.00	-845.72	0.00	4.774
14	0.65	100	105	22.12	22.12	-164.38	0.00	-845.72	0.00	5.145
15	0.75	100	105	22.12	22.12	-152.11	0.00	-845.72	0.00	5.560
16	0.85	100	105	22.12	22.12	-140.33	0.00	-845.72	0.00	6.027
17	0.95	100	105	22.12	22.12	-129.05	0.00	-845.72	0.00	6.554
18	1.05	100	105	22.12	22.12	-118.25	0.00	-845.72	0.00	7.152
19	1.15	100	105	22.12	22.12	-107.95	0.00	-845.72	0.00	7.834
20	1.25	100	105	22.12	22.12	-98.13	0.00	-845.72	0.00	8.618
21	1.35	100	105	22.12	22.12	-88.79	0.00	-845.72	0.00	9.525
22	1.45	100	105	22.12	22.12	-79.94	0.00	-845.72	0.00	10.580
23	1.55	100	105	22.12	22.12	-71.56	0.00	-845.72	0.00	11.819
24	1.65	100	105	22.12	22.12	-63.66	0.00	-845.72	0.00	13.286
25	1.75	100	105	22.12	22.12	-56.23	0.00	-845.72	0.00	15.041
26	1.85	100	105	22.12	22.12	-49.27	0.00	-845.72	0.00	17.166
27	1.95	100	105	22.12	22.12	-42.78	0.00	-845.72	0.00	19.770
28	2.05	100	105	22.12	22.12	-36.75	0.00	-845.72	0.00	23.010
29	2.15	100	105	22.12	22.12	-31.19	0.00	-845.72	0.00	27.111
30	2.25	100	105	22.12	22.12	-26.10	0.00	-845.72	0.00	32.409
31	2.35	100	105	22.12	22.12	-21.46	0.00	-845.72	0.00	39.418
32	2.45	100	105	22.12	22.12	-17.27	0.00	-845.72	0.00	48.966
33	2.55	100	105	22.12	22.12	-13.54	0.00	-845.72	0.00	62.453
34	2.65	100	105	22.12	22.12	-10.26	0.00	-845.72	0.00	82.402
35	2.75	100	105	22.12	22.12	-7.43	0.00	-845.72	0.00	113.762
36	2.85	100	105	22.12	22.12	-5.05	0.00	-845.72	0.00	167.418
37	2.95	100	105	22.12	22.12	-3.11	0.00	-845.72	0.00	271.655
38	3.05	100	105	22.12	22.12	-1.81	0.00	-845.72	0.00	467.952
39	3.15	100	105	22.12	22.12	-1.01	0.00	-845.72	0.00	834.902
40	3.25	100	105	22.12	22.12	-0.45	0.00	0.00	0.00	1000.000
41	3.35	100	105	22.12	22.12	-0.11	0.00	0.00	0.00	1000.000
42	3.45	100	105	22.12	22.12	0.00	0.00	0.00	0.00	1000.000

## Combinazione n° 4 - STR (A1-M1-R3) H - V

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## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

n°	Y [m]	B [cm]	H [cm]	Afi [cmq]	Afs [cmq]	M [kNm]	N [kN]	Mu [kNm]	Nu [kN]	FS
1	-1.55	100	105	22.12	22.12	0.00	0.00	0.00	0.00	1000.000
2	-1.45	100	105	22.12	22.12	0.86	0.00	845.72	0.00	982.211
3	-1.36	100	105	22.12	22.12	3.42	0.00	845.72	0.00	246.987
4	-1.26	100	105	22.12	22.12	7.66	0.00	845.72	0.00	110.417
5	-1.17	100	105	22.12	22.12	13.54	0.00	845.72	0.00	62.477
6	-1.07	100	105	22.12	22.12	21.03	0.00	845.72	0.00	40.223
7	-0.98	100	105	22.12	22.12	30.10	0.00	845.72	0.00	28.099
8	-0.88	100	105	22.12	22.12	40.72	0.00	845.72	0.00	20.769
9	-0.79	100	105	22.12	22.12	52.87	0.00	845.72	0.00	15.997
10	-0.69	100	105	22.12	22.12	66.50	0.00	845.72	0.00	12.717
11	-0.60	100	105	22.12	22.12	81.60	0.00	845.72	0.00	10.364
12	-0.50	100	105	22.12	22.12	98.14	0.00	845.72	0.00	8.618
13	0.55	100	105	22.12	22.12	-264.44	0.00	-845.72	0.00	3.198
14	0.65	100	105	22.12	22.12	-251.02	0.00	-845.72	0.00	3.369
15	0.75	100	105	22.12	22.12	-237.60	0.00	-845.72	0.00	3.559
16	0.85	100	105	22.12	22.12	-224.22	0.00	-845.72	0.00	3.772
17	0.95	100	105	22.12	22.12	-210.89	0.00	-845.72	0.00	4.010
18	1.05	100	105	22.12	22.12	-197.67	0.00	-845.72	0.00	4.278
19	1.15	100	105	22.12	22.12	-184.58	0.00	-845.72	0.00	4.582
20	1.25	100	105	22.12	22.12	-171.66	0.00	-845.72	0.00	4.927
21	1.35	100	105	22.12	22.12	-158.95	0.00	-845.72	0.00	5.321
22	1.45	100	105	22.12	22.12	-146.47	0.00	-845.72	0.00	5.774
23	1.55	100	105	22.12	22.12	-134.26	0.00	-845.72	0.00	6.299
24	1.65	100	105	22.12	22.12	-122.37	0.00	-845.72	0.00	6.911
25	1.75	100	105	22.12	22.12	-110.81	0.00	-845.72	0.00	7.632
26	1.85	100	105	22.12	22.12	-99.63	0.00	-845.72	0.00	8.489
27	1.95	100	105	22.12	22.12	-88.86	0.00	-845.72	0.00	9.518
28	2.05	100	105	22.12	22.12	-78.53	0.00	-845.72	0.00	10.769
29	2.15	100	105	22.12	22.12	-68.68	0.00	-845.72	0.00	12.313
30	2.25	100	105	22.12	22.12	-59.35	0.00	-845.72	0.00	14.249
31	2.35	100	105	22.12	22.12	-50.57	0.00	-845.72	0.00	16.725
32	2.45	100	105	22.12	22.12	-42.37	0.00	-845.72	0.00	19.962
33	2.55	100	105	22.12	22.12	-34.78	0.00	-845.72	0.00	24.315
34	2.65	100	105	22.12	22.12	-27.85	0.00	-845.72	0.00	30.367
35	2.75	100	105	22.12	22.12	-21.60	0.00	-845.72	0.00	39.146
36	2.85	100	105	22.12	22.12	-16.08	0.00	-845.72	0.00	52.596
37	2.95	100	105	22.12	22.12	-11.31	0.00	-845.72	0.00	74.776
38	3.05	100	105	22.12	22.12	-7.33	0.00	-845.72	0.00	115.371
39	3.15	100	105	22.12	22.12	-4.18	0.00	-845.72	0.00	202.562
40	3.25	100	105	22.12	22.12	-1.88	0.00	-845.72	0.00	450.186
41	3.35	100	105	22.12	22.12	-0.48	0.00	0.00	0.00	1000.000
42	3.45	100	105	22.12	22.12	0.00	0.00	0.00	0.00	1000.000

## Combinazione n° 13 - ECC

n°	Y [m]	B [cm]	H [cm]	Afi [cmq]	Afs [cmq]	M [kNm]	N [kN]	Mu [kNm]	Nu [kN]	FS
1	-1.55	100	105	22.12	22.12	0.00	0.00	0.00	0.00	1000.000
2	-1.45	100	105	22.12	22.12	0.59	0.00	0.00	0.00	1000.000
3	-1.36	100	105	22.12	22.12	2.37	0.00	975.50	0.00	411.102
4	-1.26	100	105	22.12	22.12	5.33	0.00	975.50	0.00	183.089
5	-1.17	100	105	22.12	22.12	9.45	0.00	975.50	0.00	103.200
6	-1.07	100	105	22.12	22.12	14.74	0.00	975.50	0.00	66.185
7	-0.98	100	105	22.12	22.12	21.18	0.00	975.50	0.00	46.057
8	-0.88	100	105	22.12	22.12	28.77	0.00	975.50	0.00	33.908
9	-0.79	100	105	22.12	22.12	37.50	0.00	975.50	0.00	26.015
10	-0.69	100	105	22.12	22.12	47.36	0.00	975.50	0.00	20.598
11	-0.60	100	105	22.12	22.12	58.35	0.00	975.50	0.00	16.719
12	-0.50	100	105	22.12	22.12	70.45	0.00	975.50	0.00	13.846
13	0.55	100	105	22.12	22.12	-72.14	0.00	-975.50	0.00	13.522
14	0.65	100	105	22.12	22.12	-68.35	0.00	-975.50	0.00	14.272
15	0.75	100	105	22.12	22.12	-64.58	0.00	-975.50	0.00	15.106
16	0.85	100	105	22.12	22.12	-60.83	0.00	-975.50	0.00	16.036
17	0.95	100	105	22.12	22.12	-57.12	0.00	-975.50	0.00	17.079
18	1.05	100	105	22.12	22.12	-53.45	0.00	-975.50	0.00	18.252
19	1.15	100	105	22.12	22.12	-49.83	0.00	-975.50	0.00	19.577
20	1.25	100	105	22.12	22.12	-46.27	0.00	-975.50	0.00	21.084

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
21	1.35	100	105	22.12	22.12	-42.78	0.00	-975.50	0.00	22.805
22	1.45	100	105	22.12	22.12	-39.36	0.00	-975.50	0.00	24.784
23	1.55	100	105	22.12	22.12	-36.03	0.00	-975.50	0.00	27.076
24	1.65	100	105	22.12	22.12	-32.79	0.00	-975.50	0.00	29.750
25	1.75	100	105	22.12	22.12	-29.65	0.00	-975.50	0.00	32.897
26	1.85	100	105	22.12	22.12	-26.63	0.00	-975.50	0.00	36.637
27	1.95	100	105	22.12	22.12	-23.72	0.00	-975.50	0.00	41.130
28	2.05	100	105	22.12	22.12	-20.94	0.00	-975.50	0.00	46.596
29	2.15	100	105	22.12	22.12	-18.29	0.00	-975.50	0.00	53.340
30	2.25	100	105	22.12	22.12	-15.78	0.00	-975.50	0.00	61.799
31	2.35	100	105	22.12	22.12	-13.43	0.00	-975.50	0.00	72.617
32	2.45	100	105	22.12	22.12	-11.24	0.00	-975.50	0.00	86.771
33	2.55	100	105	22.12	22.12	-9.22	0.00	-975.50	0.00	105.804
34	2.65	100	105	22.12	22.12	-7.37	0.00	-975.50	0.00	132.279
35	2.75	100	105	22.12	22.12	-5.71	0.00	-975.50	0.00	170.695
36	2.85	100	105	22.12	22.12	-4.25	0.00	-975.50	0.00	229.575
37	2.95	100	105	22.12	22.12	-2.99	0.00	-975.50	0.00	326.706
38	3.05	100	105	22.12	22.12	-1.93	0.00	-975.50	0.00	504.554
39	3.15	100	105	22.12	22.12	-1.10	0.00	-975.50	0.00	886.694
40	3.25	100	105	22.12	22.12	-0.49	0.00	0.00	0.00	1000.000
41	3.35	100	105	22.12	22.12	-0.13	0.00	0.00	0.00	1000.000
42	3.45	100	105	22.12	22.12	0.00	0.00	0.00	0.00	1000.000

**Verifiche a taglio****Simbologia adottata**

Is	indice sezione
Y	ordinata sezione espressa in [m]
B	larghezza sezione espresso in [cm]
H	altezza sezione espressa in [cm]
A <sub>sw</sub>	area ferri a taglio espresso in [cmq]
cotgθ	inclinazione delle bielle compresse, θ inclinazione dei puntoni di calcestruzzo
V <sub>Rcd</sub>	resistenza di progetto a 'taglio compressione' espressa in [kN]
V <sub>Rsd</sub>	resistenza di progetto a 'taglio trazione' espressa in [kN]
V <sub>Rd</sub>	resistenza di progetto a taglio espresso in [kN]. Per elementi con armature trasversali resistenti al taglio (A <sub>sw</sub> >0.0) V <sub>Rd</sub> =min(V <sub>Rcd</sub> , V <sub>Rsd</sub> ).
T	taglio agente espressa in [kN]
FS	fattore di sicurezza (rapporto tra sollecitazione resistente e sollecitazione agente)

**Paramento****Combinazione n° 1 - STR (A1-M1-R3)**

n°	Y	B	H	A <sub>sw</sub>	s	cotθ	V <sub>Rcd</sub>	V <sub>Rsd</sub>	V <sub>Rd</sub>	T	FS
	[m]	[cm]	[cm]	[cmq]	[cm]		[kN]	[kN]	[kN]	[kN]	
1	0.00	100	50	0.00	0.00	--	0.00	0.00	225.46	0.00	100.000
2	-0.10	100	51	0.00	0.00	--	0.00	0.00	227.70	0.03	7350.323
3	-0.20	100	52	0.00	0.00	--	0.00	0.00	229.94	0.12	1855.612
4	-0.30	100	53	0.00	0.00	--	0.00	0.00	232.16	0.28	834.968
5	-0.40	100	54	0.00	0.00	--	0.00	0.00	234.37	0.49	475.770
6	-0.50	100	55	0.00	0.00	--	0.00	0.00	236.57	0.77	308.036
7	-0.60	100	55	0.00	0.00	--	0.00	0.00	238.76	1.10	216.155
8	-0.70	100	56	0.00	0.00	--	0.00	0.00	240.93	1.50	160.373
9	-0.80	100	57	0.00	0.00	--	0.00	0.00	243.10	1.96	123.949
10	-0.90	100	58	0.00	0.00	--	0.00	0.00	245.26	2.48	98.836
11	-1.00	100	59	0.00	0.00	--	0.00	0.00	247.41	3.06	80.777

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## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
12	-1.10	100	60	0.00	0.00	--	0.00	0.00	249.55	3.71	67.347
13	-1.20	100	61	0.00	0.00	--	0.00	0.00	251.68	4.41	57.080
14	-1.30	100	62	0.00	0.00	--	0.00	0.00	253.80	5.17	49.051
15	-1.40	100	63	0.00	0.00	--	0.00	0.00	255.91	6.00	42.650
16	-1.50	100	64	0.00	0.00	--	0.00	0.00	258.01	6.89	37.461
17	-1.60	100	65	0.00	0.00	--	0.00	0.00	260.11	7.84	33.194
18	-1.70	100	65	0.00	0.00	--	0.00	0.00	262.20	8.85	29.641
19	-1.80	100	66	0.00	0.00	--	0.00	0.00	264.28	9.92	26.650
20	-1.90	100	67	0.00	0.00	--	0.00	0.00	266.35	11.05	24.107
21	-2.00	100	68	0.00	0.00	--	0.00	0.00	268.42	12.24	21.926
22	-2.10	100	69	0.00	0.00	--	0.00	0.00	270.48	13.50	20.041
23	-2.20	100	70	0.00	0.00	--	0.00	0.00	272.53	14.81	18.399
24	-2.30	100	71	0.00	0.00	--	0.00	0.00	274.58	16.19	16.961
25	-2.40	100	72	0.00	0.00	--	0.00	0.00	276.62	17.63	15.693
26	-2.50	100	73	0.00	0.00	--	0.00	0.00	278.66	19.13	14.569
27	-2.60	100	74	0.00	0.00	--	0.00	0.00	280.69	20.69	13.568
28	-2.70	100	75	0.00	0.00	--	0.00	0.00	282.71	22.31	12.673
29	-2.80	100	75	0.00	0.00	--	0.00	0.00	284.73	23.99	11.868
30	-2.90	100	76	0.00	0.00	--	0.00	0.00	286.74	25.74	11.142
31	-3.00	100	77	0.00	0.00	--	0.00	0.00	288.75	27.54	10.484
32	-3.10	100	78	0.00	0.00	--	0.00	0.00	290.75	29.41	9.887
33	-3.20	100	79	0.00	0.00	--	0.00	0.00	293.40	31.34	9.363
34	-3.30	100	80	0.00	0.00	--	0.00	0.00	296.26	33.32	8.890
35	-3.40	100	81	0.00	0.00	--	0.00	0.00	299.11	35.37	8.456
36	-3.50	100	82	0.00	0.00	--	0.00	0.00	301.97	37.49	8.056
37	-3.60	100	83	0.00	0.00	--	0.00	0.00	304.83	39.66	7.686
38	-3.70	100	84	0.00	0.00	--	0.00	0.00	307.68	41.89	7.345
39	-3.80	100	85	0.00	0.00	--	0.00	0.00	310.54	44.19	7.028
40	-3.90	100	85	0.00	0.00	--	0.00	0.00	313.39	46.54	6.733
41	-4.00	100	86	0.00	0.00	--	0.00	0.00	316.24	48.96	6.459
42	-4.10	100	87	0.00	0.00	--	0.00	0.00	319.10	51.44	6.204
43	-4.20	100	88	0.00	0.00	--	0.00	0.00	321.95	53.98	5.964
44	-4.30	100	89	0.00	0.00	--	0.00	0.00	324.80	56.58	5.741
45	-4.40	100	90	0.00	0.00	--	0.00	0.00	327.65	59.24	5.531
46	-4.50	100	91	0.00	0.00	--	0.00	0.00	330.50	61.96	5.334
47	-4.60	100	92	0.00	0.00	--	0.00	0.00	333.36	64.75	5.149
48	-4.70	100	93	0.00	0.00	--	0.00	0.00	336.21	67.59	4.974
49	-4.80	100	94	0.00	0.00	--	0.00	0.00	339.06	70.50	4.809
50	-4.90	100	95	0.00	0.00	--	0.00	0.00	341.91	73.47	4.654
51	-5.00	100	96	0.00	0.00	--	0.00	0.00	344.76	76.50	4.507
52	-5.10	100	96	0.00	0.00	--	0.00	0.00	347.61	79.59	4.368
53	-5.20	100	97	0.00	0.00	--	0.00	0.00	377.90	82.74	4.567
54	-5.30	100	98	0.00	0.00	--	0.00	0.00	380.05	85.95	4.422
55	-5.40	100	99	0.00	0.00	--	0.00	0.00	356.17	89.23	3.992
56	-5.50	100	100	0.00	0.00	--	0.00	0.00	359.02	92.56	3.879
57	-5.60	100	101	0.00	0.00	--	0.00	0.00	361.87	95.96	3.771
58	-5.70	100	102	0.00	0.00	--	0.00	0.00	364.72	99.42	3.669
59	-5.80	100	103	0.00	0.00	--	0.00	0.00	367.58	102.93	3.571
60	-5.90	100	104	0.00	0.00	--	0.00	0.00	370.43	106.51	3.478
61	-6.00	100	105	0.00	0.00	--	0.00	0.00	373.29	110.16	3.389

## Combinazione n° 2 - STR (A1-M1-R3) H + V

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
1	0.00	100	50	0.00	0.00	--	0.00	0.00	225.49	0.00	100.000
2	-0.10	100	51	0.00	0.00	--	0.00	0.00	227.73	0.79	288.470
3	-0.20	100	52	0.00	0.00	--	0.00	0.00	229.97	1.63	141.106
4	-0.30	100	53	0.00	0.00	--	0.00	0.00	232.19	2.52	92.128
5	-0.40	100	54	0.00	0.00	--	0.00	0.00	234.40	3.46	67.736
6	-0.50	100	55	0.00	0.00	--	0.00	0.00	236.60	4.45	53.160
7	-0.60	100	55	0.00	0.00	--	0.00	0.00	238.79	5.49	43.486
8	-0.70	100	56	0.00	0.00	--	0.00	0.00	240.97	6.58	36.611
9	-0.80	100	57	0.00	0.00	--	0.00	0.00	243.13	7.72	31.483
10	-0.90	100	58	0.00	0.00	--	0.00	0.00	245.29	8.91	27.518
11	-1.00	100	59	0.00	0.00	--	0.00	0.00	247.44	10.16	24.365
12	-1.10	100	60	0.00	0.00	--	0.00	0.00	249.58	11.45	21.803

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## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

n°	Y	B	H	A <sub>sw</sub>	s	cotθ	V <sub>Rcd</sub>	V <sub>Rsd</sub>	V <sub>Rd</sub>	T	FS
	[m]	[cm]	[cm]	[cmq]	[cm]		[kN]	[kN]	[kN]	[kN]	
13	-1.20	100	61	0.00	0.00	--	0.00	0.00	251.71	12.79	19.681
14	-1.30	100	62	0.00	0.00	--	0.00	0.00	253.83	14.18	17.899
15	-1.40	100	63	0.00	0.00	--	0.00	0.00	255.94	15.62	16.382
16	-1.50	100	64	0.00	0.00	--	0.00	0.00	258.04	17.12	15.076
17	-1.60	100	65	0.00	0.00	--	0.00	0.00	260.14	18.66	13.942
18	-1.70	100	65	0.00	0.00	--	0.00	0.00	262.23	20.25	12.948
19	-1.80	100	66	0.00	0.00	--	0.00	0.00	264.31	21.90	12.071
20	-1.90	100	67	0.00	0.00	--	0.00	0.00	266.38	23.59	11.292
21	-2.00	100	68	0.00	0.00	--	0.00	0.00	268.45	25.33	10.597
22	-2.10	100	69	0.00	0.00	--	0.00	0.00	270.51	27.13	9.972
23	-2.20	100	70	0.00	0.00	--	0.00	0.00	272.57	28.97	9.408
24	-2.30	100	71	0.00	0.00	--	0.00	0.00	274.61	30.87	8.897
25	-2.40	100	72	0.00	0.00	--	0.00	0.00	276.65	32.81	8.432
26	-2.50	100	73	0.00	0.00	--	0.00	0.00	278.69	34.81	8.007
27	-2.60	100	74	0.00	0.00	--	0.00	0.00	280.72	36.85	7.617
28	-2.70	100	75	0.00	0.00	--	0.00	0.00	282.74	38.95	7.259
29	-2.80	100	75	0.00	0.00	--	0.00	0.00	284.76	41.09	6.929
30	-2.90	100	76	0.00	0.00	--	0.00	0.00	286.77	43.29	6.624
31	-3.00	100	77	0.00	0.00	--	0.00	0.00	288.78	45.54	6.342
32	-3.10	100	78	0.00	0.00	--	0.00	0.00	290.79	47.83	6.079
33	-3.20	100	79	0.00	0.00	--	0.00	0.00	293.43	50.18	5.847
34	-3.30	100	80	0.00	0.00	--	0.00	0.00	296.29	52.58	5.635
35	-3.40	100	81	0.00	0.00	--	0.00	0.00	299.14	55.03	5.436
36	-3.50	100	82	0.00	0.00	--	0.00	0.00	302.00	57.52	5.250
37	-3.60	100	83	0.00	0.00	--	0.00	0.00	304.86	60.07	5.075
38	-3.70	100	84	0.00	0.00	--	0.00	0.00	307.71	62.67	4.910
39	-3.80	100	85	0.00	0.00	--	0.00	0.00	310.57	65.32	4.755
40	-3.90	100	85	0.00	0.00	--	0.00	0.00	313.42	68.02	4.608
41	-4.00	100	86	0.00	0.00	--	0.00	0.00	316.27	70.77	4.469
42	-4.10	100	87	0.00	0.00	--	0.00	0.00	319.13	73.57	4.338
43	-4.20	100	88	0.00	0.00	--	0.00	0.00	321.98	76.41	4.214
44	-4.30	100	89	0.00	0.00	--	0.00	0.00	324.83	79.31	4.095
45	-4.40	100	90	0.00	0.00	--	0.00	0.00	327.68	82.26	3.983
46	-4.50	100	91	0.00	0.00	--	0.00	0.00	330.53	85.26	3.877
47	-4.60	100	92	0.00	0.00	--	0.00	0.00	333.39	88.32	3.775
48	-4.70	100	93	0.00	0.00	--	0.00	0.00	336.24	91.42	3.678
49	-4.80	100	94	0.00	0.00	--	0.00	0.00	339.09	94.57	3.586
50	-4.90	100	95	0.00	0.00	--	0.00	0.00	341.94	97.77	3.497
51	-5.00	100	96	0.00	0.00	--	0.00	0.00	344.79	101.02	3.413
52	-5.10	100	96	0.00	0.00	--	0.00	0.00	347.64	104.32	3.332
53	-5.20	100	97	0.00	0.00	--	0.00	0.00	377.93	107.67	3.510
54	-5.30	100	98	0.00	0.00	--	0.00	0.00	380.09	111.08	3.422
55	-5.40	100	99	0.00	0.00	--	0.00	0.00	356.20	114.53	3.110
56	-5.50	100	100	0.00	0.00	--	0.00	0.00	359.05	118.03	3.042
57	-5.60	100	101	0.00	0.00	--	0.00	0.00	361.90	121.58	2.977
58	-5.70	100	102	0.00	0.00	--	0.00	0.00	364.76	125.19	2.914
59	-5.80	100	103	0.00	0.00	--	0.00	0.00	367.61	128.84	2.853
60	-5.90	100	104	0.00	0.00	--	0.00	0.00	370.46	132.55	2.795
61	-6.00	100	105	0.00	0.00	--	0.00	0.00	373.32	136.30	2.739

## Combinazione n° 3 - STR (A1-M1-R3)

n°	Y	B	H	A <sub>sw</sub>	s	cotθ	V <sub>Rcd</sub>	V <sub>Rsd</sub>	V <sub>Rd</sub>	T	FS
	[m]	[cm]	[cm]	[cmq]	[cm]		[kN]	[kN]	[kN]	[kN]	
1	0.00	100	50	0.00	0.00	--	0.00	0.00	225.46	0.00	100.000
2	-0.10	100	51	0.00	0.00	--	0.00	0.00	227.70	1.18	193.084
3	-0.20	100	52	0.00	0.00	--	0.00	0.00	229.94	2.42	94.993
4	-0.30	100	53	0.00	0.00	--	0.00	0.00	232.16	3.72	62.357
5	-0.40	100	54	0.00	0.00	--	0.00	0.00	234.37	5.09	46.082
6	-0.50	100	55	0.00	0.00	--	0.00	0.00	236.57	6.51	36.341
7	-0.60	100	55	0.00	0.00	--	0.00	0.00	238.76	7.99	29.865
8	-0.70	100	56	0.00	0.00	--	0.00	0.00	240.93	9.54	25.253
9	-0.80	100	57	0.00	0.00	--	0.00	0.00	243.10	11.15	21.807
10	-0.90	100	58	0.00	0.00	--	0.00	0.00	245.26	12.82	19.136
11	-1.00	100	59	0.00	0.00	--	0.00	0.00	247.41	14.55	17.008
12	-1.10	100	60	0.00	0.00	--	0.00	0.00	249.55	16.34	15.275
13	-1.20	100	61	0.00	0.00	--	0.00	0.00	251.68	18.19	13.836

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## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

n°	Y	B	H	A <sub>sw</sub>	s	cotθ	V <sub>Rcd</sub>	V <sub>Rsd</sub>	V <sub>Rd</sub>	T	FS
	[m]	[cm]	[cm]	[cmq]	[cm]		[kN]	[kN]	[kN]	[kN]	
14	-1.30	100	62	0.00	0.00	--	0.00	0.00	253.80	20.10	12.625
15	-1.40	100	63	0.00	0.00	--	0.00	0.00	255.91	22.08	11.592
16	-1.50	100	64	0.00	0.00	--	0.00	0.00	258.01	24.11	10.700
17	-1.60	100	65	0.00	0.00	--	0.00	0.00	260.11	26.21	9.924
18	-1.70	100	65	0.00	0.00	--	0.00	0.00	262.20	28.37	9.243
19	-1.80	100	66	0.00	0.00	--	0.00	0.00	264.28	30.59	8.640
20	-1.90	100	67	0.00	0.00	--	0.00	0.00	266.35	32.87	8.104
21	-2.00	100	68	0.00	0.00	--	0.00	0.00	268.42	35.21	7.624
22	-2.10	100	69	0.00	0.00	--	0.00	0.00	270.48	37.61	7.191
23	-2.20	100	70	0.00	0.00	--	0.00	0.00	272.53	40.08	6.800
24	-2.30	100	71	0.00	0.00	--	0.00	0.00	274.58	42.60	6.445
25	-2.40	100	72	0.00	0.00	--	0.00	0.00	276.62	45.19	6.122
26	-2.50	100	73	0.00	0.00	--	0.00	0.00	278.66	47.84	5.825
27	-2.60	100	74	0.00	0.00	--	0.00	0.00	280.69	50.54	5.553
28	-2.70	100	75	0.00	0.00	--	0.00	0.00	282.71	53.31	5.303
29	-2.80	100	75	0.00	0.00	--	0.00	0.00	284.73	56.15	5.071
30	-2.90	100	76	0.00	0.00	--	0.00	0.00	286.74	59.04	4.857
31	-3.00	100	77	0.00	0.00	--	0.00	0.00	288.75	61.99	4.658
32	-3.10	100	78	0.00	0.00	--	0.00	0.00	290.75	65.01	4.473
33	-3.20	100	79	0.00	0.00	--	0.00	0.00	293.40	68.08	4.309
34	-3.30	100	80	0.00	0.00	--	0.00	0.00	296.26	71.22	4.160
35	-3.40	100	81	0.00	0.00	--	0.00	0.00	299.11	74.42	4.019
36	-3.50	100	82	0.00	0.00	--	0.00	0.00	301.97	77.68	3.887
37	-3.60	100	83	0.00	0.00	--	0.00	0.00	304.83	81.00	3.763
38	-3.70	100	84	0.00	0.00	--	0.00	0.00	307.68	84.38	3.646
39	-3.80	100	85	0.00	0.00	--	0.00	0.00	310.54	87.82	3.536
40	-3.90	100	85	0.00	0.00	--	0.00	0.00	313.39	91.33	3.431
41	-4.00	100	86	0.00	0.00	--	0.00	0.00	316.24	94.89	3.333
42	-4.10	100	87	0.00	0.00	--	0.00	0.00	319.10	98.52	3.239
43	-4.20	100	88	0.00	0.00	--	0.00	0.00	321.95	102.21	3.150
44	-4.30	100	89	0.00	0.00	--	0.00	0.00	324.80	105.96	3.065
45	-4.40	100	90	0.00	0.00	--	0.00	0.00	327.65	109.77	2.985
46	-4.50	100	91	0.00	0.00	--	0.00	0.00	330.50	113.63	2.909
47	-4.60	100	92	0.00	0.00	--	0.00	0.00	333.36	117.54	2.836
48	-4.70	100	93	0.00	0.00	--	0.00	0.00	336.21	121.47	2.768
49	-4.80	100	94	0.00	0.00	--	0.00	0.00	339.06	125.40	2.704
50	-4.90	100	95	0.00	0.00	--	0.00	0.00	341.91	129.33	2.644
51	-5.00	100	96	0.00	0.00	--	0.00	0.00	344.76	133.24	2.587
52	-5.10	100	96	0.00	0.00	--	0.00	0.00	347.61	137.13	2.535
53	-5.20	100	97	0.00	0.00	--	0.00	0.00	377.90	141.01	2.680
54	-5.30	100	98	0.00	0.00	--	0.00	0.00	380.05	144.89	2.623
55	-5.40	100	99	0.00	0.00	--	0.00	0.00	356.17	148.79	2.394
56	-5.50	100	100	0.00	0.00	--	0.00	0.00	359.02	152.72	2.351
57	-5.60	100	101	0.00	0.00	--	0.00	0.00	361.87	156.71	2.309
58	-5.70	100	102	0.00	0.00	--	0.00	0.00	364.72	160.75	2.269
59	-5.80	100	103	0.00	0.00	--	0.00	0.00	367.58	164.86	2.230
60	-5.90	100	104	0.00	0.00	--	0.00	0.00	370.43	169.04	2.191
61	-6.00	100	105	0.00	0.00	--	0.00	0.00	373.29	173.27	2.154

## Combinazione n° 4 - STR (A1-M1-R3) H - V

n°	Y	B	H	A <sub>sw</sub>	s	cotθ	V <sub>Rcd</sub>	V <sub>Rsd</sub>	V <sub>Rd</sub>	T	FS
	[m]	[cm]	[cm]	[cmq]	[cm]		[kN]	[kN]	[kN]	[kN]	
1	0.00	100	50	0.00	0.00	--	0.00	0.00	225.46	0.00	100.000
2	-0.10	100	51	0.00	0.00	--	0.00	0.00	227.70	0.60	379.371
3	-0.20	100	52	0.00	0.00	--	0.00	0.00	229.94	1.25	183.764
4	-0.30	100	53	0.00	0.00	--	0.00	0.00	232.16	1.95	118.900
5	-0.40	100	54	0.00	0.00	--	0.00	0.00	234.37	2.70	86.690
6	-0.50	100	55	0.00	0.00	--	0.00	0.00	236.57	3.50	67.505
7	-0.60	100	55	0.00	0.00	--	0.00	0.00	238.76	4.36	54.816
8	-0.70	100	56	0.00	0.00	--	0.00	0.00	240.93	5.26	45.831
9	-0.80	100	57	0.00	0.00	--	0.00	0.00	243.10	6.21	39.155
10	-0.90	100	58	0.00	0.00	--	0.00	0.00	245.26	7.21	34.013
11	-1.00	100	59	0.00	0.00	--	0.00	0.00	247.41	8.26	29.942
12	-1.10	100	60	0.00	0.00	--	0.00	0.00	249.55	9.37	26.646
13	-1.20	100	61	0.00	0.00	--	0.00	0.00	251.68	10.52	23.928
14	-1.30	100	62	0.00	0.00	--	0.00	0.00	253.80	11.72	21.653

VE407

## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
15	-1.40	100	63	0.00	0.00	--	0.00	0.00	255.91	12.97	19.724
16	-1.50	100	64	0.00	0.00	--	0.00	0.00	258.01	14.28	18.071
17	-1.60	100	65	0.00	0.00	--	0.00	0.00	260.11	15.63	16.640
18	-1.70	100	65	0.00	0.00	--	0.00	0.00	262.20	17.04	15.391
19	-1.80	100	66	0.00	0.00	--	0.00	0.00	264.28	18.49	14.293
20	-1.90	100	67	0.00	0.00	--	0.00	0.00	266.35	19.99	13.322
21	-2.00	100	68	0.00	0.00	--	0.00	0.00	268.42	21.55	12.456
22	-2.10	100	69	0.00	0.00	--	0.00	0.00	270.48	23.15	11.682
23	-2.20	100	70	0.00	0.00	--	0.00	0.00	272.53	24.81	10.985
24	-2.30	100	71	0.00	0.00	--	0.00	0.00	274.58	26.51	10.356
25	-2.40	100	72	0.00	0.00	--	0.00	0.00	276.62	28.27	9.785
26	-2.50	100	73	0.00	0.00	--	0.00	0.00	278.66	30.08	9.265
27	-2.60	100	74	0.00	0.00	--	0.00	0.00	280.69	31.93	8.790
28	-2.70	100	75	0.00	0.00	--	0.00	0.00	282.71	33.84	8.355
29	-2.80	100	75	0.00	0.00	--	0.00	0.00	284.73	35.80	7.954
30	-2.90	100	76	0.00	0.00	--	0.00	0.00	286.74	37.80	7.585
31	-3.00	100	77	0.00	0.00	--	0.00	0.00	288.75	39.86	7.244
32	-3.10	100	78	0.00	0.00	--	0.00	0.00	290.75	41.97	6.928
33	-3.20	100	79	0.00	0.00	--	0.00	0.00	293.40	44.13	6.649
34	-3.30	100	80	0.00	0.00	--	0.00	0.00	296.26	46.33	6.394
35	-3.40	100	81	0.00	0.00	--	0.00	0.00	299.11	48.59	6.156
36	-3.50	100	82	0.00	0.00	--	0.00	0.00	301.97	50.90	5.933
37	-3.60	100	83	0.00	0.00	--	0.00	0.00	304.83	53.26	5.724
38	-3.70	100	84	0.00	0.00	--	0.00	0.00	307.68	55.67	5.527
39	-3.80	100	85	0.00	0.00	--	0.00	0.00	310.54	58.13	5.342
40	-3.90	100	85	0.00	0.00	--	0.00	0.00	313.39	60.64	5.168
41	-4.00	100	86	0.00	0.00	--	0.00	0.00	316.24	63.20	5.004
42	-4.10	100	87	0.00	0.00	--	0.00	0.00	319.10	65.81	4.849
43	-4.20	100	88	0.00	0.00	--	0.00	0.00	321.95	68.47	4.702
44	-4.30	100	89	0.00	0.00	--	0.00	0.00	324.80	71.18	4.563
45	-4.40	100	90	0.00	0.00	--	0.00	0.00	327.65	73.94	4.431
46	-4.50	100	91	0.00	0.00	--	0.00	0.00	330.50	76.75	4.306
47	-4.60	100	92	0.00	0.00	--	0.00	0.00	333.36	79.61	4.187
48	-4.70	100	93	0.00	0.00	--	0.00	0.00	336.21	82.52	4.074
49	-4.80	100	94	0.00	0.00	--	0.00	0.00	339.06	85.48	3.966
50	-4.90	100	95	0.00	0.00	--	0.00	0.00	341.91	88.50	3.864
51	-5.00	100	96	0.00	0.00	--	0.00	0.00	344.76	91.56	3.765
52	-5.10	100	96	0.00	0.00	--	0.00	0.00	347.61	94.67	3.672
53	-5.20	100	97	0.00	0.00	--	0.00	0.00	377.90	97.83	3.863
54	-5.30	100	98	0.00	0.00	--	0.00	0.00	380.05	101.05	3.761
55	-5.40	100	99	0.00	0.00	--	0.00	0.00	356.17	104.31	3.415
56	-5.50	100	100	0.00	0.00	--	0.00	0.00	359.02	107.62	3.336
57	-5.60	100	101	0.00	0.00	--	0.00	0.00	361.87	110.99	3.260
58	-5.70	100	102	0.00	0.00	--	0.00	0.00	364.72	114.40	3.188
59	-5.80	100	103	0.00	0.00	--	0.00	0.00	367.58	117.87	3.119
60	-5.90	100	104	0.00	0.00	--	0.00	0.00	370.43	121.38	3.052
61	-6.00	100	105	0.00	0.00	--	0.00	0.00	373.29	124.94	2.988

## Combinazione n° 13 - ECC

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
1	0.00	100	50	0.00	0.00	--	0.00	0.00	225.46	16.70	13.500
2	-0.10	100	51	0.00	0.00	--	0.00	0.00	227.70	16.72	13.616
3	-0.20	100	52	0.00	0.00	--	0.00	0.00	229.94	16.80	13.691
4	-0.30	100	53	0.00	0.00	--	0.00	0.00	232.16	16.91	13.726
5	-0.40	100	54	0.00	0.00	--	0.00	0.00	234.37	17.08	13.723
6	-0.50	100	55	0.00	0.00	--	0.00	0.00	236.57	17.29	13.682
7	-0.60	100	55	0.00	0.00	--	0.00	0.00	238.76	17.55	13.605
8	-0.70	100	56	0.00	0.00	--	0.00	0.00	240.93	17.86	13.493
9	-0.80	100	57	0.00	0.00	--	0.00	0.00	243.10	18.21	13.351
10	-0.90	100	58	0.00	0.00	--	0.00	0.00	245.26	18.61	13.180
11	-1.00	100	59	0.00	0.00	--	0.00	0.00	247.41	19.06	12.983
12	-1.10	100	60	0.00	0.00	--	0.00	0.00	249.55	19.55	12.764
13	-1.20	100	61	0.00	0.00	--	0.00	0.00	251.68	20.09	12.526
14	-1.30	100	62	0.00	0.00	--	0.00	0.00	253.80	20.68	12.273
15	-1.40	100	63	0.00	0.00	--	0.00	0.00	255.91	21.32	12.006



VE407

**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	Y	B	H	A <sub>sw</sub>	s	cotθ	V <sub>Rcd</sub>	V <sub>Rsd</sub>	V <sub>Rd</sub>	T	FS
	[m]	[cm]	[cm]	[cmq]	[cm]		[kN]	[kN]	[kN]	[kN]	
16	-1.50	100	64	0.00	0.00	--	0.00	0.00	258.01	22.00	11.729
17	-1.60	100	65	0.00	0.00	--	0.00	0.00	260.11	22.73	11.445
18	-1.70	100	65	0.00	0.00	--	0.00	0.00	262.20	23.50	11.155
19	-1.80	100	66	0.00	0.00	--	0.00	0.00	264.28	24.33	10.863
20	-1.90	100	67	0.00	0.00	--	0.00	0.00	266.35	25.20	10.570
21	-2.00	100	68	0.00	0.00	--	0.00	0.00	268.42	26.12	10.278
22	-2.10	100	69	0.00	0.00	--	0.00	0.00	270.48	27.08	9.987
23	-2.20	100	70	0.00	0.00	--	0.00	0.00	272.53	28.09	9.701
24	-2.30	100	71	0.00	0.00	--	0.00	0.00	274.58	29.15	9.419
25	-2.40	100	72	0.00	0.00	--	0.00	0.00	276.62	30.26	9.142
26	-2.50	100	73	0.00	0.00	--	0.00	0.00	278.66	31.41	8.871
27	-2.60	100	74	0.00	0.00	--	0.00	0.00	280.69	32.61	8.607
28	-2.70	100	75	0.00	0.00	--	0.00	0.00	282.71	33.86	8.349
29	-2.80	100	75	0.00	0.00	--	0.00	0.00	284.73	35.16	8.099
30	-2.90	100	76	0.00	0.00	--	0.00	0.00	286.74	36.50	7.857
31	-3.00	100	77	0.00	0.00	--	0.00	0.00	288.75	37.89	7.622
32	-3.10	100	78	0.00	0.00	--	0.00	0.00	290.75	39.32	7.394
33	-3.20	100	79	0.00	0.00	--	0.00	0.00	293.40	40.80	7.190
34	-3.30	100	80	0.00	0.00	--	0.00	0.00	296.26	42.33	6.998
35	-3.40	100	81	0.00	0.00	--	0.00	0.00	299.11	43.91	6.812
36	-3.50	100	82	0.00	0.00	--	0.00	0.00	301.97	45.53	6.632
37	-3.60	100	83	0.00	0.00	--	0.00	0.00	304.83	47.21	6.457
38	-3.70	100	84	0.00	0.00	--	0.00	0.00	307.68	48.92	6.289
39	-3.80	100	85	0.00	0.00	--	0.00	0.00	310.54	50.69	6.126
40	-3.90	100	85	0.00	0.00	--	0.00	0.00	313.39	52.50	5.969
41	-4.00	100	86	0.00	0.00	--	0.00	0.00	316.24	54.36	5.817
42	-4.10	100	87	0.00	0.00	--	0.00	0.00	319.10	56.27	5.671
43	-4.20	100	88	0.00	0.00	--	0.00	0.00	321.95	58.22	5.530
44	-4.30	100	89	0.00	0.00	--	0.00	0.00	324.80	60.22	5.393
45	-4.40	100	90	0.00	0.00	--	0.00	0.00	327.65	62.27	5.262
46	-4.50	100	91	0.00	0.00	--	0.00	0.00	330.50	64.36	5.135
47	-4.60	100	92	0.00	0.00	--	0.00	0.00	333.36	66.51	5.012
48	-4.70	100	93	0.00	0.00	--	0.00	0.00	336.21	68.70	4.894
49	-4.80	100	94	0.00	0.00	--	0.00	0.00	339.06	70.93	4.780
50	-4.90	100	95	0.00	0.00	--	0.00	0.00	341.91	73.21	4.670
51	-5.00	100	96	0.00	0.00	--	0.00	0.00	344.76	75.54	4.564
52	-5.10	100	96	0.00	0.00	--	0.00	0.00	347.61	77.92	4.461
53	-5.20	100	97	0.00	0.00	--	0.00	0.00	377.90	80.35	4.703
54	-5.30	100	98	0.00	0.00	--	0.00	0.00	380.05	82.82	4.589
55	-5.40	100	99	0.00	0.00	--	0.00	0.00	356.17	85.34	4.174
56	-5.50	100	100	0.00	0.00	--	0.00	0.00	359.02	87.90	4.084
57	-5.60	100	101	0.00	0.00	--	0.00	0.00	361.87	90.51	3.998
58	-5.70	100	102	0.00	0.00	--	0.00	0.00	364.72	93.17	3.914
59	-5.80	100	103	0.00	0.00	--	0.00	0.00	367.58	95.88	3.834
60	-5.90	100	104	0.00	0.00	--	0.00	0.00	370.43	98.63	3.756
61	-6.00	100	105	0.00	0.00	--	0.00	0.00	373.29	101.43	3.680

**Mensola valle**Combinazione n° 1 - STR (A1-M1-R3)

n°	Y	B	H	A <sub>sw</sub>	s	cotθ	V <sub>Rcd</sub>	V <sub>Rsd</sub>	V <sub>Rd</sub>	T	FS
	[m]	[cm]	[cm]	[cmq]	[cm]		[kN]	[kN]	[kN]	[kN]	
1	-0.75	100	50	0.00	0.00	--	0.00	0.00	208.90	0.00	100.000
2	-0.67	100	50	0.00	0.00	--	0.00	0.00	208.90	1.02	204.497
3	-0.58	100	50	0.00	0.00	--	0.00	0.00	208.90	2.04	102.249
4	-0.50	100	50	0.00	0.00	--	0.00	0.00	208.90	3.06	68.166

Combinazione n° 2 - STR (A1-M1-R3) H + V

VE407

**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
1	-0.75	100	50	0.00	0.00	--	0.00	0.00	208.90	0.00	100.000
2	-0.67	100	50	0.00	0.00	--	0.00	0.00	208.90	1.09	190.898
3	-0.58	100	50	0.00	0.00	--	0.00	0.00	208.90	2.19	95.449
4	-0.50	100	50	0.00	0.00	--	0.00	0.00	208.90	3.28	63.633

Combinazione n° 3 - STR (A1-M1-R3)

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
1	-0.75	100	50	0.00	0.00	--	0.00	0.00	208.90	0.00	100.000
2	-0.67	100	50	0.00	0.00	--	0.00	0.00	208.90	1.02	204.497
3	-0.58	100	50	0.00	0.00	--	0.00	0.00	208.90	2.04	102.249
4	-0.50	100	50	0.00	0.00	--	0.00	0.00	208.90	3.06	68.166

Combinazione n° 4 - STR (A1-M1-R3) H - V

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
1	-0.75	100	50	0.00	0.00	--	0.00	0.00	208.90	0.00	100.000
2	-0.67	100	50	0.00	0.00	--	0.00	0.00	208.90	1.02	204.497
3	-0.58	100	50	0.00	0.00	--	0.00	0.00	208.90	2.04	102.249
4	-0.50	100	50	0.00	0.00	--	0.00	0.00	208.90	3.06	68.166

Combinazione n° 13 - ECC

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
1	-0.75	100	50	0.00	0.00	--	0.00	0.00	208.90	0.00	100.000
2	-0.67	100	50	0.00	0.00	--	0.00	0.00	208.90	1.02	204.497
3	-0.58	100	50	0.00	0.00	--	0.00	0.00	208.90	2.04	102.249
4	-0.50	100	50	0.00	0.00	--	0.00	0.00	208.90	3.06	68.166

**Fondazione**Combinazione n° 1 - STR (A1-M1-R3)

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
1	-1.55	100	105	0.00	0.00	--	0.00	0.00	430.54	0.00	100.000
2	-1.45	100	105	0.00	0.00	--	0.00	0.00	430.54	-10.59	40.660
3	-1.36	100	105	0.00	0.00	--	0.00	0.00	430.54	-21.18	20.324
4	-1.26	100	105	0.00	0.00	--	0.00	0.00	430.54	-31.78	13.546
5	-1.17	100	105	0.00	0.00	--	0.00	0.00	430.54	-42.39	10.157
6	-1.07	100	105	0.00	0.00	--	0.00	0.00	430.54	-53.00	8.123
7	-0.98	100	105	0.00	0.00	--	0.00	0.00	430.54	-63.62	6.767
8	-0.88	100	105	0.00	0.00	--	0.00	0.00	430.54	-74.24	5.799
9	-0.79	100	105	0.00	0.00	--	0.00	0.00	430.54	-84.87	5.073
10	-0.69	100	105	0.00	0.00	--	0.00	0.00	430.54	-95.51	4.508
11	-0.60	100	105	0.00	0.00	--	0.00	0.00	430.54	-106.15	4.056
12	-0.50	100	105	0.00	0.00	--	0.00	0.00	430.54	-116.79	3.686
13	0.55	100	105	0.00	0.00	--	0.00	0.00	430.54	-101.69	4.234
14	0.65	100	105	0.00	0.00	--	0.00	0.00	430.54	-98.10	4.389
15	0.75	100	105	0.00	0.00	--	0.00	0.00	430.54	-94.51	4.556
16	0.85	100	105	0.00	0.00	--	0.00	0.00	430.54	-90.93	4.735
17	0.95	100	105	0.00	0.00	--	0.00	0.00	430.54	-87.35	4.929
18	1.05	100	105	0.00	0.00	--	0.00	0.00	430.54	-83.78	5.139
19	1.15	100	105	0.00	0.00	--	0.00	0.00	430.54	-80.22	5.367

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## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
20	1.25	100	105	0.00	0.00	--	0.00	0.00	430.54	-76.66	5.616
21	1.35	100	105	0.00	0.00	--	0.00	0.00	430.54	-73.11	5.889
22	1.45	100	105	0.00	0.00	--	0.00	0.00	430.54	-69.57	6.189
23	1.55	100	105	0.00	0.00	--	0.00	0.00	430.54	-66.03	6.521
24	1.65	100	105	0.00	0.00	--	0.00	0.00	430.54	-62.50	6.889
25	1.75	100	105	0.00	0.00	--	0.00	0.00	430.54	-58.97	7.301
26	1.85	100	105	0.00	0.00	--	0.00	0.00	430.54	-55.45	7.764
27	1.95	100	105	0.00	0.00	--	0.00	0.00	430.54	-51.94	8.290
28	2.05	100	105	0.00	0.00	--	0.00	0.00	430.54	-48.43	8.890
29	2.15	100	105	0.00	0.00	--	0.00	0.00	430.54	-44.93	9.582
30	2.25	100	105	0.00	0.00	--	0.00	0.00	430.54	-41.44	10.390
31	2.35	100	105	0.00	0.00	--	0.00	0.00	430.54	-37.95	11.345
32	2.45	100	105	0.00	0.00	--	0.00	0.00	430.54	-34.47	12.491
33	2.55	100	105	0.00	0.00	--	0.00	0.00	430.54	-30.99	13.892
34	2.65	100	105	0.00	0.00	--	0.00	0.00	430.54	-27.52	15.642
35	2.75	100	105	0.00	0.00	--	0.00	0.00	430.54	-24.06	17.893
36	2.85	100	105	0.00	0.00	--	0.00	0.00	430.54	-20.61	20.895
37	2.95	100	105	0.00	0.00	--	0.00	0.00	430.54	-17.16	25.097
38	3.05	100	105	0.00	0.00	--	0.00	0.00	430.54	-13.71	31.400
39	3.15	100	105	0.00	0.00	--	0.00	0.00	430.54	-10.27	41.905
40	3.25	100	105	0.00	0.00	--	0.00	0.00	430.54	-6.84	62.915
41	3.35	100	105	0.00	0.00	--	0.00	0.00	430.54	-3.42	125.946
42	3.45	100	105	0.00	0.00	--	0.00	0.00	430.54	0.00	100.000

## Combinazione n° 2 - STR (A1-M1-R3) H + V

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
1	-1.55	100	105	0.00	0.00	--	0.00	0.00	430.54	0.00	100.000
2	-1.45	100	105	0.00	0.00	--	0.00	0.00	430.54	-19.88	21.661
3	-1.36	100	105	0.00	0.00	--	0.00	0.00	430.54	-39.43	10.918
4	-1.26	100	105	0.00	0.00	--	0.00	0.00	430.54	-58.67	7.338
5	-1.17	100	105	0.00	0.00	--	0.00	0.00	430.54	-77.59	5.549
6	-1.07	100	105	0.00	0.00	--	0.00	0.00	430.54	-96.19	4.476
7	-0.98	100	105	0.00	0.00	--	0.00	0.00	430.54	-114.48	3.761
8	-0.88	100	105	0.00	0.00	--	0.00	0.00	430.54	-132.44	3.251
9	-0.79	100	105	0.00	0.00	--	0.00	0.00	430.54	-150.08	2.869
10	-0.69	100	105	0.00	0.00	--	0.00	0.00	430.54	-167.41	2.572
11	-0.60	100	105	0.00	0.00	--	0.00	0.00	430.54	-184.41	2.335
12	-0.50	100	105	0.00	0.00	--	0.00	0.00	430.54	-201.10	2.141
13	0.55	100	105	0.00	0.00	--	0.00	0.00	430.54	-81.84	5.261
14	0.65	100	105	0.00	0.00	--	0.00	0.00	430.54	-83.92	5.130
15	0.75	100	105	0.00	0.00	--	0.00	0.00	430.54	-85.65	5.027
16	0.85	100	105	0.00	0.00	--	0.00	0.00	430.54	-87.03	4.947
17	0.95	100	105	0.00	0.00	--	0.00	0.00	430.54	-88.05	4.890
18	1.05	100	105	0.00	0.00	--	0.00	0.00	430.54	-88.73	4.852
19	1.15	100	105	0.00	0.00	--	0.00	0.00	430.54	-89.06	4.834
20	1.25	100	105	0.00	0.00	--	0.00	0.00	430.54	-89.04	4.835
21	1.35	100	105	0.00	0.00	--	0.00	0.00	430.54	-88.67	4.856
22	1.45	100	105	0.00	0.00	--	0.00	0.00	430.54	-87.95	4.896
23	1.55	100	105	0.00	0.00	--	0.00	0.00	430.54	-86.87	4.956
24	1.65	100	105	0.00	0.00	--	0.00	0.00	430.54	-85.45	5.038
25	1.75	100	105	0.00	0.00	--	0.00	0.00	430.54	-83.68	5.145
26	1.85	100	105	0.00	0.00	--	0.00	0.00	430.54	-81.56	5.279
27	1.95	100	105	0.00	0.00	--	0.00	0.00	430.54	-79.09	5.444
28	2.05	100	105	0.00	0.00	--	0.00	0.00	430.54	-76.26	5.646
29	2.15	100	105	0.00	0.00	--	0.00	0.00	430.54	-73.09	5.891
30	2.25	100	105	0.00	0.00	--	0.00	0.00	430.54	-69.57	6.189
31	2.35	100	105	0.00	0.00	--	0.00	0.00	430.54	-65.70	6.554
32	2.45	100	105	0.00	0.00	--	0.00	0.00	430.54	-61.47	7.004
33	2.55	100	105	0.00	0.00	--	0.00	0.00	430.54	-56.90	7.566
34	2.65	100	105	0.00	0.00	--	0.00	0.00	430.54	-51.98	8.283
35	2.75	100	105	0.00	0.00	--	0.00	0.00	430.54	-46.71	9.218
36	2.85	100	105	0.00	0.00	--	0.00	0.00	430.54	-41.09	10.479
37	2.95	100	105	0.00	0.00	--	0.00	0.00	430.54	-35.11	12.262
38	3.05	100	105	0.00	0.00	--	0.00	0.00	430.54	-28.79	14.955
39	3.15	100	105	0.00	0.00	--	0.00	0.00	430.54	-22.12	19.466

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
40	3.25	100	105	0.00	0.00	--	0.00	0.00	430.54	-15.10	28.522
41	3.35	100	105	0.00	0.00	--	0.00	0.00	430.54	-7.72	55.751
42	3.45	100	105	0.00	0.00	--	0.00	0.00	430.54	0.00	100.000

**Combinazione n° 3 - STR (A1-M1-R3)**

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
1	-1.55	100	105	0.00	0.00	--	0.00	0.00	430.54	0.00	100.000
2	-1.45	100	105	0.00	0.00	--	0.00	0.00	430.54	-13.32	32.314
3	-1.36	100	105	0.00	0.00	--	0.00	0.00	430.54	-26.67	16.144
4	-1.26	100	105	0.00	0.00	--	0.00	0.00	430.54	-40.04	10.754
5	-1.17	100	105	0.00	0.00	--	0.00	0.00	430.54	-53.43	8.058
6	-1.07	100	105	0.00	0.00	--	0.00	0.00	430.54	-66.84	6.441
7	-0.98	100	105	0.00	0.00	--	0.00	0.00	430.54	-80.27	5.363
8	-0.88	100	105	0.00	0.00	--	0.00	0.00	430.54	-93.73	4.593
9	-0.79	100	105	0.00	0.00	--	0.00	0.00	430.54	-107.21	4.016
10	-0.69	100	105	0.00	0.00	--	0.00	0.00	430.54	-120.71	3.567
11	-0.60	100	105	0.00	0.00	--	0.00	0.00	430.54	-134.23	3.207
12	-0.50	100	105	0.00	0.00	--	0.00	0.00	430.54	-147.78	2.913
13	0.55	100	105	0.00	0.00	--	0.00	0.00	430.54	-125.57	3.429
14	0.65	100	105	0.00	0.00	--	0.00	0.00	430.54	-120.58	3.571
15	0.75	100	105	0.00	0.00	--	0.00	0.00	430.54	-115.62	3.724
16	0.85	100	105	0.00	0.00	--	0.00	0.00	430.54	-110.68	3.890
17	0.95	100	105	0.00	0.00	--	0.00	0.00	430.54	-105.76	4.071
18	1.05	100	105	0.00	0.00	--	0.00	0.00	430.54	-100.87	4.268
19	1.15	100	105	0.00	0.00	--	0.00	0.00	430.54	-96.01	4.485
20	1.25	100	105	0.00	0.00	--	0.00	0.00	430.54	-91.16	4.723
21	1.35	100	105	0.00	0.00	--	0.00	0.00	430.54	-86.35	4.986
22	1.45	100	105	0.00	0.00	--	0.00	0.00	430.54	-81.55	5.279
23	1.55	100	105	0.00	0.00	--	0.00	0.00	430.54	-76.78	5.607
24	1.65	100	105	0.00	0.00	--	0.00	0.00	430.54	-72.04	5.977
25	1.75	100	105	0.00	0.00	--	0.00	0.00	430.54	-67.32	6.396
26	1.85	100	105	0.00	0.00	--	0.00	0.00	430.54	-62.62	6.876
27	1.95	100	105	0.00	0.00	--	0.00	0.00	430.54	-57.95	7.430
28	2.05	100	105	0.00	0.00	--	0.00	0.00	430.54	-53.30	8.078
29	2.15	100	105	0.00	0.00	--	0.00	0.00	430.54	-48.67	8.845
30	2.25	100	105	0.00	0.00	--	0.00	0.00	430.54	-44.07	9.769
31	2.35	100	105	0.00	0.00	--	0.00	0.00	430.54	-39.50	10.900
32	2.45	100	105	0.00	0.00	--	0.00	0.00	430.54	-34.95	12.320
33	2.55	100	105	0.00	0.00	--	0.00	0.00	430.54	-30.42	14.153
34	2.65	100	105	0.00	0.00	--	0.00	0.00	430.54	-25.92	16.612
35	2.75	100	105	0.00	0.00	--	0.00	0.00	430.54	-21.44	20.083
36	2.85	100	105	0.00	0.00	--	0.00	0.00	430.54	-16.98	25.350
37	2.95	100	105	0.00	0.00	--	0.00	0.00	430.54	-12.55	34.296
38	3.05	100	105	0.00	0.00	--	0.00	0.00	430.54	-9.10	47.307
39	3.15	100	105	0.00	0.00	--	0.00	0.00	430.54	-6.79	63.414
40	3.25	100	105	0.00	0.00	--	0.00	0.00	430.54	-4.50	95.633
41	3.35	100	105	0.00	0.00	--	0.00	0.00	430.54	-2.24	192.303
42	3.45	100	105	0.00	0.00	--	0.00	0.00	430.54	0.00	100.000

**Combinazione n° 4 - STR (A1-M1-R3) H - V**

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
1	-1.55	100	105	0.00	0.00	--	0.00	0.00	430.54	0.00	100.000
2	-1.45	100	105	0.00	0.00	--	0.00	0.00	430.54	-17.99	23.935
3	-1.36	100	105	0.00	0.00	--	0.00	0.00	430.54	-35.66	12.073
4	-1.26	100	105	0.00	0.00	--	0.00	0.00	430.54	-53.02	8.120
5	-1.17	100	105	0.00	0.00	--	0.00	0.00	430.54	-70.07	6.145
6	-1.07	100	105	0.00	0.00	--	0.00	0.00	430.54	-86.80	4.960
7	-0.98	100	105	0.00	0.00	--	0.00	0.00	430.54	-103.22	4.171
8	-0.88	100	105	0.00	0.00	--	0.00	0.00	430.54	-119.32	3.608
9	-0.79	100	105	0.00	0.00	--	0.00	0.00	430.54	-135.11	3.187
10	-0.69	100	105	0.00	0.00	--	0.00	0.00	430.54	-150.58	2.859

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## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
11	-0.60	100	105	0.00	0.00	--	0.00	0.00	430.54	-165.74	2.598
12	-0.50	100	105	0.00	0.00	--	0.00	0.00	430.54	-180.59	2.384
13	0.55	100	105	0.00	0.00	--	0.00	0.00	430.54	-134.02	3.212
14	0.65	100	105	0.00	0.00	--	0.00	0.00	430.54	-134.23	3.207
15	0.75	100	105	0.00	0.00	--	0.00	0.00	430.54	-134.09	3.211
16	0.85	100	105	0.00	0.00	--	0.00	0.00	430.54	-133.61	3.222
17	0.95	100	105	0.00	0.00	--	0.00	0.00	430.54	-132.78	3.242
18	1.05	100	105	0.00	0.00	--	0.00	0.00	430.54	-131.61	3.271
19	1.15	100	105	0.00	0.00	--	0.00	0.00	430.54	-130.10	3.309
20	1.25	100	105	0.00	0.00	--	0.00	0.00	430.54	-128.23	3.358
21	1.35	100	105	0.00	0.00	--	0.00	0.00	430.54	-126.03	3.416
22	1.45	100	105	0.00	0.00	--	0.00	0.00	430.54	-123.47	3.487
23	1.55	100	105	0.00	0.00	--	0.00	0.00	430.54	-120.58	3.571
24	1.65	100	105	0.00	0.00	--	0.00	0.00	430.54	-117.34	3.669
25	1.75	100	105	0.00	0.00	--	0.00	0.00	430.54	-113.75	3.785
26	1.85	100	105	0.00	0.00	--	0.00	0.00	430.54	-109.82	3.921
27	1.95	100	105	0.00	0.00	--	0.00	0.00	430.54	-105.54	4.079
28	2.05	100	105	0.00	0.00	--	0.00	0.00	430.54	-100.92	4.266
29	2.15	100	105	0.00	0.00	--	0.00	0.00	430.54	-95.95	4.487
30	2.25	100	105	0.00	0.00	--	0.00	0.00	430.54	-90.64	4.750
31	2.35	100	105	0.00	0.00	--	0.00	0.00	430.54	-84.98	5.066
32	2.45	100	105	0.00	0.00	--	0.00	0.00	430.54	-78.98	5.451
33	2.55	100	105	0.00	0.00	--	0.00	0.00	430.54	-72.64	5.927
34	2.65	100	105	0.00	0.00	--	0.00	0.00	430.54	-65.95	6.529
35	2.75	100	105	0.00	0.00	--	0.00	0.00	430.54	-58.91	7.309
36	2.85	100	105	0.00	0.00	--	0.00	0.00	430.54	-51.53	8.355
37	2.95	100	105	0.00	0.00	--	0.00	0.00	430.54	-43.80	9.829
38	3.05	100	105	0.00	0.00	--	0.00	0.00	430.54	-35.73	12.049
39	3.15	100	105	0.00	0.00	--	0.00	0.00	430.54	-27.32	15.761
40	3.25	100	105	0.00	0.00	--	0.00	0.00	430.54	-18.56	23.202
41	3.35	100	105	0.00	0.00	--	0.00	0.00	430.54	-9.45	45.558
42	3.45	100	105	0.00	0.00	--	0.00	0.00	430.54	0.00	100.000

## Combinazione n° 13 - ECC

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
1	-1.55	100	105	0.00	0.00	--	0.00	0.00	430.54	0.00	100.000
2	-1.45	100	105	0.00	0.00	--	0.00	0.00	430.54	-12.44	34.604
3	-1.36	100	105	0.00	0.00	--	0.00	0.00	430.54	-24.81	17.355
4	-1.26	100	105	0.00	0.00	--	0.00	0.00	430.54	-37.10	11.606
5	-1.17	100	105	0.00	0.00	--	0.00	0.00	430.54	-49.31	8.732
6	-1.07	100	105	0.00	0.00	--	0.00	0.00	430.54	-61.44	7.007
7	-0.98	100	105	0.00	0.00	--	0.00	0.00	430.54	-73.50	5.858
8	-0.88	100	105	0.00	0.00	--	0.00	0.00	430.54	-85.48	5.036
9	-0.79	100	105	0.00	0.00	--	0.00	0.00	430.54	-97.39	4.421
10	-0.69	100	105	0.00	0.00	--	0.00	0.00	430.54	-109.22	3.942
11	-0.60	100	105	0.00	0.00	--	0.00	0.00	430.54	-120.97	3.559
12	-0.50	100	105	0.00	0.00	--	0.00	0.00	430.54	-132.65	3.246
13	0.55	100	105	0.00	0.00	--	0.00	0.00	430.54	-37.96	11.343
14	0.65	100	105	0.00	0.00	--	0.00	0.00	430.54	-37.83	11.382
15	0.75	100	105	0.00	0.00	--	0.00	0.00	430.54	-37.61	11.447
16	0.85	100	105	0.00	0.00	--	0.00	0.00	430.54	-37.31	11.539
17	0.95	100	105	0.00	0.00	--	0.00	0.00	430.54	-36.93	11.659
18	1.05	100	105	0.00	0.00	--	0.00	0.00	430.54	-36.46	11.808
19	1.15	100	105	0.00	0.00	--	0.00	0.00	430.54	-35.91	11.990
20	1.25	100	105	0.00	0.00	--	0.00	0.00	430.54	-35.27	12.206
21	1.35	100	105	0.00	0.00	--	0.00	0.00	430.54	-34.55	12.460
22	1.45	100	105	0.00	0.00	--	0.00	0.00	430.54	-33.75	12.757
23	1.55	100	105	0.00	0.00	--	0.00	0.00	430.54	-32.86	13.102
24	1.65	100	105	0.00	0.00	--	0.00	0.00	430.54	-31.89	13.501
25	1.75	100	105	0.00	0.00	--	0.00	0.00	430.54	-30.83	13.964
26	1.85	100	105	0.00	0.00	--	0.00	0.00	430.54	-29.69	14.500
27	1.95	100	105	0.00	0.00	--	0.00	0.00	430.54	-28.47	15.124
28	2.05	100	105	0.00	0.00	--	0.00	0.00	430.54	-27.16	15.853
29	2.15	100	105	0.00	0.00	--	0.00	0.00	430.54	-25.77	16.710
30	2.25	100	105	0.00	0.00	--	0.00	0.00	430.54	-24.29	17.726

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	Y	B	H	A <sub>sw</sub>	s	cotθ	V <sub>Rcd</sub>	V <sub>Rsd</sub>	V <sub>Rd</sub>	T	FS
	[m]	[cm]	[cm]	[cmq]	[cm]		[kN]	[kN]	[kN]	[kN]	
31	2.35	100	105	0.00	0.00	--	0.00	0.00	430.54	-22.73	18.944
32	2.45	100	105	0.00	0.00	--	0.00	0.00	430.54	-21.08	20.422
33	2.55	100	105	0.00	0.00	--	0.00	0.00	430.54	-19.35	22.247
34	2.65	100	105	0.00	0.00	--	0.00	0.00	430.54	-17.54	24.548
35	2.75	100	105	0.00	0.00	--	0.00	0.00	430.54	-15.64	27.527
36	2.85	100	105	0.00	0.00	--	0.00	0.00	430.54	-13.66	31.521
37	2.95	100	105	0.00	0.00	--	0.00	0.00	430.54	-11.59	37.139
38	3.05	100	105	0.00	0.00	--	0.00	0.00	430.54	-9.44	45.596
39	3.15	100	105	0.00	0.00	--	0.00	0.00	430.54	-7.21	59.730
40	3.25	100	105	0.00	0.00	--	0.00	0.00	430.54	-4.89	88.054
41	3.35	100	105	0.00	0.00	--	0.00	0.00	430.54	-2.49	173.129
42	3.45	100	105	0.00	0.00	--	0.00	0.00	430.54	0.00	100.000

**Verifica a fessurazione****Simbologia adottata**

n°	indice sezione
Y	ordinata sezione espressa in [m]
B	larghezza sezione espressa in [cm]
H	altezza sezione espressa in [cm]
A <sub>f</sub>	area ferri zona tesa espressa in [cmq]
A <sub>eff</sub>	area efficace espressa in [cmq]
M	momento agente espressa in [kNm]
M <sub>pf</sub>	momento di prima fessurazione espressa in [kNm]
ε	deformazione espressa in %
S <sub>m</sub>	spaziatura tra le fessure espressa in [mm]
w	apertura delle fessure espressa in [mm]

**Combinazioni SLEF****Paramento****Combinazione n° 15 - SLEF**Apertura limite fessure  $w_{lim}=0.30$ 

n°	Y	B	H	A <sub>f</sub>	A <sub>eff</sub>	M	M <sub>pf</sub>	ε	S <sub>m</sub>	w
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kNm]	[%]	[mm]	[mm]
1	0.00	100	50	10.05	1000.00	0.38	505.15	0.0000	0.00	0.000
2	-0.10	100	51	0.00	0.00	0.39	41809.45	0.0000	0.00	0.000
3	-0.20	100	52	0.00	0.00	0.40	574.73	0.0000	0.00	0.000
4	-0.30	100	53	0.00	0.00	0.43	335.16	0.0000	0.00	0.000
5	-0.40	100	54	0.00	0.00	0.48	274.28	0.0000	0.00	0.000
6	-0.50	100	55	0.00	0.00	0.55	266.71	0.0000	0.00	0.000
7	-0.60	100	55	0.00	0.00	0.66	291.86	0.0000	0.00	0.000
8	-0.70	100	56	0.00	0.00	0.80	351.05	0.0000	0.00	0.000
9	-0.80	100	57	0.00	0.00	0.97	461.70	0.0000	0.00	0.000
10	-0.90	100	58	0.00	0.00	1.19	675.84	0.0000	0.00	0.000
11	-1.00	100	59	0.00	0.00	1.47	1182.01	0.0000	0.00	0.000
12	-1.10	100	60	0.00	0.00	1.79	3458.43	0.0000	0.00	0.000
13	-1.20	100	61	0.00	0.00	2.17	5384.26	0.0000	0.00	0.000

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## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

n°	Y	B	H	Af	Aeff	M	Mpf	ε	Sm	w
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kNm]	[%]	[mm]	[mm]
14	-1.30	100	62	10.05	1000.00	2.62	1715.10	0.0000	0.00	0.000
15	-1.40	100	63	10.05	1000.00	3.13	1097.26	0.0000	0.00	0.000
16	-1.50	100	64	10.05	1000.00	3.72	847.27	0.0000	0.00	0.000
17	-1.60	100	65	10.05	1000.00	4.38	714.81	0.0000	0.00	0.000
18	-1.70	100	65	10.05	1000.00	5.13	634.61	0.0000	0.00	0.000
19	-1.80	100	66	10.05	1000.00	5.96	582.18	0.0000	0.00	0.000
20	-1.90	100	67	10.05	1000.00	6.89	546.23	0.0000	0.00	0.000
21	-2.00	100	68	10.05	1000.00	7.91	520.87	0.0000	0.00	0.000
22	-2.10	100	69	10.05	1000.00	9.04	502.73	0.0000	0.00	0.000
23	-2.20	100	70	10.05	1000.00	10.27	489.72	0.0000	0.00	0.000
24	-2.30	100	71	10.05	1000.00	11.62	480.49	0.0000	0.00	0.000
25	-2.40	100	72	10.05	1000.00	13.07	474.14	0.0000	0.00	0.000
26	-2.50	100	73	10.05	1000.00	14.65	470.04	0.0000	0.00	0.000
27	-2.60	100	74	10.05	1000.00	16.36	467.72	0.0000	0.00	0.000
28	-2.70	100	75	10.05	1000.00	18.20	466.85	0.0000	0.00	0.000
29	-2.80	100	75	10.05	1000.00	20.17	467.17	0.0000	0.00	0.000
30	-2.90	100	76	10.05	1000.00	22.28	468.49	0.0000	0.00	0.000
31	-3.00	100	77	10.05	1000.00	24.54	470.66	0.0000	0.00	0.000
32	-3.10	100	78	10.05	1000.00	26.95	473.55	0.0000	0.00	0.000
33	-3.20	100	79	10.05	1000.00	29.51	477.07	0.0000	0.00	0.000
34	-3.30	100	80	10.05	1000.00	32.23	481.14	0.0000	0.00	0.000
35	-3.40	100	81	10.05	1000.00	35.12	485.70	0.0000	0.00	0.000
36	-3.50	100	82	10.05	1000.00	38.17	490.70	0.0000	0.00	0.000
37	-3.60	100	83	10.05	1000.00	41.40	496.08	0.0000	0.00	0.000
38	-3.70	100	84	10.05	1000.00	44.81	501.82	0.0000	0.00	0.000
39	-3.80	100	85	10.05	1000.00	48.40	507.89	0.0000	0.00	0.000
40	-3.90	100	85	10.05	1000.00	52.18	514.24	0.0000	0.00	0.000
41	-4.00	100	86	10.05	1000.00	56.15	520.88	0.0000	0.00	0.000
42	-4.10	100	87	10.05	1000.00	60.32	527.76	0.0000	0.00	0.000
43	-4.20	100	88	10.05	1000.00	64.69	534.88	0.0000	0.00	0.000
44	-4.30	100	89	10.05	1000.00	69.27	542.23	0.0000	0.00	0.000
45	-4.40	100	90	10.05	1000.00	74.07	549.78	0.0000	0.00	0.000
46	-4.50	100	91	10.05	1000.00	79.08	557.53	0.0000	0.00	0.000
47	-4.60	100	92	10.05	1000.00	84.31	565.47	0.0000	0.00	0.000
48	-4.70	100	93	10.05	1000.00	89.77	573.59	0.0000	0.00	0.000
49	-4.80	100	94	10.05	1000.00	95.46	581.88	0.0000	0.00	0.000
50	-4.90	100	95	10.05	1000.00	101.38	590.33	0.0000	0.00	0.000
51	-5.00	100	96	10.05	1000.00	107.55	598.94	0.0000	0.00	0.000
52	-5.10	100	96	10.05	1000.00	113.97	607.71	0.0000	0.00	0.000
53	-5.20	100	97	20.11	1000.00	120.63	647.02	0.0000	0.00	0.000
54	-5.30	100	98	20.11	1000.00	127.55	656.31	0.0000	0.00	0.000
55	-5.40	100	99	10.05	1000.00	134.73	634.87	0.0000	0.00	0.000
56	-5.50	100	100	10.05	1000.00	142.18	644.20	0.0000	0.00	0.000
57	-5.60	100	101	10.05	1000.00	149.89	653.67	0.0000	0.00	0.000
58	-5.70	100	102	10.05	1000.00	157.89	663.26	0.0000	0.00	0.000
59	-5.80	100	103	10.05	1000.00	166.16	672.98	0.0000	0.00	0.000
60	-5.90	100	104	10.05	1000.00	174.71	682.82	0.0000	0.00	0.000
61	-6.00	100	105	10.05	1000.00	183.56	692.79	0.0000	0.00	0.000

Mensola valleCombinazione n° 15 - SLEFApertura limite fessure  $w_{lim}=0.30$ 

n°	Y	B	H	Af	Aeff	M	Mpf	ε	Sm	w
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kNm]	[%]	[mm]	[mm]
1	-0.75	100	50	0.00	0.00	0.00	0.00	0.0000	0.00	0.000
2	-0.67	100	50	0.00	0.00	-0.04	0.00	0.0000	0.00	0.000
3	-0.58	100	50	8.04	1000.00	-0.17	-143.66	0.0000	0.00	0.000
4	-0.50	100	50	8.04	1000.00	-0.38	-143.66	0.0000	0.00	0.000

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**FondazioneCombinazione n° 15 - SLEFApertura limite fessure  $w_{lim}=0.30$ 

n°	Y	B	H	Af	Aeff	M	Mpf	$\varepsilon$	Sm	w
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kNm]	[%]	[mm]	[mm]
1	-1.55	100	105	0.00	0.00	0.00	0.00	0.0000	0.00	0.000
2	-1.45	100	105	22.12	1000.00	0.45	667.83	0.0000	0.00	0.000
3	-1.36	100	105	22.12	1000.00	1.80	667.83	0.0000	0.00	0.000
4	-1.26	100	105	22.12	1000.00	4.05	667.83	0.0000	0.00	0.000
5	-1.17	100	105	22.12	1000.00	7.22	667.83	0.0000	0.00	0.000
6	-1.07	100	105	22.12	1000.00	11.29	667.83	0.0000	0.00	0.000
7	-0.98	100	105	22.12	1000.00	16.29	667.83	0.0000	0.00	0.000
8	-0.88	100	105	22.12	1000.00	22.20	667.83	0.0000	0.00	0.000
9	-0.79	100	105	22.12	1000.00	29.04	667.83	0.0000	0.00	0.000
10	-0.69	100	105	22.12	1000.00	36.80	667.83	0.0000	0.00	0.000
11	-0.60	100	105	22.12	1000.00	45.50	667.83	0.0000	0.00	0.000
12	-0.50	100	105	22.12	1000.00	55.13	667.83	0.0000	0.00	0.000
13	0.55	100	105	22.12	1000.00	11.16	667.83	0.0000	0.00	0.000
14	0.65	100	105	22.12	1000.00	11.00	667.83	0.0000	0.00	0.000
15	0.75	100	105	22.12	1000.00	10.78	667.83	0.0000	0.00	0.000
16	0.85	100	105	22.12	1000.00	10.50	667.83	0.0000	0.00	0.000
17	0.95	100	105	22.12	1000.00	10.18	667.83	0.0000	0.00	0.000
18	1.05	100	105	22.12	1000.00	9.82	667.83	0.0000	0.00	0.000
19	1.15	100	105	22.12	1000.00	9.41	667.83	0.0000	0.00	0.000
20	1.25	100	105	22.12	1000.00	8.98	667.83	0.0000	0.00	0.000
21	1.35	100	105	22.12	1000.00	8.51	667.83	0.0000	0.00	0.000
22	1.45	100	105	22.12	1000.00	8.02	667.83	0.0000	0.00	0.000
23	1.55	100	105	22.12	1000.00	7.51	667.83	0.0000	0.00	0.000
24	1.65	100	105	22.12	1000.00	6.99	667.83	0.0000	0.00	0.000
25	1.75	100	105	22.12	1000.00	6.45	667.83	0.0000	0.00	0.000
26	1.85	100	105	22.12	1000.00	5.91	667.83	0.0000	0.00	0.000
27	1.95	100	105	22.12	1000.00	5.36	667.83	0.0000	0.00	0.000
28	2.05	100	105	22.12	1000.00	4.82	667.83	0.0000	0.00	0.000
29	2.15	100	105	22.12	1000.00	4.28	667.83	0.0000	0.00	0.000
30	2.25	100	105	22.12	1000.00	3.76	667.83	0.0000	0.00	0.000
31	2.35	100	105	22.12	1000.00	3.25	667.83	0.0000	0.00	0.000
32	2.45	100	105	22.12	1000.00	2.76	667.83	0.0000	0.00	0.000
33	2.55	100	105	22.12	1000.00	2.30	667.83	0.0000	0.00	0.000
34	2.65	100	105	22.12	1000.00	1.86	667.83	0.0000	0.00	0.000
35	2.75	100	105	22.12	1000.00	1.46	667.83	0.0000	0.00	0.000
36	2.85	100	105	22.12	1000.00	1.10	667.83	0.0000	0.00	0.000
37	2.95	100	105	22.12	1000.00	0.78	667.83	0.0000	0.00	0.000
38	3.05	100	105	22.12	1000.00	0.51	667.83	0.0000	0.00	0.000
39	3.15	100	105	22.12	1000.00	0.30	667.83	0.0000	0.00	0.000
40	3.25	100	105	22.12	1000.00	0.13	667.83	0.0000	0.00	0.000
41	3.35	100	105	0.00	0.00	0.03	0.00	0.0000	0.00	0.000
42	3.45	100	105	0.00	0.00	0.00	0.00	0.0000	0.00	0.000

**Combinazioni SLEQ**ParamentoCombinazione n° 16 - SLEQApertura limite fessure  $w_{lim}=0.20$



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## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

n°	Y	B	H	Af	Aeff	M	Mpf	ε	Sm	w
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kNm]	[%]	[mm]	[mm]
1	0.00	100	50	10.05	1000.00	0.38	505.15	0.0000	0.00	0.000
2	-0.10	100	51	0.00	0.00	0.39	41809.45	0.0000	0.00	0.000
3	-0.20	100	52	0.00	0.00	0.40	574.73	0.0000	0.00	0.000
4	-0.30	100	53	0.00	0.00	0.43	335.16	0.0000	0.00	0.000
5	-0.40	100	54	0.00	0.00	0.48	274.28	0.0000	0.00	0.000
6	-0.50	100	55	0.00	0.00	0.55	266.71	0.0000	0.00	0.000
7	-0.60	100	55	0.00	0.00	0.66	291.86	0.0000	0.00	0.000
8	-0.70	100	56	0.00	0.00	0.80	351.05	0.0000	0.00	0.000
9	-0.80	100	57	0.00	0.00	0.97	461.70	0.0000	0.00	0.000
10	-0.90	100	58	0.00	0.00	1.19	675.84	0.0000	0.00	0.000
11	-1.00	100	59	0.00	0.00	1.47	1182.01	0.0000	0.00	0.000
12	-1.10	100	60	0.00	0.00	1.79	3458.43	0.0000	0.00	0.000
13	-1.20	100	61	0.00	0.00	2.17	5384.26	0.0000	0.00	0.000
14	-1.30	100	62	10.05	1000.00	2.62	1715.10	0.0000	0.00	0.000
15	-1.40	100	63	10.05	1000.00	3.13	1097.26	0.0000	0.00	0.000
16	-1.50	100	64	10.05	1000.00	3.72	847.27	0.0000	0.00	0.000
17	-1.60	100	65	10.05	1000.00	4.38	714.81	0.0000	0.00	0.000
18	-1.70	100	65	10.05	1000.00	5.13	634.61	0.0000	0.00	0.000
19	-1.80	100	66	10.05	1000.00	5.96	582.18	0.0000	0.00	0.000
20	-1.90	100	67	10.05	1000.00	6.89	546.23	0.0000	0.00	0.000
21	-2.00	100	68	10.05	1000.00	7.91	520.87	0.0000	0.00	0.000
22	-2.10	100	69	10.05	1000.00	9.04	502.73	0.0000	0.00	0.000
23	-2.20	100	70	10.05	1000.00	10.27	489.72	0.0000	0.00	0.000
24	-2.30	100	71	10.05	1000.00	11.62	480.49	0.0000	0.00	0.000
25	-2.40	100	72	10.05	1000.00	13.07	474.14	0.0000	0.00	0.000
26	-2.50	100	73	10.05	1000.00	14.65	470.04	0.0000	0.00	0.000
27	-2.60	100	74	10.05	1000.00	16.36	467.72	0.0000	0.00	0.000
28	-2.70	100	75	10.05	1000.00	18.20	466.85	0.0000	0.00	0.000
29	-2.80	100	75	10.05	1000.00	20.17	467.17	0.0000	0.00	0.000
30	-2.90	100	76	10.05	1000.00	22.28	468.49	0.0000	0.00	0.000
31	-3.00	100	77	10.05	1000.00	24.54	470.66	0.0000	0.00	0.000
32	-3.10	100	78	10.05	1000.00	26.95	473.55	0.0000	0.00	0.000
33	-3.20	100	79	10.05	1000.00	29.51	477.07	0.0000	0.00	0.000
34	-3.30	100	80	10.05	1000.00	32.23	481.14	0.0000	0.00	0.000
35	-3.40	100	81	10.05	1000.00	35.12	485.70	0.0000	0.00	0.000
36	-3.50	100	82	10.05	1000.00	38.17	490.70	0.0000	0.00	0.000
37	-3.60	100	83	10.05	1000.00	41.40	496.08	0.0000	0.00	0.000
38	-3.70	100	84	10.05	1000.00	44.81	501.82	0.0000	0.00	0.000
39	-3.80	100	85	10.05	1000.00	48.40	507.89	0.0000	0.00	0.000
40	-3.90	100	85	10.05	1000.00	52.18	514.24	0.0000	0.00	0.000
41	-4.00	100	86	10.05	1000.00	56.15	520.88	0.0000	0.00	0.000
42	-4.10	100	87	10.05	1000.00	60.32	527.76	0.0000	0.00	0.000
43	-4.20	100	88	10.05	1000.00	64.69	534.88	0.0000	0.00	0.000
44	-4.30	100	89	10.05	1000.00	69.27	542.23	0.0000	0.00	0.000
45	-4.40	100	90	10.05	1000.00	74.07	549.78	0.0000	0.00	0.000
46	-4.50	100	91	10.05	1000.00	79.08	557.53	0.0000	0.00	0.000
47	-4.60	100	92	10.05	1000.00	84.31	565.47	0.0000	0.00	0.000
48	-4.70	100	93	10.05	1000.00	89.77	573.59	0.0000	0.00	0.000
49	-4.80	100	94	10.05	1000.00	95.46	581.88	0.0000	0.00	0.000
50	-4.90	100	95	10.05	1000.00	101.38	590.33	0.0000	0.00	0.000
51	-5.00	100	96	10.05	1000.00	107.55	598.94	0.0000	0.00	0.000
52	-5.10	100	96	10.05	1000.00	113.97	607.71	0.0000	0.00	0.000
53	-5.20	100	97	20.11	1000.00	120.63	647.02	0.0000	0.00	0.000
54	-5.30	100	98	20.11	1000.00	127.55	656.31	0.0000	0.00	0.000
55	-5.40	100	99	10.05	1000.00	134.73	634.87	0.0000	0.00	0.000
56	-5.50	100	100	10.05	1000.00	142.18	644.20	0.0000	0.00	0.000
57	-5.60	100	101	10.05	1000.00	149.89	653.67	0.0000	0.00	0.000
58	-5.70	100	102	10.05	1000.00	157.89	663.26	0.0000	0.00	0.000
59	-5.80	100	103	10.05	1000.00	166.16	672.98	0.0000	0.00	0.000
60	-5.90	100	104	10.05	1000.00	174.71	682.82	0.0000	0.00	0.000
61	-6.00	100	105	10.05	1000.00	183.56	692.79	0.0000	0.00	0.000

Mensola valle

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**Combinazione n° 16 - SLEQApertura limite fessure  $w_{lim}=0.20$ 

n°	Y [m]	B [cm]	H [cm]	Af [cmq]	Aeff [cmq]	M [kNm]	Mpf [kNm]	ε [%]	Sm [mm]	w [mm]
1	-0.75	100	50	0.00	0.00	0.00	0.00	0.0000	0.00	0.000
2	-0.67	100	50	0.00	0.00	-0.04	0.00	0.0000	0.00	0.000
3	-0.58	100	50	8.04	1000.00	-0.17	-143.66	0.0000	0.00	0.000
4	-0.50	100	50	8.04	1000.00	-0.38	-143.66	0.0000	0.00	0.000

FondazioneCombinazione n° 16 - SLEQApertura limite fessure  $w_{lim}=0.20$ 

n°	Y [m]	B [cm]	H [cm]	Af [cmq]	Aeff [cmq]	M [kNm]	Mpf [kNm]	ε [%]	Sm [mm]	w [mm]
1	-1.55	100	105	0.00	0.00	0.00	0.00	0.0000	0.00	0.000
2	-1.45	100	105	22.12	1000.00	0.45	667.83	0.0000	0.00	0.000
3	-1.36	100	105	22.12	1000.00	1.80	667.83	0.0000	0.00	0.000
4	-1.26	100	105	22.12	1000.00	4.05	667.83	0.0000	0.00	0.000
5	-1.17	100	105	22.12	1000.00	7.22	667.83	0.0000	0.00	0.000
6	-1.07	100	105	22.12	1000.00	11.29	667.83	0.0000	0.00	0.000
7	-0.98	100	105	22.12	1000.00	16.29	667.83	0.0000	0.00	0.000
8	-0.88	100	105	22.12	1000.00	22.20	667.83	0.0000	0.00	0.000
9	-0.79	100	105	22.12	1000.00	29.04	667.83	0.0000	0.00	0.000
10	-0.69	100	105	22.12	1000.00	36.80	667.83	0.0000	0.00	0.000
11	-0.60	100	105	22.12	1000.00	45.50	667.83	0.0000	0.00	0.000
12	-0.50	100	105	22.12	1000.00	55.13	667.83	0.0000	0.00	0.000
13	0.55	100	105	22.12	1000.00	11.16	667.83	0.0000	0.00	0.000
14	0.65	100	105	22.12	1000.00	11.00	667.83	0.0000	0.00	0.000
15	0.75	100	105	22.12	1000.00	10.78	667.83	0.0000	0.00	0.000
16	0.85	100	105	22.12	1000.00	10.50	667.83	0.0000	0.00	0.000
17	0.95	100	105	22.12	1000.00	10.18	667.83	0.0000	0.00	0.000
18	1.05	100	105	22.12	1000.00	9.82	667.83	0.0000	0.00	0.000
19	1.15	100	105	22.12	1000.00	9.41	667.83	0.0000	0.00	0.000
20	1.25	100	105	22.12	1000.00	8.98	667.83	0.0000	0.00	0.000
21	1.35	100	105	22.12	1000.00	8.51	667.83	0.0000	0.00	0.000
22	1.45	100	105	22.12	1000.00	8.02	667.83	0.0000	0.00	0.000
23	1.55	100	105	22.12	1000.00	7.51	667.83	0.0000	0.00	0.000
24	1.65	100	105	22.12	1000.00	6.99	667.83	0.0000	0.00	0.000
25	1.75	100	105	22.12	1000.00	6.45	667.83	0.0000	0.00	0.000
26	1.85	100	105	22.12	1000.00	5.91	667.83	0.0000	0.00	0.000
27	1.95	100	105	22.12	1000.00	5.36	667.83	0.0000	0.00	0.000
28	2.05	100	105	22.12	1000.00	4.82	667.83	0.0000	0.00	0.000
29	2.15	100	105	22.12	1000.00	4.28	667.83	0.0000	0.00	0.000
30	2.25	100	105	22.12	1000.00	3.76	667.83	0.0000	0.00	0.000
31	2.35	100	105	22.12	1000.00	3.25	667.83	0.0000	0.00	0.000
32	2.45	100	105	22.12	1000.00	2.76	667.83	0.0000	0.00	0.000
33	2.55	100	105	22.12	1000.00	2.30	667.83	0.0000	0.00	0.000
34	2.65	100	105	22.12	1000.00	1.86	667.83	0.0000	0.00	0.000
35	2.75	100	105	22.12	1000.00	1.46	667.83	0.0000	0.00	0.000
36	2.85	100	105	22.12	1000.00	1.10	667.83	0.0000	0.00	0.000
37	2.95	100	105	22.12	1000.00	0.78	667.83	0.0000	0.00	0.000
38	3.05	100	105	22.12	1000.00	0.51	667.83	0.0000	0.00	0.000
39	3.15	100	105	22.12	1000.00	0.30	667.83	0.0000	0.00	0.000
40	3.25	100	105	22.12	1000.00	0.13	667.83	0.0000	0.00	0.000
41	3.35	100	105	0.00	0.00	0.03	0.00	0.0000	0.00	0.000
42	3.45	100	105	0.00	0.00	0.00	0.00	0.0000	0.00	0.000

**Elenco ferri**

## Simbologia adottata

n°	Indice del ferro
nf	numero ferri
D	diametro ferro espresso in [mm]
L	Lunghezza ferro espresso in [m]
P <sub>ferro</sub>	Peso ferro espresso in [kN]

*Paramento*

n°	Tipo	nf	D [mm]	L [m]	P <sub>f</sub> [kN]	P <sub>gf</sub> [kN]	V <sub>cls</sub> [mc]
1	Diritto inferiore	5	16.00	6.59	0.1020	0.5102	
2	Diritto superiore	5	16.00	2.45	0.0379	0.1896	
3	Diritto superiore	5	16.00	6.61	0.1024	0.5119	
4	Diritto inferiore	5	16.00	2.28	0.0353	0.1766	
5	Ripartitore	53	10.00	1.00	0.0060	0.3205	
<b>Totale al metro</b>						<b>2.0291</b>	<b>4.76</b>
<b>Totale</b>						<b>174.23</b>	<b>4.76</b>

*Fondazione*

n°	Tipo	nf	D [mm]	L [m]	P <sub>f</sub> [kN]	P <sub>gf</sub> [kN]	V <sub>cls</sub> [mc]
1	Diritto superiore	11	16.00	6.18	0.0957	1.0522	
2	Diritto inferiore	11	16.00	6.18	0.0957	1.0522	
3	Ripartitore	24	10.00	1.00	0.0060	0.1451	
<b>Totale al metro</b>						<b>2.3947</b>	<b>5.25</b>
<b>Totale</b>						<b>229.39</b>	<b>5.25</b>

*Mensola valle*

n°	Tipo	nf	D [mm]	L [m]	P <sub>f</sub> [kN]	P <sub>gf</sub> [kN]	V <sub>cls</sub> [mc]
1	Diritto inferiore	4	16.00	1.53	0.0237	0.0947	
2	Diritto superiore	4	16.00	1.53	0.0237	0.0947	
3	Ripartitore	2	10.00	1.00	0.0060	0.0121	
<b>Totale al metro</b>						<b>2.3947</b>	<b>5.25</b>
<b>Totale</b>						<b>229.39</b>	<b>5.25</b>

## 14 ALLEGATO 5 – TABULATI DI CALCOLO - MURO DI SOSTEGNO H7

### Geometria profilo terreno a monte del muro

#### Simbologia adottata

(Sistema di riferimento con origine in testa al muro, ascissa X positiva verso monte, ordinata Y positiva verso l'alto)

n°	numero ordine del punto
X	ascissa del punto espressa in [m]
Y	ordinata del punto espressa in [m]
A	inclinazione del tratto espressa in [°]

n°	X	Y	A
	[m]	[m]	[°]
1	0.00	0.00	0.000
2	1.75	0.00	0.000
3	20.00	0.00	0.000

Inclinazione terreno a valle del muro rispetto all'orizzontale 0.000 [°]

### Falda

#### Simbologia adottata

(Sistema di riferimento con origine in testa al muro, ascissa X positiva verso monte, ordinata Y positiva verso l'alto)

n°	numero ordine del punto
X	ascissa del punto espressa in [m]
Y	ordinata del punto espressa in [m]
A	inclinazione del tratto espressa in [°]

n°	X	Y	A
	[m]	[m]	[°]
1	-4.00	-8.15	0.000
2	20.00	-8.15	0.000

### Geometria muro

#### Geometria paramento e fondazione

##### Paramento

Materiale	C32/40	
Altezza paramento	7.00	[m]
Altezza paramento libero	7.00	[m]
Spessore in sommità	0.50	[m]
Spessore all'attacco con la fondazione	1.15	[m]

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

Inclinazione paramento esterno	0.00	[°]
Inclinazione paramento interno	5.30	[°]
Spessore rivestimento	0.20	[m]
Peso sp. rivestimento	20.0000	[kN/mc]

Mensola di marciapiede

Posizione rispetto alla testa del muro	0.00	[m]
Lunghezza	0.25	[m]
Spessore all'estremità libera	0.50	[m]
Spessore all'incastro	0.50	[m]

Fondazione

Materiale	C32/40	
Lunghezza mensola di valle	1.15	[m]
Lunghezza mensola di monte	3.20	[m]
Lunghezza totale	5.50	[m]
Inclinazione piano di posa	0.00	[°]
Spessore	1.15	[m]
Spessore magrone	0.20	[m]

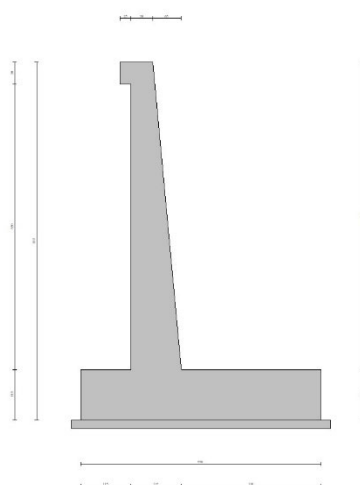


Fig. 1 - Sezione quotata del muro

Descrizione terreniParametri di resistenza

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta****Simbologia adottata**

n°	Indice del terreno
Descr	Descrizione terreno
$\gamma$	Peso di volume del terreno espresso in [kN/mc]
$\gamma_s$	Peso di volume saturo del terreno espresso in [kN/mc]
$\phi$	Angolo d'attrito interno espresso in [°]
$\delta$	Angolo d'attrito terra-muro espresso in [°]
c	Coesione espressa in [kPa]
$c_a$	Adesione terra-muro espressa in [kPa]

**Per calcolo portanza con il metodo di Bustamante-Doix**

Cesp	Coeff. di espansione laterale (solo per il metodo di Bustamante-Doix)
$\tau_l$	Tensione tangenziale limite, espressa in [kPa]

n°	Descr	$\gamma$ [kN/mc]	$\gamma_{sat}$ [kN/mc]	$\phi$ [°]	$\delta$ [°]	c [kPa]	$c_a$ [kPa]	Cesp	$\tau_l$ [kPa]
1	Rilevato	19.0000	19.0000	35.000	23.333	0	0		
2	Terreno	20.0000	20.0000	36.000	24.000	0	0		

**Stratigrafia****Simbologia adottata**

n°	Indice dello strato
H	Spessore dello strato espresso in [m]
$\alpha$	Inclinazione espressa in [°]
Terreno	Terreno dello strato
Kwn, Kwt	Costante di Winkler normale e tangenziale alla superficie espressa in Kg/cm <sup>2</sup> /cm

**Per calcolo pali (solo se presenti)**

Kw	Costante di Winkler orizzontale espressa in Kg/cm <sup>2</sup> /cm
Ks	Coefficiente di spinta
Cesp	Coefficiente di espansione laterale (per tutti i metodi tranne il metodo di Bustamante-Doix)

**Per calcolo della spinta con coeff. di spinta definiti (usati solo se attiva l'opzione 'Usa coeff. di spinta da strato')**

$K_{st_{sta}}$ , $K_{st_{sis}}$	Coeff. di spinta statico e sismico
---------------------------------	------------------------------------

n°	H [m]	$\alpha$ [°]	Terreno	Kwn [Kg/cm <sup>2</sup> ]	Kwt [Kg/cm <sup>2</sup> ]	Kw [Kg/cm <sup>2</sup> ]	Ks	Cesp	$K_{st_{sta}}$	$K_{st_{sis}}$
1	8.15	0.000	Rilevato	0.000	0.000	4.219	0.000	1.000	0.000	0.000
2	20.00	0.000	Terreno	0.000	0.000	2.203	1.000	1.000	0.000	0.000

**Condizioni di carico****Simbologia adottata**

	Carichi verticali positivi verso il basso.
	Carichi orizzontali positivi verso sinistra.
	Momento positivo senso antiorario.
X	Ascissa del punto di applicazione del carico concentrato espressa in [m]
$F_x$	Componente orizzontale del carico concentrato espressa in [kN]
$F_y$	Componente verticale del carico concentrato espressa in [kN]
M	Momento espresso in [kNm]

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**X<sub>i</sub> Ascissa del punto iniziale del carico ripartito espressa in [m]X<sub>f</sub> Ascissa del punto finale del carico ripartito espressa in [m]Q<sub>i</sub> Intensità del carico per x=X<sub>i</sub> espressa in [kN]Q<sub>f</sub> Intensità del carico per x=X<sub>f</sub> espressa in [kN]**Condizione n° 1 (Q) - VARIABILE**Coeff. di combinazione  $\Psi_0=0.75 - \Psi_1=0.75 - \Psi_2=0.00$ **Carichi sul terreno**

n°	Tipo	X	Fx	Fy	M	Xi	Xf	Qi	Qf
		[m]	[kN]	[kN]	[kNm]	[m]	[m]	[kN]	[kN]
1	Distribuito					0.00	3.00	28.4000	28.4000
2	Distribuito					3.00	6.00	15.5000	15.5000
3	Distribuito					6.00	9.00	9.0000	9.0000
4	Distribuito					9.00	20.00	2.5000	2.5000

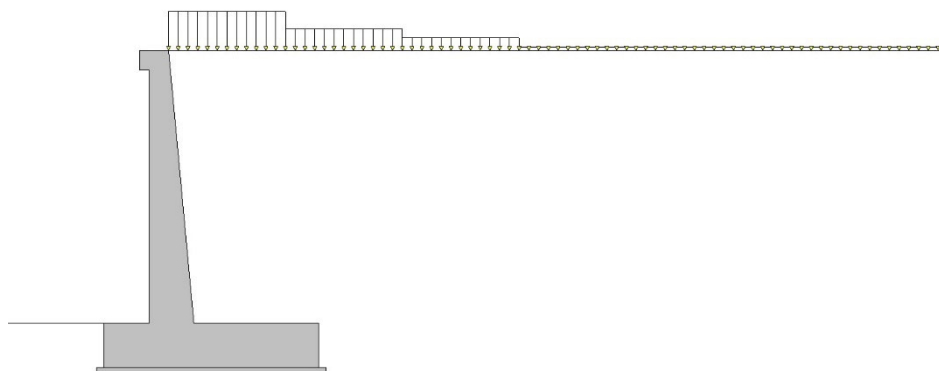


Fig. 2 - Carichi sul terreno

**Condizione n° 2 (Urto) - ECCEZIONALE****Carichi sul muro**

n°	Tipo	Dest	X; Y	Fx	Fy	M	Xi	Xf	Qi	Qf
			[m]	[kN]	[kN]	[kNm]	[m]	[m]	[kN]	[kN]
1	Concentrato	Paramento	0.00; 0.00	14.3000	0.0000	14.3000				

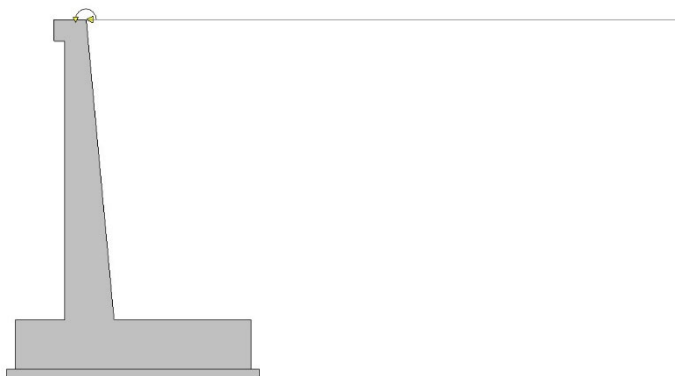


Fig. 3 - Carichi sul muro

NormativaNormativa usata: **Norme Tecniche sulle Costruzioni 2018 (D.M. 17.01.2018) + Circolare C.S.LL.PP. 21/01/2019 n.7**Coeff. parziali per le azioni o per l'effetto delle azioni

Carichi	Effetto		Combinazioni statiche					Combinazioni sismiche		
			HYD	UPL	EQU	A1	A2	EQU	A1	A2
Permanenti strutturali	Favorevoli	$\gamma_{G1, fav}$	1.00	0.90	1.00	1.00	1.00	1.00	1.00	1.00
Permanenti strutturali	Sfavorevoli	$\gamma_{G1, sfav}$	1.00	1.10	1.30	1.30	1.00	1.00	1.00	1.00
Permanenti non strutturali	Favorevoli	$\gamma_{G2, fav}$	0.00	0.80	0.80	0.80	0.80	0.00	0.00	0.00
Permanenti non strutturali	Sfavorevoli	$\gamma_{G2, sfav}$	1.00	1.50	1.50	1.50	1.30	1.00	1.00	1.00
Variabili	Favorevoli	$\gamma_{Q, fav}$	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Variabili	Sfavorevoli	$\gamma_{Q, sfav}$	1.00	1.50	1.50	1.50	1.30	1.00	1.00	1.00
Variabili da traffico	Favorevoli	$\gamma_{QT, fav}$	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Variabili da traffico	Sfavorevoli	$\gamma_{QT, sfav}$	1.00	1.50	1.35	1.35	1.15	1.00	1.00	1.00

Coeff. parziali per i parametri geotecnici del terreno

Parametro		Combinazioni statiche		Combinazioni sismiche	
		M1	M2	M1	M2
Tangente dell'angolo di attrito	$\gamma_{\tan(\phi')}$	1.00	1.25	1.00	1.00
Coesione efficace	$\gamma_c$	1.00	1.25	1.00	1.00
Resistenza non drenata	$\gamma_{cu}$	1.00	1.40	1.00	1.00
Peso nell'unità di volume	$\gamma_\gamma$	1.00	1.00	1.00	1.00

Coeff. parziali  $\gamma_R$  per le verifiche agli stati limite ultimi STR e GEO

Verifica	Combinazioni statiche			Combinazioni sismiche		
	R1	R2	R3	R1	R2	R3
Capacità portante	--	--	1.40	--	--	1.20
Scorrimento	--	--	1.10	--	--	1.00
Resistenza terreno a valle	--	--	1.40	--	--	1.20
Ribaltamento	--	--	1.15	--	--	1.00
Stabilità fronte di scavo	--	1.10	--	--	1.20	--



Descrizione combinazioni di carico

Con riferimento alle azioni elementari prima determinate, si sono considerate le seguenti combinazioni di carico:

- Combinazione fondamentale, impiegata per gli stati limite ultimi (SLU):

$$\gamma_{G1} G_1 + \gamma_{G2} G_2 + \gamma_{Q1} Q_{k1} + \gamma_{Q2} Q_{k2} + \gamma_{Q3} Q_{k3} + \dots$$

- Combinazione caratteristica, cosiddetta rara, impiegata per gli stati limite di esercizio (SLE) irreversibili:

$$G_1 + G_2 + Q_{k1} + \Psi_{0,2} Q_{k2} + \Psi_{0,3} Q_{k3} + \dots$$

- Combinazione frequente, impiegata per gli stati limite di esercizio (SLE) reversibili:

$$G_1 + G_2 + \Psi_{1,1} Q_{k1} + \Psi_{2,2} Q_{k2} + \Psi_{2,3} Q_{k3} + \dots$$

- Combinazione quasi permanente, impiegata per gli effetti di lungo periodo:

$$G_1 + G_2 + \Psi_{2,1} Q_{k1} + \Psi_{2,2} Q_{k2} + \Psi_{2,3} Q_{k3} + \dots$$

- Combinazione sismica, impiegata per gli stati limite ultimi connessi all'azione sismica E:

$$E + G_1 + G_2 + \Psi_{2,1} Q_{k1} + \Psi_{2,2} Q_{k2} + \Psi_{2,3} Q_{k3} + \dots$$

- Combinazione eccezionale, impiegata per gli stati limite ultimi connessi alle azioni eccezionali Ad:

$$G_1 + G_2 + A_d + \Psi_{2,1} Q_{k1} + \Psi_{2,2} Q_{k2} + \Psi_{2,3} Q_{k3} + \dots$$

I valori dei coeff.  $\Psi_{0,j}$ ,  $\Psi_{1,j}$ ,  $\Psi_{2,j}$  sono definiti nelle singole condizioni variabili. Per i valori dei coeff.  $\gamma_G$  e  $\gamma_Q$ , sono definiti nella tabella normativa.

In particolare si sono considerate le seguenti combinazioni:

## Simbologia adottata

$\gamma$	Coefficiente di partecipazione della condizione
$\Psi$	Coefficiente di combinazione della condizione

Combinazione n° 1 - STR (A1-M1-R3)

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Favorevole
Peso terrapieno	1.00	--	Favorevole
Spinta terreno	1.30	--	Sfavorevole

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**Combinazione n° 2 - STR (A1-M1-R3) H + V

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Favorevole
Peso terrapieno	1.00	--	Favorevole
Spinta terreno	1.00	--	Sfavorevole

Combinazione n° 3 - STR (A1-M1-R3)

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Favorevole
Peso terrapieno	1.00	--	Favorevole
Spinta terreno	1.30	--	Sfavorevole
Q	1.50	1.00	Sfavorevole

Combinazione n° 4 - STR (A1-M1-R3) H - V

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Sfavorevole
Peso terrapieno	1.00	--	Sfavorevole
Spinta terreno	1.00	--	Sfavorevole

Combinazione n° 5 - GEO (A2-M2-R2)

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Sfavorevole
Peso terrapieno	1.00	--	Sfavorevole
Spinta terreno	1.00	--	Sfavorevole

Combinazione n° 6 - GEO (A2-M2-R2) H + V

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Sfavorevole
Peso terrapieno	1.00	--	Sfavorevole
Spinta terreno	1.00	--	Sfavorevole

Combinazione n° 7 - GEO (A2-M2-R2)

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Sfavorevole
Peso terrapieno	1.00	--	Sfavorevole
Spinta terreno	1.00	--	Sfavorevole
Q	1.30	1.00	Sfavorevole

Combinazione n° 8 - GEO (A2-M2-R2) H - V

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Sfavorevole
Peso terrapieno	1.00	--	Sfavorevole
Spinta terreno	1.00	--	Sfavorevole

Combinazione n° 9 - EQU (A1-M1-R3)

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Favorevole
Peso terrapieno	1.00	--	Favorevole
Spinta terreno	1.30	--	Sfavorevole

Combinazione n° 10 - EQU (A1-M1-R3) H + V

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Favorevole
Peso terrapieno	1.00	--	Favorevole
Spinta terreno	1.00	--	Sfavorevole

Combinazione n° 11 - EQU (A1-M1-R3)

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Favorevole
Peso terrapieno	1.00	--	Favorevole
Spinta terreno	1.30	--	Sfavorevole
Q	1.50	1.00	Sfavorevole

Combinazione n° 12 - EQU (A1-M1-R3) H - V

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Favorevole
Peso terrapieno	1.00	--	Favorevole
Spinta terreno	1.00	--	Sfavorevole

Combinazione n° 13 - ECC

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Sfavorevole
Peso terrapieno	1.00	--	Sfavorevole
Spinta terreno	1.00	--	Sfavorevole
Urto	1.00	1.00	Sfavorevole

Combinazione n° 14 - SLER

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Sfavorevole
Peso terrapieno	1.00	--	Sfavorevole
Spinta terreno	1.00	--	Sfavorevole
Q	1.00	0.75	Sfavorevole

Combinazione n° 15 - SLEF

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Sfavorevole
Peso terrapieno	1.00	--	Sfavorevole
Spinta terreno	1.00	--	Sfavorevole

Combinazione n° 16 - SLEQ

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Sfavorevole
Peso terrapieno	1.00	--	Sfavorevole

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

Condizione	$\gamma$	$\Psi$	Effetto
Spinta terreno	1.00	--	Sfavorevole

Dati sismici

Comune	
Provincia	
Regione	
Latitudine	42.716470
Longitudine	12.111569
Indice punti di interpolazione	-1 - -1 - -1 - -1
Vita nominale	50 anni
Classe d'uso	II
Tipo costruzione	Normali affollamenti
Vita di riferimento	50 anni

	Simbolo	U.M.	SLU	SLE
Accelerazione al suolo	$a_g$	[m/s <sup>2</sup> ]	2.894	0.000
Accelerazione al suolo	$a_g/g$	[%]	0.295	0.000
Massimo fattore amplificazione spettro orizzontale	F0		2.423	0.000
Periodo inizio tratto spettro a velocità costante	Tc*		0.343	0.000
Tipo di sottosuolo - Coefficiente stratigrafico	Ss		C	1.271
Categoria topografica - Coefficiente amplificazione topografica	St		T1	1.000

Stato limite ...	Coeff. di riduzione $\beta_m$	kh	kv
Ultimo	0.380	14.248	7.124
Ultimo - Ribaltamento	0.570	21.372	10.686
Esercizio	0.470	0.000	0.000

Forma diagramma incremento sismico  **Rettangolare****Opzioni di calcolo**Spinta

Metodo di calcolo della spinta	Culmann
Tipo di spinta	Spinta attiva
Terreno a bassa permeabilità	NO
Superficie di spinta limitata	NO

Capacità portante

Metodo di calcolo della portanza	Hansen
Criterio di media calcolo del terreno equivalente (terreni stratificati)	Ponderata
Criterio di riduzione per eccentricità della portanza	Bowles
Criterio di riduzione per rottura locale (punzonamento)	Nessuna
Larghezza fondazione nel terzo termine della formula del carico limite ( $0.5B\gamma N_\gamma$ )	Larghezza effettiva (B)

Fattori di forma e inclinazione del carico Solo i fattori di inclinazione

Se la fondazione ha larghezza superiore a 2.0 m viene applicato il fattore di riduzione per comportamento a piastra

Stabilità globale

Metodo di calcolo della stabilità globale Bishop

Altro

Partecipazione spinta passiva terreno antistante 0.00  
 Partecipazione resistenza passiva dente di fondazione 50.00  
 Componente verticale della spinta nel calcolo delle sollecitazioni NO  
 Considera terreno sulla fondazione di valle NO  
 Considera spinta e peso acqua fondazione di valle NO

Spostamenti

Non è stato richiesto il calcolo degli spostamenti

Cedimenti

Non è stato richiesto il calcolo dei cedimenti

Specifiche per le verifiche nelle combinazioni allo Stato Limite Ultimo (SLU)

	SLU	Eccezionale
Coefficiente di sicurezza calcestruzzo a compressione	1.50	1.00
Coefficiente di sicurezza acciaio	1.15	1.00
Fattore di riduzione da resistenza cubica a cilindrica	0.83	0.83
Fattore di riduzione per carichi di lungo periodo	0.85	0.85
Coefficiente di sicurezza per la sezione	1.00	1.00

Specifiche per le verifiche nelle combinazioni allo Stato Limite di Esercizio (SLE)**Paramento e fondazione muro**

Condizioni ambientali Aggressive

Armatura ad aderenza migliorata SI

*Verifica a fessurazione*

Sensibilità armatura Poco sensibile

Metodo di calcolo aperture delle fessure NTC 2018 - CIRCOLARE 21 gennaio 2019, n. 7 C.S.LL.PP.

Valori limite aperture delle fessure:

$$w_1=0.20$$

$$w_2=0.30$$

$$w_3=0.40$$

*Verifica delle tensioni*

Valori limite delle tensioni nei materiali:

Combinazione	Calcestruzzo	Acciaio
Rara	0.60 $f_{ck}$	0.80 $f_{yk}$
Frequente	1.00 $f_{ck}$	1.00 $f_{yk}$
Quasi permanente	0.45 $f_{ck}$	1.00 $f_{yk}$

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta****Risultati per combinazione**Spinta e forze

## Simbologia adottata

Ic	Indice della combinazione
A	Tipo azione
I	Inclinazione della spinta, espressa in [°]
V	Valore dell'azione, espressa in [kN]
C <sub>x</sub> , C <sub>y</sub>	Componente in direzione X ed Y dell'azione, espressa in [kN]
P <sub>x</sub> , P <sub>y</sub>	Coordinata X ed Y del punto di applicazione dell'azione, espressa in [m]

Ic	A	V [kN]	I [°]	C <sub>x</sub> [kN]	C <sub>y</sub> [kN]	P <sub>x</sub> [m]	P <sub>y</sub> [m]
1	Spinta statica	200.50	23.33	184.10	79.41	3.85	-5.43
	Peso/Inerzia muro			0.00	299.65/0.00	0.53	-5.79
	Peso/Inerzia rivestimento			0.00	28.00	0.00	0.00
	Peso/Inerzia terrapieno			0.00	468.78/0.00	2.08	-3.39
	Peso dell'acqua sulla fondazione di valle				0.00	0.00	0.00
2	Spinta statica	154.23	23.33	141.61	61.09	3.85	-5.43
	Incremento di spinta sismica		68.72	63.10	27.22	3.85	-4.08
	Peso/Inerzia muro			42.69	299.65/21.35	0.53	-5.79
	Peso/Inerzia rivestimento			3.99	28.00	0.00	0.00
	Peso/Inerzia terrapieno			66.79	468.78/33.40	2.08	-3.39
3	Spinta statica	236.01	23.33	216.71	93.48	3.85	-5.14
	Peso/Inerzia muro			0.00	299.65/0.00	0.53	-5.79
	Peso/Inerzia rivestimento			0.00	28.00	0.00	0.00
	Peso/Inerzia terrapieno			0.00	616.33/0.00	2.04	-3.37
	Peso dell'acqua sulla fondazione di valle				0.00	0.00	0.00
4	Spinta statica	154.23	23.33	141.61	61.09	3.85	-5.43
	Incremento di spinta sismica		48.23	44.28	19.10	3.85	-4.08
	Peso/Inerzia muro			42.69	299.65/-21.35	0.53	-5.79
	Peso/Inerzia rivestimento			3.99	28.00	0.00	0.00
	Peso/Inerzia terrapieno			66.79	468.78/-33.40	2.08	-3.39
13	Spinta statica	154.23	23.33	141.61	61.09	3.85	-5.43
	Peso/Inerzia muro			0.00	299.65/0.00	0.53	-5.79
	Peso/Inerzia rivestimento			0.00	28.00	0.00	0.00
	Peso/Inerzia terrapieno			0.00	468.78/0.00	2.08	-3.39
	Peso dell'acqua sulla fondazione di valle				0.00	0.00	0.00
	Risultante forze sul muro			14.30	0.00	--	--
14	Spinta statica	171.97	23.33	157.90	68.11	3.85	-5.24
	Peso/Inerzia muro			0.00	299.65/0.00	0.53	-5.79
	Peso/Inerzia rivestimento			0.00	28.00	0.00	0.00
	Peso/Inerzia terrapieno			0.00	542.56/0.00	2.06	-3.38
	Peso dell'acqua sulla fondazione di valle				0.00	0.00	0.00
15	Spinta statica	154.23	23.33	141.61	61.09	3.85	-5.43
	Peso/Inerzia muro			0.00	299.65/0.00	0.53	-5.79
	Peso/Inerzia rivestimento			0.00	28.00	0.00	0.00
	Peso/Inerzia terrapieno			0.00	468.78/0.00	2.08	-3.39
	Peso dell'acqua sulla fondazione di valle				0.00	0.00	0.00
16	Spinta statica	154.23	23.33	141.61	61.09	3.85	-5.43
	Peso/Inerzia muro			0.00	299.65/0.00	0.53	-5.79
	Peso/Inerzia rivestimento			0.00	28.00	0.00	0.00
	Peso/Inerzia terrapieno			0.00	468.78/0.00	2.08	-3.39
	Peso dell'acqua sulla fondazione di valle				0.00	0.00	0.00

Risultanti globali

## Simbologia adottata

Cmb	Indice/Tipo combinazione
N	Componente normale al piano di posa, espressa in [kN]
T	Componente parallela al piano di posa, espressa in [kN]
M <sub>r</sub>	Momento ribaltante, espresso in [kNm]
M <sub>s</sub>	Momento stabilizzante, espresso in [kNm]
ecc	Eccentricità risultante, espressa in [m]

Ic	N [kN]	T [kN]	M <sub>r</sub> [kNm]	M <sub>s</sub> [kNm]	ecc [m]
1 - STR (A1-M1-R3)	875.84	184.10	500.15	2886.06	0.026
2 - STR (A1-M1-R3)	939.48	318.19	1092.81	3106.17	0.607
3 - STR (A1-M1-R3)	1037.46	216.71	651.41	3488.51	0.015
4 - STR (A1-M1-R3)	821.88	299.38	1187.33	2890.33	0.678
13 - ECC	857.52	155.91	515.58	2785.28	0.103

Verifiche geotecniche*Quadro riassuntivo coeff. di sicurezza calcolati*

## Simbologia adottata

Cmb	Indice/Tipo combinazione
S	Sisma (H: componente orizzontale, V: componente verticale)
FS <sub>SCO</sub>	Coeff. di sicurezza allo scorrimento
FS <sub>RIB</sub>	Coeff. di sicurezza al ribaltamento
FS <sub>QLIM</sub>	Coeff. di sicurezza a carico limite
FS <sub>STAB</sub>	Coeff. di sicurezza a stabilità globale
FS <sub>HYD</sub>	Coeff. di sicurezza a sifonamento
FS <sub>SUPL</sub>	Coeff. di sicurezza a sollevamento

Cmb	Sismica	FS <sub>SCO</sub>	FS <sub>RIB</sub>	FS <sub>QLIM</sub>	FS <sub>STAB</sub>	FS <sub>HYD</sub>	FS <sub>SUPL</sub>
1 - STR (A1-M1-R3)		2.118		6.065			
2 - STR (A1-M1-R3)	H + V	1.315		2.826			
3 - STR (A1-M1-R3)		2.131		5.163			
4 - STR (A1-M1-R3)	H - V	1.222		2.842			
5 - GEO (A2-M2-R2)					1.634		
6 - GEO (A2-M2-R2)	H + V				1.586		
7 - GEO (A2-M2-R2)					1.553		
8 - GEO (A2-M2-R2)	H - V				1.502		
9 - EQU (A1-M1-R3)			5.770				
10 - EQU (A1-M1-R3)	H + V		2.229				
11 - EQU (A1-M1-R3)			5.355				
12 - EQU (A1-M1-R3)	H - V		1.821				
13 - ECC		2.449	5.402	6.623	2.043		

*Verifica a scorrimento fondazione*



## Simbologia adottata

n°	Indice combinazione
Rsa	Resistenza allo scorrimento per attrito, espresso in [kN]
Rpt	Resistenza passiva terreno antistante, espresso in [kN]
Rps	Resistenza passiva sperone, espresso in [kN]
Rp	Resistenza a carichi orizzontali pali (solo per fondazione mista), espresso in [kN]
Rt	Resistenza a carichi orizzontali tiranti (solo se presenti), espresso in [kN]
R	Resistenza allo scorrimento (somma di Rsa+Rpt+Rps+Rp), espresso in [kN]
T	Carico parallelo al piano di posa, espresso in [kN]
FS	Fattore di sicurezza (rapporto R/T)

n°	Rsa	Rpt	Rps	Rp	Rt	R	T	FS
	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	
1 - STR (A1-M1-R3)	389.95	0.00	0.00	--	--	389.95	184.10	2.118
2 - STR (A1-M1-R3) H + V	418.28	0.00	0.00	--	--	418.28	318.19	1.315
3 - STR (A1-M1-R3)	461.91	0.00	0.00	--	--	461.91	216.71	2.131
4 - STR (A1-M1-R3) H - V	365.92	0.00	0.00	--	--	365.92	299.38	1.222
13 - ECC	381.79	0.00	0.00	--	--	381.79	155.91	2.449

## Verifica a carico limite

## Simbologia adottata

n°	Indice combinazione
N	Carico normale totale al piano di posa, espresso in [kN]
Qu	carico limite del terreno, espresso in [kN]
Qd	Portanza di progetto, espresso in [kN]
FS	Fattore di sicurezza (rapporto tra il carico limite e carico agente al piano di posa)

n°	N	Qu	Qd	FS
	[kN]	[kN]	[kN]	
1 - STR (A1-M1-R3)	875.84	5312.19	3794.42	6.065
2 - STR (A1-M1-R3) H + V	939.48	2654.78	2212.32	2.826
3 - STR (A1-M1-R3)	1037.46	5356.61	3826.15	5.163
4 - STR (A1-M1-R3) H - V	821.88	2335.40	1946.17	2.842
13 - ECC	857.52	5679.69	4056.92	6.623

## Verifica a ribaltamento

## Simbologia adottata

n°	Indice combinazione
Ms	Momento stabilizzante, espresso in [kNm]
Mr	Momento ribaltante, espresso in [kNm]
FS	Fattore di sicurezza (rapporto tra momento stabilizzante e momento ribaltante)

La verifica viene eseguita rispetto allo spigolo inferiore esterno della fondazione

n°	Ms	Mr	FS
	[kNm]	[kNm]	
9 - EQU (A1-M1-R3)	2886.06	500.15	5.770
10 - EQU (A1-M1-R3) H + V	3281.54	1472.48	2.229
11 - EQU (A1-M1-R3)	3488.51	651.41	5.355
12 - EQU (A1-M1-R3) H - V	2965.96	1628.31	1.821
13 - ECC	2785.28	515.58	5.402

### Verifica stabilità globale muro + terreno

#### Simbologia adottata

Ic	Indice/Tipo combinazione
C	Centro superficie di scorrimento, espresso in [m]
R	Raggio, espresso in [m]
FS	Fattore di sicurezza

Ic	C [m]	R [m]	FS
5 - GEO (A2-M2-R2)	-2.24; 1.68	11.57	1.634
6 - GEO (A2-M2-R2) H + V	-3.36; 5.03	15.03	1.586
7 - GEO (A2-M2-R2)	-2.80; 2.24	12.34	1.553
8 - GEO (A2-M2-R2) H - V	-3.36; 5.03	15.03	1.502
13 - ECC	-2.24; 1.68	11.57	2.043

### Sollecitazioni

#### Elementi calcolati a trave

##### Simbologia adottata

N	Sforzo normale, espresso in [kN]. Positivo se di compressione.
T	Taglio, espresso in [kN]. Positivo se diretto da monte verso valle
M	Momento, espresso in [kNm]. Positivo se tende le fibre contro terra (a monte)

### Paramento

#### Combinazione n° 1 - STR (A1-M1-R3)

n°	X [m]	N [kN]	T [kN]	M [kNm]
1	0.00	3.06	0.00	0.38
2	-0.10	4.30	0.03	0.39
3	-0.20	5.56	0.12	0.40
4	-0.30	6.84	0.28	0.44
5	-0.40	8.15	0.49	0.50
6	-0.50	9.48	0.77	0.58
7	-0.60	10.83	1.11	0.71
8	-0.70	12.20	1.50	0.88
9	-0.80	13.60	1.96	1.10
10	-0.90	15.02	2.49	1.37
11	-1.00	16.46	3.07	1.71
12	-1.10	17.92	3.71	2.11
13	-1.20	19.41	4.42	2.59
14	-1.30	20.92	5.18	3.15
15	-1.40	22.46	6.01	3.80
16	-1.50	24.01	6.90	4.53
17	-1.60	25.59	7.85	5.37
18	-1.70	27.19	8.86	6.31
19	-1.80	28.81	9.93	7.37
20	-1.90	30.46	11.07	8.54
21	-2.00	32.13	12.26	9.84
22	-2.10	33.82	13.52	11.27
23	-2.20	35.54	14.84	12.83

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
24	-2.30	37.27	16.22	14.54
25	-2.40	39.04	17.66	16.39
26	-2.50	40.82	19.16	18.40
27	-2.60	42.62	20.72	20.58
28	-2.70	44.45	22.35	22.92
29	-2.80	46.30	24.03	25.43
30	-2.90	48.18	25.78	28.13
31	-3.00	50.07	27.59	31.01
32	-3.10	51.99	29.46	34.08
33	-3.20	53.94	31.39	37.36
34	-3.30	55.90	33.38	40.84
35	-3.40	57.89	35.43	44.52
36	-3.50	59.90	37.55	48.43
37	-3.60	61.93	39.72	52.56
38	-3.70	63.99	41.96	56.93
39	-3.80	66.07	44.26	61.52
40	-3.90	68.17	46.62	66.36
41	-4.00	70.29	49.04	71.45
42	-4.10	72.44	51.52	76.80
43	-4.20	74.61	54.07	82.40
44	-4.30	76.80	56.67	88.28
45	-4.40	79.02	59.34	94.43
46	-4.50	81.26	62.07	100.85
47	-4.60	83.52	64.86	107.57
48	-4.70	85.80	67.71	114.57
49	-4.80	88.11	70.62	121.88
50	-4.90	90.44	73.59	129.49
51	-5.00	92.79	76.63	137.41
52	-5.10	95.16	79.72	145.65
53	-5.20	97.56	82.88	154.21
54	-5.30	99.98	86.10	163.10
55	-5.40	102.42	89.38	172.33
56	-5.50	104.89	92.72	181.90
57	-5.60	107.37	96.12	191.82
58	-5.70	109.89	99.58	202.09
59	-5.80	112.42	103.11	212.73
60	-5.90	114.98	106.69	223.73
61	-6.00	117.55	110.34	235.11
62	-6.10	120.16	114.05	246.86
63	-6.20	122.78	117.82	259.01
64	-6.30	125.43	121.65	271.54
65	-6.40	128.10	125.54	284.47
66	-6.50	130.79	129.50	297.81
67	-6.60	133.51	133.51	311.56
68	-6.70	136.24	137.59	325.73
69	-6.80	139.01	141.73	340.31
70	-6.90	141.79	145.92	355.33
71	-7.00	144.60	150.18	370.79

Combinazione n° 2 - STR (A1-M1-R3) H + V

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	0.00	3.28	0.00	0.41
2	-0.10	4.52	0.89	0.46
3	-0.20	5.78	1.83	0.60
4	-0.30	7.06	2.82	0.85
5	-0.40	8.37	3.86	1.20
6	-0.50	9.70	4.95	1.67
7	-0.60	11.05	6.09	2.25
8	-0.70	12.42	7.28	2.96
9	-0.80	13.82	8.52	3.79
10	-0.90	15.24	9.81	4.76
11	-1.00	16.68	11.15	5.87
12	-1.10	18.14	12.54	7.12
13	-1.20	19.63	13.98	8.52
14	-1.30	21.14	15.48	10.07

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
15	-1.40	22.67	17.02	11.78
16	-1.50	24.23	18.61	13.65
17	-1.60	25.81	20.26	15.70
18	-1.70	27.41	21.95	17.91
19	-1.80	29.03	23.69	20.31
20	-1.90	30.68	25.49	22.89
21	-2.00	32.35	27.33	25.67
22	-2.10	34.04	29.23	28.63
23	-2.20	35.76	31.18	31.80
24	-2.30	37.49	33.17	35.17
25	-2.40	39.25	35.22	38.75
26	-2.50	41.04	37.32	42.55
27	-2.60	42.84	39.46	46.57
28	-2.70	44.67	41.66	50.81
29	-2.80	46.52	43.91	55.29
30	-2.90	48.40	46.21	60.00
31	-3.00	50.29	48.56	64.95
32	-3.10	52.21	50.96	70.15
33	-3.20	54.15	53.41	75.60
34	-3.30	56.12	55.91	81.30
35	-3.40	58.11	58.46	87.27
36	-3.50	60.12	61.06	93.50
37	-3.60	62.15	63.71	100.01
38	-3.70	64.21	66.42	106.79
39	-3.80	66.29	69.17	113.86
40	-3.90	68.39	71.97	121.21
41	-4.00	70.51	74.82	128.86
42	-4.10	72.66	77.73	136.80
43	-4.20	74.83	80.68	145.05
44	-4.30	77.02	83.69	153.61
45	-4.40	79.24	86.74	162.47
46	-4.50	81.47	89.85	171.66
47	-4.60	83.73	93.00	181.17
48	-4.70	86.02	96.21	191.01
49	-4.80	88.32	99.46	201.18
50	-4.90	90.65	102.77	211.69
51	-5.00	93.01	106.13	222.55
52	-5.10	95.38	109.54	233.75
53	-5.20	97.78	112.99	245.31
54	-5.30	100.20	116.50	257.23
55	-5.40	102.64	120.06	269.51
56	-5.50	105.10	123.67	282.16
57	-5.60	107.59	127.33	295.19
58	-5.70	110.10	131.04	308.60
59	-5.80	112.64	134.80	322.39
60	-5.90	115.19	138.61	336.57
61	-6.00	117.77	142.47	351.15
62	-6.10	120.37	146.38	366.13
63	-6.20	123.00	150.34	381.52
64	-6.30	125.65	154.36	397.31
65	-6.40	128.32	158.42	413.53
66	-6.50	131.01	162.53	430.16
67	-6.60	133.72	166.70	447.22
68	-6.70	136.46	170.91	464.71
69	-6.80	139.22	175.17	482.64
70	-6.90	142.01	179.49	501.01
71	-7.00	144.81	183.85	519.82

Combinazione n° 3 - STR (A1-M1-R3)

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	0.00	3.06	0.00	0.38
2	-0.10	4.30	1.09	0.44
3	-0.20	5.56	2.24	0.61
4	-0.30	6.84	3.45	0.91
5	-0.40	8.15	4.72	1.34

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
6	-0.50	9.48	6.06	1.91
7	-0.60	10.83	7.45	2.61
8	-0.70	12.20	8.91	3.47
9	-0.80	13.60	10.42	4.48
10	-0.90	15.02	12.00	5.65
11	-1.00	16.46	13.64	7.00
12	-1.10	17.92	15.34	8.51
13	-1.20	19.41	17.10	10.20
14	-1.30	20.92	18.93	12.08
15	-1.40	22.46	20.81	14.16
16	-1.50	24.01	22.76	16.43
17	-1.60	25.59	24.76	18.90
18	-1.70	27.19	26.83	21.59
19	-1.80	28.81	28.96	24.50
20	-1.90	30.46	31.15	27.63
21	-2.00	32.13	33.41	30.98
22	-2.10	33.82	35.72	34.58
23	-2.20	35.54	38.10	38.42
24	-2.30	37.27	40.53	42.50
25	-2.40	39.04	43.03	46.84
26	-2.50	40.82	45.59	51.44
27	-2.60	42.62	48.21	56.31
28	-2.70	44.45	50.89	61.45
29	-2.80	46.30	53.63	66.88
30	-2.90	48.18	56.44	72.58
31	-3.00	50.07	59.30	78.58
32	-3.10	51.99	62.23	84.88
33	-3.20	53.94	65.22	91.49
34	-3.30	55.90	68.27	98.40
35	-3.40	57.89	71.38	105.63
36	-3.50	59.90	74.55	113.19
37	-3.60	61.93	77.78	121.07
38	-3.70	63.99	81.08	129.29
39	-3.80	66.07	84.43	137.85
40	-3.90	68.17	87.85	146.77
41	-4.00	70.29	91.33	156.03
42	-4.10	72.44	94.87	165.66
43	-4.20	74.61	98.47	175.65
44	-4.30	76.80	102.13	186.02
45	-4.40	79.02	105.86	196.76
46	-4.50	81.26	109.63	207.89
47	-4.60	83.52	113.45	219.42
48	-4.70	85.80	117.30	231.33
49	-4.80	88.11	121.14	243.64
50	-4.90	90.44	124.99	256.35
51	-5.00	92.79	128.81	269.45
52	-5.10	95.16	132.63	282.94
53	-5.20	97.56	136.43	296.83
54	-5.30	99.98	140.24	311.11
55	-5.40	102.42	144.08	325.78
56	-5.50	104.89	147.96	340.85
57	-5.60	107.37	151.90	356.32
58	-5.70	109.89	155.89	372.20
59	-5.80	112.42	159.96	388.49
60	-5.90	114.98	164.08	405.20
61	-6.00	117.55	168.27	422.35
62	-6.10	120.16	172.52	439.92
63	-6.20	122.78	176.84	457.94
64	-6.30	125.43	181.21	476.40
65	-6.40	128.10	185.65	495.32
66	-6.50	130.79	190.15	514.69
67	-6.60	133.51	194.72	534.53
68	-6.70	136.24	199.34	554.85
69	-6.80	139.01	204.03	575.64
70	-6.90	141.79	208.79	596.92
71	-7.00	144.60	213.60	618.69

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	0.00	3.06	0.00	0.38
2	-0.10	4.30	0.67	0.42
3	-0.20	5.56	1.38	0.53
4	-0.30	6.84	2.15	0.72
5	-0.40	8.15	2.97	1.00
6	-0.50	9.48	3.84	1.36
7	-0.60	10.83	4.76	1.83
8	-0.70	12.20	5.73	2.39
9	-0.80	13.60	6.75	3.06
10	-0.90	15.02	7.82	3.84
11	-1.00	16.46	8.94	4.73
12	-1.10	17.92	10.11	5.75
13	-1.20	19.41	11.33	6.90
14	-1.30	20.92	12.60	8.17
15	-1.40	22.46	13.92	9.58
16	-1.50	24.01	15.29	11.14
17	-1.60	25.59	16.72	12.84
18	-1.70	27.19	18.19	14.69
19	-1.80	28.81	19.71	16.70
20	-1.90	30.46	21.29	18.87
21	-2.00	32.13	22.91	21.21
22	-2.10	33.82	24.58	23.73
23	-2.20	35.54	26.31	26.42
24	-2.30	37.27	28.09	29.29
25	-2.40	39.04	29.91	32.35
26	-2.50	40.82	31.79	35.61
27	-2.60	42.62	33.71	39.06
28	-2.70	44.45	35.69	42.72
29	-2.80	46.30	37.72	46.59
30	-2.90	48.18	39.80	50.67
31	-3.00	50.07	41.92	54.97
32	-3.10	51.99	44.10	59.49
33	-3.20	53.94	46.33	64.24
34	-3.30	55.90	48.61	69.23
35	-3.40	57.89	50.94	74.46
36	-3.50	59.90	53.32	79.93
37	-3.60	61.93	55.75	85.65
38	-3.70	63.99	58.23	91.63
39	-3.80	66.07	60.76	97.86
40	-3.90	68.17	63.34	104.36
41	-4.00	70.29	65.98	111.14
42	-4.10	72.44	68.66	118.18
43	-4.20	74.61	71.39	125.51
44	-4.30	76.80	74.17	133.13
45	-4.40	79.02	77.01	141.03
46	-4.50	81.26	79.89	149.24
47	-4.60	83.52	82.83	157.74
48	-4.70	85.80	85.81	166.55
49	-4.80	88.11	88.85	175.67
50	-4.90	90.44	91.93	185.11
51	-5.00	92.79	95.07	194.87
52	-5.10	95.16	98.25	204.96
53	-5.20	97.56	101.49	215.38
54	-5.30	99.98	104.78	226.13
55	-5.40	102.42	108.12	237.23
56	-5.50	104.89	111.50	248.68
57	-5.60	107.37	114.94	260.48
58	-5.70	109.89	118.43	272.64
59	-5.80	112.42	121.97	285.16
60	-5.90	114.98	125.56	298.05
61	-6.00	117.55	129.20	311.31
62	-6.10	120.16	132.89	324.95
63	-6.20	122.78	136.63	338.98
64	-6.30	125.43	140.42	353.39
65	-6.40	128.10	144.26	368.20
66	-6.50	130.79	148.15	383.40
67	-6.60	133.51	152.10	399.01
68	-6.70	136.24	156.09	415.03
69	-6.80	139.01	160.13	431.47

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
70	-6.90	141.79	164.23	448.32
71	-7.00	144.60	168.37	465.60

Combinazione n° 13 - ECC

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	0.00	3.06	14.30	14.68
2	-0.10	4.30	14.32	16.12
3	-0.20	5.56	14.40	17.56
4	-0.30	6.84	14.51	19.02
5	-0.40	8.15	14.68	20.50
6	-0.50	9.48	14.89	22.01
7	-0.60	10.83	15.15	23.54
8	-0.70	12.20	15.46	25.11
9	-0.80	13.60	15.81	26.72
10	-0.90	15.02	16.21	28.37
11	-1.00	16.46	16.66	30.07
12	-1.10	17.92	17.16	31.83
13	-1.20	19.41	17.70	33.64
14	-1.30	20.92	18.29	35.52
15	-1.40	22.46	18.92	37.47
16	-1.50	24.01	19.61	39.49
17	-1.60	25.59	20.34	41.59
18	-1.70	27.19	21.12	43.77
19	-1.80	28.81	21.94	46.03
20	-1.90	30.46	22.81	48.39
21	-2.00	32.13	23.73	50.85
22	-2.10	33.82	24.70	53.41
23	-2.20	35.54	25.71	56.08
24	-2.30	37.27	26.77	58.86
25	-2.40	39.04	27.88	61.75
26	-2.50	40.82	29.04	64.77
27	-2.60	42.62	30.24	67.91
28	-2.70	44.45	31.49	71.19
29	-2.80	46.30	32.79	74.60
30	-2.90	48.18	34.13	78.15
31	-3.00	50.07	35.52	81.84
32	-3.10	51.99	36.96	85.69
33	-3.20	53.94	38.44	89.69
34	-3.30	55.90	39.98	93.85
35	-3.40	57.89	41.56	98.18
36	-3.50	59.90	43.18	102.67
37	-3.60	61.93	44.86	107.34
38	-3.70	63.99	46.58	112.19
39	-3.80	66.07	48.35	117.22
40	-3.90	68.17	50.16	122.45
41	-4.00	70.29	52.02	127.86
42	-4.10	72.44	53.93	133.48
43	-4.20	74.61	55.89	139.29
44	-4.30	76.80	57.90	145.32
45	-4.40	79.02	59.95	151.56
46	-4.50	81.26	62.04	158.02
47	-4.60	83.52	64.19	164.69
48	-4.70	85.80	66.38	171.60
49	-4.80	88.11	68.62	178.74
50	-4.90	90.44	70.91	186.12
51	-5.00	92.79	73.24	193.73
52	-5.10	95.16	75.62	201.60
53	-5.20	97.56	78.05	209.72
54	-5.30	99.98	80.53	218.09
55	-5.40	102.42	83.05	226.72
56	-5.50	104.89	85.62	235.62
57	-5.60	107.37	88.24	244.79
58	-5.70	109.89	90.90	254.24
59	-5.80	112.42	93.61	263.96
60	-5.90	114.98	96.37	273.98

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
61	-6.00	117.55	99.18	284.28
62	-6.10	120.16	102.03	294.88
63	-6.20	122.78	104.93	305.77
64	-6.30	125.43	107.88	316.97
65	-6.40	128.10	110.87	328.48
66	-6.50	130.79	113.91	340.31
67	-6.60	133.51	117.00	352.45
68	-6.70	136.24	120.14	364.92
69	-6.80	139.01	123.32	377.72
70	-6.90	141.79	126.55	390.85
71	-7.00	144.60	129.83	404.32

Combinazione n° 14 - SLER

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	0.00	3.06	0.00	0.38
2	-0.10	4.30	0.55	0.41
3	-0.20	5.56	1.15	0.51
4	-0.30	6.84	1.80	0.67
5	-0.40	8.15	2.49	0.90
6	-0.50	9.48	3.23	1.22
7	-0.60	10.83	4.02	1.61
8	-0.70	12.20	4.86	2.09
9	-0.80	13.60	5.74	2.67
10	-0.90	15.02	6.67	3.34
11	-1.00	16.46	7.65	4.12
12	-1.10	17.92	8.67	5.00
13	-1.20	19.41	9.74	5.99
14	-1.30	20.92	10.86	7.10
15	-1.40	22.46	12.02	8.33
16	-1.50	24.01	13.24	9.68
17	-1.60	25.59	14.50	11.17
18	-1.70	27.19	15.80	12.79
19	-1.80	28.81	17.16	14.56
20	-1.90	30.46	18.56	16.47
21	-2.00	32.13	20.00	18.52
22	-2.10	33.82	21.50	20.74
23	-2.20	35.54	23.04	23.11
24	-2.30	37.27	24.63	25.65
25	-2.40	39.04	26.27	28.36
26	-2.50	40.82	27.95	31.24
27	-2.60	42.62	29.68	34.30
28	-2.70	44.45	31.46	37.54
29	-2.80	46.30	33.29	40.98
30	-2.90	48.18	35.16	44.60
31	-3.00	50.07	37.08	48.43
32	-3.10	51.99	39.05	52.46
33	-3.20	53.94	41.06	56.69
34	-3.30	55.90	43.12	61.14
35	-3.40	57.89	45.23	65.81
36	-3.50	59.90	47.38	70.70
37	-3.60	61.93	49.59	75.82
38	-3.70	63.99	51.84	81.16
39	-3.80	66.07	54.13	86.75
40	-3.90	68.17	56.48	92.58
41	-4.00	70.29	58.87	98.65
42	-4.10	72.44	61.31	104.98
43	-4.20	74.61	63.79	111.56
44	-4.30	76.80	66.33	118.40
45	-4.40	79.02	68.90	125.51
46	-4.50	81.26	71.53	132.89
47	-4.60	83.52	74.18	140.54
48	-4.70	85.80	76.86	148.47
49	-4.80	88.11	79.55	156.68
50	-4.90	90.44	82.24	165.17
51	-5.00	92.79	84.93	173.94



VE407

**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
52	-5.10	95.16	87.63	182.99
53	-5.20	97.56	90.35	192.32
54	-5.30	99.98	93.11	201.94
55	-5.40	102.42	95.90	211.84
56	-5.50	104.89	98.74	222.04
57	-5.60	107.37	101.63	232.54
58	-5.70	109.89	104.57	243.34
59	-5.80	112.42	107.56	254.44
60	-5.90	114.98	110.59	265.86
61	-6.00	117.55	113.67	277.60
62	-6.10	120.16	116.80	289.66
63	-6.20	122.78	119.97	302.05
64	-6.30	125.43	123.20	314.77
65	-6.40	128.10	126.47	327.83
66	-6.50	130.79	129.79	341.22
67	-6.60	133.51	133.16	354.97
68	-6.70	136.24	136.57	369.07
69	-6.80	139.01	140.03	383.52
70	-6.90	141.79	143.54	398.34
71	-7.00	144.60	147.10	413.52

Combinazione n° 15 - SLEF

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	0.00	3.06	0.00	0.38
2	-0.10	4.30	0.02	0.39
3	-0.20	5.56	0.10	0.40
4	-0.30	6.84	0.21	0.43
5	-0.40	8.15	0.38	0.48
6	-0.50	9.48	0.59	0.56
7	-0.60	10.83	0.85	0.66
8	-0.70	12.20	1.16	0.80
9	-0.80	13.60	1.51	0.98
10	-0.90	15.02	1.91	1.20
11	-1.00	16.46	2.36	1.47
12	-1.10	17.92	2.86	1.80
13	-1.20	19.41	3.40	2.18
14	-1.30	20.92	3.99	2.63
15	-1.40	22.46	4.62	3.15
16	-1.50	24.01	5.31	3.74
17	-1.60	25.59	6.04	4.41
18	-1.70	27.19	6.82	5.16
19	-1.80	28.81	7.64	5.99
20	-1.90	30.46	8.51	6.92
21	-2.00	32.13	9.43	7.95
22	-2.10	33.82	10.40	9.08
23	-2.20	35.54	11.41	10.32
24	-2.30	37.27	12.47	11.67
25	-2.40	39.04	13.58	13.13
26	-2.50	40.82	14.74	14.72
27	-2.60	42.62	15.94	16.43
28	-2.70	44.45	17.19	18.28
29	-2.80	46.30	18.49	20.26
30	-2.90	48.18	19.83	22.38
31	-3.00	50.07	21.22	24.64
32	-3.10	51.99	22.66	27.06
33	-3.20	53.94	24.14	29.63
34	-3.30	55.90	25.68	32.36
35	-3.40	57.89	27.26	35.26
36	-3.50	59.90	28.88	38.32
37	-3.60	61.93	30.56	41.56
38	-3.70	63.99	32.28	44.98
39	-3.80	66.07	34.05	48.58
40	-3.90	68.17	35.86	52.38
41	-4.00	70.29	37.72	56.36
42	-4.10	72.44	39.63	60.55

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
43	-4.20	74.61	41.59	64.93
44	-4.30	76.80	43.60	69.53
45	-4.40	79.02	45.65	74.34
46	-4.50	81.26	47.74	79.37
47	-4.60	83.52	49.89	84.61
48	-4.70	85.80	52.08	90.09
49	-4.80	88.11	54.32	95.80
50	-4.90	90.44	56.61	101.75
51	-5.00	92.79	58.94	107.93
52	-5.10	95.16	61.32	114.37
53	-5.20	97.56	63.75	121.06
54	-5.30	99.98	66.23	128.00
55	-5.40	102.42	68.75	135.20
56	-5.50	104.89	71.32	142.67
57	-5.60	107.37	73.94	150.41
58	-5.70	109.89	76.60	158.43
59	-5.80	112.42	79.31	166.72
60	-5.90	114.98	82.07	175.31
61	-6.00	117.55	84.88	184.18
62	-6.10	120.16	87.73	193.35
63	-6.20	122.78	90.63	202.81
64	-6.30	125.43	93.58	212.58
65	-6.40	128.10	96.57	222.66
66	-6.50	130.79	99.61	233.06
67	-6.60	133.51	102.70	243.77
68	-6.70	136.24	105.84	254.81
69	-6.80	139.01	109.02	266.18
70	-6.90	141.79	112.25	277.88
71	-7.00	144.60	115.53	289.92

Combinazione n° 16 - SLEQ

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	0.00	3.06	0.00	0.38
2	-0.10	4.30	0.02	0.39
3	-0.20	5.56	0.10	0.40
4	-0.30	6.84	0.21	0.43
5	-0.40	8.15	0.38	0.48
6	-0.50	9.48	0.59	0.56
7	-0.60	10.83	0.85	0.66
8	-0.70	12.20	1.16	0.80
9	-0.80	13.60	1.51	0.98
10	-0.90	15.02	1.91	1.20
11	-1.00	16.46	2.36	1.47
12	-1.10	17.92	2.86	1.80
13	-1.20	19.41	3.40	2.18
14	-1.30	20.92	3.99	2.63
15	-1.40	22.46	4.62	3.15
16	-1.50	24.01	5.31	3.74
17	-1.60	25.59	6.04	4.41
18	-1.70	27.19	6.82	5.16
19	-1.80	28.81	7.64	5.99
20	-1.90	30.46	8.51	6.92
21	-2.00	32.13	9.43	7.95
22	-2.10	33.82	10.40	9.08
23	-2.20	35.54	11.41	10.32
24	-2.30	37.27	12.47	11.67
25	-2.40	39.04	13.58	13.13
26	-2.50	40.82	14.74	14.72
27	-2.60	42.62	15.94	16.43
28	-2.70	44.45	17.19	18.28
29	-2.80	46.30	18.49	20.26
30	-2.90	48.18	19.83	22.38
31	-3.00	50.07	21.22	24.64
32	-3.10	51.99	22.66	27.06
33	-3.20	53.94	24.14	29.63

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
34	-3.30	55.90	25.68	32.36
35	-3.40	57.89	27.26	35.26
36	-3.50	59.90	28.88	38.32
37	-3.60	61.93	30.56	41.56
38	-3.70	63.99	32.28	44.98
39	-3.80	66.07	34.05	48.58
40	-3.90	68.17	35.86	52.38
41	-4.00	70.29	37.72	56.36
42	-4.10	72.44	39.63	60.55
43	-4.20	74.61	41.59	64.93
44	-4.30	76.80	43.60	69.53
45	-4.40	79.02	45.65	74.34
46	-4.50	81.26	47.74	79.37
47	-4.60	83.52	49.89	84.61
48	-4.70	85.80	52.08	90.09
49	-4.80	88.11	54.32	95.80
50	-4.90	90.44	56.61	101.75
51	-5.00	92.79	58.94	107.93
52	-5.10	95.16	61.32	114.37
53	-5.20	97.56	63.75	121.06
54	-5.30	99.98	66.23	128.00
55	-5.40	102.42	68.75	135.20
56	-5.50	104.89	71.32	142.67
57	-5.60	107.37	73.94	150.41
58	-5.70	109.89	76.60	158.43
59	-5.80	112.42	79.31	166.72
60	-5.90	114.98	82.07	175.31
61	-6.00	117.55	84.88	184.18
62	-6.10	120.16	87.73	193.35
63	-6.20	122.78	90.63	202.81
64	-6.30	125.43	93.58	212.58
65	-6.40	128.10	96.57	222.66
66	-6.50	130.79	99.61	233.06
67	-6.60	133.51	102.70	243.77
68	-6.70	136.24	105.84	254.81
69	-6.80	139.01	109.02	266.18
70	-6.90	141.79	112.25	277.88
71	-7.00	144.60	115.53	289.92

*Mensola valle*Combinazione n° 1 - STR (A1-M1-R3)

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-0.75	0.00	0.00	0.00
2	-0.67	0.00	1.02	0.04
3	-0.58	0.00	2.04	0.17
4	-0.50	0.00	3.06	0.38

Combinazione n° 2 - STR (A1-M1-R3) H + V

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-0.75	0.00	0.00	0.00
2	-0.67	0.00	1.09	0.05
3	-0.58	0.00	2.19	0.18
4	-0.50	0.00	3.28	0.41

Combinazione n° 3 - STR (A1-M1-R3)

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-0.75	0.00	0.00	0.00
2	-0.67	0.00	1.02	0.04
3	-0.58	0.00	2.04	0.17
4	-0.50	0.00	3.06	0.38

Combinazione n° 4 - STR (A1-M1-R3) H - V

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-0.75	0.00	0.00	0.00
2	-0.67	0.00	1.02	0.04
3	-0.58	0.00	2.04	0.17
4	-0.50	0.00	3.06	0.38

Combinazione n° 13 - ECC

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-0.75	0.00	0.00	0.00
2	-0.67	0.00	1.02	0.04
3	-0.58	0.00	2.04	0.17
4	-0.50	0.00	3.06	0.38

Combinazione n° 14 - SLER

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-0.75	0.00	0.00	0.00
2	-0.67	0.00	1.02	0.04
3	-0.58	0.00	2.04	0.17
4	-0.50	0.00	3.06	0.38

Combinazione n° 15 - SLEF

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-0.75	0.00	0.00	0.00
2	-0.67	0.00	1.02	0.04
3	-0.58	0.00	2.04	0.17
4	-0.50	0.00	3.06	0.38

Combinazione n° 16 - SLEQ

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-0.75	0.00	0.00	0.00
2	-0.67	0.00	1.02	0.04
3	-0.58	0.00	2.04	0.17
4	-0.50	0.00	3.06	0.38

Fondazione

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**Combinazione n° 1 - STR (A1-M1-R3)

n°	X [m]	N [kN]	T [kN]	M [kNm]
1	-1.65	0.00	0.00	0.00
2	-1.55	0.00	12.98	0.62
3	-1.46	0.00	25.94	2.49
4	-1.36	0.00	38.89	5.59
5	-1.27	0.00	51.83	9.94
6	-1.17	0.00	64.75	15.53
7	-1.07	0.00	77.65	22.35
8	-0.98	0.00	90.54	30.41
9	-0.88	0.00	103.42	39.70
10	-0.79	0.00	116.28	50.23
11	-0.69	0.00	129.12	61.99
12	-0.60	0.00	141.95	74.98
13	-0.50	0.00	154.77	89.20
14	0.65	0.00	-139.80	-228.10
15	0.75	0.00	-135.69	-214.32
16	0.85	0.00	-131.55	-200.96
17	0.95	0.00	-127.40	-188.01
18	1.05	0.00	-123.23	-175.48
19	1.15	0.00	-119.05	-163.37
20	1.25	0.00	-114.85	-151.67
21	1.35	0.00	-110.64	-140.40
22	1.45	0.00	-106.40	-129.55
23	1.55	0.00	-102.16	-119.12
24	1.65	0.00	-97.89	-109.11
25	1.75	0.00	-93.61	-99.54
26	1.85	0.00	-89.32	-90.39
27	1.95	0.00	-85.00	-81.68
28	2.05	0.00	-80.67	-73.39
29	2.15	0.00	-76.33	-65.54
30	2.25	0.00	-71.97	-58.13
31	2.35	0.00	-67.59	-51.15
32	2.45	0.00	-63.20	-44.61
33	2.55	0.00	-58.79	-38.51
34	2.65	0.00	-54.36	-32.85
35	2.75	0.00	-49.92	-27.64
36	2.85	0.00	-45.47	-22.87
37	2.95	0.00	-40.99	-18.54
38	3.05	0.00	-36.50	-14.67
39	3.15	0.00	-32.00	-11.24
40	3.25	0.00	-27.47	-8.27
41	3.35	0.00	-22.93	-5.75
42	3.45	0.00	-18.38	-3.68
43	3.55	0.00	-13.81	-2.08
44	3.65	0.00	-9.22	-0.92
45	3.75	0.00	-4.62	-0.23
46	3.85	0.00	0.00	0.00

Combinazione n° 2 - STR (A1-M1-R3) H + V

n°	X [m]	N [kN]	T [kN]	M [kNm]
1	-1.65	0.00	0.00	0.00
2	-1.55	0.00	24.32	1.17
3	-1.46	0.00	48.26	4.65
4	-1.36	0.00	71.82	10.41
5	-1.27	0.00	95.00	18.40
6	-1.17	0.00	117.81	28.60
7	-1.07	0.00	140.23	40.97
8	-0.98	0.00	162.28	55.47
9	-0.88	0.00	183.96	72.06
10	-0.79	0.00	205.25	90.71
11	-0.69	0.00	226.17	111.39
12	-0.60	0.00	246.71	134.05
13	-0.50	0.00	266.87	158.66

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X [m]	N [kN]	T [kN]	M [kNm]
14	0.65	0.00	-120.43	-304.98
15	0.75	0.00	-123.04	-292.80
16	0.85	0.00	-125.24	-280.38
17	0.95	0.00	-127.03	-267.77
18	1.05	0.00	-128.41	-254.99
19	1.15	0.00	-129.37	-242.10
20	1.25	0.00	-129.93	-229.13
21	1.35	0.00	-130.07	-216.13
22	1.45	0.00	-129.80	-203.13
23	1.55	0.00	-129.12	-190.18
24	1.65	0.00	-128.03	-177.32
25	1.75	0.00	-126.53	-164.59
26	1.85	0.00	-124.62	-152.03
27	1.95	0.00	-122.29	-139.68
28	2.05	0.00	-119.56	-127.58
29	2.15	0.00	-116.41	-115.78
30	2.25	0.00	-112.85	-104.32
31	2.35	0.00	-108.88	-93.23
32	2.45	0.00	-104.50	-82.55
33	2.55	0.00	-99.71	-72.34
34	2.65	0.00	-94.51	-62.63
35	2.75	0.00	-88.89	-53.45
36	2.85	0.00	-82.87	-44.86
37	2.95	0.00	-76.43	-36.89
38	3.05	0.00	-69.58	-29.59
39	3.15	0.00	-62.33	-22.99
40	3.25	0.00	-54.66	-17.14
41	3.35	0.00	-46.57	-12.07
42	3.45	0.00	-38.08	-7.84
43	3.55	0.00	-29.18	-4.47
44	3.65	0.00	-19.86	-2.01
45	3.75	0.00	-10.14	-0.51
46	3.85	0.00	0.00	0.00

Combinazione n° 3 - STR (A1-M1-R3)

n°	X [m]	N [kN]	T [kN]	M [kNm]
1	-1.65	0.00	0.00	0.00
2	-1.55	0.00	15.67	0.75
3	-1.46	0.00	31.33	3.00
4	-1.36	0.00	46.97	6.75
5	-1.27	0.00	62.61	12.01
6	-1.17	0.00	78.24	18.75
7	-1.07	0.00	93.85	27.00
8	-0.98	0.00	109.46	36.74
9	-0.88	0.00	125.06	47.98
10	-0.79	0.00	140.64	60.71
11	-0.69	0.00	156.22	74.94
12	-0.60	0.00	171.78	90.65
13	-0.50	0.00	187.34	107.86
14	0.65	0.00	-163.84	-265.22
15	0.75	0.00	-158.38	-248.29
16	0.85	0.00	-152.91	-231.90
17	0.95	0.00	-147.43	-216.06
18	1.05	0.00	-141.94	-200.77
19	1.15	0.00	-136.43	-186.03
20	1.25	0.00	-130.92	-171.84
21	1.35	0.00	-125.39	-158.20
22	1.45	0.00	-119.85	-145.12
23	1.55	0.00	-114.30	-132.59
24	1.65	0.00	-108.74	-120.62
25	1.75	0.00	-103.17	-109.20
26	1.85	0.00	-97.59	-98.34
27	1.95	0.00	-91.99	-88.04
28	2.05	0.00	-86.39	-78.30
29	2.15	0.00	-80.77	-69.12

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X [m]	N [kN]	T [kN]	M [kNm]
30	2.25	0.00	-75.14	-60.50
31	2.35	0.00	-69.50	-52.44
32	2.45	0.00	-63.85	-44.96
33	2.55	0.00	-58.19	-38.03
34	2.65	0.00	-52.52	-31.67
35	2.75	0.00	-46.83	-25.88
36	2.85	0.00	-41.14	-20.66
37	2.95	0.00	-35.43	-16.01
38	3.05	0.00	-30.67	-12.32
39	3.15	0.00	-26.88	-9.44
40	3.25	0.00	-23.07	-6.94
41	3.35	0.00	-19.25	-4.82
42	3.45	0.00	-15.42	-3.09
43	3.55	0.00	-11.59	-1.74
44	3.65	0.00	-7.73	-0.77
45	3.75	0.00	-3.87	-0.19
46	3.85	0.00	0.00	0.00

Combinazione n° 4 - STR (A1-M1-R3) H - V

n°	X [m]	N [kN]	T [kN]	M [kNm]
1	-1.65	0.00	0.00	0.00
2	-1.55	0.00	22.02	1.06
3	-1.46	0.00	43.68	4.21
4	-1.36	0.00	64.96	9.42
5	-1.27	0.00	85.88	16.65
6	-1.17	0.00	106.43	25.87
7	-1.07	0.00	126.61	37.04
8	-0.98	0.00	146.42	50.12
9	-0.88	0.00	165.86	65.09
10	-0.79	0.00	184.93	81.90
11	-0.69	0.00	203.63	100.52
12	-0.60	0.00	221.97	120.92
13	-0.50	0.00	239.93	143.05
14	0.65	0.00	-185.41	-406.38
15	0.75	0.00	-185.85	-387.81
16	0.85	0.00	-185.88	-369.22
17	0.95	0.00	-185.51	-350.65
18	1.05	0.00	-184.74	-332.14
19	1.15	0.00	-183.56	-313.72
20	1.25	0.00	-181.99	-295.44
21	1.35	0.00	-180.01	-277.33
22	1.45	0.00	-177.63	-259.45
23	1.55	0.00	-174.85	-241.82
24	1.65	0.00	-171.67	-224.49
25	1.75	0.00	-168.09	-207.50
26	1.85	0.00	-164.10	-190.89
27	1.95	0.00	-159.71	-174.69
28	2.05	0.00	-154.92	-158.96
29	2.15	0.00	-149.73	-143.72
30	2.25	0.00	-144.14	-129.03
31	2.35	0.00	-138.14	-114.91
32	2.45	0.00	-131.75	-101.41
33	2.55	0.00	-124.95	-88.57
34	2.65	0.00	-117.75	-76.43
35	2.75	0.00	-110.14	-65.04
36	2.85	0.00	-102.14	-54.42
37	2.95	0.00	-93.73	-44.62
38	3.05	0.00	-84.93	-35.69
39	3.15	0.00	-75.72	-27.65
40	3.25	0.00	-66.11	-20.56
41	3.35	0.00	-56.09	-14.44
42	3.45	0.00	-45.68	-9.35
43	3.55	0.00	-34.86	-5.32
44	3.65	0.00	-23.64	-2.39
45	3.75	0.00	-12.02	-0.60

VE407

**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
46	3.85	0.00	0.00	0.00

Combinazione n° 13 - ECC

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-1.65	0.00	0.00	0.00
2	-1.55	0.00	13.89	0.67
3	-1.46	0.00	27.72	2.66
4	-1.36	0.00	41.49	5.98
5	-1.27	0.00	55.21	10.61
6	-1.17	0.00	68.86	16.56
7	-1.07	0.00	82.46	23.81
8	-0.98	0.00	96.00	32.36
9	-0.88	0.00	109.48	42.20
10	-0.79	0.00	122.90	53.34
11	-0.69	0.00	136.26	65.76
12	-0.60	0.00	149.57	79.45
13	-0.50	0.00	162.81	94.42
14	0.65	0.00	-40.26	-81.79
15	0.75	0.00	-39.99	-77.78
16	0.85	0.00	-39.65	-73.80
17	0.95	0.00	-39.25	-69.85
18	1.05	0.00	-38.79	-65.95
19	1.15	0.00	-38.26	-62.09
20	1.25	0.00	-37.67	-58.30
21	1.35	0.00	-37.02	-54.56
22	1.45	0.00	-36.30	-50.89
23	1.55	0.00	-35.52	-47.30
24	1.65	0.00	-34.68	-43.79
25	1.75	0.00	-33.77	-40.37
26	1.85	0.00	-32.80	-37.04
27	1.95	0.00	-31.76	-33.81
28	2.05	0.00	-30.66	-30.69
29	2.15	0.00	-29.50	-27.68
30	2.25	0.00	-28.27	-24.79
31	2.35	0.00	-26.99	-22.03
32	2.45	0.00	-25.63	-19.40
33	2.55	0.00	-24.21	-16.90
34	2.65	0.00	-22.73	-14.56
35	2.75	0.00	-21.19	-12.36
36	2.85	0.00	-19.58	-10.32
37	2.95	0.00	-17.91	-8.45
38	3.05	0.00	-16.17	-6.74
39	3.15	0.00	-14.37	-5.21
40	3.25	0.00	-12.51	-3.87
41	3.35	0.00	-10.59	-2.71
42	3.45	0.00	-8.60	-1.75
43	3.55	0.00	-6.54	-1.00
44	3.65	0.00	-4.43	-0.45
45	3.75	0.00	-2.24	-0.11
46	3.85	0.00	0.00	0.00

Combinazione n° 14 - SLER

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-1.65	0.00	0.00	0.00
2	-1.55	0.00	12.79	0.61
3	-1.46	0.00	25.60	2.45
4	-1.36	0.00	38.45	5.52
5	-1.27	0.00	51.33	9.82
6	-1.17	0.00	64.24	15.36
7	-1.07	0.00	77.18	22.14
8	-0.98	0.00	90.15	30.15



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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X [m]	N [kN]	T [kN]	M [kNm]
9	-0.88	0.00	103.15	39.42
10	-0.79	0.00	116.18	49.93
11	-0.69	0.00	129.25	61.69
12	-0.60	0.00	142.34	74.70
13	-0.50	0.00	155.46	88.97
14	0.65	0.00	-17.52	-18.94
15	0.75	0.00	-16.20	-16.84
16	0.85	0.00	-14.91	-14.87
17	0.95	0.00	-13.66	-13.03
18	1.05	0.00	-12.44	-11.32
19	1.15	0.00	-11.25	-9.72
20	1.25	0.00	-10.10	-8.25
21	1.35	0.00	-8.97	-6.88
22	1.45	0.00	-7.89	-5.63
23	1.55	0.00	-6.83	-4.48
24	1.65	0.00	-5.81	-3.44
25	1.75	0.00	-4.83	-2.50
26	1.85	0.00	-3.87	-1.65
27	1.95	0.00	-2.95	-0.90
28	2.05	0.00	-2.06	-0.24
29	2.15	0.00	-1.21	0.34
30	2.25	0.00	-0.39	0.83
31	2.35	0.00	0.40	1.24
32	2.45	0.00	1.15	1.57
33	2.55	0.00	1.88	1.83
34	2.65	0.00	2.56	2.02
35	2.75	0.00	3.22	2.14
36	2.85	0.00	3.84	2.20
37	2.95	0.00	4.43	2.19
38	3.05	0.00	4.50	1.94
39	3.15	0.00	4.06	1.52
40	3.25	0.00	3.58	1.13
41	3.35	0.00	3.06	0.80
42	3.45	0.00	2.52	0.52
43	3.55	0.00	1.94	0.30
44	3.65	0.00	1.33	0.13
45	3.75	0.00	0.68	0.03
46	3.85	0.00	0.00	0.00

Combinazione n° 15 - SLEF

n°	X [m]	N [kN]	T [kN]	M [kNm]
1	-1.65	0.00	0.00	0.00
2	-1.55	0.00	11.44	0.55
3	-1.46	0.00	22.92	2.19
4	-1.36	0.00	34.42	4.94
5	-1.27	0.00	45.95	8.79
6	-1.17	0.00	57.51	13.75
7	-1.07	0.00	69.09	19.82
8	-0.98	0.00	80.71	26.99
9	-0.88	0.00	92.35	35.28
10	-0.79	0.00	104.02	44.69
11	-0.69	0.00	115.72	55.22
12	-0.60	0.00	127.45	66.87
13	-0.50	0.00	139.20	79.65
14	0.65	0.00	-5.53	-0.44
15	0.75	0.00	-4.88	0.08
16	0.85	0.00	-4.26	0.54
17	0.95	0.00	-3.67	0.93
18	1.05	0.00	-3.11	1.27
19	1.15	0.00	-2.59	1.56
20	1.25	0.00	-2.09	1.79
21	1.35	0.00	-1.63	1.97
22	1.45	0.00	-1.19	2.11
23	1.55	0.00	-0.79	2.21
24	1.65	0.00	-0.42	2.27

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
25	1.75	0.00	-0.07	2.30
26	1.85	0.00	0.24	2.29
27	1.95	0.00	0.52	2.25
28	2.05	0.00	0.77	2.19
29	2.15	0.00	0.99	2.10
30	2.25	0.00	1.17	1.99
31	2.35	0.00	1.33	1.86
32	2.45	0.00	1.46	1.72
33	2.55	0.00	1.55	1.57
34	2.65	0.00	1.62	1.41
35	2.75	0.00	1.65	1.25
36	2.85	0.00	1.66	1.09
37	2.95	0.00	1.63	0.92
38	3.05	0.00	1.57	0.76
39	3.15	0.00	1.48	0.61
40	3.25	0.00	1.36	0.46
41	3.35	0.00	1.21	0.34
42	3.45	0.00	1.03	0.22
43	3.55	0.00	0.82	0.13
44	3.65	0.00	0.58	0.06
45	3.75	0.00	0.30	0.02
46	3.85	0.00	0.00	0.00

Combinazione n° 16 - SLEQ

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-1.65	0.00	0.00	0.00
2	-1.55	0.00	11.44	0.55
3	-1.46	0.00	22.92	2.19
4	-1.36	0.00	34.42	4.94
5	-1.27	0.00	45.95	8.79
6	-1.17	0.00	57.51	13.75
7	-1.07	0.00	69.09	19.82
8	-0.98	0.00	80.71	26.99
9	-0.88	0.00	92.35	35.28
10	-0.79	0.00	104.02	44.69
11	-0.69	0.00	115.72	55.22
12	-0.60	0.00	127.45	66.87
13	-0.50	0.00	139.20	79.65
14	0.65	0.00	-5.53	-0.44
15	0.75	0.00	-4.88	0.08
16	0.85	0.00	-4.26	0.54
17	0.95	0.00	-3.67	0.93
18	1.05	0.00	-3.11	1.27
19	1.15	0.00	-2.59	1.56
20	1.25	0.00	-2.09	1.79
21	1.35	0.00	-1.63	1.97
22	1.45	0.00	-1.19	2.11
23	1.55	0.00	-0.79	2.21
24	1.65	0.00	-0.42	2.27
25	1.75	0.00	-0.07	2.30
26	1.85	0.00	0.24	2.29
27	1.95	0.00	0.52	2.25
28	2.05	0.00	0.77	2.19
29	2.15	0.00	0.99	2.10
30	2.25	0.00	1.17	1.99
31	2.35	0.00	1.33	1.86
32	2.45	0.00	1.46	1.72
33	2.55	0.00	1.55	1.57
34	2.65	0.00	1.62	1.41
35	2.75	0.00	1.65	1.25
36	2.85	0.00	1.66	1.09
37	2.95	0.00	1.63	0.92
38	3.05	0.00	1.57	0.76
39	3.15	0.00	1.48	0.61
40	3.25	0.00	1.36	0.46

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
41	3.35	0.00	1.21	0.34
42	3.45	0.00	1.03	0.22
43	3.55	0.00	0.82	0.13
44	3.65	0.00	0.58	0.06
45	3.75	0.00	0.30	0.02
46	3.85	0.00	0.00	0.00

Verifiche strutturali*Verifiche a flessione*Elementi calcolati a trave

## Simbologia adottata

n°	indice sezione
Y	ordinata sezione espressa in [m]
B	larghezza sezione espressa in [cm]
H	altezza sezione espressa in [cm]
Afi	area ferri inferiori espressa in [cmq]
Afs	area ferri superiori espressa in [cmq]
M	momento agente espressa in [kNm]
N	sforzso normale agente espressa in [kN]
Mu	momento ultimi espresso in [kNm]
Nu	sforzso normale ultimo espressa in [kN]
FS	fattore di sicurezza (rapporto tra sollecitazione ultima e sollecitazione agente)

**Paramento**Combinazione n° 1 - STR (A1-M1-R3)

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
1	0.00	100	50	10.05	16.08	0.38	3.06	0.00	0.00	1000.000
2	-0.10	100	51	10.05	16.08	0.39	4.30	0.00	0.00	1000.000
3	-0.20	100	52	10.05	16.08	0.40	5.56	0.00	0.00	1000.000
4	-0.30	100	53	10.05	16.08	0.44	6.84	0.00	0.00	1000.000
5	-0.40	100	54	10.05	16.08	0.50	8.15	0.00	0.00	1000.000
6	-0.50	100	55	10.05	16.08	0.58	9.48	519.97	8424.99	888.883
7	-0.60	100	56	10.05	16.08	0.71	10.83	554.97	8451.23	780.418
8	-0.70	100	56	10.05	16.08	0.88	12.20	605.42	8391.76	687.691
9	-0.80	100	57	10.05	16.08	1.10	13.60	667.87	8264.83	607.743
10	-0.90	100	58	10.05	16.08	1.37	15.02	737.28	8064.17	536.952
11	-1.00	100	59	10.05	16.08	1.71	16.46	812.83	7828.65	475.607
12	-1.10	100	60	10.05	16.08	2.11	17.92	888.89	7540.50	420.670
13	-1.20	100	61	10.05	16.08	2.59	19.41	965.69	7234.32	372.665
14	-1.30	100	62	10.05	16.08	3.15	20.92	1039.82	6906.41	330.094
15	-1.40	100	63	10.05	16.08	3.80	22.46	1110.64	6570.75	292.613
16	-1.50	100	64	10.05	16.08	4.53	24.01	1178.31	6239.96	259.878
17	-1.60	100	65	10.05	16.08	5.37	25.59	1234.03	5878.49	229.723
18	-1.70	100	66	10.05	16.08	6.31	27.19	1283.12	5524.77	203.187
19	-1.80	100	67	10.05	16.08	7.37	28.81	1299.14	5079.36	176.278
20	-1.90	100	68	10.05	16.08	8.54	30.46	1300.98	4639.02	152.293
21	-2.00	100	69	10.05	16.08	9.84	32.13	1292.03	4219.02	131.309

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
22	-2.10	100	69	10.05	16.08	11.27	33.82	1273.35	3822.51	113.017
23	-2.20	100	70	10.05	16.08	12.83	35.54	1239.71	3433.59	96.619
24	-2.30	100	71	10.05	16.08	14.54	37.27	1208.80	3099.39	83.150
25	-2.40	100	72	10.05	16.08	16.39	39.04	1165.22	2774.55	71.078
26	-2.50	100	73	10.05	16.08	18.40	40.82	1132.25	2511.12	61.519
27	-2.60	100	74	10.05	16.08	20.58	42.62	1086.27	2250.07	52.789
28	-2.70	100	75	10.05	16.08	22.92	44.45	1049.59	2035.81	45.797
29	-2.80	100	76	10.05	16.08	25.43	46.30	1014.90	1847.76	39.905
30	-2.90	100	77	10.05	16.08	28.13	48.18	973.27	1667.04	34.602
31	-3.00	100	78	10.05	16.08	31.01	50.07	940.16	1518.21	30.319
32	-3.10	100	79	10.05	16.08	34.08	51.99	913.54	1393.60	26.803
33	-3.20	100	80	10.05	16.08	37.36	53.94	891.97	1287.85	23.877
34	-3.30	100	81	10.05	16.08	40.84	55.90	874.40	1197.02	21.413
35	-3.40	100	82	10.05	16.08	44.52	57.89	860.08	1118.23	19.317
36	-3.50	100	82	10.05	16.08	48.43	59.90	848.40	1049.28	17.517
37	-3.60	100	83	10.05	16.08	52.56	61.93	838.92	988.45	15.960
38	-3.70	100	84	10.05	16.08	56.93	63.99	831.29	934.44	14.603
39	-3.80	100	85	10.05	16.08	61.52	66.07	825.21	886.16	13.413
40	-3.90	100	86	10.05	16.08	66.36	68.17	818.72	840.99	12.337
41	-4.00	100	87	10.05	16.08	71.45	70.29	811.82	798.64	11.362
42	-4.10	100	88	10.05	16.08	76.80	72.44	806.17	760.42	10.497
43	-4.20	100	89	10.05	16.08	82.40	74.61	801.59	725.77	9.727
44	-4.30	100	90	10.05	16.08	88.28	76.80	797.94	694.21	9.039
45	-4.40	100	91	10.05	16.08	94.43	79.02	795.10	665.37	8.420
46	-4.50	100	92	10.05	16.08	100.85	81.26	792.99	638.90	7.863
47	-4.60	100	93	10.05	16.08	107.57	83.52	791.51	614.55	7.358
48	-4.70	100	94	10.05	16.08	114.57	85.80	790.60	592.06	6.900
49	-4.80	100	95	10.05	16.08	121.88	88.11	790.20	571.24	6.484
50	-4.90	100	95	10.05	16.08	129.49	90.44	790.24	551.91	6.103
51	-5.00	100	96	10.05	16.08	137.41	92.79	790.70	533.93	5.754
52	-5.10	100	97	10.05	16.08	145.65	95.16	791.52	517.16	5.435
53	-5.20	100	98	10.05	16.08	154.21	97.56	792.68	501.48	5.140
54	-5.30	100	99	10.05	16.08	163.10	99.98	794.13	486.79	4.869
55	-5.40	100	100	10.05	16.08	172.33	102.42	795.87	473.01	4.618
56	-5.50	100	101	10.05	16.08	181.90	104.89	797.86	460.06	4.386
57	-5.60	100	102	10.05	16.08	191.82	107.37	800.08	447.86	4.171
58	-5.70	100	103	10.05	16.08	202.09	109.89	802.51	436.35	3.971
59	-5.80	100	104	10.05	32.17	212.73	112.42	1564.14	826.59	7.353
60	-5.90	100	105	10.05	32.17	223.73	114.98	1571.67	807.68	7.025
61	-6.00	100	106	10.05	32.17	235.11	117.55	1579.49	789.75	6.718
62	-6.10	100	107	10.05	32.17	246.86	120.16	1587.57	772.72	6.431
63	-6.20	100	108	10.05	32.17	259.01	122.78	1595.89	756.53	6.162
64	-6.30	100	108	10.05	32.17	271.54	125.43	1604.46	741.12	5.909
65	-6.40	100	109	10.05	16.08	284.47	128.10	824.24	371.16	2.897
66	-6.50	100	110	10.05	16.08	297.81	130.79	827.88	363.59	2.780
67	-6.60	100	111	10.05	16.08	311.56	133.51	831.64	356.37	2.669
68	-6.70	100	112	10.05	16.08	325.73	136.24	835.49	349.47	2.565
69	-6.80	100	113	10.05	16.08	340.31	139.01	839.43	342.88	2.467
70	-6.90	100	114	10.05	16.08	355.33	141.79	843.47	336.57	2.374
71	-7.00	100	115	10.05	16.08	370.79	144.60	847.59	330.53	2.286

Combinazione n° 2 - STR (A1-M1-R3) H + V

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
1	0.00	100	50	10.05	16.08	0.41	3.28	0.00	0.00	1000.000
2	-0.10	100	51	10.05	16.08	0.46	4.52	0.00	0.00	1000.000
3	-0.20	100	52	10.05	16.08	0.60	5.78	0.00	0.00	1000.000
4	-0.30	100	53	10.05	16.08	0.85	7.06	742.29	6185.62	875.797
5	-0.40	100	54	10.05	16.08	1.20	8.37	819.72	5710.00	682.337
6	-0.50	100	55	10.05	16.08	1.67	9.70	893.28	5193.89	535.646
7	-0.60	100	56	10.05	16.08	2.25	11.05	947.24	4647.43	420.679
8	-0.70	100	56	10.05	16.08	2.96	12.42	952.85	4000.49	322.071
9	-0.80	100	57	10.05	16.08	3.79	13.82	933.32	3399.73	246.044
10	-0.90	100	58	10.05	16.08	4.76	15.24	898.56	2875.54	188.724
11	-1.00	100	59	10.05	16.08	5.87	16.68	858.18	2439.46	146.263
12	-1.10	100	60	10.05	16.08	7.12	18.14	816.47	2081.45	114.723

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## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
13	-1.20	100	61	10.05	16.08	8.52	19.63	775.14	1787.00	91.031
14	-1.30	100	62	10.05	16.08	10.07	21.14	742.24	1558.74	73.731
15	-1.40	100	63	10.05	16.08	11.78	22.67	706.95	1361.00	60.025
16	-1.50	100	64	10.05	16.08	13.65	24.23	678.96	1205.00	49.733
17	-1.60	100	65	10.05	16.08	15.70	25.81	658.47	1082.68	41.952
18	-1.70	100	66	10.05	16.08	17.91	27.41	643.30	984.28	35.911
19	-1.80	100	67	10.05	16.08	20.31	29.03	632.07	903.47	31.119
20	-1.90	100	68	10.05	16.08	22.89	30.68	623.80	835.95	27.248
21	-2.00	100	69	10.05	16.08	25.67	32.35	617.83	778.72	24.073
22	-2.10	100	69	10.05	16.08	28.63	34.04	613.69	729.63	21.434
23	-2.20	100	70	10.05	16.08	31.80	35.76	611.04	687.08	19.216
24	-2.30	100	71	10.05	16.08	35.17	37.49	609.59	649.86	17.333
25	-2.40	100	72	10.05	16.08	38.75	39.25	607.68	615.55	15.681
26	-2.50	100	73	10.05	16.08	42.55	41.04	606.18	584.63	14.247
27	-2.60	100	74	10.05	16.08	46.57	42.84	605.50	557.07	13.003
28	-2.70	100	75	10.05	16.08	50.81	44.67	605.52	532.35	11.917
29	-2.80	100	76	10.05	16.08	55.29	46.52	606.14	510.06	10.964
30	-2.90	100	77	10.05	16.08	60.00	48.40	607.27	489.86	10.122
31	-3.00	100	78	10.05	16.08	64.95	50.29	608.84	471.47	9.374
32	-3.10	100	79	10.05	16.08	70.15	52.21	610.81	454.65	8.708
33	-3.20	100	80	10.05	16.08	75.60	54.15	613.11	439.22	8.110
34	-3.30	100	81	10.05	16.08	81.30	56.12	615.72	425.01	7.573
35	-3.40	100	82	10.05	16.08	87.27	58.11	618.59	411.89	7.088
36	-3.50	100	82	10.05	16.08	93.50	60.12	621.70	399.72	6.649
37	-3.60	100	83	10.05	16.08	100.01	62.15	625.02	388.42	6.250
38	-3.70	100	84	10.05	16.08	106.79	64.21	628.54	377.89	5.886
39	-3.80	100	85	10.05	16.08	113.86	66.29	632.22	368.06	5.553
40	-3.90	100	86	10.05	16.08	121.21	68.39	636.07	358.86	5.247
41	-4.00	100	87	10.05	16.08	128.86	70.51	640.05	350.23	4.967
42	-4.10	100	88	10.05	16.08	136.80	72.66	644.16	342.12	4.709
43	-4.20	100	89	10.05	16.08	145.05	74.83	648.39	334.49	4.470
44	-4.30	100	90	10.05	16.08	153.61	77.02	652.72	327.29	4.249
45	-4.40	100	91	10.05	16.08	162.47	79.24	657.16	320.49	4.045
46	-4.50	100	92	10.05	16.08	171.66	81.47	661.68	314.05	3.855
47	-4.60	100	93	10.05	16.08	181.17	83.73	666.29	307.95	3.678
48	-4.70	100	94	10.05	16.08	191.01	86.02	670.98	302.17	3.513
49	-4.80	100	95	10.05	16.08	201.18	88.32	675.73	296.67	3.359
50	-4.90	100	95	10.05	16.08	211.69	90.65	680.56	291.44	3.215
51	-5.00	100	96	10.05	16.08	222.55	93.01	685.44	286.45	3.080
52	-5.10	100	97	10.05	16.08	233.75	95.38	690.38	281.70	2.953
53	-5.20	100	98	10.05	16.08	245.31	97.78	695.38	277.17	2.835
54	-5.30	100	99	10.05	16.08	257.23	100.20	700.43	272.83	2.723
55	-5.40	100	100	10.05	16.08	269.51	102.64	705.52	268.69	2.618
56	-5.50	100	101	10.05	16.08	282.16	105.10	710.65	264.72	2.519
57	-5.60	100	102	10.05	16.08	295.19	107.59	715.83	260.91	2.425
58	-5.70	100	103	10.05	16.08	308.60	110.10	721.05	257.26	2.337
59	-5.80	100	104	10.05	32.17	322.39	112.64	1429.58	499.47	4.434
60	-5.90	100	105	10.05	32.17	336.57	115.19	1440.20	492.91	4.279
61	-6.00	100	106	10.05	32.17	351.15	117.77	1450.88	486.61	4.132
62	-6.10	100	107	10.05	32.17	366.13	120.37	1461.62	480.54	3.992
63	-6.20	100	108	10.05	32.17	381.52	123.00	1472.41	474.70	3.859
64	-6.30	100	108	10.05	32.17	397.31	125.65	1483.25	469.06	3.733
65	-6.40	100	109	10.05	16.08	413.53	128.32	758.46	235.35	1.834
66	-6.50	100	110	10.05	16.08	430.16	131.01	763.92	232.66	1.776
67	-6.60	100	111	10.05	16.08	447.22	133.72	769.40	230.06	1.720
68	-6.70	100	112	10.05	16.08	464.71	136.46	774.90	227.55	1.667
69	-6.80	100	113	10.05	16.08	482.64	139.22	780.42	225.12	1.617
70	-6.90	100	114	10.05	16.08	501.01	142.01	785.96	222.78	1.569
71	-7.00	100	115	10.05	16.08	519.82	144.81	791.51	220.50	1.523

## Combinazione n° 3 - STR (A1-M1-R3)

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
1	0.00	100	50	10.05	16.08	0.38	3.06	0.00	0.00	1000.000
2	-0.10	100	51	10.05	16.08	0.44	4.30	0.00	0.00	1000.000
3	-0.20	100	52	10.05	16.08	0.61	5.56	0.00	0.00	1000.000

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## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
4	-0.30	100	53	10.05	16.08	0.91	6.84	776.20	5820.40	850.372
5	-0.40	100	54	10.05	16.08	1.34	8.15	857.81	5211.64	639.467
6	-0.50	100	55	10.05	16.08	1.91	9.48	918.92	4568.47	481.999
7	-0.60	100	56	10.05	16.08	2.61	10.83	917.54	3801.01	350.999
8	-0.70	100	56	10.05	16.08	3.47	12.20	886.38	3116.62	255.402
9	-0.80	100	57	10.05	16.08	4.48	13.60	838.68	2544.72	187.122
10	-0.90	100	58	10.05	16.08	5.65	15.02	785.75	2086.87	138.954
11	-1.00	100	59	10.05	16.08	7.00	16.46	737.37	1735.12	105.412
12	-1.10	100	60	10.05	16.08	8.51	17.92	698.30	1471.01	82.065
13	-1.20	100	61	10.05	16.08	10.20	19.41	657.35	1250.66	64.426
14	-1.30	100	62	10.05	16.08	12.08	20.92	628.53	1088.30	52.016
15	-1.40	100	63	10.05	16.08	14.16	22.46	608.18	964.73	42.962
16	-1.50	100	64	10.05	16.08	16.43	24.01	593.62	867.64	36.135
17	-1.60	100	65	10.05	16.08	18.90	25.59	583.19	789.43	30.850
18	-1.70	100	66	10.05	16.08	21.59	27.19	575.81	725.12	26.668
19	-1.80	100	67	10.05	16.08	24.50	28.81	570.74	671.34	23.299
20	-1.90	100	68	10.05	16.08	27.63	30.46	567.48	625.73	20.542
21	-2.00	100	69	10.05	16.08	30.98	32.13	565.47	586.40	18.251
22	-2.10	100	69	10.05	16.08	34.58	33.82	562.89	550.59	16.279
23	-2.20	100	70	10.05	16.08	38.42	35.54	561.41	519.35	14.614
24	-2.30	100	71	10.05	16.08	42.50	37.27	560.83	491.87	13.196
25	-2.40	100	72	10.05	16.08	46.84	39.04	561.00	467.51	11.977
26	-2.50	100	73	10.05	16.08	51.44	40.82	561.81	445.78	10.921
27	-2.60	100	74	10.05	16.08	56.31	42.62	563.15	426.27	10.001
28	-2.70	100	75	10.05	16.08	61.45	44.45	564.94	408.65	9.193
29	-2.80	100	76	10.05	16.08	66.88	46.30	567.13	392.68	8.480
30	-2.90	100	77	10.05	16.08	72.58	48.18	569.67	378.12	7.848
31	-3.00	100	78	10.05	16.08	78.58	50.07	572.50	364.80	7.285
32	-3.10	100	79	10.05	16.08	84.88	51.99	575.59	352.58	6.781
33	-3.20	100	80	10.05	16.08	91.49	53.94	578.92	341.31	6.328
34	-3.30	100	81	10.05	16.08	98.40	55.90	582.45	330.89	5.919
35	-3.40	100	82	10.05	16.08	105.63	57.89	586.17	321.24	5.549
36	-3.50	100	82	10.05	16.08	113.19	59.90	590.05	312.26	5.213
37	-3.60	100	83	10.05	16.08	121.07	61.93	594.07	303.89	4.907
38	-3.70	100	84	10.05	16.08	129.29	63.99	598.23	296.08	4.627
39	-3.80	100	85	10.05	16.08	137.85	66.07	602.52	288.76	4.371
40	-3.90	100	86	10.05	16.08	146.77	68.17	606.91	281.90	4.135
41	-4.00	100	87	10.05	16.08	156.03	70.29	611.40	275.44	3.918
42	-4.10	100	88	10.05	16.08	165.66	72.44	615.98	269.36	3.718
43	-4.20	100	89	10.05	16.08	175.65	74.61	620.64	263.63	3.533
44	-4.30	100	90	10.05	16.08	186.02	76.80	625.38	258.21	3.362
45	-4.40	100	91	10.05	16.08	196.76	79.02	630.20	253.08	3.203
46	-4.50	100	92	10.05	16.08	207.89	81.26	635.07	248.22	3.055
47	-4.60	100	93	10.05	16.08	219.42	83.52	640.01	243.61	2.917
48	-4.70	100	94	10.05	16.08	231.33	85.80	645.01	239.23	2.788
49	-4.80	100	95	10.05	16.08	243.64	88.11	650.06	235.07	2.668
50	-4.90	100	95	10.05	16.08	256.35	90.44	655.16	231.13	2.556
51	-5.00	100	96	10.05	16.08	269.45	92.79	660.32	227.38	2.451
52	-5.10	100	97	10.05	16.08	282.94	95.16	665.53	223.83	2.352
53	-5.20	100	98	10.05	16.08	296.83	97.56	670.79	220.47	2.260
54	-5.30	100	99	10.05	16.08	311.11	99.98	676.09	217.27	2.173
55	-5.40	100	100	10.05	16.08	325.78	102.42	681.44	214.24	2.092
56	-5.50	100	101	10.05	16.08	340.85	104.89	686.83	211.35	2.015
57	-5.60	100	102	10.05	16.08	356.32	107.37	692.26	208.61	1.943
58	-5.70	100	103	10.05	16.08	372.20	109.89	697.73	205.99	1.875
59	-5.80	100	104	10.05	32.17	388.49	112.42	1385.28	400.87	3.566
60	-5.90	100	105	10.05	32.17	405.20	114.98	1396.35	396.21	3.446
61	-6.00	100	106	10.05	32.17	422.35	117.55	1407.47	391.75	3.333
62	-6.10	100	107	10.05	32.17	439.92	120.16	1418.64	387.47	3.225
63	-6.20	100	108	10.05	32.17	457.94	122.78	1429.85	383.37	3.122
64	-6.30	100	108	10.05	32.17	476.40	125.43	1441.10	379.42	3.025
65	-6.40	100	109	10.05	16.08	495.32	128.10	736.76	190.54	1.487
66	-6.50	100	110	10.05	16.08	514.69	130.79	742.42	188.66	1.442
67	-6.60	100	111	10.05	16.08	534.53	133.51	748.10	186.85	1.400
68	-6.70	100	112	10.05	16.08	554.85	136.24	753.80	185.10	1.359
69	-6.80	100	113	10.05	16.08	575.64	139.01	759.51	183.41	1.319
70	-6.90	100	114	10.05	16.08	596.92	141.79	765.23	181.77	1.282
71	-7.00	100	115	10.05	16.08	618.69	144.60	770.97	180.19	1.246

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## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

Combinazione n° 4 - STR (A1-M1-R3) H - V

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
1	0.00	100	50	10.05	16.08	0.38	3.06	0.00	0.00	1000.000
2	-0.10	100	51	10.05	16.08	0.42	4.30	0.00	0.00	1000.000
3	-0.20	100	52	10.05	16.08	0.53	5.56	0.00	0.00	1000.000
4	-0.30	100	53	10.05	16.08	0.72	6.84	697.11	6620.23	967.229
5	-0.40	100	54	10.05	16.08	1.00	8.15	768.04	6277.77	770.280
6	-0.50	100	55	10.05	16.08	1.36	9.48	842.44	5854.49	617.681
7	-0.60	100	56	10.05	16.08	1.83	10.83	911.88	5407.21	499.322
8	-0.70	100	56	10.05	16.08	2.39	12.20	967.21	4939.83	404.811
9	-0.80	100	57	10.05	16.08	3.06	13.60	995.41	4426.41	325.490
10	-0.90	100	58	10.05	16.08	3.84	15.02	994.05	3889.72	258.997
11	-1.00	100	59	10.05	16.08	4.73	16.46	975.61	3392.17	206.082
12	-1.10	100	60	10.05	16.08	5.75	17.92	946.09	2948.60	164.497
13	-1.20	100	61	10.05	16.08	6.90	19.41	913.60	2572.14	132.500
14	-1.30	100	62	10.05	16.08	8.17	20.92	875.26	2241.35	107.126
15	-1.40	100	63	10.05	16.08	9.58	22.46	841.24	1971.35	87.790
16	-1.50	100	64	10.05	16.08	11.14	24.01	807.14	1740.27	72.478
17	-1.60	100	65	10.05	16.08	12.84	25.59	779.35	1553.53	60.710
18	-1.70	100	66	10.05	16.08	14.69	27.19	747.11	1382.85	50.858
19	-1.80	100	67	10.05	16.08	16.70	28.81	722.88	1247.22	43.285
20	-1.90	100	68	10.05	16.08	18.87	30.46	704.43	1136.93	37.324
21	-2.00	100	69	10.05	16.08	21.21	32.13	690.27	1045.49	32.539
22	-2.10	100	69	10.05	16.08	23.73	33.82	679.46	968.56	28.637
23	-2.20	100	70	10.05	16.08	26.42	35.54	671.25	902.97	25.409
24	-2.30	100	71	10.05	16.08	29.29	37.27	665.13	846.40	22.707
25	-2.40	100	72	10.05	16.08	32.35	39.04	660.69	797.13	20.421
26	-2.50	100	73	10.05	16.08	35.61	40.82	657.65	753.85	18.469
27	-2.60	100	74	10.05	16.08	39.06	42.62	655.77	715.55	16.787
28	-2.70	100	75	10.05	16.08	42.72	44.45	654.19	680.71	15.313
29	-2.80	100	76	10.05	16.08	46.59	46.30	651.98	648.02	13.995
30	-2.90	100	77	10.05	16.08	50.67	48.18	650.61	618.64	12.841
31	-3.00	100	78	10.05	16.08	54.97	50.07	649.95	592.11	11.825
32	-3.10	100	79	10.05	16.08	59.49	51.99	649.92	568.04	10.925
33	-3.20	100	80	10.05	16.08	64.24	53.94	650.43	546.09	10.125
34	-3.30	100	81	10.05	16.08	69.23	55.90	651.42	526.01	9.410
35	-3.40	100	82	10.05	16.08	74.46	57.89	652.81	507.56	8.768
36	-3.50	100	82	10.05	16.08	79.93	59.90	654.58	490.56	8.190
37	-3.60	100	83	10.05	16.08	85.65	61.93	656.67	474.84	7.667
38	-3.70	100	84	10.05	16.08	91.63	63.99	659.05	460.26	7.193
39	-3.80	100	85	10.05	16.08	97.86	66.07	661.69	446.71	6.761
40	-3.90	100	86	10.05	16.08	104.36	68.17	664.56	434.08	6.368
41	-4.00	100	87	10.05	16.08	111.14	70.29	667.65	422.29	6.007
42	-4.10	100	88	10.05	16.08	118.18	72.44	670.93	411.24	5.677
43	-4.20	100	89	10.05	16.08	125.51	74.61	674.38	400.88	5.373
44	-4.30	100	90	10.05	16.08	133.13	76.80	677.99	391.14	5.093
45	-4.40	100	91	10.05	16.08	141.03	79.02	681.75	381.97	4.834
46	-4.50	100	92	10.05	16.08	149.24	81.26	685.64	373.31	4.594
47	-4.60	100	93	10.05	16.08	157.74	83.52	689.65	365.14	4.372
48	-4.70	100	94	10.05	16.08	166.55	85.80	693.77	357.40	4.166
49	-4.80	100	95	10.05	16.08	175.67	88.11	698.00	350.07	3.973
50	-4.90	100	95	10.05	16.08	185.11	90.44	702.32	343.12	3.794
51	-5.00	100	96	10.05	16.08	194.87	92.79	706.73	336.51	3.627
52	-5.10	100	97	10.05	16.08	204.96	95.16	711.22	330.22	3.470
53	-5.20	100	98	10.05	16.08	215.38	97.56	715.79	324.23	3.323
54	-5.30	100	99	10.05	16.08	226.13	99.98	720.44	318.52	3.186
55	-5.40	100	100	10.05	16.08	237.23	102.42	725.14	313.07	3.057
56	-5.50	100	101	10.05	16.08	248.68	104.89	729.91	307.86	2.935
57	-5.60	100	102	10.05	16.08	260.48	107.37	734.74	302.87	2.821
58	-5.70	100	103	10.05	16.08	272.64	109.89	739.62	298.10	2.713
59	-5.80	100	104	10.05	32.17	285.16	112.42	1461.51	576.18	5.125
60	-5.90	100	105	10.05	32.17	298.05	114.98	1472.60	568.07	4.941
61	-6.00	100	106	10.05	32.17	311.31	117.55	1483.78	560.29	4.766
62	-6.10	100	107	10.05	32.17	324.95	120.16	1494.99	552.80	4.601
63	-6.20	100	108	10.05	32.17	338.98	122.78	1505.28	545.23	4.441
64	-6.30	100	108	10.05	32.17	353.39	125.43	1515.64	537.94	4.289
65	-6.40	100	109	10.05	16.08	368.20	128.10	775.08	269.66	2.105
66	-6.50	100	110	10.05	16.08	383.40	130.79	780.30	266.18	2.035
67	-6.60	100	111	10.05	16.08	399.01	133.51	785.55	262.84	1.969

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
68	-6.70	100	112	10.05	16.08	415.03	136.24	790.83	259.61	1.905
69	-6.80	100	113	10.05	16.08	431.47	139.01	796.14	256.49	1.845
70	-6.90	100	114	10.05	16.08	448.32	141.79	801.47	253.48	1.788
71	-7.00	100	115	10.05	16.08	465.60	144.60	806.84	250.57	1.733

## Combinazione n° 13 - ECC

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
1	0.00	100	50	10.05	16.08	14.68	3.06	334.09	69.73	22.753
2	-0.10	100	51	10.05	16.08	16.12	4.30	345.94	92.34	21.465
3	-0.20	100	52	10.05	16.08	17.56	5.56	357.61	113.26	20.364
4	-0.30	100	53	10.05	16.08	19.02	6.84	369.16	132.84	19.408
5	-0.40	100	54	10.05	16.08	20.50	8.15	380.62	151.32	18.566
6	-0.50	100	55	10.05	16.08	22.01	9.48	392.01	168.85	17.815
7	-0.60	100	56	10.05	16.08	23.54	10.83	403.36	185.56	17.135
8	-0.70	100	56	10.05	16.08	25.11	12.20	414.67	201.53	16.515
9	-0.80	100	57	10.05	16.08	26.72	13.60	425.95	216.81	15.942
10	-0.90	100	58	10.05	16.08	28.37	15.02	437.19	231.43	15.410
11	-1.00	100	59	10.05	16.08	30.07	16.46	448.39	245.43	14.910
12	-1.10	100	60	10.05	16.08	31.83	17.92	459.55	258.81	14.438
13	-1.20	100	61	10.05	16.08	33.64	19.41	470.67	271.58	13.990
14	-1.30	100	62	10.05	16.08	35.52	20.92	481.73	283.74	13.562
15	-1.40	100	63	10.05	16.08	37.47	22.46	492.73	295.30	13.151
16	-1.50	100	64	10.05	16.08	39.49	24.01	503.65	306.25	12.755
17	-1.60	100	65	10.05	16.08	41.59	25.59	514.50	316.60	12.372
18	-1.70	100	66	10.05	16.08	43.77	27.19	525.26	326.33	12.002
19	-1.80	100	67	10.05	16.08	46.03	28.81	535.93	335.46	11.642
20	-1.90	100	68	10.05	16.08	48.39	30.46	546.50	343.98	11.293
21	-2.00	100	69	10.05	16.08	50.85	32.13	556.96	351.91	10.952
22	-2.10	100	69	10.05	16.08	53.41	33.82	567.30	359.24	10.621
23	-2.20	100	70	10.05	16.08	56.08	35.54	577.53	365.98	10.299
24	-2.30	100	71	10.05	16.08	58.86	37.27	587.64	372.16	9.984
25	-2.40	100	72	10.05	16.08	61.75	39.04	597.62	377.77	9.678
26	-2.50	100	73	10.05	16.08	64.77	40.82	607.48	382.84	9.379
27	-2.60	100	74	10.05	16.08	67.91	42.62	617.20	387.38	9.088
28	-2.70	100	75	10.05	16.08	71.19	44.45	626.80	391.41	8.805
29	-2.80	100	76	10.05	16.08	74.60	46.30	636.27	394.96	8.530
30	-2.90	100	77	10.05	16.08	78.15	48.18	645.61	398.03	8.262
31	-3.00	100	78	10.05	16.08	81.84	50.07	654.83	400.66	8.001
32	-3.10	100	79	10.05	16.08	85.69	51.99	663.92	402.86	7.748
33	-3.20	100	80	10.05	16.08	89.69	53.94	672.88	404.65	7.502
34	-3.30	100	81	10.05	16.08	93.85	55.90	681.73	406.07	7.264
35	-3.40	100	82	10.05	16.08	98.18	57.89	690.46	407.13	7.033
36	-3.50	100	82	10.05	16.08	102.67	59.90	699.08	407.85	6.809
37	-3.60	100	83	10.05	16.08	107.34	61.93	707.58	408.26	6.592
38	-3.70	100	84	10.05	16.08	112.19	63.99	715.99	408.37	6.382
39	-3.80	100	85	10.05	16.08	117.22	66.07	724.29	408.21	6.179
40	-3.90	100	86	10.05	16.08	122.45	68.17	732.49	407.80	5.982
41	-4.00	100	87	10.05	16.08	127.86	70.29	740.60	407.15	5.792
42	-4.10	100	88	10.05	16.08	133.48	72.44	748.63	406.30	5.609
43	-4.20	100	89	10.05	16.08	139.29	74.61	756.56	405.24	5.431
44	-4.30	100	90	10.05	16.08	145.32	76.80	764.42	404.00	5.260
45	-4.40	100	91	10.05	16.08	151.56	79.02	772.20	402.60	5.095
46	-4.50	100	92	10.05	16.08	158.02	81.26	779.91	401.05	4.936
47	-4.60	100	93	10.05	16.08	164.69	83.52	787.56	399.37	4.782
48	-4.70	100	94	10.05	16.08	171.60	85.80	795.13	397.56	4.634
49	-4.80	100	95	10.05	16.08	178.74	88.11	802.65	395.65	4.491
50	-4.90	100	95	10.05	16.08	186.12	90.44	810.11	393.64	4.353
51	-5.00	100	96	10.05	16.08	193.73	92.79	817.52	391.54	4.220
52	-5.10	100	97	10.05	16.08	201.60	95.16	824.87	389.37	4.092
53	-5.20	100	98	10.05	16.08	209.72	97.56	832.18	387.13	3.968
54	-5.30	100	99	10.05	16.08	218.09	99.98	839.45	384.83	3.849
55	-5.40	100	100	10.05	16.08	226.72	102.42	846.67	382.48	3.734
56	-5.50	100	101	10.05	16.08	235.62	104.89	853.86	380.09	3.624
57	-5.60	100	102	10.05	16.08	244.79	107.37	861.01	377.67	3.517
58	-5.70	100	103	10.05	16.08	254.24	109.89	868.13	375.22	3.415



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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
59	-5.80	100	104	10.05	32.17	263.96	112.42	1724.28	734.35	6.532
60	-5.90	100	105	10.05	32.17	273.98	114.98	1738.40	729.52	6.345
61	-6.00	100	106	10.05	32.17	284.28	117.55	1752.46	724.67	6.165
62	-6.10	100	107	10.05	32.17	294.88	120.16	1766.48	719.81	5.991
63	-6.20	100	108	10.05	32.17	305.77	122.78	1780.45	714.93	5.823
64	-6.30	100	108	10.05	32.17	316.97	125.43	1794.38	710.04	5.661
65	-6.40	100	109	10.05	16.08	328.48	128.10	917.56	357.82	2.793
66	-6.50	100	110	10.05	16.08	340.31	130.79	924.63	355.36	2.717
67	-6.60	100	111	10.05	16.08	352.45	133.51	931.69	352.92	2.643
68	-6.70	100	112	10.05	16.08	364.92	136.24	938.74	350.48	2.572
69	-6.80	100	113	10.05	16.08	377.72	139.01	945.78	348.06	2.504
70	-6.90	100	114	10.05	16.08	390.85	141.79	952.81	345.66	2.438
71	-7.00	100	115	10.05	16.08	404.32	144.60	959.83	343.27	2.374

**Mensola valle**Combinazione n° 1 - STR (A1-M1-R3)

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
1	-0.75	100	50	8.04	8.04	0.00	0.00	0.00	0.00	1000.000
2	-0.67	100	50	8.04	8.04	-0.04	0.00	0.00	0.00	1000.000
3	-0.58	100	50	8.04	8.04	-0.17	0.00	-140.19	0.00	823.421
4	-0.50	100	50	8.04	8.04	-0.38	0.00	-140.19	0.00	365.965

Combinazione n° 2 - STR (A1-M1-R3) H + V

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
1	-0.75	100	50	8.04	8.04	0.00	0.00	0.00	0.00	1000.000
2	-0.67	100	50	8.04	8.04	-0.05	0.00	0.00	0.00	1000.000
3	-0.58	100	50	8.04	8.04	-0.18	0.00	-140.19	0.00	768.661
4	-0.50	100	50	8.04	8.04	-0.41	0.00	-140.19	0.00	341.627

Combinazione n° 3 - STR (A1-M1-R3)

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
1	-0.75	100	50	8.04	8.04	0.00	0.00	0.00	0.00	1000.000
2	-0.67	100	50	8.04	8.04	-0.04	0.00	0.00	0.00	1000.000
3	-0.58	100	50	8.04	8.04	-0.17	0.00	-140.19	0.00	823.421
4	-0.50	100	50	8.04	8.04	-0.38	0.00	-140.19	0.00	365.965

Combinazione n° 4 - STR (A1-M1-R3) H - V

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
1	-0.75	100	50	8.04	8.04	0.00	0.00	0.00	0.00	1000.000
2	-0.67	100	50	8.04	8.04	-0.04	0.00	0.00	0.00	1000.000
3	-0.58	100	50	8.04	8.04	-0.17	0.00	-140.19	0.00	823.421
4	-0.50	100	50	8.04	8.04	-0.38	0.00	-140.19	0.00	365.965

Combinazione n° 13 - ECC

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
1	-0.75	100	50	8.04	8.04	0.00	0.00	0.00	0.00	1000.000
2	-0.67	100	50	8.04	8.04	-0.04	0.00	0.00	0.00	1000.000
3	-0.58	100	50	8.04	8.04	-0.17	0.00	-162.29	0.00	953.202
4	-0.50	100	50	8.04	8.04	-0.38	0.00	-162.29	0.00	423.645

**Fondazione**Combinazione n° 1 - STR (A1-M1-R3)

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
1	-1.65	100	115	24.13	24.13	0.00	0.00	0.00	0.00	1000.000
2	-1.55	100	115	24.13	24.13	0.62	0.00	0.00	0.00	1000.000
3	-1.46	100	115	24.13	24.13	2.49	0.00	1015.17	0.00	408.165
4	-1.36	100	115	24.13	24.13	5.59	0.00	1015.17	0.00	181.476
5	-1.27	100	115	24.13	24.13	9.94	0.00	1015.17	0.00	102.119
6	-1.17	100	115	24.13	24.13	15.53	0.00	1015.17	0.00	65.381
7	-1.07	100	115	24.13	24.13	22.35	0.00	1015.17	0.00	45.421
8	-0.98	100	115	24.13	24.13	30.41	0.00	1015.17	0.00	33.383
9	-0.88	100	115	24.13	24.13	39.70	0.00	1015.17	0.00	25.569
10	-0.79	100	115	24.13	24.13	50.23	0.00	1015.17	0.00	20.210
11	-0.69	100	115	24.13	24.13	61.99	0.00	1015.17	0.00	16.377
12	-0.60	100	115	24.13	24.13	74.98	0.00	1015.17	0.00	13.539
13	-0.50	100	115	24.13	24.13	89.20	0.00	1015.17	0.00	11.381
14	0.65	100	115	24.13	24.13	-228.10	0.00	-1015.17	0.00	4.451
15	0.75	100	115	24.13	24.13	-214.32	0.00	-1015.17	0.00	4.737
16	0.85	100	115	24.13	24.13	-200.96	0.00	-1015.17	0.00	5.052
17	0.95	100	115	24.13	24.13	-188.01	0.00	-1015.17	0.00	5.399
18	1.05	100	115	24.13	24.13	-175.48	0.00	-1015.17	0.00	5.785
19	1.15	100	115	24.13	24.13	-163.37	0.00	-1015.17	0.00	6.214
20	1.25	100	115	24.13	24.13	-151.67	0.00	-1015.17	0.00	6.693
21	1.35	100	115	24.13	24.13	-140.40	0.00	-1015.17	0.00	7.231
22	1.45	100	115	24.13	24.13	-129.55	0.00	-1015.17	0.00	7.836
23	1.55	100	115	24.13	24.13	-119.12	0.00	-1015.17	0.00	8.522
24	1.65	100	115	24.13	24.13	-109.11	0.00	-1015.17	0.00	9.304
25	1.75	100	115	24.13	24.13	-99.54	0.00	-1015.17	0.00	10.199
26	1.85	100	115	24.13	24.13	-90.39	0.00	-1015.17	0.00	11.231
27	1.95	100	115	24.13	24.13	-81.68	0.00	-1015.17	0.00	12.429
28	2.05	100	115	24.13	24.13	-73.39	0.00	-1015.17	0.00	13.832
29	2.15	100	115	24.13	24.13	-65.54	0.00	-1015.17	0.00	15.489
30	2.25	100	115	24.13	24.13	-58.13	0.00	-1015.17	0.00	17.465
31	2.35	100	115	24.13	24.13	-51.15	0.00	-1015.17	0.00	19.847
32	2.45	100	115	24.13	24.13	-44.61	0.00	-1015.17	0.00	22.757
33	2.55	100	115	24.13	24.13	-38.51	0.00	-1015.17	0.00	26.362
34	2.65	100	115	24.13	24.13	-32.85	0.00	-1015.17	0.00	30.902
35	2.75	100	115	24.13	24.13	-27.64	0.00	-1015.17	0.00	36.732
36	2.85	100	115	24.13	24.13	-22.87	0.00	-1015.17	0.00	44.394
37	2.95	100	115	24.13	24.13	-18.54	0.00	-1015.17	0.00	54.743
38	3.05	100	115	24.13	24.13	-14.67	0.00	-1015.17	0.00	69.202
39	3.15	100	115	24.13	24.13	-11.24	0.00	-1015.17	0.00	90.281
40	3.25	100	115	24.13	24.13	-8.27	0.00	-1015.17	0.00	122.738
41	3.35	100	115	24.13	24.13	-5.75	0.00	-1015.17	0.00	176.536
42	3.45	100	115	24.13	24.13	-3.68	0.00	-1015.17	0.00	275.515
43	3.55	100	115	24.13	24.13	-2.08	0.00	-1015.17	0.00	489.232
44	3.65	100	115	24.13	24.13	-0.92	0.00	0.00	0.00	1000.000
45	3.75	100	115	24.13	24.13	-0.23	0.00	0.00	0.00	1000.000
46	3.85	100	115	24.13	24.13	0.00	0.00	0.00	0.00	1000.000

Combinazione n° 2 - STR (A1-M1-R3) H + V

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
1	-1.65	100	115	24.13	24.13	0.00	0.00	0.00	0.00	1000.000
2	-1.55	100	115	24.13	24.13	1.17	0.00	1015.17	0.00	869.014
3	-1.46	100	115	24.13	24.13	4.65	0.00	1015.17	0.00	218.381
4	-1.36	100	115	24.13	24.13	10.41	0.00	1015.17	0.00	97.565
5	-1.27	100	115	24.13	24.13	18.40	0.00	1015.17	0.00	55.168
6	-1.17	100	115	24.13	24.13	28.60	0.00	1015.17	0.00	35.494
7	-1.07	100	115	24.13	24.13	40.97	0.00	1015.17	0.00	24.779
8	-0.98	100	115	24.13	24.13	55.47	0.00	1015.17	0.00	18.302
9	-0.88	100	115	24.13	24.13	72.06	0.00	1015.17	0.00	14.088
10	-0.79	100	115	24.13	24.13	90.71	0.00	1015.17	0.00	11.191
11	-0.69	100	115	24.13	24.13	111.39	0.00	1015.17	0.00	9.114
12	-0.60	100	115	24.13	24.13	134.05	0.00	1015.17	0.00	7.573
13	-0.50	100	115	24.13	24.13	158.66	0.00	1015.17	0.00	6.398
14	0.65	100	115	24.13	24.13	-304.98	0.00	-1015.17	0.00	3.329
15	0.75	100	115	24.13	24.13	-292.80	0.00	-1015.17	0.00	3.467
16	0.85	100	115	24.13	24.13	-280.38	0.00	-1015.17	0.00	3.621
17	0.95	100	115	24.13	24.13	-267.77	0.00	-1015.17	0.00	3.791
18	1.05	100	115	24.13	24.13	-254.99	0.00	-1015.17	0.00	3.981
19	1.15	100	115	24.13	24.13	-242.10	0.00	-1015.17	0.00	4.193
20	1.25	100	115	24.13	24.13	-229.13	0.00	-1015.17	0.00	4.430
21	1.35	100	115	24.13	24.13	-216.13	0.00	-1015.17	0.00	4.697
22	1.45	100	115	24.13	24.13	-203.13	0.00	-1015.17	0.00	4.998
23	1.55	100	115	24.13	24.13	-190.18	0.00	-1015.17	0.00	5.338
24	1.65	100	115	24.13	24.13	-177.32	0.00	-1015.17	0.00	5.725
25	1.75	100	115	24.13	24.13	-164.59	0.00	-1015.17	0.00	6.168
26	1.85	100	115	24.13	24.13	-152.03	0.00	-1015.17	0.00	6.677
27	1.95	100	115	24.13	24.13	-139.68	0.00	-1015.17	0.00	7.268
28	2.05	100	115	24.13	24.13	-127.58	0.00	-1015.17	0.00	7.957
29	2.15	100	115	24.13	24.13	-115.78	0.00	-1015.17	0.00	8.768
30	2.25	100	115	24.13	24.13	-104.32	0.00	-1015.17	0.00	9.732
31	2.35	100	115	24.13	24.13	-93.23	0.00	-1015.17	0.00	10.889
32	2.45	100	115	24.13	24.13	-82.55	0.00	-1015.17	0.00	12.297
33	2.55	100	115	24.13	24.13	-72.34	0.00	-1015.17	0.00	14.033
34	2.65	100	115	24.13	24.13	-62.63	0.00	-1015.17	0.00	16.210
35	2.75	100	115	24.13	24.13	-53.45	0.00	-1015.17	0.00	18.992
36	2.85	100	115	24.13	24.13	-44.86	0.00	-1015.17	0.00	22.629
37	2.95	100	115	24.13	24.13	-36.89	0.00	-1015.17	0.00	27.517
38	3.05	100	115	24.13	24.13	-29.59	0.00	-1015.17	0.00	34.310
39	3.15	100	115	24.13	24.13	-22.99	0.00	-1015.17	0.00	44.158
40	3.25	100	115	24.13	24.13	-17.14	0.00	-1015.17	0.00	59.239
41	3.35	100	115	24.13	24.13	-12.07	0.00	-1015.17	0.00	84.094
42	3.45	100	115	24.13	24.13	-7.84	0.00	-1015.17	0.00	129.558
43	3.55	100	115	24.13	24.13	-4.47	0.00	-1015.17	0.00	227.146
44	3.65	100	115	24.13	24.13	-2.01	0.00	-1015.17	0.00	504.122
45	3.75	100	115	24.13	24.13	-0.51	0.00	0.00	0.00	1000.000
46	3.85	100	115	24.13	24.13	0.00	0.00	0.00	0.00	1000.000

Combinazione n° 3 - STR (A1-M1-R3)

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
1	-1.65	100	115	24.13	24.13	0.00	0.00	0.00	0.00	1000.000
2	-1.55	100	115	24.13	24.13	0.75	0.00	0.00	0.00	1000.000
3	-1.46	100	115	24.13	24.13	3.00	0.00	1015.17	0.00	338.079
4	-1.36	100	115	24.13	24.13	6.75	0.00	1015.17	0.00	150.291
5	-1.27	100	115	24.13	24.13	12.01	0.00	1015.17	0.00	84.557
6	-1.17	100	115	24.13	24.13	18.75	0.00	1015.17	0.00	54.128
7	-1.07	100	115	24.13	24.13	27.00	0.00	1015.17	0.00	37.597
8	-0.98	100	115	24.13	24.13	36.74	0.00	1015.17	0.00	27.629
9	-0.88	100	115	24.13	24.13	47.98	0.00	1015.17	0.00	21.158
10	-0.79	100	115	24.13	24.13	60.71	0.00	1015.17	0.00	16.721
11	-0.69	100	115	24.13	24.13	74.94	0.00	1015.17	0.00	13.547
12	-0.60	100	115	24.13	24.13	90.65	0.00	1015.17	0.00	11.198
13	-0.50	100	115	24.13	24.13	107.86	0.00	1015.17	0.00	9.412
14	0.65	100	115	24.13	24.13	-265.22	0.00	-1015.17	0.00	3.828
15	0.75	100	115	24.13	24.13	-248.29	0.00	-1015.17	0.00	4.089
16	0.85	100	115	24.13	24.13	-231.90	0.00	-1015.17	0.00	4.378

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
17	0.95	100	115	24.13	24.13	-216.06	0.00	-1015.17	0.00	4.698
18	1.05	100	115	24.13	24.13	-200.77	0.00	-1015.17	0.00	5.056
19	1.15	100	115	24.13	24.13	-186.03	0.00	-1015.17	0.00	5.457
20	1.25	100	115	24.13	24.13	-171.84	0.00	-1015.17	0.00	5.908
21	1.35	100	115	24.13	24.13	-158.20	0.00	-1015.17	0.00	6.417
22	1.45	100	115	24.13	24.13	-145.12	0.00	-1015.17	0.00	6.995
23	1.55	100	115	24.13	24.13	-132.59	0.00	-1015.17	0.00	7.656
24	1.65	100	115	24.13	24.13	-120.62	0.00	-1015.17	0.00	8.416
25	1.75	100	115	24.13	24.13	-109.20	0.00	-1015.17	0.00	9.296
26	1.85	100	115	24.13	24.13	-98.34	0.00	-1015.17	0.00	10.323
27	1.95	100	115	24.13	24.13	-88.04	0.00	-1015.17	0.00	11.531
28	2.05	100	115	24.13	24.13	-78.30	0.00	-1015.17	0.00	12.966
29	2.15	100	115	24.13	24.13	-69.12	0.00	-1015.17	0.00	14.688
30	2.25	100	115	24.13	24.13	-60.50	0.00	-1015.17	0.00	16.780
31	2.35	100	115	24.13	24.13	-52.44	0.00	-1015.17	0.00	19.357
32	2.45	100	115	24.13	24.13	-44.96	0.00	-1015.17	0.00	22.582
33	2.55	100	115	24.13	24.13	-38.03	0.00	-1015.17	0.00	26.693
34	2.65	100	115	24.13	24.13	-31.67	0.00	-1015.17	0.00	32.051
35	2.75	100	115	24.13	24.13	-25.88	0.00	-1015.17	0.00	39.220
36	2.85	100	115	24.13	24.13	-20.66	0.00	-1015.17	0.00	49.129
37	2.95	100	115	24.13	24.13	-16.01	0.00	-1015.17	0.00	63.397
38	3.05	100	115	24.13	24.13	-12.32	0.00	-1015.17	0.00	82.428
39	3.15	100	115	24.13	24.13	-9.44	0.00	-1015.17	0.00	107.556
40	3.25	100	115	24.13	24.13	-6.94	0.00	-1015.17	0.00	146.253
41	3.35	100	115	24.13	24.13	-4.82	0.00	-1015.17	0.00	210.400
42	3.45	100	115	24.13	24.13	-3.09	0.00	-1015.17	0.00	328.431
43	3.55	100	115	24.13	24.13	-1.74	0.00	-1015.17	0.00	583.312
44	3.65	100	115	24.13	24.13	-0.77	0.00	0.00	0.00	1000.000
45	3.75	100	115	24.13	24.13	-0.19	0.00	0.00	0.00	1000.000
46	3.85	100	115	24.13	24.13	0.00	0.00	0.00	0.00	1000.000

Combinazione n° 4 - STR (A1-M1-R3) H - V

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
1	-1.65	100	115	24.13	24.13	0.00	0.00	0.00	0.00	1000.000
2	-1.55	100	115	24.13	24.13	1.06	0.00	1015.17	0.00	959.277
3	-1.46	100	115	24.13	24.13	4.21	0.00	1015.17	0.00	241.162
4	-1.36	100	115	24.13	24.13	9.42	0.00	1015.17	0.00	107.787
5	-1.27	100	115	24.13	24.13	16.65	0.00	1015.17	0.00	60.974
6	-1.17	100	115	24.13	24.13	25.87	0.00	1015.17	0.00	39.245
7	-1.07	100	115	24.13	24.13	37.04	0.00	1015.17	0.00	27.410
8	-0.98	100	115	24.13	24.13	50.12	0.00	1015.17	0.00	20.254
9	-0.88	100	115	24.13	24.13	65.09	0.00	1015.17	0.00	15.597
10	-0.79	100	115	24.13	24.13	81.90	0.00	1015.17	0.00	12.395
11	-0.69	100	115	24.13	24.13	100.52	0.00	1015.17	0.00	10.099
12	-0.60	100	115	24.13	24.13	120.92	0.00	1015.17	0.00	8.396
13	-0.50	100	115	24.13	24.13	143.05	0.00	1015.17	0.00	7.096
14	0.65	100	115	24.13	24.13	-406.38	0.00	-1015.17	0.00	2.498
15	0.75	100	115	24.13	24.13	-387.81	0.00	-1015.17	0.00	2.618
16	0.85	100	115	24.13	24.13	-369.22	0.00	-1015.17	0.00	2.749
17	0.95	100	115	24.13	24.13	-350.65	0.00	-1015.17	0.00	2.895
18	1.05	100	115	24.13	24.13	-332.14	0.00	-1015.17	0.00	3.056
19	1.15	100	115	24.13	24.13	-313.72	0.00	-1015.17	0.00	3.236
20	1.25	100	115	24.13	24.13	-295.44	0.00	-1015.17	0.00	3.436
21	1.35	100	115	24.13	24.13	-277.33	0.00	-1015.17	0.00	3.660
22	1.45	100	115	24.13	24.13	-259.45	0.00	-1015.17	0.00	3.913
23	1.55	100	115	24.13	24.13	-241.82	0.00	-1015.17	0.00	4.198
24	1.65	100	115	24.13	24.13	-224.49	0.00	-1015.17	0.00	4.522
25	1.75	100	115	24.13	24.13	-207.50	0.00	-1015.17	0.00	4.892
26	1.85	100	115	24.13	24.13	-190.89	0.00	-1015.17	0.00	5.318
27	1.95	100	115	24.13	24.13	-174.69	0.00	-1015.17	0.00	5.811
28	2.05	100	115	24.13	24.13	-158.96	0.00	-1015.17	0.00	6.386
29	2.15	100	115	24.13	24.13	-143.72	0.00	-1015.17	0.00	7.063
30	2.25	100	115	24.13	24.13	-129.03	0.00	-1015.17	0.00	7.868
31	2.35	100	115	24.13	24.13	-114.91	0.00	-1015.17	0.00	8.835
32	2.45	100	115	24.13	24.13	-101.41	0.00	-1015.17	0.00	10.010

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
33	2.55	100	115	24.13	24.13	-88.57	0.00	-1015.17	0.00	11.461
34	2.65	100	115	24.13	24.13	-76.43	0.00	-1015.17	0.00	13.282
35	2.75	100	115	24.13	24.13	-65.04	0.00	-1015.17	0.00	15.609
36	2.85	100	115	24.13	24.13	-54.42	0.00	-1015.17	0.00	18.655
37	2.95	100	115	24.13	24.13	-44.62	0.00	-1015.17	0.00	22.751
38	3.05	100	115	24.13	24.13	-35.69	0.00	-1015.17	0.00	28.448
39	3.15	100	115	24.13	24.13	-27.65	0.00	-1015.17	0.00	36.715
40	3.25	100	115	24.13	24.13	-20.56	0.00	-1015.17	0.00	49.388
41	3.35	100	115	24.13	24.13	-14.44	0.00	-1015.17	0.00	70.294
42	3.45	100	115	24.13	24.13	-9.35	0.00	-1015.17	0.00	108.575
43	3.55	100	115	24.13	24.13	-5.32	0.00	-1015.17	0.00	190.836
44	3.65	100	115	24.13	24.13	-2.39	0.00	-1015.17	0.00	424.570
45	3.75	100	115	24.13	24.13	-0.60	0.00	0.00	0.00	1000.000
46	3.85	100	115	24.13	24.13	0.00	0.00	0.00	0.00	1000.000

Combinazione n° 13 - ECC

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
1	-1.65	100	115	24.13	24.13	0.00	0.00	0.00	0.00	1000.000
2	-1.55	100	115	24.13	24.13	0.67	0.00	0.00	0.00	1000.000
3	-1.46	100	115	24.13	24.13	2.66	0.00	1170.55	0.00	440.022
4	-1.36	100	115	24.13	24.13	5.98	0.00	1170.55	0.00	195.840
5	-1.27	100	115	24.13	24.13	10.61	0.00	1170.55	0.00	110.315
6	-1.17	100	115	24.13	24.13	16.56	0.00	1170.55	0.00	70.701
7	-1.07	100	115	24.13	24.13	23.81	0.00	1170.55	0.00	49.167
8	-0.98	100	115	24.13	24.13	32.36	0.00	1170.55	0.00	36.174
9	-0.88	100	115	24.13	24.13	42.20	0.00	1170.55	0.00	27.735
10	-0.79	100	115	24.13	24.13	53.34	0.00	1170.55	0.00	21.945
11	-0.69	100	115	24.13	24.13	65.76	0.00	1170.55	0.00	17.801
12	-0.60	100	115	24.13	24.13	79.45	0.00	1170.55	0.00	14.732
13	-0.50	100	115	24.13	24.13	94.42	0.00	1170.55	0.00	12.397
14	0.65	100	115	24.13	24.13	-81.79	0.00	-1170.55	0.00	14.311
15	0.75	100	115	24.13	24.13	-77.78	0.00	-1170.55	0.00	15.050
16	0.85	100	115	24.13	24.13	-73.80	0.00	-1170.55	0.00	15.862
17	0.95	100	115	24.13	24.13	-69.85	0.00	-1170.55	0.00	16.758
18	1.05	100	115	24.13	24.13	-65.95	0.00	-1170.55	0.00	17.750
19	1.15	100	115	24.13	24.13	-62.09	0.00	-1170.55	0.00	18.851
20	1.25	100	115	24.13	24.13	-58.30	0.00	-1170.55	0.00	20.079
21	1.35	100	115	24.13	24.13	-54.56	0.00	-1170.55	0.00	21.454
22	1.45	100	115	24.13	24.13	-50.89	0.00	-1170.55	0.00	22.999
23	1.55	100	115	24.13	24.13	-47.30	0.00	-1170.55	0.00	24.746
24	1.65	100	115	24.13	24.13	-43.79	0.00	-1170.55	0.00	26.729
25	1.75	100	115	24.13	24.13	-40.37	0.00	-1170.55	0.00	28.996
26	1.85	100	115	24.13	24.13	-37.04	0.00	-1170.55	0.00	31.602
27	1.95	100	115	24.13	24.13	-33.81	0.00	-1170.55	0.00	34.619
28	2.05	100	115	24.13	24.13	-30.69	0.00	-1170.55	0.00	38.141
29	2.15	100	115	24.13	24.13	-27.68	0.00	-1170.55	0.00	42.286
30	2.25	100	115	24.13	24.13	-24.79	0.00	-1170.55	0.00	47.215
31	2.35	100	115	24.13	24.13	-22.03	0.00	-1170.55	0.00	53.138
32	2.45	100	115	24.13	24.13	-19.40	0.00	-1170.55	0.00	60.346
33	2.55	100	115	24.13	24.13	-16.90	0.00	-1170.55	0.00	69.245
34	2.65	100	115	24.13	24.13	-14.56	0.00	-1170.55	0.00	80.414
35	2.75	100	115	24.13	24.13	-12.36	0.00	-1170.55	0.00	94.706
36	2.85	100	115	24.13	24.13	-10.32	0.00	-1170.55	0.00	113.416
37	2.95	100	115	24.13	24.13	-8.45	0.00	-1170.55	0.00	138.596
38	3.05	100	115	24.13	24.13	-6.74	0.00	-1170.55	0.00	173.644
39	3.15	100	115	24.13	24.13	-5.21	0.00	-1170.55	0.00	224.539
40	3.25	100	115	24.13	24.13	-3.87	0.00	-1170.55	0.00	302.606
41	3.35	100	115	24.13	24.13	-2.71	0.00	-1170.55	0.00	431.494
42	3.45	100	115	24.13	24.13	-1.75	0.00	-1170.55	0.00	667.682
43	3.55	100	115	24.13	24.13	-1.00	0.00	0.00	0.00	1000.000
44	3.65	100	115	24.13	24.13	-0.45	0.00	0.00	0.00	1000.000
45	3.75	100	115	24.13	24.13	-0.11	0.00	0.00	0.00	1000.000
46	3.85	100	115	24.13	24.13	0.00	0.00	0.00	0.00	1000.000

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta****Verifiche a taglio****Simbologia adottata**

Is	indice sezione
Y	ordinata sezione espressa in [m]
B	larghezza sezione espressa in [cm]
H	altezza sezione espressa in [cm]
A <sub>sw</sub>	area ferri a taglio espressa in [cmq]
cotgθ	inclinazione delle bielle compresse, θ inclinazione dei puntoni di calcestruzzo
V <sub>Rcd</sub>	resistenza di progetto a 'taglio compressione' espressa in [kN]
V <sub>Rsd</sub>	resistenza di progetto a 'taglio trazione' espressa in [kN]
V <sub>Rd</sub>	resistenza di progetto a taglio espressa in [kN]. Per elementi con armature trasversali resistenti al taglio (A <sub>sw</sub> >0.0) V <sub>Rd</sub> =min(V <sub>Rcd</sub> , V <sub>Rsd</sub> ).
T	taglio agente espressa in [kN]
FS	fattore di sicurezza (rapporto tra sollecitazione resistente e sollecitazione agente)

**Paramento****Combinazione n° 1 - STR (A1-M1-R3)**

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
1	0.00	100	50	0.00	0.00	--	0.00	0.00	246.02	0.00	100.000
2	-0.10	100	51	0.00	0.00	--	0.00	0.00	248.50	0.03	8008.295
3	-0.20	100	52	0.00	0.00	--	0.00	0.00	250.97	0.12	2021.937
4	-0.30	100	53	0.00	0.00	--	0.00	0.00	253.42	0.28	909.902
5	-0.40	100	54	0.00	0.00	--	0.00	0.00	255.86	0.49	518.519
6	-0.50	100	55	0.00	0.00	--	0.00	0.00	258.28	0.77	335.744
7	-0.60	100	56	0.00	0.00	--	0.00	0.00	260.69	1.11	235.618
8	-0.70	100	56	0.00	0.00	--	0.00	0.00	263.09	1.50	174.828
9	-0.80	100	57	0.00	0.00	--	0.00	0.00	265.48	1.96	135.132
10	-0.90	100	58	0.00	0.00	--	0.00	0.00	267.86	2.49	107.761
11	-1.00	100	59	0.00	0.00	--	0.00	0.00	270.22	3.07	88.078
12	-1.10	100	60	0.00	0.00	--	0.00	0.00	272.57	3.71	73.438
13	-1.20	100	61	0.00	0.00	--	0.00	0.00	274.92	4.42	62.247
14	-1.30	100	62	0.00	0.00	--	0.00	0.00	277.25	5.18	53.495
15	-1.40	100	63	0.00	0.00	--	0.00	0.00	279.57	6.01	46.516
16	-1.50	100	64	0.00	0.00	--	0.00	0.00	281.89	6.90	40.858
17	-1.60	100	65	0.00	0.00	--	0.00	0.00	284.19	7.85	36.206
18	-1.70	100	66	0.00	0.00	--	0.00	0.00	286.49	8.86	32.332
19	-1.80	100	67	0.00	0.00	--	0.00	0.00	288.77	9.93	29.071
20	-1.90	100	68	0.00	0.00	--	0.00	0.00	291.05	11.07	26.298
21	-2.00	100	69	0.00	0.00	--	0.00	0.00	293.32	12.26	23.920
22	-2.10	100	69	0.00	0.00	--	0.00	0.00	295.58	13.52	21.864
23	-2.20	100	70	0.00	0.00	--	0.00	0.00	297.84	14.84	20.074
24	-2.30	100	71	0.00	0.00	--	0.00	0.00	300.08	16.22	18.505
25	-2.40	100	72	0.00	0.00	--	0.00	0.00	302.32	17.66	17.122
26	-2.50	100	73	0.00	0.00	--	0.00	0.00	304.56	19.16	15.896
27	-2.60	100	74	0.00	0.00	--	0.00	0.00	306.78	20.72	14.805
28	-2.70	100	75	0.00	0.00	--	0.00	0.00	309.00	22.35	13.828
29	-2.80	100	76	0.00	0.00	--	0.00	0.00	311.21	24.03	12.950
30	-2.90	100	77	0.00	0.00	--	0.00	0.00	313.42	25.78	12.158
31	-3.00	100	78	0.00	0.00	--	0.00	0.00	315.62	27.59	11.441
32	-3.10	100	79	0.00	0.00	--	0.00	0.00	317.81	29.46	10.789
33	-3.20	100	80	0.00	0.00	--	0.00	0.00	320.00	31.39	10.195
34	-3.30	100	81	0.00	0.00	--	0.00	0.00	322.18	33.38	9.652
35	-3.40	100	82	0.00	0.00	--	0.00	0.00	324.36	35.43	9.154
36	-3.50	100	82	0.00	0.00	--	0.00	0.00	326.53	37.55	8.696
37	-3.60	100	83	0.00	0.00	--	0.00	0.00	328.70	39.72	8.274
38	-3.70	100	84	0.00	0.00	--	0.00	0.00	330.86	41.96	7.885

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## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
39	-3.80	100	85	0.00	0.00	--	0.00	0.00	333.02	44.26	7.524
40	-3.90	100	86	0.00	0.00	--	0.00	0.00	335.17	46.62	7.189
41	-4.00	100	87	0.00	0.00	--	0.00	0.00	337.31	49.04	6.878
42	-4.10	100	88	0.00	0.00	--	0.00	0.00	339.46	51.52	6.588
43	-4.20	100	89	0.00	0.00	--	0.00	0.00	341.60	54.07	6.318
44	-4.30	100	90	0.00	0.00	--	0.00	0.00	343.73	56.67	6.065
45	-4.40	100	91	0.00	0.00	--	0.00	0.00	345.86	59.34	5.828
46	-4.50	100	92	0.00	0.00	--	0.00	0.00	347.99	62.07	5.607
47	-4.60	100	93	0.00	0.00	--	0.00	0.00	350.11	64.86	5.398
48	-4.70	100	94	0.00	0.00	--	0.00	0.00	352.23	67.71	5.202
49	-4.80	100	95	0.00	0.00	--	0.00	0.00	354.34	70.62	5.018
50	-4.90	100	95	0.00	0.00	--	0.00	0.00	356.45	73.59	4.844
51	-5.00	100	96	0.00	0.00	--	0.00	0.00	358.56	76.63	4.679
52	-5.10	100	97	0.00	0.00	--	0.00	0.00	360.66	79.72	4.524
53	-5.20	100	98	0.00	0.00	--	0.00	0.00	362.77	82.88	4.377
54	-5.30	100	99	0.00	0.00	--	0.00	0.00	364.86	86.10	4.238
55	-5.40	100	100	0.00	0.00	--	0.00	0.00	366.96	89.38	4.106
56	-5.50	100	101	0.00	0.00	--	0.00	0.00	369.05	92.72	3.980
57	-5.60	100	102	0.00	0.00	--	0.00	0.00	371.14	96.12	3.861
58	-5.70	100	103	0.00	0.00	--	0.00	0.00	373.22	99.58	3.748
59	-5.80	100	104	0.00	0.00	--	0.00	0.00	437.55	103.11	4.244
60	-5.90	100	105	0.00	0.00	--	0.00	0.00	439.93	106.69	4.123
61	-6.00	100	106	0.00	0.00	--	0.00	0.00	442.30	110.34	4.009
62	-6.10	100	107	0.00	0.00	--	0.00	0.00	444.67	114.05	3.899
63	-6.20	100	108	0.00	0.00	--	0.00	0.00	447.04	117.82	3.794
64	-6.30	100	108	0.00	0.00	--	0.00	0.00	449.40	121.65	3.694
65	-6.40	100	109	0.00	0.00	--	0.00	0.00	387.89	125.54	3.090
66	-6.50	100	110	0.00	0.00	--	0.00	0.00	390.80	129.50	3.018
67	-6.60	100	111	0.00	0.00	--	0.00	0.00	393.71	133.51	2.949
68	-6.70	100	112	0.00	0.00	--	0.00	0.00	396.61	137.59	2.883
69	-6.80	100	113	0.00	0.00	--	0.00	0.00	399.52	141.73	2.819
70	-6.90	100	114	0.00	0.00	--	0.00	0.00	402.43	145.92	2.758
71	-7.00	100	115	0.00	0.00	--	0.00	0.00	405.34	150.18	2.699

## Combinazione n° 2 - STR (A1-M1-R3) H + V

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
1	0.00	100	50	0.00	0.00	--	0.00	0.00	246.05	0.00	100.000
2	-0.10	100	51	0.00	0.00	--	0.00	0.00	248.53	0.89	279.828
3	-0.20	100	52	0.00	0.00	--	0.00	0.00	251.00	1.83	137.360
4	-0.30	100	53	0.00	0.00	--	0.00	0.00	253.45	2.82	89.977
5	-0.40	100	54	0.00	0.00	--	0.00	0.00	255.89	3.86	66.358
6	-0.50	100	55	0.00	0.00	--	0.00	0.00	258.31	4.95	52.230
7	-0.60	100	56	0.00	0.00	--	0.00	0.00	260.72	6.09	42.844
8	-0.70	100	56	0.00	0.00	--	0.00	0.00	263.12	7.28	36.165
9	-0.80	100	57	0.00	0.00	--	0.00	0.00	265.51	8.52	31.177
10	-0.90	100	58	0.00	0.00	--	0.00	0.00	267.89	9.81	27.315
11	-1.00	100	59	0.00	0.00	--	0.00	0.00	270.25	11.15	24.240
12	-1.10	100	60	0.00	0.00	--	0.00	0.00	272.60	12.54	21.738
13	-1.20	100	61	0.00	0.00	--	0.00	0.00	274.95	13.98	19.663
14	-1.30	100	62	0.00	0.00	--	0.00	0.00	277.28	15.48	17.918
15	-1.40	100	63	0.00	0.00	--	0.00	0.00	279.60	17.02	16.430
16	-1.50	100	64	0.00	0.00	--	0.00	0.00	281.92	18.61	15.147
17	-1.60	100	65	0.00	0.00	--	0.00	0.00	284.22	20.26	14.032
18	-1.70	100	66	0.00	0.00	--	0.00	0.00	286.52	21.95	13.053
19	-1.80	100	67	0.00	0.00	--	0.00	0.00	288.80	23.69	12.189
20	-1.90	100	68	0.00	0.00	--	0.00	0.00	291.08	25.49	11.420
21	-2.00	100	69	0.00	0.00	--	0.00	0.00	293.35	27.33	10.732
22	-2.10	100	69	0.00	0.00	--	0.00	0.00	295.61	29.23	10.113
23	-2.20	100	70	0.00	0.00	--	0.00	0.00	297.87	31.18	9.554
24	-2.30	100	71	0.00	0.00	--	0.00	0.00	300.12	33.17	9.047
25	-2.40	100	72	0.00	0.00	--	0.00	0.00	302.35	35.22	8.585
26	-2.50	100	73	0.00	0.00	--	0.00	0.00	304.59	37.32	8.162
27	-2.60	100	74	0.00	0.00	--	0.00	0.00	306.81	39.46	7.774
28	-2.70	100	75	0.00	0.00	--	0.00	0.00	309.03	41.66	7.417
29	-2.80	100	76	0.00	0.00	--	0.00	0.00	311.24	43.91	7.088

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## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

n°	Y	B	H	A <sub>sw</sub>	s	cotθ	V <sub>Rcd</sub>	V <sub>Rsd</sub>	V <sub>Rd</sub>	T	FS
	[m]	[cm]	[cm]	[cmq]	[cm]		[kN]	[kN]	[kN]	[kN]	
30	-2.90	100	77	0.00	0.00	--	0.00	0.00	313.45	46.21	6.783
31	-3.00	100	78	0.00	0.00	--	0.00	0.00	315.65	48.56	6.500
32	-3.10	100	79	0.00	0.00	--	0.00	0.00	317.84	50.96	6.237
33	-3.20	100	80	0.00	0.00	--	0.00	0.00	320.03	53.41	5.992
34	-3.30	100	81	0.00	0.00	--	0.00	0.00	322.21	55.91	5.763
35	-3.40	100	82	0.00	0.00	--	0.00	0.00	324.39	58.46	5.549
36	-3.50	100	82	0.00	0.00	--	0.00	0.00	326.56	61.06	5.348
37	-3.60	100	83	0.00	0.00	--	0.00	0.00	328.73	63.71	5.159
38	-3.70	100	84	0.00	0.00	--	0.00	0.00	330.89	66.42	4.982
39	-3.80	100	85	0.00	0.00	--	0.00	0.00	333.05	69.17	4.815
40	-3.90	100	86	0.00	0.00	--	0.00	0.00	335.20	71.97	4.657
41	-4.00	100	87	0.00	0.00	--	0.00	0.00	337.35	74.82	4.509
42	-4.10	100	88	0.00	0.00	--	0.00	0.00	339.49	77.73	4.368
43	-4.20	100	89	0.00	0.00	--	0.00	0.00	341.63	80.68	4.234
44	-4.30	100	90	0.00	0.00	--	0.00	0.00	343.76	83.69	4.108
45	-4.40	100	91	0.00	0.00	--	0.00	0.00	345.89	86.74	3.988
46	-4.50	100	92	0.00	0.00	--	0.00	0.00	348.02	89.85	3.873
47	-4.60	100	93	0.00	0.00	--	0.00	0.00	350.14	93.00	3.765
48	-4.70	100	94	0.00	0.00	--	0.00	0.00	352.26	96.21	3.661
49	-4.80	100	95	0.00	0.00	--	0.00	0.00	354.37	99.46	3.563
50	-4.90	100	95	0.00	0.00	--	0.00	0.00	356.48	102.77	3.469
51	-5.00	100	96	0.00	0.00	--	0.00	0.00	358.59	106.13	3.379
52	-5.10	100	97	0.00	0.00	--	0.00	0.00	360.70	109.54	3.293
53	-5.20	100	98	0.00	0.00	--	0.00	0.00	362.80	112.99	3.211
54	-5.30	100	99	0.00	0.00	--	0.00	0.00	364.89	116.50	3.132
55	-5.40	100	100	0.00	0.00	--	0.00	0.00	366.99	120.06	3.057
56	-5.50	100	101	0.00	0.00	--	0.00	0.00	369.08	123.67	2.984
57	-5.60	100	102	0.00	0.00	--	0.00	0.00	371.17	127.33	2.915
58	-5.70	100	103	0.00	0.00	--	0.00	0.00	373.26	131.04	2.848
59	-5.80	100	104	0.00	0.00	--	0.00	0.00	437.59	134.80	3.246
60	-5.90	100	105	0.00	0.00	--	0.00	0.00	439.96	138.61	3.174
61	-6.00	100	106	0.00	0.00	--	0.00	0.00	442.34	142.47	3.105
62	-6.10	100	107	0.00	0.00	--	0.00	0.00	444.70	146.38	3.038
63	-6.20	100	108	0.00	0.00	--	0.00	0.00	447.07	150.34	2.974
64	-6.30	100	108	0.00	0.00	--	0.00	0.00	449.43	154.36	2.912
65	-6.40	100	109	0.00	0.00	--	0.00	0.00	387.93	158.42	2.449
66	-6.50	100	110	0.00	0.00	--	0.00	0.00	390.83	162.53	2.405
67	-6.60	100	111	0.00	0.00	--	0.00	0.00	393.74	166.70	2.362
68	-6.70	100	112	0.00	0.00	--	0.00	0.00	396.65	170.91	2.321
69	-6.80	100	113	0.00	0.00	--	0.00	0.00	399.55	175.17	2.281
70	-6.90	100	114	0.00	0.00	--	0.00	0.00	402.46	179.49	2.242
71	-7.00	100	115	0.00	0.00	--	0.00	0.00	405.37	183.85	2.205

## Combinazione n° 3 - STR (A1-M1-R3)

n°	Y	B	H	A <sub>sw</sub>	s	cotθ	V <sub>Rcd</sub>	V <sub>Rsd</sub>	V <sub>Rd</sub>	T	FS
	[m]	[cm]	[cm]	[cmq]	[cm]		[kN]	[kN]	[kN]	[kN]	
1	0.00	100	50	0.00	0.00	--	0.00	0.00	246.02	0.00	100.000
2	-0.10	100	51	0.00	0.00	--	0.00	0.00	248.50	1.09	228.359
3	-0.20	100	52	0.00	0.00	--	0.00	0.00	250.97	2.24	112.114
4	-0.30	100	53	0.00	0.00	--	0.00	0.00	253.42	3.45	73.453
5	-0.40	100	54	0.00	0.00	--	0.00	0.00	255.86	4.72	54.181
6	-0.50	100	55	0.00	0.00	--	0.00	0.00	258.28	6.06	42.654
7	-0.60	100	56	0.00	0.00	--	0.00	0.00	260.69	7.45	34.994
8	-0.70	100	56	0.00	0.00	--	0.00	0.00	263.09	8.91	29.543
9	-0.80	100	57	0.00	0.00	--	0.00	0.00	265.48	10.42	25.472
10	-0.90	100	58	0.00	0.00	--	0.00	0.00	267.86	12.00	22.320
11	-1.00	100	59	0.00	0.00	--	0.00	0.00	270.22	13.64	19.811
12	-1.10	100	60	0.00	0.00	--	0.00	0.00	272.57	15.34	17.768
13	-1.20	100	61	0.00	0.00	--	0.00	0.00	274.92	17.10	16.074
14	-1.30	100	62	0.00	0.00	--	0.00	0.00	277.25	18.93	14.649
15	-1.40	100	63	0.00	0.00	--	0.00	0.00	279.57	20.81	13.434
16	-1.50	100	64	0.00	0.00	--	0.00	0.00	281.89	22.76	12.387
17	-1.60	100	65	0.00	0.00	--	0.00	0.00	284.19	24.76	11.476
18	-1.70	100	66	0.00	0.00	--	0.00	0.00	286.49	26.83	10.677
19	-1.80	100	67	0.00	0.00	--	0.00	0.00	288.77	28.96	9.970
20	-1.90	100	68	0.00	0.00	--	0.00	0.00	291.05	31.15	9.342



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## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
21	-2.00	100	69	0.00	0.00	--	0.00	0.00	293.32	33.41	8.780
22	-2.10	100	69	0.00	0.00	--	0.00	0.00	295.58	35.72	8.275
23	-2.20	100	70	0.00	0.00	--	0.00	0.00	297.84	38.10	7.818
24	-2.30	100	71	0.00	0.00	--	0.00	0.00	300.08	40.53	7.404
25	-2.40	100	72	0.00	0.00	--	0.00	0.00	302.32	43.03	7.026
26	-2.50	100	73	0.00	0.00	--	0.00	0.00	304.56	45.59	6.680
27	-2.60	100	74	0.00	0.00	--	0.00	0.00	306.78	48.21	6.364
28	-2.70	100	75	0.00	0.00	--	0.00	0.00	309.00	50.89	6.072
29	-2.80	100	76	0.00	0.00	--	0.00	0.00	311.21	53.63	5.803
30	-2.90	100	77	0.00	0.00	--	0.00	0.00	313.42	56.44	5.553
31	-3.00	100	78	0.00	0.00	--	0.00	0.00	315.62	59.30	5.322
32	-3.10	100	79	0.00	0.00	--	0.00	0.00	317.81	62.23	5.107
33	-3.20	100	80	0.00	0.00	--	0.00	0.00	320.00	65.22	4.907
34	-3.30	100	81	0.00	0.00	--	0.00	0.00	322.18	68.27	4.719
35	-3.40	100	82	0.00	0.00	--	0.00	0.00	324.36	71.38	4.544
36	-3.50	100	82	0.00	0.00	--	0.00	0.00	326.53	74.55	4.380
37	-3.60	100	83	0.00	0.00	--	0.00	0.00	328.70	77.78	4.226
38	-3.70	100	84	0.00	0.00	--	0.00	0.00	330.86	81.08	4.081
39	-3.80	100	85	0.00	0.00	--	0.00	0.00	333.02	84.43	3.944
40	-3.90	100	86	0.00	0.00	--	0.00	0.00	335.17	87.85	3.815
41	-4.00	100	87	0.00	0.00	--	0.00	0.00	337.31	91.33	3.693
42	-4.10	100	88	0.00	0.00	--	0.00	0.00	339.46	94.87	3.578
43	-4.20	100	89	0.00	0.00	--	0.00	0.00	341.60	98.47	3.469
44	-4.30	100	90	0.00	0.00	--	0.00	0.00	343.73	102.13	3.365
45	-4.40	100	91	0.00	0.00	--	0.00	0.00	345.86	105.86	3.267
46	-4.50	100	92	0.00	0.00	--	0.00	0.00	347.99	109.63	3.174
47	-4.60	100	93	0.00	0.00	--	0.00	0.00	350.11	113.45	3.086
48	-4.70	100	94	0.00	0.00	--	0.00	0.00	352.23	117.30	3.003
49	-4.80	100	95	0.00	0.00	--	0.00	0.00	354.34	121.14	2.925
50	-4.90	100	95	0.00	0.00	--	0.00	0.00	356.45	124.99	2.852
51	-5.00	100	96	0.00	0.00	--	0.00	0.00	358.56	128.81	2.784
52	-5.10	100	97	0.00	0.00	--	0.00	0.00	360.66	132.63	2.719
53	-5.20	100	98	0.00	0.00	--	0.00	0.00	362.77	136.43	2.659
54	-5.30	100	99	0.00	0.00	--	0.00	0.00	364.86	140.24	2.602
55	-5.40	100	100	0.00	0.00	--	0.00	0.00	366.96	144.08	2.547
56	-5.50	100	101	0.00	0.00	--	0.00	0.00	369.05	147.96	2.494
57	-5.60	100	102	0.00	0.00	--	0.00	0.00	371.14	151.90	2.443
58	-5.70	100	103	0.00	0.00	--	0.00	0.00	373.22	155.89	2.394
59	-5.80	100	104	0.00	0.00	--	0.00	0.00	437.55	159.96	2.735
60	-5.90	100	105	0.00	0.00	--	0.00	0.00	439.93	164.08	2.681
61	-6.00	100	106	0.00	0.00	--	0.00	0.00	442.30	168.27	2.629
62	-6.10	100	107	0.00	0.00	--	0.00	0.00	444.67	172.52	2.578
63	-6.20	100	108	0.00	0.00	--	0.00	0.00	447.04	176.84	2.528
64	-6.30	100	108	0.00	0.00	--	0.00	0.00	449.40	181.21	2.480
65	-6.40	100	109	0.00	0.00	--	0.00	0.00	387.89	185.65	2.089
66	-6.50	100	110	0.00	0.00	--	0.00	0.00	390.80	190.15	2.055
67	-6.60	100	111	0.00	0.00	--	0.00	0.00	393.71	194.72	2.022
68	-6.70	100	112	0.00	0.00	--	0.00	0.00	396.61	199.34	1.990
69	-6.80	100	113	0.00	0.00	--	0.00	0.00	399.52	204.03	1.958
70	-6.90	100	114	0.00	0.00	--	0.00	0.00	402.43	208.79	1.927
71	-7.00	100	115	0.00	0.00	--	0.00	0.00	405.34	213.60	1.898

## Combinazione n° 4 - STR (A1-M1-R3) H - V

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
1	0.00	100	50	0.00	0.00	--	0.00	0.00	246.02	0.00	100.000
2	-0.10	100	51	0.00	0.00	--	0.00	0.00	248.50	0.67	372.589
3	-0.20	100	52	0.00	0.00	--	0.00	0.00	250.97	1.38	181.217
4	-0.30	100	53	0.00	0.00	--	0.00	0.00	253.42	2.15	117.692
5	-0.40	100	54	0.00	0.00	--	0.00	0.00	255.86	2.97	86.107
6	-0.50	100	55	0.00	0.00	--	0.00	0.00	258.28	3.84	67.268
7	-0.60	100	56	0.00	0.00	--	0.00	0.00	260.69	4.76	54.788
8	-0.70	100	56	0.00	0.00	--	0.00	0.00	263.09	5.73	45.937
9	-0.80	100	57	0.00	0.00	--	0.00	0.00	265.48	6.75	39.350
10	-0.90	100	58	0.00	0.00	--	0.00	0.00	267.86	7.82	34.268
11	-1.00	100	59	0.00	0.00	--	0.00	0.00	270.22	8.94	30.237

VE407

## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
12	-1.10	100	60	0.00	0.00	--	0.00	0.00	272.57	10.11	26.968
13	-1.20	100	61	0.00	0.00	--	0.00	0.00	274.92	11.33	24.268
14	-1.30	100	62	0.00	0.00	--	0.00	0.00	277.25	12.60	22.004
15	-1.40	100	63	0.00	0.00	--	0.00	0.00	279.57	13.92	20.082
16	-1.50	100	64	0.00	0.00	--	0.00	0.00	281.89	15.29	18.432
17	-1.60	100	65	0.00	0.00	--	0.00	0.00	284.19	16.72	17.001
18	-1.70	100	66	0.00	0.00	--	0.00	0.00	286.49	18.19	15.750
19	-1.80	100	67	0.00	0.00	--	0.00	0.00	288.77	19.71	14.649
20	-1.90	100	68	0.00	0.00	--	0.00	0.00	291.05	21.29	13.673
21	-2.00	100	69	0.00	0.00	--	0.00	0.00	293.32	22.91	12.803
22	-2.10	100	69	0.00	0.00	--	0.00	0.00	295.58	24.58	12.023
23	-2.20	100	70	0.00	0.00	--	0.00	0.00	297.84	26.31	11.320
24	-2.30	100	71	0.00	0.00	--	0.00	0.00	300.08	28.09	10.685
25	-2.40	100	72	0.00	0.00	--	0.00	0.00	302.32	29.91	10.107
26	-2.50	100	73	0.00	0.00	--	0.00	0.00	304.56	31.79	9.581
27	-2.60	100	74	0.00	0.00	--	0.00	0.00	306.78	33.71	9.100
28	-2.70	100	75	0.00	0.00	--	0.00	0.00	309.00	35.69	8.658
29	-2.80	100	76	0.00	0.00	--	0.00	0.00	311.21	37.72	8.251
30	-2.90	100	77	0.00	0.00	--	0.00	0.00	313.42	39.80	7.876
31	-3.00	100	78	0.00	0.00	--	0.00	0.00	315.62	41.92	7.528
32	-3.10	100	79	0.00	0.00	--	0.00	0.00	317.81	44.10	7.206
33	-3.20	100	80	0.00	0.00	--	0.00	0.00	320.00	46.33	6.907
34	-3.30	100	81	0.00	0.00	--	0.00	0.00	322.18	48.61	6.628
35	-3.40	100	82	0.00	0.00	--	0.00	0.00	324.36	50.94	6.368
36	-3.50	100	82	0.00	0.00	--	0.00	0.00	326.53	53.32	6.124
37	-3.60	100	83	0.00	0.00	--	0.00	0.00	328.70	55.75	5.896
38	-3.70	100	84	0.00	0.00	--	0.00	0.00	330.86	58.23	5.682
39	-3.80	100	85	0.00	0.00	--	0.00	0.00	333.02	60.76	5.481
40	-3.90	100	86	0.00	0.00	--	0.00	0.00	335.17	63.34	5.291
41	-4.00	100	87	0.00	0.00	--	0.00	0.00	337.31	65.98	5.113
42	-4.10	100	88	0.00	0.00	--	0.00	0.00	339.46	68.66	4.944
43	-4.20	100	89	0.00	0.00	--	0.00	0.00	341.60	71.39	4.785
44	-4.30	100	90	0.00	0.00	--	0.00	0.00	343.73	74.17	4.634
45	-4.40	100	91	0.00	0.00	--	0.00	0.00	345.86	77.01	4.491
46	-4.50	100	92	0.00	0.00	--	0.00	0.00	347.99	79.89	4.356
47	-4.60	100	93	0.00	0.00	--	0.00	0.00	350.11	82.83	4.227
48	-4.70	100	94	0.00	0.00	--	0.00	0.00	352.23	85.81	4.105
49	-4.80	100	95	0.00	0.00	--	0.00	0.00	354.34	88.85	3.988
50	-4.90	100	95	0.00	0.00	--	0.00	0.00	356.45	91.93	3.877
51	-5.00	100	96	0.00	0.00	--	0.00	0.00	358.56	95.07	3.772
52	-5.10	100	97	0.00	0.00	--	0.00	0.00	360.66	98.25	3.671
53	-5.20	100	98	0.00	0.00	--	0.00	0.00	362.77	101.49	3.574
54	-5.30	100	99	0.00	0.00	--	0.00	0.00	364.86	104.78	3.482
55	-5.40	100	100	0.00	0.00	--	0.00	0.00	366.96	108.12	3.394
56	-5.50	100	101	0.00	0.00	--	0.00	0.00	369.05	111.50	3.310
57	-5.60	100	102	0.00	0.00	--	0.00	0.00	371.14	114.94	3.229
58	-5.70	100	103	0.00	0.00	--	0.00	0.00	373.22	118.43	3.151
59	-5.80	100	104	0.00	0.00	--	0.00	0.00	437.55	121.97	3.587
60	-5.90	100	105	0.00	0.00	--	0.00	0.00	439.93	125.56	3.504
61	-6.00	100	106	0.00	0.00	--	0.00	0.00	442.30	129.20	3.423
62	-6.10	100	107	0.00	0.00	--	0.00	0.00	444.67	132.89	3.346
63	-6.20	100	108	0.00	0.00	--	0.00	0.00	447.04	136.63	3.272
64	-6.30	100	108	0.00	0.00	--	0.00	0.00	449.40	140.42	3.200
65	-6.40	100	109	0.00	0.00	--	0.00	0.00	387.89	144.26	2.689
66	-6.50	100	110	0.00	0.00	--	0.00	0.00	390.80	148.15	2.638
67	-6.60	100	111	0.00	0.00	--	0.00	0.00	393.71	152.10	2.589
68	-6.70	100	112	0.00	0.00	--	0.00	0.00	396.61	156.09	2.541
69	-6.80	100	113	0.00	0.00	--	0.00	0.00	399.52	160.13	2.495
70	-6.90	100	114	0.00	0.00	--	0.00	0.00	402.43	164.23	2.450
71	-7.00	100	115	0.00	0.00	--	0.00	0.00	405.34	168.37	2.407

Combinazione n° 13 - ECC

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
1	0.00	100	50	0.00	0.00	--	0.00	0.00	246.02	14.30	17.204
2	-0.10	100	51	0.00	0.00	--	0.00	0.00	248.50	14.32	17.349

VE407

## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
3	-0.20	100	52	0.00	0.00	--	0.00	0.00	250.97	14.40	17.434
4	-0.30	100	53	0.00	0.00	--	0.00	0.00	253.42	14.51	17.460
5	-0.40	100	54	0.00	0.00	--	0.00	0.00	255.86	14.68	17.430
6	-0.50	100	55	0.00	0.00	--	0.00	0.00	258.28	14.89	17.344
7	-0.60	100	56	0.00	0.00	--	0.00	0.00	260.69	15.15	17.206
8	-0.70	100	56	0.00	0.00	--	0.00	0.00	263.09	15.46	17.020
9	-0.80	100	57	0.00	0.00	--	0.00	0.00	265.48	15.81	16.791
10	-0.90	100	58	0.00	0.00	--	0.00	0.00	267.86	16.21	16.522
11	-1.00	100	59	0.00	0.00	--	0.00	0.00	270.22	16.66	16.220
12	-1.10	100	60	0.00	0.00	--	0.00	0.00	272.57	17.16	15.889
13	-1.20	100	61	0.00	0.00	--	0.00	0.00	274.92	17.70	15.534
14	-1.30	100	62	0.00	0.00	--	0.00	0.00	277.25	18.29	15.161
15	-1.40	100	63	0.00	0.00	--	0.00	0.00	279.57	18.92	14.774
16	-1.50	100	64	0.00	0.00	--	0.00	0.00	281.89	19.61	14.377
17	-1.60	100	65	0.00	0.00	--	0.00	0.00	284.19	20.34	13.973
18	-1.70	100	66	0.00	0.00	--	0.00	0.00	286.49	21.12	13.567
19	-1.80	100	67	0.00	0.00	--	0.00	0.00	288.77	21.94	13.161
20	-1.90	100	68	0.00	0.00	--	0.00	0.00	291.05	22.81	12.758
21	-2.00	100	69	0.00	0.00	--	0.00	0.00	293.32	23.73	12.359
22	-2.10	100	69	0.00	0.00	--	0.00	0.00	295.58	24.70	11.967
23	-2.20	100	70	0.00	0.00	--	0.00	0.00	297.84	25.71	11.583
24	-2.30	100	71	0.00	0.00	--	0.00	0.00	300.08	26.77	11.208
25	-2.40	100	72	0.00	0.00	--	0.00	0.00	302.32	27.88	10.843
26	-2.50	100	73	0.00	0.00	--	0.00	0.00	304.56	29.04	10.488
27	-2.60	100	74	0.00	0.00	--	0.00	0.00	306.78	30.24	10.145
28	-2.70	100	75	0.00	0.00	--	0.00	0.00	309.00	31.49	9.813
29	-2.80	100	76	0.00	0.00	--	0.00	0.00	311.21	32.79	9.492
30	-2.90	100	77	0.00	0.00	--	0.00	0.00	313.42	34.13	9.183
31	-3.00	100	78	0.00	0.00	--	0.00	0.00	315.62	35.52	8.885
32	-3.10	100	79	0.00	0.00	--	0.00	0.00	317.81	36.96	8.599
33	-3.20	100	80	0.00	0.00	--	0.00	0.00	320.00	38.44	8.324
34	-3.30	100	81	0.00	0.00	--	0.00	0.00	322.18	39.98	8.059
35	-3.40	100	82	0.00	0.00	--	0.00	0.00	324.36	41.56	7.805
36	-3.50	100	82	0.00	0.00	--	0.00	0.00	326.53	43.18	7.562
37	-3.60	100	83	0.00	0.00	--	0.00	0.00	328.70	44.86	7.328
38	-3.70	100	84	0.00	0.00	--	0.00	0.00	330.86	46.58	7.103
39	-3.80	100	85	0.00	0.00	--	0.00	0.00	333.02	48.35	6.888
40	-3.90	100	86	0.00	0.00	--	0.00	0.00	335.17	50.16	6.682
41	-4.00	100	87	0.00	0.00	--	0.00	0.00	337.31	52.02	6.484
42	-4.10	100	88	0.00	0.00	--	0.00	0.00	339.46	53.93	6.294
43	-4.20	100	89	0.00	0.00	--	0.00	0.00	341.60	55.89	6.112
44	-4.30	100	90	0.00	0.00	--	0.00	0.00	343.73	57.90	5.937
45	-4.40	100	91	0.00	0.00	--	0.00	0.00	345.86	59.95	5.770
46	-4.50	100	92	0.00	0.00	--	0.00	0.00	347.99	62.04	5.609
47	-4.60	100	93	0.00	0.00	--	0.00	0.00	350.11	64.19	5.454
48	-4.70	100	94	0.00	0.00	--	0.00	0.00	352.23	66.38	5.306
49	-4.80	100	95	0.00	0.00	--	0.00	0.00	354.34	68.62	5.164
50	-4.90	100	95	0.00	0.00	--	0.00	0.00	356.45	70.91	5.027
51	-5.00	100	96	0.00	0.00	--	0.00	0.00	358.56	73.24	4.895
52	-5.10	100	97	0.00	0.00	--	0.00	0.00	360.66	75.62	4.769
53	-5.20	100	98	0.00	0.00	--	0.00	0.00	362.77	78.05	4.648
54	-5.30	100	99	0.00	0.00	--	0.00	0.00	364.86	80.53	4.531
55	-5.40	100	100	0.00	0.00	--	0.00	0.00	366.96	83.05	4.418
56	-5.50	100	101	0.00	0.00	--	0.00	0.00	369.05	85.62	4.310
57	-5.60	100	102	0.00	0.00	--	0.00	0.00	371.14	88.24	4.206
58	-5.70	100	103	0.00	0.00	--	0.00	0.00	373.22	90.90	4.106
59	-5.80	100	104	0.00	0.00	--	0.00	0.00	437.55	93.61	4.674
60	-5.90	100	105	0.00	0.00	--	0.00	0.00	439.93	96.37	4.565
61	-6.00	100	106	0.00	0.00	--	0.00	0.00	442.30	99.18	4.460
62	-6.10	100	107	0.00	0.00	--	0.00	0.00	444.67	102.03	4.358
63	-6.20	100	108	0.00	0.00	--	0.00	0.00	447.04	104.93	4.260
64	-6.30	100	108	0.00	0.00	--	0.00	0.00	449.40	107.88	4.166
65	-6.40	100	109	0.00	0.00	--	0.00	0.00	387.89	110.87	3.499
66	-6.50	100	110	0.00	0.00	--	0.00	0.00	390.80	113.91	3.431
67	-6.60	100	111	0.00	0.00	--	0.00	0.00	393.71	117.00	3.365
68	-6.70	100	112	0.00	0.00	--	0.00	0.00	396.61	120.14	3.301
69	-6.80	100	113	0.00	0.00	--	0.00	0.00	399.52	123.32	3.240
70	-6.90	100	114	0.00	0.00	--	0.00	0.00	402.43	126.55	3.180
71	-7.00	100	115	0.00	0.00	--	0.00	0.00	405.34	129.83	3.122

VE407

**Relazione Tecnica e di Calcolo - Muri su fondazione diretta****Mensola valle**Combinazione n° 1 - STR (A1-M1-R3)

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
1	-0.75	100	50	0.00	0.00	--	0.00	0.00	208.90	0.00	100.000
2	-0.67	100	50	0.00	0.00	--	0.00	0.00	208.90	1.02	204.497
3	-0.58	100	50	0.00	0.00	--	0.00	0.00	208.90	2.04	102.249
4	-0.50	100	50	0.00	0.00	--	0.00	0.00	208.90	3.06	68.166

Combinazione n° 2 - STR (A1-M1-R3) H + V

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
1	-0.75	100	50	0.00	0.00	--	0.00	0.00	208.90	0.00	100.000
2	-0.67	100	50	0.00	0.00	--	0.00	0.00	208.90	1.09	190.898
3	-0.58	100	50	0.00	0.00	--	0.00	0.00	208.90	2.19	95.449
4	-0.50	100	50	0.00	0.00	--	0.00	0.00	208.90	3.28	63.633

Combinazione n° 3 - STR (A1-M1-R3)

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
1	-0.75	100	50	0.00	0.00	--	0.00	0.00	208.90	0.00	100.000
2	-0.67	100	50	0.00	0.00	--	0.00	0.00	208.90	1.02	204.497
3	-0.58	100	50	0.00	0.00	--	0.00	0.00	208.90	2.04	102.249
4	-0.50	100	50	0.00	0.00	--	0.00	0.00	208.90	3.06	68.166

Combinazione n° 4 - STR (A1-M1-R3) H - V

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
1	-0.75	100	50	0.00	0.00	--	0.00	0.00	208.90	0.00	100.000
2	-0.67	100	50	0.00	0.00	--	0.00	0.00	208.90	1.02	204.497
3	-0.58	100	50	0.00	0.00	--	0.00	0.00	208.90	2.04	102.249
4	-0.50	100	50	0.00	0.00	--	0.00	0.00	208.90	3.06	68.166

Combinazione n° 13 - ECC

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
1	-0.75	100	50	0.00	0.00	--	0.00	0.00	208.90	0.00	100.000
2	-0.67	100	50	0.00	0.00	--	0.00	0.00	208.90	1.02	204.497
3	-0.58	100	50	0.00	0.00	--	0.00	0.00	208.90	2.04	102.249
4	-0.50	100	50	0.00	0.00	--	0.00	0.00	208.90	3.06	68.166

**Fondazione**Combinazione n° 1 - STR (A1-M1-R3)

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## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
1	-1.65	100	115	0.00	0.00	--	0.00	0.00	465.30	0.00	100.000
2	-1.55	100	115	0.00	0.00	--	0.00	0.00	465.30	-12.98	35.851
3	-1.46	100	115	0.00	0.00	--	0.00	0.00	465.30	-25.94	17.936
4	-1.36	100	115	0.00	0.00	--	0.00	0.00	465.30	-38.89	11.964
5	-1.27	100	115	0.00	0.00	--	0.00	0.00	465.30	-51.83	8.978
6	-1.17	100	115	0.00	0.00	--	0.00	0.00	465.30	-64.75	7.187
7	-1.07	100	115	0.00	0.00	--	0.00	0.00	465.30	-77.65	5.992
8	-0.98	100	115	0.00	0.00	--	0.00	0.00	465.30	-90.54	5.139
9	-0.88	100	115	0.00	0.00	--	0.00	0.00	465.30	-103.42	4.499
10	-0.79	100	115	0.00	0.00	--	0.00	0.00	465.30	-116.28	4.002
11	-0.69	100	115	0.00	0.00	--	0.00	0.00	465.30	-129.12	3.604
12	-0.60	100	115	0.00	0.00	--	0.00	0.00	465.30	-141.95	3.278
13	-0.50	100	115	0.00	0.00	--	0.00	0.00	465.30	-154.77	3.006
14	0.65	100	115	0.00	0.00	--	0.00	0.00	465.30	-139.80	3.328
15	0.75	100	115	0.00	0.00	--	0.00	0.00	465.30	-135.69	3.429
16	0.85	100	115	0.00	0.00	--	0.00	0.00	465.30	-131.55	3.537
17	0.95	100	115	0.00	0.00	--	0.00	0.00	465.30	-127.40	3.652
18	1.05	100	115	0.00	0.00	--	0.00	0.00	465.30	-123.23	3.776
19	1.15	100	115	0.00	0.00	--	0.00	0.00	465.30	-119.05	3.908
20	1.25	100	115	0.00	0.00	--	0.00	0.00	465.30	-114.85	4.051
21	1.35	100	115	0.00	0.00	--	0.00	0.00	465.30	-110.64	4.206
22	1.45	100	115	0.00	0.00	--	0.00	0.00	465.30	-106.40	4.373
23	1.55	100	115	0.00	0.00	--	0.00	0.00	465.30	-102.16	4.555
24	1.65	100	115	0.00	0.00	--	0.00	0.00	465.30	-97.89	4.753
25	1.75	100	115	0.00	0.00	--	0.00	0.00	465.30	-93.61	4.971
26	1.85	100	115	0.00	0.00	--	0.00	0.00	465.30	-89.32	5.210
27	1.95	100	115	0.00	0.00	--	0.00	0.00	465.30	-85.00	5.474
28	2.05	100	115	0.00	0.00	--	0.00	0.00	465.30	-80.67	5.768
29	2.15	100	115	0.00	0.00	--	0.00	0.00	465.30	-76.33	6.096
30	2.25	100	115	0.00	0.00	--	0.00	0.00	465.30	-71.97	6.465
31	2.35	100	115	0.00	0.00	--	0.00	0.00	465.30	-67.59	6.884
32	2.45	100	115	0.00	0.00	--	0.00	0.00	465.30	-63.20	7.362
33	2.55	100	115	0.00	0.00	--	0.00	0.00	465.30	-58.79	7.915
34	2.65	100	115	0.00	0.00	--	0.00	0.00	465.30	-54.36	8.559
35	2.75	100	115	0.00	0.00	--	0.00	0.00	465.30	-49.92	9.320
36	2.85	100	115	0.00	0.00	--	0.00	0.00	465.30	-45.47	10.234
37	2.95	100	115	0.00	0.00	--	0.00	0.00	465.30	-40.99	11.351
38	3.05	100	115	0.00	0.00	--	0.00	0.00	465.30	-36.50	12.748
39	3.15	100	115	0.00	0.00	--	0.00	0.00	465.30	-32.00	14.543
40	3.25	100	115	0.00	0.00	--	0.00	0.00	465.30	-27.47	16.937
41	3.35	100	115	0.00	0.00	--	0.00	0.00	465.30	-22.93	20.288
42	3.45	100	115	0.00	0.00	--	0.00	0.00	465.30	-18.38	25.316
43	3.55	100	115	0.00	0.00	--	0.00	0.00	465.30	-13.81	33.695
44	3.65	100	115	0.00	0.00	--	0.00	0.00	465.30	-9.22	50.454
45	3.75	100	115	0.00	0.00	--	0.00	0.00	465.30	-4.62	100.732
46	3.85	100	115	0.00	0.00	--	0.00	0.00	465.30	0.00	100.000

## Combinazione n° 2 - STR (A1-M1-R3) H + V

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
1	-1.65	100	115	0.00	0.00	--	0.00	0.00	465.30	0.00	100.000
2	-1.55	100	115	0.00	0.00	--	0.00	0.00	465.30	-24.32	19.135
3	-1.46	100	115	0.00	0.00	--	0.00	0.00	465.30	-48.26	9.643
4	-1.36	100	115	0.00	0.00	--	0.00	0.00	465.30	-71.82	6.479
5	-1.27	100	115	0.00	0.00	--	0.00	0.00	465.30	-95.00	4.898
6	-1.17	100	115	0.00	0.00	--	0.00	0.00	465.30	-117.81	3.950
7	-1.07	100	115	0.00	0.00	--	0.00	0.00	465.30	-140.23	3.318
8	-0.98	100	115	0.00	0.00	--	0.00	0.00	465.30	-162.28	2.867
9	-0.88	100	115	0.00	0.00	--	0.00	0.00	465.30	-183.96	2.529
10	-0.79	100	115	0.00	0.00	--	0.00	0.00	465.30	-205.25	2.267
11	-0.69	100	115	0.00	0.00	--	0.00	0.00	465.30	-226.17	2.057
12	-0.60	100	115	0.00	0.00	--	0.00	0.00	465.30	-246.71	1.886
13	-0.50	100	115	0.00	0.00	--	0.00	0.00	465.30	-266.87	1.744
14	0.65	100	115	0.00	0.00	--	0.00	0.00	465.30	-120.43	3.864
15	0.75	100	115	0.00	0.00	--	0.00	0.00	465.30	-123.04	3.782
16	0.85	100	115	0.00	0.00	--	0.00	0.00	465.30	-125.24	3.715

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## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
17	0.95	100	115	0.00	0.00	--	0.00	0.00	465.30	-127.03	3.663
18	1.05	100	115	0.00	0.00	--	0.00	0.00	465.30	-128.41	3.624
19	1.15	100	115	0.00	0.00	--	0.00	0.00	465.30	-129.37	3.597
20	1.25	100	115	0.00	0.00	--	0.00	0.00	465.30	-129.93	3.581
21	1.35	100	115	0.00	0.00	--	0.00	0.00	465.30	-130.07	3.577
22	1.45	100	115	0.00	0.00	--	0.00	0.00	465.30	-129.80	3.585
23	1.55	100	115	0.00	0.00	--	0.00	0.00	465.30	-129.12	3.604
24	1.65	100	115	0.00	0.00	--	0.00	0.00	465.30	-128.03	3.634
25	1.75	100	115	0.00	0.00	--	0.00	0.00	465.30	-126.53	3.677
26	1.85	100	115	0.00	0.00	--	0.00	0.00	465.30	-124.62	3.734
27	1.95	100	115	0.00	0.00	--	0.00	0.00	465.30	-122.29	3.805
28	2.05	100	115	0.00	0.00	--	0.00	0.00	465.30	-119.56	3.892
29	2.15	100	115	0.00	0.00	--	0.00	0.00	465.30	-116.41	3.997
30	2.25	100	115	0.00	0.00	--	0.00	0.00	465.30	-112.85	4.123
31	2.35	100	115	0.00	0.00	--	0.00	0.00	465.30	-108.88	4.273
32	2.45	100	115	0.00	0.00	--	0.00	0.00	465.30	-104.50	4.453
33	2.55	100	115	0.00	0.00	--	0.00	0.00	465.30	-99.71	4.667
34	2.65	100	115	0.00	0.00	--	0.00	0.00	465.30	-94.51	4.923
35	2.75	100	115	0.00	0.00	--	0.00	0.00	465.30	-88.89	5.234
36	2.85	100	115	0.00	0.00	--	0.00	0.00	465.30	-82.87	5.615
37	2.95	100	115	0.00	0.00	--	0.00	0.00	465.30	-76.43	6.088
38	3.05	100	115	0.00	0.00	--	0.00	0.00	465.30	-69.58	6.687
39	3.15	100	115	0.00	0.00	--	0.00	0.00	465.30	-62.33	7.466
40	3.25	100	115	0.00	0.00	--	0.00	0.00	465.30	-54.66	8.513
41	3.35	100	115	0.00	0.00	--	0.00	0.00	465.30	-46.57	9.991
42	3.45	100	115	0.00	0.00	--	0.00	0.00	465.30	-38.08	12.219
43	3.55	100	115	0.00	0.00	--	0.00	0.00	465.30	-29.18	15.947
44	3.65	100	115	0.00	0.00	--	0.00	0.00	465.30	-19.86	23.425
45	3.75	100	115	0.00	0.00	--	0.00	0.00	465.30	-10.14	45.901
46	3.85	100	115	0.00	0.00	--	0.00	0.00	465.30	0.00	100.000

## Combinazione n° 3 - STR (A1-M1-R3)

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
1	-1.65	100	115	0.00	0.00	--	0.00	0.00	465.30	0.00	100.000
2	-1.55	100	115	0.00	0.00	--	0.00	0.00	465.30	-15.67	29.697
3	-1.46	100	115	0.00	0.00	--	0.00	0.00	465.30	-31.33	14.854
4	-1.36	100	115	0.00	0.00	--	0.00	0.00	465.30	-46.97	9.906
5	-1.27	100	115	0.00	0.00	--	0.00	0.00	465.30	-62.61	7.432
6	-1.17	100	115	0.00	0.00	--	0.00	0.00	465.30	-78.24	5.947
7	-1.07	100	115	0.00	0.00	--	0.00	0.00	465.30	-93.85	4.958
8	-0.98	100	115	0.00	0.00	--	0.00	0.00	465.30	-109.46	4.251
9	-0.88	100	115	0.00	0.00	--	0.00	0.00	465.30	-125.06	3.721
10	-0.79	100	115	0.00	0.00	--	0.00	0.00	465.30	-140.64	3.308
11	-0.69	100	115	0.00	0.00	--	0.00	0.00	465.30	-156.22	2.979
12	-0.60	100	115	0.00	0.00	--	0.00	0.00	465.30	-171.78	2.709
13	-0.50	100	115	0.00	0.00	--	0.00	0.00	465.30	-187.34	2.484
14	0.65	100	115	0.00	0.00	--	0.00	0.00	465.30	-163.84	2.840
15	0.75	100	115	0.00	0.00	--	0.00	0.00	465.30	-158.38	2.938
16	0.85	100	115	0.00	0.00	--	0.00	0.00	465.30	-152.91	3.043
17	0.95	100	115	0.00	0.00	--	0.00	0.00	465.30	-147.43	3.156
18	1.05	100	115	0.00	0.00	--	0.00	0.00	465.30	-141.94	3.278
19	1.15	100	115	0.00	0.00	--	0.00	0.00	465.30	-136.43	3.410
20	1.25	100	115	0.00	0.00	--	0.00	0.00	465.30	-130.92	3.554
21	1.35	100	115	0.00	0.00	--	0.00	0.00	465.30	-125.39	3.711
22	1.45	100	115	0.00	0.00	--	0.00	0.00	465.30	-119.85	3.882
23	1.55	100	115	0.00	0.00	--	0.00	0.00	465.30	-114.30	4.071
24	1.65	100	115	0.00	0.00	--	0.00	0.00	465.30	-108.74	4.279
25	1.75	100	115	0.00	0.00	--	0.00	0.00	465.30	-103.17	4.510
26	1.85	100	115	0.00	0.00	--	0.00	0.00	465.30	-97.59	4.768
27	1.95	100	115	0.00	0.00	--	0.00	0.00	465.30	-91.99	5.058
28	2.05	100	115	0.00	0.00	--	0.00	0.00	465.30	-86.39	5.386
29	2.15	100	115	0.00	0.00	--	0.00	0.00	465.30	-80.77	5.761
30	2.25	100	115	0.00	0.00	--	0.00	0.00	465.30	-75.14	6.192
31	2.35	100	115	0.00	0.00	--	0.00	0.00	465.30	-69.50	6.695
32	2.45	100	115	0.00	0.00	--	0.00	0.00	465.30	-63.85	7.287

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## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
33	2.55	100	115	0.00	0.00	--	0.00	0.00	465.30	-58.19	7.996
34	2.65	100	115	0.00	0.00	--	0.00	0.00	465.30	-52.52	8.860
35	2.75	100	115	0.00	0.00	--	0.00	0.00	465.30	-46.83	9.935
36	2.85	100	115	0.00	0.00	--	0.00	0.00	465.30	-41.14	11.310
37	2.95	100	115	0.00	0.00	--	0.00	0.00	465.30	-35.43	13.132
38	3.05	100	115	0.00	0.00	--	0.00	0.00	465.30	-30.67	15.172
39	3.15	100	115	0.00	0.00	--	0.00	0.00	465.30	-26.88	17.313
40	3.25	100	115	0.00	0.00	--	0.00	0.00	465.30	-23.07	20.170
41	3.35	100	115	0.00	0.00	--	0.00	0.00	465.30	-19.25	24.168
42	3.45	100	115	0.00	0.00	--	0.00	0.00	465.30	-15.42	30.166
43	3.55	100	115	0.00	0.00	--	0.00	0.00	465.30	-11.59	40.163
44	3.65	100	115	0.00	0.00	--	0.00	0.00	465.30	-7.73	60.157
45	3.75	100	115	0.00	0.00	--	0.00	0.00	465.30	-3.87	120.139
46	3.85	100	115	0.00	0.00	--	0.00	0.00	465.30	0.00	100.000

## Combinazione n° 4 - STR (A1-M1-R3) H - V

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
1	-1.65	100	115	0.00	0.00	--	0.00	0.00	465.30	0.00	100.000
2	-1.55	100	115	0.00	0.00	--	0.00	0.00	465.30	-22.02	21.127
3	-1.46	100	115	0.00	0.00	--	0.00	0.00	465.30	-43.68	10.653
4	-1.36	100	115	0.00	0.00	--	0.00	0.00	465.30	-64.96	7.162
5	-1.27	100	115	0.00	0.00	--	0.00	0.00	465.30	-85.88	5.418
6	-1.17	100	115	0.00	0.00	--	0.00	0.00	465.30	-106.43	4.372
7	-1.07	100	115	0.00	0.00	--	0.00	0.00	465.30	-126.61	3.675
8	-0.98	100	115	0.00	0.00	--	0.00	0.00	465.30	-146.42	3.178
9	-0.88	100	115	0.00	0.00	--	0.00	0.00	465.30	-165.86	2.805
10	-0.79	100	115	0.00	0.00	--	0.00	0.00	465.30	-184.93	2.516
11	-0.69	100	115	0.00	0.00	--	0.00	0.00	465.30	-203.63	2.285
12	-0.60	100	115	0.00	0.00	--	0.00	0.00	465.30	-221.97	2.096
13	-0.50	100	115	0.00	0.00	--	0.00	0.00	465.30	-239.93	1.939
14	0.65	100	115	0.00	0.00	--	0.00	0.00	465.30	-185.41	2.510
15	0.75	100	115	0.00	0.00	--	0.00	0.00	465.30	-185.85	2.504
16	0.85	100	115	0.00	0.00	--	0.00	0.00	465.30	-185.88	2.503
17	0.95	100	115	0.00	0.00	--	0.00	0.00	465.30	-185.51	2.508
18	1.05	100	115	0.00	0.00	--	0.00	0.00	465.30	-184.74	2.519
19	1.15	100	115	0.00	0.00	--	0.00	0.00	465.30	-183.56	2.535
20	1.25	100	115	0.00	0.00	--	0.00	0.00	465.30	-181.99	2.557
21	1.35	100	115	0.00	0.00	--	0.00	0.00	465.30	-180.01	2.585
22	1.45	100	115	0.00	0.00	--	0.00	0.00	465.30	-177.63	2.619
23	1.55	100	115	0.00	0.00	--	0.00	0.00	465.30	-174.85	2.661
24	1.65	100	115	0.00	0.00	--	0.00	0.00	465.30	-171.67	2.710
25	1.75	100	115	0.00	0.00	--	0.00	0.00	465.30	-168.09	2.768
26	1.85	100	115	0.00	0.00	--	0.00	0.00	465.30	-164.10	2.836
27	1.95	100	115	0.00	0.00	--	0.00	0.00	465.30	-159.71	2.913
28	2.05	100	115	0.00	0.00	--	0.00	0.00	465.30	-154.92	3.003
29	2.15	100	115	0.00	0.00	--	0.00	0.00	465.30	-149.73	3.108
30	2.25	100	115	0.00	0.00	--	0.00	0.00	465.30	-144.14	3.228
31	2.35	100	115	0.00	0.00	--	0.00	0.00	465.30	-138.14	3.368
32	2.45	100	115	0.00	0.00	--	0.00	0.00	465.30	-131.75	3.532
33	2.55	100	115	0.00	0.00	--	0.00	0.00	465.30	-124.95	3.724
34	2.65	100	115	0.00	0.00	--	0.00	0.00	465.30	-117.75	3.952
35	2.75	100	115	0.00	0.00	--	0.00	0.00	465.30	-110.14	4.224
36	2.85	100	115	0.00	0.00	--	0.00	0.00	465.30	-102.14	4.556
37	2.95	100	115	0.00	0.00	--	0.00	0.00	465.30	-93.73	4.964
38	3.05	100	115	0.00	0.00	--	0.00	0.00	465.30	-84.93	5.479
39	3.15	100	115	0.00	0.00	--	0.00	0.00	465.30	-75.72	6.145
40	3.25	100	115	0.00	0.00	--	0.00	0.00	465.30	-66.11	7.039
41	3.35	100	115	0.00	0.00	--	0.00	0.00	465.30	-56.09	8.295
42	3.45	100	115	0.00	0.00	--	0.00	0.00	465.30	-45.68	10.187
43	3.55	100	115	0.00	0.00	--	0.00	0.00	465.30	-34.86	13.347
44	3.65	100	115	0.00	0.00	--	0.00	0.00	465.30	-23.64	19.681
45	3.75	100	115	0.00	0.00	--	0.00	0.00	465.30	-12.02	38.704
46	3.85	100	115	0.00	0.00	--	0.00	0.00	465.30	0.00	100.000

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## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

## Combinazione n° 13 - ECC

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
1	-1.65	100	115	0.00	0.00	--	0.00	0.00	465.30	0.00	100.000
2	-1.55	100	115	0.00	0.00	--	0.00	0.00	465.30	-13.89	33.501
3	-1.46	100	115	0.00	0.00	--	0.00	0.00	465.30	-27.72	16.786
4	-1.36	100	115	0.00	0.00	--	0.00	0.00	465.30	-41.49	11.214
5	-1.27	100	115	0.00	0.00	--	0.00	0.00	465.30	-55.21	8.429
6	-1.17	100	115	0.00	0.00	--	0.00	0.00	465.30	-68.86	6.757
7	-1.07	100	115	0.00	0.00	--	0.00	0.00	465.30	-82.46	5.643
8	-0.98	100	115	0.00	0.00	--	0.00	0.00	465.30	-96.00	4.847
9	-0.88	100	115	0.00	0.00	--	0.00	0.00	465.30	-109.48	4.250
10	-0.79	100	115	0.00	0.00	--	0.00	0.00	465.30	-122.90	3.786
11	-0.69	100	115	0.00	0.00	--	0.00	0.00	465.30	-136.26	3.415
12	-0.60	100	115	0.00	0.00	--	0.00	0.00	465.30	-149.57	3.111
13	-0.50	100	115	0.00	0.00	--	0.00	0.00	465.30	-162.81	2.858
14	0.65	100	115	0.00	0.00	--	0.00	0.00	465.30	-40.26	11.558
15	0.75	100	115	0.00	0.00	--	0.00	0.00	465.30	-39.99	11.636
16	0.85	100	115	0.00	0.00	--	0.00	0.00	465.30	-39.65	11.735
17	0.95	100	115	0.00	0.00	--	0.00	0.00	465.30	-39.25	11.854
18	1.05	100	115	0.00	0.00	--	0.00	0.00	465.30	-38.79	11.996
19	1.15	100	115	0.00	0.00	--	0.00	0.00	465.30	-38.26	12.160
20	1.25	100	115	0.00	0.00	--	0.00	0.00	465.30	-37.67	12.351
21	1.35	100	115	0.00	0.00	--	0.00	0.00	465.30	-37.02	12.569
22	1.45	100	115	0.00	0.00	--	0.00	0.00	465.30	-36.30	12.817
23	1.55	100	115	0.00	0.00	--	0.00	0.00	465.30	-35.52	13.099
24	1.65	100	115	0.00	0.00	--	0.00	0.00	465.30	-34.68	13.418
25	1.75	100	115	0.00	0.00	--	0.00	0.00	465.30	-33.77	13.779
26	1.85	100	115	0.00	0.00	--	0.00	0.00	465.30	-32.80	14.187
27	1.95	100	115	0.00	0.00	--	0.00	0.00	465.30	-31.76	14.649
28	2.05	100	115	0.00	0.00	--	0.00	0.00	465.30	-30.66	15.174
29	2.15	100	115	0.00	0.00	--	0.00	0.00	465.30	-29.50	15.772
30	2.25	100	115	0.00	0.00	--	0.00	0.00	465.30	-28.27	16.456
31	2.35	100	115	0.00	0.00	--	0.00	0.00	465.30	-26.99	17.243
32	2.45	100	115	0.00	0.00	--	0.00	0.00	465.30	-25.63	18.154
33	2.55	100	115	0.00	0.00	--	0.00	0.00	465.30	-24.21	19.216
34	2.65	100	115	0.00	0.00	--	0.00	0.00	465.30	-22.73	20.468
35	2.75	100	115	0.00	0.00	--	0.00	0.00	465.30	-21.19	21.960
36	2.85	100	115	0.00	0.00	--	0.00	0.00	465.30	-19.58	23.763
37	2.95	100	115	0.00	0.00	--	0.00	0.00	465.30	-17.91	25.981
38	3.05	100	115	0.00	0.00	--	0.00	0.00	465.30	-16.17	28.769
39	3.15	100	115	0.00	0.00	--	0.00	0.00	465.30	-14.37	32.369
40	3.25	100	115	0.00	0.00	--	0.00	0.00	465.30	-12.51	37.188
41	3.35	100	115	0.00	0.00	--	0.00	0.00	465.30	-10.59	43.955
42	3.45	100	115	0.00	0.00	--	0.00	0.00	465.30	-8.60	54.130
43	3.55	100	115	0.00	0.00	--	0.00	0.00	465.30	-6.54	71.120
44	3.65	100	115	0.00	0.00	--	0.00	0.00	465.30	-4.43	105.146
45	3.75	100	115	0.00	0.00	--	0.00	0.00	465.30	-2.24	207.311
46	3.85	100	115	0.00	0.00	--	0.00	0.00	465.30	0.00	100.000

## Verifica a fessurazione

## Simbologia adottata

n°	indice sezione
Y	ordinata sezione espressa in [m]
B	larghezza sezione espressa in [cm]
H	altezza sezione espressa in [cm]
A <sub>f</sub>	area ferri zona tesa espressa in [cmq]
A <sub>eff</sub>	area efficace espressa in [cmq]
M	momento agente espressa in [kNm]
M <sub>pf</sub>	momento di prima fessurazione espressa in [kNm]



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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

- $\varepsilon$  deformazione espresso in %  
 $S_m$  spaziatura tra le fessure espressa in [mm]  
 $w$  apertura delle fessure espressa in [mm]

**Combinazioni SLEF**ParamentoCombinazione n° 15 - SLEFApertura limite fessure  $w_{lim}=0.30$ 

n°	Y [m]	B [cm]	H [cm]	Af [cmq]	Aeff [cmq]	M [kNm]	Mpf [kNm]	$\varepsilon$ [%]	$S_m$ [mm]	w [mm]
1	0.00	100	50	16.08	1000.00	0.38	517.91	0.0000	0.00	0.000
2	-0.10	100	51	0.00	0.00	0.39	31753.72	0.0000	0.00	0.000
3	-0.20	100	52	0.00	0.00	0.40	626.93	0.0000	0.00	0.000
4	-0.30	100	53	0.00	0.00	0.43	360.62	0.0000	0.00	0.000
5	-0.40	100	54	0.00	0.00	0.48	294.15	0.0000	0.00	0.000
6	-0.50	100	55	0.00	0.00	0.56	285.93	0.0000	0.00	0.000
7	-0.60	100	56	0.00	0.00	0.66	313.21	0.0000	0.00	0.000
8	-0.70	100	56	0.00	0.00	0.80	377.57	0.0000	0.00	0.000
9	-0.80	100	57	0.00	0.00	0.98	498.51	0.0000	0.00	0.000
10	-0.90	100	58	0.00	0.00	1.20	735.01	0.0000	0.00	0.000
11	-1.00	100	59	0.00	0.00	1.47	1307.49	0.0000	0.00	0.000
12	-1.10	100	60	0.00	0.00	1.80	4141.66	0.0000	0.00	0.000
13	-1.20	100	61	0.00	0.00	2.18	4883.54	0.0000	0.00	0.000
14	-1.30	100	62	16.08	1000.00	2.63	1729.93	0.0000	0.00	0.000
15	-1.40	100	63	16.08	1000.00	3.15	1128.08	0.0000	0.00	0.000
16	-1.50	100	64	16.08	1000.00	3.74	877.95	0.0000	0.00	0.000
17	-1.60	100	65	16.08	1000.00	4.41	743.83	0.0000	0.00	0.000
18	-1.70	100	66	16.08	1000.00	5.16	662.10	0.0000	0.00	0.000
19	-1.80	100	67	16.08	1000.00	5.99	608.44	0.0000	0.00	0.000
20	-1.90	100	68	16.08	1000.00	6.92	571.57	0.0000	0.00	0.000
21	-2.00	100	69	16.08	1000.00	7.95	545.52	0.0000	0.00	0.000
22	-2.10	100	69	16.08	1000.00	9.08	526.87	0.0000	0.00	0.000
23	-2.20	100	70	16.08	1000.00	10.32	513.50	0.0000	0.00	0.000
24	-2.30	100	71	16.08	1000.00	11.67	504.03	0.0000	0.00	0.000
25	-2.40	100	72	16.08	1000.00	13.13	497.53	0.0000	0.00	0.000
26	-2.50	100	73	16.08	1000.00	14.72	493.34	0.0000	0.00	0.000
27	-2.60	100	74	16.08	1000.00	16.43	491.01	0.0000	0.00	0.000
28	-2.70	100	75	16.08	1000.00	18.28	490.17	0.0000	0.00	0.000
29	-2.80	100	76	16.08	1000.00	20.26	490.58	0.0000	0.00	0.000
30	-2.90	100	77	16.08	1000.00	22.38	492.01	0.0000	0.00	0.000
31	-3.00	100	78	16.08	1000.00	24.64	494.33	0.0000	0.00	0.000
32	-3.10	100	79	16.08	1000.00	27.06	497.40	0.0000	0.00	0.000
33	-3.20	100	80	16.08	1000.00	29.63	501.13	0.0000	0.00	0.000
34	-3.30	100	81	16.08	1000.00	32.36	505.42	0.0000	0.00	0.000
35	-3.40	100	82	16.08	1000.00	35.26	510.23	0.0000	0.00	0.000
36	-3.50	100	82	16.08	1000.00	38.32	515.49	0.0000	0.00	0.000
37	-3.60	100	83	16.08	1000.00	41.56	521.15	0.0000	0.00	0.000
38	-3.70	100	84	16.08	1000.00	44.98	527.18	0.0000	0.00	0.000
39	-3.80	100	85	16.08	1000.00	48.58	533.55	0.0000	0.00	0.000
40	-3.90	100	86	16.08	1000.00	52.38	540.23	0.0000	0.00	0.000
41	-4.00	100	87	16.08	1000.00	56.36	547.19	0.0000	0.00	0.000
42	-4.10	100	88	16.08	1000.00	60.55	554.41	0.0000	0.00	0.000
43	-4.20	100	89	16.08	1000.00	64.93	561.88	0.0000	0.00	0.000
44	-4.30	100	90	16.08	1000.00	69.53	569.59	0.0000	0.00	0.000
45	-4.40	100	91	16.08	1000.00	74.34	577.51	0.0000	0.00	0.000
46	-4.50	100	92	16.08	1000.00	79.37	585.64	0.0000	0.00	0.000
47	-4.60	100	93	16.08	1000.00	84.61	593.96	0.0000	0.00	0.000
48	-4.70	100	94	16.08	1000.00	90.09	602.47	0.0000	0.00	0.000

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	Y	B	H	Af	Aeff	M	Mpf	ε	Sm	w
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kNm]	[%]	[mm]	[mm]
49	-4.80	100	95	16.08	1000.00	95.80	611.16	0.0000	0.00	0.000
50	-4.90	100	95	16.08	1000.00	101.75	620.02	0.0000	0.00	0.000
51	-5.00	100	96	16.08	1000.00	107.93	629.04	0.0000	0.00	0.000
52	-5.10	100	97	16.08	1000.00	114.37	638.23	0.0000	0.00	0.000
53	-5.20	100	98	16.08	1000.00	121.06	647.56	0.0000	0.00	0.000
54	-5.30	100	99	16.08	1000.00	128.00	657.05	0.0000	0.00	0.000
55	-5.40	100	100	16.08	1000.00	135.20	666.68	0.0000	0.00	0.000
56	-5.50	100	101	16.08	1000.00	142.67	676.46	0.0000	0.00	0.000
57	-5.60	100	102	16.08	1000.00	150.41	686.37	0.0000	0.00	0.000
58	-5.70	100	103	16.08	1000.00	158.43	696.42	0.0000	0.00	0.000
59	-5.80	100	104	32.17	1000.00	166.72	758.07	0.0000	0.00	0.000
60	-5.90	100	105	32.17	1000.00	175.31	768.79	0.0000	0.00	0.000
61	-6.00	100	106	32.17	1000.00	184.18	779.64	0.0000	0.00	0.000
62	-6.10	100	107	32.17	1000.00	193.35	790.61	0.0000	0.00	0.000
63	-6.20	100	108	32.17	1000.00	202.81	801.71	0.0000	0.00	0.000
64	-6.30	100	108	32.17	1000.00	212.58	812.94	0.0000	0.00	0.000
65	-6.40	100	109	16.08	1000.00	222.66	770.29	0.0000	0.00	0.000
66	-6.50	100	110	16.08	1000.00	233.06	781.33	0.0000	0.00	0.000
67	-6.60	100	111	16.08	1000.00	243.77	792.48	0.0000	0.00	0.000
68	-6.70	100	112	16.08	1000.00	254.81	803.75	0.0000	0.00	0.000
69	-6.80	100	113	16.08	1000.00	266.18	815.13	0.0000	0.00	0.000
70	-6.90	100	114	16.08	1000.00	277.88	826.62	0.0000	0.00	0.000
71	-7.00	100	115	16.08	1000.00	289.92	838.23	0.0000	0.00	0.000

Mensola valleCombinazione n° 15 - SLEFApertura limite fessure  $w_{lim}=0.30$ 

n°	Y	B	H	Af	Aeff	M	Mpf	ε	Sm	w
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kNm]	[%]	[mm]	[mm]
1	-0.75	100	50	0.00	0.00	0.00	0.00	0.0000	0.00	0.000
2	-0.67	100	50	0.00	0.00	-0.04	0.00	0.0000	0.00	0.000
3	-0.58	100	50	8.04	1000.00	-0.17	-143.66	0.0000	0.00	0.000
4	-0.50	100	50	8.04	1000.00	-0.38	-143.66	0.0000	0.00	0.000

FondazioneCombinazione n° 15 - SLEFApertura limite fessure  $w_{lim}=0.30$ 

n°	Y	B	H	Af	Aeff	M	Mpf	ε	Sm	w
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kNm]	[%]	[mm]	[mm]
1	-1.65	100	115	0.00	0.00	0.00	0.00	0.0000	0.00	0.000
2	-1.55	100	115	24.13	1000.00	0.55	802.25	0.0000	0.00	0.000
3	-1.46	100	115	24.13	1000.00	2.19	802.25	0.0000	0.00	0.000
4	-1.36	100	115	24.13	1000.00	4.94	802.25	0.0000	0.00	0.000
5	-1.27	100	115	24.13	1000.00	8.79	802.25	0.0000	0.00	0.000
6	-1.17	100	115	24.13	1000.00	13.75	802.25	0.0000	0.00	0.000
7	-1.07	100	115	24.13	1000.00	19.82	802.25	0.0000	0.00	0.000
8	-0.98	100	115	24.13	1000.00	26.99	802.25	0.0000	0.00	0.000
9	-0.88	100	115	24.13	1000.00	35.28	802.25	0.0000	0.00	0.000
10	-0.79	100	115	24.13	1000.00	44.69	802.25	0.0000	0.00	0.000
11	-0.69	100	115	24.13	1000.00	55.22	802.25	0.0000	0.00	0.000
12	-0.60	100	115	24.13	1000.00	66.87	802.25	0.0000	0.00	0.000

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## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

n°	Y	B	H	Af	Aeff	M	Mpf	ε	Sm	w
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kNm]	[%]	[mm]	[mm]
13	-0.50	100	115	24.13	1000.00	79.65	802.25	0.0000	0.00	0.000
14	0.65	100	115	24.13	1000.00	-0.44	-802.25	0.0000	0.00	0.000
15	0.75	100	115	0.00	0.00	0.08	0.00	0.0000	0.00	0.000
16	0.85	100	115	24.13	1000.00	0.54	802.25	0.0000	0.00	0.000
17	0.95	100	115	24.13	1000.00	0.93	802.25	0.0000	0.00	0.000
18	1.05	100	115	24.13	1000.00	1.27	802.25	0.0000	0.00	0.000
19	1.15	100	115	24.13	1000.00	1.56	802.25	0.0000	0.00	0.000
20	1.25	100	115	24.13	1000.00	1.79	802.25	0.0000	0.00	0.000
21	1.35	100	115	24.13	1000.00	1.97	802.25	0.0000	0.00	0.000
22	1.45	100	115	24.13	1000.00	2.11	802.25	0.0000	0.00	0.000
23	1.55	100	115	24.13	1000.00	2.21	802.25	0.0000	0.00	0.000
24	1.65	100	115	24.13	1000.00	2.27	802.25	0.0000	0.00	0.000
25	1.75	100	115	24.13	1000.00	2.30	802.25	0.0000	0.00	0.000
26	1.85	100	115	24.13	1000.00	2.29	802.25	0.0000	0.00	0.000
27	1.95	100	115	24.13	1000.00	2.25	802.25	0.0000	0.00	0.000
28	2.05	100	115	24.13	1000.00	2.19	802.25	0.0000	0.00	0.000
29	2.15	100	115	24.13	1000.00	2.10	802.25	0.0000	0.00	0.000
30	2.25	100	115	24.13	1000.00	1.99	802.25	0.0000	0.00	0.000
31	2.35	100	115	24.13	1000.00	1.86	802.25	0.0000	0.00	0.000
32	2.45	100	115	24.13	1000.00	1.72	802.25	0.0000	0.00	0.000
33	2.55	100	115	24.13	1000.00	1.57	802.25	0.0000	0.00	0.000
34	2.65	100	115	24.13	1000.00	1.41	802.25	0.0000	0.00	0.000
35	2.75	100	115	24.13	1000.00	1.25	802.25	0.0000	0.00	0.000
36	2.85	100	115	24.13	1000.00	1.09	802.25	0.0000	0.00	0.000
37	2.95	100	115	24.13	1000.00	0.92	802.25	0.0000	0.00	0.000
38	3.05	100	115	24.13	1000.00	0.76	802.25	0.0000	0.00	0.000
39	3.15	100	115	24.13	1000.00	0.61	802.25	0.0000	0.00	0.000
40	3.25	100	115	24.13	1000.00	0.46	802.25	0.0000	0.00	0.000
41	3.35	100	115	24.13	1000.00	0.34	802.25	0.0000	0.00	0.000
42	3.45	100	115	24.13	1000.00	0.22	802.25	0.0000	0.00	0.000
43	3.55	100	115	24.13	1000.00	0.13	802.25	0.0000	0.00	0.000
44	3.65	100	115	0.00	0.00	0.06	0.00	0.0000	0.00	0.000
45	3.75	100	115	0.00	0.00	0.02	0.00	0.0000	0.00	0.000
46	3.85	100	115	0.00	0.00	0.00	0.00	0.0000	0.00	0.000

## Combinazioni SLEQ

## Paramento

## Combinazione n° 16 - SLEQ

Apertura limite fessure  $w_{lim}=0.20$ 

n°	Y	B	H	Af	Aeff	M	Mpf	ε	Sm	w
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kNm]	[%]	[mm]	[mm]
1	0.00	100	50	16.08	1000.00	0.38	517.91	0.0000	0.00	0.000
2	-0.10	100	51	0.00	0.00	0.39	31753.72	0.0000	0.00	0.000
3	-0.20	100	52	0.00	0.00	0.40	626.93	0.0000	0.00	0.000
4	-0.30	100	53	0.00	0.00	0.43	360.62	0.0000	0.00	0.000
5	-0.40	100	54	0.00	0.00	0.48	294.15	0.0000	0.00	0.000
6	-0.50	100	55	0.00	0.00	0.56	285.93	0.0000	0.00	0.000
7	-0.60	100	56	0.00	0.00	0.66	313.21	0.0000	0.00	0.000
8	-0.70	100	56	0.00	0.00	0.80	377.57	0.0000	0.00	0.000
9	-0.80	100	57	0.00	0.00	0.98	498.51	0.0000	0.00	0.000
10	-0.90	100	58	0.00	0.00	1.20	735.01	0.0000	0.00	0.000
11	-1.00	100	59	0.00	0.00	1.47	1307.49	0.0000	0.00	0.000
12	-1.10	100	60	0.00	0.00	1.80	4141.66	0.0000	0.00	0.000
13	-1.20	100	61	0.00	0.00	2.18	4883.54	0.0000	0.00	0.000
14	-1.30	100	62	16.08	1000.00	2.63	1729.93	0.0000	0.00	0.000
15	-1.40	100	63	16.08	1000.00	3.15	1128.08	0.0000	0.00	0.000

VE407

## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

n°	Y	B	H	Af	Aeff	M	Mpf	ε	Sm	w
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kNm]	[%]	[mm]	[mm]
16	-1.50	100	64	16.08	1000.00	3.74	877.95	0.0000	0.00	0.000
17	-1.60	100	65	16.08	1000.00	4.41	743.83	0.0000	0.00	0.000
18	-1.70	100	66	16.08	1000.00	5.16	662.10	0.0000	0.00	0.000
19	-1.80	100	67	16.08	1000.00	5.99	608.44	0.0000	0.00	0.000
20	-1.90	100	68	16.08	1000.00	6.92	571.57	0.0000	0.00	0.000
21	-2.00	100	69	16.08	1000.00	7.95	545.52	0.0000	0.00	0.000
22	-2.10	100	69	16.08	1000.00	9.08	526.87	0.0000	0.00	0.000
23	-2.20	100	70	16.08	1000.00	10.32	513.50	0.0000	0.00	0.000
24	-2.30	100	71	16.08	1000.00	11.67	504.03	0.0000	0.00	0.000
25	-2.40	100	72	16.08	1000.00	13.13	497.53	0.0000	0.00	0.000
26	-2.50	100	73	16.08	1000.00	14.72	493.34	0.0000	0.00	0.000
27	-2.60	100	74	16.08	1000.00	16.43	491.01	0.0000	0.00	0.000
28	-2.70	100	75	16.08	1000.00	18.28	490.17	0.0000	0.00	0.000
29	-2.80	100	76	16.08	1000.00	20.26	490.58	0.0000	0.00	0.000
30	-2.90	100	77	16.08	1000.00	22.38	492.01	0.0000	0.00	0.000
31	-3.00	100	78	16.08	1000.00	24.64	494.33	0.0000	0.00	0.000
32	-3.10	100	79	16.08	1000.00	27.06	497.40	0.0000	0.00	0.000
33	-3.20	100	80	16.08	1000.00	29.63	501.13	0.0000	0.00	0.000
34	-3.30	100	81	16.08	1000.00	32.36	505.42	0.0000	0.00	0.000
35	-3.40	100	82	16.08	1000.00	35.26	510.23	0.0000	0.00	0.000
36	-3.50	100	82	16.08	1000.00	38.32	515.49	0.0000	0.00	0.000
37	-3.60	100	83	16.08	1000.00	41.56	521.15	0.0000	0.00	0.000
38	-3.70	100	84	16.08	1000.00	44.98	527.18	0.0000	0.00	0.000
39	-3.80	100	85	16.08	1000.00	48.58	533.55	0.0000	0.00	0.000
40	-3.90	100	86	16.08	1000.00	52.38	540.23	0.0000	0.00	0.000
41	-4.00	100	87	16.08	1000.00	56.36	547.19	0.0000	0.00	0.000
42	-4.10	100	88	16.08	1000.00	60.55	554.41	0.0000	0.00	0.000
43	-4.20	100	89	16.08	1000.00	64.93	561.88	0.0000	0.00	0.000
44	-4.30	100	90	16.08	1000.00	69.53	569.59	0.0000	0.00	0.000
45	-4.40	100	91	16.08	1000.00	74.34	577.51	0.0000	0.00	0.000
46	-4.50	100	92	16.08	1000.00	79.37	585.64	0.0000	0.00	0.000
47	-4.60	100	93	16.08	1000.00	84.61	593.96	0.0000	0.00	0.000
48	-4.70	100	94	16.08	1000.00	90.09	602.47	0.0000	0.00	0.000
49	-4.80	100	95	16.08	1000.00	95.80	611.16	0.0000	0.00	0.000
50	-4.90	100	95	16.08	1000.00	101.75	620.02	0.0000	0.00	0.000
51	-5.00	100	96	16.08	1000.00	107.93	629.04	0.0000	0.00	0.000
52	-5.10	100	97	16.08	1000.00	114.37	638.23	0.0000	0.00	0.000
53	-5.20	100	98	16.08	1000.00	121.06	647.56	0.0000	0.00	0.000
54	-5.30	100	99	16.08	1000.00	128.00	657.05	0.0000	0.00	0.000
55	-5.40	100	100	16.08	1000.00	135.20	666.68	0.0000	0.00	0.000
56	-5.50	100	101	16.08	1000.00	142.67	676.46	0.0000	0.00	0.000
57	-5.60	100	102	16.08	1000.00	150.41	686.37	0.0000	0.00	0.000
58	-5.70	100	103	16.08	1000.00	158.43	696.42	0.0000	0.00	0.000
59	-5.80	100	104	32.17	1000.00	166.72	758.07	0.0000	0.00	0.000
60	-5.90	100	105	32.17	1000.00	175.31	768.79	0.0000	0.00	0.000
61	-6.00	100	106	32.17	1000.00	184.18	779.64	0.0000	0.00	0.000
62	-6.10	100	107	32.17	1000.00	193.35	790.61	0.0000	0.00	0.000
63	-6.20	100	108	32.17	1000.00	202.81	801.71	0.0000	0.00	0.000
64	-6.30	100	108	32.17	1000.00	212.58	812.94	0.0000	0.00	0.000
65	-6.40	100	109	16.08	1000.00	222.66	770.29	0.0000	0.00	0.000
66	-6.50	100	110	16.08	1000.00	233.06	781.33	0.0000	0.00	0.000
67	-6.60	100	111	16.08	1000.00	243.77	792.48	0.0000	0.00	0.000
68	-6.70	100	112	16.08	1000.00	254.81	803.75	0.0000	0.00	0.000
69	-6.80	100	113	16.08	1000.00	266.18	815.13	0.0000	0.00	0.000
70	-6.90	100	114	16.08	1000.00	277.88	826.62	0.0000	0.00	0.000
71	-7.00	100	115	16.08	1000.00	289.92	838.23	0.0000	0.00	0.000

Mensola valle

Combinazione n° 16 - SLEQ

Apertura limite fessure  $w_{lim}=0.20$

VE407

**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	Y	B	H	Af	Aeff	M	Mpf	ε	Sm	w
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kNm]	[%]	[mm]	[mm]
1	-0.75	100	50	0.00	0.00	0.00	0.00	0.0000	0.00	0.000
2	-0.67	100	50	0.00	0.00	-0.04	0.00	0.0000	0.00	0.000
3	-0.58	100	50	8.04	1000.00	-0.17	-143.66	0.0000	0.00	0.000
4	-0.50	100	50	8.04	1000.00	-0.38	-143.66	0.0000	0.00	0.000

FondazioneCombinazione n° 16 - SLEQApertura limite fessure  $w_{lim}=0.20$ 

n°	Y	B	H	Af	Aeff	M	Mpf	ε	Sm	w
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kNm]	[%]	[mm]	[mm]
1	-1.65	100	115	0.00	0.00	0.00	0.00	0.0000	0.00	0.000
2	-1.55	100	115	24.13	1000.00	0.55	802.25	0.0000	0.00	0.000
3	-1.46	100	115	24.13	1000.00	2.19	802.25	0.0000	0.00	0.000
4	-1.36	100	115	24.13	1000.00	4.94	802.25	0.0000	0.00	0.000
5	-1.27	100	115	24.13	1000.00	8.79	802.25	0.0000	0.00	0.000
6	-1.17	100	115	24.13	1000.00	13.75	802.25	0.0000	0.00	0.000
7	-1.07	100	115	24.13	1000.00	19.82	802.25	0.0000	0.00	0.000
8	-0.98	100	115	24.13	1000.00	26.99	802.25	0.0000	0.00	0.000
9	-0.88	100	115	24.13	1000.00	35.28	802.25	0.0000	0.00	0.000
10	-0.79	100	115	24.13	1000.00	44.69	802.25	0.0000	0.00	0.000
11	-0.69	100	115	24.13	1000.00	55.22	802.25	0.0000	0.00	0.000
12	-0.60	100	115	24.13	1000.00	66.87	802.25	0.0000	0.00	0.000
13	-0.50	100	115	24.13	1000.00	79.65	802.25	0.0000	0.00	0.000
14	0.65	100	115	24.13	1000.00	-0.44	-802.25	0.0000	0.00	0.000
15	0.75	100	115	0.00	0.00	0.08	0.00	0.0000	0.00	0.000
16	0.85	100	115	24.13	1000.00	0.54	802.25	0.0000	0.00	0.000
17	0.95	100	115	24.13	1000.00	0.93	802.25	0.0000	0.00	0.000
18	1.05	100	115	24.13	1000.00	1.27	802.25	0.0000	0.00	0.000
19	1.15	100	115	24.13	1000.00	1.56	802.25	0.0000	0.00	0.000
20	1.25	100	115	24.13	1000.00	1.79	802.25	0.0000	0.00	0.000
21	1.35	100	115	24.13	1000.00	1.97	802.25	0.0000	0.00	0.000
22	1.45	100	115	24.13	1000.00	2.11	802.25	0.0000	0.00	0.000
23	1.55	100	115	24.13	1000.00	2.21	802.25	0.0000	0.00	0.000
24	1.65	100	115	24.13	1000.00	2.27	802.25	0.0000	0.00	0.000
25	1.75	100	115	24.13	1000.00	2.30	802.25	0.0000	0.00	0.000
26	1.85	100	115	24.13	1000.00	2.29	802.25	0.0000	0.00	0.000
27	1.95	100	115	24.13	1000.00	2.25	802.25	0.0000	0.00	0.000
28	2.05	100	115	24.13	1000.00	2.19	802.25	0.0000	0.00	0.000
29	2.15	100	115	24.13	1000.00	2.10	802.25	0.0000	0.00	0.000
30	2.25	100	115	24.13	1000.00	1.99	802.25	0.0000	0.00	0.000
31	2.35	100	115	24.13	1000.00	1.86	802.25	0.0000	0.00	0.000
32	2.45	100	115	24.13	1000.00	1.72	802.25	0.0000	0.00	0.000
33	2.55	100	115	24.13	1000.00	1.57	802.25	0.0000	0.00	0.000
34	2.65	100	115	24.13	1000.00	1.41	802.25	0.0000	0.00	0.000
35	2.75	100	115	24.13	1000.00	1.25	802.25	0.0000	0.00	0.000
36	2.85	100	115	24.13	1000.00	1.09	802.25	0.0000	0.00	0.000
37	2.95	100	115	24.13	1000.00	0.92	802.25	0.0000	0.00	0.000
38	3.05	100	115	24.13	1000.00	0.76	802.25	0.0000	0.00	0.000
39	3.15	100	115	24.13	1000.00	0.61	802.25	0.0000	0.00	0.000
40	3.25	100	115	24.13	1000.00	0.46	802.25	0.0000	0.00	0.000
41	3.35	100	115	24.13	1000.00	0.34	802.25	0.0000	0.00	0.000
42	3.45	100	115	24.13	1000.00	0.22	802.25	0.0000	0.00	0.000
43	3.55	100	115	24.13	1000.00	0.13	802.25	0.0000	0.00	0.000
44	3.65	100	115	0.00	0.00	0.06	0.00	0.0000	0.00	0.000
45	3.75	100	115	0.00	0.00	0.02	0.00	0.0000	0.00	0.000
46	3.85	100	115	0.00	0.00	0.00	0.00	0.0000	0.00	0.000

**Elenco ferri**

## Simbologia adottata

n°	Indice del ferro
nf	numero ferri
D	diametro ferro espresso in [mm]
L	Lunghezza ferro espresso in [m]
P <sub>ferro</sub>	Peso ferro espresso in [kN]

*Paramento*

n°	Tipo	nf	D [mm]	L [m]	P <sub>f</sub> [kN]	P <sub>gf</sub> [kN]	V <sub>cls</sub> [mc]
1	Diritto inferiore	5	16.00	7.59	0.1175	0.5876	
2	Diritto superiore	8	16.00	2.95	0.0457	0.3655	
3	Diritto inferiore	5	16.00	2.38	0.0369	0.1843	
4	Diritto superiore	8	16.00	7.62	0.1179	0.9435	
5	Ripartitore	69	10.00	1.00	0.0060	0.4172	
<b>Totale al metro</b>						<b>2.9153</b>	<b>5.90</b>
<b>Totale</b>						<b>254.73</b>	<b>5.90</b>

*Fondazione*

n°	Tipo	nf	D [mm]	L [m]	P <sub>f</sub> [kN]	P <sub>gf</sub> [kN]	V <sub>cls</sub> [mc]
1	Diritto superiore	12	16.00	6.68	0.1034	1.2414	
2	Diritto inferiore	12	16.00	6.68	0.1034	1.2414	
3	Ripartitore	31	10.00	1.00	0.0060	0.1874	
<b>Totale al metro</b>						<b>2.8576</b>	<b>6.32</b>
<b>Totale</b>						<b>272.28</b>	<b>6.32</b>

*Mensola valle*

n°	Tipo	nf	D [mm]	L [m]	P <sub>f</sub> [kN]	P <sub>gf</sub> [kN]	V <sub>cls</sub> [mc]
1	Diritto inferiore	4	16.00	1.53	0.0237	0.0947	
2	Diritto superiore	4	16.00	1.53	0.0237	0.0947	
3	Ripartitore	2	10.00	1.00	0.0060	0.0121	
<b>Totale al metro</b>						<b>2.8576</b>	<b>6.32</b>
<b>Totale</b>						<b>272.28</b>	<b>6.32</b>

## 15 ALLEGATO 6 – TABULATI DI CALCOLO - MURO DI SOSTEGNO H8

### Geometria profilo terreno a monte del muro

#### Simbologia adottata

(Sistema di riferimento con origine in testa al muro, ascissa X positiva verso monte, ordinata Y positiva verso l'alto)

n°	numero ordine del punto
X	ascissa del punto espressa in [m]
Y	ordinata del punto espressa in [m]
A	inclinazione del tratto espressa in [°]

n°	X	Y	A
	[m]	[m]	[°]
1	0.00	0.00	0.000
2	1.75	0.00	0.000
3	20.00	0.00	0.000

Inclinazione terreno a valle del muro rispetto all'orizzontale 0.000 [°]

### Falda

#### Simbologia adottata

(Sistema di riferimento con origine in testa al muro, ascissa X positiva verso monte, ordinata Y positiva verso l'alto)

n°	numero ordine del punto
X	ascissa del punto espressa in [m]
Y	ordinata del punto espressa in [m]
A	inclinazione del tratto espressa in [°]

n°	X	Y	A
	[m]	[m]	[°]
1	-4.00	-9.25	0.000
2	20.00	-9.25	0.000

### Geometria muro

#### *Geometria paramento e fondazione*

##### Paramento

Materiale	C32/40	
Altezza paramento	8.00	[m]
Altezza paramento libero	8.00	[m]
Spessore in sommità	0.50	[m]
Spessore all'attacco con la fondazione	1.25	[m]

VE407

**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

Inclinazione paramento esterno	0.00	[°]
Inclinazione paramento interno	5.35	[°]
Spessore rivestimento	0.20	[m]
Peso sp. rivestimento	20.0000	[kN/mc]

Mensola di marciapiede

Posizione rispetto alla testa del muro	0.00	[m]
Lunghezza	0.25	[m]
Spessore all'estremità libera	0.50	[m]
Spessore all'incastro	0.50	[m]

Fondazione

Materiale	C32/40	
Lunghezza mensola di valle	1.25	[m]
Lunghezza mensola di monte	3.50	[m]
Lunghezza totale	6.00	[m]
Inclinazione piano di posa	0.00	[°]
Spessore	1.25	[m]
Spessore magrone	0.20	[m]

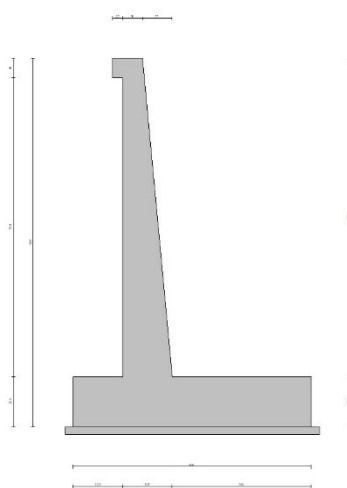


Fig. 1 - Sezione quotata del muro

Descrizione terreniParametri di resistenza



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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta****Simbologia adottata**

n°	Indice del terreno
Descr	Descrizione terreno
$\gamma$	Peso di volume del terreno espresso in [kN/mc]
$\gamma_s$	Peso di volume saturo del terreno espresso in [kN/mc]
$\phi$	Angolo d'attrito interno espresso in [°]
$\delta$	Angolo d'attrito terra-muro espresso in [°]
c	Coesione espressa in [kPa]
$c_a$	Adesione terra-muro espressa in [kPa]

**Per calcolo portanza con il metodo di Bustamante-Doix**

Cesp	Coeff. di espansione laterale (solo per il metodo di Bustamante-Doix)
$\tau_l$	Tensione tangenziale limite, espressa in [kPa]

n°	Descr	$\gamma$ [kN/mc]	$\gamma_{sat}$ [kN/mc]	$\phi$ [°]	$\delta$ [°]	c [kPa]	$c_a$ [kPa]	Cesp	$\tau_l$ [kPa]
1	Rilevato	19.0000	19.0000	35.000	23.333	0	0		
2	Terreno	20.0000	20.0000	36.000	24.000	0	0		

**Stratigrafia****Simbologia adottata**

n°	Indice dello strato
H	Spessore dello strato espresso in [m]
$\alpha$	Inclinazione espressa in [°]
Terreno	Terreno dello strato
Kwn, Kwt	Costante di Winkler normale e tangenziale alla superficie espressa in Kg/cm <sup>2</sup> /cm

**Per calcolo pali (solo se presenti)**

Kw	Costante di Winkler orizzontale espressa in Kg/cm <sup>2</sup> /cm
Ks	Coefficiente di spinta
Cesp	Coefficiente di espansione laterale (per tutti i metodi tranne il metodo di Bustamante-Doix)

**Per calcolo della spinta con coeff. di spinta definiti (usati solo se attiva l'opzione 'Usa coeff. di spinta da strato')**

$K_{st_{sta}}$ , $K_{st_{sis}}$	Coeff. di spinta statico e sismico
---------------------------------	------------------------------------

n°	H [m]	$\alpha$ [°]	Terreno	Kwn [Kg/cm <sup>2</sup> ]	Kwt [Kg/cm <sup>2</sup> ]	Kw [Kg/cm <sup>2</sup> ]	Ks	Cesp	$K_{st_{sta}}$	$K_{st_{sis}}$
1	9.25	0.000	Rilevato	0.000	0.000	4.219	0.000	1.000	0.000	0.000
2	20.00	0.000	Terreno	0.000	0.000	2.203	1.000	1.000	0.000	0.000

**Condizioni di carico****Simbologia adottata**

	Carichi verticali positivi verso il basso.
	Carichi orizzontali positivi verso sinistra.
	Momento positivo senso antiorario.
X	Ascissa del punto di applicazione del carico concentrato espressa in [m]
$F_x$	Componente orizzontale del carico concentrato espressa in [kN]
$F_y$	Componente verticale del carico concentrato espressa in [kN]
M	Momento espresso in [kNm]

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**X<sub>i</sub> Ascissa del punto iniziale del carico ripartito espressa in [m]X<sub>f</sub> Ascissa del punto finale del carico ripartito espressa in [m]Q<sub>i</sub> Intensità del carico per x=X<sub>i</sub> espressa in [kN]Q<sub>f</sub> Intensità del carico per x=X<sub>f</sub> espressa in [kN]Condizione n° 1 (Q) - VARIABILECoeff. di combinazione  $\Psi_0=0.75$  -  $\Psi_1=0.75$  -  $\Psi_2=0.00$ *Carichi sul terreno*

n°	Tipo	X	F <sub>x</sub>	F <sub>y</sub>	M	X <sub>i</sub>	X <sub>f</sub>	Q <sub>i</sub>	Q <sub>f</sub>
		[m]	[kN]	[kN]	[kNm]	[m]	[m]	[kN]	[kN]
1	Distribuito					0.00	3.00	26.5000	26.5000
2	Distribuito					3.00	6.00	14.2000	14.2000
3	Distribuito					6.00	9.00	8.3000	8.3000
4	Distribuito					9.00	20.00	2.5000	2.5000

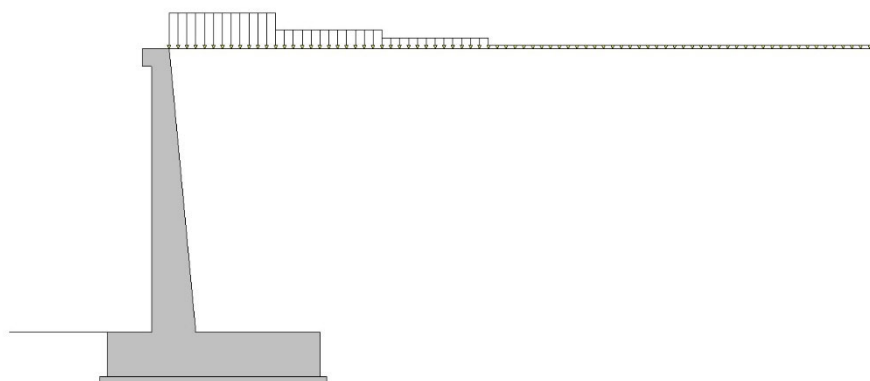


Fig. 2 - Carichi sul terreno

Condizione n° 2 (Urto) - ECCEZIONALE*Carichi sul muro*

n°	Tipo	Dest	X; Y	F <sub>x</sub>	F <sub>y</sub>	M	X <sub>i</sub>	X <sub>f</sub>	Q <sub>i</sub>	Q <sub>f</sub>
			[m]	[kN]	[kN]	[kNm]	[m]	[m]	[kN]	[kN]
1	Concentrato	Paramento	0.00; 0.00	12.5000	0.0000	12.5000				

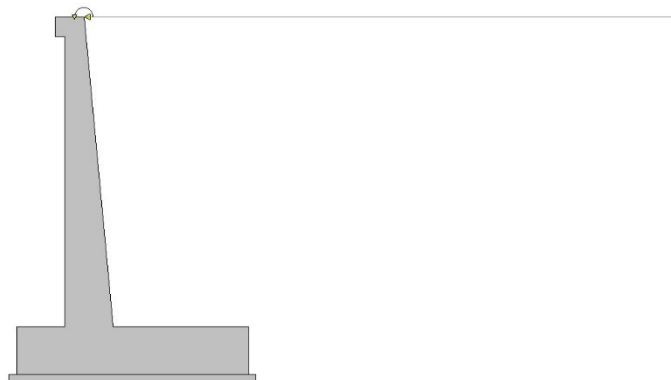


Fig. 3 - Carichi sul muro

NormativaNormativa usata: **Norme Tecniche sulle Costruzioni 2018 (D.M. 17.01.2018) + Circolare C.S.LL.PP. 21/01/2019 n.7**Coeff. parziali per le azioni o per l'effetto delle azioni

Carichi	Effetto		Combinazioni statiche					Combinazioni sismiche		
			HYD	UPL	EQU	A1	A2	EQU	A1	A2
Permanenti strutturali	Favorevoli	$\gamma_{G1, fav}$	1.00	0.90	1.00	1.00	1.00	1.00	1.00	1.00
Permanenti strutturali	Sfavorevoli	$\gamma_{G1, sfav}$	1.00	1.10	1.30	1.30	1.00	1.00	1.00	1.00
Permanenti non strutturali	Favorevoli	$\gamma_{G2, fav}$	0.00	0.80	0.80	0.80	0.80	0.00	0.00	0.00
Permanenti non strutturali	Sfavorevoli	$\gamma_{G2, sfav}$	1.00	1.50	1.50	1.50	1.30	1.00	1.00	1.00
Variabili	Favorevoli	$\gamma_{Q, fav}$	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Variabili	Sfavorevoli	$\gamma_{Q, sfav}$	1.00	1.50	1.50	1.50	1.30	1.00	1.00	1.00
Variabili da traffico	Favorevoli	$\gamma_{QT, fav}$	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Variabili da traffico	Sfavorevoli	$\gamma_{QT, sfav}$	1.00	1.50	1.35	1.35	1.15	1.00	1.00	1.00

Coeff. parziali per i parametri geotecnici del terreno

Parametro		Combinazioni statiche		Combinazioni sismiche	
		M1	M2	M1	M2
Tangente dell'angolo di attrito	$\gamma_{\tan(\phi')}$	1.00	1.25	1.00	1.00
Coesione efficace	$\gamma_c$	1.00	1.25	1.00	1.00
Resistenza non drenata	$\gamma_{cu}$	1.00	1.40	1.00	1.00
Peso nell'unità di volume	$\gamma_\gamma$	1.00	1.00	1.00	1.00

Coeff. parziali  $\gamma_R$  per le verifiche agli stati limite ultimi STR e GEO

Verifica	Combinazioni statiche			Combinazioni sismiche		
	R1	R2	R3	R1	R2	R3
Capacità portante	--	--	1.40	--	--	1.20
Scorrimento	--	--	1.10	--	--	1.00
Resistenza terreno a valle	--	--	1.40	--	--	1.20
Ribaltamento	--	--	1.15	--	--	1.00
Stabilità fronte di scavo	--	1.10	--	--	1.20	--

Descrizione combinazioni di carico

Con riferimento alle azioni elementari prima determinate, si sono considerate le seguenti combinazioni di carico:

- Combinazione fondamentale, impiegata per gli stati limite ultimi (SLU):

$$\gamma_{G1} G_1 + \gamma_{G2} G_2 + \gamma_{Q1} Q_{k1} + \gamma_{Q2} Q_{k2} + \gamma_{Q3} Q_{k3} + \dots$$

- Combinazione caratteristica, cosiddetta rara, impiegata per gli stati limite di esercizio (SLE) irreversibili:

$$G_1 + G_2 + Q_{k1} + \Psi_{0,2} Q_{k2} + \Psi_{0,3} Q_{k3} + \dots$$

- Combinazione frequente, impiegata per gli stati limite di esercizio (SLE) reversibili:

$$G_1 + G_2 + \Psi_{1,1} Q_{k1} + \Psi_{2,2} Q_{k2} + \Psi_{2,3} Q_{k3} + \dots$$

- Combinazione quasi permanente, impiegata per gli effetti di lungo periodo:

$$G_1 + G_2 + \Psi_{2,1} Q_{k1} + \Psi_{2,2} Q_{k2} + \Psi_{2,3} Q_{k3} + \dots$$

- Combinazione sismica, impiegata per gli stati limite ultimi connessi all'azione sismica E:

$$E + G_1 + G_2 + \Psi_{2,1} Q_{k1} + \Psi_{2,2} Q_{k2} + \Psi_{2,3} Q_{k3} + \dots$$

- Combinazione eccezionale, impiegata per gli stati limite ultimi connessi alle azioni eccezionali Ad:

$$G_1 + G_2 + A_d + \Psi_{2,1} Q_{k1} + \Psi_{2,2} Q_{k2} + \Psi_{2,3} Q_{k3} + \dots$$

I valori dei coeff.  $\Psi_{0,j}$ ,  $\Psi_{1,j}$ ,  $\Psi_{2,j}$  sono definiti nelle singole condizioni variabili. I valori dei coeff.  $\gamma_G$  e  $\gamma_Q$ , sono definiti nella tabella normativa.

In particolare si sono considerate le seguenti combinazioni:

## Simbologia adottata

$\gamma$	Coefficiente di partecipazione della condizione
$\Psi$	Coefficiente di combinazione della condizione

Combinazione n° 1 - STR (A1-M1-R3)

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Favorevole
Peso terrapieno	1.00	--	Favorevole
Spinta terreno	1.30	--	Sfavorevole

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**Combinazione n° 2 - STR (A1-M1-R3) H + V

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Favorevole
Peso terrapieno	1.00	--	Favorevole
Spinta terreno	1.00	--	Sfavorevole

Combinazione n° 3 - STR (A1-M1-R3)

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Favorevole
Peso terrapieno	1.00	--	Favorevole
Spinta terreno	1.30	--	Sfavorevole
Q	1.50	1.00	Sfavorevole

Combinazione n° 4 - STR (A1-M1-R3) H - V

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Sfavorevole
Peso terrapieno	1.00	--	Sfavorevole
Spinta terreno	1.00	--	Sfavorevole

Combinazione n° 5 - GEO (A2-M2-R2)

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Sfavorevole
Peso terrapieno	1.00	--	Sfavorevole
Spinta terreno	1.00	--	Sfavorevole

Combinazione n° 6 - GEO (A2-M2-R2) H + V

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Sfavorevole
Peso terrapieno	1.00	--	Sfavorevole
Spinta terreno	1.00	--	Sfavorevole

Combinazione n° 7 - GEO (A2-M2-R2)

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Sfavorevole
Peso terrapieno	1.00	--	Sfavorevole
Spinta terreno	1.00	--	Sfavorevole
Q	1.30	1.00	Sfavorevole

Combinazione n° 8 - GEO (A2-M2-R2) H - V

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Sfavorevole
Peso terrapieno	1.00	--	Sfavorevole
Spinta terreno	1.00	--	Sfavorevole

Combinazione n° 9 - EQU (A1-M1-R3)

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Favorevole
Peso terrapieno	1.00	--	Favorevole
Spinta terreno	1.30	--	Sfavorevole

Combinazione n° 10 - EQU (A1-M1-R3) H + V

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Favorevole
Peso terrapieno	1.00	--	Favorevole
Spinta terreno	1.00	--	Sfavorevole

Combinazione n° 11 - EQU (A1-M1-R3)

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Favorevole
Peso terrapieno	1.00	--	Favorevole
Spinta terreno	1.30	--	Sfavorevole
Q	1.50	1.00	Sfavorevole

Combinazione n° 12 - EQU (A1-M1-R3) H - V

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Favorevole
Peso terrapieno	1.00	--	Favorevole
Spinta terreno	1.00	--	Sfavorevole

Combinazione n° 13 - ECC

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Sfavorevole
Peso terrapieno	1.00	--	Sfavorevole
Spinta terreno	1.00	--	Sfavorevole
Urto	1.00	1.00	Sfavorevole

Combinazione n° 14 - SLER

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Sfavorevole
Peso terrapieno	1.00	--	Sfavorevole
Spinta terreno	1.00	--	Sfavorevole
Q	1.00	0.75	Sfavorevole

Combinazione n° 15 - SLEF

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Sfavorevole
Peso terrapieno	1.00	--	Sfavorevole
Spinta terreno	1.00	--	Sfavorevole

Combinazione n° 16 - SLEQ

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Sfavorevole
Peso terrapieno	1.00	--	Sfavorevole

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

Condizione	$\gamma$	$\Psi$	Effetto
Spinta terreno	1.00	--	Sfavorevole

Dati sismici

Comune	
Provincia	
Regione	
Latitudine	42.716470
Longitudine	12.111569
Indice punti di interpolazione	-1 - -1 - -1 - -1
Vita nominale	50 anni
Classe d'uso	II
Tipo costruzione	Normali affollamenti
Vita di riferimento	50 anni

	Simbolo	U.M.		SLU	SLE
Accelerazione al suolo	$a_g$	[m/s <sup>2</sup> ]		2.894	0.000
Accelerazione al suolo	$a_g/g$	[%]		0.295	0.000
Massimo fattore amplificazione spettro orizzontale	F0			2.423	0.000
Periodo inizio tratto spettro a velocità costante	Tc*			0.343	0.000
Tipo di sottosuolo - Coefficiente stratigrafico	Ss		C	1.271	1.500
Categoria topografica - Coefficiente amplificazione topografica	St		T1	1.000	

Stato limite ...	Coeff. di riduzione $\beta_m$	kh	kv
Ultimo	0.380	14.248	7.124
Ultimo - Ribaltamento	0.570	21.372	10.686
Esercizio	0.470	0.000	0.000

Forma diagramma incremento sismico  **Rettangolare****Opzioni di calcolo**Spinta

Metodo di calcolo della spinta	Culmann
Tipo di spinta	Spinta attiva
Terreno a bassa permeabilità	NO
Superficie di spinta limitata	NO

Capacità portante

Metodo di calcolo della portanza	Hansen
Criterio di media calcolo del terreno equivalente (terreni stratificati)	Ponderata
Criterio di riduzione per eccentricità della portanza	Bowles
Criterio di riduzione per rottura locale (punzonamento)	Nessuna
Larghezza fondazione nel terzo termine della formula del carico limite ( $0.5B\gamma N_\gamma$ )	Larghezza effettiva (B)

Fattori di forma e inclinazione del carico Solo i fattori di inclinazione

Se la fondazione ha larghezza superiore a 2.0 m viene applicato il fattore di riduzione per comportamento a piastra

Stabilità globale

Metodo di calcolo della stabilità globale Bishop

Altro

Partecipazione spinta passiva terreno antistante 0.00  
 Partecipazione resistenza passiva dente di fondazione 50.00  
 Componente verticale della spinta nel calcolo delle sollecitazioni NO  
 Considera terreno sulla fondazione di valle NO  
 Considera spinta e peso acqua fondazione di valle NO

Spostamenti

Non è stato richiesto il calcolo degli spostamenti

Cedimenti

Non è stato richiesto il calcolo dei cedimenti

Specifiche per le verifiche nelle combinazioni allo Stato Limite Ultimo (SLU)

	SLU	Eccezionale
Coefficiente di sicurezza calcestruzzo a compressione	1.50	1.00
Coefficiente di sicurezza acciaio	1.15	1.00
Fattore di riduzione da resistenza cubica a cilindrica	0.83	0.83
Fattore di riduzione per carichi di lungo periodo	0.85	0.85
Coefficiente di sicurezza per la sezione	1.00	1.00

Specifiche per le verifiche nelle combinazioni allo Stato Limite di Esercizio (SLE)**Paramento e fondazione muro**

Condizioni ambientali Aggressive

Armatura ad aderenza migliorata SI

Verifica a fessurazione

Sensibilità armatura Poco sensibile

Metodo di calcolo aperture delle fessure NTC 2018 - CIRCOLARE 21 gennaio 2019, n. 7 C.S.LL.PP.

Valori limite aperture delle fessure:

$$w_1=0.20$$

$$w_2=0.30$$

$$w_3=0.40$$

Verifica delle tensioni



Valori limite delle tensioni nei materiali:

Combinazione	Calcestruzzo	Acciaio
Rara	0.60 $f_{ck}$	0.80 $f_{yk}$
Frequente	1.00 $f_{ck}$	1.00 $f_{yk}$
Quasi permanente	0.45 $f_{ck}$	1.00 $f_{yk}$

## Risultati per combinazione

### Spinta e forze

#### Simbologia adottata

Ic	Indice della combinazione
A	Tipo azione
I	Inclinazione della spinta, espressa in [°]
V	Valore dell'azione, espressa in [kN]
C <sub>x</sub> , C <sub>y</sub>	Componente in direzione X ed Y dell'azione, espressa in [kN]
P <sub>x</sub> , P <sub>y</sub>	Coordinata X ed Y del punto di applicazione dell'azione, espressa in [m]

Ic	A	V [kN]	I [°]	C <sub>x</sub> [kN]	C <sub>y</sub> [kN]	P <sub>x</sub> [m]	P <sub>y</sub> [m]
1	Spinta statica	258.27	23.33	237.15	102.30	4.25	-6.17
	Peso/Inerzia muro			0.00	358.46/0.00	0.62	-6.61
	Peso/Inerzia rivestimento			0.00	32.00	0.00	0.00
	Peso/Inerzia terrapieno			0.00	588.94/0.00	2.31	-3.87
	Peso dell'acqua sulla fondazione di valle				0.00	0.00	0.00
2	Spinta statica	198.67	23.33	182.42	78.69	4.25	-6.17
	Incremento di spinta sismica		88.53	81.29	35.06	4.25	-4.63
	Peso/Inerzia muro			51.07	358.46/25.54	0.62	-6.61
	Peso/Inerzia rivestimento			4.56	32.00	0.00	0.00
	Peso/Inerzia terrapieno			83.91	588.94/41.96	2.31	-3.87
3	Spinta statica	290.51	23.33	266.75	115.06	4.25	-5.89
	Peso/Inerzia muro			0.00	358.46/0.00	0.62	-6.61
	Peso/Inerzia rivestimento			0.00	32.00	0.00	0.00
	Peso/Inerzia terrapieno			0.00	734.80/0.00	2.26	-3.84
	Peso dell'acqua sulla fondazione di valle				0.00	0.00	0.00
4	Spinta statica	198.67	23.33	182.42	78.69	4.25	-6.17
	Incremento di spinta sismica		62.13	57.05	24.61	4.25	-4.63
	Peso/Inerzia muro			51.07	358.46/-25.54	0.62	-6.61
	Peso/Inerzia rivestimento			4.56	32.00	0.00	0.00
	Peso/Inerzia terrapieno			83.91	588.94/-41.96	2.31	-3.87
13	Spinta statica	198.67	23.33	182.42	78.69	4.25	-6.17
	Peso/Inerzia muro			0.00	358.46/0.00	0.62	-6.61
	Peso/Inerzia rivestimento			0.00	32.00	0.00	0.00
	Peso/Inerzia terrapieno			0.00	588.94/0.00	2.31	-3.87
	Peso dell'acqua sulla fondazione di valle				0.00	0.00	0.00
	Risultante forze sul muro			12.50	0.00	--	--
14	Spinta statica	214.67	23.33	197.11	85.03	4.25	-5.98
	Peso/Inerzia muro			0.00	358.46/0.00	0.62	-6.61
	Peso/Inerzia rivestimento			0.00	32.00	0.00	0.00
	Peso/Inerzia terrapieno			0.00	661.87/0.00	2.28	-3.86
	Peso dell'acqua sulla fondazione di valle				0.00	0.00	0.00
15	Spinta statica	198.67	23.33	182.42	78.69	4.25	-6.17
	Peso/Inerzia muro			0.00	358.46/0.00	0.62	-6.61
	Peso/Inerzia rivestimento			0.00	32.00	0.00	0.00
	Peso/Inerzia terrapieno			0.00	588.94/0.00	2.31	-3.87
	Peso dell'acqua sulla fondazione di valle				0.00	0.00	0.00
16	Spinta statica	198.67	23.33	182.42	78.69	4.25	-6.17
	Peso/Inerzia muro			0.00	358.46/0.00	0.62	-6.61
	Peso/Inerzia rivestimento			0.00	32.00	0.00	0.00
	Peso/Inerzia terrapieno			0.00	588.94/0.00	2.31	-3.87
	Peso dell'acqua sulla fondazione di valle				0.00	0.00	0.00

Risultanti globali

## Simbologia adottata

Cmb	Indice/Tipo combinazione
N	Componente normale al piano di posa, espressa in [kN]
T	Componente parallela al piano di posa, espressa in [kN]
M <sub>r</sub>	Momento ribaltante, espresso in [kNm]
M <sub>s</sub>	Momento stabilizzante, espresso in [kNm]
ecc	Eccentricità risultante, espressa in [m]

Ic	N [kN]	T [kN]	M <sub>r</sub> [kNm]	M <sub>s</sub> [kNm]	ecc [m]
1 - STR (A1-M1-R3)	1081.69	237.15	731.22	3907.28	0.063
2 - STR (A1-M1-R3)	1160.64	403.25	1566.62	4206.66	0.725
3 - STR (A1-M1-R3)	1240.31	266.75	895.46	4544.11	0.058
4 - STR (A1-M1-R3)	1015.20	379.01	1685.16	3913.28	0.805
13 - ECC	1058.08	194.92	690.60	3765.66	0.093

Verifiche geotecniche*Quadro riassuntivo coeff. di sicurezza calcolati*

## Simbologia adottata

Cmb	Indice/Tipo combinazione
S	Sisma (H: componente orizzontale, V: componente verticale)
FS <sub>SCO</sub>	Coeff. di sicurezza allo scorrimento
FS <sub>RIB</sub>	Coeff. di sicurezza al ribaltamento
FS <sub>QLIM</sub>	Coeff. di sicurezza a carico limite
FS <sub>STAB</sub>	Coeff. di sicurezza a stabilità globale
FS <sub>HYD</sub>	Coeff. di sicurezza a sifonamento
FS <sub>SUPL</sub>	Coeff. di sicurezza a sollevamento

Cmb	Sismica	FS <sub>SCO</sub>	FS <sub>RIB</sub>	FS <sub>QLIM</sub>	FS <sub>STAB</sub>	FS <sub>HYD</sub>	FS <sub>SUPL</sub>
1 - STR (A1-M1-R3)		2.031		5.560			
2 - STR (A1-M1-R3)	H + V	1.281		2.548			
3 - STR (A1-M1-R3)		2.070		4.928			
4 - STR (A1-M1-R3)	H - V	1.193		2.553			
5 - GEO (A2-M2-R2)					1.593		
6 - GEO (A2-M2-R2)	H + V				1.566		
7 - GEO (A2-M2-R2)					1.540		
8 - GEO (A2-M2-R2)	H - V				1.483		
9 - EQU (A1-M1-R3)			5.344				
10 - EQU (A1-M1-R3)	H + V		2.112				
11 - EQU (A1-M1-R3)			5.075				
12 - EQU (A1-M1-R3)	H - V		1.744				
13 - ECC		2.417	5.453	6.334	1.991		

*Verifica a scorrimento fondazione*

**Simbologia adottata**

n°	Indice combinazione
Rsa	Resistenza allo scorrimento per attrito, espresso in [kN]
Rpt	Resistenza passiva terreno antistante, espresso in [kN]
Rps	Resistenza passiva sperone, espresso in [kN]
Rp	Resistenza a carichi orizzontali pali (solo per fondazione mista), espresso in [kN]
Rt	Resistenza a carichi orizzontali tiranti (solo se presenti), espresso in [kN]
R	Resistenza allo scorrimento (somma di Rsa+Rpt+Rps+Rp), espresso in [kN]
T	Carico parallelo al piano di posa, espresso in [kN]
FS	Fattore di sicurezza (rapporto R/T)

n°	Rsa [kN]	Rpt [kN]	Rps [kN]	Rp [kN]	Rt [kN]	R [kN]	T [kN]	FS
1 - STR (A1-M1-R3)	481.60	0.00	0.00	--	--	481.60	237.15	2.031
2 - STR (A1-M1-R3) H + V	516.75	0.00	0.00	--	--	516.75	403.25	1.281
3 - STR (A1-M1-R3)	552.22	0.00	0.00	--	--	552.22	266.75	2.070
4 - STR (A1-M1-R3) H - V	451.99	0.00	0.00	--	--	451.99	379.01	1.193
13 - ECC	471.09	0.00	0.00	--	--	471.09	194.92	2.417

**Verifica a carico limite****Simbologia adottata**

n°	Indice combinazione
N	Carico normale totale al piano di posa, espresso in [kN]
Qu	carico limite del terreno, espresso in [kN]
Qd	Portanza di progetto, espresso in [kN]
FS	Fattore di sicurezza (rapporto tra il carico limite e carico agente al piano di posa)

n°	N [kN]	Qu [kN]	Qd [kN]	FS
1 - STR (A1-M1-R3)	1081.69	6014.69	4296.20	5.560
2 - STR (A1-M1-R3) H + V	1160.64	2956.92	2464.10	2.548
3 - STR (A1-M1-R3)	1240.31	6112.36	4365.97	4.928
4 - STR (A1-M1-R3) H - V	1015.20	2591.49	2159.57	2.553
13 - ECC	1058.08	6701.54	4786.82	6.334

**Verifica a ribaltamento****Simbologia adottata**

n°	Indice combinazione
Ms	Momento stabilizzante, espresso in [kNm]
Mr	Momento ribaltante, espresso in [kNm]
FS	Fattore di sicurezza (rapporto tra momento stabilizzante e momento ribaltante)

La verifica viene eseguita rispetto allo spigolo inferiore esterno della fondazione

n°	Ms [kNm]	Mr [kNm]	FS
9 - EQU (A1-M1-R3)	3907.28	731.22	5.344
10 - EQU (A1-M1-R3) H + V	4448.12	2106.15	2.112
11 - EQU (A1-M1-R3)	4544.11	895.46	5.075
12 - EQU (A1-M1-R3) H - V	4019.56	2304.51	1.744
13 - ECC	3765.66	690.60	5.453

### Verifica stabilità globale muro + terreno

#### Simbologia adottata

Ic	Indice/Tipo combinazione
C	Centro superficie di scorrimento, espresso in [m]
R	Raggio, espresso in [m]
FS	Fattore di sicurezza

Ic	C [m]	R [m]	FS
5 - GEO (A2-M2-R2)	-2.80; 1.68	13.01	1.593
6 - GEO (A2-M2-R2) H + V	-3.36; 5.03	16.19	1.566
7 - GEO (A2-M2-R2)	-2.80; 1.68	13.01	1.540
8 - GEO (A2-M2-R2) H - V	-3.92; 5.03	16.46	1.483
13 - ECC	-2.80; 1.68	13.01	1.991

### Sollecitazioni

#### Elementi calcolati a trave

##### Simbologia adottata

N	Sforzo normale, espresso in [kN]. Positivo se di compressione.
T	Taglio, espresso in [kN]. Positivo se diretto da monte verso valle
M	Momento, espresso in [kNm]. Positivo se tende le fibre contro terra (a monte)

### Paramento

#### Combinazione n° 1 - STR (A1-M1-R3)

n°	X [m]	N [kN]	T [kN]	M [kNm]
1	0.00	3.06	0.00	0.38
2	-0.10	4.30	0.03	0.39
3	-0.20	5.56	0.12	0.40
4	-0.30	6.85	0.28	0.44
5	-0.40	8.15	0.49	0.50
6	-0.50	9.48	0.77	0.59
7	-0.60	10.83	1.11	0.71
8	-0.70	12.21	1.51	0.88
9	-0.80	13.61	1.97	1.10
10	-0.90	15.03	2.49	1.38
11	-1.00	16.47	3.07	1.71
12	-1.10	17.94	3.71	2.12
13	-1.20	19.43	4.42	2.60
14	-1.30	20.94	5.19	3.16
15	-1.40	22.48	6.02	3.80
16	-1.50	24.04	6.90	4.54
17	-1.60	25.62	7.86	5.38
18	-1.70	27.22	8.87	6.33
19	-1.80	28.85	9.94	7.39
20	-1.90	30.50	11.08	8.56
21	-2.00	32.17	12.27	9.86
22	-2.10	33.87	13.53	11.29
23	-2.20	35.59	14.85	12.86

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
24	-2.30	37.33	16.23	14.57
25	-2.40	39.10	17.67	16.43
26	-2.50	40.89	19.17	18.44
27	-2.60	42.70	20.74	20.62
28	-2.70	44.53	22.37	22.96
29	-2.80	46.39	24.05	25.48
30	-2.90	48.27	25.80	28.18
31	-3.00	50.17	27.61	31.07
32	-3.10	52.10	29.48	34.14
33	-3.20	54.05	31.41	37.42
34	-3.30	56.02	33.41	40.91
35	-3.40	58.01	35.46	44.60
36	-3.50	60.03	37.58	48.52
37	-3.60	62.07	39.76	52.65
38	-3.70	64.14	42.00	57.02
39	-3.80	66.22	44.30	61.63
40	-3.90	68.33	46.66	66.48
41	-4.00	70.47	49.08	71.57
42	-4.10	72.62	51.57	76.93
43	-4.20	74.80	54.11	82.54
44	-4.30	77.00	56.72	88.42
45	-4.40	79.23	59.39	94.58
46	-4.50	81.47	62.12	101.02
47	-4.60	83.74	64.91	107.74
48	-4.70	86.04	67.76	114.76
49	-4.80	88.35	70.68	122.07
50	-4.90	90.69	73.65	129.69
51	-5.00	93.06	76.69	137.62
52	-5.10	95.44	79.79	145.87
53	-5.20	97.85	82.95	154.45
54	-5.30	100.28	86.17	163.35
55	-5.40	102.74	89.45	172.60
56	-5.50	105.21	92.79	182.18
57	-5.60	107.71	96.20	192.11
58	-5.70	110.24	99.67	202.40
59	-5.80	112.78	103.19	213.05
60	-5.90	115.35	106.78	224.07
61	-6.00	117.94	110.43	235.46
62	-6.10	120.56	114.14	247.23
63	-6.20	123.20	117.92	259.39
64	-6.30	125.86	121.75	271.95
65	-6.40	128.54	125.65	284.90
66	-6.50	131.25	129.60	298.25
67	-6.60	133.98	133.62	312.02
68	-6.70	136.73	137.70	326.20
69	-6.80	139.50	141.84	340.81
70	-6.90	142.30	146.05	355.85
71	-7.00	145.13	150.31	371.33
72	-7.10	147.97	154.64	387.25
73	-7.20	150.84	159.02	403.61
74	-7.30	153.73	163.47	420.44
75	-7.40	156.64	167.98	437.72
76	-7.50	159.58	172.55	455.47
77	-7.60	162.54	177.18	473.70
78	-7.70	165.52	181.87	492.41
79	-7.80	168.52	186.63	511.60
80	-7.90	171.55	191.45	531.28
81	-8.00	174.60	196.32	551.47

Combinazione n° 2 - STR (A1-M1-R3) H + V

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	0.00	3.28	0.00	0.41
2	-0.10	4.52	0.99	0.46
3	-0.20	5.78	2.02	0.62
4	-0.30	7.06	3.11	0.89

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
5	-0.40	8.37	4.25	1.28
6	-0.50	9.70	5.44	1.79
7	-0.60	11.05	6.68	2.43
8	-0.70	12.43	7.97	3.20
9	-0.80	13.82	9.31	4.11
10	-0.90	15.25	10.70	5.16
11	-1.00	16.69	12.14	6.36
12	-1.10	18.16	13.63	7.72
13	-1.20	19.65	15.17	9.23
14	-1.30	21.16	16.76	10.91
15	-1.40	22.69	18.40	12.75
16	-1.50	24.25	20.10	14.77
17	-1.60	25.84	21.84	16.97
18	-1.70	27.44	23.63	19.35
19	-1.80	29.07	25.48	21.92
20	-1.90	30.72	27.37	24.69
21	-2.00	32.39	29.32	27.66
22	-2.10	34.09	31.31	30.83
23	-2.20	35.81	33.36	34.21
24	-2.30	37.55	35.46	37.81
25	-2.40	39.32	37.60	41.63
26	-2.50	41.10	39.80	45.67
27	-2.60	42.92	42.05	49.94
28	-2.70	44.75	44.35	54.45
29	-2.80	46.61	46.70	59.20
30	-2.90	48.49	49.10	64.20
31	-3.00	50.39	51.55	69.45
32	-3.10	52.32	54.05	74.95
33	-3.20	54.27	56.60	80.72
34	-3.30	56.24	59.20	86.75
35	-3.40	58.23	61.85	93.05
36	-3.50	60.25	64.55	99.64
37	-3.60	62.29	67.31	106.50
38	-3.70	64.36	70.11	113.65
39	-3.80	66.44	72.96	121.10
40	-3.90	68.55	75.87	128.84
41	-4.00	70.68	78.82	136.88
42	-4.10	72.84	81.83	145.23
43	-4.20	75.02	84.88	153.90
44	-4.30	77.22	87.99	162.88
45	-4.40	79.45	91.14	172.19
46	-4.50	81.69	94.35	181.83
47	-4.60	83.96	97.61	191.80
48	-4.70	86.26	100.92	202.11
49	-4.80	88.57	104.27	212.76
50	-4.90	90.91	107.68	223.76
51	-5.00	93.27	111.14	235.12
52	-5.10	95.66	114.65	246.83
53	-5.20	98.07	118.21	258.91
54	-5.30	100.50	121.82	271.37
55	-5.40	102.95	125.48	284.19
56	-5.50	105.43	129.19	297.40
57	-5.60	107.93	132.96	310.99
58	-5.70	110.45	136.77	324.97
59	-5.80	113.00	140.63	339.35
60	-5.90	115.57	144.54	354.13
61	-6.00	118.16	148.51	369.31
62	-6.10	120.78	152.52	384.90
63	-6.20	123.41	156.59	400.92
64	-6.30	126.07	160.70	417.35
65	-6.40	128.76	164.87	434.21
66	-6.50	131.47	169.08	451.50
67	-6.60	134.20	173.35	469.23
68	-6.70	136.95	177.67	487.40
69	-6.80	139.72	182.04	506.01
70	-6.90	142.52	186.45	525.08
71	-7.00	145.34	190.92	544.61
72	-7.10	148.19	195.44	564.60
73	-7.20	151.06	200.01	585.06
74	-7.30	153.95	204.63	605.99

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
75	-7.40	156.86	209.30	627.40
76	-7.50	159.80	214.02	649.29
77	-7.60	162.75	218.79	671.67
78	-7.70	165.74	223.61	694.54
79	-7.80	168.74	228.49	717.91
80	-7.90	171.77	233.41	741.79
81	-8.00	174.82	238.38	766.17

Combinazione n° 3 - STR (A1-M1-R3)

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	0.00	3.06	0.00	0.38
2	-0.10	4.30	1.02	0.44
3	-0.20	5.56	2.10	0.60
4	-0.30	6.85	3.24	0.88
5	-0.40	8.15	4.44	1.29
6	-0.50	9.48	5.71	1.82
7	-0.60	10.83	7.03	2.49
8	-0.70	12.21	8.42	3.30
9	-0.80	13.61	9.86	4.26
10	-0.90	15.03	11.37	5.37
11	-1.00	16.47	12.94	6.65
12	-1.10	17.94	14.58	8.09
13	-1.20	19.43	16.27	9.71
14	-1.30	20.94	18.02	11.50
15	-1.40	22.48	19.84	13.48
16	-1.50	24.04	21.71	15.65
17	-1.60	25.62	23.65	18.02
18	-1.70	27.22	25.65	20.60
19	-1.80	28.85	27.71	23.38
20	-1.90	30.50	29.84	26.38
21	-2.00	32.17	32.02	29.61
22	-2.10	33.87	34.26	33.06
23	-2.20	35.59	36.57	36.75
24	-2.30	37.33	38.94	40.68
25	-2.40	39.10	41.37	44.86
26	-2.50	40.89	43.86	49.29
27	-2.60	42.70	46.41	53.99
28	-2.70	44.53	49.02	58.95
29	-2.80	46.39	51.70	64.18
30	-2.90	48.27	54.43	69.70
31	-3.00	50.17	57.23	75.49
32	-3.10	52.10	60.09	81.59
33	-3.20	54.05	63.01	87.97
34	-3.30	56.02	65.99	94.67
35	-3.40	58.01	69.03	101.67
36	-3.50	60.03	72.14	108.99
37	-3.60	62.07	75.30	116.63
38	-3.70	64.14	78.53	124.60
39	-3.80	66.22	81.82	132.91
40	-3.90	68.33	85.16	141.56
41	-4.00	70.47	88.58	150.56
42	-4.10	72.62	92.05	159.91
43	-4.20	74.80	95.58	169.62
44	-4.30	77.00	99.18	179.70
45	-4.40	79.23	102.83	190.15
46	-4.50	81.47	106.54	200.98
47	-4.60	83.74	110.29	212.19
48	-4.70	86.04	114.07	223.80
49	-4.80	88.35	117.85	235.78
50	-4.90	90.69	121.63	248.16
51	-5.00	93.06	125.39	260.93
52	-5.10	95.44	129.14	274.08
53	-5.20	97.85	132.89	287.62
54	-5.30	100.28	136.65	301.55
55	-5.40	102.74	140.44	315.86



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n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
56	-5.50	105.21	144.27	330.57
57	-5.60	107.71	148.17	345.68
58	-5.70	110.24	152.12	361.19
59	-5.80	112.78	156.14	377.11
60	-5.90	115.35	160.23	393.45
61	-6.00	117.94	164.37	410.21
62	-6.10	120.56	168.58	427.40
63	-6.20	123.20	172.85	445.03
64	-6.30	125.86	177.19	463.10
65	-6.40	128.54	181.58	481.61
66	-6.50	131.25	186.04	500.59
67	-6.60	133.98	190.56	520.03
68	-6.70	136.73	195.15	539.93
69	-6.80	139.50	199.79	560.31
70	-6.90	142.30	204.50	581.17
71	-7.00	145.13	209.27	602.52
72	-7.10	147.97	214.11	624.36
73	-7.20	150.84	219.00	646.70
74	-7.30	153.73	223.96	669.54
75	-7.40	156.64	228.98	692.90
76	-7.50	159.58	234.06	716.78
77	-7.60	162.54	239.21	741.18
78	-7.70	165.52	244.41	766.11
79	-7.80	168.52	249.68	791.59
80	-7.90	171.55	255.01	817.60
81	-8.00	174.60	260.40	844.17

Combinazione n° 4 - STR (A1-M1-R3) H - V

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	0.00	3.06	0.00	0.38
2	-0.10	4.30	0.73	0.42
3	-0.20	5.56	1.52	0.54
4	-0.30	6.85	2.35	0.75
5	-0.40	8.15	3.24	1.05
6	-0.50	9.48	4.17	1.45
7	-0.60	10.83	5.16	1.95
8	-0.70	12.21	6.20	2.55
9	-0.80	13.61	7.28	3.27
10	-0.90	15.03	8.42	4.11
11	-1.00	16.47	9.61	5.07
12	-1.10	17.94	10.85	6.16
13	-1.20	19.43	12.13	7.38
14	-1.30	20.94	13.47	8.74
15	-1.40	22.48	14.86	10.25
16	-1.50	24.04	16.30	11.90
17	-1.60	25.62	17.79	13.70
18	-1.70	27.22	19.33	15.67
19	-1.80	28.85	20.92	17.80
20	-1.90	30.50	22.57	20.10
21	-2.00	32.17	24.26	22.57
22	-2.10	33.87	26.00	25.22
23	-2.20	35.59	27.79	28.06
24	-2.30	37.33	29.64	31.09
25	-2.40	39.10	31.53	34.31
26	-2.50	40.89	33.48	37.73
27	-2.60	42.70	35.47	41.36
28	-2.70	44.53	37.52	45.20
29	-2.80	46.39	39.61	49.26
30	-2.90	48.27	41.76	53.53
31	-3.00	50.17	43.96	58.03
32	-3.10	52.10	46.20	62.76
33	-3.20	54.05	48.50	67.73
34	-3.30	56.02	50.85	72.94
35	-3.40	58.01	53.25	78.40
36	-3.50	60.03	55.70	84.11

VE407

**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
37	-3.60	62.07	58.20	90.08
38	-3.70	64.14	60.75	96.30
39	-3.80	66.22	63.35	102.80
40	-3.90	68.33	66.00	109.57
41	-4.00	70.47	68.70	116.61
42	-4.10	72.62	71.45	123.94
43	-4.20	74.80	74.25	131.55
44	-4.30	77.00	77.11	139.46
45	-4.40	79.23	80.01	147.67
46	-4.50	81.47	82.96	156.18
47	-4.60	83.74	85.97	165.00
48	-4.70	86.04	89.02	174.13
49	-4.80	88.35	92.13	183.58
50	-4.90	90.69	95.28	193.36
51	-5.00	93.06	98.49	203.46
52	-5.10	95.44	101.75	213.90
53	-5.20	97.85	105.05	224.68
54	-5.30	100.28	108.41	235.80
55	-5.40	102.74	111.82	247.27
56	-5.50	105.21	115.28	259.10
57	-5.60	107.71	118.79	271.28
58	-5.70	110.24	122.35	283.84
59	-5.80	112.78	125.95	296.76
60	-5.90	115.35	129.62	310.06
61	-6.00	117.94	133.33	323.74
62	-6.10	120.56	137.09	337.80
63	-6.20	123.20	140.90	352.25
64	-6.30	125.86	144.76	367.11
65	-6.40	128.54	148.67	382.36
66	-6.50	131.25	152.64	398.02
67	-6.60	133.98	156.65	414.09
68	-6.70	136.73	160.71	430.57
69	-6.80	139.50	164.83	447.48
70	-6.90	142.30	168.99	464.82
71	-7.00	145.13	173.21	482.59
72	-7.10	147.97	177.47	500.79
73	-7.20	150.84	181.79	519.44
74	-7.30	153.73	186.16	538.54
75	-7.40	156.64	190.57	558.09
76	-7.50	159.58	195.04	578.09
77	-7.60	162.54	199.56	598.56
78	-7.70	165.52	204.13	619.50
79	-7.80	168.52	208.75	640.91
80	-7.90	171.55	213.42	662.80
81	-8.00	174.60	218.14	685.17

Combinazione n° 13 - ECC

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	0.00	3.06	12.50	12.88
2	-0.10	4.30	12.52	14.14
3	-0.20	5.56	12.60	15.40
4	-0.30	6.85	12.71	16.68
5	-0.40	8.15	12.88	17.98
6	-0.50	9.48	13.09	19.31
7	-0.60	10.83	13.35	20.66
8	-0.70	12.21	13.66	22.05
9	-0.80	13.61	14.01	23.48
10	-0.90	15.03	14.41	24.95
11	-1.00	16.47	14.86	26.48
12	-1.10	17.94	15.36	28.05
13	-1.20	19.43	15.90	29.69
14	-1.30	20.94	16.49	31.39
15	-1.40	22.48	17.13	33.16
16	-1.50	24.04	17.81	35.00
17	-1.60	25.62	18.54	36.92

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
18	-1.70	27.22	19.32	38.92
19	-1.80	28.85	20.15	41.01
20	-1.90	30.50	21.02	43.19
21	-2.00	32.17	21.94	45.47
22	-2.10	33.87	22.91	47.85
23	-2.20	35.59	23.92	50.34
24	-2.30	37.33	24.98	52.94
25	-2.40	39.10	26.09	55.66
26	-2.50	40.89	27.25	58.50
27	-2.60	42.70	28.45	61.47
28	-2.70	44.53	29.70	64.57
29	-2.80	46.39	31.00	67.80
30	-2.90	48.27	32.35	71.17
31	-3.00	50.17	33.74	74.69
32	-3.10	52.10	35.18	78.36
33	-3.20	54.05	36.66	82.19
34	-3.30	56.02	38.20	86.18
35	-3.40	58.01	39.78	90.33
36	-3.50	60.03	41.41	94.65
37	-3.60	62.07	43.08	99.14
38	-3.70	64.14	44.81	103.82
39	-3.80	66.22	46.58	108.68
40	-3.90	68.33	48.39	113.73
41	-4.00	70.47	50.26	118.97
42	-4.10	72.62	52.17	124.41
43	-4.20	74.80	54.13	130.06
44	-4.30	77.00	56.13	135.91
45	-4.40	79.23	58.18	141.98
46	-4.50	81.47	60.28	148.26
47	-4.60	83.74	62.43	154.77
48	-4.70	86.04	64.63	161.50
49	-4.80	88.35	66.87	168.47
50	-4.90	90.69	69.16	175.68
51	-5.00	93.06	71.49	183.13
52	-5.10	95.44	73.88	190.82
53	-5.20	97.85	76.31	198.77
54	-5.30	100.28	78.78	206.97
55	-5.40	102.74	81.31	215.44
56	-5.50	105.21	83.88	224.17
57	-5.60	107.71	86.50	233.17
58	-5.70	110.24	89.17	242.45
59	-5.80	112.78	91.88	252.01
60	-5.90	115.35	94.64	261.85
61	-6.00	117.94	97.45	271.99
62	-6.10	120.56	100.30	282.42
63	-6.20	123.20	103.21	293.15
64	-6.30	125.86	106.16	304.19
65	-6.40	128.54	109.15	315.54
66	-6.50	131.25	112.20	327.20
67	-6.60	133.98	115.29	339.18
68	-6.70	136.73	118.43	351.48
69	-6.80	139.50	121.61	364.12
70	-6.90	142.30	124.84	377.08
71	-7.00	145.13	128.12	390.39
72	-7.10	147.97	131.45	404.04
73	-7.20	150.84	134.82	418.04
74	-7.30	153.73	138.25	432.39
75	-7.40	156.64	141.71	447.10
76	-7.50	159.58	145.23	462.17
77	-7.60	162.54	148.79	477.61
78	-7.70	165.52	152.40	493.43
79	-7.80	168.52	156.06	509.62
80	-7.90	171.55	159.77	526.19
81	-8.00	174.60	163.52	543.15

Combinazione n° 14 - SLER

VE407

**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	0.00	3.06	0.00	0.38
2	-0.10	4.30	0.52	0.41
3	-0.20	5.56	1.08	0.50
4	-0.30	6.85	1.70	0.65
5	-0.40	8.15	2.35	0.88
6	-0.50	9.48	3.06	1.17
7	-0.60	10.83	3.81	1.55
8	-0.70	12.21	4.61	2.01
9	-0.80	13.61	5.46	2.56
10	-0.90	15.03	6.36	3.20
11	-1.00	16.47	7.30	3.94
12	-1.10	17.94	8.29	4.79
13	-1.20	19.43	9.32	5.74
14	-1.30	20.94	10.41	6.81
15	-1.40	22.48	11.54	7.99
16	-1.50	24.04	12.72	9.30
17	-1.60	25.62	13.94	10.73
18	-1.70	27.22	15.21	12.30
19	-1.80	28.85	16.53	14.01
20	-1.90	30.50	17.90	15.85
21	-2.00	32.17	19.31	17.84
22	-2.10	33.87	20.77	19.99
23	-2.20	35.59	22.28	22.29
24	-2.30	37.33	23.84	24.75
25	-2.40	39.10	25.44	27.38
26	-2.50	40.89	27.09	30.18
27	-2.60	42.70	28.79	33.15
28	-2.70	44.53	30.53	36.31
29	-2.80	46.39	32.32	39.65
30	-2.90	48.27	34.16	43.18
31	-3.00	50.17	36.05	46.91
32	-3.10	52.10	37.98	50.83
33	-3.20	54.05	39.96	54.96
34	-3.30	56.02	41.99	59.30
35	-3.40	58.01	44.06	63.86
36	-3.50	60.03	46.19	68.63
37	-3.60	62.07	48.35	73.63
38	-3.70	64.14	50.57	78.86
39	-3.80	66.22	52.83	84.32
40	-3.90	68.33	55.14	90.02
41	-4.00	70.47	57.50	95.96
42	-4.10	72.62	59.91	102.15
43	-4.20	74.80	62.36	108.60
44	-4.30	77.00	64.86	115.30
45	-4.40	79.23	67.41	122.26
46	-4.50	81.47	69.99	129.49
47	-4.60	83.74	72.62	137.00
48	-4.70	86.04	75.26	144.77
49	-4.80	88.35	77.92	152.83
50	-4.90	90.69	80.58	161.15
51	-5.00	93.06	83.24	169.76
52	-5.10	95.44	85.91	178.65
53	-5.20	97.85	88.61	187.81
54	-5.30	100.28	91.34	197.26
55	-5.40	102.74	94.11	206.99
56	-5.50	105.21	96.93	217.01
57	-5.60	107.71	99.80	227.33
58	-5.70	110.24	102.72	237.96
59	-5.80	112.78	105.68	248.88
60	-5.90	115.35	108.70	260.12
61	-6.00	117.94	111.76	271.68
62	-6.10	120.56	114.86	283.55
63	-6.20	123.20	118.02	295.75
64	-6.30	125.86	121.22	308.28
65	-6.40	128.54	124.47	321.15
66	-6.50	131.25	127.77	334.35
67	-6.60	133.98	131.12	347.90
68	-6.70	136.73	134.51	361.80
69	-6.80	139.50	137.96	376.06
70	-6.90	142.30	141.44	390.67

VE407

**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
71	-7.00	145.13	144.98	405.65
72	-7.10	147.97	148.56	421.00
73	-7.20	150.84	152.20	436.72
74	-7.30	153.73	155.88	452.83
75	-7.40	156.64	159.60	469.31
76	-7.50	159.58	163.38	486.19
77	-7.60	162.54	167.20	503.45
78	-7.70	165.52	171.07	521.12
79	-7.80	168.52	174.98	539.19
80	-7.90	171.55	178.95	557.67
81	-8.00	174.60	182.96	576.56

Combinazione n° 15 - SLEF

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	0.00	3.06	0.00	0.38
2	-0.10	4.30	0.02	0.39
3	-0.20	5.56	0.10	0.40
4	-0.30	6.85	0.21	0.43
5	-0.40	8.15	0.38	0.48
6	-0.50	9.48	0.59	0.56
7	-0.60	10.83	0.85	0.66
8	-0.70	12.21	1.16	0.80
9	-0.80	13.61	1.51	0.98
10	-0.90	15.03	1.91	1.20
11	-1.00	16.47	2.36	1.48
12	-1.10	17.94	2.86	1.80
13	-1.20	19.43	3.40	2.19
14	-1.30	20.94	3.99	2.64
15	-1.40	22.48	4.63	3.16
16	-1.50	24.04	5.31	3.75
17	-1.60	25.62	6.04	4.42
18	-1.70	27.22	6.82	5.17
19	-1.80	28.85	7.65	6.01
20	-1.90	30.50	8.52	6.94
21	-2.00	32.17	9.44	7.97
22	-2.10	33.87	10.41	9.10
23	-2.20	35.59	11.42	10.34
24	-2.30	37.33	12.48	11.69
25	-2.40	39.10	13.59	13.16
26	-2.50	40.89	14.75	14.75
27	-2.60	42.70	15.95	16.47
28	-2.70	44.53	17.20	18.32
29	-2.80	46.39	18.50	20.30
30	-2.90	48.27	19.85	22.42
31	-3.00	50.17	21.24	24.69
32	-3.10	52.10	22.68	27.11
33	-3.20	54.05	24.16	29.69
34	-3.30	56.02	25.70	32.43
35	-3.40	58.01	27.28	35.33
36	-3.50	60.03	28.91	38.40
37	-3.60	62.07	30.58	41.64
38	-3.70	64.14	32.31	45.07
39	-3.80	66.22	34.08	48.68
40	-3.90	68.33	35.89	52.48
41	-4.00	70.47	37.76	56.47
42	-4.10	72.62	39.67	60.66
43	-4.20	74.80	41.63	65.06
44	-4.30	77.00	43.63	69.66
45	-4.40	79.23	45.68	74.48
46	-4.50	81.47	47.78	79.51
47	-4.60	83.74	49.93	84.77
48	-4.70	86.04	52.13	90.25
49	-4.80	88.35	54.37	95.97
50	-4.90	90.69	56.66	101.93
51	-5.00	93.06	58.99	108.13

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
52	-5.10	95.44	61.38	114.57
53	-5.20	97.85	63.81	121.27
54	-5.30	100.28	66.28	128.22
55	-5.40	102.74	68.81	135.44
56	-5.50	105.21	71.38	142.92
57	-5.60	107.71	74.00	150.67
58	-5.70	110.24	76.67	158.70
59	-5.80	112.78	79.38	167.01
60	-5.90	115.35	82.14	175.60
61	-6.00	117.94	84.95	184.49
62	-6.10	120.56	87.80	193.67
63	-6.20	123.20	90.71	203.15
64	-6.30	125.86	93.66	212.94
65	-6.40	128.54	96.65	223.04
66	-6.50	131.25	99.70	233.45
67	-6.60	133.98	102.79	244.18
68	-6.70	136.73	105.93	255.23
69	-6.80	139.50	109.11	266.62
70	-6.90	142.30	112.34	278.33
71	-7.00	145.13	115.62	290.39
72	-7.10	147.97	118.95	302.79
73	-7.20	150.84	122.32	315.54
74	-7.30	153.73	125.75	328.64
75	-7.40	156.64	129.21	342.10
76	-7.50	159.58	132.73	355.92
77	-7.60	162.54	136.29	370.11
78	-7.70	165.52	139.90	384.68
79	-7.80	168.52	143.56	399.62
80	-7.90	171.55	147.27	414.94
81	-8.00	174.60	151.02	430.65

Combinazione n° 16 - SLEQ

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	0.00	3.06	0.00	0.38
2	-0.10	4.30	0.02	0.39
3	-0.20	5.56	0.10	0.40
4	-0.30	6.85	0.21	0.43
5	-0.40	8.15	0.38	0.48
6	-0.50	9.48	0.59	0.56
7	-0.60	10.83	0.85	0.66
8	-0.70	12.21	1.16	0.80
9	-0.80	13.61	1.51	0.98
10	-0.90	15.03	1.91	1.20
11	-1.00	16.47	2.36	1.48
12	-1.10	17.94	2.86	1.80
13	-1.20	19.43	3.40	2.19
14	-1.30	20.94	3.99	2.64
15	-1.40	22.48	4.63	3.16
16	-1.50	24.04	5.31	3.75
17	-1.60	25.62	6.04	4.42
18	-1.70	27.22	6.82	5.17
19	-1.80	28.85	7.65	6.01
20	-1.90	30.50	8.52	6.94
21	-2.00	32.17	9.44	7.97
22	-2.10	33.87	10.41	9.10
23	-2.20	35.59	11.42	10.34
24	-2.30	37.33	12.48	11.69
25	-2.40	39.10	13.59	13.16
26	-2.50	40.89	14.75	14.75
27	-2.60	42.70	15.95	16.47
28	-2.70	44.53	17.20	18.32
29	-2.80	46.39	18.50	20.30
30	-2.90	48.27	19.85	22.42
31	-3.00	50.17	21.24	24.69
32	-3.10	52.10	22.68	27.11

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
33	-3.20	54.05	24.16	29.69
34	-3.30	56.02	25.70	32.43
35	-3.40	58.01	27.28	35.33
36	-3.50	60.03	28.91	38.40
37	-3.60	62.07	30.58	41.64
38	-3.70	64.14	32.31	45.07
39	-3.80	66.22	34.08	48.68
40	-3.90	68.33	35.89	52.48
41	-4.00	70.47	37.76	56.47
42	-4.10	72.62	39.67	60.66
43	-4.20	74.80	41.63	65.06
44	-4.30	77.00	43.63	69.66
45	-4.40	79.23	45.68	74.48
46	-4.50	81.47	47.78	79.51
47	-4.60	83.74	49.93	84.77
48	-4.70	86.04	52.13	90.25
49	-4.80	88.35	54.37	95.97
50	-4.90	90.69	56.66	101.93
51	-5.00	93.06	58.99	108.13
52	-5.10	95.44	61.38	114.57
53	-5.20	97.85	63.81	121.27
54	-5.30	100.28	66.28	128.22
55	-5.40	102.74	68.81	135.44
56	-5.50	105.21	71.38	142.92
57	-5.60	107.71	74.00	150.67
58	-5.70	110.24	76.67	158.70
59	-5.80	112.78	79.38	167.01
60	-5.90	115.35	82.14	175.60
61	-6.00	117.94	84.95	184.49
62	-6.10	120.56	87.80	193.67
63	-6.20	123.20	90.71	203.15
64	-6.30	125.86	93.66	212.94
65	-6.40	128.54	96.65	223.04
66	-6.50	131.25	99.70	233.45
67	-6.60	133.98	102.79	244.18
68	-6.70	136.73	105.93	255.23
69	-6.80	139.50	109.11	266.62
70	-6.90	142.30	112.34	278.33
71	-7.00	145.13	115.62	290.39
72	-7.10	147.97	118.95	302.79
73	-7.20	150.84	122.32	315.54
74	-7.30	153.73	125.75	328.64
75	-7.40	156.64	129.21	342.10
76	-7.50	159.58	132.73	355.92
77	-7.60	162.54	136.29	370.11
78	-7.70	165.52	139.90	384.68
79	-7.80	168.52	143.56	399.62
80	-7.90	171.55	147.27	414.94
81	-8.00	174.60	151.02	430.65

*Mensola valle*Combinazione n° 1 - STR (A1-M1-R3)

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-0.75	0.00	0.00	0.00
2	-0.67	0.00	1.02	0.04
3	-0.58	0.00	2.04	0.17
4	-0.50	0.00	3.06	0.38

Combinazione n° 2 - STR (A1-M1-R3) H + V

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-0.75	0.00	0.00	0.00
2	-0.67	0.00	1.09	0.05
3	-0.58	0.00	2.19	0.18
4	-0.50	0.00	3.28	0.41

Combinazione n° 3 - STR (A1-M1-R3)

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-0.75	0.00	0.00	0.00
2	-0.67	0.00	1.02	0.04
3	-0.58	0.00	2.04	0.17
4	-0.50	0.00	3.06	0.38

Combinazione n° 4 - STR (A1-M1-R3) H - V

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-0.75	0.00	0.00	0.00
2	-0.67	0.00	1.02	0.04
3	-0.58	0.00	2.04	0.17
4	-0.50	0.00	3.06	0.38

Combinazione n° 13 - ECC

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-0.75	0.00	0.00	0.00
2	-0.67	0.00	1.02	0.04
3	-0.58	0.00	2.04	0.17
4	-0.50	0.00	3.06	0.38

Combinazione n° 14 - SLER

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-0.75	0.00	0.00	0.00
2	-0.67	0.00	1.02	0.04
3	-0.58	0.00	2.04	0.17
4	-0.50	0.00	3.06	0.38

Combinazione n° 15 - SLEF

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-0.75	0.00	0.00	0.00
2	-0.67	0.00	1.02	0.04
3	-0.58	0.00	2.04	0.17
4	-0.50	0.00	3.06	0.38

Combinazione n° 16 - SLEQ



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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-0.75	0.00	0.00	0.00
2	-0.67	0.00	1.02	0.04
3	-0.58	0.00	2.04	0.17
4	-0.50	0.00	3.06	0.38

*Fondazione*Combinazione n° 1 - STR (A1-M1-R3)

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-1.75	0.00	0.00	0.00
2	-1.65	0.00	15.47	0.74
3	-1.56	0.00	30.91	2.97
4	-1.46	0.00	46.31	6.69
5	-1.37	0.00	61.68	11.88
6	-1.27	0.00	77.01	18.55
7	-1.17	0.00	92.30	26.69
8	-1.08	0.00	107.56	36.30
9	-0.98	0.00	122.79	47.37
10	-0.88	0.00	137.98	59.91
11	-0.79	0.00	153.13	73.90
12	-0.69	0.00	168.25	89.36
13	-0.60	0.00	183.34	106.26
14	-0.50	0.00	198.39	124.61
15	0.75	0.00	-184.46	-336.41
16	0.85	0.00	-179.83	-318.20
17	0.95	0.00	-175.17	-300.45
18	1.05	0.00	-170.47	-283.16
19	1.15	0.00	-165.74	-266.35
20	1.25	0.00	-160.96	-250.02
21	1.35	0.00	-156.15	-234.16
22	1.45	0.00	-151.30	-218.79
23	1.55	0.00	-146.41	-203.90
24	1.65	0.00	-141.48	-189.51
25	1.75	0.00	-136.52	-175.61
26	1.85	0.00	-131.51	-162.21
27	1.95	0.00	-126.47	-149.31
28	2.05	0.00	-121.39	-136.91
29	2.15	0.00	-116.27	-125.03
30	2.25	0.00	-111.12	-113.66
31	2.35	0.00	-105.93	-102.81
32	2.45	0.00	-100.69	-92.48
33	2.55	0.00	-95.42	-82.67
34	2.65	0.00	-90.11	-73.39
35	2.75	0.00	-84.77	-64.65
36	2.85	0.00	-79.38	-56.44
37	2.95	0.00	-73.96	-48.77
38	3.05	0.00	-68.50	-41.65
39	3.15	0.00	-63.00	-35.07
40	3.25	0.00	-57.46	-29.05
41	3.35	0.00	-51.89	-23.58
42	3.45	0.00	-46.28	-18.67
43	3.55	0.00	-40.63	-14.33
44	3.65	0.00	-34.94	-10.55
45	3.75	0.00	-29.21	-7.34
46	3.85	0.00	-23.44	-4.71
47	3.95	0.00	-17.64	-2.65
48	4.05	0.00	-11.80	-1.18
49	4.15	0.00	-5.92	-0.30
50	4.25	0.00	0.00	0.00

Combinazione n° 2 - STR (A1-M1-R3) H + V

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-1.75	0.00	0.00	0.00
2	-1.65	0.00	28.93	1.39
3	-1.56	0.00	57.42	5.55
4	-1.46	0.00	85.48	12.42
5	-1.37	0.00	113.11	21.97
6	-1.27	0.00	140.31	34.16
7	-1.17	0.00	167.08	48.94
8	-1.08	0.00	193.41	66.28
9	-0.98	0.00	219.31	86.12
10	-0.88	0.00	244.78	108.44
11	-0.79	0.00	269.82	133.18
12	-0.69	0.00	294.42	160.31
13	-0.60	0.00	318.59	189.79
14	-0.50	0.00	342.33	221.57
15	0.75	0.00	-166.65	-458.72
16	0.85	0.00	-169.84	-441.89
17	0.95	0.00	-172.56	-424.77
18	1.05	0.00	-174.81	-407.40
19	1.15	0.00	-176.60	-389.82
20	1.25	0.00	-177.92	-372.09
21	1.35	0.00	-178.77	-354.26
22	1.45	0.00	-179.15	-336.36
23	1.55	0.00	-179.06	-318.44
24	1.65	0.00	-178.51	-300.56
25	1.75	0.00	-177.49	-282.75
26	1.85	0.00	-176.00	-265.08
27	1.95	0.00	-174.05	-247.57
28	2.05	0.00	-171.62	-230.28
29	2.15	0.00	-168.73	-213.26
30	2.25	0.00	-165.37	-196.55
31	2.35	0.00	-161.55	-180.20
32	2.45	0.00	-157.25	-164.26
33	2.55	0.00	-152.49	-148.76
34	2.65	0.00	-147.26	-133.77
35	2.75	0.00	-141.57	-119.33
36	2.85	0.00	-135.40	-105.48
37	2.95	0.00	-128.77	-92.26
38	3.05	0.00	-121.67	-79.74
39	3.15	0.00	-114.10	-67.94
40	3.25	0.00	-106.07	-56.93
41	3.35	0.00	-97.57	-46.75
42	3.45	0.00	-88.60	-37.43
43	3.55	0.00	-79.16	-29.04
44	3.65	0.00	-69.25	-21.62
45	3.75	0.00	-58.88	-15.21
46	3.85	0.00	-48.04	-9.86
47	3.95	0.00	-36.73	-5.61
48	4.05	0.00	-24.95	-2.53
49	4.15	0.00	-12.71	-0.64
50	4.25	0.00	0.00	0.00

Combinazione n° 3 - STR (A1-M1-R3)

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-1.75	0.00	0.00	0.00
2	-1.65	0.00	18.07	0.87
3	-1.56	0.00	36.09	3.47
4	-1.46	0.00	54.08	7.81
5	-1.37	0.00	72.04	13.87
6	-1.27	0.00	89.96	21.66
7	-1.17	0.00	107.84	31.17
8	-1.08	0.00	125.68	42.40
9	-0.98	0.00	143.49	55.34
10	-0.88	0.00	161.26	69.99
11	-0.79	0.00	178.99	86.35

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X [m]	N [kN]	T [kN]	M [kNm]
12	-0.69	0.00	196.69	104.41
13	-0.60	0.00	214.35	124.17
14	-0.50	0.00	231.97	145.63
15	0.75	0.00	-208.77	-379.61
16	0.85	0.00	-202.83	-357.88
17	0.95	0.00	-196.84	-336.74
18	1.05	0.00	-190.82	-316.21
19	1.15	0.00	-184.75	-296.28
20	1.25	0.00	-178.65	-276.95
21	1.35	0.00	-172.51	-258.24
22	1.45	0.00	-166.32	-240.15
23	1.55	0.00	-160.10	-222.67
24	1.65	0.00	-153.83	-205.83
25	1.75	0.00	-147.53	-189.61
26	1.85	0.00	-141.18	-174.02
27	1.95	0.00	-134.80	-159.06
28	2.05	0.00	-128.38	-144.75
29	2.15	0.00	-121.91	-131.09
30	2.25	0.00	-115.41	-118.07
31	2.35	0.00	-108.86	-105.70
32	2.45	0.00	-102.28	-93.99
33	2.55	0.00	-95.66	-82.94
34	2.65	0.00	-88.99	-72.56
35	2.75	0.00	-82.29	-62.84
36	2.85	0.00	-75.55	-53.80
37	2.95	0.00	-68.76	-45.43
38	3.05	0.00	-62.85	-38.28
39	3.15	0.00	-57.83	-32.25
40	3.25	0.00	-52.77	-26.72
41	3.35	0.00	-47.67	-21.70
42	3.45	0.00	-42.54	-17.19
43	3.55	0.00	-37.36	-13.19
44	3.65	0.00	-32.14	-9.71
45	3.75	0.00	-26.89	-6.76
46	3.85	0.00	-21.59	-4.34
47	3.95	0.00	-16.25	-2.45
48	4.05	0.00	-10.87	-1.09
49	4.15	0.00	-5.46	-0.27
50	4.25	0.00	0.00	0.00

Combinazione n° 4 - STR (A1-M1-R3) H - V

n°	X [m]	N [kN]	T [kN]	M [kNm]
1	-1.75	0.00	0.00	0.00
2	-1.65	0.00	26.21	1.26
3	-1.56	0.00	52.00	5.03
4	-1.46	0.00	77.38	11.25
5	-1.37	0.00	102.33	19.89
6	-1.27	0.00	126.86	30.92
7	-1.17	0.00	150.97	44.28
8	-1.08	0.00	174.67	59.94
9	-0.98	0.00	197.94	77.85
10	-0.88	0.00	220.79	97.99
11	-0.79	0.00	243.23	120.30
12	-0.69	0.00	265.24	144.75
13	-0.60	0.00	286.83	171.29
14	-0.50	0.00	308.01	199.90
15	0.75	0.00	-245.59	-592.02
16	0.85	0.00	-246.29	-567.42
17	0.95	0.00	-246.54	-542.78
18	1.05	0.00	-246.33	-518.13
19	1.15	0.00	-245.67	-493.53
20	1.25	0.00	-244.56	-469.01
21	1.35	0.00	-242.99	-444.63
22	1.45	0.00	-240.97	-420.43
23	1.55	0.00	-238.49	-396.45

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
24	1.65	0.00	-235.56	-372.74
25	1.75	0.00	-232.18	-349.35
26	1.85	0.00	-228.34	-326.32
27	1.95	0.00	-224.05	-303.70
28	2.05	0.00	-219.30	-281.53
29	2.15	0.00	-214.10	-259.85
30	2.25	0.00	-208.45	-238.72
31	2.35	0.00	-202.34	-218.18
32	2.45	0.00	-195.78	-198.27
33	2.55	0.00	-188.76	-179.04
34	2.65	0.00	-181.29	-160.53
35	2.75	0.00	-173.37	-142.80
36	2.85	0.00	-164.99	-125.87
37	2.95	0.00	-156.15	-109.81
38	3.05	0.00	-146.87	-94.66
39	3.15	0.00	-137.13	-80.46
40	3.25	0.00	-126.93	-67.25
41	3.35	0.00	-116.28	-55.08
42	3.45	0.00	-105.18	-44.01
43	3.55	0.00	-93.62	-34.06
44	3.65	0.00	-81.61	-25.30
45	3.75	0.00	-69.14	-17.76
46	3.85	0.00	-56.22	-11.49
47	3.95	0.00	-42.85	-6.53
48	4.05	0.00	-29.02	-2.93
49	4.15	0.00	-14.74	-0.74
50	4.25	0.00	0.00	0.00

Combinazione n° 13 - ECC

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-1.75	0.00	0.00	0.00
2	-1.65	0.00	15.57	0.75
3	-1.56	0.00	31.09	2.99
4	-1.46	0.00	46.56	6.73
5	-1.37	0.00	61.97	11.94
6	-1.27	0.00	77.34	18.64
7	-1.17	0.00	92.66	26.82
8	-1.08	0.00	107.92	36.46
9	-0.98	0.00	123.14	47.57
10	-0.88	0.00	138.30	60.14
11	-0.79	0.00	153.41	74.16
12	-0.69	0.00	168.48	89.64
13	-0.60	0.00	183.49	106.56
14	-0.50	0.00	198.45	124.92
15	0.75	0.00	-45.97	-100.05
16	0.85	0.00	-45.59	-95.47
17	0.95	0.00	-45.15	-90.94
18	1.05	0.00	-44.66	-86.45
19	1.15	0.00	-44.12	-82.01
20	1.25	0.00	-43.52	-77.62
21	1.35	0.00	-42.86	-73.30
22	1.45	0.00	-42.15	-69.05
23	1.55	0.00	-41.39	-64.88
24	1.65	0.00	-40.57	-60.78
25	1.75	0.00	-39.69	-56.76
26	1.85	0.00	-38.77	-52.84
27	1.95	0.00	-37.78	-49.01
28	2.05	0.00	-36.74	-45.29
29	2.15	0.00	-35.65	-41.67
30	2.25	0.00	-34.50	-38.16
31	2.35	0.00	-33.30	-34.77
32	2.45	0.00	-32.04	-31.50
33	2.55	0.00	-30.72	-28.36
34	2.65	0.00	-29.36	-25.36
35	2.75	0.00	-27.93	-22.49

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X [m]	N [kN]	T [kN]	M [kNm]
36	2.85	0.00	-26.45	-19.77
37	2.95	0.00	-24.92	-17.20
38	3.05	0.00	-23.33	-14.79
39	3.15	0.00	-21.69	-12.54
40	3.25	0.00	-19.99	-10.45
41	3.35	0.00	-18.24	-8.54
42	3.45	0.00	-16.43	-6.81
43	3.55	0.00	-14.57	-5.26
44	3.65	0.00	-12.66	-3.90
45	3.75	0.00	-10.68	-2.73
46	3.85	0.00	-8.66	-1.76
47	3.95	0.00	-6.57	-1.00
48	4.05	0.00	-4.44	-0.45
49	4.15	0.00	-2.25	-0.11
50	4.25	0.00	0.00	0.00

Combinazione n° 14 - SLER

n°	X [m]	N [kN]	T [kN]	M [kNm]
1	-1.75	0.00	0.00	0.00
2	-1.65	0.00	14.84	0.71
3	-1.56	0.00	29.70	2.85
4	-1.46	0.00	44.57	6.43
5	-1.37	0.00	59.46	11.43
6	-1.27	0.00	74.36	17.86
7	-1.17	0.00	89.27	25.73
8	-1.08	0.00	104.20	35.03
9	-0.98	0.00	119.15	45.77
10	-0.88	0.00	134.10	57.94
11	-0.79	0.00	149.08	71.56
12	-0.69	0.00	164.06	86.61
13	-0.60	0.00	179.06	103.11
14	-0.50	0.00	194.08	121.05
15	0.75	0.00	-26.99	-41.70
16	0.85	0.00	-25.63	-38.49
17	0.95	0.00	-24.28	-35.42
18	1.05	0.00	-22.95	-32.49
19	1.15	0.00	-21.63	-29.68
20	1.25	0.00	-20.33	-27.01
21	1.35	0.00	-19.04	-24.46
22	1.45	0.00	-17.77	-22.05
23	1.55	0.00	-16.51	-19.76
24	1.65	0.00	-15.28	-17.59
25	1.75	0.00	-14.05	-15.55
26	1.85	0.00	-12.84	-13.63
27	1.95	0.00	-11.65	-11.83
28	2.05	0.00	-10.47	-10.15
29	2.15	0.00	-9.31	-8.58
30	2.25	0.00	-8.16	-7.13
31	2.35	0.00	-7.03	-5.79
32	2.45	0.00	-5.92	-4.57
33	2.55	0.00	-4.81	-3.46
34	2.65	0.00	-3.73	-2.46
35	2.75	0.00	-2.66	-1.56
36	2.85	0.00	-1.61	-0.77
37	2.95	0.00	-0.57	-0.09
38	3.05	0.00	0.00	0.22
39	3.15	0.00	0.09	0.22
40	3.25	0.00	0.16	0.21
41	3.35	0.00	0.21	0.19
42	3.45	0.00	0.25	0.17
43	3.55	0.00	0.27	0.14
44	3.65	0.00	0.28	0.11
45	3.75	0.00	0.27	0.08
46	3.85	0.00	0.25	0.06
47	3.95	0.00	0.21	0.03

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
48	4.05	0.00	0.15	0.02
49	4.15	0.00	0.09	0.00
50	4.25	0.00	0.00	0.00

Combinazione n° 15 - SLEF

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-1.75	0.00	0.00	0.00
2	-1.65	0.00	13.55	0.65
3	-1.56	0.00	27.11	2.61
4	-1.46	0.00	40.69	5.87
5	-1.37	0.00	54.29	10.43
6	-1.27	0.00	67.89	16.31
7	-1.17	0.00	81.52	23.49
8	-1.08	0.00	95.16	31.98
9	-0.98	0.00	108.81	41.79
10	-0.88	0.00	122.48	52.91
11	-0.79	0.00	136.17	65.34
12	-0.69	0.00	149.87	79.10
13	-0.60	0.00	163.58	94.16
14	-0.50	0.00	177.31	110.55
15	0.75	0.00	-14.82	-20.11
16	0.85	0.00	-14.12	-18.66
17	0.95	0.00	-13.44	-17.28
18	1.05	0.00	-12.77	-15.97
19	1.15	0.00	-12.12	-14.73
20	1.25	0.00	-11.48	-13.55
21	1.35	0.00	-10.86	-12.43
22	1.45	0.00	-10.26	-11.38
23	1.55	0.00	-9.67	-10.38
24	1.65	0.00	-9.10	-9.44
25	1.75	0.00	-8.55	-8.56
26	1.85	0.00	-8.01	-7.73
27	1.95	0.00	-7.49	-6.96
28	2.05	0.00	-6.98	-6.23
29	2.15	0.00	-6.49	-5.56
30	2.25	0.00	-6.02	-4.93
31	2.35	0.00	-5.57	-4.35
32	2.45	0.00	-5.13	-3.82
33	2.55	0.00	-4.70	-3.33
34	2.65	0.00	-4.29	-2.88
35	2.75	0.00	-3.90	-2.47
36	2.85	0.00	-3.53	-2.10
37	2.95	0.00	-3.17	-1.76
38	3.05	0.00	-2.83	-1.46
39	3.15	0.00	-2.50	-1.20
40	3.25	0.00	-2.19	-0.96
41	3.35	0.00	-1.90	-0.76
42	3.45	0.00	-1.63	-0.58
43	3.55	0.00	-1.36	-0.43
44	3.65	0.00	-1.12	-0.31
45	3.75	0.00	-0.89	-0.21
46	3.85	0.00	-0.68	-0.13
47	3.95	0.00	-0.49	-0.07
48	4.05	0.00	-0.31	-0.03
49	4.15	0.00	-0.15	-0.01
50	4.25	0.00	0.00	0.00

Combinazione n° 16 - SLEQ

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-1.75	0.00	0.00	0.00
2	-1.65	0.00	13.55	0.65

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
3	-1.56	0.00	27.11	2.61
4	-1.46	0.00	40.69	5.87
5	-1.37	0.00	54.29	10.43
6	-1.27	0.00	67.89	16.31
7	-1.17	0.00	81.52	23.49
8	-1.08	0.00	95.16	31.98
9	-0.98	0.00	108.81	41.79
10	-0.88	0.00	122.48	52.91
11	-0.79	0.00	136.17	65.34
12	-0.69	0.00	149.87	79.10
13	-0.60	0.00	163.58	94.16
14	-0.50	0.00	177.31	110.55
15	0.75	0.00	-14.82	-20.11
16	0.85	0.00	-14.12	-18.66
17	0.95	0.00	-13.44	-17.28
18	1.05	0.00	-12.77	-15.97
19	1.15	0.00	-12.12	-14.73
20	1.25	0.00	-11.48	-13.55
21	1.35	0.00	-10.86	-12.43
22	1.45	0.00	-10.26	-11.38
23	1.55	0.00	-9.67	-10.38
24	1.65	0.00	-9.10	-9.44
25	1.75	0.00	-8.55	-8.56
26	1.85	0.00	-8.01	-7.73
27	1.95	0.00	-7.49	-6.96
28	2.05	0.00	-6.98	-6.23
29	2.15	0.00	-6.49	-5.56
30	2.25	0.00	-6.02	-4.93
31	2.35	0.00	-5.57	-4.35
32	2.45	0.00	-5.13	-3.82
33	2.55	0.00	-4.70	-3.33
34	2.65	0.00	-4.29	-2.88
35	2.75	0.00	-3.90	-2.47
36	2.85	0.00	-3.53	-2.10
37	2.95	0.00	-3.17	-1.76
38	3.05	0.00	-2.83	-1.46
39	3.15	0.00	-2.50	-1.20
40	3.25	0.00	-2.19	-0.96
41	3.35	0.00	-1.90	-0.76
42	3.45	0.00	-1.63	-0.58
43	3.55	0.00	-1.36	-0.43
44	3.65	0.00	-1.12	-0.31
45	3.75	0.00	-0.89	-0.21
46	3.85	0.00	-0.68	-0.13
47	3.95	0.00	-0.49	-0.07
48	4.05	0.00	-0.31	-0.03
49	4.15	0.00	-0.15	-0.01
50	4.25	0.00	0.00	0.00

Verifiche strutturali*Verifiche a flessione*Elementi calcolati a trave

## Simbologia adottata

n°	indice sezione
Y	ordinata sezione espressa in [m]
B	larghezza sezione espresso in [cm]
H	altezza sezione espressa in [cm]
Afi	area ferri inferiori espresso in [cmq]

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

Afs	area ferri superiori espressa in [cmq]
M	momento agente espressa in [kNm]
N	sforzso normale agente espressa in [kN]
Mu	momento ultimi espresso in [kNm]
Nu	sforzso normale ultimo espressa in [kN]
FS	fattore di sicurezza (rapporto tra sollecitazione ultima e sollecitazione agente)

**Paramento**
**Combinazione n° 1 - STR (A1-M1-R3)**

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
1	0.00	100	50	15.71	25.13	0.38	3.06	0.00	0.00	1000.000
2	-0.10	100	51	15.71	25.13	0.39	4.30	0.00	0.00	1000.000
3	-0.20	100	52	15.71	25.13	0.40	5.56	0.00	0.00	1000.000
4	-0.30	100	53	15.71	25.13	0.44	6.85	0.00	0.00	1000.000
5	-0.40	100	54	15.71	25.13	0.50	8.15	0.00	0.00	1000.000
6	-0.50	100	55	15.71	25.13	0.59	9.48	544.35	8810.11	929.250
7	-0.60	100	56	15.71	25.13	0.71	10.83	581.00	8835.51	815.611
8	-0.70	100	57	15.71	25.13	0.88	12.21	633.91	8773.20	718.638
9	-0.80	100	57	15.71	25.13	1.10	13.61	699.80	8645.91	635.442
10	-0.90	100	58	15.71	25.13	1.38	15.03	774.30	8455.20	562.662
11	-1.00	100	59	15.71	25.13	1.71	16.47	854.82	8219.71	499.038
12	-1.10	100	60	15.71	25.13	2.12	17.94	938.51	7948.96	443.134
13	-1.20	100	61	15.71	25.13	2.60	19.43	1023.24	7654.03	393.971
14	-1.30	100	62	15.71	25.13	3.16	20.94	1107.09	7342.90	350.651
15	-1.40	100	63	15.71	25.13	3.80	22.48	1189.46	7027.83	312.674
16	-1.50	100	64	15.71	25.13	4.54	24.04	1269.07	6712.43	279.273
17	-1.60	100	65	15.71	25.13	5.38	25.62	1346.04	6404.93	250.026
18	-1.70	100	66	15.71	25.13	6.33	27.22	1416.99	6094.98	223.901
19	-1.80	100	67	15.71	25.13	7.39	28.85	1476.52	5767.59	199.921
20	-1.90	100	68	15.71	25.13	8.56	30.50	1522.37	5423.99	177.836
21	-2.00	100	69	15.71	25.13	9.86	32.17	1543.72	5037.28	156.566
22	-2.10	100	70	15.71	25.13	11.29	33.87	1549.45	4648.44	137.243
23	-2.20	100	71	15.71	25.13	12.86	35.59	1550.09	4290.97	120.568
24	-2.30	100	72	15.71	25.13	14.57	37.33	1539.70	3946.06	105.702
25	-2.40	100	72	15.71	25.13	16.43	39.10	1524.58	3628.93	92.818
26	-2.50	100	73	15.71	25.13	18.44	40.89	1504.37	3335.48	81.581
27	-2.60	100	74	15.71	25.13	20.62	42.70	1484.70	3074.79	72.014
28	-2.70	100	75	15.71	25.13	22.96	44.53	1457.55	2826.78	63.478
29	-2.80	100	76	15.71	25.13	25.48	46.39	1436.90	2615.98	56.393
30	-2.90	100	77	15.71	25.13	28.18	48.27	1414.61	2423.08	50.200
31	-3.00	100	78	15.71	25.13	31.07	50.17	1388.23	2242.02	44.687
32	-3.10	100	79	15.71	25.13	34.14	52.10	1367.33	2086.26	40.045
33	-3.20	100	80	15.71	25.13	37.42	54.05	1350.89	1950.96	36.097
34	-3.30	100	81	15.71	25.13	40.91	56.02	1329.45	1820.58	32.499
35	-3.40	100	82	15.71	25.13	44.60	58.01	1306.28	1699.06	29.287
36	-3.50	100	83	15.71	25.13	48.52	60.03	1287.29	1592.83	26.533
37	-3.60	100	84	15.71	25.13	52.65	62.07	1271.75	1499.23	24.153
38	-3.70	100	85	15.71	25.13	57.02	64.14	1259.10	1416.18	22.081
39	-3.80	100	86	15.71	25.13	61.63	66.22	1248.89	1342.03	20.265
40	-3.90	100	87	15.71	25.13	66.48	68.33	1240.77	1275.44	18.665
41	-4.00	100	87	15.71	25.13	71.57	70.47	1234.44	1215.35	17.247
42	-4.10	100	88	15.71	25.13	76.93	72.62	1229.66	1160.86	15.985
43	-4.20	100	89	15.71	25.13	82.54	74.80	1226.24	1111.26	14.856
44	-4.30	100	90	15.71	25.13	88.42	77.00	1224.00	1065.91	13.843
45	-4.40	100	91	15.71	25.13	94.58	79.23	1222.81	1024.32	12.929
46	-4.50	100	92	15.71	25.13	101.02	81.47	1222.55	986.05	12.103
47	-4.60	100	93	15.71	25.13	107.74	83.74	1223.12	950.72	11.353
48	-4.70	100	94	15.71	25.13	114.76	86.04	1224.43	918.02	10.670
49	-4.80	100	95	15.71	25.13	122.07	88.35	1226.40	887.67	10.047
50	-4.90	100	96	15.71	25.13	129.69	90.69	1228.98	859.43	9.476
51	-5.00	100	97	15.71	25.13	137.62	93.06	1232.10	833.10	8.953
52	-5.10	100	98	15.71	25.13	145.87	95.44	1234.79	807.89	8.465



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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
53	-5.20	100	99	15.71	25.13	154.45	97.85	1236.79	783.56	8.008
54	-5.30	100	100	15.71	25.13	163.35	100.28	1239.27	760.77	7.586
55	-5.40	100	101	15.71	25.13	172.60	102.74	1242.16	739.38	7.197
56	-5.50	100	102	15.71	25.13	182.18	105.21	1245.44	719.27	6.836
57	-5.60	100	102	15.71	25.13	192.11	107.71	1249.08	700.32	6.502
58	-5.70	100	103	15.71	25.13	202.40	110.24	1253.04	682.45	6.191
59	-5.80	100	104	15.71	25.13	213.05	112.78	1257.30	665.57	5.901
60	-5.90	100	105	15.71	25.13	224.07	115.35	1261.84	649.59	5.631
61	-6.00	100	106	15.71	25.13	235.46	117.94	1266.63	634.46	5.379
62	-6.10	100	107	15.71	25.13	247.23	120.56	1271.66	620.10	5.144
63	-6.20	100	108	15.71	25.13	259.39	123.20	1276.92	606.45	4.923
64	-6.30	100	109	15.71	25.13	271.95	125.86	1282.37	593.48	4.716
65	-6.40	100	110	15.71	25.13	284.90	128.54	1288.02	581.13	4.521
66	-6.50	100	111	15.71	25.13	298.25	131.25	1293.84	569.36	4.338
67	-6.60	100	112	15.71	50.27	312.02	133.98	2500.25	1073.57	8.013
68	-6.70	100	113	15.71	50.27	326.20	136.73	2513.89	1053.70	7.706
69	-6.80	100	114	15.71	50.27	340.81	139.50	2527.79	1034.70	7.417
70	-6.90	100	115	15.71	50.27	355.85	142.30	2541.94	1016.51	7.143
71	-7.00	100	116	15.71	50.27	371.33	145.13	2556.32	999.08	6.884
72	-7.10	100	116	15.71	50.27	387.25	147.97	2570.92	982.36	6.639
73	-7.20	100	117	31.42	50.27	403.61	150.84	2628.19	982.19	6.512
74	-7.30	100	118	15.71	25.13	420.44	153.73	1345.61	492.00	3.200
75	-7.40	100	119	15.71	25.13	437.72	156.64	1352.61	484.04	3.090
76	-7.50	100	120	15.71	25.13	455.47	159.58	1359.70	476.38	2.985
77	-7.60	100	121	15.71	25.13	473.70	162.54	1366.88	469.01	2.886
78	-7.70	100	122	15.71	25.13	492.41	165.52	1374.15	461.91	2.791
79	-7.80	100	123	15.71	25.13	511.60	168.52	1381.50	455.08	2.700
80	-7.90	100	124	15.71	25.13	531.28	171.55	1388.93	448.49	2.614
81	-8.00	100	125	15.71	25.13	551.47	174.60	1396.43	442.13	2.532

Combinazione n° 2 - STR (A1-M1-R3) H + V

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
1	0.00	100	50	15.71	25.13	0.41	3.28	0.00	0.00	1000.000
2	-0.10	100	51	15.71	25.13	0.46	4.52	0.00	0.00	1000.000
3	-0.20	100	52	15.71	25.13	0.62	5.78	0.00	0.00	1000.000
4	-0.30	100	53	15.71	25.13	0.89	7.06	809.89	6412.38	907.777
5	-0.40	100	54	15.71	25.13	1.28	8.37	902.79	5900.23	704.923
6	-0.50	100	55	15.71	25.13	1.79	9.70	991.89	5369.55	553.608
7	-0.60	100	56	15.71	25.13	2.43	11.05	1066.43	4849.36	438.803
8	-0.70	100	57	15.71	25.13	3.20	12.43	1110.88	4311.50	346.963
9	-0.80	100	57	15.71	25.13	4.11	13.82	1113.40	3744.07	270.829
10	-0.90	100	58	15.71	25.13	5.16	15.25	1099.73	3247.00	212.981
11	-1.00	100	59	15.71	25.13	6.36	16.69	1077.74	2826.26	169.344
12	-1.10	100	60	15.71	25.13	7.72	18.16	1055.19	2482.21	136.713
13	-1.20	100	61	15.71	25.13	9.23	19.65	1026.45	2184.60	111.197
14	-1.30	100	62	15.71	25.13	10.91	21.16	1007.04	1953.57	92.328
15	-1.40	100	63	15.71	25.13	12.75	22.69	982.97	1749.34	77.081
16	-1.50	100	64	15.71	25.13	14.77	24.25	965.38	1585.06	65.353
17	-1.60	100	65	15.71	25.13	16.97	25.84	952.52	1450.14	56.130
18	-1.70	100	66	15.71	25.13	19.35	27.44	934.68	1325.28	48.297
19	-1.80	100	67	15.71	25.13	21.92	29.07	921.64	1221.90	42.036
20	-1.90	100	68	15.71	25.13	24.69	30.72	912.25	1134.91	36.946
21	-2.00	100	69	15.71	25.13	27.66	32.39	905.70	1060.71	32.746
22	-2.10	100	70	15.71	25.13	30.83	34.09	901.47	996.75	29.240
23	-2.20	100	71	15.71	25.13	34.21	35.81	899.10	941.06	26.281
24	-2.30	100	72	15.71	25.13	37.81	37.55	898.28	892.15	23.759
25	-2.40	100	72	15.71	25.13	41.63	39.32	898.73	848.86	21.591
26	-2.50	100	73	15.71	25.13	45.67	41.10	900.26	810.29	19.713
27	-2.60	100	74	15.71	25.13	49.94	42.92	902.71	775.70	18.075
28	-2.70	100	75	15.71	25.13	54.45	44.75	905.94	744.53	16.638
29	-2.80	100	76	15.71	25.13	59.20	46.61	909.84	716.28	15.369
30	-2.90	100	77	15.71	25.13	64.20	48.49	914.34	690.57	14.242
31	-3.00	100	78	15.71	25.13	69.45	50.39	919.35	667.08	13.238
32	-3.10	100	79	15.71	25.13	74.95	52.32	924.82	645.54	12.339
33	-3.20	100	80	15.71	25.13	80.72	54.27	930.69	625.70	11.530

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## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
34	-3.30	100	81	15.71	25.13	86.75	56.24	936.92	607.38	10.800
35	-3.40	100	82	15.71	25.13	93.05	58.23	943.48	590.42	10.139
36	-3.50	100	83	15.71	25.13	99.64	60.25	949.93	574.43	9.534
37	-3.60	100	84	15.71	25.13	106.50	62.29	955.89	559.10	8.976
38	-3.70	100	85	15.71	25.13	113.65	64.36	962.09	544.79	8.465
39	-3.80	100	86	15.71	25.13	121.10	66.44	968.52	531.40	7.998
40	-3.90	100	87	15.71	25.13	128.84	68.55	975.15	518.86	7.569
41	-4.00	100	87	15.71	25.13	136.88	70.68	981.96	507.08	7.174
42	-4.10	100	88	15.71	25.13	145.23	72.84	988.94	495.99	6.809
43	-4.20	100	89	15.71	25.13	153.90	75.02	996.07	485.54	6.472
44	-4.30	100	90	15.71	25.13	162.88	77.22	1003.34	475.67	6.160
45	-4.40	100	91	15.71	25.13	172.19	79.45	1010.75	466.34	5.870
46	-4.50	100	92	15.71	25.13	181.83	81.69	1018.27	457.49	5.600
47	-4.60	100	93	15.71	25.13	191.80	83.96	1025.90	449.11	5.349
48	-4.70	100	94	15.71	25.13	202.11	86.26	1033.63	441.14	5.114
49	-4.80	100	95	15.71	25.13	212.76	88.57	1041.45	433.57	4.895
50	-4.90	100	96	15.71	25.13	223.76	90.91	1049.37	426.35	4.690
51	-5.00	100	97	15.71	25.13	235.12	93.27	1057.36	419.47	4.497
52	-5.10	100	98	15.71	25.13	246.83	95.66	1065.43	412.91	4.316
53	-5.20	100	99	15.71	25.13	258.91	98.07	1073.57	406.63	4.146
54	-5.30	100	100	15.71	25.13	271.37	100.50	1081.78	400.63	3.986
55	-5.40	100	101	15.71	25.13	284.19	102.95	1090.05	394.89	3.836
56	-5.50	100	102	15.71	25.13	297.40	105.43	1098.37	389.39	3.693
57	-5.60	100	102	15.71	25.13	310.99	107.93	1106.75	384.11	3.559
58	-5.70	100	103	15.71	25.13	324.97	110.45	1115.19	379.04	3.432
59	-5.80	100	104	15.71	25.13	339.35	113.00	1123.67	374.17	3.311
60	-5.90	100	105	15.71	25.13	354.13	115.57	1132.19	369.49	3.197
61	-6.00	100	106	15.71	25.13	369.31	118.16	1140.76	364.99	3.089
62	-6.10	100	107	15.71	25.13	384.90	120.78	1149.37	360.65	2.986
63	-6.20	100	108	15.71	25.13	400.92	123.41	1158.01	356.47	2.888
64	-6.30	100	109	15.71	25.13	417.35	126.07	1166.70	352.44	2.795
65	-6.40	100	110	15.71	25.13	434.21	128.76	1175.41	348.55	2.707
66	-6.50	100	111	15.71	25.13	451.50	131.47	1184.16	344.80	2.623
67	-6.60	100	112	15.71	50.27	469.23	134.20	2317.49	662.78	4.939
68	-6.70	100	113	15.71	50.27	487.40	136.95	2335.61	656.25	4.792
69	-6.80	100	114	15.71	50.27	506.01	139.72	2353.80	649.94	4.652
70	-6.90	100	115	15.71	50.27	525.08	142.52	2372.05	643.84	4.517
71	-7.00	100	116	15.71	50.27	544.61	145.34	2390.36	637.93	4.389
72	-7.10	100	116	15.71	50.27	564.60	148.19	2408.74	632.21	4.266
73	-7.20	100	117	31.42	50.27	585.06	151.06	2463.43	636.03	4.211
74	-7.30	100	118	15.71	25.13	605.99	153.95	1255.15	318.86	2.071
75	-7.40	100	119	15.71	25.13	627.40	156.86	1264.13	316.05	2.015
76	-7.50	100	120	15.71	25.13	649.29	159.80	1273.13	313.33	1.961
77	-7.60	100	121	15.71	25.13	671.67	162.75	1282.15	310.68	1.909
78	-7.70	100	122	15.71	25.13	694.54	165.74	1291.19	308.11	1.859
79	-7.80	100	123	15.71	25.13	717.91	168.74	1300.24	305.62	1.811
80	-7.90	100	124	15.71	25.13	741.79	171.77	1309.31	303.19	1.765
81	-8.00	100	125	15.71	25.13	766.17	174.82	1318.40	300.83	1.721

## Combinazione n° 3 - STR (A1-M1-R3)

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
1	0.00	100	50	15.71	25.13	0.38	3.06	0.00	0.00	1000.000
2	-0.10	100	51	15.71	25.13	0.44	4.30	0.00	0.00	1000.000
3	-0.20	100	52	15.71	25.13	0.60	5.56	0.00	0.00	1000.000
4	-0.30	100	53	15.71	25.13	0.88	6.85	817.08	6344.54	926.819
5	-0.40	100	54	15.71	25.13	1.29	8.15	913.78	5792.14	710.544
6	-0.50	100	55	15.71	25.13	1.82	9.48	1004.73	5234.14	552.074
7	-0.60	100	56	15.71	25.13	2.49	10.83	1076.02	4682.32	432.227
8	-0.70	100	57	15.71	25.13	3.30	12.21	1104.47	4084.68	334.588
9	-0.80	100	57	15.71	25.13	4.26	13.61	1099.27	3510.46	258.006
10	-0.90	100	58	15.71	25.13	5.37	15.03	1077.85	3013.56	200.541
11	-1.00	100	59	15.71	25.13	6.65	16.47	1048.38	2596.90	157.664
12	-1.10	100	60	15.71	25.13	8.09	17.94	1019.43	2260.09	125.994
13	-1.20	100	61	15.71	25.13	9.71	19.43	994.20	1990.07	102.434
14	-1.30	100	62	15.71	25.13	11.50	20.94	969.07	1764.63	84.267

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## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
15	-1.40	100	63	15.71	25.13	13.48	22.48	947.67	1580.18	70.303
16	-1.50	100	64	15.71	25.13	15.65	24.04	932.99	1432.77	59.611
17	-1.60	100	65	15.71	25.13	18.02	25.62	912.89	1297.68	50.657
18	-1.70	100	66	15.71	25.13	20.60	27.22	898.29	1187.32	43.616
19	-1.80	100	67	15.71	25.13	23.38	28.85	887.82	1095.52	37.974
20	-1.90	100	68	15.71	25.13	26.38	30.50	880.52	1017.98	33.376
21	-2.00	100	69	15.71	25.13	29.61	32.17	875.69	951.63	29.578
22	-2.10	100	70	15.71	25.13	33.06	33.87	872.89	894.28	26.403
23	-2.20	100	71	15.71	25.13	36.75	35.59	871.73	844.22	23.721
24	-2.30	100	72	15.71	25.13	40.68	37.33	871.93	800.16	21.434
25	-2.40	100	72	15.71	25.13	44.86	39.10	873.27	761.09	19.467
26	-2.50	100	73	15.71	25.13	49.29	40.89	875.56	726.22	17.762
27	-2.60	100	74	15.71	25.13	53.99	42.70	878.66	694.91	16.275
28	-2.70	100	75	15.71	25.13	58.95	44.53	882.47	666.64	14.970
29	-2.80	100	76	15.71	25.13	64.18	46.39	886.88	641.00	13.818
30	-2.90	100	77	15.71	25.13	69.70	48.27	891.82	617.64	12.796
31	-3.00	100	78	15.71	25.13	75.49	50.17	897.23	596.28	11.885
32	-3.10	100	79	15.71	25.13	81.59	52.10	903.04	576.66	11.069
33	-3.20	100	80	15.71	25.13	87.97	54.05	909.22	558.59	10.335
34	-3.30	100	81	15.71	25.13	94.67	56.02	915.29	541.63	9.669
35	-3.40	100	82	15.71	25.13	101.67	58.01	920.96	525.52	9.058
36	-3.50	100	83	15.71	25.13	108.99	60.03	926.91	510.55	8.505
37	-3.60	100	84	15.71	25.13	116.63	62.07	933.10	496.61	8.000
38	-3.70	100	85	15.71	25.13	124.60	64.14	939.51	483.59	7.540
39	-3.80	100	86	15.71	25.13	132.91	66.22	946.13	471.41	7.118
40	-3.90	100	87	15.71	25.13	141.56	68.33	952.92	459.99	6.732
41	-4.00	100	87	15.71	25.13	150.56	70.47	959.88	449.26	6.376
42	-4.10	100	88	15.71	25.13	159.91	72.62	967.00	439.16	6.047
43	-4.20	100	89	15.71	25.13	169.62	74.80	974.25	429.63	5.744
44	-4.30	100	90	15.71	25.13	179.70	77.00	981.63	420.63	5.463
45	-4.40	100	91	15.71	25.13	190.15	79.23	989.12	412.12	5.202
46	-4.50	100	92	15.71	25.13	200.98	81.47	996.72	404.06	4.959
47	-4.60	100	93	15.71	25.13	212.19	83.74	1004.43	396.41	4.734
48	-4.70	100	94	15.71	25.13	223.80	86.04	1012.22	389.15	4.523
49	-4.80	100	95	15.71	25.13	235.78	88.35	1020.12	382.26	4.326
50	-4.90	100	96	15.71	25.13	248.16	90.69	1028.09	375.73	4.143
51	-5.00	100	97	15.71	25.13	260.93	93.06	1036.16	369.53	3.971
52	-5.10	100	98	15.71	25.13	274.08	95.44	1044.31	363.65	3.810
53	-5.20	100	99	15.71	25.13	287.62	97.85	1052.55	358.08	3.659
54	-5.30	100	100	15.71	25.13	301.55	100.28	1060.86	352.79	3.518
55	-5.40	100	101	15.71	25.13	315.86	102.74	1069.24	347.77	3.385
56	-5.50	100	102	15.71	25.13	330.57	105.21	1077.69	343.00	3.260
57	-5.60	100	102	15.71	25.13	345.68	107.71	1086.21	338.46	3.142
58	-5.70	100	103	15.71	25.13	361.19	110.24	1094.78	334.13	3.031
59	-5.80	100	104	15.71	25.13	377.11	112.78	1103.41	330.00	2.926
60	-5.90	100	105	15.71	25.13	393.45	115.35	1112.08	326.04	2.827
61	-6.00	100	106	15.71	25.13	410.21	117.94	1120.80	322.25	2.732
62	-6.10	100	107	15.71	25.13	427.40	120.56	1129.55	318.62	2.643
63	-6.20	100	108	15.71	25.13	445.03	123.20	1138.35	315.13	2.558
64	-6.30	100	109	15.71	25.13	463.10	125.86	1147.18	311.77	2.477
65	-6.40	100	110	15.71	25.13	481.61	128.54	1156.04	308.54	2.400
66	-6.50	100	111	15.71	25.13	500.59	131.25	1164.94	305.43	2.327
67	-6.60	100	112	15.71	50.27	520.03	133.98	2284.47	588.56	4.393
68	-6.70	100	113	15.71	50.27	539.93	136.73	2302.82	583.16	4.265
69	-6.80	100	114	15.71	50.27	560.31	139.50	2321.24	577.94	4.143
70	-6.90	100	115	15.71	50.27	581.17	142.30	2339.71	572.90	4.026
71	-7.00	100	116	15.71	50.27	602.52	145.13	2358.24	568.02	3.914
72	-7.10	100	116	15.71	50.27	624.36	147.97	2376.82	563.30	3.807
73	-7.20	100	117	31.42	50.27	646.70	150.84	2430.53	566.90	3.758
74	-7.30	100	118	15.71	25.13	669.54	153.73	1236.94	284.00	1.847
75	-7.40	100	119	15.71	25.13	692.90	156.64	1246.03	281.68	1.798
76	-7.50	100	120	15.71	25.13	716.78	159.58	1255.13	279.43	1.751
77	-7.60	100	121	15.71	25.13	741.18	162.54	1264.25	277.24	1.706
78	-7.70	100	122	15.71	25.13	766.11	165.52	1273.39	275.11	1.662
79	-7.80	100	123	15.71	25.13	791.59	168.52	1282.53	273.04	1.620
80	-7.90	100	124	15.71	25.13	817.60	171.55	1291.69	271.03	1.580
81	-8.00	100	125	15.71	25.13	844.17	174.60	1300.86	269.06	1.541

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## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

Combinazione n° 4 - STR (A1-M1-R3) H - V

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
1	0.00	100	50	15.71	25.13	0.38	3.06	0.00	0.00	1000.000
2	-0.10	100	51	15.71	25.13	0.42	4.30	0.00	0.00	1000.000
3	-0.20	100	52	15.71	25.13	0.54	5.56	0.00	0.00	1000.000
4	-0.30	100	53	15.71	25.13	0.75	6.85	0.00	0.00	1000.000
5	-0.40	100	54	15.71	25.13	1.05	8.15	838.16	6501.10	797.515
6	-0.50	100	55	15.71	25.13	1.45	9.48	925.08	6056.60	638.823
7	-0.60	100	56	15.71	25.13	1.95	10.83	1008.21	5608.04	517.681
8	-0.70	100	57	15.71	25.13	2.55	12.21	1083.82	5179.67	424.282
9	-0.80	100	57	15.71	25.13	3.27	13.61	1144.82	4757.58	349.664
10	-0.90	100	58	15.71	25.13	4.11	15.03	1168.90	4272.31	284.306
11	-1.00	100	59	15.71	25.13	5.07	16.47	1171.32	3804.03	230.952
12	-1.10	100	60	15.71	25.13	6.16	17.94	1162.14	3384.12	188.656
13	-1.20	100	61	15.71	25.13	7.38	19.43	1147.82	3020.95	155.495
14	-1.30	100	62	15.71	25.13	8.74	20.94	1127.99	2702.09	129.035
15	-1.40	100	63	15.71	25.13	10.25	22.48	1107.06	2428.71	108.055
16	-1.50	100	64	15.71	25.13	11.90	24.04	1087.03	2195.99	91.365
17	-1.60	100	65	15.71	25.13	13.70	25.62	1071.57	2003.13	78.195
18	-1.70	100	66	15.71	25.13	15.67	27.22	1051.21	1826.27	67.089
19	-1.80	100	67	15.71	25.13	17.80	28.85	1036.82	1680.59	58.254
20	-1.90	100	68	15.71	25.13	20.10	30.50	1026.88	1558.44	51.096
21	-2.00	100	69	15.71	25.13	22.57	32.17	1009.99	1439.74	44.749
22	-2.10	100	70	15.71	25.13	25.22	33.87	996.78	1338.51	39.519
23	-2.20	100	71	15.71	25.13	28.06	35.59	986.90	1251.70	35.170
24	-2.30	100	72	15.71	25.13	31.09	37.33	979.70	1176.47	31.514
25	-2.40	100	72	15.71	25.13	34.31	39.10	974.68	1110.66	28.408
26	-2.50	100	73	15.71	25.13	37.73	40.89	971.47	1052.63	25.746
27	-2.60	100	74	15.71	25.13	41.36	42.70	969.77	1001.08	23.446
28	-2.70	100	75	15.71	25.13	45.20	44.53	969.35	954.99	21.445
29	-2.80	100	76	15.71	25.13	49.26	46.39	970.01	913.56	19.694
30	-2.90	100	77	15.71	25.13	53.53	48.27	971.62	876.11	18.151
31	-3.00	100	78	15.71	25.13	58.03	50.17	974.03	842.11	16.784
32	-3.10	100	79	15.71	25.13	62.76	52.10	977.16	811.10	15.569
33	-3.20	100	80	15.71	25.13	67.73	54.05	980.91	782.70	14.482
34	-3.30	100	81	15.71	25.13	72.94	56.02	985.20	756.62	13.506
35	-3.40	100	82	15.71	25.13	78.40	58.01	989.99	732.56	12.627
36	-3.50	100	83	15.71	25.13	84.11	60.03	995.22	710.32	11.832
37	-3.60	100	84	15.71	25.13	90.08	62.07	1000.83	689.70	11.111
38	-3.70	100	85	15.71	25.13	96.30	64.14	1006.80	670.52	10.455
39	-3.80	100	86	15.71	25.13	102.80	66.22	1013.09	652.65	9.855
40	-3.90	100	87	15.71	25.13	109.57	68.33	1019.25	635.68	9.303
41	-4.00	100	87	15.71	25.13	116.61	70.47	1024.80	619.27	8.788
42	-4.10	100	88	15.71	25.13	123.94	72.62	1030.59	603.88	8.315
43	-4.20	100	89	15.71	25.13	131.55	74.80	1036.62	589.41	7.880
44	-4.30	100	90	15.71	25.13	139.46	77.00	1042.86	575.80	7.478
45	-4.40	100	91	15.71	25.13	147.67	79.23	1049.29	562.96	7.106
46	-4.50	100	92	15.71	25.13	156.18	81.47	1055.90	550.83	6.761
47	-4.60	100	93	15.71	25.13	165.00	83.74	1062.67	539.36	6.440
48	-4.70	100	94	15.71	25.13	174.13	86.04	1069.59	528.49	6.142
49	-4.80	100	95	15.71	25.13	183.58	88.35	1076.65	518.17	5.865
50	-4.90	100	96	15.71	25.13	193.36	90.69	1083.84	508.38	5.605
51	-5.00	100	97	15.71	25.13	203.46	93.06	1091.15	499.06	5.363
52	-5.10	100	98	15.71	25.13	213.90	95.44	1098.56	490.18	5.136
53	-5.20	100	99	15.71	25.13	224.68	97.85	1106.09	481.72	4.923
54	-5.30	100	100	15.71	25.13	235.80	100.28	1113.70	473.64	4.723
55	-5.40	100	101	15.71	25.13	247.27	102.74	1121.41	465.92	4.535
56	-5.50	100	102	15.71	25.13	259.10	105.21	1129.20	458.54	4.358
57	-5.60	100	102	15.71	25.13	271.28	107.71	1137.07	451.47	4.191
58	-5.70	100	103	15.71	25.13	283.84	110.24	1145.02	444.70	4.034
59	-5.80	100	104	15.71	25.13	296.76	112.78	1153.03	438.20	3.885
60	-5.90	100	105	15.71	25.13	310.06	115.35	1161.11	431.97	3.745
61	-6.00	100	106	15.71	25.13	323.74	117.94	1169.25	425.98	3.612
62	-6.10	100	107	15.71	25.13	337.80	120.56	1177.45	420.22	3.486
63	-6.20	100	108	15.71	25.13	352.25	123.20	1185.70	414.68	3.366
64	-6.30	100	109	15.71	25.13	367.11	125.86	1194.00	409.35	3.252
65	-6.40	100	110	15.71	25.13	382.36	128.54	1202.36	404.21	3.145
66	-6.50	100	111	15.71	25.13	398.02	131.25	1210.76	399.25	3.042
67	-6.60	100	112	15.71	50.27	414.09	133.98	2362.72	764.45	5.706

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## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
68	-6.70	100	113	15.71	50.27	430.57	136.73	2380.29	755.86	5.528
69	-6.80	100	114	15.71	50.27	447.48	139.50	2397.95	747.57	5.359
70	-6.90	100	115	15.71	50.27	464.82	142.30	2415.69	739.56	5.197
71	-7.00	100	116	15.71	50.27	482.59	145.13	2433.50	731.81	5.043
72	-7.10	100	116	15.71	50.27	500.79	147.97	2451.40	724.31	4.895
73	-7.20	100	117	31.42	50.27	519.44	150.84	2507.23	728.06	4.827
74	-7.30	100	118	15.71	25.13	538.54	153.73	1279.36	365.20	2.376
75	-7.40	100	119	15.71	25.13	558.09	156.64	1288.09	361.53	2.308
76	-7.50	100	120	15.71	25.13	578.09	159.58	1296.84	357.98	2.243
77	-7.60	100	121	15.71	25.13	598.56	162.54	1305.62	354.53	2.181
78	-7.70	100	122	15.71	25.13	619.50	165.52	1314.42	351.19	2.122
79	-7.80	100	123	15.71	25.13	640.91	168.52	1323.25	347.94	2.065
80	-7.90	100	124	15.71	25.13	662.80	171.55	1332.11	344.79	2.010
81	-8.00	100	125	15.71	25.13	685.17	174.60	1340.98	341.72	1.957

## Combinazione n° 13 - ECC

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
1	0.00	100	50	15.71	25.13	12.88	3.06	518.53	123.35	40.249
2	-0.10	100	51	15.71	25.13	14.14	4.30	538.22	163.79	38.072
3	-0.20	100	52	15.71	25.13	15.40	5.56	557.64	201.40	36.208
4	-0.30	100	53	15.71	25.13	16.68	6.85	576.87	236.74	34.583
5	-0.40	100	54	15.71	25.13	17.98	8.15	595.98	270.19	33.145
6	-0.50	100	55	15.71	25.13	19.31	9.48	615.00	302.02	31.855
7	-0.60	100	56	15.71	25.13	20.66	10.83	633.95	332.39	30.683
8	-0.70	100	57	15.71	25.13	22.05	12.21	652.84	361.44	29.606
9	-0.80	100	57	15.71	25.13	23.48	13.61	671.67	389.22	28.606
10	-0.90	100	58	15.71	25.13	24.95	15.03	690.44	415.78	27.669
11	-1.00	100	59	15.71	25.13	26.48	16.47	709.12	441.15	26.783
12	-1.10	100	60	15.71	25.13	28.05	17.94	727.72	465.33	25.941
13	-1.20	100	61	15.71	25.13	29.69	19.43	746.22	488.31	25.135
14	-1.30	100	62	15.71	25.13	31.39	20.94	764.59	510.10	24.359
15	-1.40	100	63	15.71	25.13	33.16	22.48	782.81	530.67	23.610
16	-1.50	100	64	15.71	25.13	35.00	24.04	800.88	550.03	22.884
17	-1.60	100	65	15.71	25.13	36.92	25.62	818.77	568.17	22.179
18	-1.70	100	66	15.71	25.13	38.92	27.22	836.47	585.08	21.493
19	-1.80	100	67	15.71	25.13	41.01	28.85	853.96	600.76	20.824
20	-1.90	100	68	15.71	25.13	43.19	30.50	871.22	615.23	20.171
21	-2.00	100	69	15.71	25.13	45.47	32.17	888.26	628.50	19.535
22	-2.10	100	70	15.71	25.13	47.85	33.87	905.05	640.58	18.913
23	-2.20	100	71	15.71	25.13	50.34	35.59	921.58	651.51	18.306
24	-2.30	100	72	15.71	25.13	52.94	37.33	937.86	661.31	17.714
25	-2.40	100	72	15.71	25.13	55.66	39.10	953.88	670.01	17.137
26	-2.50	100	73	15.71	25.13	58.50	40.89	969.64	677.66	16.575
27	-2.60	100	74	15.71	25.13	61.47	42.70	985.14	684.30	16.027
28	-2.70	100	75	15.71	25.13	64.57	44.53	1000.37	689.97	15.494
29	-2.80	100	76	15.71	25.13	67.80	46.39	1015.35	694.71	14.976
30	-2.90	100	77	15.71	25.13	71.17	48.27	1030.07	698.59	14.473
31	-3.00	100	78	15.71	25.13	74.69	50.17	1044.55	701.63	13.985
32	-3.10	100	79	15.71	25.13	78.36	52.10	1058.79	703.91	13.511
33	-3.20	100	80	15.71	25.13	82.19	54.05	1072.79	705.46	13.053
34	-3.30	100	81	15.71	25.13	86.18	56.02	1086.56	706.33	12.609
35	-3.40	100	82	15.71	25.13	90.33	58.01	1100.12	706.58	12.179
36	-3.50	100	83	15.71	25.13	94.65	60.03	1113.48	706.25	11.764
37	-3.60	100	84	15.71	25.13	99.14	62.07	1126.63	705.38	11.364
38	-3.70	100	85	15.71	25.13	103.82	64.14	1139.59	704.02	10.977
39	-3.80	100	86	15.71	25.13	108.68	66.22	1152.38	702.21	10.604
40	-3.90	100	87	15.71	25.13	113.73	68.33	1164.99	700.00	10.244
41	-4.00	100	87	15.71	25.13	118.97	70.47	1177.45	697.41	9.897
42	-4.10	100	88	15.71	25.13	124.41	72.62	1189.75	694.49	9.563
43	-4.20	100	89	15.71	25.13	130.06	74.80	1201.91	691.27	9.242
44	-4.30	100	90	15.71	25.13	135.91	77.00	1213.93	687.78	8.932
45	-4.40	100	91	15.71	25.13	141.98	79.23	1225.83	684.05	8.634
46	-4.50	100	92	15.71	25.13	148.26	81.47	1237.62	680.11	8.348
47	-4.60	100	93	15.71	25.13	154.77	83.74	1249.29	675.99	8.072
48	-4.70	100	94	15.71	25.13	161.50	86.04	1260.86	671.70	7.807

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## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
49	-4.80	100	95	15.71	25.13	168.47	88.35	1272.34	667.28	7.552
50	-4.90	100	96	15.71	25.13	175.68	90.69	1283.73	662.73	7.307
51	-5.00	100	97	15.71	25.13	183.13	93.06	1295.04	658.08	7.072
52	-5.10	100	98	15.71	25.13	190.82	95.44	1306.27	653.35	6.846
53	-5.20	100	99	15.71	25.13	198.77	97.85	1317.43	648.55	6.628
54	-5.30	100	100	15.71	25.13	206.97	100.28	1328.53	643.70	6.419
55	-5.40	100	101	15.71	25.13	215.44	102.74	1339.57	638.80	6.218
56	-5.50	100	102	15.71	25.13	224.17	105.21	1350.55	633.88	6.025
57	-5.60	100	102	15.71	25.13	233.17	107.71	1361.49	628.94	5.839
58	-5.70	100	103	15.71	25.13	242.45	110.24	1372.37	623.98	5.660
59	-5.80	100	104	15.71	25.13	252.01	112.78	1383.22	619.03	5.489
60	-5.90	100	105	15.71	25.13	261.85	115.35	1394.03	614.09	5.324
61	-6.00	100	106	15.71	25.13	271.99	117.94	1404.80	609.16	5.165
62	-6.10	100	107	15.71	25.13	282.42	120.56	1415.54	604.25	5.012
63	-6.20	100	108	15.71	25.13	293.15	123.20	1426.25	599.37	4.865
64	-6.30	100	109	15.71	25.13	304.19	125.86	1436.94	594.52	4.724
65	-6.40	100	110	15.71	25.13	315.54	128.54	1447.60	589.71	4.588
66	-6.50	100	111	15.71	25.13	327.20	131.25	1458.24	584.94	4.457
67	-6.60	100	112	15.71	50.27	339.18	133.98	2858.04	1128.94	8.426
68	-6.70	100	113	15.71	50.27	351.48	136.73	2880.40	1120.50	8.195
69	-6.80	100	114	15.71	50.27	364.12	139.50	2902.76	1112.14	7.972
70	-6.90	100	115	15.71	50.27	377.08	142.30	2925.11	1103.88	7.757
71	-7.00	100	116	15.71	50.27	390.39	145.13	2947.47	1095.71	7.550
72	-7.10	100	116	15.71	50.27	404.04	147.97	2969.84	1087.63	7.350
73	-7.20	100	117	31.42	50.27	418.04	150.84	3029.24	1093.02	7.246
74	-7.30	100	118	15.71	25.13	432.39	153.73	1542.84	548.52	3.568
75	-7.40	100	119	15.71	25.13	447.10	156.64	1553.37	544.22	3.474
76	-7.50	100	120	15.71	25.13	462.17	159.58	1563.90	539.98	3.384
77	-7.60	100	121	15.71	25.13	477.61	162.54	1574.42	535.79	3.296
78	-7.70	100	122	15.71	25.13	493.43	165.52	1584.94	531.66	3.212
79	-7.80	100	123	15.71	25.13	509.62	168.52	1595.46	527.60	3.131
80	-7.90	100	124	15.71	25.13	526.19	171.55	1605.97	523.59	3.052
81	-8.00	100	125	15.71	25.13	543.15	174.60	1616.49	519.64	2.976

## Mensola valle

## Combinazione n° 1 - STR (A1-M1-R3)

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
1	-0.75	100	50	10.18	10.18	0.00	0.00	0.00	0.00	1000.000
2	-0.67	100	50	10.18	10.18	-0.04	0.00	0.00	0.00	1000.000
3	-0.58	100	50	10.18	10.18	-0.17	0.00	0.00	0.00	1000.000
4	-0.50	100	50	10.18	10.18	-0.38	0.00	-176.32	0.00	460.264

## Combinazione n° 2 - STR (A1-M1-R3) H + V

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
1	-0.75	100	50	10.18	10.18	0.00	0.00	0.00	0.00	1000.000
2	-0.67	100	50	10.18	10.18	-0.05	0.00	0.00	0.00	1000.000
3	-0.58	100	50	10.18	10.18	-0.18	0.00	-176.32	0.00	966.724
4	-0.50	100	50	10.18	10.18	-0.41	0.00	-176.32	0.00	429.655

## Combinazione n° 3 - STR (A1-M1-R3)

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
1	-0.75	100	50	10.18	10.18	0.00	0.00	0.00	0.00	1000.000
2	-0.67	100	50	10.18	10.18	-0.04	0.00	0.00	0.00	1000.000

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
3	-0.58	100	50	10.18	10.18	-0.17	0.00	0.00	0.00	1000.000
4	-0.50	100	50	10.18	10.18	-0.38	0.00	-176.32	0.00	460.264

Combinazione n° 4 - STR (A1-M1-R3) H - V

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
1	-0.75	100	50	10.18	10.18	0.00	0.00	0.00	0.00	1000.000
2	-0.67	100	50	10.18	10.18	-0.04	0.00	0.00	0.00	1000.000
3	-0.58	100	50	10.18	10.18	-0.17	0.00	0.00	0.00	1000.000
4	-0.50	100	50	10.18	10.18	-0.38	0.00	-176.32	0.00	460.264

Combinazione n° 13 - ECC

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
1	-0.75	100	50	10.18	10.18	0.00	0.00	0.00	0.00	1000.000
2	-0.67	100	50	10.18	10.18	-0.04	0.00	0.00	0.00	1000.000
3	-0.58	100	50	10.18	10.18	-0.17	0.00	0.00	0.00	1000.000
4	-0.50	100	50	10.18	10.18	-0.38	0.00	-204.21	0.00	533.078

**Fondazione**Combinazione n° 1 - STR (A1-M1-R3)

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
1	-1.75	100	125	25.45	25.45	0.00	0.00	0.00	0.00	1000.000
2	-1.65	100	125	25.45	25.45	0.74	0.00	0.00	0.00	1000.000
3	-1.56	100	125	25.45	25.45	2.97	0.00	1168.68	0.00	392.938
4	-1.46	100	125	25.45	25.45	6.69	0.00	1168.68	0.00	174.772
5	-1.37	100	125	25.45	25.45	11.88	0.00	1168.68	0.00	98.384
6	-1.27	100	125	25.45	25.45	18.55	0.00	1168.68	0.00	63.014
7	-1.17	100	125	25.45	25.45	26.69	0.00	1168.68	0.00	43.793
8	-1.08	100	125	25.45	25.45	36.30	0.00	1168.68	0.00	32.199
9	-0.98	100	125	25.45	25.45	47.37	0.00	1168.68	0.00	24.671
10	-0.88	100	125	25.45	25.45	59.91	0.00	1168.68	0.00	19.508
11	-0.79	100	125	25.45	25.45	73.90	0.00	1168.68	0.00	15.814
12	-0.69	100	125	25.45	25.45	89.36	0.00	1168.68	0.00	13.079
13	-0.60	100	125	25.45	25.45	106.26	0.00	1168.68	0.00	10.998
14	-0.50	100	125	25.45	25.45	124.61	0.00	1168.68	0.00	9.379
15	0.75	100	125	25.45	25.45	-336.41	0.00	-1168.68	0.00	3.474
16	0.85	100	125	25.45	25.45	-318.20	0.00	-1168.68	0.00	3.673
17	0.95	100	125	25.45	25.45	-300.45	0.00	-1168.68	0.00	3.890
18	1.05	100	125	25.45	25.45	-283.16	0.00	-1168.68	0.00	4.127
19	1.15	100	125	25.45	25.45	-266.35	0.00	-1168.68	0.00	4.388
20	1.25	100	125	25.45	25.45	-250.02	0.00	-1168.68	0.00	4.674
21	1.35	100	125	25.45	25.45	-234.16	0.00	-1168.68	0.00	4.991
22	1.45	100	125	25.45	25.45	-218.79	0.00	-1168.68	0.00	5.342
23	1.55	100	125	25.45	25.45	-203.90	0.00	-1168.68	0.00	5.732
24	1.65	100	125	25.45	25.45	-189.51	0.00	-1168.68	0.00	6.167
25	1.75	100	125	25.45	25.45	-175.61	0.00	-1168.68	0.00	6.655
26	1.85	100	125	25.45	25.45	-162.21	0.00	-1168.68	0.00	7.205
27	1.95	100	125	25.45	25.45	-149.31	0.00	-1168.68	0.00	7.827
28	2.05	100	125	25.45	25.45	-136.91	0.00	-1168.68	0.00	8.536
29	2.15	100	125	25.45	25.45	-125.03	0.00	-1168.68	0.00	9.347
30	2.25	100	125	25.45	25.45	-113.66	0.00	-1168.68	0.00	10.282
31	2.35	100	125	25.45	25.45	-102.81	0.00	-1168.68	0.00	11.368
32	2.45	100	125	25.45	25.45	-92.48	0.00	-1168.68	0.00	12.638
33	2.55	100	125	25.45	25.45	-82.67	0.00	-1168.68	0.00	14.137

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## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
34	2.65	100	125	25.45	25.45	-73.39	0.00	-1168.68	0.00	15.924
35	2.75	100	125	25.45	25.45	-64.65	0.00	-1168.68	0.00	18.078
36	2.85	100	125	25.45	25.45	-56.44	0.00	-1168.68	0.00	20.707
37	2.95	100	125	25.45	25.45	-48.77	0.00	-1168.68	0.00	23.962
38	3.05	100	125	25.45	25.45	-41.65	0.00	-1168.68	0.00	28.060
39	3.15	100	125	25.45	25.45	-35.07	0.00	-1168.68	0.00	33.321
40	3.25	100	125	25.45	25.45	-29.05	0.00	-1168.68	0.00	40.230
41	3.35	100	125	25.45	25.45	-23.58	0.00	-1168.68	0.00	49.558
42	3.45	100	125	25.45	25.45	-18.67	0.00	-1168.68	0.00	62.586
43	3.55	100	125	25.45	25.45	-14.33	0.00	-1168.68	0.00	81.567
44	3.65	100	125	25.45	25.45	-10.55	0.00	-1168.68	0.00	110.782
45	3.75	100	125	25.45	25.45	-7.34	0.00	-1168.68	0.00	159.181
46	3.85	100	125	25.45	25.45	-4.71	0.00	-1168.68	0.00	248.183
47	3.95	100	125	25.45	25.45	-2.65	0.00	-1168.68	0.00	440.264
48	4.05	100	125	25.45	25.45	-1.18	0.00	-1168.68	0.00	988.466
49	4.15	100	125	25.45	25.45	-0.30	0.00	0.00	0.00	1000.000
50	4.25	100	125	25.45	25.45	0.00	0.00	0.00	0.00	1000.000

## Combinazione n° 2 - STR (A1-M1-R3) H + V

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
1	-1.75	100	125	25.45	25.45	0.00	0.00	0.00	0.00	1000.000
2	-1.65	100	125	25.45	25.45	1.39	0.00	1168.68	0.00	838.251
3	-1.56	100	125	25.45	25.45	5.55	0.00	1168.68	0.00	210.609
4	-1.46	100	125	25.45	25.45	12.42	0.00	1168.68	0.00	94.074
5	-1.37	100	125	25.45	25.45	21.97	0.00	1168.68	0.00	53.184
6	-1.27	100	125	25.45	25.45	34.16	0.00	1168.68	0.00	34.210
7	-1.17	100	125	25.45	25.45	48.94	0.00	1168.68	0.00	23.878
8	-1.08	100	125	25.45	25.45	66.28	0.00	1168.68	0.00	17.633
9	-0.98	100	125	25.45	25.45	86.12	0.00	1168.68	0.00	13.570
10	-0.88	100	125	25.45	25.45	108.44	0.00	1168.68	0.00	10.777
11	-0.79	100	125	25.45	25.45	133.18	0.00	1168.68	0.00	8.775
12	-0.69	100	125	25.45	25.45	160.31	0.00	1168.68	0.00	7.290
13	-0.60	100	125	25.45	25.45	189.79	0.00	1168.68	0.00	6.158
14	-0.50	100	125	25.45	25.45	221.57	0.00	1168.68	0.00	5.275
15	0.75	100	125	25.45	25.45	-458.72	0.00	-1168.68	0.00	2.548
16	0.85	100	125	25.45	25.45	-441.89	0.00	-1168.68	0.00	2.645
17	0.95	100	125	25.45	25.45	-424.77	0.00	-1168.68	0.00	2.751
18	1.05	100	125	25.45	25.45	-407.40	0.00	-1168.68	0.00	2.869
19	1.15	100	125	25.45	25.45	-389.82	0.00	-1168.68	0.00	2.998
20	1.25	100	125	25.45	25.45	-372.09	0.00	-1168.68	0.00	3.141
21	1.35	100	125	25.45	25.45	-354.26	0.00	-1168.68	0.00	3.299
22	1.45	100	125	25.45	25.45	-336.36	0.00	-1168.68	0.00	3.475
23	1.55	100	125	25.45	25.45	-318.44	0.00	-1168.68	0.00	3.670
24	1.65	100	125	25.45	25.45	-300.56	0.00	-1168.68	0.00	3.888
25	1.75	100	125	25.45	25.45	-282.75	0.00	-1168.68	0.00	4.133
26	1.85	100	125	25.45	25.45	-265.08	0.00	-1168.68	0.00	4.409
27	1.95	100	125	25.45	25.45	-247.57	0.00	-1168.68	0.00	4.721
28	2.05	100	125	25.45	25.45	-230.28	0.00	-1168.68	0.00	5.075
29	2.15	100	125	25.45	25.45	-213.26	0.00	-1168.68	0.00	5.480
30	2.25	100	125	25.45	25.45	-196.55	0.00	-1168.68	0.00	5.946
31	2.35	100	125	25.45	25.45	-180.20	0.00	-1168.68	0.00	6.485
32	2.45	100	125	25.45	25.45	-164.26	0.00	-1168.68	0.00	7.115
33	2.55	100	125	25.45	25.45	-148.76	0.00	-1168.68	0.00	7.856
34	2.65	100	125	25.45	25.45	-133.77	0.00	-1168.68	0.00	8.736
35	2.75	100	125	25.45	25.45	-119.33	0.00	-1168.68	0.00	9.794
36	2.85	100	125	25.45	25.45	-105.48	0.00	-1168.68	0.00	11.080
37	2.95	100	125	25.45	25.45	-92.26	0.00	-1168.68	0.00	12.667
38	3.05	100	125	25.45	25.45	-79.74	0.00	-1168.68	0.00	14.657
39	3.15	100	125	25.45	25.45	-67.94	0.00	-1168.68	0.00	17.201
40	3.25	100	125	25.45	25.45	-56.93	0.00	-1168.68	0.00	20.528
41	3.35	100	125	25.45	25.45	-46.75	0.00	-1168.68	0.00	25.001
42	3.45	100	125	25.45	25.45	-37.43	0.00	-1168.68	0.00	31.220
43	3.55	100	125	25.45	25.45	-29.04	0.00	-1168.68	0.00	40.241
44	3.65	100	125	25.45	25.45	-21.62	0.00	-1168.68	0.00	54.062
45	3.75	100	125	25.45	25.45	-15.21	0.00	-1168.68	0.00	76.851



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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
46	3.85	100	125	25.45	25.45	-9.86	0.00	-1168.68	0.00	118.561
47	3.95	100	125	25.45	25.45	-5.61	0.00	-1168.68	0.00	208.141
48	4.05	100	125	25.45	25.45	-2.53	0.00	-1168.68	0.00	462.540
49	4.15	100	125	25.45	25.45	-0.64	0.00	0.00	0.00	1000.000
50	4.25	100	125	25.45	25.45	0.00	0.00	0.00	0.00	1000.000

Combinazione n° 3 - STR (A1-M1-R3)

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
1	-1.75	100	125	25.45	25.45	0.00	0.00	0.00	0.00	1000.000
2	-1.65	100	125	25.45	25.45	0.87	0.00	0.00	0.00	1000.000
3	-1.56	100	125	25.45	25.45	3.47	0.00	1168.68	0.00	336.516
4	-1.46	100	125	25.45	25.45	7.81	0.00	1168.68	0.00	149.664
5	-1.37	100	125	25.45	25.45	13.87	0.00	1168.68	0.00	84.244
6	-1.27	100	125	25.45	25.45	21.66	0.00	1168.68	0.00	53.953
7	-1.17	100	125	25.45	25.45	31.17	0.00	1168.68	0.00	37.493
8	-1.08	100	125	25.45	25.45	42.40	0.00	1168.68	0.00	27.565
9	-0.98	100	125	25.45	25.45	55.34	0.00	1168.68	0.00	21.119
10	-0.88	100	125	25.45	25.45	69.99	0.00	1168.68	0.00	16.698
11	-0.79	100	125	25.45	25.45	86.35	0.00	1168.68	0.00	13.534
12	-0.69	100	125	25.45	25.45	104.41	0.00	1168.68	0.00	11.193
13	-0.60	100	125	25.45	25.45	124.17	0.00	1168.68	0.00	9.412
14	-0.50	100	125	25.45	25.45	145.63	0.00	1168.68	0.00	8.025
15	0.75	100	125	25.45	25.45	-379.61	0.00	-1168.68	0.00	3.079
16	0.85	100	125	25.45	25.45	-357.88	0.00	-1168.68	0.00	3.266
17	0.95	100	125	25.45	25.45	-336.74	0.00	-1168.68	0.00	3.471
18	1.05	100	125	25.45	25.45	-316.21	0.00	-1168.68	0.00	3.696
19	1.15	100	125	25.45	25.45	-296.28	0.00	-1168.68	0.00	3.945
20	1.25	100	125	25.45	25.45	-276.95	0.00	-1168.68	0.00	4.220
21	1.35	100	125	25.45	25.45	-258.24	0.00	-1168.68	0.00	4.526
22	1.45	100	125	25.45	25.45	-240.15	0.00	-1168.68	0.00	4.867
23	1.55	100	125	25.45	25.45	-222.67	0.00	-1168.68	0.00	5.248
24	1.65	100	125	25.45	25.45	-205.83	0.00	-1168.68	0.00	5.678
25	1.75	100	125	25.45	25.45	-189.61	0.00	-1168.68	0.00	6.164
26	1.85	100	125	25.45	25.45	-174.02	0.00	-1168.68	0.00	6.716
27	1.95	100	125	25.45	25.45	-159.06	0.00	-1168.68	0.00	7.347
28	2.05	100	125	25.45	25.45	-144.75	0.00	-1168.68	0.00	8.074
29	2.15	100	125	25.45	25.45	-131.09	0.00	-1168.68	0.00	8.915
30	2.25	100	125	25.45	25.45	-118.07	0.00	-1168.68	0.00	9.898
31	2.35	100	125	25.45	25.45	-105.70	0.00	-1168.68	0.00	11.056
32	2.45	100	125	25.45	25.45	-93.99	0.00	-1168.68	0.00	12.434
33	2.55	100	125	25.45	25.45	-82.94	0.00	-1168.68	0.00	14.090
34	2.65	100	125	25.45	25.45	-72.56	0.00	-1168.68	0.00	16.107
35	2.75	100	125	25.45	25.45	-62.84	0.00	-1168.68	0.00	18.598
36	2.85	100	125	25.45	25.45	-53.80	0.00	-1168.68	0.00	21.725
37	2.95	100	125	25.45	25.45	-45.43	0.00	-1168.68	0.00	25.727
38	3.05	100	125	25.45	25.45	-38.28	0.00	-1168.68	0.00	30.527
39	3.15	100	125	25.45	25.45	-32.25	0.00	-1168.68	0.00	36.239
40	3.25	100	125	25.45	25.45	-26.72	0.00	-1168.68	0.00	43.740
41	3.35	100	125	25.45	25.45	-21.70	0.00	-1168.68	0.00	53.866
42	3.45	100	125	25.45	25.45	-17.19	0.00	-1168.68	0.00	68.005
43	3.55	100	125	25.45	25.45	-13.19	0.00	-1168.68	0.00	88.604
44	3.65	100	125	25.45	25.45	-9.71	0.00	-1168.68	0.00	120.302
45	3.75	100	125	25.45	25.45	-6.76	0.00	-1168.68	0.00	172.810
46	3.85	100	125	25.45	25.45	-4.34	0.00	-1168.68	0.00	269.353
47	3.95	100	125	25.45	25.45	-2.45	0.00	-1168.68	0.00	477.678
48	4.05	100	125	25.45	25.45	-1.09	0.00	0.00	0.00	1000.000
49	4.15	100	125	25.45	25.45	-0.27	0.00	0.00	0.00	1000.000
50	4.25	100	125	25.45	25.45	0.00	0.00	0.00	0.00	1000.000

Combinazione n° 4 - STR (A1-M1-R3) H - V

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## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
1	-1.75	100	125	25.45	25.45	0.00	0.00	0.00	0.00	1000.000
2	-1.65	100	125	25.45	25.45	1.26	0.00	1168.68	0.00	924.918
3	-1.56	100	125	25.45	25.45	5.03	0.00	1168.68	0.00	232.467
4	-1.46	100	125	25.45	25.45	11.25	0.00	1168.68	0.00	103.875
5	-1.37	100	125	25.45	25.45	19.89	0.00	1168.68	0.00	58.746
6	-1.27	100	125	25.45	25.45	30.92	0.00	1168.68	0.00	37.802
7	-1.17	100	125	25.45	25.45	44.28	0.00	1168.68	0.00	26.395
8	-1.08	100	125	25.45	25.45	59.94	0.00	1168.68	0.00	19.499
9	-0.98	100	125	25.45	25.45	77.85	0.00	1168.68	0.00	15.011
10	-0.88	100	125	25.45	25.45	97.99	0.00	1168.68	0.00	11.927
11	-0.79	100	125	25.45	25.45	120.30	0.00	1168.68	0.00	9.715
12	-0.69	100	125	25.45	25.45	144.75	0.00	1168.68	0.00	8.074
13	-0.60	100	125	25.45	25.45	171.29	0.00	1168.68	0.00	6.823
14	-0.50	100	125	25.45	25.45	199.90	0.00	1168.68	0.00	5.846
15	0.75	100	125	25.45	25.45	-592.02	0.00	-1168.68	0.00	1.974
16	0.85	100	125	25.45	25.45	-567.42	0.00	-1168.68	0.00	2.060
17	0.95	100	125	25.45	25.45	-542.78	0.00	-1168.68	0.00	2.153
18	1.05	100	125	25.45	25.45	-518.13	0.00	-1168.68	0.00	2.256
19	1.15	100	125	25.45	25.45	-493.53	0.00	-1168.68	0.00	2.368
20	1.25	100	125	25.45	25.45	-469.01	0.00	-1168.68	0.00	2.492
21	1.35	100	125	25.45	25.45	-444.63	0.00	-1168.68	0.00	2.628
22	1.45	100	125	25.45	25.45	-420.43	0.00	-1168.68	0.00	2.780
23	1.55	100	125	25.45	25.45	-396.45	0.00	-1168.68	0.00	2.948
24	1.65	100	125	25.45	25.45	-372.74	0.00	-1168.68	0.00	3.135
25	1.75	100	125	25.45	25.45	-349.35	0.00	-1168.68	0.00	3.345
26	1.85	100	125	25.45	25.45	-326.32	0.00	-1168.68	0.00	3.581
27	1.95	100	125	25.45	25.45	-303.70	0.00	-1168.68	0.00	3.848
28	2.05	100	125	25.45	25.45	-281.53	0.00	-1168.68	0.00	4.151
29	2.15	100	125	25.45	25.45	-259.85	0.00	-1168.68	0.00	4.497
30	2.25	100	125	25.45	25.45	-238.72	0.00	-1168.68	0.00	4.896
31	2.35	100	125	25.45	25.45	-218.18	0.00	-1168.68	0.00	5.357
32	2.45	100	125	25.45	25.45	-198.27	0.00	-1168.68	0.00	5.894
33	2.55	100	125	25.45	25.45	-179.04	0.00	-1168.68	0.00	6.528
34	2.65	100	125	25.45	25.45	-160.53	0.00	-1168.68	0.00	7.280
35	2.75	100	125	25.45	25.45	-142.80	0.00	-1168.68	0.00	8.184
36	2.85	100	125	25.45	25.45	-125.87	0.00	-1168.68	0.00	9.284
37	2.95	100	125	25.45	25.45	-109.81	0.00	-1168.68	0.00	10.642
38	3.05	100	125	25.45	25.45	-94.66	0.00	-1168.68	0.00	12.346
39	3.15	100	125	25.45	25.45	-80.46	0.00	-1168.68	0.00	14.526
40	3.25	100	125	25.45	25.45	-67.25	0.00	-1168.68	0.00	17.378
41	3.35	100	125	25.45	25.45	-55.08	0.00	-1168.68	0.00	21.216
42	3.45	100	125	25.45	25.45	-44.01	0.00	-1168.68	0.00	26.556
43	3.55	100	125	25.45	25.45	-34.06	0.00	-1168.68	0.00	34.308
44	3.65	100	125	25.45	25.45	-25.30	0.00	-1168.68	0.00	46.194
45	3.75	100	125	25.45	25.45	-17.76	0.00	-1168.68	0.00	65.810
46	3.85	100	125	25.45	25.45	-11.49	0.00	-1168.68	0.00	101.745
47	3.95	100	125	25.45	25.45	-6.53	0.00	-1168.68	0.00	178.993
48	4.05	100	125	25.45	25.45	-2.93	0.00	-1168.68	0.00	398.575
49	4.15	100	125	25.45	25.45	-0.74	0.00	0.00	0.00	1000.000
50	4.25	100	125	25.45	25.45	0.00	0.00	0.00	0.00	1000.000

## Combinazione n° 13 - ECC

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
1	-1.75	100	125	25.45	25.45	0.00	0.00	0.00	0.00	1000.000
2	-1.65	100	125	25.45	25.45	0.75	0.00	0.00	0.00	1000.000
3	-1.56	100	125	25.45	25.45	2.99	0.00	1347.22	0.00	450.193
4	-1.46	100	125	25.45	25.45	6.73	0.00	1347.22	0.00	200.303
5	-1.37	100	125	25.45	25.45	11.94	0.00	1347.22	0.00	112.793
6	-1.27	100	125	25.45	25.45	18.64	0.00	1347.22	0.00	72.267
7	-1.17	100	125	25.45	25.45	26.82	0.00	1347.22	0.00	50.240
8	-1.08	100	125	25.45	25.45	36.46	0.00	1347.22	0.00	36.951
9	-0.98	100	125	25.45	25.45	47.57	0.00	1347.22	0.00	28.322
10	-0.88	100	125	25.45	25.45	60.14	0.00	1347.22	0.00	22.402
11	-0.79	100	125	25.45	25.45	74.16	0.00	1347.22	0.00	18.166
12	-0.69	100	125	25.45	25.45	89.64	0.00	1347.22	0.00	15.029

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
13	-0.60	100	125	25.45	25.45	106.56	0.00	1347.22	0.00	12.643
14	-0.50	100	125	25.45	25.45	124.92	0.00	1347.22	0.00	10.784
15	0.75	100	125	25.45	25.45	-100.05	0.00	-1347.22	0.00	13.465
16	0.85	100	125	25.45	25.45	-95.47	0.00	-1347.22	0.00	14.111
17	0.95	100	125	25.45	25.45	-90.94	0.00	-1347.22	0.00	14.815
18	1.05	100	125	25.45	25.45	-86.45	0.00	-1347.22	0.00	15.585
19	1.15	100	125	25.45	25.45	-82.01	0.00	-1347.22	0.00	16.428
20	1.25	100	125	25.45	25.45	-77.62	0.00	-1347.22	0.00	17.356
21	1.35	100	125	25.45	25.45	-73.30	0.00	-1347.22	0.00	18.378
22	1.45	100	125	25.45	25.45	-69.05	0.00	-1347.22	0.00	19.510
23	1.55	100	125	25.45	25.45	-64.88	0.00	-1347.22	0.00	20.766
24	1.65	100	125	25.45	25.45	-60.78	0.00	-1347.22	0.00	22.166
25	1.75	100	125	25.45	25.45	-56.76	0.00	-1347.22	0.00	23.734
26	1.85	100	125	25.45	25.45	-52.84	0.00	-1347.22	0.00	25.496
27	1.95	100	125	25.45	25.45	-49.01	0.00	-1347.22	0.00	27.487
28	2.05	100	125	25.45	25.45	-45.29	0.00	-1347.22	0.00	29.749
29	2.15	100	125	25.45	25.45	-41.67	0.00	-1347.22	0.00	32.333
30	2.25	100	125	25.45	25.45	-38.16	0.00	-1347.22	0.00	35.306
31	2.35	100	125	25.45	25.45	-34.77	0.00	-1347.22	0.00	38.748
32	2.45	100	125	25.45	25.45	-31.50	0.00	-1347.22	0.00	42.767
33	2.55	100	125	25.45	25.45	-28.36	0.00	-1347.22	0.00	47.500
34	2.65	100	125	25.45	25.45	-25.36	0.00	-1347.22	0.00	53.127
35	2.75	100	125	25.45	25.45	-22.49	0.00	-1347.22	0.00	59.894
36	2.85	100	125	25.45	25.45	-19.77	0.00	-1347.22	0.00	68.132
37	2.95	100	125	25.45	25.45	-17.20	0.00	-1347.22	0.00	78.308
38	3.05	100	125	25.45	25.45	-14.79	0.00	-1347.22	0.00	91.084
39	3.15	100	125	25.45	25.45	-12.54	0.00	-1347.22	0.00	107.441
40	3.25	100	125	25.45	25.45	-10.45	0.00	-1347.22	0.00	128.866
41	3.35	100	125	25.45	25.45	-8.54	0.00	-1347.22	0.00	157.714
42	3.45	100	125	25.45	25.45	-6.81	0.00	-1347.22	0.00	197.890
43	3.55	100	125	25.45	25.45	-5.26	0.00	-1347.22	0.00	256.265
44	3.65	100	125	25.45	25.45	-3.90	0.00	-1347.22	0.00	345.856
45	3.75	100	125	25.45	25.45	-2.73	0.00	-1347.22	0.00	493.857
46	3.85	100	125	25.45	25.45	-1.76	0.00	-1347.22	0.00	765.237
47	3.95	100	125	25.45	25.45	-1.00	0.00	0.00	0.00	1000.000
48	4.05	100	125	25.45	25.45	-0.45	0.00	0.00	0.00	1000.000
49	4.15	100	125	25.45	25.45	-0.11	0.00	0.00	0.00	1000.000
50	4.25	100	125	25.45	25.45	0.00	0.00	0.00	0.00	1000.000

### Verifiche a taglio

#### Simbologia adottata

Is	indice sezione
Y	ordinata sezione espressa in [m]
B	larghezza sezione espressa in [cm]
H	altezza sezione espressa in [cm]
A <sub>sw</sub>	area ferri a taglio espressa in [cmq]
cotgθ	inclinazione delle bielle compresse, θ inclinazione dei puntoni di calcestruzzo
V <sub>Rcd</sub>	resistenza di progetto a 'taglio compressione' espressa in [kN]
V <sub>Rsd</sub>	resistenza di progetto a 'taglio trazione' espressa in [kN]
V <sub>Rd</sub>	resistenza di progetto a taglio espressa in [kN]. Per elementi con armature trasversali resistenti al taglio (A <sub>sw</sub> >0.0) V <sub>Rd</sub> =min(V <sub>Rcd</sub> , V <sub>Rsd</sub> ).
T	taglio agente espressa in [kN]
FS	fattore di sicurezza (rapporto tra sollecitazione resistente e sollecitazione agente)

#### Paramento

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## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

## Combinazione n° 1 - STR (A1-M1-R3)

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
1	0.00	100	50	0.00	0.00	--	0.00	0.00	285.42	0.00	100.000
2	-0.10	100	51	0.00	0.00	--	0.00	0.00	288.29	0.03	9282.782
3	-0.20	100	52	0.00	0.00	--	0.00	0.00	291.15	0.12	2343.701
4	-0.30	100	53	0.00	0.00	--	0.00	0.00	293.99	0.28	1054.688
5	-0.40	100	54	0.00	0.00	--	0.00	0.00	296.81	0.49	601.018
6	-0.50	100	55	0.00	0.00	--	0.00	0.00	299.62	0.77	389.156
7	-0.60	100	56	0.00	0.00	--	0.00	0.00	302.41	1.11	273.096
8	-0.70	100	57	0.00	0.00	--	0.00	0.00	305.19	1.51	202.633
9	-0.80	100	57	0.00	0.00	--	0.00	0.00	307.95	1.97	156.619
10	-0.90	100	58	0.00	0.00	--	0.00	0.00	310.70	2.49	124.893
11	-1.00	100	59	0.00	0.00	--	0.00	0.00	313.43	3.07	102.077
12	-1.10	100	60	0.00	0.00	--	0.00	0.00	316.15	3.71	85.108
13	-1.20	100	61	0.00	0.00	--	0.00	0.00	318.86	4.42	72.136
14	-1.30	100	62	0.00	0.00	--	0.00	0.00	321.55	5.19	61.991
15	-1.40	100	63	0.00	0.00	--	0.00	0.00	324.24	6.02	53.902
16	-1.50	100	64	0.00	0.00	--	0.00	0.00	326.91	6.90	47.344
17	-1.60	100	65	0.00	0.00	--	0.00	0.00	329.57	7.86	41.952
18	-1.70	100	66	0.00	0.00	--	0.00	0.00	332.21	8.87	37.462
19	-1.80	100	67	0.00	0.00	--	0.00	0.00	334.85	9.94	33.681
20	-1.90	100	68	0.00	0.00	--	0.00	0.00	337.48	11.08	30.467
21	-2.00	100	69	0.00	0.00	--	0.00	0.00	340.09	12.27	27.711
22	-2.10	100	70	0.00	0.00	--	0.00	0.00	342.70	13.53	25.328
23	-2.20	100	71	0.00	0.00	--	0.00	0.00	345.30	14.85	23.253
24	-2.30	100	72	0.00	0.00	--	0.00	0.00	347.88	16.23	21.434
25	-2.40	100	72	0.00	0.00	--	0.00	0.00	350.46	17.67	19.832
26	-2.50	100	73	0.00	0.00	--	0.00	0.00	353.03	19.17	18.411
27	-2.60	100	74	0.00	0.00	--	0.00	0.00	355.59	20.74	17.146
28	-2.70	100	75	0.00	0.00	--	0.00	0.00	358.14	22.37	16.013
29	-2.80	100	76	0.00	0.00	--	0.00	0.00	360.69	24.05	14.996
30	-2.90	100	77	0.00	0.00	--	0.00	0.00	363.22	25.80	14.078
31	-3.00	100	78	0.00	0.00	--	0.00	0.00	365.75	27.61	13.247
32	-3.10	100	79	0.00	0.00	--	0.00	0.00	368.27	29.48	12.491
33	-3.20	100	80	0.00	0.00	--	0.00	0.00	370.78	31.41	11.803
34	-3.30	100	81	0.00	0.00	--	0.00	0.00	373.29	33.41	11.174
35	-3.40	100	82	0.00	0.00	--	0.00	0.00	375.79	35.46	10.596
36	-3.50	100	83	0.00	0.00	--	0.00	0.00	378.28	37.58	10.066
37	-3.60	100	84	0.00	0.00	--	0.00	0.00	380.76	39.76	9.577
38	-3.70	100	85	0.00	0.00	--	0.00	0.00	383.24	42.00	9.125
39	-3.80	100	86	0.00	0.00	--	0.00	0.00	385.71	44.30	8.707
40	-3.90	100	87	0.00	0.00	--	0.00	0.00	388.18	46.66	8.319
41	-4.00	100	87	0.00	0.00	--	0.00	0.00	390.64	49.08	7.959
42	-4.10	100	88	0.00	0.00	--	0.00	0.00	393.09	51.57	7.623
43	-4.20	100	89	0.00	0.00	--	0.00	0.00	395.54	54.11	7.309
44	-4.30	100	90	0.00	0.00	--	0.00	0.00	397.99	56.72	7.017
45	-4.40	100	91	0.00	0.00	--	0.00	0.00	400.42	59.39	6.742
46	-4.50	100	92	0.00	0.00	--	0.00	0.00	402.86	62.12	6.485
47	-4.60	100	93	0.00	0.00	--	0.00	0.00	405.28	64.91	6.244
48	-4.70	100	94	0.00	0.00	--	0.00	0.00	407.70	67.76	6.017
49	-4.80	100	95	0.00	0.00	--	0.00	0.00	410.12	70.68	5.803
50	-4.90	100	96	0.00	0.00	--	0.00	0.00	412.53	73.65	5.601
51	-5.00	100	97	0.00	0.00	--	0.00	0.00	414.94	76.69	5.411
52	-5.10	100	98	0.00	0.00	--	0.00	0.00	417.35	79.79	5.231
53	-5.20	100	99	0.00	0.00	--	0.00	0.00	419.74	82.95	5.060
54	-5.30	100	100	0.00	0.00	--	0.00	0.00	422.14	86.17	4.899
55	-5.40	100	101	0.00	0.00	--	0.00	0.00	424.53	89.45	4.746
56	-5.50	100	102	0.00	0.00	--	0.00	0.00	426.92	92.79	4.601
57	-5.60	100	102	0.00	0.00	--	0.00	0.00	429.30	96.20	4.463
58	-5.70	100	103	0.00	0.00	--	0.00	0.00	431.68	99.67	4.331
59	-5.80	100	104	0.00	0.00	--	0.00	0.00	434.05	103.19	4.206
60	-5.90	100	105	0.00	0.00	--	0.00	0.00	436.42	106.78	4.087
61	-6.00	100	106	0.00	0.00	--	0.00	0.00	438.79	110.43	3.973
62	-6.10	100	107	0.00	0.00	--	0.00	0.00	441.15	114.14	3.865
63	-6.20	100	108	0.00	0.00	--	0.00	0.00	443.51	117.92	3.761
64	-6.30	100	109	0.00	0.00	--	0.00	0.00	445.87	121.75	3.662
65	-6.40	100	110	0.00	0.00	--	0.00	0.00	448.23	125.65	3.567
66	-6.50	100	111	0.00	0.00	--	0.00	0.00	450.58	129.60	3.477
67	-6.60	100	112	0.00	0.00	--	0.00	0.00	452.94	133.62	3.392

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## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
68	-6.70	100	113	0.00	0.00	--	0.00	0.00	530.76	137.70	3.854
69	-6.80	100	114	0.00	0.00	--	0.00	0.00	533.44	141.84	3.761
70	-6.90	100	115	0.00	0.00	--	0.00	0.00	536.11	146.05	3.671
71	-7.00	100	116	0.00	0.00	--	0.00	0.00	538.78	150.31	3.584
72	-7.10	100	116	0.00	0.00	--	0.00	0.00	541.44	154.64	3.501
73	-7.20	100	117	0.00	0.00	--	0.00	0.00	582.64	159.02	3.664
74	-7.30	100	118	0.00	0.00	--	0.00	0.00	469.28	163.47	2.871
75	-7.40	100	119	0.00	0.00	--	0.00	0.00	471.61	167.98	2.808
76	-7.50	100	120	0.00	0.00	--	0.00	0.00	473.93	172.55	2.747
77	-7.60	100	121	0.00	0.00	--	0.00	0.00	476.25	177.18	2.688
78	-7.70	100	122	0.00	0.00	--	0.00	0.00	478.57	181.87	2.631
79	-7.80	100	123	0.00	0.00	--	0.00	0.00	480.89	186.63	2.577
80	-7.90	100	124	0.00	0.00	--	0.00	0.00	483.20	191.45	2.524
81	-8.00	100	125	0.00	0.00	--	0.00	0.00	485.51	196.32	2.473

## Combinazione n° 2 - STR (A1-M1-R3) H + V

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
1	0.00	100	50	0.00	0.00	--	0.00	0.00	285.45	0.00	100.000
2	-0.10	100	51	0.00	0.00	--	0.00	0.00	288.32	0.99	292.203
3	-0.20	100	52	0.00	0.00	--	0.00	0.00	291.18	2.02	143.829
4	-0.30	100	53	0.00	0.00	--	0.00	0.00	294.02	3.11	94.458
5	-0.40	100	54	0.00	0.00	--	0.00	0.00	296.84	4.25	69.832
6	-0.50	100	55	0.00	0.00	--	0.00	0.00	299.65	5.44	55.092
7	-0.60	100	56	0.00	0.00	--	0.00	0.00	302.44	6.68	45.291
8	-0.70	100	57	0.00	0.00	--	0.00	0.00	305.22	7.97	38.310
9	-0.80	100	57	0.00	0.00	--	0.00	0.00	307.98	9.31	33.092
10	-0.90	100	58	0.00	0.00	--	0.00	0.00	310.73	10.70	29.049
11	-1.00	100	59	0.00	0.00	--	0.00	0.00	313.46	12.14	25.826
12	-1.10	100	60	0.00	0.00	--	0.00	0.00	316.18	13.63	23.200
13	-1.20	100	61	0.00	0.00	--	0.00	0.00	318.89	15.17	21.021
14	-1.30	100	62	0.00	0.00	--	0.00	0.00	321.59	16.76	19.185
15	-1.40	100	63	0.00	0.00	--	0.00	0.00	324.27	18.40	17.619
16	-1.50	100	64	0.00	0.00	--	0.00	0.00	326.94	20.10	16.268
17	-1.60	100	65	0.00	0.00	--	0.00	0.00	329.60	21.84	15.091
18	-1.70	100	66	0.00	0.00	--	0.00	0.00	332.25	23.63	14.058
19	-1.80	100	67	0.00	0.00	--	0.00	0.00	334.88	25.48	13.143
20	-1.90	100	68	0.00	0.00	--	0.00	0.00	337.51	27.37	12.330
21	-2.00	100	69	0.00	0.00	--	0.00	0.00	340.12	29.32	11.601
22	-2.10	100	70	0.00	0.00	--	0.00	0.00	342.73	31.31	10.945
23	-2.20	100	71	0.00	0.00	--	0.00	0.00	345.33	33.36	10.351
24	-2.30	100	72	0.00	0.00	--	0.00	0.00	347.91	35.46	9.812
25	-2.40	100	72	0.00	0.00	--	0.00	0.00	350.49	37.60	9.320
26	-2.50	100	73	0.00	0.00	--	0.00	0.00	353.06	39.80	8.870
27	-2.60	100	74	0.00	0.00	--	0.00	0.00	355.62	42.05	8.457
28	-2.70	100	75	0.00	0.00	--	0.00	0.00	358.17	44.35	8.076
29	-2.80	100	76	0.00	0.00	--	0.00	0.00	360.72	46.70	7.725
30	-2.90	100	77	0.00	0.00	--	0.00	0.00	363.25	49.10	7.399
31	-3.00	100	78	0.00	0.00	--	0.00	0.00	365.78	51.55	7.096
32	-3.10	100	79	0.00	0.00	--	0.00	0.00	368.30	54.05	6.814
33	-3.20	100	80	0.00	0.00	--	0.00	0.00	370.81	56.60	6.552
34	-3.30	100	81	0.00	0.00	--	0.00	0.00	373.32	59.20	6.306
35	-3.40	100	82	0.00	0.00	--	0.00	0.00	375.82	61.85	6.076
36	-3.50	100	83	0.00	0.00	--	0.00	0.00	378.31	64.55	5.860
37	-3.60	100	84	0.00	0.00	--	0.00	0.00	380.79	67.31	5.658
38	-3.70	100	85	0.00	0.00	--	0.00	0.00	383.27	70.11	5.467
39	-3.80	100	86	0.00	0.00	--	0.00	0.00	385.74	72.96	5.287
40	-3.90	100	87	0.00	0.00	--	0.00	0.00	388.21	75.87	5.117
41	-4.00	100	87	0.00	0.00	--	0.00	0.00	390.67	78.82	4.956
42	-4.10	100	88	0.00	0.00	--	0.00	0.00	393.12	81.83	4.804
43	-4.20	100	89	0.00	0.00	--	0.00	0.00	395.57	84.88	4.660
44	-4.30	100	90	0.00	0.00	--	0.00	0.00	398.02	87.99	4.524
45	-4.40	100	91	0.00	0.00	--	0.00	0.00	400.45	91.14	4.394
46	-4.50	100	92	0.00	0.00	--	0.00	0.00	402.89	94.35	4.270
47	-4.60	100	93	0.00	0.00	--	0.00	0.00	405.31	97.61	4.152
48	-4.70	100	94	0.00	0.00	--	0.00	0.00	407.74	100.92	4.040

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## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
49	-4.80	100	95	0.00	0.00	--	0.00	0.00	410.15	104.27	3.933
50	-4.90	100	96	0.00	0.00	--	0.00	0.00	412.57	107.68	3.831
51	-5.00	100	97	0.00	0.00	--	0.00	0.00	414.97	111.14	3.734
52	-5.10	100	98	0.00	0.00	--	0.00	0.00	417.38	114.65	3.640
53	-5.20	100	99	0.00	0.00	--	0.00	0.00	419.78	118.21	3.551
54	-5.30	100	100	0.00	0.00	--	0.00	0.00	422.17	121.82	3.465
55	-5.40	100	101	0.00	0.00	--	0.00	0.00	424.56	125.48	3.383
56	-5.50	100	102	0.00	0.00	--	0.00	0.00	426.95	129.19	3.305
57	-5.60	100	102	0.00	0.00	--	0.00	0.00	429.33	132.96	3.229
58	-5.70	100	103	0.00	0.00	--	0.00	0.00	431.71	136.77	3.156
59	-5.80	100	104	0.00	0.00	--	0.00	0.00	434.08	140.63	3.087
60	-5.90	100	105	0.00	0.00	--	0.00	0.00	436.45	144.54	3.020
61	-6.00	100	106	0.00	0.00	--	0.00	0.00	438.82	148.51	2.955
62	-6.10	100	107	0.00	0.00	--	0.00	0.00	441.19	152.52	2.893
63	-6.20	100	108	0.00	0.00	--	0.00	0.00	443.55	156.59	2.833
64	-6.30	100	109	0.00	0.00	--	0.00	0.00	445.90	160.70	2.775
65	-6.40	100	110	0.00	0.00	--	0.00	0.00	448.26	164.87	2.719
66	-6.50	100	111	0.00	0.00	--	0.00	0.00	450.61	169.08	2.665
67	-6.60	100	112	0.00	0.00	--	0.00	0.00	452.97	173.35	2.613
68	-6.70	100	113	0.00	0.00	--	0.00	0.00	455.33	177.67	2.563
69	-6.80	100	114	0.00	0.00	--	0.00	0.00	457.69	182.04	2.515
70	-6.90	100	115	0.00	0.00	--	0.00	0.00	460.05	186.45	2.469
71	-7.00	100	116	0.00	0.00	--	0.00	0.00	462.41	190.92	2.425
72	-7.10	100	116	0.00	0.00	--	0.00	0.00	464.77	195.44	2.383
73	-7.20	100	117	0.00	0.00	--	0.00	0.00	467.13	200.01	2.343
74	-7.30	100	118	0.00	0.00	--	0.00	0.00	469.49	204.63	2.304
75	-7.40	100	119	0.00	0.00	--	0.00	0.00	471.85	209.30	2.267
76	-7.50	100	120	0.00	0.00	--	0.00	0.00	474.21	214.02	2.231
77	-7.60	100	121	0.00	0.00	--	0.00	0.00	476.57	218.79	2.197
78	-7.70	100	122	0.00	0.00	--	0.00	0.00	478.93	223.61	2.164
79	-7.80	100	123	0.00	0.00	--	0.00	0.00	481.29	228.49	2.132
80	-7.90	100	124	0.00	0.00	--	0.00	0.00	483.65	233.41	2.101
81	-8.00	100	125	0.00	0.00	--	0.00	0.00	486.01	238.38	2.071

## Combinazione n° 3 - STR (A1-M1-R3)

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
1	0.00	100	50	0.00	0.00	--	0.00	0.00	285.42	0.00	100.000
2	-0.10	100	51	0.00	0.00	--	0.00	0.00	288.29	1.02	283.101
3	-0.20	100	52	0.00	0.00	--	0.00	0.00	291.15	2.10	138.722
4	-0.30	100	53	0.00	0.00	--	0.00	0.00	293.99	3.24	90.720
5	-0.40	100	54	0.00	0.00	--	0.00	0.00	296.81	4.44	66.804
6	-0.50	100	55	0.00	0.00	--	0.00	0.00	299.62	5.71	52.506
7	-0.60	100	56	0.00	0.00	--	0.00	0.00	302.41	7.03	43.010
8	-0.70	100	57	0.00	0.00	--	0.00	0.00	305.19	8.42	36.258
9	-0.80	100	57	0.00	0.00	--	0.00	0.00	307.95	9.86	31.218
10	-0.90	100	58	0.00	0.00	--	0.00	0.00	310.70	11.37	27.318
11	-1.00	100	59	0.00	0.00	--	0.00	0.00	313.43	12.94	24.215
12	-1.10	100	60	0.00	0.00	--	0.00	0.00	316.15	14.58	21.691
13	-1.20	100	61	0.00	0.00	--	0.00	0.00	318.86	16.27	19.601
14	-1.30	100	62	0.00	0.00	--	0.00	0.00	321.55	18.02	17.842
15	-1.40	100	63	0.00	0.00	--	0.00	0.00	324.24	19.84	16.345
16	-1.50	100	64	0.00	0.00	--	0.00	0.00	326.91	21.71	15.055
17	-1.60	100	65	0.00	0.00	--	0.00	0.00	329.57	23.65	13.934
18	-1.70	100	66	0.00	0.00	--	0.00	0.00	332.21	25.65	12.951
19	-1.80	100	67	0.00	0.00	--	0.00	0.00	334.85	27.71	12.083
20	-1.90	100	68	0.00	0.00	--	0.00	0.00	337.48	29.84	11.311
21	-2.00	100	69	0.00	0.00	--	0.00	0.00	340.09	32.02	10.622
22	-2.10	100	70	0.00	0.00	--	0.00	0.00	342.70	34.26	10.002
23	-2.20	100	71	0.00	0.00	--	0.00	0.00	345.30	36.57	9.442
24	-2.30	100	72	0.00	0.00	--	0.00	0.00	347.88	38.94	8.934
25	-2.40	100	72	0.00	0.00	--	0.00	0.00	350.46	41.37	8.472
26	-2.50	100	73	0.00	0.00	--	0.00	0.00	353.03	43.86	8.049
27	-2.60	100	74	0.00	0.00	--	0.00	0.00	355.59	46.41	7.662
28	-2.70	100	75	0.00	0.00	--	0.00	0.00	358.14	49.02	7.306
29	-2.80	100	76	0.00	0.00	--	0.00	0.00	360.69	51.70	6.977

VE407

## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

n°	Y	B	H	A <sub>sw</sub>	s	cotθ	V <sub>Rcd</sub>	V <sub>Rsd</sub>	V <sub>Rd</sub>	T	FS
	[m]	[cm]	[cm]	[cmq]	[cm]		[kN]	[kN]	[kN]	[kN]	
30	-2.90	100	77	0.00	0.00	--	0.00	0.00	363.22	54.43	6.673
31	-3.00	100	78	0.00	0.00	--	0.00	0.00	365.75	57.23	6.391
32	-3.10	100	79	0.00	0.00	--	0.00	0.00	368.27	60.09	6.129
33	-3.20	100	80	0.00	0.00	--	0.00	0.00	370.78	63.01	5.885
34	-3.30	100	81	0.00	0.00	--	0.00	0.00	373.29	65.99	5.657
35	-3.40	100	82	0.00	0.00	--	0.00	0.00	375.79	69.03	5.444
36	-3.50	100	83	0.00	0.00	--	0.00	0.00	378.28	72.14	5.244
37	-3.60	100	84	0.00	0.00	--	0.00	0.00	380.76	75.30	5.057
38	-3.70	100	85	0.00	0.00	--	0.00	0.00	383.24	78.53	4.880
39	-3.80	100	86	0.00	0.00	--	0.00	0.00	385.71	81.82	4.714
40	-3.90	100	87	0.00	0.00	--	0.00	0.00	388.18	85.16	4.558
41	-4.00	100	87	0.00	0.00	--	0.00	0.00	390.64	88.58	4.410
42	-4.10	100	88	0.00	0.00	--	0.00	0.00	393.09	92.05	4.271
43	-4.20	100	89	0.00	0.00	--	0.00	0.00	395.54	95.58	4.138
44	-4.30	100	90	0.00	0.00	--	0.00	0.00	397.99	99.18	4.013
45	-4.40	100	91	0.00	0.00	--	0.00	0.00	400.42	102.83	3.894
46	-4.50	100	92	0.00	0.00	--	0.00	0.00	402.86	106.54	3.781
47	-4.60	100	93	0.00	0.00	--	0.00	0.00	405.28	110.29	3.675
48	-4.70	100	94	0.00	0.00	--	0.00	0.00	407.70	114.07	3.574
49	-4.80	100	95	0.00	0.00	--	0.00	0.00	410.12	117.85	3.480
50	-4.90	100	96	0.00	0.00	--	0.00	0.00	412.53	121.63	3.392
51	-5.00	100	97	0.00	0.00	--	0.00	0.00	414.94	125.39	3.309
52	-5.10	100	98	0.00	0.00	--	0.00	0.00	417.35	129.14	3.232
53	-5.20	100	99	0.00	0.00	--	0.00	0.00	419.74	132.89	3.159
54	-5.30	100	100	0.00	0.00	--	0.00	0.00	422.14	136.65	3.089
55	-5.40	100	101	0.00	0.00	--	0.00	0.00	424.53	140.44	3.023
56	-5.50	100	102	0.00	0.00	--	0.00	0.00	426.92	144.27	2.959
57	-5.60	100	102	0.00	0.00	--	0.00	0.00	429.30	148.17	2.897
58	-5.70	100	103	0.00	0.00	--	0.00	0.00	431.68	152.12	2.838
59	-5.80	100	104	0.00	0.00	--	0.00	0.00	434.05	156.14	2.780
60	-5.90	100	105	0.00	0.00	--	0.00	0.00	436.42	160.23	2.724
61	-6.00	100	106	0.00	0.00	--	0.00	0.00	438.79	164.37	2.670
62	-6.10	100	107	0.00	0.00	--	0.00	0.00	441.15	168.58	2.617
63	-6.20	100	108	0.00	0.00	--	0.00	0.00	443.51	172.85	2.566
64	-6.30	100	109	0.00	0.00	--	0.00	0.00	445.87	177.19	2.516
65	-6.40	100	110	0.00	0.00	--	0.00	0.00	448.23	181.58	2.468
66	-6.50	100	111	0.00	0.00	--	0.00	0.00	450.58	186.04	2.422
67	-6.60	100	112	0.00	0.00	--	0.00	0.00	452.92	190.56	2.377
68	-6.70	100	113	0.00	0.00	--	0.00	0.00	455.26	195.15	2.333
69	-6.80	100	114	0.00	0.00	--	0.00	0.00	457.59	199.79	2.290
70	-6.90	100	115	0.00	0.00	--	0.00	0.00	459.92	204.50	2.248
71	-7.00	100	116	0.00	0.00	--	0.00	0.00	462.25	209.27	2.207
72	-7.10	100	116	0.00	0.00	--	0.00	0.00	464.57	214.11	2.167
73	-7.20	100	117	0.00	0.00	--	0.00	0.00	466.89	219.00	2.128
74	-7.30	100	118	0.00	0.00	--	0.00	0.00	469.21	223.96	2.090
75	-7.40	100	119	0.00	0.00	--	0.00	0.00	471.53	228.98	2.053
76	-7.50	100	120	0.00	0.00	--	0.00	0.00	473.85	234.06	2.017
77	-7.60	100	121	0.00	0.00	--	0.00	0.00	476.17	239.21	1.982
78	-7.70	100	122	0.00	0.00	--	0.00	0.00	478.49	244.41	1.948
79	-7.80	100	123	0.00	0.00	--	0.00	0.00	480.81	249.68	1.915
80	-7.90	100	124	0.00	0.00	--	0.00	0.00	483.13	255.01	1.883
81	-8.00	100	125	0.00	0.00	--	0.00	0.00	485.45	260.40	1.852

## Combinazione n° 4 - STR (A1-M1-R3) H - V

n°	Y	B	H	A <sub>sw</sub>	s	cotθ	V <sub>Rcd</sub>	V <sub>Rsd</sub>	V <sub>Rd</sub>	T	FS
	[m]	[cm]	[cm]	[cmq]	[cm]		[kN]	[kN]	[kN]	[kN]	
1	0.00	100	50	0.00	0.00	--	0.00	0.00	285.42	0.00	100.000
2	-0.10	100	51	0.00	0.00	--	0.00	0.00	288.29	0.73	392.940
3	-0.20	100	52	0.00	0.00	--	0.00	0.00	291.15	1.52	191.747
4	-0.30	100	53	0.00	0.00	--	0.00	0.00	293.99	2.35	124.911
5	-0.40	100	54	0.00	0.00	--	0.00	0.00	296.81	3.24	91.647
6	-0.50	100	55	0.00	0.00	--	0.00	0.00	299.62	4.17	71.784
7	-0.60	100	56	0.00	0.00	--	0.00	0.00	302.41	5.16	58.612
8	-0.70	100	57	0.00	0.00	--	0.00	0.00	305.19	6.20	49.258
9	-0.80	100	57	0.00	0.00	--	0.00	0.00	307.95	7.28	42.287
10	-0.90	100	58	0.00	0.00	--	0.00	0.00	310.70	8.42	36.902

VE407

## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
11	-1.00	100	59	0.00	0.00	--	0.00	0.00	313.43	9.61	32.625
12	-1.10	100	60	0.00	0.00	--	0.00	0.00	316.15	10.85	29.152
13	-1.20	100	61	0.00	0.00	--	0.00	0.00	318.86	12.13	26.279
14	-1.30	100	62	0.00	0.00	--	0.00	0.00	321.55	13.47	23.867
15	-1.40	100	63	0.00	0.00	--	0.00	0.00	324.24	14.86	21.817
16	-1.50	100	64	0.00	0.00	--	0.00	0.00	326.91	16.30	20.053
17	-1.60	100	65	0.00	0.00	--	0.00	0.00	329.57	17.79	18.523
18	-1.70	100	66	0.00	0.00	--	0.00	0.00	332.21	19.33	17.184
19	-1.80	100	67	0.00	0.00	--	0.00	0.00	334.85	20.92	16.003
20	-1.90	100	68	0.00	0.00	--	0.00	0.00	337.48	22.57	14.955
21	-2.00	100	69	0.00	0.00	--	0.00	0.00	340.09	24.26	14.020
22	-2.10	100	70	0.00	0.00	--	0.00	0.00	342.70	26.00	13.180
23	-2.20	100	71	0.00	0.00	--	0.00	0.00	345.30	27.79	12.423
24	-2.30	100	72	0.00	0.00	--	0.00	0.00	347.88	29.64	11.738
25	-2.40	100	72	0.00	0.00	--	0.00	0.00	350.46	31.53	11.115
26	-2.50	100	73	0.00	0.00	--	0.00	0.00	353.03	33.48	10.546
27	-2.60	100	74	0.00	0.00	--	0.00	0.00	355.59	35.47	10.025
28	-2.70	100	75	0.00	0.00	--	0.00	0.00	358.14	37.52	9.546
29	-2.80	100	76	0.00	0.00	--	0.00	0.00	360.69	39.61	9.105
30	-2.90	100	77	0.00	0.00	--	0.00	0.00	363.22	41.76	8.698
31	-3.00	100	78	0.00	0.00	--	0.00	0.00	365.75	43.96	8.321
32	-3.10	100	79	0.00	0.00	--	0.00	0.00	368.27	46.20	7.971
33	-3.20	100	80	0.00	0.00	--	0.00	0.00	370.78	48.50	7.645
34	-3.30	100	81	0.00	0.00	--	0.00	0.00	373.29	50.85	7.341
35	-3.40	100	82	0.00	0.00	--	0.00	0.00	375.79	53.25	7.057
36	-3.50	100	83	0.00	0.00	--	0.00	0.00	378.28	55.70	6.792
37	-3.60	100	84	0.00	0.00	--	0.00	0.00	380.76	58.20	6.543
38	-3.70	100	85	0.00	0.00	--	0.00	0.00	383.24	60.75	6.309
39	-3.80	100	86	0.00	0.00	--	0.00	0.00	385.71	63.35	6.089
40	-3.90	100	87	0.00	0.00	--	0.00	0.00	388.18	66.00	5.882
41	-4.00	100	87	0.00	0.00	--	0.00	0.00	390.64	68.70	5.686
42	-4.10	100	88	0.00	0.00	--	0.00	0.00	393.09	71.45	5.502
43	-4.20	100	89	0.00	0.00	--	0.00	0.00	395.54	74.25	5.327
44	-4.30	100	90	0.00	0.00	--	0.00	0.00	397.99	77.11	5.162
45	-4.40	100	91	0.00	0.00	--	0.00	0.00	400.42	80.01	5.005
46	-4.50	100	92	0.00	0.00	--	0.00	0.00	402.86	82.96	4.856
47	-4.60	100	93	0.00	0.00	--	0.00	0.00	405.28	85.97	4.714
48	-4.70	100	94	0.00	0.00	--	0.00	0.00	407.70	89.02	4.580
49	-4.80	100	95	0.00	0.00	--	0.00	0.00	410.12	92.13	4.452
50	-4.90	100	96	0.00	0.00	--	0.00	0.00	412.53	95.28	4.330
51	-5.00	100	97	0.00	0.00	--	0.00	0.00	414.94	98.49	4.213
52	-5.10	100	98	0.00	0.00	--	0.00	0.00	417.35	101.75	4.102
53	-5.20	100	99	0.00	0.00	--	0.00	0.00	419.74	105.05	3.996
54	-5.30	100	100	0.00	0.00	--	0.00	0.00	422.14	108.41	3.894
55	-5.40	100	101	0.00	0.00	--	0.00	0.00	424.53	111.82	3.797
56	-5.50	100	102	0.00	0.00	--	0.00	0.00	426.92	115.28	3.703
57	-5.60	100	102	0.00	0.00	--	0.00	0.00	429.30	118.79	3.614
58	-5.70	100	103	0.00	0.00	--	0.00	0.00	431.68	122.35	3.528
59	-5.80	100	104	0.00	0.00	--	0.00	0.00	434.05	125.95	3.446
60	-5.90	100	105	0.00	0.00	--	0.00	0.00	436.42	129.62	3.367
61	-6.00	100	106	0.00	0.00	--	0.00	0.00	438.79	133.33	3.291
62	-6.10	100	107	0.00	0.00	--	0.00	0.00	441.15	137.09	3.218
63	-6.20	100	108	0.00	0.00	--	0.00	0.00	443.51	140.90	3.148
64	-6.30	100	109	0.00	0.00	--	0.00	0.00	445.87	144.76	3.080
65	-6.40	100	110	0.00	0.00	--	0.00	0.00	448.23	148.67	3.015
66	-6.50	100	111	0.00	0.00	--	0.00	0.00	450.58	152.64	2.952
67	-6.60	100	112	0.00	0.00	--	0.00	0.00	452.94	156.65	2.891
68	-6.70	100	113	0.00	0.00	--	0.00	0.00	455.30	160.71	2.833
69	-6.80	100	114	0.00	0.00	--	0.00	0.00	457.66	164.83	2.778
70	-6.90	100	115	0.00	0.00	--	0.00	0.00	460.02	168.99	2.726
71	-7.00	100	116	0.00	0.00	--	0.00	0.00	462.38	173.21	2.676
72	-7.10	100	116	0.00	0.00	--	0.00	0.00	464.74	177.47	2.628
73	-7.20	100	117	0.00	0.00	--	0.00	0.00	467.10	181.79	2.582
74	-7.30	100	118	0.00	0.00	--	0.00	0.00	469.46	186.16	2.538
75	-7.40	100	119	0.00	0.00	--	0.00	0.00	471.82	190.57	2.495
76	-7.50	100	120	0.00	0.00	--	0.00	0.00	474.18	195.04	2.454
77	-7.60	100	121	0.00	0.00	--	0.00	0.00	476.54	199.56	2.415
78	-7.70	100	122	0.00	0.00	--	0.00	0.00	478.90	204.13	2.378
79	-7.80	100	123	0.00	0.00	--	0.00	0.00	481.26	208.75	2.343
80	-7.90	100	124	0.00	0.00	--	0.00	0.00	483.62	213.42	2.310



VE407

## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

n°	Y	B	H	A <sub>sw</sub>	s	cotθ	V <sub>Rcd</sub>	V <sub>Rsd</sub>	V <sub>Rd</sub>	T	FS
	[m]	[cm]	[cm]	[cmq]	[cm]		[kN]	[kN]	[kN]	[kN]	
81	-8.00	100	125	0.00	0.00	--	0.00	0.00	485.51	218.14	2.226

## Combinazione n° 13 - ECC

n°	Y	B	H	A <sub>sw</sub>	s	cotθ	V <sub>Rcd</sub>	V <sub>Rsd</sub>	V <sub>Rd</sub>	T	FS
	[m]	[cm]	[cm]	[cmq]	[cm]		[kN]	[kN]	[kN]	[kN]	
1	0.00	100	50	0.00	0.00	--	0.00	0.00	285.42	12.50	22.833
2	-0.10	100	51	0.00	0.00	--	0.00	0.00	288.29	12.52	23.019
3	-0.20	100	52	0.00	0.00	--	0.00	0.00	291.15	12.60	23.115
4	-0.30	100	53	0.00	0.00	--	0.00	0.00	293.99	12.71	23.123
5	-0.40	100	54	0.00	0.00	--	0.00	0.00	296.81	12.88	23.045
6	-0.50	100	55	0.00	0.00	--	0.00	0.00	299.62	13.09	22.885
7	-0.60	100	56	0.00	0.00	--	0.00	0.00	302.41	13.35	22.650
8	-0.70	100	57	0.00	0.00	--	0.00	0.00	305.19	13.66	22.344
9	-0.80	100	57	0.00	0.00	--	0.00	0.00	307.95	14.01	21.977
10	-0.90	100	58	0.00	0.00	--	0.00	0.00	310.70	14.41	21.556
11	-1.00	100	59	0.00	0.00	--	0.00	0.00	313.43	14.86	21.090
12	-1.10	100	60	0.00	0.00	--	0.00	0.00	316.15	15.36	20.586
13	-1.20	100	61	0.00	0.00	--	0.00	0.00	318.86	15.90	20.054
14	-1.30	100	62	0.00	0.00	--	0.00	0.00	321.55	16.49	19.500
15	-1.40	100	63	0.00	0.00	--	0.00	0.00	324.24	17.13	18.931
16	-1.50	100	64	0.00	0.00	--	0.00	0.00	326.91	17.81	18.354
17	-1.60	100	65	0.00	0.00	--	0.00	0.00	329.57	18.54	17.773
18	-1.70	100	66	0.00	0.00	--	0.00	0.00	332.21	19.32	17.194
19	-1.80	100	67	0.00	0.00	--	0.00	0.00	334.85	20.15	16.620
20	-1.90	100	68	0.00	0.00	--	0.00	0.00	337.48	21.02	16.055
21	-2.00	100	69	0.00	0.00	--	0.00	0.00	340.09	21.94	15.501
22	-2.10	100	70	0.00	0.00	--	0.00	0.00	342.70	22.91	14.960
23	-2.20	100	71	0.00	0.00	--	0.00	0.00	345.30	23.92	14.434
24	-2.30	100	72	0.00	0.00	--	0.00	0.00	347.88	24.98	13.924
25	-2.40	100	72	0.00	0.00	--	0.00	0.00	350.46	26.09	13.431
26	-2.50	100	73	0.00	0.00	--	0.00	0.00	353.03	27.25	12.955
27	-2.60	100	74	0.00	0.00	--	0.00	0.00	355.59	28.45	12.497
28	-2.70	100	75	0.00	0.00	--	0.00	0.00	358.14	29.70	12.057
29	-2.80	100	76	0.00	0.00	--	0.00	0.00	360.69	31.00	11.634
30	-2.90	100	77	0.00	0.00	--	0.00	0.00	363.22	32.35	11.229
31	-3.00	100	78	0.00	0.00	--	0.00	0.00	365.75	33.74	10.841
32	-3.10	100	79	0.00	0.00	--	0.00	0.00	368.27	35.18	10.469
33	-3.20	100	80	0.00	0.00	--	0.00	0.00	370.78	36.66	10.113
34	-3.30	100	81	0.00	0.00	--	0.00	0.00	373.29	38.20	9.772
35	-3.40	100	82	0.00	0.00	--	0.00	0.00	375.79	39.78	9.447
36	-3.50	100	83	0.00	0.00	--	0.00	0.00	378.28	41.41	9.135
37	-3.60	100	84	0.00	0.00	--	0.00	0.00	380.76	43.08	8.838
38	-3.70	100	85	0.00	0.00	--	0.00	0.00	383.24	44.81	8.553
39	-3.80	100	86	0.00	0.00	--	0.00	0.00	385.71	46.58	8.282
40	-3.90	100	87	0.00	0.00	--	0.00	0.00	388.18	48.39	8.022
41	-4.00	100	87	0.00	0.00	--	0.00	0.00	390.64	50.26	7.773
42	-4.10	100	88	0.00	0.00	--	0.00	0.00	393.09	52.17	7.535
43	-4.20	100	89	0.00	0.00	--	0.00	0.00	395.54	54.13	7.308
44	-4.30	100	90	0.00	0.00	--	0.00	0.00	397.99	56.13	7.090
45	-4.40	100	91	0.00	0.00	--	0.00	0.00	400.42	58.18	6.882
46	-4.50	100	92	0.00	0.00	--	0.00	0.00	402.86	60.28	6.683
47	-4.60	100	93	0.00	0.00	--	0.00	0.00	405.28	62.43	6.492
48	-4.70	100	94	0.00	0.00	--	0.00	0.00	407.70	64.63	6.309
49	-4.80	100	95	0.00	0.00	--	0.00	0.00	410.12	66.87	6.133
50	-4.90	100	96	0.00	0.00	--	0.00	0.00	412.53	69.16	5.965
51	-5.00	100	97	0.00	0.00	--	0.00	0.00	414.94	71.49	5.804
52	-5.10	100	98	0.00	0.00	--	0.00	0.00	417.35	73.88	5.649
53	-5.20	100	99	0.00	0.00	--	0.00	0.00	419.74	76.31	5.501
54	-5.30	100	100	0.00	0.00	--	0.00	0.00	422.14	78.78	5.358
55	-5.40	100	101	0.00	0.00	--	0.00	0.00	424.53	81.31	5.221
56	-5.50	100	102	0.00	0.00	--	0.00	0.00	426.92	83.88	5.090
57	-5.60	100	102	0.00	0.00	--	0.00	0.00	429.30	86.50	4.963
58	-5.70	100	103	0.00	0.00	--	0.00	0.00	431.68	89.17	4.841
59	-5.80	100	104	0.00	0.00	--	0.00	0.00	434.05	91.88	4.724
60	-5.90	100	105	0.00	0.00	--	0.00	0.00	436.42	94.64	4.611
61	-6.00	100	106	0.00	0.00	--	0.00	0.00	438.79	97.45	4.503

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
62	-6.10	100	107	0.00	0.00	--	0.00	0.00	441.15	100.30	4.398
63	-6.20	100	108	0.00	0.00	--	0.00	0.00	443.51	103.21	4.297
64	-6.30	100	109	0.00	0.00	--	0.00	0.00	445.87	106.16	4.200
65	-6.40	100	110	0.00	0.00	--	0.00	0.00	448.23	109.15	4.106
66	-6.50	100	111	0.00	0.00	--	0.00	0.00	450.58	112.20	4.016
67	-6.60	100	112	0.00	0.00	--	0.00	0.00	452.94	115.29	3.928
68	-6.70	100	113	0.00	0.00	--	0.00	0.00	455.30	118.43	3.842
69	-6.80	100	114	0.00	0.00	--	0.00	0.00	457.66	121.61	3.758
70	-6.90	100	115	0.00	0.00	--	0.00	0.00	460.02	124.84	3.674
71	-7.00	100	116	0.00	0.00	--	0.00	0.00	462.38	128.12	3.590
72	-7.10	100	116	0.00	0.00	--	0.00	0.00	464.74	131.45	3.506
73	-7.20	100	117	0.00	0.00	--	0.00	0.00	467.10	134.82	3.422
74	-7.30	100	118	0.00	0.00	--	0.00	0.00	469.46	138.25	3.338
75	-7.40	100	119	0.00	0.00	--	0.00	0.00	471.82	141.71	3.254
76	-7.50	100	120	0.00	0.00	--	0.00	0.00	474.18	145.23	3.170
77	-7.60	100	121	0.00	0.00	--	0.00	0.00	476.54	148.79	3.086
78	-7.70	100	122	0.00	0.00	--	0.00	0.00	478.90	152.40	3.002
79	-7.80	100	123	0.00	0.00	--	0.00	0.00	481.26	156.06	2.918
80	-7.90	100	124	0.00	0.00	--	0.00	0.00	483.62	159.77	2.834
81	-8.00	100	125	0.00	0.00	--	0.00	0.00	485.98	163.52	2.750

**Mensola valle**Combinazione n° 1 - STR (A1-M1-R3)

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
1	-0.75	100	50	0.00	0.00	--	0.00	0.00	225.97	0.00	100.000
2	-0.67	100	50	0.00	0.00	--	0.00	0.00	225.97	1.02	221.202
3	-0.58	100	50	0.00	0.00	--	0.00	0.00	225.97	2.04	110.601
4	-0.50	100	50	0.00	0.00	--	0.00	0.00	225.97	3.06	73.734

Combinazione n° 2 - STR (A1-M1-R3) H + V

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
1	-0.75	100	50	0.00	0.00	--	0.00	0.00	225.97	0.00	100.000
2	-0.67	100	50	0.00	0.00	--	0.00	0.00	225.97	1.09	206.492
3	-0.58	100	50	0.00	0.00	--	0.00	0.00	225.97	2.19	103.246
4	-0.50	100	50	0.00	0.00	--	0.00	0.00	225.97	3.28	68.831

Combinazione n° 3 - STR (A1-M1-R3)

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
1	-0.75	100	50	0.00	0.00	--	0.00	0.00	225.97	0.00	100.000
2	-0.67	100	50	0.00	0.00	--	0.00	0.00	225.97	1.02	221.202
3	-0.58	100	50	0.00	0.00	--	0.00	0.00	225.97	2.04	110.601
4	-0.50	100	50	0.00	0.00	--	0.00	0.00	225.97	3.06	73.734

Combinazione n° 4 - STR (A1-M1-R3) H - V

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
1	-0.75	100	50	0.00	0.00	--	0.00	0.00	225.97	0.00	100.000
2	-0.67	100	50	0.00	0.00	--	0.00	0.00	225.97	1.02	221.202
3	-0.58	100	50	0.00	0.00	--	0.00	0.00	225.97	2.04	110.601

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	Y	B	H	A <sub>sw</sub>	s	cotθ	V <sub>Rcd</sub>	V <sub>Rsd</sub>	V <sub>Rd</sub>	T	FS
	[m]	[cm]	[cm]	[cmq]	[cm]		[kN]	[kN]	[kN]	[kN]	
4	-0.50	100	50	0.00	0.00	--	0.00	0.00	225.97	3.06	73.734

Combinazione n° 13 - ECC

n°	Y	B	H	A <sub>sw</sub>	s	cotθ	V <sub>Rcd</sub>	V <sub>Rsd</sub>	V <sub>Rd</sub>	T	FS
	[m]	[cm]	[cm]	[cmq]	[cm]		[kN]	[kN]	[kN]	[kN]	
1	-0.75	100	50	0.00	0.00	--	0.00	0.00	225.97	0.00	100.000
2	-0.67	100	50	0.00	0.00	--	0.00	0.00	225.97	1.02	221.202
3	-0.58	100	50	0.00	0.00	--	0.00	0.00	225.97	2.04	110.601
4	-0.50	100	50	0.00	0.00	--	0.00	0.00	225.97	3.06	73.734

**Fondazione**Combinazione n° 1 - STR (A1-M1-R3)

n°	Y	B	H	A <sub>sw</sub>	s	cotθ	V <sub>Rcd</sub>	V <sub>Rsd</sub>	V <sub>Rd</sub>	T	FS
	[m]	[cm]	[cm]	[cmq]	[cm]		[kN]	[kN]	[kN]	[kN]	
1	-1.75	100	125	0.00	0.00	--	0.00	0.00	495.36	0.00	100.000
2	-1.65	100	125	0.00	0.00	--	0.00	0.00	495.36	-15.47	32.017
3	-1.56	100	125	0.00	0.00	--	0.00	0.00	495.36	-30.91	16.027
4	-1.46	100	125	0.00	0.00	--	0.00	0.00	495.36	-46.31	10.697
5	-1.37	100	125	0.00	0.00	--	0.00	0.00	495.36	-61.68	8.032
6	-1.27	100	125	0.00	0.00	--	0.00	0.00	495.36	-77.01	6.433
7	-1.17	100	125	0.00	0.00	--	0.00	0.00	495.36	-92.30	5.367
8	-1.08	100	125	0.00	0.00	--	0.00	0.00	495.36	-107.56	4.605
9	-0.98	100	125	0.00	0.00	--	0.00	0.00	495.36	-122.79	4.034
10	-0.88	100	125	0.00	0.00	--	0.00	0.00	495.36	-137.98	3.590
11	-0.79	100	125	0.00	0.00	--	0.00	0.00	495.36	-153.13	3.235
12	-0.69	100	125	0.00	0.00	--	0.00	0.00	495.36	-168.25	2.944
13	-0.60	100	125	0.00	0.00	--	0.00	0.00	495.36	-183.34	2.702
14	-0.50	100	125	0.00	0.00	--	0.00	0.00	495.36	-198.39	2.497
15	0.75	100	125	0.00	0.00	--	0.00	0.00	495.36	-184.46	2.686
16	0.85	100	125	0.00	0.00	--	0.00	0.00	495.36	-179.83	2.755
17	0.95	100	125	0.00	0.00	--	0.00	0.00	495.36	-175.17	2.828
18	1.05	100	125	0.00	0.00	--	0.00	0.00	495.36	-170.47	2.906
19	1.15	100	125	0.00	0.00	--	0.00	0.00	495.36	-165.74	2.989
20	1.25	100	125	0.00	0.00	--	0.00	0.00	495.36	-160.96	3.077
21	1.35	100	125	0.00	0.00	--	0.00	0.00	495.36	-156.15	3.172
22	1.45	100	125	0.00	0.00	--	0.00	0.00	495.36	-151.30	3.274
23	1.55	100	125	0.00	0.00	--	0.00	0.00	495.36	-146.41	3.383
24	1.65	100	125	0.00	0.00	--	0.00	0.00	495.36	-141.48	3.501
25	1.75	100	125	0.00	0.00	--	0.00	0.00	495.36	-136.52	3.629
26	1.85	100	125	0.00	0.00	--	0.00	0.00	495.36	-131.51	3.767
27	1.95	100	125	0.00	0.00	--	0.00	0.00	495.36	-126.47	3.917
28	2.05	100	125	0.00	0.00	--	0.00	0.00	495.36	-121.39	4.081
29	2.15	100	125	0.00	0.00	--	0.00	0.00	495.36	-116.27	4.260
30	2.25	100	125	0.00	0.00	--	0.00	0.00	495.36	-111.12	4.458
31	2.35	100	125	0.00	0.00	--	0.00	0.00	495.36	-105.93	4.677
32	2.45	100	125	0.00	0.00	--	0.00	0.00	495.36	-100.69	4.920
33	2.55	100	125	0.00	0.00	--	0.00	0.00	495.36	-95.42	5.191
34	2.65	100	125	0.00	0.00	--	0.00	0.00	495.36	-90.11	5.497
35	2.75	100	125	0.00	0.00	--	0.00	0.00	495.36	-84.77	5.844
36	2.85	100	125	0.00	0.00	--	0.00	0.00	495.36	-79.38	6.240
37	2.95	100	125	0.00	0.00	--	0.00	0.00	495.36	-73.96	6.698
38	3.05	100	125	0.00	0.00	--	0.00	0.00	495.36	-68.50	7.232
39	3.15	100	125	0.00	0.00	--	0.00	0.00	495.36	-63.00	7.863
40	3.25	100	125	0.00	0.00	--	0.00	0.00	495.36	-57.46	8.620
41	3.35	100	125	0.00	0.00	--	0.00	0.00	495.36	-51.89	9.546
42	3.45	100	125	0.00	0.00	--	0.00	0.00	495.36	-46.28	10.704
43	3.55	100	125	0.00	0.00	--	0.00	0.00	495.36	-40.63	12.193
44	3.65	100	125	0.00	0.00	--	0.00	0.00	495.36	-34.94	14.179
45	3.75	100	125	0.00	0.00	--	0.00	0.00	495.36	-29.21	16.959

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
46	3.85	100	125	0.00	0.00	--	0.00	0.00	495.36	-23.44	21.130
47	3.95	100	125	0.00	0.00	--	0.00	0.00	495.36	-17.64	28.082
48	4.05	100	125	0.00	0.00	--	0.00	0.00	495.36	-11.80	41.988
49	4.15	100	125	0.00	0.00	--	0.00	0.00	495.36	-5.92	83.705
50	4.25	100	125	0.00	0.00	--	0.00	0.00	495.36	0.00	100.000

Combinazione n° 2 - STR (A1-M1-R3) H + V

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
1	-1.75	100	125	0.00	0.00	--	0.00	0.00	495.36	0.00	100.000
2	-1.65	100	125	0.00	0.00	--	0.00	0.00	495.36	-28.93	17.124
3	-1.56	100	125	0.00	0.00	--	0.00	0.00	495.36	-57.42	8.627
4	-1.46	100	125	0.00	0.00	--	0.00	0.00	495.36	-85.48	5.795
5	-1.37	100	125	0.00	0.00	--	0.00	0.00	495.36	-113.11	4.379
6	-1.27	100	125	0.00	0.00	--	0.00	0.00	495.36	-140.31	3.530
7	-1.17	100	125	0.00	0.00	--	0.00	0.00	495.36	-167.08	2.965
8	-1.08	100	125	0.00	0.00	--	0.00	0.00	495.36	-193.41	2.561
9	-0.98	100	125	0.00	0.00	--	0.00	0.00	495.36	-219.31	2.259
10	-0.88	100	125	0.00	0.00	--	0.00	0.00	495.36	-244.78	2.024
11	-0.79	100	125	0.00	0.00	--	0.00	0.00	495.36	-269.82	1.836
12	-0.69	100	125	0.00	0.00	--	0.00	0.00	495.36	-294.42	1.683
13	-0.60	100	125	0.00	0.00	--	0.00	0.00	495.36	-318.59	1.555
14	-0.50	100	125	0.00	0.00	--	0.00	0.00	495.36	-342.33	1.447
15	0.75	100	125	0.00	0.00	--	0.00	0.00	495.36	-166.65	2.972
16	0.85	100	125	0.00	0.00	--	0.00	0.00	495.36	-169.84	2.917
17	0.95	100	125	0.00	0.00	--	0.00	0.00	495.36	-172.56	2.871
18	1.05	100	125	0.00	0.00	--	0.00	0.00	495.36	-174.81	2.834
19	1.15	100	125	0.00	0.00	--	0.00	0.00	495.36	-176.60	2.805
20	1.25	100	125	0.00	0.00	--	0.00	0.00	495.36	-177.92	2.784
21	1.35	100	125	0.00	0.00	--	0.00	0.00	495.36	-178.77	2.771
22	1.45	100	125	0.00	0.00	--	0.00	0.00	495.36	-179.15	2.765
23	1.55	100	125	0.00	0.00	--	0.00	0.00	495.36	-179.06	2.766
24	1.65	100	125	0.00	0.00	--	0.00	0.00	495.36	-178.51	2.775
25	1.75	100	125	0.00	0.00	--	0.00	0.00	495.36	-177.49	2.791
26	1.85	100	125	0.00	0.00	--	0.00	0.00	495.36	-176.00	2.814
27	1.95	100	125	0.00	0.00	--	0.00	0.00	495.36	-174.05	2.846
28	2.05	100	125	0.00	0.00	--	0.00	0.00	495.36	-171.62	2.886
29	2.15	100	125	0.00	0.00	--	0.00	0.00	495.36	-168.73	2.936
30	2.25	100	125	0.00	0.00	--	0.00	0.00	495.36	-165.37	2.995
31	2.35	100	125	0.00	0.00	--	0.00	0.00	495.36	-161.55	3.066
32	2.45	100	125	0.00	0.00	--	0.00	0.00	495.36	-157.25	3.150
33	2.55	100	125	0.00	0.00	--	0.00	0.00	495.36	-152.49	3.248
34	2.65	100	125	0.00	0.00	--	0.00	0.00	495.36	-147.26	3.364
35	2.75	100	125	0.00	0.00	--	0.00	0.00	495.36	-141.57	3.499
36	2.85	100	125	0.00	0.00	--	0.00	0.00	495.36	-135.40	3.658
37	2.95	100	125	0.00	0.00	--	0.00	0.00	495.36	-128.77	3.847
38	3.05	100	125	0.00	0.00	--	0.00	0.00	495.36	-121.67	4.071
39	3.15	100	125	0.00	0.00	--	0.00	0.00	495.36	-114.10	4.341
40	3.25	100	125	0.00	0.00	--	0.00	0.00	495.36	-106.07	4.670
41	3.35	100	125	0.00	0.00	--	0.00	0.00	495.36	-97.57	5.077
42	3.45	100	125	0.00	0.00	--	0.00	0.00	495.36	-88.60	5.591
43	3.55	100	125	0.00	0.00	--	0.00	0.00	495.36	-79.16	6.258
44	3.65	100	125	0.00	0.00	--	0.00	0.00	495.36	-69.25	7.153
45	3.75	100	125	0.00	0.00	--	0.00	0.00	495.36	-58.88	8.413
46	3.85	100	125	0.00	0.00	--	0.00	0.00	495.36	-48.04	10.312
47	3.95	100	125	0.00	0.00	--	0.00	0.00	495.36	-36.73	13.486
48	4.05	100	125	0.00	0.00	--	0.00	0.00	495.36	-24.95	19.850
49	4.15	100	125	0.00	0.00	--	0.00	0.00	495.36	-12.71	38.970
50	4.25	100	125	0.00	0.00	--	0.00	0.00	495.36	0.00	100.000

Combinazione n° 3 - STR (A1-M1-R3)

VE407

## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
1	-1.75	100	125	0.00	0.00	--	0.00	0.00	495.36	0.00	100.000
2	-1.65	100	125	0.00	0.00	--	0.00	0.00	495.36	-18.07	27.421
3	-1.56	100	125	0.00	0.00	--	0.00	0.00	495.36	-36.09	13.724
4	-1.46	100	125	0.00	0.00	--	0.00	0.00	495.36	-54.08	9.159
5	-1.37	100	125	0.00	0.00	--	0.00	0.00	495.36	-72.04	6.876
6	-1.27	100	125	0.00	0.00	--	0.00	0.00	495.36	-89.96	5.507
7	-1.17	100	125	0.00	0.00	--	0.00	0.00	495.36	-107.84	4.594
8	-1.08	100	125	0.00	0.00	--	0.00	0.00	495.36	-125.68	3.941
9	-0.98	100	125	0.00	0.00	--	0.00	0.00	495.36	-143.49	3.452
10	-0.88	100	125	0.00	0.00	--	0.00	0.00	495.36	-161.26	3.072
11	-0.79	100	125	0.00	0.00	--	0.00	0.00	495.36	-178.99	2.768
12	-0.69	100	125	0.00	0.00	--	0.00	0.00	495.36	-196.69	2.519
13	-0.60	100	125	0.00	0.00	--	0.00	0.00	495.36	-214.35	2.311
14	-0.50	100	125	0.00	0.00	--	0.00	0.00	495.36	-231.97	2.135
15	0.75	100	125	0.00	0.00	--	0.00	0.00	495.36	-208.77	2.373
16	0.85	100	125	0.00	0.00	--	0.00	0.00	495.36	-202.83	2.442
17	0.95	100	125	0.00	0.00	--	0.00	0.00	495.36	-196.84	2.517
18	1.05	100	125	0.00	0.00	--	0.00	0.00	495.36	-190.82	2.596
19	1.15	100	125	0.00	0.00	--	0.00	0.00	495.36	-184.75	2.681
20	1.25	100	125	0.00	0.00	--	0.00	0.00	495.36	-178.65	2.773
21	1.35	100	125	0.00	0.00	--	0.00	0.00	495.36	-172.51	2.872
22	1.45	100	125	0.00	0.00	--	0.00	0.00	495.36	-166.32	2.978
23	1.55	100	125	0.00	0.00	--	0.00	0.00	495.36	-160.10	3.094
24	1.65	100	125	0.00	0.00	--	0.00	0.00	495.36	-153.83	3.220
25	1.75	100	125	0.00	0.00	--	0.00	0.00	495.36	-147.53	3.358
26	1.85	100	125	0.00	0.00	--	0.00	0.00	495.36	-141.18	3.509
27	1.95	100	125	0.00	0.00	--	0.00	0.00	495.36	-134.80	3.675
28	2.05	100	125	0.00	0.00	--	0.00	0.00	495.36	-128.38	3.859
29	2.15	100	125	0.00	0.00	--	0.00	0.00	495.36	-121.91	4.063
30	2.25	100	125	0.00	0.00	--	0.00	0.00	495.36	-115.41	4.292
31	2.35	100	125	0.00	0.00	--	0.00	0.00	495.36	-108.86	4.550
32	2.45	100	125	0.00	0.00	--	0.00	0.00	495.36	-102.28	4.843
33	2.55	100	125	0.00	0.00	--	0.00	0.00	495.36	-95.66	5.179
34	2.65	100	125	0.00	0.00	--	0.00	0.00	495.36	-88.99	5.566
35	2.75	100	125	0.00	0.00	--	0.00	0.00	495.36	-82.29	6.020
36	2.85	100	125	0.00	0.00	--	0.00	0.00	495.36	-75.55	6.557
37	2.95	100	125	0.00	0.00	--	0.00	0.00	495.36	-68.76	7.204
38	3.05	100	125	0.00	0.00	--	0.00	0.00	495.36	-62.85	7.882
39	3.15	100	125	0.00	0.00	--	0.00	0.00	495.36	-57.83	8.566
40	3.25	100	125	0.00	0.00	--	0.00	0.00	495.36	-52.77	9.387
41	3.35	100	125	0.00	0.00	--	0.00	0.00	495.36	-47.67	10.390
42	3.45	100	125	0.00	0.00	--	0.00	0.00	495.36	-42.54	11.645
43	3.55	100	125	0.00	0.00	--	0.00	0.00	495.36	-37.36	13.259
44	3.65	100	125	0.00	0.00	--	0.00	0.00	495.36	-32.14	15.411
45	3.75	100	125	0.00	0.00	--	0.00	0.00	495.36	-26.89	18.425
46	3.85	100	125	0.00	0.00	--	0.00	0.00	495.36	-21.59	22.946
47	3.95	100	125	0.00	0.00	--	0.00	0.00	495.36	-16.25	30.482
48	4.05	100	125	0.00	0.00	--	0.00	0.00	495.36	-10.87	45.556
49	4.15	100	125	0.00	0.00	--	0.00	0.00	495.36	-5.46	90.779
50	4.25	100	125	0.00	0.00	--	0.00	0.00	495.36	0.00	100.000

## Combinazione n° 4 - STR (A1-M1-R3) H - V

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
1	-1.75	100	125	0.00	0.00	--	0.00	0.00	495.36	0.00	100.000
2	-1.65	100	125	0.00	0.00	--	0.00	0.00	495.36	-26.21	18.898
3	-1.56	100	125	0.00	0.00	--	0.00	0.00	495.36	-52.00	9.525
4	-1.46	100	125	0.00	0.00	--	0.00	0.00	495.36	-77.38	6.402
5	-1.37	100	125	0.00	0.00	--	0.00	0.00	495.36	-102.33	4.841
6	-1.27	100	125	0.00	0.00	--	0.00	0.00	495.36	-126.86	3.905
7	-1.17	100	125	0.00	0.00	--	0.00	0.00	495.36	-150.97	3.281
8	-1.08	100	125	0.00	0.00	--	0.00	0.00	495.36	-174.67	2.836
9	-0.98	100	125	0.00	0.00	--	0.00	0.00	495.36	-197.94	2.503
10	-0.88	100	125	0.00	0.00	--	0.00	0.00	495.36	-220.79	2.244
11	-0.79	100	125	0.00	0.00	--	0.00	0.00	495.36	-243.23	2.037
12	-0.69	100	125	0.00	0.00	--	0.00	0.00	495.36	-265.24	1.868

VE407

## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
13	-0.60	100	125	0.00	0.00	--	0.00	0.00	495.36	-286.83	1.727
14	-0.50	100	125	0.00	0.00	--	0.00	0.00	495.36	-308.01	1.608
15	0.75	100	125	0.00	0.00	--	0.00	0.00	495.36	-245.59	2.017
16	0.85	100	125	0.00	0.00	--	0.00	0.00	495.36	-246.29	2.011
17	0.95	100	125	0.00	0.00	--	0.00	0.00	495.36	-246.54	2.009
18	1.05	100	125	0.00	0.00	--	0.00	0.00	495.36	-246.33	2.011
19	1.15	100	125	0.00	0.00	--	0.00	0.00	495.36	-245.67	2.016
20	1.25	100	125	0.00	0.00	--	0.00	0.00	495.36	-244.56	2.026
21	1.35	100	125	0.00	0.00	--	0.00	0.00	495.36	-242.99	2.039
22	1.45	100	125	0.00	0.00	--	0.00	0.00	495.36	-240.97	2.056
23	1.55	100	125	0.00	0.00	--	0.00	0.00	495.36	-238.49	2.077
24	1.65	100	125	0.00	0.00	--	0.00	0.00	495.36	-235.56	2.103
25	1.75	100	125	0.00	0.00	--	0.00	0.00	495.36	-232.18	2.134
26	1.85	100	125	0.00	0.00	--	0.00	0.00	495.36	-228.34	2.169
27	1.95	100	125	0.00	0.00	--	0.00	0.00	495.36	-224.05	2.211
28	2.05	100	125	0.00	0.00	--	0.00	0.00	495.36	-219.30	2.259
29	2.15	100	125	0.00	0.00	--	0.00	0.00	495.36	-214.10	2.314
30	2.25	100	125	0.00	0.00	--	0.00	0.00	495.36	-208.45	2.376
31	2.35	100	125	0.00	0.00	--	0.00	0.00	495.36	-202.34	2.448
32	2.45	100	125	0.00	0.00	--	0.00	0.00	495.36	-195.78	2.530
33	2.55	100	125	0.00	0.00	--	0.00	0.00	495.36	-188.76	2.624
34	2.65	100	125	0.00	0.00	--	0.00	0.00	495.36	-181.29	2.732
35	2.75	100	125	0.00	0.00	--	0.00	0.00	495.36	-173.37	2.857
36	2.85	100	125	0.00	0.00	--	0.00	0.00	495.36	-164.99	3.002
37	2.95	100	125	0.00	0.00	--	0.00	0.00	495.36	-156.15	3.172
38	3.05	100	125	0.00	0.00	--	0.00	0.00	495.36	-146.87	3.373
39	3.15	100	125	0.00	0.00	--	0.00	0.00	495.36	-137.13	3.612
40	3.25	100	125	0.00	0.00	--	0.00	0.00	495.36	-126.93	3.903
41	3.35	100	125	0.00	0.00	--	0.00	0.00	495.36	-116.28	4.260
42	3.45	100	125	0.00	0.00	--	0.00	0.00	495.36	-105.18	4.710
43	3.55	100	125	0.00	0.00	--	0.00	0.00	495.36	-93.62	5.291
44	3.65	100	125	0.00	0.00	--	0.00	0.00	495.36	-81.61	6.070
45	3.75	100	125	0.00	0.00	--	0.00	0.00	495.36	-69.14	7.165
46	3.85	100	125	0.00	0.00	--	0.00	0.00	495.36	-56.22	8.811
47	3.95	100	125	0.00	0.00	--	0.00	0.00	495.36	-42.85	11.561
48	4.05	100	125	0.00	0.00	--	0.00	0.00	495.36	-29.02	17.070
49	4.15	100	125	0.00	0.00	--	0.00	0.00	495.36	-14.74	33.615
50	4.25	100	125	0.00	0.00	--	0.00	0.00	495.36	0.00	100.000

## Combinazione n° 13 - ECC

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
1	-1.75	100	125	0.00	0.00	--	0.00	0.00	495.36	0.00	100.000
2	-1.65	100	125	0.00	0.00	--	0.00	0.00	495.36	-15.57	31.816
3	-1.56	100	125	0.00	0.00	--	0.00	0.00	495.36	-31.09	15.934
4	-1.46	100	125	0.00	0.00	--	0.00	0.00	495.36	-46.56	10.640
5	-1.37	100	125	0.00	0.00	--	0.00	0.00	495.36	-61.97	7.993
6	-1.27	100	125	0.00	0.00	--	0.00	0.00	495.36	-77.34	6.405
7	-1.17	100	125	0.00	0.00	--	0.00	0.00	495.36	-92.66	5.346
8	-1.08	100	125	0.00	0.00	--	0.00	0.00	495.36	-107.92	4.590
9	-0.98	100	125	0.00	0.00	--	0.00	0.00	495.36	-123.14	4.023
10	-0.88	100	125	0.00	0.00	--	0.00	0.00	495.36	-138.30	3.582
11	-0.79	100	125	0.00	0.00	--	0.00	0.00	495.36	-153.41	3.229
12	-0.69	100	125	0.00	0.00	--	0.00	0.00	495.36	-168.48	2.940
13	-0.60	100	125	0.00	0.00	--	0.00	0.00	495.36	-183.49	2.700
14	-0.50	100	125	0.00	0.00	--	0.00	0.00	495.36	-198.45	2.496
15	0.75	100	125	0.00	0.00	--	0.00	0.00	495.36	-45.97	10.776
16	0.85	100	125	0.00	0.00	--	0.00	0.00	495.36	-45.59	10.866
17	0.95	100	125	0.00	0.00	--	0.00	0.00	495.36	-45.15	10.971
18	1.05	100	125	0.00	0.00	--	0.00	0.00	495.36	-44.66	11.091
19	1.15	100	125	0.00	0.00	--	0.00	0.00	495.36	-44.12	11.228
20	1.25	100	125	0.00	0.00	--	0.00	0.00	495.36	-43.52	11.383
21	1.35	100	125	0.00	0.00	--	0.00	0.00	495.36	-42.86	11.557
22	1.45	100	125	0.00	0.00	--	0.00	0.00	495.36	-42.15	11.752
23	1.55	100	125	0.00	0.00	--	0.00	0.00	495.36	-41.39	11.969
24	1.65	100	125	0.00	0.00	--	0.00	0.00	495.36	-40.57	12.210

VE407

**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	Y	B	H	A <sub>sw</sub>	s	cotθ	V <sub>Rcd</sub>	V <sub>Rsd</sub>	V <sub>Rd</sub>	T	FS
	[m]	[cm]	[cm]	[cmq]	[cm]		[kN]	[kN]	[kN]	[kN]	
25	1.75	100	125	0.00	0.00	--	0.00	0.00	495.36	-39.69	12.479
26	1.85	100	125	0.00	0.00	--	0.00	0.00	495.36	-38.77	12.779
27	1.95	100	125	0.00	0.00	--	0.00	0.00	495.36	-37.78	13.111
28	2.05	100	125	0.00	0.00	--	0.00	0.00	495.36	-36.74	13.482
29	2.15	100	125	0.00	0.00	--	0.00	0.00	495.36	-35.65	13.896
30	2.25	100	125	0.00	0.00	--	0.00	0.00	495.36	-34.50	14.358
31	2.35	100	125	0.00	0.00	--	0.00	0.00	495.36	-33.30	14.877
32	2.45	100	125	0.00	0.00	--	0.00	0.00	495.36	-32.04	15.462
33	2.55	100	125	0.00	0.00	--	0.00	0.00	495.36	-30.72	16.123
34	2.65	100	125	0.00	0.00	--	0.00	0.00	495.36	-29.36	16.874
35	2.75	100	125	0.00	0.00	--	0.00	0.00	495.36	-27.93	17.734
36	2.85	100	125	0.00	0.00	--	0.00	0.00	495.36	-26.45	18.725
37	2.95	100	125	0.00	0.00	--	0.00	0.00	495.36	-24.92	19.876
38	3.05	100	125	0.00	0.00	--	0.00	0.00	495.36	-23.33	21.229
39	3.15	100	125	0.00	0.00	--	0.00	0.00	495.36	-21.69	22.837
40	3.25	100	125	0.00	0.00	--	0.00	0.00	495.36	-19.99	24.775
41	3.35	100	125	0.00	0.00	--	0.00	0.00	495.36	-18.24	27.156
42	3.45	100	125	0.00	0.00	--	0.00	0.00	495.36	-16.43	30.142
43	3.55	100	125	0.00	0.00	--	0.00	0.00	495.36	-14.57	33.994
44	3.65	100	125	0.00	0.00	--	0.00	0.00	495.36	-12.66	39.143
45	3.75	100	125	0.00	0.00	--	0.00	0.00	495.36	-10.68	46.369
46	3.85	100	125	0.00	0.00	--	0.00	0.00	495.36	-8.66	57.226
47	3.95	100	125	0.00	0.00	--	0.00	0.00	495.36	-6.57	75.346
48	4.05	100	125	0.00	0.00	--	0.00	0.00	495.36	-4.44	111.621
49	4.15	100	125	0.00	0.00	--	0.00	0.00	495.36	-2.25	220.514
50	4.25	100	125	0.00	0.00	--	0.00	0.00	495.36	0.00	100.000

**Verifica a fessurazione****Simbologia adottata**

n°	indice sezione
Y	ordinata sezione espressa in [m]
B	larghezza sezione espresso in [cm]
H	altezza sezione espressa in [cm]
A <sub>f</sub>	area ferri zona tesa espresso in [cmq]
A <sub>eff</sub>	area efficace espressa in [cmq]
M	momento agente espressa in [kNm]
M <sub>pf</sub>	momento di prima fessurazione espressa in [kNm]
ε	deformazione espresso in %
S <sub>m</sub>	spaziatura tra le fessure espressa in [mm]
w	apertura delle fessure espressa in [mm]

**Combinazioni SLEF****Paramento****Combinazione n° 15 - SLEF**Apertura limite fessure  $w_{lim}=0.30$

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## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

n°	Y	B	H	Af	Aeff	M	Mpf	ε	Sm	w
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kNm]	[%]	[mm]	[mm]
1	0.00	100	50	25.13	1000.00	0.38	600.07	0.0000	0.00	0.000
2	-0.10	100	51	0.00	0.00	0.39	8192.11	0.0000	0.00	0.000
3	-0.20	100	52	0.00	0.00	0.40	604.46	0.0000	0.00	0.000
4	-0.30	100	53	0.00	0.00	0.43	361.89	0.0000	0.00	0.000
5	-0.40	100	54	0.00	0.00	0.48	298.40	0.0000	0.00	0.000
6	-0.50	100	55	0.00	0.00	0.56	290.74	0.0000	0.00	0.000
7	-0.60	100	56	0.00	0.00	0.66	317.71	0.0000	0.00	0.000
8	-0.70	100	57	0.00	0.00	0.80	380.33	0.0000	0.00	0.000
9	-0.80	100	57	0.00	0.00	0.98	495.51	0.0000	0.00	0.000
10	-0.90	100	58	0.00	0.00	1.20	712.18	0.0000	0.00	0.000
11	-1.00	100	59	0.00	0.00	1.48	1194.61	0.0000	0.00	0.000
12	-1.10	100	60	0.00	0.00	1.80	2956.07	0.0000	0.00	0.000
13	-1.20	100	61	0.00	0.00	2.19	11406.52	0.0000	0.00	0.000
14	-1.30	100	62	0.00	0.00	2.64	2248.60	0.0000	0.00	0.000
15	-1.40	100	63	25.13	1000.00	3.16	1350.59	0.0000	0.00	0.000
16	-1.50	100	64	25.13	1000.00	3.75	1017.02	0.0000	0.00	0.000
17	-1.60	100	65	25.13	1000.00	4.42	846.43	0.0000	0.00	0.000
18	-1.70	100	66	25.13	1000.00	5.17	745.03	0.0000	0.00	0.000
19	-1.80	100	67	25.13	1000.00	6.01	679.39	0.0000	0.00	0.000
20	-1.90	100	68	25.13	1000.00	6.94	634.60	0.0000	0.00	0.000
21	-2.00	100	69	25.13	1000.00	7.97	603.04	0.0000	0.00	0.000
22	-2.10	100	70	25.13	1000.00	9.10	580.39	0.0000	0.00	0.000
23	-2.20	100	71	25.13	1000.00	10.34	564.04	0.0000	0.00	0.000
24	-2.30	100	72	25.13	1000.00	11.69	552.30	0.0000	0.00	0.000
25	-2.40	100	72	25.13	1000.00	13.16	544.06	0.0000	0.00	0.000
26	-2.50	100	73	25.13	1000.00	14.75	538.51	0.0000	0.00	0.000
27	-2.60	100	74	25.13	1000.00	16.47	535.11	0.0000	0.00	0.000
28	-2.70	100	75	25.13	1000.00	18.32	533.45	0.0000	0.00	0.000
29	-2.80	100	76	25.13	1000.00	20.30	533.20	0.0000	0.00	0.000
30	-2.90	100	77	25.13	1000.00	22.42	534.14	0.0000	0.00	0.000
31	-3.00	100	78	25.13	1000.00	24.69	536.08	0.0000	0.00	0.000
32	-3.10	100	79	25.13	1000.00	27.11	538.88	0.0000	0.00	0.000
33	-3.20	100	80	25.13	1000.00	29.69	542.41	0.0000	0.00	0.000
34	-3.30	100	81	25.13	1000.00	32.43	546.59	0.0000	0.00	0.000
35	-3.40	100	82	25.13	1000.00	35.33	551.34	0.0000	0.00	0.000
36	-3.50	100	83	25.13	1000.00	38.40	556.60	0.0000	0.00	0.000
37	-3.60	100	84	25.13	1000.00	41.64	562.31	0.0000	0.00	0.000
38	-3.70	100	85	25.13	1000.00	45.07	568.42	0.0000	0.00	0.000
39	-3.80	100	86	25.13	1000.00	48.68	574.91	0.0000	0.00	0.000
40	-3.90	100	87	25.13	1000.00	52.48	581.74	0.0000	0.00	0.000
41	-4.00	100	87	25.13	1000.00	56.47	588.88	0.0000	0.00	0.000
42	-4.10	100	88	25.13	1000.00	60.66	596.32	0.0000	0.00	0.000
43	-4.20	100	89	25.13	1000.00	65.06	604.02	0.0000	0.00	0.000
44	-4.30	100	90	25.13	1000.00	69.66	611.97	0.0000	0.00	0.000
45	-4.40	100	91	25.13	1000.00	74.48	620.16	0.0000	0.00	0.000
46	-4.50	100	92	25.13	1000.00	79.51	628.57	0.0000	0.00	0.000
47	-4.60	100	93	25.13	1000.00	84.77	637.20	0.0000	0.00	0.000
48	-4.70	100	94	25.13	1000.00	90.25	646.02	0.0000	0.00	0.000
49	-4.80	100	95	25.13	1000.00	95.97	655.04	0.0000	0.00	0.000
50	-4.90	100	96	25.13	1000.00	101.93	664.24	0.0000	0.00	0.000
51	-5.00	100	97	25.13	1000.00	108.13	673.62	0.0000	0.00	0.000
52	-5.10	100	98	25.13	1000.00	114.57	683.16	0.0000	0.00	0.000
53	-5.20	100	99	25.13	1000.00	121.27	692.87	0.0000	0.00	0.000
54	-5.30	100	100	25.13	1000.00	128.22	702.74	0.0000	0.00	0.000
55	-5.40	100	101	25.13	1000.00	135.44	712.76	0.0000	0.00	0.000
56	-5.50	100	102	25.13	1000.00	142.92	722.93	0.0000	0.00	0.000
57	-5.60	100	102	25.13	1000.00	150.67	733.25	0.0000	0.00	0.000
58	-5.70	100	103	25.13	1000.00	158.70	743.71	0.0000	0.00	0.000
59	-5.80	100	104	25.13	1000.00	167.01	754.31	0.0000	0.00	0.000
60	-5.90	100	105	25.13	1000.00	175.60	765.04	0.0000	0.00	0.000
61	-6.00	100	106	25.13	1000.00	184.49	775.91	0.0000	0.00	0.000
62	-6.10	100	107	25.13	1000.00	193.67	786.90	0.0000	0.00	0.000
63	-6.20	100	108	25.13	1000.00	203.15	798.03	0.0000	0.00	0.000
64	-6.30	100	109	25.13	1000.00	212.94	809.28	0.0000	0.00	0.000
65	-6.40	100	110	25.13	1000.00	223.04	820.65	0.0000	0.00	0.000
66	-6.50	100	111	25.13	1000.00	233.45	832.15	0.0000	0.00	0.000
67	-6.60	100	112	50.27	1000.00	244.18	930.56	0.0000	0.00	0.000
68	-6.70	100	113	50.27	1000.00	255.23	942.98	0.0000	0.00	0.000
69	-6.80	100	114	50.27	1000.00	266.62	955.51	0.0000	0.00	0.000
70	-6.90	100	115	50.27	1000.00	278.33	968.17	0.0000	0.00	0.000



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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	Y	B	H	Af	Aeff	M	Mpf	ε	Sm	w
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kNm]	[%]	[mm]	[mm]
71	-7.00	100	116	50.27	1000.00	290.39	980.94	0.0000	0.00	0.000
72	-7.10	100	116	50.27	1000.00	302.79	993.83	0.0000	0.00	0.000
73	-7.20	100	117	50.27	1000.00	315.54	1040.71	0.0000	0.00	0.000
74	-7.30	100	118	25.13	1000.00	328.64	928.35	0.0000	0.00	0.000
75	-7.40	100	119	25.13	1000.00	342.10	940.88	0.0000	0.00	0.000
76	-7.50	100	120	25.13	1000.00	355.92	953.53	0.0000	0.00	0.000
77	-7.60	100	121	25.13	1000.00	370.11	966.28	0.0000	0.00	0.000
78	-7.70	100	122	25.13	1000.00	384.68	979.14	0.0000	0.00	0.000
79	-7.80	100	123	25.13	1000.00	399.62	992.11	0.0000	0.00	0.000
80	-7.90	100	124	25.13	1000.00	414.94	1005.19	0.0000	0.00	0.000
81	-8.00	100	125	25.13	1000.00	430.65	1018.38	0.0000	0.00	0.000

Mensola valleCombinazione n° 15 - SLEFApertura limite fessure  $w_{lim}=0.30$ 

n°	Y	B	H	Af	Aeff	M	Mpf	ε	Sm	w
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kNm]	[%]	[mm]	[mm]
1	-0.75	100	50	0.00	0.00	0.00	0.00	0.0000	0.00	0.000
2	-0.67	100	50	0.00	0.00	-0.04	0.00	0.0000	0.00	0.000
3	-0.58	100	50	10.18	1000.00	-0.17	-147.20	0.0000	0.00	0.000
4	-0.50	100	50	10.18	1000.00	-0.38	-147.20	0.0000	0.00	0.000

FondazioneCombinazione n° 15 - SLEFApertura limite fessure  $w_{lim}=0.30$ 

n°	Y	B	H	Af	Aeff	M	Mpf	ε	Sm	w
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kNm]	[%]	[mm]	[mm]
1	-1.75	100	125	0.00	0.00	0.00	0.00	0.0000	0.00	0.000
2	-1.65	100	125	25.45	1000.00	0.65	945.43	0.0000	0.00	0.000
3	-1.56	100	125	25.45	1000.00	2.61	945.43	0.0000	0.00	0.000
4	-1.46	100	125	25.45	1000.00	5.87	945.43	0.0000	0.00	0.000
5	-1.37	100	125	25.45	1000.00	10.43	945.43	0.0000	0.00	0.000
6	-1.27	100	125	25.45	1000.00	16.31	945.43	0.0000	0.00	0.000
7	-1.17	100	125	25.45	1000.00	23.49	945.43	0.0000	0.00	0.000
8	-1.08	100	125	25.45	1000.00	31.98	945.43	0.0000	0.00	0.000
9	-0.98	100	125	25.45	1000.00	41.79	945.43	0.0000	0.00	0.000
10	-0.88	100	125	25.45	1000.00	52.91	945.43	0.0000	0.00	0.000
11	-0.79	100	125	25.45	1000.00	65.34	945.43	0.0000	0.00	0.000
12	-0.69	100	125	25.45	1000.00	79.10	945.43	0.0000	0.00	0.000
13	-0.60	100	125	25.45	1000.00	94.16	945.43	0.0000	0.00	0.000
14	-0.50	100	125	25.45	1000.00	110.55	945.43	0.0000	0.00	0.000
15	0.75	100	125	25.45	1000.00	-20.11	-945.43	0.0000	0.00	0.000
16	0.85	100	125	25.45	1000.00	-18.66	-945.43	0.0000	0.00	0.000
17	0.95	100	125	25.45	1000.00	-17.28	-945.43	0.0000	0.00	0.000
18	1.05	100	125	25.45	1000.00	-15.97	-945.43	0.0000	0.00	0.000
19	1.15	100	125	25.45	1000.00	-14.73	-945.43	0.0000	0.00	0.000
20	1.25	100	125	25.45	1000.00	-13.55	-945.43	0.0000	0.00	0.000
21	1.35	100	125	25.45	1000.00	-12.43	-945.43	0.0000	0.00	0.000
22	1.45	100	125	25.45	1000.00	-11.38	-945.43	0.0000	0.00	0.000
23	1.55	100	125	25.45	1000.00	-10.38	-945.43	0.0000	0.00	0.000
24	1.65	100	125	25.45	1000.00	-9.44	-945.43	0.0000	0.00	0.000

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## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

n°	Y	B	H	Af	Aeff	M	Mpf	ε	Sm	w
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kNm]	[%]	[mm]	[mm]
25	1.75	100	125	25.45	1000.00	-8.56	-945.43	0.0000	0.00	0.000
26	1.85	100	125	25.45	1000.00	-7.73	-945.43	0.0000	0.00	0.000
27	1.95	100	125	25.45	1000.00	-6.96	-945.43	0.0000	0.00	0.000
28	2.05	100	125	25.45	1000.00	-6.23	-945.43	0.0000	0.00	0.000
29	2.15	100	125	25.45	1000.00	-5.56	-945.43	0.0000	0.00	0.000
30	2.25	100	125	25.45	1000.00	-4.93	-945.43	0.0000	0.00	0.000
31	2.35	100	125	25.45	1000.00	-4.35	-945.43	0.0000	0.00	0.000
32	2.45	100	125	25.45	1000.00	-3.82	-945.43	0.0000	0.00	0.000
33	2.55	100	125	25.45	1000.00	-3.33	-945.43	0.0000	0.00	0.000
34	2.65	100	125	25.45	1000.00	-2.88	-945.43	0.0000	0.00	0.000
35	2.75	100	125	25.45	1000.00	-2.47	-945.43	0.0000	0.00	0.000
36	2.85	100	125	25.45	1000.00	-2.10	-945.43	0.0000	0.00	0.000
37	2.95	100	125	25.45	1000.00	-1.76	-945.43	0.0000	0.00	0.000
38	3.05	100	125	25.45	1000.00	-1.46	-945.43	0.0000	0.00	0.000
39	3.15	100	125	25.45	1000.00	-1.20	-945.43	0.0000	0.00	0.000
40	3.25	100	125	25.45	1000.00	-0.96	-945.43	0.0000	0.00	0.000
41	3.35	100	125	25.45	1000.00	-0.76	-945.43	0.0000	0.00	0.000
42	3.45	100	125	25.45	1000.00	-0.58	-945.43	0.0000	0.00	0.000
43	3.55	100	125	25.45	1000.00	-0.43	-945.43	0.0000	0.00	0.000
44	3.65	100	125	25.45	1000.00	-0.31	-945.43	0.0000	0.00	0.000
45	3.75	100	125	25.45	1000.00	-0.21	-945.43	0.0000	0.00	0.000
46	3.85	100	125	25.45	1000.00	-0.13	-945.43	0.0000	0.00	0.000
47	3.95	100	125	0.00	0.00	-0.07	0.00	0.0000	0.00	0.000
48	4.05	100	125	0.00	0.00	-0.03	0.00	0.0000	0.00	0.000
49	4.15	100	125	0.00	0.00	-0.01	0.00	0.0000	0.00	0.000
50	4.25	100	125	0.00	0.00	0.00	0.00	0.0000	0.00	0.000

## Combinazioni SLEQ

## Paramento

## Combinazione n° 16 - SLEQ

Apertura limite fessure  $w_{lim}=0.20$ 

n°	Y	B	H	Af	Aeff	M	Mpf	ε	Sm	w
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kNm]	[%]	[mm]	[mm]
1	0.00	100	50	25.13	1000.00	0.38	600.07	0.0000	0.00	0.000
2	-0.10	100	51	0.00	0.00	0.39	8192.11	0.0000	0.00	0.000
3	-0.20	100	52	0.00	0.00	0.40	604.46	0.0000	0.00	0.000
4	-0.30	100	53	0.00	0.00	0.43	361.89	0.0000	0.00	0.000
5	-0.40	100	54	0.00	0.00	0.48	298.40	0.0000	0.00	0.000
6	-0.50	100	55	0.00	0.00	0.56	290.74	0.0000	0.00	0.000
7	-0.60	100	56	0.00	0.00	0.66	317.71	0.0000	0.00	0.000
8	-0.70	100	57	0.00	0.00	0.80	380.33	0.0000	0.00	0.000
9	-0.80	100	57	0.00	0.00	0.98	495.51	0.0000	0.00	0.000
10	-0.90	100	58	0.00	0.00	1.20	712.18	0.0000	0.00	0.000
11	-1.00	100	59	0.00	0.00	1.48	1194.61	0.0000	0.00	0.000
12	-1.10	100	60	0.00	0.00	1.80	2956.07	0.0000	0.00	0.000
13	-1.20	100	61	0.00	0.00	2.19	11406.52	0.0000	0.00	0.000
14	-1.30	100	62	0.00	0.00	2.64	2248.60	0.0000	0.00	0.000
15	-1.40	100	63	25.13	1000.00	3.16	1350.59	0.0000	0.00	0.000
16	-1.50	100	64	25.13	1000.00	3.75	1017.02	0.0000	0.00	0.000
17	-1.60	100	65	25.13	1000.00	4.42	846.43	0.0000	0.00	0.000
18	-1.70	100	66	25.13	1000.00	5.17	745.03	0.0000	0.00	0.000
19	-1.80	100	67	25.13	1000.00	6.01	679.39	0.0000	0.00	0.000
20	-1.90	100	68	25.13	1000.00	6.94	634.60	0.0000	0.00	0.000
21	-2.00	100	69	25.13	1000.00	7.97	603.04	0.0000	0.00	0.000
22	-2.10	100	70	25.13	1000.00	9.10	580.39	0.0000	0.00	0.000
23	-2.20	100	71	25.13	1000.00	10.34	564.04	0.0000	0.00	0.000

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## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

n°	Y	B	H	Af	Aeff	M	Mpf	ε	Sm	w
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kNm]	[%]	[mm]	[mm]
24	-2.30	100	72	25.13	1000.00	11.69	552.30	0.0000	0.00	0.000
25	-2.40	100	72	25.13	1000.00	13.16	544.06	0.0000	0.00	0.000
26	-2.50	100	73	25.13	1000.00	14.75	538.51	0.0000	0.00	0.000
27	-2.60	100	74	25.13	1000.00	16.47	535.11	0.0000	0.00	0.000
28	-2.70	100	75	25.13	1000.00	18.32	533.45	0.0000	0.00	0.000
29	-2.80	100	76	25.13	1000.00	20.30	533.20	0.0000	0.00	0.000
30	-2.90	100	77	25.13	1000.00	22.42	534.14	0.0000	0.00	0.000
31	-3.00	100	78	25.13	1000.00	24.69	536.08	0.0000	0.00	0.000
32	-3.10	100	79	25.13	1000.00	27.11	538.88	0.0000	0.00	0.000
33	-3.20	100	80	25.13	1000.00	29.69	542.41	0.0000	0.00	0.000
34	-3.30	100	81	25.13	1000.00	32.43	546.59	0.0000	0.00	0.000
35	-3.40	100	82	25.13	1000.00	35.33	551.34	0.0000	0.00	0.000
36	-3.50	100	83	25.13	1000.00	38.40	556.60	0.0000	0.00	0.000
37	-3.60	100	84	25.13	1000.00	41.64	562.31	0.0000	0.00	0.000
38	-3.70	100	85	25.13	1000.00	45.07	568.42	0.0000	0.00	0.000
39	-3.80	100	86	25.13	1000.00	48.68	574.91	0.0000	0.00	0.000
40	-3.90	100	87	25.13	1000.00	52.48	581.74	0.0000	0.00	0.000
41	-4.00	100	87	25.13	1000.00	56.47	588.88	0.0000	0.00	0.000
42	-4.10	100	88	25.13	1000.00	60.66	596.32	0.0000	0.00	0.000
43	-4.20	100	89	25.13	1000.00	65.06	604.02	0.0000	0.00	0.000
44	-4.30	100	90	25.13	1000.00	69.66	611.97	0.0000	0.00	0.000
45	-4.40	100	91	25.13	1000.00	74.48	620.16	0.0000	0.00	0.000
46	-4.50	100	92	25.13	1000.00	79.51	628.57	0.0000	0.00	0.000
47	-4.60	100	93	25.13	1000.00	84.77	637.20	0.0000	0.00	0.000
48	-4.70	100	94	25.13	1000.00	90.25	646.02	0.0000	0.00	0.000
49	-4.80	100	95	25.13	1000.00	95.97	655.04	0.0000	0.00	0.000
50	-4.90	100	96	25.13	1000.00	101.93	664.24	0.0000	0.00	0.000
51	-5.00	100	97	25.13	1000.00	108.13	673.62	0.0000	0.00	0.000
52	-5.10	100	98	25.13	1000.00	114.57	683.16	0.0000	0.00	0.000
53	-5.20	100	99	25.13	1000.00	121.27	692.87	0.0000	0.00	0.000
54	-5.30	100	100	25.13	1000.00	128.22	702.74	0.0000	0.00	0.000
55	-5.40	100	101	25.13	1000.00	135.44	712.76	0.0000	0.00	0.000
56	-5.50	100	102	25.13	1000.00	142.92	722.93	0.0000	0.00	0.000
57	-5.60	100	102	25.13	1000.00	150.67	733.25	0.0000	0.00	0.000
58	-5.70	100	103	25.13	1000.00	158.70	743.71	0.0000	0.00	0.000
59	-5.80	100	104	25.13	1000.00	167.01	754.31	0.0000	0.00	0.000
60	-5.90	100	105	25.13	1000.00	175.60	765.04	0.0000	0.00	0.000
61	-6.00	100	106	25.13	1000.00	184.49	775.91	0.0000	0.00	0.000
62	-6.10	100	107	25.13	1000.00	193.67	786.90	0.0000	0.00	0.000
63	-6.20	100	108	25.13	1000.00	203.15	798.03	0.0000	0.00	0.000
64	-6.30	100	109	25.13	1000.00	212.94	809.28	0.0000	0.00	0.000
65	-6.40	100	110	25.13	1000.00	223.04	820.65	0.0000	0.00	0.000
66	-6.50	100	111	25.13	1000.00	233.45	832.15	0.0000	0.00	0.000
67	-6.60	100	112	50.27	1000.00	244.18	930.56	0.0000	0.00	0.000
68	-6.70	100	113	50.27	1000.00	255.23	942.98	0.0000	0.00	0.000
69	-6.80	100	114	50.27	1000.00	266.62	955.51	0.0000	0.00	0.000
70	-6.90	100	115	50.27	1000.00	278.33	968.17	0.0000	0.00	0.000
71	-7.00	100	116	50.27	1000.00	290.39	980.94	0.0000	0.00	0.000
72	-7.10	100	116	50.27	1000.00	302.79	993.83	0.0000	0.00	0.000
73	-7.20	100	117	50.27	1000.00	315.54	1040.71	0.0000	0.00	0.000
74	-7.30	100	118	25.13	1000.00	328.64	928.35	0.0000	0.00	0.000
75	-7.40	100	119	25.13	1000.00	342.10	940.88	0.0000	0.00	0.000
76	-7.50	100	120	25.13	1000.00	355.92	953.53	0.0000	0.00	0.000
77	-7.60	100	121	25.13	1000.00	370.11	966.28	0.0000	0.00	0.000
78	-7.70	100	122	25.13	1000.00	384.68	979.14	0.0000	0.00	0.000
79	-7.80	100	123	25.13	1000.00	399.62	992.11	0.0000	0.00	0.000
80	-7.90	100	124	25.13	1000.00	414.94	1005.19	0.0000	0.00	0.000
81	-8.00	100	125	25.13	1000.00	430.65	1018.38	0.0000	0.00	0.000

Mensola valleCombinazione n° 16 - SLEQApertura limite fessure  $w_{lim}=0.20$

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## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

n°	Y	B	H	Af	Aeff	M	Mpf	ε	Sm	w
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kNm]	[%]	[mm]	[mm]
1	-0.75	100	50	0.00	0.00	0.00	0.00	0.0000	0.00	0.000
2	-0.67	100	50	0.00	0.00	-0.04	0.00	0.0000	0.00	0.000
3	-0.58	100	50	10.18	1000.00	-0.17	-147.20	0.0000	0.00	0.000
4	-0.50	100	50	10.18	1000.00	-0.38	-147.20	0.0000	0.00	0.000

## Fondazione

## Combinazione n° 16 - SLEQ

Apertura limite fessure  $w_{lim}=0.20$ 

n°	Y	B	H	Af	Aeff	M	Mpf	ε	Sm	w
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kNm]	[%]	[mm]	[mm]
1	-1.75	100	125	0.00	0.00	0.00	0.00	0.0000	0.00	0.000
2	-1.65	100	125	25.45	1000.00	0.65	945.43	0.0000	0.00	0.000
3	-1.56	100	125	25.45	1000.00	2.61	945.43	0.0000	0.00	0.000
4	-1.46	100	125	25.45	1000.00	5.87	945.43	0.0000	0.00	0.000
5	-1.37	100	125	25.45	1000.00	10.43	945.43	0.0000	0.00	0.000
6	-1.27	100	125	25.45	1000.00	16.31	945.43	0.0000	0.00	0.000
7	-1.17	100	125	25.45	1000.00	23.49	945.43	0.0000	0.00	0.000
8	-1.08	100	125	25.45	1000.00	31.98	945.43	0.0000	0.00	0.000
9	-0.98	100	125	25.45	1000.00	41.79	945.43	0.0000	0.00	0.000
10	-0.88	100	125	25.45	1000.00	52.91	945.43	0.0000	0.00	0.000
11	-0.79	100	125	25.45	1000.00	65.34	945.43	0.0000	0.00	0.000
12	-0.69	100	125	25.45	1000.00	79.10	945.43	0.0000	0.00	0.000
13	-0.60	100	125	25.45	1000.00	94.16	945.43	0.0000	0.00	0.000
14	-0.50	100	125	25.45	1000.00	110.55	945.43	0.0000	0.00	0.000
15	0.75	100	125	25.45	1000.00	-20.11	-945.43	0.0000	0.00	0.000
16	0.85	100	125	25.45	1000.00	-18.66	-945.43	0.0000	0.00	0.000
17	0.95	100	125	25.45	1000.00	-17.28	-945.43	0.0000	0.00	0.000
18	1.05	100	125	25.45	1000.00	-15.97	-945.43	0.0000	0.00	0.000
19	1.15	100	125	25.45	1000.00	-14.73	-945.43	0.0000	0.00	0.000
20	1.25	100	125	25.45	1000.00	-13.55	-945.43	0.0000	0.00	0.000
21	1.35	100	125	25.45	1000.00	-12.43	-945.43	0.0000	0.00	0.000
22	1.45	100	125	25.45	1000.00	-11.38	-945.43	0.0000	0.00	0.000
23	1.55	100	125	25.45	1000.00	-10.38	-945.43	0.0000	0.00	0.000
24	1.65	100	125	25.45	1000.00	-9.44	-945.43	0.0000	0.00	0.000
25	1.75	100	125	25.45	1000.00	-8.56	-945.43	0.0000	0.00	0.000
26	1.85	100	125	25.45	1000.00	-7.73	-945.43	0.0000	0.00	0.000
27	1.95	100	125	25.45	1000.00	-6.96	-945.43	0.0000	0.00	0.000
28	2.05	100	125	25.45	1000.00	-6.23	-945.43	0.0000	0.00	0.000
29	2.15	100	125	25.45	1000.00	-5.56	-945.43	0.0000	0.00	0.000
30	2.25	100	125	25.45	1000.00	-4.93	-945.43	0.0000	0.00	0.000
31	2.35	100	125	25.45	1000.00	-4.35	-945.43	0.0000	0.00	0.000
32	2.45	100	125	25.45	1000.00	-3.82	-945.43	0.0000	0.00	0.000
33	2.55	100	125	25.45	1000.00	-3.33	-945.43	0.0000	0.00	0.000
34	2.65	100	125	25.45	1000.00	-2.88	-945.43	0.0000	0.00	0.000
35	2.75	100	125	25.45	1000.00	-2.47	-945.43	0.0000	0.00	0.000
36	2.85	100	125	25.45	1000.00	-2.10	-945.43	0.0000	0.00	0.000
37	2.95	100	125	25.45	1000.00	-1.76	-945.43	0.0000	0.00	0.000
38	3.05	100	125	25.45	1000.00	-1.46	-945.43	0.0000	0.00	0.000
39	3.15	100	125	25.45	1000.00	-1.20	-945.43	0.0000	0.00	0.000
40	3.25	100	125	25.45	1000.00	-0.96	-945.43	0.0000	0.00	0.000
41	3.35	100	125	25.45	1000.00	-0.76	-945.43	0.0000	0.00	0.000
42	3.45	100	125	25.45	1000.00	-0.58	-945.43	0.0000	0.00	0.000
43	3.55	100	125	25.45	1000.00	-0.43	-945.43	0.0000	0.00	0.000
44	3.65	100	125	25.45	1000.00	-0.31	-945.43	0.0000	0.00	0.000
45	3.75	100	125	25.45	1000.00	-0.21	-945.43	0.0000	0.00	0.000
46	3.85	100	125	25.45	1000.00	-0.13	-945.43	0.0000	0.00	0.000
47	3.95	100	125	0.00	0.00	-0.07	0.00	0.0000	0.00	0.000
48	4.05	100	125	0.00	0.00	-0.03	0.00	0.0000	0.00	0.000
49	4.15	100	125	0.00	0.00	-0.01	0.00	0.0000	0.00	0.000

S.S. 51 "Alemagna" – Variante di Longarone

Progetto Fattibilità Tecnica ed Economica



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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	Y	B	H	Af	Aeff	M	Mpf	$\varepsilon$	Sm	w
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kNm]	[%]	[mm]	[mm]
50	4.25	100	125	0.00	0.00	0.00	0.00	0.0000	0.00	0.000

**Elenco ferri**

## Simbologia adottata

n°	Indice del ferro
nf	numero ferri
D	diametro ferro espresso in [mm]
L	Lunghezza ferro espresso in [m]
P <sub>ferro</sub>	Peso ferro espresso in [kN]

*Paramento*

n°	Tipo	nf	D [mm]	L [m]	P <sub>f</sub> [kN]	P <sub>gf</sub> [kN]	V <sub>cls</sub> [mc]
1	Diritto inferiore	5	20.00	2.80	0.0677	0.3386	
2	Diritto superiore	8	20.00	3.41	0.0825	0.6600	
3	Diritto inferiore	5	20.00	8.75	0.2116	1.0581	
4	Diritto superiore	8	20.00	8.78	0.2124	1.6990	
5	Ripartitore	30	12.00	1.00	0.0087	0.2612	
<b>Totale al metro</b>						<b>4.2781</b>	<b>7.12</b>
<b>Totale</b>						<b>409.61</b>	<b>7.12</b>

*Fondazione*

n°	Tipo	nf	D [mm]	L [m]	P <sub>f</sub> [kN]	P <sub>gf</sub> [kN]	V <sub>cls</sub> [mc]
1	Diritto superiore	10	18.00	7.34	0.1438	1.4381	
2	Diritto inferiore	10	18.00	7.34	0.1438	1.4381	
3	Ripartitore	24	12.00	1.00	0.0087	0.2090	
<b>Totale al metro</b>						<b>3.2942</b>	<b>7.50</b>
<b>Totale</b>						<b>314.60</b>	<b>7.50</b>

*Mensola valle*

n°	Tipo	nf	D [mm]	L [m]	P <sub>f</sub> [kN]	P <sub>gf</sub> [kN]	V <sub>cls</sub> [mc]
1	Diritto inferiore	4	18.00	1.69	0.0331	0.1324	
2	Diritto superiore	4	18.00	1.69	0.0331	0.1324	
3	Ripartitore	2	12.00	1.00	0.0087	0.0174	
<b>Totale al metro</b>						<b>3.2942</b>	<b>7.50</b>
<b>Totale</b>						<b>314.60</b>	<b>7.50</b>

## 16 ALLEGATO 7 – TABULATI DI CALCOLO - MURO DI SOSTEGNO H9

### Geometria profilo terreno a monte del muro

#### Simbologia adottata

(Sistema di riferimento con origine in testa al muro, ascissa X positiva verso monte, ordinata Y positiva verso l'alto)

n°	numero ordine del punto
X	ascissa del punto espressa in [m]
Y	ordinata del punto espressa in [m]
A	inclinazione del tratto espressa in [°]

n°	X	Y	A
	[m]	[m]	[°]
1	0.00	0.00	0.000
2	1.75	0.00	0.000
3	20.00	0.00	0.000

Inclinazione terreno a valle del muro rispetto all'orizzontale 0.000 [°]

### Falda

#### Simbologia adottata

(Sistema di riferimento con origine in testa al muro, ascissa X positiva verso monte, ordinata Y positiva verso l'alto)

n°	numero ordine del punto
X	ascissa del punto espressa in [m]
Y	ordinata del punto espressa in [m]
A	inclinazione del tratto espressa in [°]

n°	X	Y	A
	[m]	[m]	[°]
1	-4.00	-10.55	0.000
2	20.00	-10.55	0.000

### Geometria muro

#### Geometria paramento e fondazione

##### Paramento

Materiale	C32/40	
Altezza paramento	9.00	[m]
Altezza paramento libero	9.00	[m]
Spessore in sommità	0.50	[m]
Spessore all'attacco con la fondazione	1.35	[m]

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

Inclinazione paramento esterno	0.00	[°]
Inclinazione paramento interno	5.40	[°]
Spessore rivestimento	0.20	[m]
Peso sp. rivestimento	20.0000	[kN/mc]

Mensola di marciapiede

Posizione rispetto alla testa del muro	0.00	[m]
Lunghezza	0.25	[m]
Spessore all'estremità libera	0.50	[m]
Spessore all'incastro	0.50	[m]

Fondazione

Materiale	C32/40	
Lunghezza mensola di valle	1.35	[m]
Lunghezza mensola di monte	3.80	[m]
Lunghezza totale	6.50	[m]
Inclinazione piano di posa	0.00	[°]
Spessore	1.35	[m]
Spessore magrone	0.20	[m]

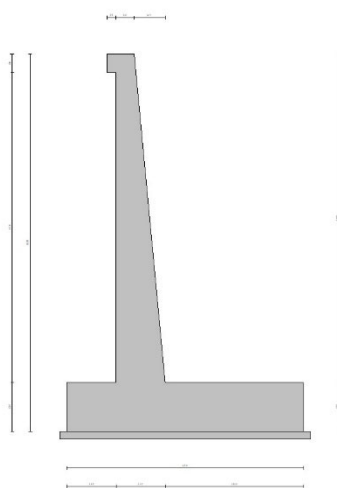


Fig. 1 - Sezione quotata del muro

Descrizione terreniParametri di resistenza



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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta****Simbologia adottata**

n°	Indice del terreno
Descr	Descrizione terreno
$\gamma$	Peso di volume del terreno espresso in [kN/mc]
$\gamma_s$	Peso di volume saturo del terreno espresso in [kN/mc]
$\phi$	Angolo d'attrito interno espresso in [°]
$\delta$	Angolo d'attrito terra-muro espresso in [°]
c	Coesione espressa in [kPa]
$c_a$	Adesione terra-muro espressa in [kPa]

**Per calcolo portanza con il metodo di Bustamante-Doix**

Cesp	Coeff. di espansione laterale (solo per il metodo di Bustamante-Doix)
$\tau_l$	Tensione tangenziale limite, espressa in [kPa]

n°	Descr	$\gamma$ [kN/mc]	$\gamma_{sat}$ [kN/mc]	$\phi$ [°]	$\delta$ [°]	c [kPa]	$c_a$ [kPa]	Cesp	$\tau_l$ [kPa]
1	Rilevato	19.0000	19.0000	35.000	23.330	0	0		
2	Terreno	20.0000	20.0000	36.000	24.000	0	0		

**Stratigrafia****Simbologia adottata**

n°	Indice dello strato
H	Spessore dello strato espresso in [m]
$\alpha$	Inclinazione espressa in [°]
Terreno	Terreno dello strato
Kwn, Kwt	Costante di Winkler normale e tangenziale alla superficie espressa in Kg/cm <sup>2</sup> /cm

**Per calcolo pali (solo se presenti)**

Kw	Costante di Winkler orizzontale espressa in Kg/cm <sup>2</sup> /cm
Ks	Coefficiente di spinta
Cesp	Coefficiente di espansione laterale (per tutti i metodi tranne il metodo di Bustamante-Doix)

**Per calcolo della spinta con coeff. di spinta definiti (usati solo se attiva l'opzione 'Usa coeff. di spinta da strato')**

$K_{st_{sta}}$ , $K_{st_{sis}}$	Coeff. di spinta statico e sismico
---------------------------------	------------------------------------

n°	H [m]	$\alpha$ [°]	Terreno	Kwn [Kg/cm <sup>2</sup> ]	Kwt [Kg/cm <sup>2</sup> ]	Kw [Kg/cm <sup>2</sup> ]	Ks	Cesp	$K_{st_{sta}}$	$K_{st_{sis}}$
1	10.35	0.000	Rilevato	0.000	0.000	4.219	0.000	1.000	0.000	0.000
2	20.00	0.000	Terreno	0.000	0.000	2.203	1.000	1.000	0.000	0.000

**Condizioni di carico****Simbologia adottata**

	Carichi verticali positivi verso il basso.
	Carichi orizzontali positivi verso sinistra.
	Momento positivo senso antiorario.
X	Ascissa del punto di applicazione del carico concentrato espressa in [m]
$F_x$	Componente orizzontale del carico concentrato espressa in [kN]
$F_y$	Componente verticale del carico concentrato espressa in [kN]
M	Momento espresso in [kNm]

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**X<sub>i</sub> Ascissa del punto iniziale del carico ripartito espressa in [m]X<sub>f</sub> Ascissa del punto finale del carico ripartito espressa in [m]Q<sub>i</sub> Intensità del carico per x=X<sub>i</sub> espressa in [kN]Q<sub>f</sub> Intensità del carico per x=X<sub>f</sub> espressa in [kN]**Condizione n° 1 (Q) - VARIABILE**Coeff. di combinazione  $\Psi_0=0.75 - \Psi_1=0.75 - \Psi_2=0.00$ **Carichi sul terreno**

n°	Tipo	X	F <sub>x</sub>	F <sub>y</sub>	M	X <sub>i</sub>	X <sub>f</sub>	Q <sub>i</sub>	Q <sub>f</sub>
		[m]	[kN]	[kN]	[kNm]	[m]	[m]	[kN]	[kN]
1	Distribuito					0.00	3.00	24.9000	24.9000
2	Distribuito					3.00	6.00	13.1000	13.1000
3	Distribuito					6.00	9.00	7.8000	7.8000
4	Distribuito					9.00	20.00	2.5000	2.5000

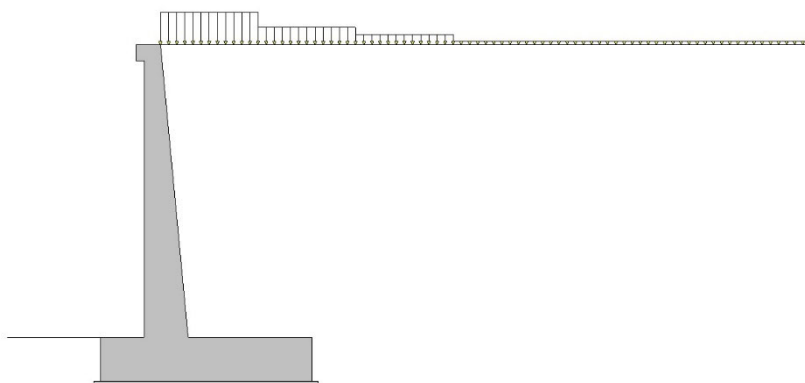


Fig. 2 - Carichi sul terreno

**Condizione n° 2 (Urto) - ECCEZIONALE****Carichi sul muro**

n°	Tipo	Dest	X; Y	F <sub>x</sub>	F <sub>y</sub>	M	X <sub>i</sub>	X <sub>f</sub>	Q <sub>i</sub>	Q <sub>f</sub>
			[m]	[kN]	[kN]	[kNm]	[m]	[m]	[kN]	[kN]
1	Concentrato	Paramento	0.00; 0.00	33.3000	0.0000	33.3000				



Fig. 3 - Carichi sul muro

## Normativa

Normativa usata: **Norme Tecniche sulle Costruzioni 2018 (D.M. 17.01.2018) + Circolare C.S.LL.PP. 21/01/2019 n.7**

### Coeff. parziali per le azioni o per l'effetto delle azioni

Carichi	Effetto		Combinazioni statiche					Combinazioni sismiche		
			HYD	UPL	EQU	A1	A2	EQU	A1	A2
Permanenti strutturali	Favorevoli	$\gamma_{G1, fav}$	1.00	0.90	1.00	1.00	1.00	1.00	1.00	1.00
Permanenti strutturali	Sfavorevoli	$\gamma_{G1, sfav}$	1.00	1.10	1.30	1.30	1.00	1.00	1.00	1.00
Permanenti non strutturali	Favorevoli	$\gamma_{G2, fav}$	0.00	0.80	0.80	0.80	0.80	0.00	0.00	0.00
Permanenti non strutturali	Sfavorevoli	$\gamma_{G2, sfav}$	1.00	1.50	1.50	1.50	1.30	1.00	1.00	1.00
Variabili	Favorevoli	$\gamma_{Q, fav}$	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Variabili	Sfavorevoli	$\gamma_{Q, sfav}$	1.00	1.50	1.50	1.50	1.30	1.00	1.00	1.00
Variabili da traffico	Favorevoli	$\gamma_{QT, fav}$	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Variabili da traffico	Sfavorevoli	$\gamma_{QT, sfav}$	1.00	1.50	1.35	1.35	1.15	1.00	1.00	1.00

### Coeff. parziali per i parametri geotecnici del terreno

Parametro		Combinazioni statiche		Combinazioni sismiche	
		M1	M2	M1	M2
Tangente dell'angolo di attrito	$\gamma_{\tan(\phi')}$	1.00	1.25	1.00	1.00
Coesione efficace	$\gamma_c$	1.00	1.25	1.00	1.00
Resistenza non drenata	$\gamma_{cu}$	1.00	1.40	1.00	1.00
Peso nell'unità di volume	$\gamma_\gamma$	1.00	1.00	1.00	1.00

### Coeff. parziali $\gamma_R$ per le verifiche agli stati limite ultimi STR e GEO

Verifica	Combinazioni statiche			Combinazioni sismiche		
	R1	R2	R3	R1	R2	R3
Capacità portante	--	--	1.40	--	--	1.20
Scorrimento	--	--	1.10	--	--	1.00
Resistenza terreno a valle	--	--	1.40	--	--	1.20
Ribaltamento	--	--	1.15	--	--	1.00
Stabilità fronte di scavo	--	1.10	--	--	1.20	--

Descrizione combinazioni di carico

Con riferimento alle azioni elementari prima determinate, si sono considerate le seguenti combinazioni di carico:

- Combinazione fondamentale, impiegata per gli stati limite ultimi (SLU):

$$\gamma_{G1} G_1 + \gamma_{G2} G_2 + \gamma_{Q1} Q_{k1} + \gamma_{Q2} Q_{k2} + \gamma_{Q3} Q_{k3} + \dots$$

- Combinazione caratteristica, cosiddetta rara, impiegata per gli stati limite di esercizio (SLE) irreversibili:

$$G_1 + G_2 + Q_{k1} + \Psi_{0,2} Q_{k2} + \Psi_{0,3} Q_{k3} + \dots$$

- Combinazione frequente, impiegata per gli stati limite di esercizio (SLE) reversibili:

$$G_1 + G_2 + \Psi_{1,1} Q_{k1} + \Psi_{2,2} Q_{k2} + \Psi_{2,3} Q_{k3} + \dots$$

- Combinazione quasi permanente, impiegata per gli effetti di lungo periodo:

$$G_1 + G_2 + \Psi_{2,1} Q_{k1} + \Psi_{2,2} Q_{k2} + \Psi_{2,3} Q_{k3} + \dots$$

- Combinazione sismica, impiegata per gli stati limite ultimi connessi all'azione sismica E:

$$E + G_1 + G_2 + \Psi_{2,1} Q_{k1} + \Psi_{2,2} Q_{k2} + \Psi_{2,3} Q_{k3} + \dots$$

- Combinazione eccezionale, impiegata per gli stati limite ultimi connessi alle azioni eccezionali Ad:

$$G_1 + G_2 + A_d + \Psi_{2,1} Q_{k1} + \Psi_{2,2} Q_{k2} + \Psi_{2,3} Q_{k3} + \dots$$

I valori dei coeff.  $\Psi_{0,j}$ ,  $\Psi_{1,j}$ ,  $\Psi_{2,j}$  sono definiti nelle singole condizioni variabili. per I valori dei coeff.  $\gamma_G$  e  $\gamma_Q$ , sono definiti nella tabella normativa.

In particolare si sono considerate le seguenti combinazioni:

## Simbologia adottata

$\gamma$	Coefficiente di partecipazione della condizione
$\Psi$	Coefficiente di combinazione della condizione

Combinazione n° 1 - STR (A1-M1-R3)

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Favorevole
Peso terrapieno	1.00	--	Favorevole
Spinta terreno	1.30	--	Sfavorevole

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**Combinazione n° 2 - STR (A1-M1-R3) H + V

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Favorevole
Peso terrapieno	1.00	--	Favorevole
Spinta terreno	1.00	--	Sfavorevole

Combinazione n° 3 - STR (A1-M1-R3)

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Favorevole
Peso terrapieno	1.00	--	Favorevole
Spinta terreno	1.30	--	Sfavorevole
Q	1.50	1.00	Sfavorevole

Combinazione n° 4 - STR (A1-M1-R3) H - V

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Sfavorevole
Peso terrapieno	1.00	--	Sfavorevole
Spinta terreno	1.00	--	Sfavorevole

Combinazione n° 5 - GEO (A2-M2-R2)

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Sfavorevole
Peso terrapieno	1.00	--	Sfavorevole
Spinta terreno	1.00	--	Sfavorevole

Combinazione n° 6 - GEO (A2-M2-R2) H + V

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Sfavorevole
Peso terrapieno	1.00	--	Sfavorevole
Spinta terreno	1.00	--	Sfavorevole

Combinazione n° 7 - GEO (A2-M2-R2)

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Sfavorevole
Peso terrapieno	1.00	--	Sfavorevole
Spinta terreno	1.00	--	Sfavorevole
Q	1.30	1.00	Sfavorevole

Combinazione n° 8 - GEO (A2-M2-R2) H - V

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Sfavorevole
Peso terrapieno	1.00	--	Sfavorevole
Spinta terreno	1.00	--	Sfavorevole

Combinazione n° 9 - EQU (A1-M1-R3)

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Favorevole
Peso terrapieno	1.00	--	Favorevole
Spinta terreno	1.30	--	Sfavorevole

Combinazione n° 10 - EQU (A1-M1-R3) H + V

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Favorevole
Peso terrapieno	1.00	--	Favorevole
Spinta terreno	1.00	--	Sfavorevole

Combinazione n° 11 - EQU (A1-M1-R3)

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Favorevole
Peso terrapieno	1.00	--	Favorevole
Spinta terreno	1.30	--	Sfavorevole
Q	1.50	1.00	Sfavorevole

Combinazione n° 12 - EQU (A1-M1-R3) H - V

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Favorevole
Peso terrapieno	1.00	--	Favorevole
Spinta terreno	1.00	--	Sfavorevole

Combinazione n° 13 - ECC

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Sfavorevole
Peso terrapieno	1.00	--	Sfavorevole
Spinta terreno	1.00	--	Sfavorevole
Urto	1.00	1.00	Sfavorevole

Combinazione n° 14 - SLER

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Sfavorevole
Peso terrapieno	1.00	--	Sfavorevole
Spinta terreno	1.00	--	Sfavorevole
Q	1.00	0.75	Sfavorevole

Combinazione n° 15 - SLEF

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Sfavorevole
Peso terrapieno	1.00	--	Sfavorevole
Spinta terreno	1.00	--	Sfavorevole

Combinazione n° 16 - SLEQ

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Sfavorevole
Peso terrapieno	1.00	--	Sfavorevole

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

Condizione	$\gamma$	$\Psi$	Effetto
Spinta terreno	1.00	--	Sfavorevole

Dati sismici

Comune

Provincia

Regione

Latitudine 42.716470

Longitudine 12.111569

Indice punti di interpolazione -1 - -1 - -1 - -1

Vita nominale 50 anni

Classe d'uso II

Tipo costruzione Normali affollamenti

Vita di riferimento 50 anni

	Simbolo	U.M.		SLU	SLE
Accelerazione al suolo	$a_g$	[m/s <sup>2</sup> ]		2.894	0.000
Accelerazione al suolo	$a_g/g$	[%]		0.295	0.000
Massimo fattore amplificazione spettro orizzontale	F0			2.423	0.000
Periodo inizio tratto spettro a velocità costante	Tc*			0.343	0.000
Tipo di sottosuolo - Coefficiente stratigrafico	Ss		C	1.271	1.500
Categoria topografica - Coefficiente amplificazione topografica	St		T1	1.000	

Stato limite ...	Coeff. di riduzione $\beta_m$	kh	kv
Ultimo	0.380	14.248	7.124
Ultimo - Ribaltamento	0.570	21.372	10.686
Esercizio	0.470	0.000	0.000

Forma diagramma incremento sismico  **Rettangolare**

**Opzioni di calcolo**Spinta

Metodo di calcolo della spinta	Culmann
Tipo di spinta	Spinta attiva
Terreno a bassa permeabilità	NO
Superficie di spinta limitata	NO

Capacità portante

Metodo di calcolo della portanza	Hansen
Criterio di media calcolo del terreno equivalente (terreni stratificati)	Ponderata
Criterio di riduzione per eccentricità della portanza	Bowles
Criterio di riduzione per rottura locale (punzonamento)	Nessuna
Larghezza fondazione nel terzo termine della formula del carico limite ( $0.5B\gamma N_r$ )	Larghezza effettiva (B)
Fattori di forma e inclinazione del carico	Solo i fattori di inclinazione
Se la fondazione ha larghezza superiore a 2.0 m viene applicato il fattore di riduzione per comportamento a piastra	

Stabilità globale

Metodo di calcolo della stabilità globale	Bishop
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Altro

Partecipazione spinta passiva terreno antistante	0.00
Partecipazione resistenza passiva dente di fondazione	50.00
Componente verticale della spinta nel calcolo delle sollecitazioni	NO
Considera terreno sulla fondazione di valle	NO
Considera spinta e peso acqua fondazione di valle	NO

Spostamenti

Non è stato richiesto il calcolo degli spostamenti

Cedimenti

Non è stato richiesto il calcolo dei cedimenti

Specifiche per le verifiche nelle combinazioni allo Stato Limite Ultimo (SLU)

	SLU	Eccezionale
Coefficiente di sicurezza calcestruzzo a compressione	1.50	1.00
Coefficiente di sicurezza acciaio	1.15	1.00
Fattore di riduzione da resistenza cubica a cilindrica	0.83	0.83
Fattore di riduzione per carichi di lungo periodo	0.85	0.85
Coefficiente di sicurezza per la sezione	1.00	1.00

Specifiche per le verifiche nelle combinazioni allo Stato Limite di Esercizio (SLE)**Paramento e fondazione muro**



Condizioni ambientali      Aggressive

Armatura ad aderenza migliorata      SI

*Verifica a fessurazione*

Sensibilità armatura      Poco sensibile

Metodo di calcolo aperture delle fessure      NTC 2018 - CIRCOLARE 21 gennaio 2019, n. 7 C.S.LL.PP.

Valori limite aperture delle fessure:

$w_1=0.20$

$w_2=0.30$

$w_3=0.40$

*Verifica delle tensioni*

Valori limite delle tensioni nei materiali:

Combinazione	Calcestruzzo	Acciaio
Rara	$0.60 f_{ck}$	$0.80 f_{yk}$
Frequente	$1.00 f_{ck}$	$1.00 f_{yk}$
Quasi permanente	$0.45 f_{ck}$	$1.00 f_{yk}$

## Risultati per combinazione

### Spinta e forze

#### Simbologia adottata

Ic	Indice della combinazione
A	Tipo azione
I	Inclinazione della spinta, espressa in [°]
V	Valore dell'azione, espressa in [kN]
C <sub>x</sub> , C <sub>y</sub>	Componente in direzione X ed Y dell'azione, espressa in [kN]
P <sub>x</sub> , P <sub>y</sub>	Coordinata X ed Y del punto di applicazione dell'azione, espressa in [m]

Ic	A	V	I	C <sub>x</sub>	C <sub>y</sub>	P <sub>x</sub>	P <sub>y</sub>
		[kN]	[°]	[kN]	[kN]	[m]	[m]
1	Spinta statica	323.35	23.33	296.91	128.05	4.65	-6.90
	Peso/Inerzia muro			0.00	422.41/0.00	0.71	-7.44
	Peso/Inerzia rivestimento			0.00	36.00	0.00	0.00
	Peso/Inerzia terrapieno			0.00	722.54/0.00	2.53	-4.35
	Peso dell'acqua sulla fondazione di valle				0.00	0.00	0.00
2	Spinta statica	248.73	23.33	228.39	98.50	4.65	-6.90
	Incremento di spinta sismica		110.83	101.77	43.89	4.65	-5.17
	Peso/Inerzia muro			60.19	422.41/30.09	0.71	-7.44
	Peso/Inerzia rivestimento			5.13	36.00	0.00	0.00
	Peso/Inerzia terrapieno			102.95	722.54/51.47	2.53	-4.35
	Peso dell'acqua sulla fondazione di valle				0.00	0.00	0.00
3	Spinta statica	351.57	23.33	322.83	139.23	4.65	-6.65
	Peso/Inerzia muro			0.00	422.41/0.00	0.71	-7.44
	Peso/Inerzia rivestimento			0.00	36.00	0.00	0.00
	Peso/Inerzia terrapieno			0.00	867.03/0.00	2.49	-4.32
	Peso dell'acqua sulla fondazione di valle				0.00	0.00	0.00
4	Spinta statica	248.73	23.33	228.39	98.50	4.65	-6.90
	Incremento di spinta sismica		77.78	71.42	30.80	4.65	-5.17
	Peso/Inerzia muro			60.19	422.41/-30.09	0.71	-7.44
	Peso/Inerzia rivestimento			5.13	36.00	0.00	0.00
	Peso/Inerzia terrapieno			102.95	722.54/-51.47	2.53	-4.35
	Peso dell'acqua sulla fondazione di valle				0.00	0.00	0.00
13	Spinta statica	248.73	23.33	228.39	98.50	4.65	-6.90
	Peso/Inerzia muro			0.00	422.41/0.00	0.71	-7.44
	Peso/Inerzia rivestimento			0.00	36.00	0.00	0.00
	Peso/Inerzia terrapieno			0.00	722.54/0.00	2.53	-4.35
	Peso dell'acqua sulla fondazione di valle				0.00	0.00	0.00
	Risultante forze sul muro			33.30	0.00	--	--
14	Spinta statica	262.78	23.33	241.30	104.07	4.65	-6.73
	Peso/Inerzia muro			0.00	422.41/0.00	0.71	-7.44
	Peso/Inerzia rivestimento			0.00	36.00	0.00	0.00
	Peso/Inerzia terrapieno			0.00	794.78/0.00	2.51	-4.33
	Peso dell'acqua sulla fondazione di valle				0.00	0.00	0.00
15	Spinta statica	248.73	23.33	228.39	98.50	4.65	-6.90
	Peso/Inerzia muro			0.00	422.41/0.00	0.71	-7.44
	Peso/Inerzia rivestimento			0.00	36.00	0.00	0.00
	Peso/Inerzia terrapieno			0.00	722.54/0.00	2.53	-4.35
	Peso dell'acqua sulla fondazione di valle				0.00	0.00	0.00
16	Spinta statica	248.73	23.33	228.39	98.50	4.65	-6.90
	Peso/Inerzia muro			0.00	422.41/0.00	0.71	-7.44
	Peso/Inerzia rivestimento			0.00	36.00	0.00	0.00
	Peso/Inerzia terrapieno			0.00	722.54/0.00	2.53	-4.35
	Peso dell'acqua sulla fondazione di valle				0.00	0.00	0.00

Risultanti globali

## Simbologia adottata

Cmb	Indice/Tipo combinazione
N	Componente normale al piano di posa, espressa in [kN]
T	Componente parallela al piano di posa, espressa in [kN]
M <sub>r</sub>	Momento ribaltante, espresso in [kNm]
M <sub>s</sub>	Momento stabilizzante, espresso in [kNm]
ecc	Eccentricità risultante, espressa in [m]

Ic	N [kN]	T [kN]	M <sub>r</sub> [kNm]	M <sub>s</sub> [kNm]	ecc [m]
1 - STR (A1-M1-R3)	1309.01	296.91	1024.36	5144.33	0.103
2 - STR (A1-M1-R3)	1404.91	498.42	2160.74	5539.99	0.845
3 - STR (A1-M1-R3)	1464.67	322.83	1194.92	5812.36	0.098
4 - STR (A1-M1-R3)	1228.69	468.08	2306.12	5152.46	0.934
13 - ECC	1279.46	261.69	1165.92	4952.23	0.291

Verifiche geotecniche*Quadro riassuntivo coeff. di sicurezza calcolati*

## Simbologia adottata

Cmb	Indice/Tipo combinazione
S	Sisma (H: componente orizzontale, V: componente verticale)
FS <sub>SCO</sub>	Coeff. di sicurezza allo scorrimento
FS <sub>RIB</sub>	Coeff. di sicurezza al ribaltamento
FS <sub>QLIM</sub>	Coeff. di sicurezza a carico limite
FS <sub>STAB</sub>	Coeff. di sicurezza a stabilità globale
FS <sub>HYD</sub>	Coeff. di sicurezza a sifonamento
FS <sub>SUPL</sub>	Coeff. di sicurezza a sollevamento

Cmb	Sismica	FS <sub>SCO</sub>	FS <sub>RIB</sub>	FS <sub>QLIM</sub>	FS <sub>STAB</sub>	FS <sub>HYD</sub>	FS <sub>SUPL</sub>
1 - STR (A1-M1-R3)		1.963		5.238			
2 - STR (A1-M1-R3)	H + V	1.255		2.362			
3 - STR (A1-M1-R3)		2.020		4.793			
4 - STR (A1-M1-R3)	H - V	1.169		2.358			
5 - GEO (A2-M2-R2)					1.592		
6 - GEO (A2-M2-R2)	H + V				1.563		
7 - GEO (A2-M2-R2)					1.555		
8 - GEO (A2-M2-R2)	H - V				1.487		
9 - EQU (A1-M1-R3)			5.022				
10 - EQU (A1-M1-R3)	H + V		2.022				
11 - EQU (A1-M1-R3)			4.864				
12 - EQU (A1-M1-R3)	H - V		1.683				
13 - ECC		2.177	4.247	5.437	1.990		

*Verifica a scorrimento fondazione*

**Simbologia adottata**

n°	Indice combinazione
Rsa	Resistenza allo scorrimento per attrito, espresso in [kN]
Rpt	Resistenza passiva terreno antistante, espresso in [kN]
Rps	Resistenza passiva sperone, espresso in [kN]
Rp	Resistenza a carichi orizzontali pali (solo per fondazione mista), espresso in [kN]
Rt	Resistenza a carichi orizzontali tiranti (solo se presenti), espresso in [kN]
R	Resistenza allo scorrimento (somma di Rsa+Rpt+Rps+Rp), espresso in [kN]
T	Carico parallelo al piano di posa, espresso in [kN]
FS	Fattore di sicurezza (rapporto R/T)

n°	Rsa	Rpt	Rps	Rp	Rt	R	T	FS
	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	
1 - STR (A1-M1-R3)	582.81	0.00	0.00	--	--	582.81	296.91	1.963
2 - STR (A1-M1-R3) H + V	625.51	0.00	0.00	--	--	625.51	498.42	1.255
3 - STR (A1-M1-R3)	652.11	0.00	0.00	--	--	652.11	322.83	2.020
4 - STR (A1-M1-R3) H - V	547.05	0.00	0.00	--	--	547.05	468.08	1.169
13 - ECC	569.65	0.00	0.00	--	--	569.65	261.69	2.177

**Verifica a carico limite****Simbologia adottata**

n°	Indice combinazione
N	Carico normale totale al piano di posa, espresso in [kN]
Qu	carico limite del terreno, espresso in [kN]
Qd	Portanza di progetto, espresso in [kN]
FS	Fattore di sicurezza (rapporto tra il carico limite e carico agente al piano di posa)

n°	N	Qu	Qd	FS
	[kN]	[kN]	[kN]	
1 - STR (A1-M1-R3)	1309.01	6856.29	4897.35	5.238
2 - STR (A1-M1-R3) H + V	1404.91	3317.82	2764.85	2.362
3 - STR (A1-M1-R3)	1464.67	7020.26	5014.47	4.793
4 - STR (A1-M1-R3) H - V	1228.69	2897.38	2414.48	2.358
13 - ECC	1279.46	6956.47	4968.90	5.437

**Verifica a ribaltamento****Simbologia adottata**

n°	Indice combinazione
Ms	Momento stabilizzante, espresso in [kNm]
Mr	Momento ribaltante, espresso in [kNm]
FS	Fattore di sicurezza (rapporto tra momento stabilizzante e momento ribaltante)

La verifica viene eseguita rispetto allo spigolo inferiore esterno della fondazione

n°	Ms	Mr	FS
	[kNm]	[kNm]	
9 - EQU (A1-M1-R3)	5144.33	1024.36	5.022
10 - EQU (A1-M1-R3) H + V	5862.31	2899.61	2.022
11 - EQU (A1-M1-R3)	5812.36	1194.92	4.864
12 - EQU (A1-M1-R3) H - V	5296.61	3146.46	1.683
13 - ECC	4952.23	1165.92	4.247

## Verifica stabilità globale muro + terreno

## Simbologia adottata

Ic	Indice/Tipo combinazione
C	Centro superficie di scorrimento, espresso in [m]
R	Raggio, espresso in [m]
FS	Fattore di sicurezza

Ic	C [m]	R [m]	FS
5 - GEO (A2-M2-R2)	-3.36; 2.24	14.93	1.592
6 - GEO (A2-M2-R2) H + V	-3.92; 5.03	17.62	1.563
7 - GEO (A2-M2-R2)	-3.36; 2.24	14.93	1.555
8 - GEO (A2-M2-R2) H - V	-3.92; 5.03	17.62	1.487
13 - ECC	-3.36; 2.24	14.93	1.990

## Sollecitazioni

## Elementi calcolati a trave

## Simbologia adottata

N	Sforzo normale, espresso in [kN]. Positivo se di compressione.
T	Taglio, espresso in [kN]. Positivo se diretto da monte verso valle
M	Momento, espresso in [kNm]. Positivo se tende le fibre contro terra (a monte)

## Paramento

## Combinazione n° 1 - STR (A1-M1-R3)

n°	X [m]	N [kN]	T [kN]	M [kNm]
1	0.00	3.06	0.00	0.38
2	-0.10	4.30	0.03	0.39
3	-0.20	5.56	0.12	0.40
4	-0.30	6.85	0.28	0.44
5	-0.40	8.15	0.49	0.50
6	-0.50	9.48	0.77	0.59
7	-0.60	10.84	1.11	0.71
8	-0.70	12.21	1.51	0.88
9	-0.80	13.61	1.97	1.10
10	-0.90	15.04	2.49	1.38
11	-1.00	16.48	3.07	1.72
12	-1.10	17.95	3.72	2.12
13	-1.20	19.44	4.42	2.60
14	-1.30	20.96	5.19	3.16
15	-1.40	22.50	6.02	3.81
16	-1.50	24.06	6.91	4.55
17	-1.60	25.64	7.86	5.40
18	-1.70	27.25	8.88	6.34
19	-1.80	28.88	9.95	7.40
20	-1.90	30.54	11.09	8.58
21	-2.00	32.22	12.28	9.88
22	-2.10	33.92	13.54	11.31
23	-2.20	35.64	14.86	12.88

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
24	-2.30	37.39	16.24	14.60
25	-2.40	39.16	17.69	16.46
26	-2.50	40.95	19.19	18.48
27	-2.60	42.77	20.76	20.66
28	-2.70	44.61	22.38	23.01
29	-2.80	46.47	24.07	25.53
30	-2.90	48.36	25.82	28.23
31	-3.00	50.27	27.63	31.12
32	-3.10	52.20	29.51	34.21
33	-3.20	54.16	31.44	37.49
34	-3.30	56.14	33.44	40.98
35	-3.40	58.14	35.49	44.68
36	-3.50	60.16	37.61	48.60
37	-3.60	62.21	39.79	52.75
38	-3.70	64.28	42.03	57.12
39	-3.80	66.38	44.34	61.73
40	-3.90	68.50	46.70	66.59
41	-4.00	70.64	49.13	71.69
42	-4.10	72.80	51.61	77.06
43	-4.20	74.99	54.16	82.68
44	-4.30	77.20	56.77	88.57
45	-4.40	79.44	59.44	94.74
46	-4.50	81.69	62.17	101.18
47	-4.60	83.97	64.97	107.92
48	-4.70	86.28	67.82	114.94
49	-4.80	88.60	70.74	122.27
50	-4.90	90.95	73.72	129.90
51	-5.00	93.33	76.76	137.84
52	-5.10	95.72	79.86	146.11
53	-5.20	98.14	83.02	154.69
54	-5.30	100.58	86.24	163.61
55	-5.40	103.05	89.53	172.87
56	-5.50	105.54	92.87	182.46
57	-5.60	108.05	96.28	192.41
58	-5.70	110.59	99.75	202.72
59	-5.80	113.14	103.28	213.38
60	-5.90	115.73	106.87	224.42
61	-6.00	118.33	110.53	235.82
62	-6.10	120.96	114.24	247.61
63	-6.20	123.61	118.02	259.79
64	-6.30	126.28	121.86	272.36
65	-6.40	128.98	125.76	285.33
66	-6.50	131.70	129.72	298.70
67	-6.60	134.45	133.74	312.49
68	-6.70	137.21	137.82	326.69
69	-6.80	140.00	141.97	341.32
70	-6.90	142.82	146.17	356.38
71	-7.00	145.65	150.44	371.88
72	-7.10	148.51	154.77	387.82
73	-7.20	151.40	159.16	404.21
74	-7.30	154.30	163.61	421.06
75	-7.40	157.23	168.12	438.36
76	-7.50	160.18	172.70	456.14
77	-7.60	163.16	177.33	474.39
78	-7.70	166.16	182.03	493.12
79	-7.80	169.18	186.79	512.34
80	-7.90	172.23	191.61	532.05
81	-8.00	175.29	196.49	552.27
82	-8.10	178.39	201.44	572.98
83	-8.20	181.50	206.44	594.21
84	-8.30	184.64	211.51	615.96
85	-8.40	187.80	216.63	638.23
86	-8.50	190.98	221.82	661.03
87	-8.60	194.19	227.07	684.37
88	-8.70	197.42	232.38	708.26
89	-8.80	200.67	237.75	732.69
90	-8.90	203.95	243.19	757.68
91	-9.00	207.25	248.68	783.23

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

Combinazione n° 2 - STR (A1-M1-R3) H + V

n°	X [m]	N [kN]	T [kN]	M [kNm]
1	0.00	3.28	0.00	0.41
2	-0.10	4.52	1.09	0.47
3	-0.20	5.78	2.22	0.64
4	-0.30	7.06	3.41	0.94
5	-0.40	8.37	4.65	1.36
6	-0.50	9.70	5.93	1.92
7	-0.60	11.06	7.27	2.61
8	-0.70	12.43	8.66	3.45
9	-0.80	13.83	10.10	4.43
10	-0.90	15.25	11.59	5.57
11	-1.00	16.70	13.13	6.86
12	-1.10	18.17	14.72	8.32
13	-1.20	19.66	16.36	9.95
14	-1.30	21.18	18.05	11.75
15	-1.40	22.72	19.79	13.73
16	-1.50	24.28	21.58	15.89
17	-1.60	25.86	23.43	18.25
18	-1.70	27.47	25.32	20.79
19	-1.80	29.10	27.27	23.54
20	-1.90	30.76	29.26	26.49
21	-2.00	32.44	31.30	29.65
22	-2.10	34.14	33.40	33.03
23	-2.20	35.86	35.55	36.63
24	-2.30	37.61	37.74	40.45
25	-2.40	39.38	39.99	44.50
26	-2.50	41.17	42.29	48.79
27	-2.60	42.99	44.64	53.32
28	-2.70	44.83	47.04	58.09
29	-2.80	46.69	49.49	63.12
30	-2.90	48.58	51.99	68.40
31	-3.00	50.49	54.54	73.95
32	-3.10	52.42	57.14	79.76
33	-3.20	54.38	59.79	85.84
34	-3.30	56.36	62.49	92.20
35	-3.40	58.36	65.24	98.84
36	-3.50	60.38	68.05	105.77
37	-3.60	62.43	70.90	112.99
38	-3.70	64.50	73.81	120.51
39	-3.80	66.60	76.76	128.34
40	-3.90	68.72	79.77	136.47
41	-4.00	70.86	82.82	144.91
42	-4.10	73.02	85.93	153.67
43	-4.20	75.21	89.08	162.76
44	-4.30	77.42	92.29	172.17
45	-4.40	79.65	95.55	181.92
46	-4.50	81.91	98.86	192.00
47	-4.60	84.19	102.22	202.43
48	-4.70	86.50	105.63	213.21
49	-4.80	88.82	109.09	224.35
50	-4.90	91.17	112.60	235.84
51	-5.00	93.54	116.16	247.70
52	-5.10	95.94	119.77	259.93
53	-5.20	98.36	123.43	272.53
54	-5.30	100.80	127.15	285.52
55	-5.40	103.27	130.91	298.88
56	-5.50	105.76	134.72	312.64
57	-5.60	108.27	138.59	326.80
58	-5.70	110.80	142.50	341.36
59	-5.80	113.36	146.47	356.32
60	-5.90	115.94	150.49	371.69
61	-6.00	118.55	154.55	387.48
62	-6.10	121.18	158.67	403.69
63	-6.20	123.83	162.84	420.33
64	-6.30	126.50	167.06	437.40
65	-6.40	129.20	171.32	454.91
66	-6.50	131.92	175.64	472.86
67	-6.60	134.67	180.01	491.26

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
68	-6.70	137.43	184.43	510.11
69	-6.80	140.22	188.90	529.41
70	-6.90	143.04	193.43	549.18
71	-7.00	145.87	198.00	569.42
72	-7.10	148.73	202.62	590.13
73	-7.20	151.61	207.29	611.32
74	-7.30	154.52	212.02	632.99
75	-7.40	157.45	216.79	655.16
76	-7.50	160.40	221.62	677.81
77	-7.60	163.38	226.49	700.97
78	-7.70	166.38	231.42	724.62
79	-7.80	169.40	236.39	748.79
80	-7.90	172.44	241.42	773.48
81	-8.00	175.51	246.50	798.68
82	-8.10	178.60	251.62	824.40
83	-8.20	181.72	256.80	850.66
84	-8.30	184.86	262.03	877.45
85	-8.40	188.02	267.31	904.79
86	-8.50	191.20	272.64	932.66
87	-8.60	194.41	278.02	961.09
88	-8.70	197.64	283.45	990.08
89	-8.80	200.89	288.93	1019.62
90	-8.90	204.17	294.47	1049.73
91	-9.00	207.47	300.05	1080.42

Combinazione n° 3 - STR (A1-M1-R3)

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	0.00	3.06	0.00	0.38
2	-0.10	4.30	0.96	0.43
3	-0.20	5.56	1.98	0.59
4	-0.30	6.85	3.06	0.86
5	-0.40	8.15	4.21	1.24
6	-0.50	9.48	5.41	1.75
7	-0.60	10.84	6.68	2.38
8	-0.70	12.21	8.01	3.16
9	-0.80	13.61	9.40	4.07
10	-0.90	15.04	10.85	5.14
11	-1.00	16.48	12.36	6.36
12	-1.10	17.95	13.93	7.74
13	-1.20	19.44	15.57	9.29
14	-1.30	20.96	17.26	11.01
15	-1.40	22.50	19.02	12.91
16	-1.50	24.06	20.84	15.00
17	-1.60	25.64	22.72	17.28
18	-1.70	27.25	24.66	19.76
19	-1.80	28.88	26.66	22.44
20	-1.90	30.54	28.73	25.34
21	-2.00	32.22	30.85	28.45
22	-2.10	33.92	33.04	31.79
23	-2.20	35.64	35.29	35.35
24	-2.30	37.39	37.60	39.15
25	-2.40	39.16	39.97	43.20
26	-2.50	40.95	42.40	47.49
27	-2.60	42.77	44.90	52.04
28	-2.70	44.61	47.45	56.85
29	-2.80	46.47	50.07	61.93
30	-2.90	48.36	52.75	67.28
31	-3.00	50.27	55.49	72.91
32	-3.10	52.20	58.29	78.82
33	-3.20	54.16	61.15	85.03
34	-3.30	56.14	64.08	91.54
35	-3.40	58.14	67.06	98.35
36	-3.50	60.16	70.11	105.47
37	-3.60	62.21	73.22	112.91
38	-3.70	64.28	76.39	120.68



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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
39	-3.80	66.38	79.62	128.77
40	-3.90	68.50	82.91	137.20
41	-4.00	70.64	86.27	145.97
42	-4.10	72.80	89.68	155.10
43	-4.20	74.99	93.16	164.57
44	-4.30	77.20	96.70	174.41
45	-4.40	79.44	100.30	184.61
46	-4.50	81.69	103.95	195.19
47	-4.60	83.97	107.64	206.15
48	-4.70	86.28	111.36	217.49
49	-4.80	88.60	115.09	229.21
50	-4.90	90.95	118.81	241.31
51	-5.00	93.33	122.52	253.80
52	-5.10	95.72	126.22	266.67
53	-5.20	98.14	129.92	279.92
54	-5.30	100.58	133.64	293.55
55	-5.40	103.05	137.39	307.57
56	-5.50	105.54	141.19	321.98
57	-5.60	108.05	145.04	336.78
58	-5.70	110.59	148.97	351.98
59	-5.80	113.14	152.95	367.59
60	-5.90	115.73	157.00	383.61
61	-6.00	118.33	161.11	400.06
62	-6.10	120.96	165.28	416.93
63	-6.20	123.61	169.52	434.23
64	-6.30	126.28	173.82	451.97
65	-6.40	128.98	178.18	470.16
66	-6.50	131.70	182.60	488.80
67	-6.60	134.45	187.09	507.90
68	-6.70	137.21	191.64	527.46
69	-6.80	140.00	196.25	547.49
70	-6.90	142.82	200.92	568.01
71	-7.00	145.65	205.65	589.00
72	-7.10	148.51	210.45	610.49
73	-7.20	151.40	215.31	632.47
74	-7.30	154.30	220.23	654.95
75	-7.40	157.23	225.22	677.95
76	-7.50	160.18	230.26	701.46
77	-7.60	163.16	235.37	725.49
78	-7.70	166.16	240.54	750.05
79	-7.80	169.18	245.78	775.14
80	-7.90	172.23	251.07	800.77
81	-8.00	175.29	256.43	826.96
82	-8.10	178.39	261.84	853.69
83	-8.20	181.50	267.32	880.98
84	-8.30	184.64	272.86	908.84
85	-8.40	187.80	278.47	937.28
86	-8.50	190.98	284.13	966.29
87	-8.60	194.19	289.86	995.88
88	-8.70	197.42	295.65	1026.07
89	-8.80	200.67	301.50	1056.85
90	-8.90	203.95	307.41	1088.24
91	-9.00	207.25	313.39	1120.23

Combinazione n° 4 - STR (A1-M1-R3) H - V

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	0.00	3.06	0.00	0.38
2	-0.10	4.30	0.80	0.43
3	-0.20	5.56	1.65	0.56
4	-0.30	6.85	2.55	0.78
5	-0.40	8.15	3.51	1.10
6	-0.50	9.48	4.51	1.53
7	-0.60	10.84	5.56	2.07
8	-0.70	12.21	6.66	2.72
9	-0.80	13.61	7.82	3.49

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
10	-0.90	15.04	9.02	4.38
11	-1.00	16.48	10.28	5.41
12	-1.10	17.95	11.58	6.57
13	-1.20	19.44	12.94	7.87
14	-1.30	20.96	14.35	9.31
15	-1.40	22.50	15.80	10.91
16	-1.50	24.06	17.31	12.66
17	-1.60	25.64	18.87	14.57
18	-1.70	27.25	20.48	16.65
19	-1.80	28.88	22.14	18.90
20	-1.90	30.54	23.85	21.32
21	-2.00	32.22	25.61	23.93
22	-2.10	33.92	27.42	26.72
23	-2.20	35.64	29.28	29.70
24	-2.30	37.39	31.19	32.88
25	-2.40	39.16	33.15	36.27
26	-2.50	40.95	35.17	39.86
27	-2.60	42.77	37.23	43.66
28	-2.70	44.61	39.34	47.68
29	-2.80	46.47	41.51	51.92
30	-2.90	48.36	43.72	56.39
31	-3.00	50.27	45.99	61.10
32	-3.10	52.20	48.30	66.04
33	-3.20	54.16	50.67	71.22
34	-3.30	56.14	53.09	76.66
35	-3.40	58.14	55.56	82.35
36	-3.50	60.16	58.07	88.29
37	-3.60	62.21	60.64	94.50
38	-3.70	64.28	63.26	100.98
39	-3.80	66.38	65.93	107.74
40	-3.90	68.50	68.65	114.77
41	-4.00	70.64	71.42	122.09
42	-4.10	72.80	74.25	129.69
43	-4.20	74.99	77.12	137.60
44	-4.30	77.20	80.04	145.80
45	-4.40	79.44	83.01	154.31
46	-4.50	81.69	86.04	163.12
47	-4.60	83.97	89.11	172.26
48	-4.70	86.28	92.24	181.71
49	-4.80	88.60	95.41	191.49
50	-4.90	90.95	98.64	201.61
51	-5.00	93.33	101.91	212.05
52	-5.10	95.72	105.24	222.84
53	-5.20	98.14	108.62	233.98
54	-5.30	100.58	112.04	245.47
55	-5.40	103.05	115.52	257.31
56	-5.50	105.54	119.05	269.52
57	-5.60	108.05	122.63	282.09
58	-5.70	110.59	126.26	295.04
59	-5.80	113.14	129.94	308.36
60	-5.90	115.73	133.67	322.07
61	-6.00	118.33	137.46	336.16
62	-6.10	120.96	141.29	350.65
63	-6.20	123.61	145.17	365.54
64	-6.30	126.28	149.10	380.83
65	-6.40	128.98	153.09	396.53
66	-6.50	131.70	157.12	412.64
67	-6.60	134.45	161.21	429.17
68	-6.70	137.21	165.34	446.12
69	-6.80	140.00	169.53	463.51
70	-6.90	142.82	173.76	481.32
71	-7.00	145.65	178.05	499.58
72	-7.10	148.51	182.39	518.28
73	-7.20	151.40	186.78	537.44
74	-7.30	154.30	191.22	557.04
75	-7.40	157.23	195.70	577.11
76	-7.50	160.18	200.24	597.64
77	-7.60	163.16	204.83	618.65
78	-7.70	166.16	209.48	640.12
79	-7.80	169.18	214.17	662.08

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
80	-7.90	172.23	218.91	684.53
81	-8.00	175.29	223.70	707.47
82	-8.10	178.39	228.54	730.90
83	-8.20	181.50	233.44	754.83
84	-8.30	184.64	238.38	779.28
85	-8.40	187.80	243.38	804.23
86	-8.50	190.98	248.42	829.70
87	-8.60	194.19	253.52	855.69
88	-8.70	197.42	258.66	882.21
89	-8.80	200.67	263.86	909.26
90	-8.90	203.95	269.11	936.85
91	-9.00	207.25	274.40	964.98

Combinazione n° 13 - ECC

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	0.00	3.06	33.30	33.68
2	-0.10	4.30	33.32	37.02
3	-0.20	5.56	33.40	40.36
4	-0.30	6.85	33.51	43.72
5	-0.40	8.15	33.68	47.10
6	-0.50	9.48	33.89	50.51
7	-0.60	10.84	34.15	53.94
8	-0.70	12.21	34.46	57.41
9	-0.80	13.61	34.81	60.92
10	-0.90	15.04	35.22	64.48
11	-1.00	16.48	35.66	68.08
12	-1.10	17.95	36.16	71.74
13	-1.20	19.44	36.70	75.45
14	-1.30	20.96	37.29	79.23
15	-1.40	22.50	37.93	83.08
16	-1.50	24.06	38.62	87.01
17	-1.60	25.64	39.35	91.01
18	-1.70	27.25	40.13	95.09
19	-1.80	28.88	40.95	99.26
20	-1.90	30.54	41.83	103.53
21	-2.00	32.22	42.75	107.89
22	-2.10	33.92	43.72	112.35
23	-2.20	35.64	44.73	116.93
24	-2.30	37.39	45.80	121.61
25	-2.40	39.16	46.91	126.41
26	-2.50	40.95	48.06	131.33
27	-2.60	42.77	49.27	136.38
28	-2.70	44.61	50.52	141.56
29	-2.80	46.47	51.82	146.88
30	-2.90	48.36	53.16	152.34
31	-3.00	50.27	54.56	157.94
32	-3.10	52.20	56.00	163.70
33	-3.20	54.16	57.49	169.61
34	-3.30	56.14	59.02	175.68
35	-3.40	58.14	60.60	181.92
36	-3.50	60.16	62.23	188.32
37	-3.60	62.21	63.91	194.91
38	-3.70	64.28	65.63	201.67
39	-3.80	66.38	67.40	208.61
40	-3.90	68.50	69.22	215.75
41	-4.00	70.64	71.09	223.08
42	-4.10	72.80	73.00	230.61
43	-4.20	74.99	74.96	238.34
44	-4.30	77.20	76.97	246.28
45	-4.40	79.44	79.02	254.43
46	-4.50	81.69	81.13	262.81
47	-4.60	83.97	83.27	271.40
48	-4.70	86.28	85.47	280.23
49	-4.80	88.60	87.71	289.29
50	-4.90	90.95	90.01	298.58

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
51	-5.00	93.33	92.34	308.12
52	-5.10	95.72	94.73	317.91
53	-5.20	98.14	97.16	327.94
54	-5.30	100.58	99.64	338.24
55	-5.40	103.05	102.17	348.80
56	-5.50	105.54	104.74	359.62
57	-5.60	108.05	107.36	370.71
58	-5.70	110.59	110.03	382.09
59	-5.80	113.14	112.75	393.74
60	-5.90	115.73	115.51	405.68
61	-6.00	118.33	118.32	417.91
62	-6.10	120.96	121.18	430.43
63	-6.20	123.61	124.08	443.26
64	-6.30	126.28	127.04	456.39
65	-6.40	128.98	130.04	469.83
66	-6.50	131.70	133.08	483.59
67	-6.60	134.45	136.18	497.67
68	-6.70	137.21	139.32	512.07
69	-6.80	140.00	142.50	526.80
70	-6.90	142.82	145.74	541.87
71	-7.00	145.65	149.02	557.27
72	-7.10	148.51	152.35	573.02
73	-7.20	151.40	155.73	589.12
74	-7.30	154.30	159.15	605.57
75	-7.40	157.23	162.63	622.38
76	-7.50	160.18	166.15	639.55
77	-7.60	163.16	169.71	657.10
78	-7.70	166.16	173.32	675.01
79	-7.80	169.18	176.99	693.30
80	-7.90	172.23	180.69	711.98
81	-8.00	175.29	184.45	731.04
82	-8.10	178.39	188.25	750.50
83	-8.20	181.50	192.10	770.35
84	-8.30	184.64	196.00	790.61
85	-8.40	187.80	199.94	811.27
86	-8.50	190.98	203.93	832.34
87	-8.60	194.19	207.97	853.83
88	-8.70	197.42	212.06	875.75
89	-8.80	200.67	216.19	898.08
90	-8.90	203.95	220.37	920.85
91	-9.00	207.25	224.60	944.06

Combinazione n° 14 - SLER

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	0.00	3.06	0.00	0.38
2	-0.10	4.30	0.49	0.41
3	-0.20	5.56	1.02	0.49
4	-0.30	6.85	1.61	0.64
5	-0.40	8.15	2.24	0.85
6	-0.50	9.48	2.91	1.14
7	-0.60	10.84	3.64	1.50
8	-0.70	12.21	4.41	1.94
9	-0.80	13.61	5.23	2.47
10	-0.90	15.04	6.09	3.09
11	-1.00	16.48	7.01	3.80
12	-1.10	17.95	7.97	4.62
13	-1.20	19.44	8.97	5.54
14	-1.30	20.96	10.03	6.57
15	-1.40	22.50	11.13	7.71
16	-1.50	24.06	12.28	8.98
17	-1.60	25.64	13.48	10.37
18	-1.70	27.25	14.72	11.89
19	-1.80	28.88	16.01	13.54
20	-1.90	30.54	17.35	15.34
21	-2.00	32.22	18.73	17.27

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
22	-2.10	33.92	20.17	19.36
23	-2.20	35.64	21.65	21.60
24	-2.30	37.39	23.17	24.00
25	-2.40	39.16	24.75	26.56
26	-2.50	40.95	26.37	29.29
27	-2.60	42.77	28.04	32.20
28	-2.70	44.61	29.75	35.28
29	-2.80	46.47	31.52	38.54
30	-2.90	48.36	33.33	41.99
31	-3.00	50.27	35.18	45.64
32	-3.10	52.20	37.09	49.48
33	-3.20	54.16	39.04	53.52
34	-3.30	56.14	41.04	57.77
35	-3.40	58.14	43.09	62.23
36	-3.50	60.16	45.18	66.91
37	-3.60	62.21	47.32	71.81
38	-3.70	64.28	49.51	76.93
39	-3.80	66.38	51.75	82.29
40	-3.90	68.50	54.03	87.88
41	-4.00	70.64	56.36	93.72
42	-4.10	72.80	58.74	99.80
43	-4.20	74.99	61.16	106.13
44	-4.30	77.20	63.63	112.71
45	-4.40	79.44	66.15	119.55
46	-4.50	81.69	68.71	126.66
47	-4.60	83.97	71.31	134.04
48	-4.70	86.28	73.92	141.69
49	-4.80	88.60	76.55	149.61
50	-4.90	90.95	79.19	157.81
51	-5.00	93.33	81.82	166.28
52	-5.10	95.72	84.47	175.03
53	-5.20	98.14	87.15	184.05
54	-5.30	100.58	89.86	193.36
55	-5.40	103.05	92.62	202.95
56	-5.50	105.54	95.42	212.83
57	-5.60	108.05	98.27	223.00
58	-5.70	110.59	101.17	233.48
59	-5.80	113.14	104.12	244.25
60	-5.90	115.73	107.12	255.34
61	-6.00	118.33	110.16	266.74
62	-6.10	120.96	113.25	278.46
63	-6.20	123.61	116.39	290.51
64	-6.30	126.28	119.57	302.88
65	-6.40	128.98	122.81	315.59
66	-6.50	131.70	126.09	328.64
67	-6.60	134.45	129.42	342.03
68	-6.70	137.21	132.80	355.76
69	-6.80	140.00	136.22	369.86
70	-6.90	142.82	139.69	384.31
71	-7.00	145.65	143.21	399.12
72	-7.10	148.51	146.78	414.30
73	-7.20	151.40	150.40	429.85
74	-7.30	154.30	154.06	445.78
75	-7.40	157.23	157.77	462.09
76	-7.50	160.18	161.52	478.79
77	-7.60	163.16	165.33	495.88
78	-7.70	166.16	169.18	513.37
79	-7.80	169.18	173.08	531.26
80	-7.90	172.23	177.03	549.56
81	-8.00	175.29	181.02	568.27
82	-8.10	178.39	185.06	587.40
83	-8.20	181.50	189.15	606.94
84	-8.30	184.64	193.29	626.91
85	-8.40	187.80	197.47	647.32
86	-8.50	190.98	201.70	668.16
87	-8.60	194.19	205.98	689.44
88	-8.70	197.42	210.31	711.16
89	-8.80	200.67	214.68	733.34
90	-8.90	203.95	219.10	755.97
91	-9.00	207.25	223.57	779.06

Combinazione n° 15 - SLEF

n°	X [m]	N [kN]	T [kN]	M [kNm]
1	0.00	3.06	0.00	0.38
2	-0.10	4.30	0.02	0.39
3	-0.20	5.56	0.10	0.40
4	-0.30	6.85	0.21	0.43
5	-0.40	8.15	0.38	0.48
6	-0.50	9.48	0.59	0.56
7	-0.60	10.84	0.85	0.66
8	-0.70	12.21	1.16	0.80
9	-0.80	13.61	1.51	0.98
10	-0.90	15.04	1.92	1.21
11	-1.00	16.48	2.36	1.48
12	-1.10	17.95	2.86	1.81
13	-1.20	19.44	3.40	2.19
14	-1.30	20.96	3.99	2.64
15	-1.40	22.50	4.63	3.16
16	-1.50	24.06	5.32	3.76
17	-1.60	25.64	6.05	4.43
18	-1.70	27.25	6.83	5.18
19	-1.80	28.88	7.65	6.02
20	-1.90	30.54	8.53	6.96
21	-2.00	32.22	9.45	7.99
22	-2.10	33.92	10.42	9.12
23	-2.20	35.64	11.43	10.37
24	-2.30	37.39	12.50	11.72
25	-2.40	39.16	13.61	13.19
26	-2.50	40.95	14.76	14.78
27	-2.60	42.77	15.97	16.50
28	-2.70	44.61	17.22	18.35
29	-2.80	46.47	18.52	20.34
30	-2.90	48.36	19.86	22.47
31	-3.00	50.27	21.26	24.74
32	-3.10	52.20	22.70	27.17
33	-3.20	54.16	24.19	29.75
34	-3.30	56.14	25.72	32.49
35	-3.40	58.14	27.30	35.40
36	-3.50	60.16	28.93	38.47
37	-3.60	62.21	30.61	41.73
38	-3.70	64.28	32.33	45.16
39	-3.80	66.38	34.10	48.77
40	-3.90	68.50	35.92	52.58
41	-4.00	70.64	37.79	56.58
42	-4.10	72.80	39.70	60.78
43	-4.20	74.99	41.66	65.18
44	-4.30	77.20	43.67	69.79
45	-4.40	79.44	45.72	74.61
46	-4.50	81.69	47.83	79.66
47	-4.60	83.97	49.97	84.92
48	-4.70	86.28	52.17	90.42
49	-4.80	88.60	54.41	96.15
50	-4.90	90.95	56.71	102.11
51	-5.00	93.33	59.04	108.32
52	-5.10	95.72	61.43	114.78
53	-5.20	98.14	63.86	121.48
54	-5.30	100.58	66.34	128.45
55	-5.40	103.05	68.87	135.68
56	-5.50	105.54	71.44	143.17
57	-5.60	108.05	74.06	150.93
58	-5.70	110.59	76.73	158.98
59	-5.80	113.14	79.45	167.30
60	-5.90	115.73	82.21	175.91
61	-6.00	118.33	85.02	184.81
62	-6.10	120.96	87.88	194.00
63	-6.20	123.61	90.78	203.50
64	-6.30	126.28	93.74	213.30
65	-6.40	128.98	96.74	223.41

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
66	-6.50	131.70	99.78	233.84
67	-6.60	134.45	102.88	244.59
68	-6.70	137.21	106.02	255.66
69	-6.80	140.00	109.20	267.06
70	-6.90	142.82	112.44	278.80
71	-7.00	145.65	115.72	290.87
72	-7.10	148.51	119.05	303.29
73	-7.20	151.40	122.43	316.06
74	-7.30	154.30	125.85	329.18
75	-7.40	157.23	129.33	342.66
76	-7.50	160.18	132.85	356.50
77	-7.60	163.16	136.41	370.72
78	-7.70	166.16	140.02	385.30
79	-7.80	169.18	143.69	400.26
80	-7.90	172.23	147.39	415.61
81	-8.00	175.29	151.15	431.34
82	-8.10	178.39	154.95	447.47
83	-8.20	181.50	158.80	463.99
84	-8.30	184.64	162.70	480.92
85	-8.40	187.80	166.64	498.25
86	-8.50	190.98	170.63	515.99
87	-8.60	194.19	174.67	534.15
88	-8.70	197.42	178.76	552.74
89	-8.80	200.67	182.89	571.74
90	-8.90	203.95	187.07	591.18
91	-9.00	207.25	191.30	611.06

Combinazione n° 16 - SLEQ

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	0.00	3.06	0.00	0.38
2	-0.10	4.30	0.02	0.39
3	-0.20	5.56	0.10	0.40
4	-0.30	6.85	0.21	0.43
5	-0.40	8.15	0.38	0.48
6	-0.50	9.48	0.59	0.56
7	-0.60	10.84	0.85	0.66
8	-0.70	12.21	1.16	0.80
9	-0.80	13.61	1.51	0.98
10	-0.90	15.04	1.92	1.21
11	-1.00	16.48	2.36	1.48
12	-1.10	17.95	2.86	1.81
13	-1.20	19.44	3.40	2.19
14	-1.30	20.96	3.99	2.64
15	-1.40	22.50	4.63	3.16
16	-1.50	24.06	5.32	3.76
17	-1.60	25.64	6.05	4.43
18	-1.70	27.25	6.83	5.18
19	-1.80	28.88	7.65	6.02
20	-1.90	30.54	8.53	6.96
21	-2.00	32.22	9.45	7.99
22	-2.10	33.92	10.42	9.12
23	-2.20	35.64	11.43	10.37
24	-2.30	37.39	12.50	11.72
25	-2.40	39.16	13.61	13.19
26	-2.50	40.95	14.76	14.78
27	-2.60	42.77	15.97	16.50
28	-2.70	44.61	17.22	18.35
29	-2.80	46.47	18.52	20.34
30	-2.90	48.36	19.86	22.47
31	-3.00	50.27	21.26	24.74
32	-3.10	52.20	22.70	27.17
33	-3.20	54.16	24.19	29.75
34	-3.30	56.14	25.72	32.49
35	-3.40	58.14	27.30	35.40
36	-3.50	60.16	28.93	38.47

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
37	-3.60	62.21	30.61	41.73
38	-3.70	64.28	32.33	45.16
39	-3.80	66.38	34.10	48.77
40	-3.90	68.50	35.92	52.58
41	-4.00	70.64	37.79	56.58
42	-4.10	72.80	39.70	60.78
43	-4.20	74.99	41.66	65.18
44	-4.30	77.20	43.67	69.79
45	-4.40	79.44	45.72	74.61
46	-4.50	81.69	47.83	79.66
47	-4.60	83.97	49.97	84.92
48	-4.70	86.28	52.17	90.42
49	-4.80	88.60	54.41	96.15
50	-4.90	90.95	56.71	102.11
51	-5.00	93.33	59.04	108.32
52	-5.10	95.72	61.43	114.78
53	-5.20	98.14	63.86	121.48
54	-5.30	100.58	66.34	128.45
55	-5.40	103.05	68.87	135.68
56	-5.50	105.54	71.44	143.17
57	-5.60	108.05	74.06	150.93
58	-5.70	110.59	76.73	158.98
59	-5.80	113.14	79.45	167.30
60	-5.90	115.73	82.21	175.91
61	-6.00	118.33	85.02	184.81
62	-6.10	120.96	87.88	194.00
63	-6.20	123.61	90.78	203.50
64	-6.30	126.28	93.74	213.30
65	-6.40	128.98	96.74	223.41
66	-6.50	131.70	99.78	233.84
67	-6.60	134.45	102.88	244.59
68	-6.70	137.21	106.02	255.66
69	-6.80	140.00	109.20	267.06
70	-6.90	142.82	112.44	278.80
71	-7.00	145.65	115.72	290.87
72	-7.10	148.51	119.05	303.29
73	-7.20	151.40	122.43	316.06
74	-7.30	154.30	125.85	329.18
75	-7.40	157.23	129.33	342.66
76	-7.50	160.18	132.85	356.50
77	-7.60	163.16	136.41	370.72
78	-7.70	166.16	140.02	385.30
79	-7.80	169.18	143.69	400.26
80	-7.90	172.23	147.39	415.61
81	-8.00	175.29	151.15	431.34
82	-8.10	178.39	154.95	447.47
83	-8.20	181.50	158.80	463.99
84	-8.30	184.64	162.70	480.92
85	-8.40	187.80	166.64	498.25
86	-8.50	190.98	170.63	515.99
87	-8.60	194.19	174.67	534.15
88	-8.70	197.42	178.76	552.74
89	-8.80	200.67	182.89	571.74
90	-8.90	203.95	187.07	591.18
91	-9.00	207.25	191.30	611.06

*Mensola valle*

Combinazione n° 1 - STR (A1-M1-R3)

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-0.75	0.00	0.00	0.00
2	-0.67	0.00	1.02	0.04



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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
3	-0.58	0.00	2.04	0.17
4	-0.50	0.00	3.06	0.38

Combinazione n° 2 - STR (A1-M1-R3) H + V

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-0.75	0.00	0.00	0.00
2	-0.67	0.00	1.09	0.05
3	-0.58	0.00	2.19	0.18
4	-0.50	0.00	3.28	0.41

Combinazione n° 3 - STR (A1-M1-R3)

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-0.75	0.00	0.00	0.00
2	-0.67	0.00	1.02	0.04
3	-0.58	0.00	2.04	0.17
4	-0.50	0.00	3.06	0.38

Combinazione n° 4 - STR (A1-M1-R3) H - V

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-0.75	0.00	0.00	0.00
2	-0.67	0.00	1.02	0.04
3	-0.58	0.00	2.04	0.17
4	-0.50	0.00	3.06	0.38

Combinazione n° 13 - ECC

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-0.75	0.00	0.00	0.00
2	-0.67	0.00	1.02	0.04
3	-0.58	0.00	2.04	0.17
4	-0.50	0.00	3.06	0.38

Combinazione n° 14 - SLER

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-0.75	0.00	0.00	0.00
2	-0.67	0.00	1.02	0.04
3	-0.58	0.00	2.04	0.17
4	-0.50	0.00	3.06	0.38

Combinazione n° 15 - SLEF

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-0.75	0.00	0.00	0.00
2	-0.67	0.00	1.02	0.04
3	-0.58	0.00	2.04	0.17

VE407

**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
4	-0.50	0.00	3.06	0.38

Combinazione n° 16 - SLEQ

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-0.75	0.00	0.00	0.00
2	-0.67	0.00	1.02	0.04
3	-0.58	0.00	2.04	0.17
4	-0.50	0.00	3.06	0.38

Fondazione

Combinazione n° 1 - STR (A1-M1-R3)

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-1.85	0.00	0.00	0.00
2	-1.75	0.00	18.04	0.87
3	-1.66	0.00	36.03	3.48
4	-1.56	0.00	53.97	7.82
5	-1.46	0.00	71.85	13.88
6	-1.37	0.00	89.67	21.67
7	-1.27	0.00	107.44	31.18
8	-1.18	0.00	125.16	42.39
9	-1.08	0.00	142.82	55.31
10	-0.98	0.00	160.42	69.93
11	-0.89	0.00	177.97	86.25
12	-0.79	0.00	195.47	104.25
13	-0.69	0.00	212.91	123.94
14	-0.60	0.00	230.30	145.31
15	-0.50	0.00	247.63	168.36
16	0.85	0.00	-235.55	-474.46
17	0.95	0.00	-230.44	-451.16
18	1.05	0.00	-225.27	-428.38
19	1.15	0.00	-220.04	-406.11
20	1.25	0.00	-214.76	-384.37
21	1.35	0.00	-209.41	-363.16
22	1.45	0.00	-204.01	-342.49
23	1.55	0.00	-198.55	-322.36
24	1.65	0.00	-193.02	-302.78
25	1.75	0.00	-187.44	-283.76
26	1.85	0.00	-181.80	-265.30
27	1.95	0.00	-176.11	-247.40
28	2.05	0.00	-170.35	-230.08
29	2.15	0.00	-164.53	-213.33
30	2.25	0.00	-158.66	-197.17
31	2.35	0.00	-152.73	-181.60
32	2.45	0.00	-146.73	-166.63
33	2.55	0.00	-140.68	-152.26
34	2.65	0.00	-134.57	-138.50
35	2.75	0.00	-128.40	-125.35
36	2.85	0.00	-122.17	-112.82
37	2.95	0.00	-115.89	-100.91
38	3.05	0.00	-109.54	-89.64
39	3.15	0.00	-103.14	-79.01
40	3.25	0.00	-96.67	-69.02
41	3.35	0.00	-90.15	-59.68
42	3.45	0.00	-83.57	-50.99
43	3.55	0.00	-76.93	-42.96
44	3.65	0.00	-70.23	-35.61
45	3.75	0.00	-63.47	-28.92

VE407

**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
46	3.85	0.00	-56.65	-22.91
47	3.95	0.00	-49.78	-17.59
48	4.05	0.00	-42.84	-12.96
49	4.15	0.00	-35.85	-9.02
50	4.25	0.00	-28.80	-5.79
51	4.35	0.00	-21.69	-3.27
52	4.45	0.00	-14.52	-1.46
53	4.55	0.00	-7.29	-0.36
54	4.65	0.00	0.00	0.00

Combinazione n° 2 - STR (A1-M1-R3) H + V

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-1.85	0.00	0.00	0.00
2	-1.75	0.00	33.66	1.63
3	-1.66	0.00	66.84	6.48
4	-1.56	0.00	99.54	14.50
5	-1.46	0.00	131.75	25.66
6	-1.37	0.00	163.48	39.90
7	-1.27	0.00	194.74	57.17
8	-1.18	0.00	225.50	77.44
9	-1.08	0.00	255.79	100.65
10	-0.98	0.00	285.59	126.75
11	-0.89	0.00	314.91	155.71
12	-0.79	0.00	343.75	187.47
13	-0.69	0.00	372.11	221.99
14	-0.60	0.00	399.99	259.22
15	-0.50	0.00	427.38	299.11
16	0.85	0.00	-220.45	-655.99
17	0.95	0.00	-224.24	-633.75
18	1.05	0.00	-227.51	-611.16
19	1.15	0.00	-230.27	-588.26
20	1.25	0.00	-232.51	-565.12
21	1.35	0.00	-234.23	-541.78
22	1.45	0.00	-235.43	-518.29
23	1.55	0.00	-236.11	-494.71
24	1.65	0.00	-236.27	-471.09
25	1.75	0.00	-235.91	-447.48
26	1.85	0.00	-235.04	-423.92
27	1.95	0.00	-233.65	-400.48
28	2.05	0.00	-231.73	-377.21
29	2.15	0.00	-229.30	-354.16
30	2.25	0.00	-226.35	-331.37
31	2.35	0.00	-222.89	-308.90
32	2.45	0.00	-218.90	-286.81
33	2.55	0.00	-214.40	-265.14
34	2.65	0.00	-209.37	-243.95
35	2.75	0.00	-203.83	-223.28
36	2.85	0.00	-197.77	-203.20
37	2.95	0.00	-191.19	-183.74
38	3.05	0.00	-184.09	-164.98
39	3.15	0.00	-176.48	-146.94
40	3.25	0.00	-168.34	-129.70
41	3.35	0.00	-159.69	-113.29
42	3.45	0.00	-150.52	-97.78
43	3.55	0.00	-140.83	-83.21
44	3.65	0.00	-130.62	-69.63
45	3.75	0.00	-119.89	-57.10
46	3.85	0.00	-108.64	-45.67
47	3.95	0.00	-96.88	-35.39
48	4.05	0.00	-84.59	-26.31
49	4.15	0.00	-71.79	-18.49
50	4.25	0.00	-58.47	-11.97
51	4.35	0.00	-44.63	-6.81
52	4.45	0.00	-30.27	-3.06
53	4.55	0.00	-15.40	-0.77

VE407

**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
54	4.65	0.00	0.00	0.00

Combinazione n° 3 - STR (A1-M1-R3)

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-1.85	0.00	0.00	0.00
2	-1.75	0.00	20.47	0.99
3	-1.66	0.00	40.88	3.95
4	-1.56	0.00	61.23	8.87
5	-1.46	0.00	81.52	15.75
6	-1.37	0.00	101.75	24.59
7	-1.27	0.00	121.93	35.37
8	-1.18	0.00	142.05	48.10
9	-1.08	0.00	162.11	62.77
10	-0.98	0.00	182.11	79.36
11	-0.89	0.00	202.05	97.89
12	-0.79	0.00	221.94	118.33
13	-0.69	0.00	241.77	140.69
14	-0.60	0.00	261.54	164.95
15	-0.50	0.00	281.25	191.12
16	0.85	0.00	-259.17	-521.05
17	0.95	0.00	-252.74	-493.99
18	1.05	0.00	-246.25	-467.58
19	1.15	0.00	-239.69	-441.82
20	1.25	0.00	-233.07	-416.72
21	1.35	0.00	-226.39	-392.29
22	1.45	0.00	-219.65	-368.53
23	1.55	0.00	-212.84	-345.44
24	1.65	0.00	-205.97	-323.04
25	1.75	0.00	-199.04	-301.33
26	1.85	0.00	-192.04	-280.31
27	1.95	0.00	-184.99	-260.00
28	2.05	0.00	-177.87	-240.39
29	2.15	0.00	-170.68	-221.50
30	2.25	0.00	-163.44	-203.34
31	2.35	0.00	-156.13	-185.90
32	2.45	0.00	-148.76	-169.19
33	2.55	0.00	-141.33	-153.23
34	2.65	0.00	-133.83	-138.01
35	2.75	0.00	-126.28	-123.54
36	2.85	0.00	-118.65	-109.83
37	2.95	0.00	-110.97	-96.89
38	3.05	0.00	-104.12	-85.44
39	3.15	0.00	-98.09	-75.32
40	3.25	0.00	-91.98	-65.82
41	3.35	0.00	-85.82	-56.93
42	3.45	0.00	-79.60	-48.66
43	3.55	0.00	-73.31	-41.01
44	3.65	0.00	-66.96	-34.00
45	3.75	0.00	-60.54	-27.62
46	3.85	0.00	-54.07	-21.89
47	3.95	0.00	-47.53	-16.81
48	4.05	0.00	-40.92	-12.39
49	4.15	0.00	-34.26	-8.63
50	4.25	0.00	-27.53	-5.54
51	4.35	0.00	-20.74	-3.13
52	4.45	0.00	-13.89	-1.39
53	4.55	0.00	-6.98	-0.35
54	4.65	0.00	0.00	0.00

Combinazione n° 4 - STR (A1-M1-R3) H - V

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X [m]	N [kN]	T [kN]	M [kNm]
1	-1.85	0.00	0.00	0.00
2	-1.75	0.00	30.51	1.47
3	-1.66	0.00	60.55	5.87
4	-1.56	0.00	90.13	13.14
5	-1.46	0.00	119.24	23.24
6	-1.37	0.00	147.89	36.12
7	-1.27	0.00	176.07	51.74
8	-1.18	0.00	203.78	70.06
9	-1.08	0.00	231.03	91.03
10	-0.98	0.00	257.81	114.60
11	-0.89	0.00	284.12	140.73
12	-0.79	0.00	309.97	169.38
13	-0.69	0.00	335.36	200.50
14	-0.60	0.00	360.27	234.04
15	-0.50	0.00	384.72	269.96
16	0.85	0.00	-314.52	-826.76
17	0.95	0.00	-315.51	-795.25
18	1.05	0.00	-316.01	-763.67
19	1.15	0.00	-316.00	-732.07
20	1.25	0.00	-315.49	-700.49
21	1.35	0.00	-314.48	-668.98
22	1.45	0.00	-312.97	-637.61
23	1.55	0.00	-310.96	-606.41
24	1.65	0.00	-308.45	-575.43
25	1.75	0.00	-305.43	-544.73
26	1.85	0.00	-301.92	-514.36
27	1.95	0.00	-297.90	-484.37
28	2.05	0.00	-293.38	-454.80
29	2.15	0.00	-288.36	-425.71
30	2.25	0.00	-282.84	-397.14
31	2.35	0.00	-276.82	-369.16
32	2.45	0.00	-270.30	-341.80
33	2.55	0.00	-263.27	-315.11
34	2.65	0.00	-255.75	-289.16
35	2.75	0.00	-247.72	-263.98
36	2.85	0.00	-239.19	-239.63
37	2.95	0.00	-230.17	-216.16
38	3.05	0.00	-220.64	-193.62
39	3.15	0.00	-210.61	-172.05
40	3.25	0.00	-200.07	-151.51
41	3.35	0.00	-189.04	-132.05
42	3.45	0.00	-177.51	-113.72
43	3.55	0.00	-165.47	-96.57
44	3.65	0.00	-152.93	-80.64
45	3.75	0.00	-139.89	-66.00
46	3.85	0.00	-126.36	-52.68
47	3.95	0.00	-112.32	-40.74
48	4.05	0.00	-97.77	-30.23
49	4.15	0.00	-82.73	-21.20
50	4.25	0.00	-67.19	-13.70
51	4.35	0.00	-51.14	-7.78
52	4.45	0.00	-34.60	-3.49
53	4.55	0.00	-17.55	-0.88
54	4.65	0.00	0.00	0.00

Combinazione n° 13 - ECC

n°	X [m]	N [kN]	T [kN]	M [kNm]
1	-1.85	0.00	0.00	0.00
2	-1.75	0.00	20.81	1.00
3	-1.66	0.00	41.47	4.01
4	-1.56	0.00	61.98	9.00
5	-1.46	0.00	82.33	15.96
6	-1.37	0.00	102.54	24.87
7	-1.27	0.00	122.59	35.73
8	-1.18	0.00	142.49	48.51

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X [m]	N [kN]	T [kN]	M [kNm]
9	-1.08	0.00	162.25	63.20
10	-0.98	0.00	181.85	79.79
11	-0.89	0.00	201.29	98.27
12	-0.79	0.00	220.59	118.61
13	-0.69	0.00	239.74	140.81
14	-0.60	0.00	258.73	164.84
15	-0.50	0.00	277.58	190.70
16	0.85	0.00	-111.14	-285.55
17	0.95	0.00	-111.23	-274.43
18	1.05	0.00	-111.15	-263.31
19	1.15	0.00	-110.91	-252.21
20	1.25	0.00	-110.50	-241.14
21	1.35	0.00	-109.94	-230.12
22	1.45	0.00	-109.21	-219.16
23	1.55	0.00	-108.32	-208.28
24	1.65	0.00	-107.26	-197.50
25	1.75	0.00	-106.05	-186.83
26	1.85	0.00	-104.67	-176.29
27	1.95	0.00	-103.13	-165.90
28	2.05	0.00	-101.42	-155.67
29	2.15	0.00	-99.55	-145.62
30	2.25	0.00	-97.52	-135.77
31	2.35	0.00	-95.33	-126.12
32	2.45	0.00	-92.98	-116.71
33	2.55	0.00	-90.46	-107.53
34	2.65	0.00	-87.78	-98.62
35	2.75	0.00	-84.93	-89.98
36	2.85	0.00	-81.93	-81.64
37	2.95	0.00	-78.76	-73.60
38	3.05	0.00	-75.43	-65.89
39	3.15	0.00	-71.93	-58.52
40	3.25	0.00	-68.28	-51.51
41	3.35	0.00	-64.46	-44.87
42	3.45	0.00	-60.47	-38.63
43	3.55	0.00	-56.33	-32.79
44	3.65	0.00	-52.02	-27.37
45	3.75	0.00	-47.55	-22.39
46	3.85	0.00	-42.92	-17.86
47	3.95	0.00	-38.12	-13.81
48	4.05	0.00	-33.17	-10.24
49	4.15	0.00	-28.04	-7.18
50	4.25	0.00	-22.76	-4.64
51	4.35	0.00	-17.31	-2.63
52	4.45	0.00	-11.71	-1.18
53	4.55	0.00	-5.93	-0.30
54	4.65	0.00	0.00	0.00

Combinazione n° 14 - SLER

n°	X [m]	N [kN]	T [kN]	M [kNm]
1	-1.85	0.00	0.00	0.00
2	-1.75	0.00	16.92	0.82
3	-1.66	0.00	33.84	3.26
4	-1.56	0.00	50.77	7.34
5	-1.46	0.00	67.69	13.05
6	-1.37	0.00	84.61	20.40
7	-1.27	0.00	101.54	29.37
8	-1.18	0.00	118.46	39.98
9	-1.08	0.00	135.39	52.22
10	-0.98	0.00	152.31	66.09
11	-0.89	0.00	169.24	81.59
12	-0.79	0.00	186.17	98.73
13	-0.69	0.00	203.09	117.50
14	-0.60	0.00	220.02	137.90
15	-0.50	0.00	236.95	159.93
16	0.85	0.00	-38.21	-72.29

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X [m]	N [kN]	T [kN]	M [kNm]
17	0.95	0.00	-36.80	-67.81
18	1.05	0.00	-35.40	-63.47
19	1.15	0.00	-34.00	-59.27
20	1.25	0.00	-32.60	-55.21
21	1.35	0.00	-31.20	-51.29
22	1.45	0.00	-29.80	-47.51
23	1.55	0.00	-28.41	-43.87
24	1.65	0.00	-27.01	-40.36
25	1.75	0.00	-25.61	-37.00
26	1.85	0.00	-24.22	-33.78
27	1.95	0.00	-22.82	-30.70
28	2.05	0.00	-21.43	-27.76
29	2.15	0.00	-20.03	-24.95
30	2.25	0.00	-18.64	-22.29
31	2.35	0.00	-17.24	-19.77
32	2.45	0.00	-15.85	-17.38
33	2.55	0.00	-14.46	-15.13
34	2.65	0.00	-13.07	-13.03
35	2.75	0.00	-11.68	-11.06
36	2.85	0.00	-10.29	-9.23
37	2.95	0.00	-8.90	-7.54
38	3.05	0.00	-7.96	-6.35
39	3.15	0.00	-7.46	-5.58
40	3.25	0.00	-6.96	-4.86
41	3.35	0.00	-6.46	-4.18
42	3.45	0.00	-5.96	-3.56
43	3.55	0.00	-5.46	-2.99
44	3.65	0.00	-4.96	-2.47
45	3.75	0.00	-4.46	-2.00
46	3.85	0.00	-3.96	-1.58
47	3.95	0.00	-3.46	-1.21
48	4.05	0.00	-2.97	-0.89
49	4.15	0.00	-2.47	-0.62
50	4.25	0.00	-1.97	-0.39
51	4.35	0.00	-1.48	-0.22
52	4.45	0.00	-0.99	-0.10
53	4.55	0.00	-0.49	-0.02
54	4.65	0.00	0.00	0.00

Combinazione n° 15 - SLEF

n°	X [m]	N [kN]	T [kN]	M [kNm]
1	-1.85	0.00	0.00	0.00
2	-1.75	0.00	15.71	0.76
3	-1.66	0.00	31.43	3.03
4	-1.56	0.00	47.14	6.82
5	-1.46	0.00	62.86	12.12
6	-1.37	0.00	78.58	18.94
7	-1.27	0.00	94.31	27.28
8	-1.18	0.00	110.03	37.13
9	-1.08	0.00	125.76	48.50
10	-0.98	0.00	141.49	61.38
11	-0.89	0.00	157.22	75.79
12	-0.79	0.00	172.96	91.71
13	-0.69	0.00	188.70	109.14
14	-0.60	0.00	204.44	128.10
15	-0.50	0.00	220.18	148.57
16	0.85	0.00	-26.43	-49.10
17	0.95	0.00	-25.69	-46.50
18	1.05	0.00	-24.95	-43.96
19	1.15	0.00	-24.21	-41.51
20	1.25	0.00	-23.48	-39.12
21	1.35	0.00	-22.75	-36.81
22	1.45	0.00	-22.02	-34.57
23	1.55	0.00	-21.30	-32.41
24	1.65	0.00	-20.57	-30.31

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X [m]	N [kN]	T [kN]	M [kNm]
25	1.75	0.00	-19.85	-28.29
26	1.85	0.00	-19.13	-26.34
27	1.95	0.00	-18.42	-24.46
28	2.05	0.00	-17.70	-22.66
29	2.15	0.00	-16.99	-20.92
30	2.25	0.00	-16.28	-19.26
31	2.35	0.00	-15.58	-17.67
32	2.45	0.00	-14.87	-16.15
33	2.55	0.00	-14.17	-14.69
34	2.65	0.00	-13.47	-13.31
35	2.75	0.00	-12.78	-12.00
36	2.85	0.00	-12.08	-10.76
37	2.95	0.00	-11.39	-9.58
38	3.05	0.00	-10.70	-8.48
39	3.15	0.00	-10.01	-7.44
40	3.25	0.00	-9.33	-6.47
41	3.35	0.00	-8.65	-5.58
42	3.45	0.00	-7.97	-4.75
43	3.55	0.00	-7.29	-3.98
44	3.65	0.00	-6.61	-3.29
45	3.75	0.00	-5.94	-2.66
46	3.85	0.00	-5.27	-2.10
47	3.95	0.00	-4.61	-1.60
48	4.05	0.00	-3.94	-1.18
49	4.15	0.00	-3.28	-0.82
50	4.25	0.00	-2.62	-0.52
51	4.35	0.00	-1.96	-0.29
52	4.45	0.00	-1.30	-0.13
53	4.55	0.00	-0.65	-0.03
54	4.65	0.00	0.00	0.00

Combinazione n° 16 - SLEQ

n°	X [m]	N [kN]	T [kN]	M [kNm]
1	-1.85	0.00	0.00	0.00
2	-1.75	0.00	15.71	0.76
3	-1.66	0.00	31.43	3.03
4	-1.56	0.00	47.14	6.82
5	-1.46	0.00	62.86	12.12
6	-1.37	0.00	78.58	18.94
7	-1.27	0.00	94.31	27.28
8	-1.18	0.00	110.03	37.13
9	-1.08	0.00	125.76	48.50
10	-0.98	0.00	141.49	61.38
11	-0.89	0.00	157.22	75.79
12	-0.79	0.00	172.96	91.71
13	-0.69	0.00	188.70	109.14
14	-0.60	0.00	204.44	128.10
15	-0.50	0.00	220.18	148.57
16	0.85	0.00	-26.43	-49.10
17	0.95	0.00	-25.69	-46.50
18	1.05	0.00	-24.95	-43.96
19	1.15	0.00	-24.21	-41.51
20	1.25	0.00	-23.48	-39.12
21	1.35	0.00	-22.75	-36.81
22	1.45	0.00	-22.02	-34.57
23	1.55	0.00	-21.30	-32.41
24	1.65	0.00	-20.57	-30.31
25	1.75	0.00	-19.85	-28.29
26	1.85	0.00	-19.13	-26.34
27	1.95	0.00	-18.42	-24.46
28	2.05	0.00	-17.70	-22.66
29	2.15	0.00	-16.99	-20.92
30	2.25	0.00	-16.28	-19.26
31	2.35	0.00	-15.58	-17.67
32	2.45	0.00	-14.87	-16.15



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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
33	2.55	0.00	-14.17	-14.69
34	2.65	0.00	-13.47	-13.31
35	2.75	0.00	-12.78	-12.00
36	2.85	0.00	-12.08	-10.76
37	2.95	0.00	-11.39	-9.58
38	3.05	0.00	-10.70	-8.48
39	3.15	0.00	-10.01	-7.44
40	3.25	0.00	-9.33	-6.47
41	3.35	0.00	-8.65	-5.58
42	3.45	0.00	-7.97	-4.75
43	3.55	0.00	-7.29	-3.98
44	3.65	0.00	-6.61	-3.29
45	3.75	0.00	-5.94	-2.66
46	3.85	0.00	-5.27	-2.10
47	3.95	0.00	-4.61	-1.60
48	4.05	0.00	-3.94	-1.18
49	4.15	0.00	-3.28	-0.82
50	4.25	0.00	-2.62	-0.52
51	4.35	0.00	-1.96	-0.29
52	4.45	0.00	-1.30	-0.13
53	4.55	0.00	-0.65	-0.03
54	4.65	0.00	0.00	0.00

Verifiche strutturali*Verifiche a flessione*Elementi calcolati a trave

## Simbologia adottata

n°	indice sezione
Y	ordinata sezione espressa in [m]
B	larghezza sezione espressa in [cm]
H	altezza sezione espressa in [cm]
Afi	area ferri inferiori espressa in [cmq]
Afs	area ferri superiori espressa in [cmq]
M	momento agente espressa in [kNm]
N	sfuerzo normale agente espressa in [kN]
Mu	momento ultimi espresso in [kNm]
Nu	sfuerzo normale ultimo espressa in [kN]
FS	fattore di sicurezza (rapporto tra sollecitazione ultima e sollecitazione agente)

**Paramento**Combinazione n° 1 - STR (A1-M1-R3)

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
1	0.00	100	50	15.71	25.13	0.38	3.06	0.00	0.00	1000.000
2	-0.10	100	51	15.71	25.13	0.39	4.30	0.00	0.00	1000.000
3	-0.20	100	52	15.71	25.13	0.40	5.56	0.00	0.00	1000.000
4	-0.30	100	53	15.71	25.13	0.44	6.85	0.00	0.00	1000.000
5	-0.40	100	54	15.71	25.13	0.50	8.15	0.00	0.00	1000.000

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## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
6	-0.50	100	55	15.71	25.13	0.59	9.48	544.40	8800.90	928.015
7	-0.60	100	56	15.71	25.13	0.71	10.84	581.22	8826.67	814.502
8	-0.70	100	57	15.71	25.13	0.88	12.21	634.24	8764.31	717.599
9	-0.80	100	58	15.71	25.13	1.10	13.61	700.20	8636.83	634.452
10	-0.90	100	59	15.71	25.13	1.38	15.04	774.60	8444.42	561.617
11	-1.00	100	59	15.71	25.13	1.72	16.48	855.04	8208.43	498.027
12	-1.10	100	60	15.71	25.13	2.12	17.95	938.42	7935.64	442.070
13	-1.20	100	61	15.71	25.13	2.60	19.44	1022.94	7640.27	392.948
14	-1.30	100	62	15.71	25.13	3.16	20.96	1106.29	7327.13	349.593
15	-1.40	100	63	15.71	25.13	3.81	22.50	1188.33	7011.87	311.670
16	-1.50	100	64	15.71	25.13	4.55	24.06	1267.31	6694.88	278.262
17	-1.60	100	65	15.71	25.13	5.40	25.64	1343.90	6387.50	249.077
18	-1.70	100	66	15.71	25.13	6.34	27.25	1413.96	6075.69	222.937
19	-1.80	100	67	15.71	25.13	7.40	28.88	1474.38	5753.86	199.203
20	-1.90	100	68	15.71	25.13	8.58	30.54	1520.19	5411.68	177.206
21	-2.00	100	69	15.71	25.13	9.88	32.22	1541.43	5026.06	156.008
22	-2.10	100	70	15.71	25.13	11.31	33.92	1546.73	4637.26	136.721
23	-2.20	100	71	15.71	25.13	12.88	35.64	1547.00	4280.02	120.084
24	-2.30	100	72	15.71	25.13	14.60	37.39	1536.45	3935.89	105.268
25	-2.40	100	73	15.71	25.13	16.46	39.16	1521.04	3619.10	92.419
26	-2.50	100	74	15.71	25.13	18.48	40.95	1500.68	3326.30	81.222
27	-2.60	100	75	15.71	25.13	20.66	42.77	1480.89	3066.23	71.691
28	-2.70	100	76	15.71	25.13	23.01	44.61	1453.59	2818.72	63.186
29	-2.80	100	76	15.71	25.13	25.53	46.47	1432.87	2608.49	56.129
30	-2.90	100	77	15.71	25.13	28.23	48.36	1410.84	2416.66	49.973
31	-3.00	100	78	15.71	25.13	31.12	50.27	1384.61	2236.39	44.488
32	-3.10	100	79	15.71	25.13	34.21	52.20	1363.89	2081.35	39.871
33	-3.20	100	80	15.71	25.13	37.49	54.16	1347.61	1946.69	35.945
34	-3.30	100	81	15.71	25.13	40.98	56.14	1324.57	1814.44	32.322
35	-3.40	100	82	15.71	25.13	44.68	58.14	1301.79	1693.84	29.134
36	-3.50	100	83	15.71	25.13	48.60	60.16	1283.14	1588.39	26.401
37	-3.60	100	84	15.71	25.13	52.75	62.21	1267.90	1495.46	24.038
38	-3.70	100	85	15.71	25.13	57.12	64.28	1255.54	1412.98	21.980
39	-3.80	100	86	15.71	25.13	61.73	66.38	1245.59	1339.32	20.177
40	-3.90	100	87	15.71	25.13	66.59	68.50	1237.70	1273.17	18.587
41	-4.00	100	88	15.71	25.13	71.69	70.64	1231.59	1213.46	17.178
42	-4.10	100	89	15.71	25.13	77.06	72.80	1227.02	1159.31	15.924
43	-4.20	100	90	15.71	25.13	82.68	74.99	1223.79	1110.01	14.802
44	-4.30	100	91	15.71	25.13	88.57	77.20	1221.74	1064.94	13.794
45	-4.40	100	92	15.71	25.13	94.74	79.44	1220.73	1023.59	12.886
46	-4.50	100	93	15.71	25.13	101.18	81.69	1220.65	985.54	12.064
47	-4.60	100	93	15.71	25.13	107.92	83.97	1221.38	950.41	11.318
48	-4.70	100	94	15.71	25.13	114.94	86.28	1222.85	917.88	10.639
49	-4.80	100	95	15.71	25.13	122.27	88.60	1224.98	887.70	10.019
50	-4.90	100	96	15.71	25.13	129.90	90.95	1227.71	859.61	9.451
51	-5.00	100	97	15.71	25.13	137.84	93.33	1230.98	833.42	8.930
52	-5.10	100	98	15.71	25.13	146.11	95.72	1234.11	808.53	8.447
53	-5.20	100	99	15.71	25.13	154.69	98.14	1236.28	784.33	7.992
54	-5.30	100	100	15.71	25.13	163.61	100.58	1238.90	761.65	7.572
55	-5.40	100	101	15.71	25.13	172.87	103.05	1241.95	740.36	7.184
56	-5.50	100	102	15.71	25.13	182.46	105.54	1245.37	720.33	6.825
57	-5.60	100	103	15.71	25.13	192.41	108.05	1249.15	701.47	6.492
58	-5.70	100	104	15.71	25.13	202.72	110.59	1253.25	683.68	6.182
59	-5.80	100	105	15.71	25.13	213.38	113.14	1257.65	666.87	5.894
60	-5.90	100	106	15.71	25.13	224.42	115.73	1262.32	650.96	5.625
61	-6.00	100	107	15.71	25.13	235.82	118.33	1267.25	635.88	5.374
62	-6.10	100	108	15.71	25.13	247.61	120.96	1272.41	621.58	5.139
63	-6.20	100	109	15.71	25.13	259.79	123.61	1277.79	607.99	4.919
64	-6.30	100	110	15.71	25.13	272.36	126.28	1283.37	595.06	4.712
65	-6.40	100	110	15.71	25.13	285.33	128.98	1289.14	582.76	4.518
66	-6.50	100	111	15.71	25.13	298.70	131.70	1295.09	571.03	4.336
67	-6.60	100	112	15.71	25.13	312.49	134.45	1301.20	559.84	4.164
68	-6.70	100	113	15.71	25.13	326.69	137.21	1307.46	549.15	4.002
69	-6.80	100	114	15.71	25.13	341.32	140.00	1313.87	538.93	3.849
70	-6.90	100	115	15.71	25.13	356.38	142.82	1320.42	529.15	3.705
71	-7.00	100	116	15.71	25.13	371.88	145.65	1327.09	519.78	3.569
72	-7.10	100	117	15.71	25.13	387.82	148.51	1333.88	510.80	3.439
73	-7.20	100	118	15.71	25.13	404.21	151.40	1340.79	502.19	3.317
74	-7.30	100	119	15.71	25.13	421.06	154.30	1347.80	493.92	3.201
75	-7.40	100	120	15.71	25.13	438.36	157.23	1354.91	485.98	3.091

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
76	-7.50	100	121	15.71	25.13	456.14	160.18	1362.12	478.34	2.986
77	-7.60	100	122	15.71	25.13	474.39	163.16	1369.41	470.99	2.887
78	-7.70	100	123	15.71	25.13	493.12	166.16	1376.79	463.91	2.792
79	-7.80	100	124	15.71	50.27	512.34	169.18	2683.73	886.19	5.238
80	-7.90	100	125	15.71	50.27	532.05	172.23	2699.96	873.97	5.075
81	-8.00	100	126	15.71	50.27	552.27	175.29	2716.32	862.19	4.919
82	-8.10	100	127	15.71	50.27	572.98	178.39	2732.83	850.80	4.769
83	-8.20	100	128	15.71	50.27	594.21	181.50	2749.46	839.81	4.627
84	-8.30	100	128	0.00	25.13	615.96	184.64	1414.21	423.92	2.296
85	-8.40	100	129	15.71	25.13	638.23	187.80	1430.50	420.92	2.241
86	-8.50	100	130	15.71	25.13	661.03	190.98	1438.42	415.58	2.176
87	-8.60	100	131	15.71	25.13	684.37	194.19	1446.40	410.41	2.113
88	-8.70	100	132	15.71	25.13	708.26	197.42	1454.42	405.41	2.054
89	-8.80	100	133	15.71	25.13	732.69	200.67	1462.50	400.56	1.996
90	-8.90	100	134	15.71	25.13	757.68	203.95	1470.63	395.86	1.941
91	-9.00	100	135	15.71	25.13	783.23	207.25	1478.80	391.31	1.888

Combinazione n° 2 - STR (A1-M1-R3) H + V

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
1	0.00	100	50	15.71	25.13	0.41	3.28	0.00	0.00	1000.000
2	-0.10	100	51	15.71	25.13	0.47	4.52	0.00	0.00	1000.000
3	-0.20	100	52	15.71	25.13	0.64	5.78	0.00	0.00	1000.000
4	-0.30	100	53	15.71	25.13	0.94	7.06	824.10	6214.78	879.683
5	-0.40	100	54	15.71	25.13	1.36	8.37	918.73	5655.06	675.492
6	-0.50	100	55	15.71	25.13	1.92	9.70	1007.12	5100.27	525.698
7	-0.60	100	56	15.71	25.13	2.61	11.06	1075.68	4557.91	412.286
8	-0.70	100	57	15.71	25.13	3.45	12.43	1092.56	3942.53	317.135
9	-0.80	100	58	15.71	25.13	4.43	13.83	1081.53	3377.49	244.191
10	-0.90	100	59	15.71	25.13	5.57	15.25	1059.71	2904.20	190.387
11	-1.00	100	59	15.71	25.13	6.86	16.70	1030.98	2509.35	150.259
12	-1.10	100	60	15.71	25.13	8.32	18.17	1001.57	2187.26	120.381
13	-1.20	100	61	15.71	25.13	9.95	19.66	978.91	1934.92	98.410
14	-1.30	100	62	15.71	25.13	11.75	21.18	953.40	1718.61	81.153
15	-1.40	100	63	15.71	25.13	13.73	22.72	933.42	1544.55	67.994
16	-1.50	100	64	15.71	25.13	15.89	24.28	919.25	1404.33	57.844
17	-1.60	100	65	15.71	25.13	18.25	25.86	901.62	1278.07	49.417
18	-1.70	100	66	15.71	25.13	20.79	27.47	888.98	1174.53	42.755
19	-1.80	100	67	15.71	25.13	23.54	29.10	880.13	1088.13	37.389
20	-1.90	100	68	15.71	25.13	26.49	30.76	874.20	1014.98	33.000
21	-2.00	100	69	15.71	25.13	29.65	32.44	870.59	952.27	29.359
22	-2.10	100	70	15.71	25.13	33.03	34.14	868.84	897.94	26.305
23	-2.20	100	71	15.71	25.13	36.63	35.86	868.60	850.43	23.715
24	-2.30	100	72	15.71	25.13	40.45	37.61	869.62	808.53	21.499
25	-2.40	100	73	15.71	25.13	44.50	39.38	871.68	771.33	19.588
26	-2.50	100	74	15.71	25.13	48.79	41.17	874.64	738.07	17.927
27	-2.60	100	75	15.71	25.13	53.32	42.99	878.34	708.16	16.473
28	-2.70	100	76	15.71	25.13	58.09	44.83	882.70	681.13	15.194
29	-2.80	100	76	15.71	25.13	63.12	46.69	887.62	656.58	14.062
30	-2.90	100	77	15.71	25.13	68.40	48.58	893.02	634.19	13.055
31	-3.00	100	78	15.71	25.13	73.95	50.49	898.86	613.69	12.155
32	-3.10	100	79	15.71	25.13	79.76	52.42	905.10	594.86	11.348
33	-3.20	100	80	15.71	25.13	85.84	54.38	911.67	577.50	10.620
34	-3.30	100	81	15.71	25.13	92.20	56.36	918.56	561.44	9.963
35	-3.40	100	82	15.71	25.13	98.84	58.36	925.30	546.30	9.361
36	-3.50	100	83	15.71	25.13	105.77	60.38	931.63	531.84	8.808
37	-3.60	100	84	15.71	25.13	112.99	62.43	938.19	518.37	8.303
38	-3.70	100	85	15.71	25.13	120.51	64.50	944.97	505.78	7.841
39	-3.80	100	86	15.71	25.13	128.34	66.60	951.93	493.99	7.417
40	-3.90	100	87	15.71	25.13	136.47	68.72	959.06	482.93	7.028
41	-4.00	100	88	15.71	25.13	144.91	70.86	966.35	472.53	6.669
42	-4.10	100	89	15.71	25.13	153.67	73.02	973.79	462.73	6.337
43	-4.20	100	90	15.71	25.13	162.76	75.21	981.36	453.48	6.030
44	-4.30	100	91	15.71	25.13	172.17	77.42	989.04	444.75	5.745
45	-4.40	100	92	15.71	25.13	181.92	79.65	996.84	436.48	5.480
46	-4.50	100	93	15.71	25.13	192.00	81.91	1004.74	428.64	5.233

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## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
47	-4.60	100	93	15.71	25.13	202.43	84.19	1012.73	421.19	5.003
48	-4.70	100	94	15.71	25.13	213.21	86.50	1020.81	414.12	4.788
49	-4.80	100	95	15.71	25.13	224.35	88.82	1028.97	407.38	4.587
50	-4.90	100	96	15.71	25.13	235.84	91.17	1037.21	400.97	4.398
51	-5.00	100	97	15.71	25.13	247.70	93.54	1045.52	394.84	4.221
52	-5.10	100	98	15.71	25.13	259.93	95.94	1053.89	389.00	4.055
53	-5.20	100	99	15.71	25.13	272.53	98.36	1062.32	383.41	3.898
54	-5.30	100	100	15.71	25.13	285.52	100.80	1070.81	378.06	3.750
55	-5.40	100	101	15.71	25.13	298.88	103.27	1079.36	372.93	3.611
56	-5.50	100	102	15.71	25.13	312.64	105.76	1087.95	368.02	3.480
57	-5.60	100	103	15.71	25.13	326.80	108.27	1096.59	363.30	3.356
58	-5.70	100	104	15.71	25.13	341.36	110.80	1105.28	358.78	3.238
59	-5.80	100	105	15.71	25.13	356.32	113.36	1114.01	354.42	3.126
60	-5.90	100	106	15.71	25.13	371.69	115.94	1122.77	350.24	3.021
61	-6.00	100	107	15.71	25.13	387.48	118.55	1131.58	346.20	2.920
62	-6.10	100	108	15.71	25.13	403.69	121.18	1140.42	342.32	2.825
63	-6.20	100	109	15.71	25.13	420.33	123.83	1149.29	338.58	2.734
64	-6.30	100	110	15.71	25.13	437.40	126.50	1158.19	334.97	2.648
65	-6.40	100	110	15.71	25.13	454.91	129.20	1167.13	331.48	2.566
66	-6.50	100	111	15.71	25.13	472.86	131.92	1176.09	328.11	2.487
67	-6.60	100	112	15.71	25.13	491.26	134.67	1185.08	324.86	2.412
68	-6.70	100	113	15.71	25.13	510.11	137.43	1194.09	321.71	2.341
69	-6.80	100	114	15.71	25.13	529.41	140.22	1203.13	318.67	2.273
70	-6.90	100	115	15.71	25.13	549.18	143.04	1212.19	315.72	2.207
71	-7.00	100	116	15.71	25.13	569.42	145.87	1221.28	312.86	2.145
72	-7.10	100	117	15.71	25.13	590.13	148.73	1230.38	310.10	2.085
73	-7.20	100	118	15.71	25.13	611.32	151.61	1239.51	307.41	2.028
74	-7.30	100	119	15.71	25.13	632.99	154.52	1248.65	304.81	1.973
75	-7.40	100	120	15.71	25.13	655.16	157.45	1257.82	302.28	1.920
76	-7.50	100	121	15.71	25.13	677.81	160.40	1267.00	299.83	1.869
77	-7.60	100	122	15.71	25.13	700.97	163.38	1276.19	297.45	1.821
78	-7.70	100	123	15.71	25.13	724.62	166.38	1285.41	295.13	1.774
79	-7.80	100	124	15.71	50.27	748.79	169.40	2529.52	572.25	3.378
80	-7.90	100	125	15.71	50.27	773.48	172.44	2548.63	568.21	3.295
81	-8.00	100	126	15.71	50.27	798.68	175.51	2567.79	564.28	3.215
82	-8.10	100	127	15.71	50.27	824.40	178.60	2586.99	560.46	3.138
83	-8.20	100	128	15.71	50.27	850.66	181.72	2606.23	556.74	3.064
84	-8.30	100	128	0.00	25.13	877.45	184.86	1334.55	281.15	1.521
85	-8.40	100	129	15.71	25.13	904.79	188.02	1350.30	280.60	1.492
86	-8.50	100	130	15.71	25.13	932.66	191.20	1359.62	278.73	1.458
87	-8.60	100	131	15.71	25.13	961.09	194.41	1368.95	276.91	1.424
88	-8.70	100	132	15.71	25.13	990.08	197.64	1378.29	275.13	1.392
89	-8.80	100	133	15.71	25.13	1019.62	200.89	1387.64	273.40	1.361
90	-8.90	100	134	15.71	25.13	1049.73	204.17	1397.01	271.71	1.331
91	-9.00	100	135	15.71	25.13	1080.42	207.47	1406.38	270.06	1.302

## Combinazione n° 3 - STR (A1-M1-R3)

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
1	0.00	100	50	15.71	25.13	0.38	3.06	0.00	0.00	1000.000
2	-0.10	100	51	15.71	25.13	0.43	4.30	0.00	0.00	1000.000
3	-0.20	100	52	15.71	25.13	0.59	5.56	0.00	0.00	1000.000
4	-0.30	100	53	15.71	25.13	0.86	6.85	802.51	6423.05	938.155
5	-0.40	100	54	15.71	25.13	1.24	8.15	896.08	5894.48	722.944
6	-0.50	100	55	15.71	25.13	1.75	9.48	985.40	5348.52	563.978
7	-0.60	100	56	15.71	25.13	2.38	10.84	1060.29	4817.97	444.590
8	-0.70	100	57	15.71	25.13	3.16	12.21	1103.54	4267.00	349.371
9	-0.80	100	58	15.71	25.13	4.07	13.61	1103.93	3688.00	270.917
10	-0.90	100	59	15.71	25.13	5.14	15.04	1087.60	3181.77	211.611
11	-1.00	100	59	15.71	25.13	6.36	16.48	1062.61	2754.03	167.094
12	-1.10	100	60	15.71	25.13	7.74	17.95	1037.70	2406.65	134.067
13	-1.20	100	61	15.71	25.13	9.29	19.44	1008.27	2110.62	108.551
14	-1.30	100	62	15.71	25.13	11.01	20.96	987.02	1878.88	89.646
15	-1.40	100	63	15.71	25.13	12.91	22.50	961.02	1674.47	74.428
16	-1.50	100	64	15.71	25.13	15.00	24.06	943.22	1512.91	62.882
17	-1.60	100	65	15.71	25.13	17.28	25.64	926.84	1375.48	53.636

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## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
18	-1.70	100	66	15.71	25.13	19.76	27.25	910.26	1255.48	46.068
19	-1.80	100	67	15.71	25.13	22.44	28.88	898.25	1156.05	40.023
20	-1.90	100	68	15.71	25.13	25.34	30.54	889.73	1072.36	35.115
21	-2.00	100	69	15.71	25.13	28.45	32.22	883.96	1000.98	31.070
22	-2.10	100	70	15.71	25.13	31.79	33.92	880.38	939.41	27.697
23	-2.20	100	71	15.71	25.13	35.35	35.64	878.57	885.77	24.852
24	-2.30	100	72	15.71	25.13	39.15	37.39	878.23	838.63	22.430
25	-2.40	100	73	15.71	25.13	43.20	39.16	879.10	796.90	20.350
26	-2.50	100	74	15.71	25.13	47.49	40.95	880.99	759.70	18.550
27	-2.60	100	75	15.71	25.13	52.04	42.77	883.75	726.33	16.982
28	-2.70	100	76	15.71	25.13	56.85	44.61	887.26	696.24	15.607
29	-2.80	100	76	15.71	25.13	61.93	46.47	891.40	668.97	14.395
30	-2.90	100	77	15.71	25.13	67.28	48.36	896.09	644.14	13.320
31	-3.00	100	78	15.71	25.13	72.91	50.27	901.29	621.45	12.362
32	-3.10	100	79	15.71	25.13	78.82	52.20	906.93	600.64	11.506
33	-3.20	100	80	15.71	25.13	85.03	54.16	912.95	581.48	10.737
34	-3.30	100	81	15.71	25.13	91.54	56.14	919.32	563.79	10.043
35	-3.40	100	82	15.71	25.13	98.35	58.14	925.61	547.17	9.411
36	-3.50	100	83	15.71	25.13	105.47	60.16	931.44	531.32	8.831
37	-3.60	100	84	15.71	25.13	112.91	62.21	937.53	516.56	8.303
38	-3.70	100	85	15.71	25.13	120.68	64.28	943.86	502.80	7.821
39	-3.80	100	86	15.71	25.13	128.77	66.38	950.41	489.92	7.381
40	-3.90	100	87	15.71	25.13	137.20	68.50	957.15	477.85	6.976
41	-4.00	100	88	15.71	25.13	145.97	70.64	964.06	466.52	6.604
42	-4.10	100	89	15.71	25.13	155.10	72.80	971.14	455.86	6.262
43	-4.20	100	90	15.71	25.13	164.57	74.99	978.36	445.81	5.945
44	-4.30	100	91	15.71	25.13	174.41	77.20	985.71	436.32	5.652
45	-4.40	100	92	15.71	25.13	184.61	79.44	993.19	427.35	5.380
46	-4.50	100	93	15.71	25.13	195.19	81.69	1000.79	418.86	5.127
47	-4.60	100	93	15.71	25.13	206.15	83.97	1008.49	410.80	4.892
48	-4.70	100	94	15.71	25.13	217.49	86.28	1016.30	403.17	4.673
49	-4.80	100	95	15.71	25.13	229.21	88.60	1024.20	395.92	4.468
50	-4.90	100	96	15.71	25.13	241.31	90.95	1032.19	389.05	4.277
51	-5.00	100	97	15.71	25.13	253.80	93.33	1040.28	382.53	4.099
52	-5.10	100	98	15.71	25.13	266.67	95.72	1048.46	376.35	3.932
53	-5.20	100	99	15.71	25.13	279.92	98.14	1056.72	370.49	3.775
54	-5.30	100	100	15.71	25.13	293.55	100.58	1065.06	364.94	3.628
55	-5.40	100	101	15.71	25.13	307.57	103.05	1073.49	359.67	3.490
56	-5.50	100	102	15.71	25.13	321.98	105.54	1081.98	354.66	3.360
57	-5.60	100	103	15.71	25.13	336.78	108.05	1090.54	349.89	3.238
58	-5.70	100	104	15.71	25.13	351.98	110.59	1099.16	345.34	3.123
59	-5.80	100	105	15.71	25.13	367.59	113.14	1107.83	340.99	3.014
60	-5.90	100	106	15.71	25.13	383.61	115.73	1116.56	336.84	2.911
61	-6.00	100	107	15.71	25.13	400.06	118.33	1125.33	332.86	2.813
62	-6.10	100	108	15.71	25.13	416.93	120.96	1134.14	329.04	2.720
63	-6.20	100	109	15.71	25.13	434.23	123.61	1142.99	325.37	2.632
64	-6.30	100	110	15.71	25.13	451.97	126.28	1151.88	321.84	2.549
65	-6.40	100	110	15.71	25.13	470.16	128.98	1160.80	318.45	2.469
66	-6.50	100	111	15.71	25.13	488.80	131.70	1169.75	315.18	2.393
67	-6.60	100	112	15.71	25.13	507.90	134.45	1178.74	312.03	2.321
68	-6.70	100	113	15.71	25.13	527.46	137.21	1187.75	308.98	2.252
69	-6.80	100	114	15.71	25.13	547.49	140.00	1196.78	306.04	2.186
70	-6.90	100	115	15.71	25.13	568.01	142.82	1205.84	303.19	2.123
71	-7.00	100	116	15.71	25.13	589.00	145.65	1214.92	300.44	2.063
72	-7.10	100	117	15.71	25.13	610.49	148.51	1224.03	297.77	2.005
73	-7.20	100	118	15.71	25.13	632.47	151.40	1233.15	295.18	1.950
74	-7.30	100	119	15.71	25.13	654.95	154.30	1242.29	292.67	1.897
75	-7.40	100	120	15.71	25.13	677.95	157.23	1251.45	290.24	1.846
76	-7.50	100	121	15.71	25.13	701.46	160.18	1260.62	287.88	1.797
77	-7.60	100	122	15.71	25.13	725.49	163.16	1269.82	285.58	1.750
78	-7.70	100	123	15.71	25.13	750.05	166.16	1279.02	283.34	1.705
79	-7.80	100	124	15.71	50.27	775.14	169.18	2518.42	549.67	3.249
80	-7.90	100	125	15.71	50.27	800.77	172.23	2537.52	545.75	3.169
81	-8.00	100	126	15.71	50.27	826.96	175.29	2556.66	541.95	3.092
82	-8.10	100	127	15.71	50.27	853.69	178.39	2575.83	538.24	3.017
83	-8.20	100	128	15.71	50.27	880.98	181.50	2595.04	534.63	2.946
84	-8.30	100	128	25.13	0.00	908.84	184.64	1328.24	269.84	1.461
85	-8.40	100	129	15.71	25.13	937.28	187.80	1343.82	269.26	1.434
86	-8.50	100	130	15.71	25.13	966.29	190.98	1353.12	267.44	1.400
87	-8.60	100	131	15.71	25.13	995.88	194.19	1362.43	265.66	1.368

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
88	-8.70	100	132	15.71	25.13	1026.07	197.42	1371.74	263.93	1.337
89	-8.80	100	133	15.71	25.13	1056.85	200.67	1381.07	262.24	1.307
90	-8.90	100	134	15.71	25.13	1088.24	203.95	1390.41	260.58	1.278
91	-9.00	100	135	15.71	25.13	1120.23	207.25	1399.75	258.96	1.250

## Combinazione n° 4 - STR (A1-M1-R3) H - V

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
1	0.00	100	50	15.71	25.13	0.38	3.06	0.00	0.00	1000.000
2	-0.10	100	51	15.71	25.13	0.43	4.30	0.00	0.00	1000.000
3	-0.20	100	52	15.71	25.13	0.56	5.56	0.00	0.00	1000.000
4	-0.30	100	53	15.71	25.13	0.78	6.85	767.21	6722.99	981.965
5	-0.40	100	54	15.71	25.13	1.10	8.15	853.50	6298.66	772.516
6	-0.50	100	55	15.71	25.13	1.53	9.48	941.29	5825.73	614.296
7	-0.60	100	56	15.71	25.13	2.07	10.84	1023.56	5361.48	494.743
8	-0.70	100	57	15.71	25.13	2.72	12.21	1092.06	4904.13	401.537
9	-0.80	100	58	15.71	25.13	3.49	13.61	1138.28	4440.05	326.161
10	-0.90	100	59	15.71	25.13	4.38	15.04	1146.19	3930.45	261.405
11	-1.00	100	59	15.71	25.13	5.41	16.48	1140.40	3474.75	210.822
12	-1.10	100	60	15.71	25.13	6.57	17.95	1127.02	3079.92	171.573
13	-1.20	100	61	15.71	25.13	7.87	19.44	1103.47	2726.79	140.242
14	-1.30	100	62	15.71	25.13	9.31	20.96	1083.10	2437.50	116.299
15	-1.40	100	63	15.71	25.13	10.91	22.50	1060.29	2186.80	97.201
16	-1.50	100	64	15.71	25.13	12.66	24.06	1045.04	1986.20	82.553
17	-1.60	100	65	15.71	25.13	14.57	25.64	1022.14	1799.01	70.151
18	-1.70	100	66	15.71	25.13	16.65	27.25	1006.05	1646.93	60.431
19	-1.80	100	67	15.71	25.13	18.90	28.88	995.06	1521.04	52.659
20	-1.90	100	68	15.71	25.13	21.32	30.54	979.01	1402.30	45.918
21	-2.00	100	69	15.71	25.13	23.93	32.22	966.35	1301.17	40.388
22	-2.10	100	70	15.71	25.13	26.72	33.92	957.05	1214.89	35.819
23	-2.20	100	71	15.71	25.13	29.70	35.64	950.44	1140.46	31.998
24	-2.30	100	72	15.71	25.13	32.88	37.39	946.01	1075.59	28.768
25	-2.40	100	73	15.71	25.13	36.27	39.16	943.36	1018.58	26.011
26	-2.50	100	74	15.71	25.13	39.86	40.95	942.20	968.09	23.639
27	-2.60	100	75	15.71	25.13	43.66	42.77	942.30	923.08	21.582
28	-2.70	100	76	15.71	25.13	47.68	44.61	943.45	882.70	19.787
29	-2.80	100	76	15.71	25.13	51.92	46.47	945.51	846.26	18.210
30	-2.90	100	77	15.71	25.13	56.39	48.36	948.34	813.23	16.816
31	-3.00	100	78	15.71	25.13	61.10	50.27	951.86	783.16	15.579
32	-3.10	100	79	15.71	25.13	66.04	52.20	956.00	755.68	14.476
33	-3.20	100	80	15.71	25.13	71.22	54.16	960.67	730.47	13.488
34	-3.30	100	81	15.71	25.13	76.66	56.14	965.81	707.26	12.599
35	-3.40	100	82	15.71	25.13	82.35	58.14	971.38	685.82	11.796
36	-3.50	100	83	15.71	25.13	88.29	60.16	977.32	665.97	11.069
37	-3.60	100	84	15.71	25.13	94.50	62.21	983.61	647.53	10.408
38	-3.70	100	85	15.71	25.13	100.98	64.28	990.21	630.37	9.806
39	-3.80	100	86	15.71	25.13	107.74	66.38	996.81	614.17	9.252
40	-3.90	100	87	15.71	25.13	114.77	68.50	1002.70	598.45	8.737
41	-4.00	100	88	15.71	25.13	122.09	70.64	1008.84	583.71	8.263
42	-4.10	100	89	15.71	25.13	129.69	72.80	1015.19	569.88	7.828
43	-4.20	100	90	15.71	25.13	137.60	74.99	1021.75	556.86	7.426
44	-4.30	100	91	15.71	25.13	145.80	77.20	1028.49	544.59	7.054
45	-4.40	100	92	15.71	25.13	154.31	79.44	1035.39	533.01	6.710
46	-4.50	100	93	15.71	25.13	163.12	81.69	1042.45	522.06	6.391
47	-4.60	100	93	15.71	25.13	172.26	83.97	1049.65	511.69	6.093
48	-4.70	100	94	15.71	25.13	181.71	86.28	1056.99	501.85	5.817
49	-4.80	100	95	15.71	25.13	191.49	88.60	1064.44	492.51	5.559
50	-4.90	100	96	15.71	25.13	201.61	90.95	1072.01	483.63	5.317
51	-5.00	100	97	15.71	25.13	212.05	93.33	1079.68	475.17	5.092
52	-5.10	100	98	15.71	25.13	222.84	95.72	1087.45	467.11	4.880
53	-5.20	100	99	15.71	25.13	233.98	98.14	1095.31	459.42	4.681
54	-5.30	100	100	15.71	25.13	245.47	100.58	1103.25	452.08	4.494
55	-5.40	100	101	15.71	25.13	257.31	103.05	1111.27	445.05	4.319
56	-5.50	100	102	15.71	25.13	269.52	105.54	1119.37	438.33	4.153
57	-5.60	100	103	15.71	25.13	282.09	108.05	1127.53	431.88	3.997
58	-5.70	100	104	15.71	25.13	295.04	110.59	1135.76	425.71	3.850

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## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
59	-5.80	100	105	15.71	25.13	308.36	113.14	1144.05	419.78	3.710
60	-5.90	100	106	15.71	25.13	322.07	115.73	1152.40	414.08	3.578
61	-6.00	100	107	15.71	25.13	336.16	118.33	1160.80	408.61	3.453
62	-6.10	100	108	15.71	25.13	350.65	120.96	1169.26	403.34	3.335
63	-6.20	100	109	15.71	25.13	365.54	123.61	1177.76	398.27	3.222
64	-6.30	100	110	15.71	25.13	380.83	126.28	1186.31	393.39	3.115
65	-6.40	100	110	15.71	25.13	396.53	128.98	1194.90	388.68	3.013
66	-6.50	100	111	15.71	25.13	412.64	131.70	1203.53	384.14	2.917
67	-6.60	100	112	15.71	25.13	429.17	134.45	1212.21	379.75	2.825
68	-6.70	100	113	15.71	25.13	446.12	137.21	1220.91	375.52	2.737
69	-6.80	100	114	15.71	25.13	463.51	140.00	1229.66	371.42	2.653
70	-6.90	100	115	15.71	25.13	481.32	142.82	1238.43	367.47	2.573
71	-7.00	100	116	15.71	25.13	499.58	145.65	1247.24	363.64	2.497
72	-7.10	100	117	15.71	25.13	518.28	148.51	1256.08	359.93	2.424
73	-7.20	100	118	15.71	25.13	537.44	151.40	1264.95	356.34	2.354
74	-7.30	100	119	15.71	25.13	557.04	154.30	1273.84	352.86	2.287
75	-7.40	100	120	15.71	25.13	577.11	157.23	1282.76	349.49	2.223
76	-7.50	100	121	15.71	25.13	597.64	160.18	1291.71	346.21	2.161
77	-7.60	100	122	15.71	25.13	618.65	163.16	1300.68	343.04	2.102
78	-7.70	100	123	15.71	25.13	640.12	166.16	1309.67	339.96	2.046
79	-7.80	100	124	15.71	50.27	662.08	169.18	2571.15	657.00	3.883
80	-7.90	100	125	15.71	50.27	684.53	172.23	2589.91	651.61	3.783
81	-8.00	100	126	15.71	50.27	707.47	175.29	2608.73	646.38	3.687
82	-8.10	100	127	15.71	50.27	730.90	178.39	2627.59	641.30	3.595
83	-8.20	100	128	15.71	50.27	754.83	181.50	2646.51	636.35	3.506
84	-8.30	100	128	0.00	25.13	779.28	184.64	1357.09	321.54	1.741
85	-8.40	100	129	15.71	25.13	804.23	187.80	1373.19	320.66	1.707
86	-8.50	100	130	15.71	25.13	829.70	190.98	1382.34	318.19	1.666
87	-8.60	100	131	15.71	25.13	855.69	194.19	1391.50	315.79	1.626
88	-8.70	100	132	15.71	25.13	882.21	197.42	1400.68	313.44	1.588
89	-8.80	100	133	15.71	25.13	909.26	200.67	1409.87	311.16	1.551
90	-8.90	100	134	15.71	25.13	936.85	203.95	1419.08	308.93	1.515
91	-9.00	100	135	15.71	25.13	964.98	207.25	1428.30	306.76	1.480

## Combinazione n° 13 - ECC

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
1	0.00	100	50	15.71	25.13	33.68	3.06	495.81	45.11	14.720
2	-0.10	100	51	15.71	25.13	37.02	4.30	509.55	59.22	13.765
3	-0.20	100	52	15.71	25.13	40.36	5.56	523.14	72.10	12.962
4	-0.30	100	53	15.71	25.13	43.72	6.85	536.64	84.03	12.274
5	-0.40	100	54	15.71	25.13	47.10	8.15	550.07	95.22	11.678
6	-0.50	100	55	15.71	25.13	50.51	9.48	563.46	105.80	11.156
7	-0.60	100	56	15.71	25.13	53.94	10.84	576.83	115.88	10.694
8	-0.70	100	57	15.71	25.13	57.41	12.21	590.19	125.55	10.280
9	-0.80	100	58	15.71	25.13	60.92	13.61	603.54	134.86	9.907
10	-0.90	100	59	15.71	25.13	64.48	15.04	616.90	143.86	9.568
11	-1.00	100	59	15.71	25.13	68.08	16.48	630.27	152.59	9.258
12	-1.10	100	60	15.71	25.13	71.74	17.95	643.65	161.06	8.972
13	-1.20	100	61	15.71	25.13	75.45	19.44	657.05	169.31	8.708
14	-1.30	100	62	15.71	25.13	79.23	20.96	670.46	177.35	8.462
15	-1.40	100	63	15.71	25.13	83.08	22.50	683.89	185.19	8.231
16	-1.50	100	64	15.71	25.13	87.01	24.06	697.34	192.83	8.015
17	-1.60	100	65	15.71	25.13	91.01	25.64	710.80	200.29	7.810
18	-1.70	100	66	15.71	25.13	95.09	27.25	724.28	207.58	7.617
19	-1.80	100	67	15.71	25.13	99.26	28.88	737.77	214.68	7.432
20	-1.90	100	68	15.71	25.13	103.53	30.54	751.26	221.61	7.257
21	-2.00	100	69	15.71	25.13	107.89	32.22	764.77	228.37	7.088
22	-2.10	100	70	15.71	25.13	112.35	33.92	778.29	234.95	6.927
23	-2.20	100	71	15.71	25.13	116.93	35.64	791.81	241.36	6.772
24	-2.30	100	72	15.71	25.13	121.61	37.39	805.33	247.60	6.622
25	-2.40	100	73	15.71	25.13	126.41	39.16	818.85	253.66	6.478
26	-2.50	100	74	15.71	25.13	131.33	40.95	832.38	259.55	6.338
27	-2.60	100	75	15.71	25.13	136.38	42.77	845.89	265.27	6.202
28	-2.70	100	76	15.71	25.13	141.56	44.61	859.40	270.81	6.071
29	-2.80	100	76	15.71	25.13	146.88	46.47	872.90	276.18	5.943

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## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
30	-2.90	100	77	15.71	25.13	152.34	48.36	886.39	281.38	5.818
31	-3.00	100	78	15.71	25.13	157.94	50.27	899.86	286.40	5.697
32	-3.10	100	79	15.71	25.13	163.70	52.20	913.32	291.25	5.579
33	-3.20	100	80	15.71	25.13	169.61	54.16	926.76	295.92	5.464
34	-3.30	100	81	15.71	25.13	175.68	56.14	940.18	300.42	5.352
35	-3.40	100	82	15.71	25.13	181.92	58.14	953.57	304.75	5.242
36	-3.50	100	83	15.71	25.13	188.32	60.16	966.95	308.91	5.134
37	-3.60	100	84	15.71	25.13	194.91	62.21	980.30	312.91	5.030
38	-3.70	100	85	15.71	25.13	201.67	64.28	993.62	316.73	4.927
39	-3.80	100	86	15.71	25.13	208.61	66.38	1006.91	320.39	4.827
40	-3.90	100	87	15.71	25.13	215.75	68.50	1020.18	323.90	4.729
41	-4.00	100	88	15.71	25.13	223.08	70.64	1033.41	327.24	4.633
42	-4.10	100	89	15.71	25.13	230.61	72.80	1046.61	330.42	4.539
43	-4.20	100	90	15.71	25.13	238.34	74.99	1059.78	333.45	4.447
44	-4.30	100	91	15.71	25.13	246.28	77.20	1072.91	336.33	4.356
45	-4.40	100	92	15.71	25.13	254.43	79.44	1086.02	339.06	4.268
46	-4.50	100	93	15.71	25.13	262.81	81.69	1099.08	341.65	4.182
47	-4.60	100	93	15.71	25.13	271.40	83.97	1112.11	344.09	4.098
48	-4.70	100	94	15.71	25.13	280.23	86.28	1125.11	346.40	4.015
49	-4.80	100	95	15.71	25.13	289.29	88.60	1138.07	348.57	3.934
50	-4.90	100	96	15.71	25.13	298.58	90.95	1150.99	350.61	3.855
51	-5.00	100	97	15.71	25.13	308.12	93.33	1163.88	352.53	3.777
52	-5.10	100	98	15.71	25.13	317.91	95.72	1176.73	354.32	3.701
53	-5.20	100	99	15.71	25.13	327.94	98.14	1189.54	355.99	3.627
54	-5.30	100	100	15.71	25.13	338.24	100.58	1202.32	357.54	3.555
55	-5.40	100	101	15.71	25.13	348.80	103.05	1215.06	358.98	3.484
56	-5.50	100	102	15.71	25.13	359.62	105.54	1227.76	360.32	3.414
57	-5.60	100	103	15.71	25.13	370.71	108.05	1240.43	361.55	3.346
58	-5.70	100	104	15.71	25.13	382.09	110.59	1253.07	362.67	3.280
59	-5.80	100	105	15.71	25.13	393.74	113.14	1265.66	363.70	3.214
60	-5.90	100	106	15.71	25.13	405.68	115.73	1278.23	364.64	3.151
61	-6.00	100	107	15.71	25.13	417.91	118.33	1290.76	365.48	3.089
62	-6.10	100	108	15.71	25.13	430.43	120.96	1303.25	366.24	3.028
63	-6.20	100	109	15.71	25.13	443.26	123.61	1315.71	366.91	2.968
64	-6.30	100	110	15.71	25.13	456.39	126.28	1328.14	367.50	2.910
65	-6.40	100	110	15.71	25.13	469.83	128.98	1340.54	368.02	2.853
66	-6.50	100	111	15.71	25.13	483.59	131.70	1352.90	368.46	2.798
67	-6.60	100	112	15.71	25.13	497.67	134.45	1365.24	368.82	2.743
68	-6.70	100	113	15.71	25.13	512.07	137.21	1377.54	369.12	2.690
69	-6.80	100	114	15.71	25.13	526.80	140.00	1389.81	369.36	2.638
70	-6.90	100	115	15.71	25.13	541.87	142.82	1402.06	369.53	2.587
71	-7.00	100	116	15.71	25.13	557.27	145.65	1414.27	369.65	2.538
72	-7.10	100	117	15.71	25.13	573.02	148.51	1426.46	369.70	2.489
73	-7.20	100	118	15.71	25.13	589.12	151.40	1438.62	369.71	2.442
74	-7.30	100	119	15.71	25.13	605.57	154.30	1450.75	369.66	2.396
75	-7.40	100	120	15.71	25.13	622.38	157.23	1462.85	369.56	2.350
76	-7.50	100	121	15.71	25.13	639.55	160.18	1474.93	369.42	2.306
77	-7.60	100	122	15.71	25.13	657.10	163.16	1486.99	369.23	2.263
78	-7.70	100	123	15.71	25.13	675.01	166.16	1499.02	368.99	2.221
79	-7.80	100	124	15.71	50.27	693.30	169.18	2975.14	726.00	4.291
80	-7.90	100	125	15.71	50.27	711.98	172.23	2998.98	725.44	4.212
81	-8.00	100	126	15.71	50.27	731.04	175.29	3022.79	724.82	4.135
82	-8.10	100	127	15.71	50.27	750.50	178.39	3046.55	724.13	4.059
83	-8.20	100	128	15.71	50.27	770.35	181.50	3070.27	723.38	3.986
84	-8.30	100	128	15.71	0.00	790.61	184.64	1566.81	365.91	1.982
85	-8.40	100	129	15.71	25.13	811.27	187.80	1582.60	366.35	1.951
86	-8.50	100	130	15.71	25.13	832.34	190.98	1594.46	365.85	1.916
87	-8.60	100	131	15.71	25.13	853.83	194.19	1606.30	365.33	1.881
88	-8.70	100	132	15.71	25.13	875.75	197.42	1618.12	364.78	1.848
89	-8.80	100	133	15.71	25.13	898.08	200.67	1629.92	364.20	1.815
90	-8.90	100	134	15.71	25.13	920.85	203.95	1641.70	363.61	1.783
91	-9.00	100	135	15.71	25.13	944.06	207.25	1653.47	362.99	1.751

## Mensola valle

Combinazione n° 1 - STR (A1-M1-R3)

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	Y [m]	B [cm]	H [cm]	Afi [cmq]	Afs [cmq]	M [kNm]	N [kN]	Mu [kNm]	Nu [kN]	FS
1	-0.75	100	50	10.18	10.18	0.00	0.00	0.00	0.00	1000.000
2	-0.67	100	50	10.18	10.18	-0.04	0.00	0.00	0.00	1000.000
3	-0.58	100	50	10.18	10.18	-0.17	0.00	0.00	0.00	1000.000
4	-0.50	100	50	10.18	10.18	-0.38	0.00	-174.63	0.00	455.852

Combinazione n° 2 - STR (A1-M1-R3) H + V

n°	Y [m]	B [cm]	H [cm]	Afi [cmq]	Afs [cmq]	M [kNm]	N [kN]	Mu [kNm]	Nu [kN]	FS
1	-0.75	100	50	10.18	10.18	0.00	0.00	0.00	0.00	1000.000
2	-0.67	100	50	10.18	10.18	-0.05	0.00	0.00	0.00	1000.000
3	-0.58	100	50	10.18	10.18	-0.18	0.00	-174.63	0.00	957.458
4	-0.50	100	50	10.18	10.18	-0.41	0.00	-174.63	0.00	425.537

Combinazione n° 3 - STR (A1-M1-R3)

n°	Y [m]	B [cm]	H [cm]	Afi [cmq]	Afs [cmq]	M [kNm]	N [kN]	Mu [kNm]	Nu [kN]	FS
1	-0.75	100	50	10.18	10.18	0.00	0.00	0.00	0.00	1000.000
2	-0.67	100	50	10.18	10.18	-0.04	0.00	0.00	0.00	1000.000
3	-0.58	100	50	10.18	10.18	-0.17	0.00	0.00	0.00	1000.000
4	-0.50	100	50	10.18	10.18	-0.38	0.00	-174.63	0.00	455.852

Combinazione n° 4 - STR (A1-M1-R3) H - V

n°	Y [m]	B [cm]	H [cm]	Afi [cmq]	Afs [cmq]	M [kNm]	N [kN]	Mu [kNm]	Nu [kN]	FS
1	-0.75	100	50	10.18	10.18	0.00	0.00	0.00	0.00	1000.000
2	-0.67	100	50	10.18	10.18	-0.04	0.00	0.00	0.00	1000.000
3	-0.58	100	50	10.18	10.18	-0.17	0.00	0.00	0.00	1000.000
4	-0.50	100	50	10.18	10.18	-0.38	0.00	-174.63	0.00	455.852

Combinazione n° 13 - ECC

n°	Y [m]	B [cm]	H [cm]	Afi [cmq]	Afs [cmq]	M [kNm]	N [kN]	Mu [kNm]	Nu [kN]	FS
1	-0.75	100	50	10.18	10.18	0.00	0.00	0.00	0.00	1000.000
2	-0.67	100	50	10.18	10.18	-0.04	0.00	0.00	0.00	1000.000
3	-0.58	100	50	10.18	10.18	-0.17	0.00	0.00	0.00	1000.000
4	-0.50	100	50	10.18	10.18	-0.38	0.00	-202.43	0.00	528.442

**Fondazione**Combinazione n° 1 - STR (A1-M1-R3)

n°	Y [m]	B [cm]	H [cm]	Afi [cmq]	Afs [cmq]	M [kNm]	N [kN]	Mu [kNm]	Nu [kN]	FS
1	-1.85	100	135	27.99	27.99	0.00	0.00	0.00	0.00	1000.000
2	-1.75	100	135	27.99	27.99	0.87	0.00	0.00	0.00	1000.000
3	-1.66	100	135	27.99	27.99	3.48	0.00	1385.55	0.00	398.368
4	-1.56	100	135	27.99	27.99	7.82	0.00	1385.55	0.00	177.232
5	-1.46	100	135	27.99	27.99	13.88	0.00	1385.55	0.00	99.794
6	-1.37	100	135	27.99	27.99	21.67	0.00	1385.55	0.00	63.933
7	-1.27	100	135	27.99	27.99	31.18	0.00	1385.55	0.00	44.443

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## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
8	-1.18	100	135	27.99	27.99	42.39	0.00	1385.55	0.00	32.685
9	-1.08	100	135	27.99	27.99	55.31	0.00	1385.55	0.00	25.050
10	-0.98	100	135	27.99	27.99	69.93	0.00	1385.55	0.00	19.813
11	-0.89	100	135	27.99	27.99	86.25	0.00	1385.55	0.00	16.065
12	-0.79	100	135	27.99	27.99	104.25	0.00	1385.55	0.00	13.290
13	-0.69	100	135	27.99	27.99	123.94	0.00	1385.55	0.00	11.179
14	-0.60	100	135	27.99	27.99	145.31	0.00	1385.55	0.00	9.535
15	-0.50	100	135	27.99	27.99	168.36	0.00	1385.55	0.00	8.230
16	0.85	100	135	27.99	27.99	-474.46	0.00	-1385.55	0.00	2.920
17	0.95	100	135	27.99	27.99	-451.16	0.00	-1385.55	0.00	3.071
18	1.05	100	135	27.99	27.99	-428.38	0.00	-1385.55	0.00	3.234
19	1.15	100	135	27.99	27.99	-406.11	0.00	-1385.55	0.00	3.412
20	1.25	100	135	27.99	27.99	-384.37	0.00	-1385.55	0.00	3.605
21	1.35	100	135	27.99	27.99	-363.16	0.00	-1385.55	0.00	3.815
22	1.45	100	135	27.99	27.99	-342.49	0.00	-1385.55	0.00	4.046
23	1.55	100	135	27.99	27.99	-322.36	0.00	-1385.55	0.00	4.298
24	1.65	100	135	27.99	27.99	-302.78	0.00	-1385.55	0.00	4.576
25	1.75	100	135	27.99	27.99	-283.76	0.00	-1385.55	0.00	4.883
26	1.85	100	135	27.99	27.99	-265.30	0.00	-1385.55	0.00	5.223
27	1.95	100	135	27.99	27.99	-247.40	0.00	-1385.55	0.00	5.600
28	2.05	100	135	27.99	27.99	-230.08	0.00	-1385.55	0.00	6.022
29	2.15	100	135	27.99	27.99	-213.33	0.00	-1385.55	0.00	6.495
30	2.25	100	135	27.99	27.99	-197.17	0.00	-1385.55	0.00	7.027
31	2.35	100	135	27.99	27.99	-181.60	0.00	-1385.55	0.00	7.630
32	2.45	100	135	27.99	27.99	-166.63	0.00	-1385.55	0.00	8.315
33	2.55	100	135	27.99	27.99	-152.26	0.00	-1385.55	0.00	9.100
34	2.65	100	135	27.99	27.99	-138.50	0.00	-1385.55	0.00	10.004
35	2.75	100	135	27.99	27.99	-125.35	0.00	-1385.55	0.00	11.054
36	2.85	100	135	27.99	27.99	-112.82	0.00	-1385.55	0.00	12.281
37	2.95	100	135	27.99	27.99	-100.91	0.00	-1385.55	0.00	13.730
38	3.05	100	135	27.99	27.99	-89.64	0.00	-1385.55	0.00	15.456
39	3.15	100	135	27.99	27.99	-79.01	0.00	-1385.55	0.00	17.537
40	3.25	100	135	27.99	27.99	-69.02	0.00	-1385.55	0.00	20.075
41	3.35	100	135	27.99	27.99	-59.68	0.00	-1385.55	0.00	23.218
42	3.45	100	135	27.99	27.99	-50.99	0.00	-1385.55	0.00	27.173
43	3.55	100	135	27.99	27.99	-42.96	0.00	-1385.55	0.00	32.249
44	3.65	100	135	27.99	27.99	-35.61	0.00	-1385.55	0.00	38.914
45	3.75	100	135	27.99	27.99	-28.92	0.00	-1385.55	0.00	47.910
46	3.85	100	135	27.99	27.99	-22.91	0.00	-1385.55	0.00	60.470
47	3.95	100	135	27.99	27.99	-17.59	0.00	-1385.55	0.00	78.765
48	4.05	100	135	27.99	27.99	-12.96	0.00	-1385.55	0.00	106.916
49	4.15	100	135	27.99	27.99	-9.02	0.00	-1385.55	0.00	153.541
50	4.25	100	135	27.99	27.99	-5.79	0.00	-1385.55	0.00	239.257
51	4.35	100	135	27.99	27.99	-3.27	0.00	-1385.55	0.00	424.196
52	4.45	100	135	27.99	27.99	-1.46	0.00	-1385.55	0.00	951.866
53	4.55	100	135	27.99	27.99	-0.36	0.00	0.00	0.00	1000.000
54	4.65	100	135	27.99	27.99	0.00	0.00	0.00	0.00	1000.000

## Combinazione n° 2 - STR (A1-M1-R3) H + V

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
1	-1.85	100	135	27.99	27.99	0.00	0.00	0.00	0.00	1000.000
2	-1.75	100	135	27.99	27.99	1.63	0.00	1385.55	0.00	851.684
3	-1.66	100	135	27.99	27.99	6.48	0.00	1385.55	0.00	213.940
4	-1.56	100	135	27.99	27.99	14.50	0.00	1385.55	0.00	95.542
5	-1.46	100	135	27.99	27.99	25.66	0.00	1385.55	0.00	54.002
6	-1.37	100	135	27.99	27.99	39.90	0.00	1385.55	0.00	34.729
7	-1.27	100	135	27.99	27.99	57.17	0.00	1385.55	0.00	24.235
8	-1.18	100	135	27.99	27.99	77.44	0.00	1385.55	0.00	17.893
9	-1.08	100	135	27.99	27.99	100.65	0.00	1385.55	0.00	13.767
10	-0.98	100	135	27.99	27.99	126.75	0.00	1385.55	0.00	10.931
11	-0.89	100	135	27.99	27.99	155.71	0.00	1385.55	0.00	8.898
12	-0.79	100	135	27.99	27.99	187.47	0.00	1385.55	0.00	7.391
13	-0.69	100	135	27.99	27.99	221.99	0.00	1385.55	0.00	6.242
14	-0.60	100	135	27.99	27.99	259.22	0.00	1385.55	0.00	5.345
15	-0.50	100	135	27.99	27.99	299.11	0.00	1385.55	0.00	4.632

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
16	0.85	100	135	27.99	27.99	-655.99	0.00	-1385.55	0.00	2.112
17	0.95	100	135	27.99	27.99	-633.75	0.00	-1385.55	0.00	2.186
18	1.05	100	135	27.99	27.99	-611.16	0.00	-1385.55	0.00	2.267
19	1.15	100	135	27.99	27.99	-588.26	0.00	-1385.55	0.00	2.355
20	1.25	100	135	27.99	27.99	-565.12	0.00	-1385.55	0.00	2.452
21	1.35	100	135	27.99	27.99	-541.78	0.00	-1385.55	0.00	2.557
22	1.45	100	135	27.99	27.99	-518.29	0.00	-1385.55	0.00	2.673
23	1.55	100	135	27.99	27.99	-494.71	0.00	-1385.55	0.00	2.801
24	1.65	100	135	27.99	27.99	-471.09	0.00	-1385.55	0.00	2.941
25	1.75	100	135	27.99	27.99	-447.48	0.00	-1385.55	0.00	3.096
26	1.85	100	135	27.99	27.99	-423.92	0.00	-1385.55	0.00	3.268
27	1.95	100	135	27.99	27.99	-400.48	0.00	-1385.55	0.00	3.460
28	2.05	100	135	27.99	27.99	-377.21	0.00	-1385.55	0.00	3.673
29	2.15	100	135	27.99	27.99	-354.16	0.00	-1385.55	0.00	3.912
30	2.25	100	135	27.99	27.99	-331.37	0.00	-1385.55	0.00	4.181
31	2.35	100	135	27.99	27.99	-308.90	0.00	-1385.55	0.00	4.485
32	2.45	100	135	27.99	27.99	-286.81	0.00	-1385.55	0.00	4.831
33	2.55	100	135	27.99	27.99	-265.14	0.00	-1385.55	0.00	5.226
34	2.65	100	135	27.99	27.99	-243.95	0.00	-1385.55	0.00	5.680
35	2.75	100	135	27.99	27.99	-223.28	0.00	-1385.55	0.00	6.205
36	2.85	100	135	27.99	27.99	-203.20	0.00	-1385.55	0.00	6.819
37	2.95	100	135	27.99	27.99	-183.74	0.00	-1385.55	0.00	7.541
38	3.05	100	135	27.99	27.99	-164.98	0.00	-1385.55	0.00	8.398
39	3.15	100	135	27.99	27.99	-146.94	0.00	-1385.55	0.00	9.429
40	3.25	100	135	27.99	27.99	-129.70	0.00	-1385.55	0.00	10.683
41	3.35	100	135	27.99	27.99	-113.29	0.00	-1385.55	0.00	12.230
42	3.45	100	135	27.99	27.99	-97.78	0.00	-1385.55	0.00	14.170
43	3.55	100	135	27.99	27.99	-83.21	0.00	-1385.55	0.00	16.652
44	3.65	100	135	27.99	27.99	-69.63	0.00	-1385.55	0.00	19.899
45	3.75	100	135	27.99	27.99	-57.10	0.00	-1385.55	0.00	24.265
46	3.85	100	135	27.99	27.99	-45.67	0.00	-1385.55	0.00	30.339
47	3.95	100	135	27.99	27.99	-35.39	0.00	-1385.55	0.00	39.152
48	4.05	100	135	27.99	27.99	-26.31	0.00	-1385.55	0.00	52.660
49	4.15	100	135	27.99	27.99	-18.49	0.00	-1385.55	0.00	74.944
50	4.25	100	135	27.99	27.99	-11.97	0.00	-1385.55	0.00	115.747
51	4.35	100	135	27.99	27.99	-6.81	0.00	-1385.55	0.00	203.422
52	4.45	100	135	27.99	27.99	-3.06	0.00	-1385.55	0.00	452.531
53	4.55	100	135	27.99	27.99	-0.77	0.00	0.00	0.00	1000.000
54	4.65	100	135	27.99	27.99	0.00	0.00	0.00	0.00	1000.000

Combinazione n° 3 - STR (A1-M1-R3)

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
1	-1.85	100	135	27.99	27.99	0.00	0.00	0.00	0.00	1000.000
2	-1.75	100	135	27.99	27.99	0.99	0.00	0.00	0.00	1000.000
3	-1.66	100	135	27.99	27.99	3.95	0.00	1385.55	0.00	351.182
4	-1.56	100	135	27.99	27.99	8.87	0.00	1385.55	0.00	156.229
5	-1.46	100	135	27.99	27.99	15.75	0.00	1385.55	0.00	87.962
6	-1.37	100	135	27.99	27.99	24.59	0.00	1385.55	0.00	56.349
7	-1.27	100	135	27.99	27.99	35.37	0.00	1385.55	0.00	39.169
8	-1.18	100	135	27.99	27.99	48.10	0.00	1385.55	0.00	28.804
9	-1.08	100	135	27.99	27.99	62.77	0.00	1385.55	0.00	22.074
10	-0.98	100	135	27.99	27.99	79.36	0.00	1385.55	0.00	17.458
11	-0.89	100	135	27.99	27.99	97.89	0.00	1385.55	0.00	14.155
12	-0.79	100	135	27.99	27.99	118.33	0.00	1385.55	0.00	11.709
13	-0.69	100	135	27.99	27.99	140.69	0.00	1385.55	0.00	9.848
14	-0.60	100	135	27.99	27.99	164.95	0.00	1385.55	0.00	8.400
15	-0.50	100	135	27.99	27.99	191.12	0.00	1385.55	0.00	7.249
16	0.85	100	135	27.99	27.99	-521.05	0.00	-1385.55	0.00	2.659
17	0.95	100	135	27.99	27.99	-493.99	0.00	-1385.55	0.00	2.805
18	1.05	100	135	27.99	27.99	-467.58	0.00	-1385.55	0.00	2.963
19	1.15	100	135	27.99	27.99	-441.82	0.00	-1385.55	0.00	3.136
20	1.25	100	135	27.99	27.99	-416.72	0.00	-1385.55	0.00	3.325
21	1.35	100	135	27.99	27.99	-392.29	0.00	-1385.55	0.00	3.532
22	1.45	100	135	27.99	27.99	-368.53	0.00	-1385.55	0.00	3.760
23	1.55	100	135	27.99	27.99	-345.44	0.00	-1385.55	0.00	4.011

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## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
24	1.65	100	135	27.99	27.99	-323.04	0.00	-1385.55	0.00	4.289
25	1.75	100	135	27.99	27.99	-301.33	0.00	-1385.55	0.00	4.598
26	1.85	100	135	27.99	27.99	-280.31	0.00	-1385.55	0.00	4.943
27	1.95	100	135	27.99	27.99	-260.00	0.00	-1385.55	0.00	5.329
28	2.05	100	135	27.99	27.99	-240.39	0.00	-1385.55	0.00	5.764
29	2.15	100	135	27.99	27.99	-221.50	0.00	-1385.55	0.00	6.255
30	2.25	100	135	27.99	27.99	-203.34	0.00	-1385.55	0.00	6.814
31	2.35	100	135	27.99	27.99	-185.90	0.00	-1385.55	0.00	7.453
32	2.45	100	135	27.99	27.99	-169.19	0.00	-1385.55	0.00	8.189
33	2.55	100	135	27.99	27.99	-153.23	0.00	-1385.55	0.00	9.043
34	2.65	100	135	27.99	27.99	-138.01	0.00	-1385.55	0.00	10.040
35	2.75	100	135	27.99	27.99	-123.54	0.00	-1385.55	0.00	11.215
36	2.85	100	135	27.99	27.99	-109.83	0.00	-1385.55	0.00	12.615
37	2.95	100	135	27.99	27.99	-96.89	0.00	-1385.55	0.00	14.300
38	3.05	100	135	27.99	27.99	-85.44	0.00	-1385.55	0.00	16.217
39	3.15	100	135	27.99	27.99	-75.32	0.00	-1385.55	0.00	18.394
40	3.25	100	135	27.99	27.99	-65.82	0.00	-1385.55	0.00	21.050
41	3.35	100	135	27.99	27.99	-56.93	0.00	-1385.55	0.00	24.338
42	3.45	100	135	27.99	27.99	-48.66	0.00	-1385.55	0.00	28.475
43	3.55	100	135	27.99	27.99	-41.01	0.00	-1385.55	0.00	33.783
44	3.65	100	135	27.99	27.99	-34.00	0.00	-1385.55	0.00	40.752
45	3.75	100	135	27.99	27.99	-27.62	0.00	-1385.55	0.00	50.158
46	3.85	100	135	27.99	27.99	-21.89	0.00	-1385.55	0.00	63.287
47	3.95	100	135	27.99	27.99	-16.81	0.00	-1385.55	0.00	82.409
48	4.05	100	135	27.99	27.99	-12.39	0.00	-1385.55	0.00	111.828
49	4.15	100	135	27.99	27.99	-8.63	0.00	-1385.55	0.00	160.546
50	4.25	100	135	27.99	27.99	-5.54	0.00	-1385.55	0.00	250.098
51	4.35	100	135	27.99	27.99	-3.13	0.00	-1385.55	0.00	443.283
52	4.45	100	135	27.99	27.99	-1.39	0.00	-1385.55	0.00	994.399
53	4.55	100	135	27.99	27.99	-0.35	0.00	0.00	0.00	1000.000
54	4.65	100	135	27.99	27.99	0.00	0.00	0.00	0.00	1000.000

## Combinazione n° 4 - STR (A1-M1-R3) H - V

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
1	-1.85	100	135	27.99	27.99	0.00	0.00	0.00	0.00	1000.000
2	-1.75	100	135	27.99	27.99	1.47	0.00	1385.55	0.00	939.524
3	-1.66	100	135	27.99	27.99	5.87	0.00	1385.55	0.00	236.080
4	-1.56	100	135	27.99	27.99	13.14	0.00	1385.55	0.00	105.463
5	-1.46	100	135	27.99	27.99	23.24	0.00	1385.55	0.00	59.629
6	-1.37	100	135	27.99	27.99	36.12	0.00	1385.55	0.00	38.360
7	-1.27	100	135	27.99	27.99	51.74	0.00	1385.55	0.00	26.778
8	-1.18	100	135	27.99	27.99	70.06	0.00	1385.55	0.00	19.777
9	-1.08	100	135	27.99	27.99	91.03	0.00	1385.55	0.00	15.221
10	-0.98	100	135	27.99	27.99	114.60	0.00	1385.55	0.00	12.090
11	-0.89	100	135	27.99	27.99	140.73	0.00	1385.55	0.00	9.845
12	-0.79	100	135	27.99	27.99	169.38	0.00	1385.55	0.00	8.180
13	-0.69	100	135	27.99	27.99	200.50	0.00	1385.55	0.00	6.911
14	-0.60	100	135	27.99	27.99	234.04	0.00	1385.55	0.00	5.920
15	-0.50	100	135	27.99	27.99	269.96	0.00	1385.55	0.00	5.132
16	0.85	100	135	27.99	27.99	-826.76	0.00	-1385.55	0.00	1.676
17	0.95	100	135	27.99	27.99	-795.25	0.00	-1385.55	0.00	1.742
18	1.05	100	135	27.99	27.99	-763.67	0.00	-1385.55	0.00	1.814
19	1.15	100	135	27.99	27.99	-732.07	0.00	-1385.55	0.00	1.893
20	1.25	100	135	27.99	27.99	-700.49	0.00	-1385.55	0.00	1.978
21	1.35	100	135	27.99	27.99	-668.98	0.00	-1385.55	0.00	2.071
22	1.45	100	135	27.99	27.99	-637.61	0.00	-1385.55	0.00	2.173
23	1.55	100	135	27.99	27.99	-606.41	0.00	-1385.55	0.00	2.285
24	1.65	100	135	27.99	27.99	-575.43	0.00	-1385.55	0.00	2.408
25	1.75	100	135	27.99	27.99	-544.73	0.00	-1385.55	0.00	2.544
26	1.85	100	135	27.99	27.99	-514.36	0.00	-1385.55	0.00	2.694
27	1.95	100	135	27.99	27.99	-484.37	0.00	-1385.55	0.00	2.861
28	2.05	100	135	27.99	27.99	-454.80	0.00	-1385.55	0.00	3.047
29	2.15	100	135	27.99	27.99	-425.71	0.00	-1385.55	0.00	3.255
30	2.25	100	135	27.99	27.99	-397.14	0.00	-1385.55	0.00	3.489
31	2.35	100	135	27.99	27.99	-369.16	0.00	-1385.55	0.00	3.753

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## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
32	2.45	100	135	27.99	27.99	-341.80	0.00	-1385.55	0.00	4.054
33	2.55	100	135	27.99	27.99	-315.11	0.00	-1385.55	0.00	4.397
34	2.65	100	135	27.99	27.99	-289.16	0.00	-1385.55	0.00	4.792
35	2.75	100	135	27.99	27.99	-263.98	0.00	-1385.55	0.00	5.249
36	2.85	100	135	27.99	27.99	-239.63	0.00	-1385.55	0.00	5.782
37	2.95	100	135	27.99	27.99	-216.16	0.00	-1385.55	0.00	6.410
38	3.05	100	135	27.99	27.99	-193.62	0.00	-1385.55	0.00	7.156
39	3.15	100	135	27.99	27.99	-172.05	0.00	-1385.55	0.00	8.053
40	3.25	100	135	27.99	27.99	-151.51	0.00	-1385.55	0.00	9.145
41	3.35	100	135	27.99	27.99	-132.05	0.00	-1385.55	0.00	10.493
42	3.45	100	135	27.99	27.99	-113.72	0.00	-1385.55	0.00	12.184
43	3.55	100	135	27.99	27.99	-96.57	0.00	-1385.55	0.00	14.348
44	3.65	100	135	27.99	27.99	-80.64	0.00	-1385.55	0.00	17.181
45	3.75	100	135	27.99	27.99	-66.00	0.00	-1385.55	0.00	20.994
46	3.85	100	135	27.99	27.99	-52.68	0.00	-1385.55	0.00	26.301
47	3.95	100	135	27.99	27.99	-40.74	0.00	-1385.55	0.00	34.007
48	4.05	100	135	27.99	27.99	-30.23	0.00	-1385.55	0.00	45.827
49	4.15	100	135	27.99	27.99	-21.20	0.00	-1385.55	0.00	65.341
50	4.25	100	135	27.99	27.99	-13.70	0.00	-1385.55	0.00	101.100
51	4.35	100	135	27.99	27.99	-7.78	0.00	-1385.55	0.00	177.998
52	4.45	100	135	27.99	27.99	-3.49	0.00	-1385.55	0.00	396.664
53	4.55	100	135	27.99	27.99	-0.88	0.00	0.00	0.00	1000.000
54	4.65	100	135	27.99	27.99	0.00	0.00	0.00	0.00	1000.000

## Combinazione n° 13 - ECC

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
1	-1.85	100	135	27.99	27.99	0.00	0.00	0.00	0.00	1000.000
2	-1.75	100	135	27.99	27.99	1.00	0.00	0.00	0.00	1000.000
3	-1.66	100	135	27.99	27.99	4.01	0.00	1597.41	0.00	398.503
4	-1.56	100	135	27.99	27.99	9.00	0.00	1597.41	0.00	177.543
5	-1.46	100	135	27.99	27.99	15.96	0.00	1597.41	0.00	100.112
6	-1.37	100	135	27.99	27.99	24.87	0.00	1597.41	0.00	64.228
7	-1.27	100	135	27.99	27.99	35.73	0.00	1597.41	0.00	44.712
8	-1.18	100	135	27.99	27.99	48.51	0.00	1597.41	0.00	32.930
9	-1.08	100	135	27.99	27.99	63.20	0.00	1597.41	0.00	25.274
10	-0.98	100	135	27.99	27.99	79.79	0.00	1597.41	0.00	20.019
11	-0.89	100	135	27.99	27.99	98.27	0.00	1597.41	0.00	16.256
12	-0.79	100	135	27.99	27.99	118.61	0.00	1597.41	0.00	13.468
13	-0.69	100	135	27.99	27.99	140.81	0.00	1597.41	0.00	11.345
14	-0.60	100	135	27.99	27.99	164.84	0.00	1597.41	0.00	9.691
15	-0.50	100	135	27.99	27.99	190.70	0.00	1597.41	0.00	8.377
16	0.85	100	135	27.99	27.99	-285.55	0.00	-1597.41	0.00	5.594
17	0.95	100	135	27.99	27.99	-274.43	0.00	-1597.41	0.00	5.821
18	1.05	100	135	27.99	27.99	-263.31	0.00	-1597.41	0.00	6.067
19	1.15	100	135	27.99	27.99	-252.21	0.00	-1597.41	0.00	6.334
20	1.25	100	135	27.99	27.99	-241.14	0.00	-1597.41	0.00	6.624
21	1.35	100	135	27.99	27.99	-230.12	0.00	-1597.41	0.00	6.942
22	1.45	100	135	27.99	27.99	-219.16	0.00	-1597.41	0.00	7.289
23	1.55	100	135	27.99	27.99	-208.28	0.00	-1597.41	0.00	7.670
24	1.65	100	135	27.99	27.99	-197.50	0.00	-1597.41	0.00	8.088
25	1.75	100	135	27.99	27.99	-186.83	0.00	-1597.41	0.00	8.550
26	1.85	100	135	27.99	27.99	-176.29	0.00	-1597.41	0.00	9.061
27	1.95	100	135	27.99	27.99	-165.90	0.00	-1597.41	0.00	9.629
28	2.05	100	135	27.99	27.99	-155.67	0.00	-1597.41	0.00	10.261
29	2.15	100	135	27.99	27.99	-145.62	0.00	-1597.41	0.00	10.969
30	2.25	100	135	27.99	27.99	-135.77	0.00	-1597.41	0.00	11.766
31	2.35	100	135	27.99	27.99	-126.12	0.00	-1597.41	0.00	12.665
32	2.45	100	135	27.99	27.99	-116.71	0.00	-1597.41	0.00	13.687
33	2.55	100	135	27.99	27.99	-107.53	0.00	-1597.41	0.00	14.855
34	2.65	100	135	27.99	27.99	-98.62	0.00	-1597.41	0.00	16.197
35	2.75	100	135	27.99	27.99	-89.98	0.00	-1597.41	0.00	17.752
36	2.85	100	135	27.99	27.99	-81.64	0.00	-1597.41	0.00	19.566
37	2.95	100	135	27.99	27.99	-73.60	0.00	-1597.41	0.00	21.703
38	3.05	100	135	27.99	27.99	-65.89	0.00	-1597.41	0.00	24.242
39	3.15	100	135	27.99	27.99	-58.52	0.00	-1597.41	0.00	27.295

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
40	3.25	100	135	27.99	27.99	-51.51	0.00	-1597.41	0.00	31.010
41	3.35	100	135	27.99	27.99	-44.87	0.00	-1597.41	0.00	35.597
42	3.45	100	135	27.99	27.99	-38.63	0.00	-1597.41	0.00	41.355
43	3.55	100	135	27.99	27.99	-32.79	0.00	-1597.41	0.00	48.723
44	3.65	100	135	27.99	27.99	-27.37	0.00	-1597.41	0.00	58.371
45	3.75	100	135	27.99	27.99	-22.39	0.00	-1597.41	0.00	71.356
46	3.85	100	135	27.99	27.99	-17.86	0.00	-1597.41	0.00	89.432
47	3.95	100	135	27.99	27.99	-13.81	0.00	-1597.41	0.00	115.686
48	4.05	100	135	27.99	27.99	-10.24	0.00	-1597.41	0.00	155.961
49	4.15	100	135	27.99	27.99	-7.18	0.00	-1597.41	0.00	222.463
50	4.25	100	135	27.99	27.99	-4.64	0.00	-1597.41	0.00	344.348
51	4.35	100	135	27.99	27.99	-2.63	0.00	-1597.41	0.00	606.503
52	4.45	100	135	27.99	27.99	-1.18	0.00	0.00	0.00	1000.000
53	4.55	100	135	27.99	27.99	-0.30	0.00	0.00	0.00	1000.000
54	4.65	100	135	27.99	27.99	0.00	0.00	0.00	0.00	1000.000

**Verifiche a taglio****Simbologia adottata**

Is	indice sezione
Y	ordinata sezione espressa in [m]
B	larghezza sezione espressa in [cm]
H	altezza sezione espressa in [cm]
A <sub>sw</sub>	area ferri a taglio espresso in [cmq]
cotθ	inclinazione delle bielle compresse, θ inclinazione dei puntoni di calcestruzzo
V <sub>Rcd</sub>	resistenza di progetto a 'taglio compressione' espressa in [kN]
V <sub>Rsd</sub>	resistenza di progetto a 'taglio trazione' espressa in [kN]
V <sub>Rd</sub>	resistenza di progetto a taglio espresso in [kN]. Per elementi con armature trasversali resistenti al taglio (A <sub>sw</sub> >0.0) V <sub>Rd</sub> =min(V <sub>Rcd</sub> , V <sub>Rsd</sub> ).
T	taglio agente espressa in [kN]
FS	fattore di sicurezza (rapporto tra sollecitazione resistente e sollecitazione agente)

**Paramento****Combinazione n° 1 - STR (A1-M1-R3)**

n°	Y	B	H	A <sub>sw</sub>	s	cotθ	V <sub>Rcd</sub>	V <sub>Rsd</sub>	V <sub>Rd</sub>	T	FS
	[m]	[cm]	[cm]	[cmq]	[cm]		[kN]	[kN]	[kN]	[kN]	
1	0.00	100	50	0.00	0.00	--	0.00	0.00	283.96	0.00	100.000
2	-0.10	100	51	0.00	0.00	--	0.00	0.00	286.87	0.03	9229.029
3	-0.20	100	52	0.00	0.00	--	0.00	0.00	289.76	0.12	2330.523
4	-0.30	100	53	0.00	0.00	--	0.00	0.00	292.64	0.28	1048.929
5	-0.40	100	54	0.00	0.00	--	0.00	0.00	295.50	0.49	597.830
6	-0.50	100	55	0.00	0.00	--	0.00	0.00	298.34	0.77	387.151
7	-0.60	100	56	0.00	0.00	--	0.00	0.00	301.16	1.11	271.729
8	-0.70	100	57	0.00	0.00	--	0.00	0.00	303.97	1.51	201.647
9	-0.80	100	58	0.00	0.00	--	0.00	0.00	306.76	1.97	155.879
10	-0.90	100	59	0.00	0.00	--	0.00	0.00	309.54	2.49	124.319
11	-1.00	100	59	0.00	0.00	--	0.00	0.00	312.30	3.07	101.622
12	-1.10	100	60	0.00	0.00	--	0.00	0.00	315.05	3.72	84.739
13	-1.20	100	61	0.00	0.00	--	0.00	0.00	317.79	4.42	71.832
14	-1.30	100	62	0.00	0.00	--	0.00	0.00	320.51	5.19	61.737
15	-1.40	100	63	0.00	0.00	--	0.00	0.00	323.22	6.02	53.687
16	-1.50	100	64	0.00	0.00	--	0.00	0.00	325.92	6.91	47.161
17	-1.60	100	65	0.00	0.00	--	0.00	0.00	328.61	7.86	41.794
18	-1.70	100	66	0.00	0.00	--	0.00	0.00	331.29	8.88	37.325

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## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
19	-1.80	100	67	0.00	0.00	--	0.00	0.00	333.95	9.95	33.562
20	-1.90	100	68	0.00	0.00	--	0.00	0.00	336.60	11.09	30.362
21	-2.00	100	69	0.00	0.00	--	0.00	0.00	339.25	12.28	27.618
22	-2.10	100	70	0.00	0.00	--	0.00	0.00	341.88	13.54	25.245
23	-2.20	100	71	0.00	0.00	--	0.00	0.00	344.50	14.86	23.179
24	-2.30	100	72	0.00	0.00	--	0.00	0.00	347.11	16.24	21.368
25	-2.40	100	73	0.00	0.00	--	0.00	0.00	349.72	17.69	19.772
26	-2.50	100	74	0.00	0.00	--	0.00	0.00	352.31	19.19	18.358
27	-2.60	100	75	0.00	0.00	--	0.00	0.00	354.89	20.76	17.097
28	-2.70	100	76	0.00	0.00	--	0.00	0.00	357.47	22.38	15.970
29	-2.80	100	76	0.00	0.00	--	0.00	0.00	360.04	24.07	14.956
30	-2.90	100	77	0.00	0.00	--	0.00	0.00	362.60	25.82	14.042
31	-3.00	100	78	0.00	0.00	--	0.00	0.00	365.15	27.63	13.214
32	-3.10	100	79	0.00	0.00	--	0.00	0.00	367.69	29.51	12.461
33	-3.20	100	80	0.00	0.00	--	0.00	0.00	370.23	31.44	11.775
34	-3.30	100	81	0.00	0.00	--	0.00	0.00	372.76	33.44	11.148
35	-3.40	100	82	0.00	0.00	--	0.00	0.00	375.28	35.49	10.573
36	-3.50	100	83	0.00	0.00	--	0.00	0.00	377.79	37.61	10.044
37	-3.60	100	84	0.00	0.00	--	0.00	0.00	380.30	39.79	9.557
38	-3.70	100	85	0.00	0.00	--	0.00	0.00	382.80	42.03	9.107
39	-3.80	100	86	0.00	0.00	--	0.00	0.00	385.30	44.34	8.690
40	-3.90	100	87	0.00	0.00	--	0.00	0.00	387.78	46.70	8.304
41	-4.00	100	88	0.00	0.00	--	0.00	0.00	390.27	49.13	7.944
42	-4.10	100	89	0.00	0.00	--	0.00	0.00	392.74	51.61	7.610
43	-4.20	100	90	0.00	0.00	--	0.00	0.00	395.21	54.16	7.297
44	-4.30	100	91	0.00	0.00	--	0.00	0.00	397.68	56.77	7.005
45	-4.40	100	92	0.00	0.00	--	0.00	0.00	400.14	59.44	6.732
46	-4.50	100	93	0.00	0.00	--	0.00	0.00	402.59	62.17	6.475
47	-4.60	100	93	0.00	0.00	--	0.00	0.00	405.04	64.97	6.234
48	-4.70	100	94	0.00	0.00	--	0.00	0.00	407.48	67.82	6.008
49	-4.80	100	95	0.00	0.00	--	0.00	0.00	409.92	70.74	5.795
50	-4.90	100	96	0.00	0.00	--	0.00	0.00	412.35	73.72	5.594
51	-5.00	100	97	0.00	0.00	--	0.00	0.00	414.78	76.76	5.404
52	-5.10	100	98	0.00	0.00	--	0.00	0.00	417.20	79.86	5.224
53	-5.20	100	99	0.00	0.00	--	0.00	0.00	419.62	83.02	5.054
54	-5.30	100	100	0.00	0.00	--	0.00	0.00	422.04	86.24	4.894
55	-5.40	100	101	0.00	0.00	--	0.00	0.00	424.45	89.53	4.741
56	-5.50	100	102	0.00	0.00	--	0.00	0.00	426.85	92.87	4.596
57	-5.60	100	103	0.00	0.00	--	0.00	0.00	429.26	96.28	4.458
58	-5.70	100	104	0.00	0.00	--	0.00	0.00	431.65	99.75	4.327
59	-5.80	100	105	0.00	0.00	--	0.00	0.00	434.05	103.28	4.203
60	-5.90	100	106	0.00	0.00	--	0.00	0.00	436.44	106.87	4.084
61	-6.00	100	107	0.00	0.00	--	0.00	0.00	438.83	110.53	3.970
62	-6.10	100	108	0.00	0.00	--	0.00	0.00	441.21	114.24	3.862
63	-6.20	100	109	0.00	0.00	--	0.00	0.00	443.59	118.02	3.759
64	-6.30	100	110	0.00	0.00	--	0.00	0.00	445.97	121.86	3.660
65	-6.40	100	110	0.00	0.00	--	0.00	0.00	448.34	125.76	3.565
66	-6.50	100	111	0.00	0.00	--	0.00	0.00	450.71	129.72	3.475
67	-6.60	100	112	0.00	0.00	--	0.00	0.00	453.07	133.74	3.388
68	-6.70	100	113	0.00	0.00	--	0.00	0.00	455.44	137.82	3.305
69	-6.80	100	114	0.00	0.00	--	0.00	0.00	457.80	141.97	3.225
70	-6.90	100	115	0.00	0.00	--	0.00	0.00	460.16	146.17	3.148
71	-7.00	100	116	0.00	0.00	--	0.00	0.00	462.51	150.44	3.074
72	-7.10	100	117	0.00	0.00	--	0.00	0.00	464.86	154.77	3.004
73	-7.20	100	118	0.00	0.00	--	0.00	0.00	467.21	159.16	2.936
74	-7.30	100	119	0.00	0.00	--	0.00	0.00	469.56	163.61	2.870
75	-7.40	100	120	0.00	0.00	--	0.00	0.00	471.90	168.12	2.807
76	-7.50	100	121	0.00	0.00	--	0.00	0.00	474.25	172.70	2.746
77	-7.60	100	122	0.00	0.00	--	0.00	0.00	476.59	177.33	2.687
78	-7.70	100	123	0.00	0.00	--	0.00	0.00	478.92	182.03	2.631
79	-7.80	100	124	0.00	0.00	--	0.00	0.00	481.25	186.79	2.577
80	-7.90	100	125	0.00	0.00	--	0.00	0.00	483.57	191.61	2.525
81	-8.00	100	126	0.00	0.00	--	0.00	0.00	485.89	196.49	2.474
82	-8.10	100	127	0.00	0.00	--	0.00	0.00	488.21	201.44	2.424
83	-8.20	100	128	0.00	0.00	--	0.00	0.00	490.52	206.44	2.375
84	-8.30	100	128	0.00	0.00	--	0.00	0.00	492.83	211.51	2.327
85	-8.40	100	129	0.00	0.00	--	0.00	0.00	495.14	216.63	2.280
86	-8.50	100	130	0.00	0.00	--	0.00	0.00	497.45	221.82	2.234
87	-8.60	100	131	0.00	0.00	--	0.00	0.00	499.76	227.07	2.189
88	-8.70	100	132	0.00	0.00	--	0.00	0.00	502.08	232.38	2.145

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## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
89	-8.80	100	133	0.00	0.00	--	0.00	0.00	504.50	237.75	2.122
90	-8.90	100	134	0.00	0.00	--	0.00	0.00	506.81	243.19	2.084
91	-9.00	100	135	0.00	0.00	--	0.00	0.00	509.12	248.68	2.047

## Combinazione n° 2 - STR (A1-M1-R3) H + V

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
1	0.00	100	50	0.00	0.00	--	0.00	0.00	283.99	0.00	100.000
2	-0.10	100	51	0.00	0.00	--	0.00	0.00	286.90	1.09	264.341
3	-0.20	100	52	0.00	0.00	--	0.00	0.00	289.79	2.22	130.432
4	-0.30	100	53	0.00	0.00	--	0.00	0.00	292.67	3.41	85.857
5	-0.40	100	54	0.00	0.00	--	0.00	0.00	295.53	4.65	63.612
6	-0.50	100	55	0.00	0.00	--	0.00	0.00	298.37	5.93	50.290
7	-0.60	100	56	0.00	0.00	--	0.00	0.00	301.19	7.27	41.425
8	-0.70	100	57	0.00	0.00	--	0.00	0.00	304.00	8.66	35.108
9	-0.80	100	58	0.00	0.00	--	0.00	0.00	306.79	10.10	30.382
10	-0.90	100	59	0.00	0.00	--	0.00	0.00	309.57	11.59	26.717
11	-1.00	100	59	0.00	0.00	--	0.00	0.00	312.33	13.13	23.793
12	-1.10	100	60	0.00	0.00	--	0.00	0.00	315.08	14.72	21.409
13	-1.20	100	61	0.00	0.00	--	0.00	0.00	317.82	16.36	19.429
14	-1.30	100	62	0.00	0.00	--	0.00	0.00	320.54	18.05	17.759
15	-1.40	100	63	0.00	0.00	--	0.00	0.00	323.26	19.79	16.333
16	-1.50	100	64	0.00	0.00	--	0.00	0.00	325.95	21.58	15.101
17	-1.60	100	65	0.00	0.00	--	0.00	0.00	328.64	23.43	14.028
18	-1.70	100	66	0.00	0.00	--	0.00	0.00	331.32	25.32	13.085
19	-1.80	100	67	0.00	0.00	--	0.00	0.00	333.98	27.27	12.249
20	-1.90	100	68	0.00	0.00	--	0.00	0.00	336.63	29.26	11.505
21	-2.00	100	69	0.00	0.00	--	0.00	0.00	339.28	31.30	10.838
22	-2.10	100	70	0.00	0.00	--	0.00	0.00	341.91	33.40	10.237
23	-2.20	100	71	0.00	0.00	--	0.00	0.00	344.53	35.55	9.692
24	-2.30	100	72	0.00	0.00	--	0.00	0.00	347.14	37.74	9.197
25	-2.40	100	73	0.00	0.00	--	0.00	0.00	349.75	39.99	8.746
26	-2.50	100	74	0.00	0.00	--	0.00	0.00	352.34	42.29	8.332
27	-2.60	100	75	0.00	0.00	--	0.00	0.00	354.93	44.64	7.951
28	-2.70	100	76	0.00	0.00	--	0.00	0.00	357.50	47.04	7.601
29	-2.80	100	76	0.00	0.00	--	0.00	0.00	360.07	49.49	7.276
30	-2.90	100	77	0.00	0.00	--	0.00	0.00	362.63	51.99	6.976
31	-3.00	100	78	0.00	0.00	--	0.00	0.00	365.18	54.54	6.696
32	-3.10	100	79	0.00	0.00	--	0.00	0.00	367.72	57.14	6.436
33	-3.20	100	80	0.00	0.00	--	0.00	0.00	370.26	59.79	6.193
34	-3.30	100	81	0.00	0.00	--	0.00	0.00	372.79	62.49	5.965
35	-3.40	100	82	0.00	0.00	--	0.00	0.00	375.31	65.24	5.752
36	-3.50	100	83	0.00	0.00	--	0.00	0.00	377.82	68.05	5.552
37	-3.60	100	84	0.00	0.00	--	0.00	0.00	380.33	70.90	5.364
38	-3.70	100	85	0.00	0.00	--	0.00	0.00	382.83	73.81	5.187
39	-3.80	100	86	0.00	0.00	--	0.00	0.00	385.33	76.76	5.020
40	-3.90	100	87	0.00	0.00	--	0.00	0.00	387.82	79.77	4.862
41	-4.00	100	88	0.00	0.00	--	0.00	0.00	390.30	82.82	4.713
42	-4.10	100	89	0.00	0.00	--	0.00	0.00	392.77	85.93	4.571
43	-4.20	100	90	0.00	0.00	--	0.00	0.00	395.24	89.08	4.437
44	-4.30	100	91	0.00	0.00	--	0.00	0.00	397.71	92.29	4.309
45	-4.40	100	92	0.00	0.00	--	0.00	0.00	400.17	95.55	4.188
46	-4.50	100	93	0.00	0.00	--	0.00	0.00	402.62	98.86	4.073
47	-4.60	100	93	0.00	0.00	--	0.00	0.00	405.07	102.22	3.963
48	-4.70	100	94	0.00	0.00	--	0.00	0.00	407.51	105.63	3.858
49	-4.80	100	95	0.00	0.00	--	0.00	0.00	409.95	109.09	3.758
50	-4.90	100	96	0.00	0.00	--	0.00	0.00	412.38	112.60	3.662
51	-5.00	100	97	0.00	0.00	--	0.00	0.00	414.81	116.16	3.571
52	-5.10	100	98	0.00	0.00	--	0.00	0.00	417.24	119.77	3.484
53	-5.20	100	99	0.00	0.00	--	0.00	0.00	419.65	123.43	3.400
54	-5.30	100	100	0.00	0.00	--	0.00	0.00	422.07	127.15	3.320
55	-5.40	100	101	0.00	0.00	--	0.00	0.00	424.48	130.91	3.243
56	-5.50	100	102	0.00	0.00	--	0.00	0.00	426.89	134.72	3.169
57	-5.60	100	103	0.00	0.00	--	0.00	0.00	429.29	138.59	3.098
58	-5.70	100	104	0.00	0.00	--	0.00	0.00	431.69	142.50	3.029
59	-5.80	100	105	0.00	0.00	--	0.00	0.00	434.08	146.47	2.964



VE407

## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
60	-5.90	100	106	0.00	0.00	--	0.00	0.00	436.47	150.49	2.900
61	-6.00	100	107	0.00	0.00	--	0.00	0.00	438.86	154.55	2.840
62	-6.10	100	108	0.00	0.00	--	0.00	0.00	441.24	158.67	2.781
63	-6.20	100	109	0.00	0.00	--	0.00	0.00	443.62	162.84	2.724
64	-6.30	100	110	0.00	0.00	--	0.00	0.00	446.00	167.06	2.670
65	-6.40	100	110	0.00	0.00	--	0.00	0.00	448.37	171.32	2.617
66	-6.50	100	111	0.00	0.00	--	0.00	0.00	450.74	175.64	2.566
67	-6.60	100	112	0.00	0.00	--	0.00	0.00	453.11	180.01	2.517
68	-6.70	100	113	0.00	0.00	--	0.00	0.00	455.47	184.43	2.470
69	-6.80	100	114	0.00	0.00	--	0.00	0.00	457.83	188.90	2.424
70	-6.90	100	115	0.00	0.00	--	0.00	0.00	460.19	193.43	2.379
71	-7.00	100	116	0.00	0.00	--	0.00	0.00	462.54	198.00	2.336
72	-7.10	100	117	0.00	0.00	--	0.00	0.00	464.90	202.62	2.294
73	-7.20	100	118	0.00	0.00	--	0.00	0.00	467.24	207.29	2.254
74	-7.30	100	119	0.00	0.00	--	0.00	0.00	469.59	212.02	2.215
75	-7.40	100	120	0.00	0.00	--	0.00	0.00	471.94	216.79	2.177
76	-7.50	100	121	0.00	0.00	--	0.00	0.00	474.28	221.62	2.140
77	-7.60	100	122	0.00	0.00	--	0.00	0.00	476.62	226.49	2.104
78	-7.70	100	123	0.00	0.00	--	0.00	0.00	478.95	231.42	2.070
79	-7.80	100	124	0.00	0.00	--	0.00	0.00	560.47	236.39	2.371
80	-7.90	100	125	0.00	0.00	--	0.00	0.00	563.13	241.42	2.333
81	-8.00	100	126	0.00	0.00	--	0.00	0.00	565.79	246.50	2.295
82	-8.10	100	127	0.00	0.00	--	0.00	0.00	568.44	251.62	2.259
83	-8.20	100	128	0.00	0.00	--	0.00	0.00	571.09	256.80	2.224
84	-8.30	100	128	0.00	0.00	--	0.00	0.00	445.96	262.03	1.702
85	-8.40	100	129	0.00	0.00	--	0.00	0.00	495.25	267.31	1.853
86	-8.50	100	130	0.00	0.00	--	0.00	0.00	497.58	272.64	1.825
87	-8.60	100	131	0.00	0.00	--	0.00	0.00	499.89	278.02	1.798
88	-8.70	100	132	0.00	0.00	--	0.00	0.00	502.21	283.45	1.772
89	-8.80	100	133	0.00	0.00	--	0.00	0.00	504.53	288.93	1.746
90	-8.90	100	134	0.00	0.00	--	0.00	0.00	506.84	294.47	1.721
91	-9.00	100	135	0.00	0.00	--	0.00	0.00	509.15	300.05	1.697

## Combinazione n° 3 - STR (A1-M1-R3)

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
1	0.00	100	50	0.00	0.00	--	0.00	0.00	283.96	0.00	100.000
2	-0.10	100	51	0.00	0.00	--	0.00	0.00	286.87	0.96	298.962
3	-0.20	100	52	0.00	0.00	--	0.00	0.00	289.76	1.98	146.249
4	-0.30	100	53	0.00	0.00	--	0.00	0.00	292.64	3.06	95.494
5	-0.40	100	54	0.00	0.00	--	0.00	0.00	295.50	4.21	70.218
6	-0.50	100	55	0.00	0.00	--	0.00	0.00	298.34	5.41	55.114
7	-0.60	100	56	0.00	0.00	--	0.00	0.00	301.16	6.68	45.089
8	-0.70	100	57	0.00	0.00	--	0.00	0.00	303.97	8.01	37.963
9	-0.80	100	58	0.00	0.00	--	0.00	0.00	306.76	9.40	32.648
10	-0.90	100	59	0.00	0.00	--	0.00	0.00	309.54	10.85	28.539
11	-1.00	100	59	0.00	0.00	--	0.00	0.00	312.30	12.36	25.271
12	-1.10	100	60	0.00	0.00	--	0.00	0.00	315.05	13.93	22.615
13	-1.20	100	61	0.00	0.00	--	0.00	0.00	317.79	15.57	20.416
14	-1.30	100	62	0.00	0.00	--	0.00	0.00	320.51	17.26	18.568
15	-1.40	100	63	0.00	0.00	--	0.00	0.00	323.22	19.02	16.994
16	-1.50	100	64	0.00	0.00	--	0.00	0.00	325.92	20.84	15.641
17	-1.60	100	65	0.00	0.00	--	0.00	0.00	328.61	22.72	14.464
18	-1.70	100	66	0.00	0.00	--	0.00	0.00	331.29	24.66	13.434
19	-1.80	100	67	0.00	0.00	--	0.00	0.00	333.95	26.66	12.525
20	-1.90	100	68	0.00	0.00	--	0.00	0.00	336.60	28.73	11.717
21	-2.00	100	69	0.00	0.00	--	0.00	0.00	339.25	30.85	10.995
22	-2.10	100	70	0.00	0.00	--	0.00	0.00	341.88	33.04	10.347
23	-2.20	100	71	0.00	0.00	--	0.00	0.00	344.50	35.29	9.762
24	-2.30	100	72	0.00	0.00	--	0.00	0.00	347.11	37.60	9.232
25	-2.40	100	73	0.00	0.00	--	0.00	0.00	349.72	39.97	8.749
26	-2.50	100	74	0.00	0.00	--	0.00	0.00	352.31	42.40	8.308
27	-2.60	100	75	0.00	0.00	--	0.00	0.00	354.89	44.90	7.904
28	-2.70	100	76	0.00	0.00	--	0.00	0.00	357.47	47.45	7.533
29	-2.80	100	76	0.00	0.00	--	0.00	0.00	360.04	50.07	7.191
30	-2.90	100	77	0.00	0.00	--	0.00	0.00	362.60	52.75	6.874

VE407

## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

n°	Y	B	H	A <sub>sw</sub>	s	cotθ	V <sub>Rcd</sub>	V <sub>Rsd</sub>	V <sub>Rd</sub>	T	FS
	[m]	[cm]	[cm]	[cmq]	[cm]		[kN]	[kN]	[kN]	[kN]	
31	-3.00	100	78	0.00	0.00	--	0.00	0.00	365.15	55.49	6.581
32	-3.10	100	79	0.00	0.00	--	0.00	0.00	367.69	58.29	6.308
33	-3.20	100	80	0.00	0.00	--	0.00	0.00	370.23	61.15	6.054
34	-3.30	100	81	0.00	0.00	--	0.00	0.00	372.76	64.08	5.817
35	-3.40	100	82	0.00	0.00	--	0.00	0.00	375.28	67.06	5.596
36	-3.50	100	83	0.00	0.00	--	0.00	0.00	377.79	70.11	5.389
37	-3.60	100	84	0.00	0.00	--	0.00	0.00	380.30	73.22	5.194
38	-3.70	100	85	0.00	0.00	--	0.00	0.00	382.80	76.39	5.011
39	-3.80	100	86	0.00	0.00	--	0.00	0.00	385.30	79.62	4.839
40	-3.90	100	87	0.00	0.00	--	0.00	0.00	387.78	82.91	4.677
41	-4.00	100	88	0.00	0.00	--	0.00	0.00	390.27	86.27	4.524
42	-4.10	100	89	0.00	0.00	--	0.00	0.00	392.74	89.68	4.379
43	-4.20	100	90	0.00	0.00	--	0.00	0.00	395.21	93.16	4.242
44	-4.30	100	91	0.00	0.00	--	0.00	0.00	397.68	96.70	4.113
45	-4.40	100	92	0.00	0.00	--	0.00	0.00	400.14	100.30	3.990
46	-4.50	100	93	0.00	0.00	--	0.00	0.00	402.59	103.95	3.873
47	-4.60	100	93	0.00	0.00	--	0.00	0.00	405.04	107.64	3.763
48	-4.70	100	94	0.00	0.00	--	0.00	0.00	407.48	111.36	3.659
49	-4.80	100	95	0.00	0.00	--	0.00	0.00	409.92	115.09	3.562
50	-4.90	100	96	0.00	0.00	--	0.00	0.00	412.35	118.81	3.471
51	-5.00	100	97	0.00	0.00	--	0.00	0.00	414.78	122.52	3.385
52	-5.10	100	98	0.00	0.00	--	0.00	0.00	417.20	126.22	3.305
53	-5.20	100	99	0.00	0.00	--	0.00	0.00	419.62	129.92	3.230
54	-5.30	100	100	0.00	0.00	--	0.00	0.00	422.04	133.64	3.158
55	-5.40	100	101	0.00	0.00	--	0.00	0.00	424.45	137.39	3.089
56	-5.50	100	102	0.00	0.00	--	0.00	0.00	426.85	141.19	3.023
57	-5.60	100	103	0.00	0.00	--	0.00	0.00	429.26	145.04	2.959
58	-5.70	100	104	0.00	0.00	--	0.00	0.00	431.65	148.97	2.898
59	-5.80	100	105	0.00	0.00	--	0.00	0.00	434.05	152.95	2.838
60	-5.90	100	106	0.00	0.00	--	0.00	0.00	436.44	157.00	2.780
61	-6.00	100	107	0.00	0.00	--	0.00	0.00	438.83	161.11	2.724
62	-6.10	100	108	0.00	0.00	--	0.00	0.00	441.21	165.28	2.669
63	-6.20	100	109	0.00	0.00	--	0.00	0.00	443.59	169.52	2.617
64	-6.30	100	110	0.00	0.00	--	0.00	0.00	445.97	173.82	2.566
65	-6.40	100	110	0.00	0.00	--	0.00	0.00	448.34	178.18	2.516
66	-6.50	100	111	0.00	0.00	--	0.00	0.00	450.71	182.60	2.468
67	-6.60	100	112	0.00	0.00	--	0.00	0.00	453.07	187.09	2.422
68	-6.70	100	113	0.00	0.00	--	0.00	0.00	455.44	191.64	2.377
69	-6.80	100	114	0.00	0.00	--	0.00	0.00	457.80	196.25	2.333
70	-6.90	100	115	0.00	0.00	--	0.00	0.00	460.16	200.92	2.290
71	-7.00	100	116	0.00	0.00	--	0.00	0.00	462.51	205.65	2.249
72	-7.10	100	117	0.00	0.00	--	0.00	0.00	464.86	210.45	2.209
73	-7.20	100	118	0.00	0.00	--	0.00	0.00	467.21	215.31	2.170
74	-7.30	100	119	0.00	0.00	--	0.00	0.00	469.56	220.23	2.132
75	-7.40	100	120	0.00	0.00	--	0.00	0.00	471.90	225.22	2.095
76	-7.50	100	121	0.00	0.00	--	0.00	0.00	474.25	230.26	2.060
77	-7.60	100	122	0.00	0.00	--	0.00	0.00	476.59	235.37	2.025
78	-7.70	100	123	0.00	0.00	--	0.00	0.00	478.92	240.54	1.991
79	-7.80	100	124	0.00	0.00	--	0.00	0.00	481.25	245.78	1.958
80	-7.90	100	125	0.00	0.00	--	0.00	0.00	483.57	251.07	1.924
81	-8.00	100	126	0.00	0.00	--	0.00	0.00	485.89	256.43	1.890
82	-8.10	100	127	0.00	0.00	--	0.00	0.00	488.21	261.84	1.857
83	-8.20	100	128	0.00	0.00	--	0.00	0.00	490.52	267.32	1.824
84	-8.30	100	128	0.00	0.00	--	0.00	0.00	492.83	272.86	1.791
85	-8.40	100	129	0.00	0.00	--	0.00	0.00	495.14	278.47	1.758
86	-8.50	100	130	0.00	0.00	--	0.00	0.00	497.45	284.13	1.725
87	-8.60	100	131	0.00	0.00	--	0.00	0.00	499.76	289.86	1.692
88	-8.70	100	132	0.00	0.00	--	0.00	0.00	502.07	295.65	1.659
89	-8.80	100	133	0.00	0.00	--	0.00	0.00	504.38	301.50	1.626
90	-8.90	100	134	0.00	0.00	--	0.00	0.00	506.69	307.41	1.593
91	-9.00	100	135	0.00	0.00	--	0.00	0.00	509.00	313.39	1.560

## Combinazione n° 4 - STR (A1-M1-R3) H - V

n°	Y	B	H	A <sub>sw</sub>	s	cotθ	V <sub>Rcd</sub>	V <sub>Rsd</sub>	V <sub>Rd</sub>	T	FS
	[m]	[cm]	[cm]	[cmq]	[cm]		[kN]	[kN]	[kN]	[kN]	
1	0.00	100	50	0.00	0.00	--	0.00	0.00	283.96	0.00	100.000

VE407

## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

n°	Y	B	H	A <sub>sw</sub>	s	cotθ	V <sub>Rcd</sub>	V <sub>Rsd</sub>	V <sub>Rd</sub>	T	FS
	[m]	[cm]	[cm]	[cmq]	[cm]		[kN]	[kN]	[kN]	[kN]	
2	-0.10	100	51	0.00	0.00	--	0.00	0.00	286.87	0.80	358.413
3	-0.20	100	52	0.00	0.00	--	0.00	0.00	289.76	1.65	175.412
4	-0.30	100	53	0.00	0.00	--	0.00	0.00	292.64	2.55	114.582
5	-0.40	100	54	0.00	0.00	--	0.00	0.00	295.50	3.51	84.284
6	-0.50	100	55	0.00	0.00	--	0.00	0.00	298.34	4.51	66.176
7	-0.60	100	56	0.00	0.00	--	0.00	0.00	301.16	5.56	54.156
8	-0.70	100	57	0.00	0.00	--	0.00	0.00	303.97	6.66	45.612
9	-0.80	100	58	0.00	0.00	--	0.00	0.00	306.76	7.82	39.237
10	-0.90	100	59	0.00	0.00	--	0.00	0.00	309.54	9.02	34.308
11	-1.00	100	59	0.00	0.00	--	0.00	0.00	312.30	10.28	30.387
12	-1.10	100	60	0.00	0.00	--	0.00	0.00	315.05	11.58	27.200
13	-1.20	100	61	0.00	0.00	--	0.00	0.00	317.79	12.94	24.561
14	-1.30	100	62	0.00	0.00	--	0.00	0.00	320.51	14.35	22.343
15	-1.40	100	63	0.00	0.00	--	0.00	0.00	323.22	15.80	20.454
16	-1.50	100	64	0.00	0.00	--	0.00	0.00	325.92	17.31	18.829
17	-1.60	100	65	0.00	0.00	--	0.00	0.00	328.61	18.87	17.416
18	-1.70	100	66	0.00	0.00	--	0.00	0.00	331.29	20.48	16.179
19	-1.80	100	67	0.00	0.00	--	0.00	0.00	333.95	22.14	15.086
20	-1.90	100	68	0.00	0.00	--	0.00	0.00	336.60	23.85	14.116
21	-2.00	100	69	0.00	0.00	--	0.00	0.00	339.25	25.61	13.249
22	-2.10	100	70	0.00	0.00	--	0.00	0.00	341.88	27.42	12.470
23	-2.20	100	71	0.00	0.00	--	0.00	0.00	344.50	29.28	11.766
24	-2.30	100	72	0.00	0.00	--	0.00	0.00	347.11	31.19	11.129
25	-2.40	100	73	0.00	0.00	--	0.00	0.00	349.72	33.15	10.549
26	-2.50	100	74	0.00	0.00	--	0.00	0.00	352.31	35.17	10.019
27	-2.60	100	75	0.00	0.00	--	0.00	0.00	354.89	37.23	9.533
28	-2.70	100	76	0.00	0.00	--	0.00	0.00	357.47	39.34	9.086
29	-2.80	100	76	0.00	0.00	--	0.00	0.00	360.04	41.51	8.674
30	-2.90	100	77	0.00	0.00	--	0.00	0.00	362.60	43.72	8.293
31	-3.00	100	78	0.00	0.00	--	0.00	0.00	365.15	45.99	7.940
32	-3.10	100	79	0.00	0.00	--	0.00	0.00	367.69	48.30	7.612
33	-3.20	100	80	0.00	0.00	--	0.00	0.00	370.23	50.67	7.307
34	-3.30	100	81	0.00	0.00	--	0.00	0.00	372.76	53.09	7.022
35	-3.40	100	82	0.00	0.00	--	0.00	0.00	375.28	55.56	6.755
36	-3.50	100	83	0.00	0.00	--	0.00	0.00	377.79	58.07	6.505
37	-3.60	100	84	0.00	0.00	--	0.00	0.00	380.30	60.64	6.271
38	-3.70	100	85	0.00	0.00	--	0.00	0.00	382.80	63.26	6.051
39	-3.80	100	86	0.00	0.00	--	0.00	0.00	385.30	65.93	5.844
40	-3.90	100	87	0.00	0.00	--	0.00	0.00	387.78	68.65	5.649
41	-4.00	100	88	0.00	0.00	--	0.00	0.00	390.27	71.42	5.464
42	-4.10	100	89	0.00	0.00	--	0.00	0.00	392.74	74.25	5.290
43	-4.20	100	90	0.00	0.00	--	0.00	0.00	395.21	77.12	5.125
44	-4.30	100	91	0.00	0.00	--	0.00	0.00	397.68	80.04	4.969
45	-4.40	100	92	0.00	0.00	--	0.00	0.00	400.14	83.01	4.820
46	-4.50	100	93	0.00	0.00	--	0.00	0.00	402.59	86.04	4.679
47	-4.60	100	93	0.00	0.00	--	0.00	0.00	405.04	89.11	4.545
48	-4.70	100	94	0.00	0.00	--	0.00	0.00	407.48	92.24	4.418
49	-4.80	100	95	0.00	0.00	--	0.00	0.00	409.92	95.41	4.296
50	-4.90	100	96	0.00	0.00	--	0.00	0.00	412.35	98.64	4.181
51	-5.00	100	97	0.00	0.00	--	0.00	0.00	414.78	101.91	4.070
52	-5.10	100	98	0.00	0.00	--	0.00	0.00	417.20	105.24	3.964
53	-5.20	100	99	0.00	0.00	--	0.00	0.00	419.62	108.62	3.863
54	-5.30	100	100	0.00	0.00	--	0.00	0.00	422.04	112.04	3.767
55	-5.40	100	101	0.00	0.00	--	0.00	0.00	424.45	115.52	3.674
56	-5.50	100	102	0.00	0.00	--	0.00	0.00	426.85	119.05	3.585
57	-5.60	100	103	0.00	0.00	--	0.00	0.00	429.26	122.63	3.500
58	-5.70	100	104	0.00	0.00	--	0.00	0.00	431.65	126.26	3.419
59	-5.80	100	105	0.00	0.00	--	0.00	0.00	434.05	129.94	3.340
60	-5.90	100	106	0.00	0.00	--	0.00	0.00	436.44	133.67	3.265
61	-6.00	100	107	0.00	0.00	--	0.00	0.00	438.83	137.46	3.193
62	-6.10	100	108	0.00	0.00	--	0.00	0.00	441.21	141.29	3.123
63	-6.20	100	109	0.00	0.00	--	0.00	0.00	443.59	145.17	3.056
64	-6.30	100	110	0.00	0.00	--	0.00	0.00	445.97	149.10	2.991
65	-6.40	100	110	0.00	0.00	--	0.00	0.00	448.34	153.09	2.929
66	-6.50	100	111	0.00	0.00	--	0.00	0.00	450.71	157.12	2.869
67	-6.60	100	112	0.00	0.00	--	0.00	0.00	453.07	161.21	2.811
68	-6.70	100	113	0.00	0.00	--	0.00	0.00	455.44	165.34	2.755
69	-6.80	100	114	0.00	0.00	--	0.00	0.00	457.80	169.53	2.700
70	-6.90	100	115	0.00	0.00	--	0.00	0.00	460.16	173.76	2.648
71	-7.00	100	116	0.00	0.00	--	0.00	0.00	462.51	178.05	2.598

VE407

## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

n°	Y	B	H	A <sub>sw</sub>	s	cotθ	V <sub>Rcd</sub>	V <sub>Rsd</sub>	V <sub>Rd</sub>	T	FS
	[m]	[cm]	[cm]	[cmq]	[cm]		[kN]	[kN]	[kN]	[kN]	
72	-7.10	100	117	0.00	0.00	--	0.00	0.00	464.86	182.39	2.549
73	-7.20	100	118	0.00	0.00	--	0.00	0.00	467.21	186.78	2.501
74	-7.30	100	119	0.00	0.00	--	0.00	0.00	469.56	191.22	2.456
75	-7.40	100	120	0.00	0.00	--	0.00	0.00	471.90	195.70	2.411
76	-7.50	100	121	0.00	0.00	--	0.00	0.00	474.25	200.24	2.368
77	-7.60	100	122	0.00	0.00	--	0.00	0.00	476.59	204.83	2.327
78	-7.70	100	123	0.00	0.00	--	0.00	0.00	478.92	209.48	2.286
79	-7.80	100	124	0.00	0.00	--	0.00	0.00	560.44	214.17	2.617
80	-7.90	100	125	0.00	0.00	--	0.00	0.00	563.10	218.91	2.572
81	-8.00	100	126	0.00	0.00	--	0.00	0.00	565.76	223.70	2.529
82	-8.10	100	127	0.00	0.00	--	0.00	0.00	568.41	228.54	2.487
83	-8.20	100	128	0.00	0.00	--	0.00	0.00	571.06	233.44	2.446
84	-8.30	100	128	0.00	0.00	--	0.00	0.00	445.93	238.38	1.871
85	-8.40	100	129	0.00	0.00	--	0.00	0.00	495.22	243.38	2.035
86	-8.50	100	130	0.00	0.00	--	0.00	0.00	497.54	248.42	2.003
87	-8.60	100	131	0.00	0.00	--	0.00	0.00	499.86	253.52	1.972
88	-8.70	100	132	0.00	0.00	--	0.00	0.00	502.18	258.66	1.941
89	-8.80	100	133	0.00	0.00	--	0.00	0.00	504.50	263.86	1.912
90	-8.90	100	134	0.00	0.00	--	0.00	0.00	506.81	269.11	1.883
91	-9.00	100	135	0.00	0.00	--	0.00	0.00	509.12	274.40	1.855

## Combinazione n° 13 - ECC

n°	Y	B	H	A <sub>sw</sub>	s	cotθ	V <sub>Rcd</sub>	V <sub>Rsd</sub>	V <sub>Rd</sub>	T	FS
	[m]	[cm]	[cm]	[cmq]	[cm]		[kN]	[kN]	[kN]	[kN]	
1	0.00	100	50	0.00	0.00	--	0.00	0.00	283.96	33.30	8.527
2	-0.10	100	51	0.00	0.00	--	0.00	0.00	286.87	33.32	8.609
3	-0.20	100	52	0.00	0.00	--	0.00	0.00	289.76	33.40	8.677
4	-0.30	100	53	0.00	0.00	--	0.00	0.00	292.64	33.51	8.732
5	-0.40	100	54	0.00	0.00	--	0.00	0.00	295.50	33.68	8.774
6	-0.50	100	55	0.00	0.00	--	0.00	0.00	298.34	33.89	8.802
7	-0.60	100	56	0.00	0.00	--	0.00	0.00	301.16	34.15	8.818
8	-0.70	100	57	0.00	0.00	--	0.00	0.00	303.97	34.46	8.821
9	-0.80	100	58	0.00	0.00	--	0.00	0.00	306.76	34.81	8.811
10	-0.90	100	59	0.00	0.00	--	0.00	0.00	309.54	35.22	8.790
11	-1.00	100	59	0.00	0.00	--	0.00	0.00	312.30	35.66	8.757
12	-1.10	100	60	0.00	0.00	--	0.00	0.00	315.05	36.16	8.713
13	-1.20	100	61	0.00	0.00	--	0.00	0.00	317.79	36.70	8.658
14	-1.30	100	62	0.00	0.00	--	0.00	0.00	320.51	37.29	8.594
15	-1.40	100	63	0.00	0.00	--	0.00	0.00	323.22	37.93	8.521
16	-1.50	100	64	0.00	0.00	--	0.00	0.00	325.92	38.62	8.440
17	-1.60	100	65	0.00	0.00	--	0.00	0.00	328.61	39.35	8.351
18	-1.70	100	66	0.00	0.00	--	0.00	0.00	331.29	40.13	8.256
19	-1.80	100	67	0.00	0.00	--	0.00	0.00	333.95	40.95	8.154
20	-1.90	100	68	0.00	0.00	--	0.00	0.00	336.60	41.83	8.047
21	-2.00	100	69	0.00	0.00	--	0.00	0.00	339.25	42.75	7.936
22	-2.10	100	70	0.00	0.00	--	0.00	0.00	341.88	43.72	7.820
23	-2.20	100	71	0.00	0.00	--	0.00	0.00	344.50	44.73	7.701
24	-2.30	100	72	0.00	0.00	--	0.00	0.00	347.11	45.80	7.580
25	-2.40	100	73	0.00	0.00	--	0.00	0.00	349.72	46.91	7.456
26	-2.50	100	74	0.00	0.00	--	0.00	0.00	352.31	48.06	7.330
27	-2.60	100	75	0.00	0.00	--	0.00	0.00	354.89	49.27	7.203
28	-2.70	100	76	0.00	0.00	--	0.00	0.00	357.47	50.52	7.076
29	-2.80	100	76	0.00	0.00	--	0.00	0.00	360.04	51.82	6.948
30	-2.90	100	77	0.00	0.00	--	0.00	0.00	362.60	53.16	6.820
31	-3.00	100	78	0.00	0.00	--	0.00	0.00	365.15	54.56	6.693
32	-3.10	100	79	0.00	0.00	--	0.00	0.00	367.69	56.00	6.566
33	-3.20	100	80	0.00	0.00	--	0.00	0.00	370.23	57.49	6.440
34	-3.30	100	81	0.00	0.00	--	0.00	0.00	372.76	59.02	6.316
35	-3.40	100	82	0.00	0.00	--	0.00	0.00	375.28	60.60	6.192
36	-3.50	100	83	0.00	0.00	--	0.00	0.00	377.79	62.23	6.071
37	-3.60	100	84	0.00	0.00	--	0.00	0.00	380.30	63.91	5.951
38	-3.70	100	85	0.00	0.00	--	0.00	0.00	382.80	65.63	5.832
39	-3.80	100	86	0.00	0.00	--	0.00	0.00	385.30	67.40	5.716
40	-3.90	100	87	0.00	0.00	--	0.00	0.00	387.78	69.22	5.602
41	-4.00	100	88	0.00	0.00	--	0.00	0.00	390.27	71.09	5.490
42	-4.10	100	89	0.00	0.00	--	0.00	0.00	392.74	73.00	5.380

VE407

## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
43	-4.20	100	90	0.00	0.00	--	0.00	0.00	395.21	74.96	5.272
44	-4.30	100	91	0.00	0.00	--	0.00	0.00	397.68	76.97	5.167
45	-4.40	100	92	0.00	0.00	--	0.00	0.00	400.14	79.02	5.063
46	-4.50	100	93	0.00	0.00	--	0.00	0.00	402.59	81.13	4.963
47	-4.60	100	93	0.00	0.00	--	0.00	0.00	405.04	83.27	4.864
48	-4.70	100	94	0.00	0.00	--	0.00	0.00	407.48	85.47	4.767
49	-4.80	100	95	0.00	0.00	--	0.00	0.00	409.92	87.71	4.673
50	-4.90	100	96	0.00	0.00	--	0.00	0.00	412.35	90.01	4.581
51	-5.00	100	97	0.00	0.00	--	0.00	0.00	414.78	92.34	4.492
52	-5.10	100	98	0.00	0.00	--	0.00	0.00	417.20	94.73	4.404
53	-5.20	100	99	0.00	0.00	--	0.00	0.00	419.62	97.16	4.319
54	-5.30	100	100	0.00	0.00	--	0.00	0.00	422.04	99.64	4.236
55	-5.40	100	101	0.00	0.00	--	0.00	0.00	424.45	102.17	4.154
56	-5.50	100	102	0.00	0.00	--	0.00	0.00	426.85	104.74	4.075
57	-5.60	100	103	0.00	0.00	--	0.00	0.00	429.26	107.36	3.998
58	-5.70	100	104	0.00	0.00	--	0.00	0.00	431.65	110.03	3.923
59	-5.80	100	105	0.00	0.00	--	0.00	0.00	434.05	112.75	3.850
60	-5.90	100	106	0.00	0.00	--	0.00	0.00	436.44	115.51	3.778
61	-6.00	100	107	0.00	0.00	--	0.00	0.00	438.83	118.32	3.709
62	-6.10	100	108	0.00	0.00	--	0.00	0.00	441.21	121.18	3.641
63	-6.20	100	109	0.00	0.00	--	0.00	0.00	443.59	124.08	3.575
64	-6.30	100	110	0.00	0.00	--	0.00	0.00	445.97	127.04	3.511
65	-6.40	100	110	0.00	0.00	--	0.00	0.00	448.34	130.04	3.448
66	-6.50	100	111	0.00	0.00	--	0.00	0.00	450.71	133.08	3.387
67	-6.60	100	112	0.00	0.00	--	0.00	0.00	453.07	136.18	3.327
68	-6.70	100	113	0.00	0.00	--	0.00	0.00	455.44	139.32	3.269
69	-6.80	100	114	0.00	0.00	--	0.00	0.00	457.80	142.50	3.213
70	-6.90	100	115	0.00	0.00	--	0.00	0.00	460.16	145.74	3.157
71	-7.00	100	116	0.00	0.00	--	0.00	0.00	462.51	149.02	3.104
72	-7.10	100	117	0.00	0.00	--	0.00	0.00	464.86	152.35	3.051
73	-7.20	100	118	0.00	0.00	--	0.00	0.00	467.21	155.73	3.000
74	-7.30	100	119	0.00	0.00	--	0.00	0.00	469.56	159.15	2.950
75	-7.40	100	120	0.00	0.00	--	0.00	0.00	471.90	162.63	2.902
76	-7.50	100	121	0.00	0.00	--	0.00	0.00	474.25	166.15	2.854
77	-7.60	100	122	0.00	0.00	--	0.00	0.00	476.59	169.71	2.808
78	-7.70	100	123	0.00	0.00	--	0.00	0.00	478.92	173.32	2.763
79	-7.80	100	124	0.00	0.00	--	0.00	0.00	481.25	176.99	2.719
80	-7.90	100	125	0.00	0.00	--	0.00	0.00	483.57	180.69	2.676
81	-8.00	100	126	0.00	0.00	--	0.00	0.00	485.89	184.45	2.634
82	-8.10	100	127	0.00	0.00	--	0.00	0.00	488.21	188.25	2.593
83	-8.20	100	128	0.00	0.00	--	0.00	0.00	490.52	192.10	2.553
84	-8.30	100	128	0.00	0.00	--	0.00	0.00	492.83	196.00	2.514
85	-8.40	100	129	0.00	0.00	--	0.00	0.00	495.14	199.94	2.476
86	-8.50	100	130	0.00	0.00	--	0.00	0.00	497.45	203.93	2.439
87	-8.60	100	131	0.00	0.00	--	0.00	0.00	499.76	207.97	2.403
88	-8.70	100	132	0.00	0.00	--	0.00	0.00	502.07	212.06	2.368
89	-8.80	100	133	0.00	0.00	--	0.00	0.00	504.38	216.19	2.334
90	-8.90	100	134	0.00	0.00	--	0.00	0.00	506.69	220.37	2.300
91	-9.00	100	135	0.00	0.00	--	0.00	0.00	509.00	224.60	2.267

## Mensola valle

## Combinazione n° 1 - STR (A1-M1-R3)

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
1	-0.75	100	50	0.00	0.00	--	0.00	0.00	224.82	0.00	100.000
2	-0.67	100	50	0.00	0.00	--	0.00	0.00	224.82	1.02	220.074
3	-0.58	100	50	0.00	0.00	--	0.00	0.00	224.82	2.04	110.037
4	-0.50	100	50	0.00	0.00	--	0.00	0.00	224.82	3.06	73.358

## Combinazione n° 2 - STR (A1-M1-R3) H + V

VE407

**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
1	-0.75	100	50	0.00	0.00	--	0.00	0.00	224.82	0.00	100.000
2	-0.67	100	50	0.00	0.00	--	0.00	0.00	224.82	1.09	205.439
3	-0.58	100	50	0.00	0.00	--	0.00	0.00	224.82	2.19	102.719
4	-0.50	100	50	0.00	0.00	--	0.00	0.00	224.82	3.28	68.480

Combinazione n° 3 - STR (A1-M1-R3)

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
1	-0.75	100	50	0.00	0.00	--	0.00	0.00	224.82	0.00	100.000
2	-0.67	100	50	0.00	0.00	--	0.00	0.00	224.82	1.02	220.074
3	-0.58	100	50	0.00	0.00	--	0.00	0.00	224.82	2.04	110.037
4	-0.50	100	50	0.00	0.00	--	0.00	0.00	224.82	3.06	73.358

Combinazione n° 4 - STR (A1-M1-R3) H - V

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
1	-0.75	100	50	0.00	0.00	--	0.00	0.00	224.82	0.00	100.000
2	-0.67	100	50	0.00	0.00	--	0.00	0.00	224.82	1.02	220.074
3	-0.58	100	50	0.00	0.00	--	0.00	0.00	224.82	2.04	110.037
4	-0.50	100	50	0.00	0.00	--	0.00	0.00	224.82	3.06	73.358

Combinazione n° 13 - ECC

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
1	-0.75	100	50	0.00	0.00	--	0.00	0.00	224.82	0.00	100.000
2	-0.67	100	50	0.00	0.00	--	0.00	0.00	224.82	1.02	220.074
3	-0.58	100	50	0.00	0.00	--	0.00	0.00	224.82	2.04	110.037
4	-0.50	100	50	0.00	0.00	--	0.00	0.00	224.82	3.06	73.358

**Fondazione**Combinazione n° 1 - STR (A1-M1-R3)

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
1	-1.85	100	135	0.00	0.00	--	0.00	0.00	532.01	0.00	100.000
2	-1.75	100	135	0.00	0.00	--	0.00	0.00	532.01	-18.04	29.485
3	-1.66	100	135	0.00	0.00	--	0.00	0.00	532.01	-36.03	14.765
4	-1.56	100	135	0.00	0.00	--	0.00	0.00	532.01	-53.97	9.858
5	-1.46	100	135	0.00	0.00	--	0.00	0.00	532.01	-71.85	7.405
6	-1.37	100	135	0.00	0.00	--	0.00	0.00	532.01	-89.67	5.933
7	-1.27	100	135	0.00	0.00	--	0.00	0.00	532.01	-107.44	4.952
8	-1.18	100	135	0.00	0.00	--	0.00	0.00	532.01	-125.16	4.251
9	-1.08	100	135	0.00	0.00	--	0.00	0.00	532.01	-142.82	3.725
10	-0.98	100	135	0.00	0.00	--	0.00	0.00	532.01	-160.42	3.316
11	-0.89	100	135	0.00	0.00	--	0.00	0.00	532.01	-177.97	2.989
12	-0.79	100	135	0.00	0.00	--	0.00	0.00	532.01	-195.47	2.722
13	-0.69	100	135	0.00	0.00	--	0.00	0.00	532.01	-212.91	2.499
14	-0.60	100	135	0.00	0.00	--	0.00	0.00	532.01	-230.30	2.310
15	-0.50	100	135	0.00	0.00	--	0.00	0.00	532.01	-247.63	2.148
16	0.85	100	135	0.00	0.00	--	0.00	0.00	532.01	-235.55	2.259
17	0.95	100	135	0.00	0.00	--	0.00	0.00	532.01	-230.44	2.309
18	1.05	100	135	0.00	0.00	--	0.00	0.00	532.01	-225.27	2.362

VE407

## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
19	1.15	100	135	0.00	0.00	--	0.00	0.00	532.01	-220.04	2.418
20	1.25	100	135	0.00	0.00	--	0.00	0.00	532.01	-214.76	2.477
21	1.35	100	135	0.00	0.00	--	0.00	0.00	532.01	-209.41	2.541
22	1.45	100	135	0.00	0.00	--	0.00	0.00	532.01	-204.01	2.608
23	1.55	100	135	0.00	0.00	--	0.00	0.00	532.01	-198.55	2.680
24	1.65	100	135	0.00	0.00	--	0.00	0.00	532.01	-193.02	2.756
25	1.75	100	135	0.00	0.00	--	0.00	0.00	532.01	-187.44	2.838
26	1.85	100	135	0.00	0.00	--	0.00	0.00	532.01	-181.80	2.926
27	1.95	100	135	0.00	0.00	--	0.00	0.00	532.01	-176.11	3.021
28	2.05	100	135	0.00	0.00	--	0.00	0.00	532.01	-170.35	3.123
29	2.15	100	135	0.00	0.00	--	0.00	0.00	532.01	-164.53	3.233
30	2.25	100	135	0.00	0.00	--	0.00	0.00	532.01	-158.66	3.353
31	2.35	100	135	0.00	0.00	--	0.00	0.00	532.01	-152.73	3.483
32	2.45	100	135	0.00	0.00	--	0.00	0.00	532.01	-146.73	3.626
33	2.55	100	135	0.00	0.00	--	0.00	0.00	532.01	-140.68	3.782
34	2.65	100	135	0.00	0.00	--	0.00	0.00	532.01	-134.57	3.953
35	2.75	100	135	0.00	0.00	--	0.00	0.00	532.01	-128.40	4.143
36	2.85	100	135	0.00	0.00	--	0.00	0.00	532.01	-122.17	4.355
37	2.95	100	135	0.00	0.00	--	0.00	0.00	532.01	-115.89	4.591
38	3.05	100	135	0.00	0.00	--	0.00	0.00	532.01	-109.54	4.857
39	3.15	100	135	0.00	0.00	--	0.00	0.00	532.01	-103.14	5.158
40	3.25	100	135	0.00	0.00	--	0.00	0.00	532.01	-96.67	5.503
41	3.35	100	135	0.00	0.00	--	0.00	0.00	532.01	-90.15	5.901
42	3.45	100	135	0.00	0.00	--	0.00	0.00	532.01	-83.57	6.366
43	3.55	100	135	0.00	0.00	--	0.00	0.00	532.01	-76.93	6.916
44	3.65	100	135	0.00	0.00	--	0.00	0.00	532.01	-70.23	7.575
45	3.75	100	135	0.00	0.00	--	0.00	0.00	532.01	-63.47	8.382
46	3.85	100	135	0.00	0.00	--	0.00	0.00	532.01	-56.65	9.390
47	3.95	100	135	0.00	0.00	--	0.00	0.00	532.01	-49.78	10.688
48	4.05	100	135	0.00	0.00	--	0.00	0.00	532.01	-42.84	12.417
49	4.15	100	135	0.00	0.00	--	0.00	0.00	532.01	-35.85	14.840
50	4.25	100	135	0.00	0.00	--	0.00	0.00	532.01	-28.80	18.474
51	4.35	100	135	0.00	0.00	--	0.00	0.00	532.01	-21.69	24.531
52	4.45	100	135	0.00	0.00	--	0.00	0.00	532.01	-14.52	36.648
53	4.55	100	135	0.00	0.00	--	0.00	0.00	532.01	-7.29	73.000
54	4.65	100	135	0.00	0.00	--	0.00	0.00	532.01	0.00	100.000

## Combinazione n° 2 - STR (A1-M1-R3) H + V

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
1	-1.85	100	135	0.00	0.00	--	0.00	0.00	532.01	0.00	100.000
2	-1.75	100	135	0.00	0.00	--	0.00	0.00	532.01	-33.66	15.805
3	-1.66	100	135	0.00	0.00	--	0.00	0.00	532.01	-66.84	7.959
4	-1.56	100	135	0.00	0.00	--	0.00	0.00	532.01	-99.54	5.345
5	-1.46	100	135	0.00	0.00	--	0.00	0.00	532.01	-131.75	4.038
6	-1.37	100	135	0.00	0.00	--	0.00	0.00	532.01	-163.48	3.254
7	-1.27	100	135	0.00	0.00	--	0.00	0.00	532.01	-194.74	2.732
8	-1.18	100	135	0.00	0.00	--	0.00	0.00	532.01	-225.50	2.359
9	-1.08	100	135	0.00	0.00	--	0.00	0.00	532.01	-255.79	2.080
10	-0.98	100	135	0.00	0.00	--	0.00	0.00	532.01	-285.59	1.863
11	-0.89	100	135	0.00	0.00	--	0.00	0.00	532.01	-314.91	1.689
12	-0.79	100	135	0.00	0.00	--	0.00	0.00	532.01	-343.75	1.548
13	-0.69	100	135	0.00	0.00	--	0.00	0.00	532.01	-372.11	1.430
14	-0.60	100	135	0.00	0.00	--	0.00	0.00	532.01	-399.99	1.330
15	-0.50	100	135	0.00	0.00	--	0.00	0.00	532.01	-427.38	1.245
16	0.85	100	135	0.00	0.00	--	0.00	0.00	532.01	-220.45	2.413
17	0.95	100	135	0.00	0.00	--	0.00	0.00	532.01	-224.24	2.373
18	1.05	100	135	0.00	0.00	--	0.00	0.00	532.01	-227.51	2.338
19	1.15	100	135	0.00	0.00	--	0.00	0.00	532.01	-230.27	2.310
20	1.25	100	135	0.00	0.00	--	0.00	0.00	532.01	-232.51	2.288
21	1.35	100	135	0.00	0.00	--	0.00	0.00	532.01	-234.23	2.271
22	1.45	100	135	0.00	0.00	--	0.00	0.00	532.01	-235.43	2.260
23	1.55	100	135	0.00	0.00	--	0.00	0.00	532.01	-236.11	2.253
24	1.65	100	135	0.00	0.00	--	0.00	0.00	532.01	-236.27	2.252
25	1.75	100	135	0.00	0.00	--	0.00	0.00	532.01	-235.91	2.255
26	1.85	100	135	0.00	0.00	--	0.00	0.00	532.01	-235.04	2.264

VE407

## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
27	1.95	100	135	0.00	0.00	--	0.00	0.00	532.01	-233.65	2.277
28	2.05	100	135	0.00	0.00	--	0.00	0.00	532.01	-231.73	2.296
29	2.15	100	135	0.00	0.00	--	0.00	0.00	532.01	-229.30	2.320
30	2.25	100	135	0.00	0.00	--	0.00	0.00	532.01	-226.35	2.350
31	2.35	100	135	0.00	0.00	--	0.00	0.00	532.01	-222.89	2.387
32	2.45	100	135	0.00	0.00	--	0.00	0.00	532.01	-218.90	2.430
33	2.55	100	135	0.00	0.00	--	0.00	0.00	532.01	-214.40	2.481
34	2.65	100	135	0.00	0.00	--	0.00	0.00	532.01	-209.37	2.541
35	2.75	100	135	0.00	0.00	--	0.00	0.00	532.01	-203.83	2.610
36	2.85	100	135	0.00	0.00	--	0.00	0.00	532.01	-197.77	2.690
37	2.95	100	135	0.00	0.00	--	0.00	0.00	532.01	-191.19	2.783
38	3.05	100	135	0.00	0.00	--	0.00	0.00	532.01	-184.09	2.890
39	3.15	100	135	0.00	0.00	--	0.00	0.00	532.01	-176.48	3.015
40	3.25	100	135	0.00	0.00	--	0.00	0.00	532.01	-168.34	3.160
41	3.35	100	135	0.00	0.00	--	0.00	0.00	532.01	-159.69	3.332
42	3.45	100	135	0.00	0.00	--	0.00	0.00	532.01	-150.52	3.535
43	3.55	100	135	0.00	0.00	--	0.00	0.00	532.01	-140.83	3.778
44	3.65	100	135	0.00	0.00	--	0.00	0.00	532.01	-130.62	4.073
45	3.75	100	135	0.00	0.00	--	0.00	0.00	532.01	-119.89	4.438
46	3.85	100	135	0.00	0.00	--	0.00	0.00	532.01	-108.64	4.897
47	3.95	100	135	0.00	0.00	--	0.00	0.00	532.01	-96.88	5.492
48	4.05	100	135	0.00	0.00	--	0.00	0.00	532.01	-84.59	6.289
49	4.15	100	135	0.00	0.00	--	0.00	0.00	532.01	-71.79	7.411
50	4.25	100	135	0.00	0.00	--	0.00	0.00	532.01	-58.47	9.099
51	4.35	100	135	0.00	0.00	--	0.00	0.00	532.01	-44.63	11.920
52	4.45	100	135	0.00	0.00	--	0.00	0.00	532.01	-30.27	17.574
53	4.55	100	135	0.00	0.00	--	0.00	0.00	532.01	-15.40	34.557
54	4.65	100	135	0.00	0.00	--	0.00	0.00	532.01	0.00	100.000

## Combinazione n° 3 - STR (A1-M1-R3)

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
1	-1.85	100	135	0.00	0.00	--	0.00	0.00	532.01	0.00	100.000
2	-1.75	100	135	0.00	0.00	--	0.00	0.00	532.01	-20.47	25.993
3	-1.66	100	135	0.00	0.00	--	0.00	0.00	532.01	-40.88	13.015
4	-1.56	100	135	0.00	0.00	--	0.00	0.00	532.01	-61.23	8.689
5	-1.46	100	135	0.00	0.00	--	0.00	0.00	532.01	-81.52	6.526
6	-1.37	100	135	0.00	0.00	--	0.00	0.00	532.01	-101.75	5.228
7	-1.27	100	135	0.00	0.00	--	0.00	0.00	532.01	-121.93	4.363
8	-1.18	100	135	0.00	0.00	--	0.00	0.00	532.01	-142.05	3.745
9	-1.08	100	135	0.00	0.00	--	0.00	0.00	532.01	-162.11	3.282
10	-0.98	100	135	0.00	0.00	--	0.00	0.00	532.01	-182.11	2.921
11	-0.89	100	135	0.00	0.00	--	0.00	0.00	532.01	-202.05	2.633
12	-0.79	100	135	0.00	0.00	--	0.00	0.00	532.01	-221.94	2.397
13	-0.69	100	135	0.00	0.00	--	0.00	0.00	532.01	-241.77	2.201
14	-0.60	100	135	0.00	0.00	--	0.00	0.00	532.01	-261.54	2.034
15	-0.50	100	135	0.00	0.00	--	0.00	0.00	532.01	-281.25	1.892
16	0.85	100	135	0.00	0.00	--	0.00	0.00	532.01	-259.17	2.053
17	0.95	100	135	0.00	0.00	--	0.00	0.00	532.01	-252.74	2.105
18	1.05	100	135	0.00	0.00	--	0.00	0.00	532.01	-246.25	2.160
19	1.15	100	135	0.00	0.00	--	0.00	0.00	532.01	-239.69	2.220
20	1.25	100	135	0.00	0.00	--	0.00	0.00	532.01	-233.07	2.283
21	1.35	100	135	0.00	0.00	--	0.00	0.00	532.01	-226.39	2.350
22	1.45	100	135	0.00	0.00	--	0.00	0.00	532.01	-219.65	2.422
23	1.55	100	135	0.00	0.00	--	0.00	0.00	532.01	-212.84	2.500
24	1.65	100	135	0.00	0.00	--	0.00	0.00	532.01	-205.97	2.583
25	1.75	100	135	0.00	0.00	--	0.00	0.00	532.01	-199.04	2.673
26	1.85	100	135	0.00	0.00	--	0.00	0.00	532.01	-192.04	2.770
27	1.95	100	135	0.00	0.00	--	0.00	0.00	532.01	-184.99	2.876
28	2.05	100	135	0.00	0.00	--	0.00	0.00	532.01	-177.87	2.991
29	2.15	100	135	0.00	0.00	--	0.00	0.00	532.01	-170.68	3.117
30	2.25	100	135	0.00	0.00	--	0.00	0.00	532.01	-163.44	3.255
31	2.35	100	135	0.00	0.00	--	0.00	0.00	532.01	-156.13	3.407
32	2.45	100	135	0.00	0.00	--	0.00	0.00	532.01	-148.76	3.576
33	2.55	100	135	0.00	0.00	--	0.00	0.00	532.01	-141.33	3.764
34	2.65	100	135	0.00	0.00	--	0.00	0.00	532.01	-133.83	3.975



VE407

## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
35	2.75	100	135	0.00	0.00	--	0.00	0.00	532.01	-126.28	4.213
36	2.85	100	135	0.00	0.00	--	0.00	0.00	532.01	-118.65	4.484
37	2.95	100	135	0.00	0.00	--	0.00	0.00	532.01	-110.97	4.794
38	3.05	100	135	0.00	0.00	--	0.00	0.00	532.01	-104.12	5.109
39	3.15	100	135	0.00	0.00	--	0.00	0.00	532.01	-98.09	5.424
40	3.25	100	135	0.00	0.00	--	0.00	0.00	532.01	-91.98	5.784
41	3.35	100	135	0.00	0.00	--	0.00	0.00	532.01	-85.82	6.199
42	3.45	100	135	0.00	0.00	--	0.00	0.00	532.01	-79.60	6.684
43	3.55	100	135	0.00	0.00	--	0.00	0.00	532.01	-73.31	7.257
44	3.65	100	135	0.00	0.00	--	0.00	0.00	532.01	-66.96	7.946
45	3.75	100	135	0.00	0.00	--	0.00	0.00	532.01	-60.54	8.788
46	3.85	100	135	0.00	0.00	--	0.00	0.00	532.01	-54.07	9.840
47	3.95	100	135	0.00	0.00	--	0.00	0.00	532.01	-47.53	11.194
48	4.05	100	135	0.00	0.00	--	0.00	0.00	532.01	-40.92	13.000
49	4.15	100	135	0.00	0.00	--	0.00	0.00	532.01	-34.26	15.529
50	4.25	100	135	0.00	0.00	--	0.00	0.00	532.01	-27.53	19.323
51	4.35	100	135	0.00	0.00	--	0.00	0.00	532.01	-20.74	25.647
52	4.45	100	135	0.00	0.00	--	0.00	0.00	532.01	-13.89	38.297
53	4.55	100	135	0.00	0.00	--	0.00	0.00	532.01	-6.98	76.250
54	4.65	100	135	0.00	0.00	--	0.00	0.00	532.01	0.00	100.000

## Combinazione n° 4 - STR (A1-M1-R3) H - V

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
1	-1.85	100	135	0.00	0.00	--	0.00	0.00	532.01	0.00	100.000
2	-1.75	100	135	0.00	0.00	--	0.00	0.00	532.01	-30.51	17.438
3	-1.66	100	135	0.00	0.00	--	0.00	0.00	532.01	-60.55	8.786
4	-1.56	100	135	0.00	0.00	--	0.00	0.00	532.01	-90.13	5.903
5	-1.46	100	135	0.00	0.00	--	0.00	0.00	532.01	-119.24	4.462
6	-1.37	100	135	0.00	0.00	--	0.00	0.00	532.01	-147.89	3.597
7	-1.27	100	135	0.00	0.00	--	0.00	0.00	532.01	-176.07	3.022
8	-1.18	100	135	0.00	0.00	--	0.00	0.00	532.01	-203.78	2.611
9	-1.08	100	135	0.00	0.00	--	0.00	0.00	532.01	-231.03	2.303
10	-0.98	100	135	0.00	0.00	--	0.00	0.00	532.01	-257.81	2.064
11	-0.89	100	135	0.00	0.00	--	0.00	0.00	532.01	-284.12	1.872
12	-0.79	100	135	0.00	0.00	--	0.00	0.00	532.01	-309.97	1.716
13	-0.69	100	135	0.00	0.00	--	0.00	0.00	532.01	-335.36	1.586
14	-0.60	100	135	0.00	0.00	--	0.00	0.00	532.01	-360.27	1.477
15	-0.50	100	135	0.00	0.00	--	0.00	0.00	532.01	-384.72	1.383
16	0.85	100	135	0.00	0.00	--	0.00	0.00	532.01	-314.52	1.692
17	0.95	100	135	0.00	0.00	--	0.00	0.00	532.01	-315.51	1.686
18	1.05	100	135	0.00	0.00	--	0.00	0.00	532.01	-316.01	1.684
19	1.15	100	135	0.00	0.00	--	0.00	0.00	532.01	-316.00	1.684
20	1.25	100	135	0.00	0.00	--	0.00	0.00	532.01	-315.49	1.686
21	1.35	100	135	0.00	0.00	--	0.00	0.00	532.01	-314.48	1.692
22	1.45	100	135	0.00	0.00	--	0.00	0.00	532.01	-312.97	1.700
23	1.55	100	135	0.00	0.00	--	0.00	0.00	532.01	-310.96	1.711
24	1.65	100	135	0.00	0.00	--	0.00	0.00	532.01	-308.45	1.725
25	1.75	100	135	0.00	0.00	--	0.00	0.00	532.01	-305.43	1.742
26	1.85	100	135	0.00	0.00	--	0.00	0.00	532.01	-301.92	1.762
27	1.95	100	135	0.00	0.00	--	0.00	0.00	532.01	-297.90	1.786
28	2.05	100	135	0.00	0.00	--	0.00	0.00	532.01	-293.38	1.813
29	2.15	100	135	0.00	0.00	--	0.00	0.00	532.01	-288.36	1.845
30	2.25	100	135	0.00	0.00	--	0.00	0.00	532.01	-282.84	1.881
31	2.35	100	135	0.00	0.00	--	0.00	0.00	532.01	-276.82	1.922
32	2.45	100	135	0.00	0.00	--	0.00	0.00	532.01	-270.30	1.968
33	2.55	100	135	0.00	0.00	--	0.00	0.00	532.01	-263.27	2.021
34	2.65	100	135	0.00	0.00	--	0.00	0.00	532.01	-255.75	2.080
35	2.75	100	135	0.00	0.00	--	0.00	0.00	532.01	-247.72	2.148
36	2.85	100	135	0.00	0.00	--	0.00	0.00	532.01	-239.19	2.224
37	2.95	100	135	0.00	0.00	--	0.00	0.00	532.01	-230.17	2.311
38	3.05	100	135	0.00	0.00	--	0.00	0.00	532.01	-220.64	2.411
39	3.15	100	135	0.00	0.00	--	0.00	0.00	532.01	-210.61	2.526
40	3.25	100	135	0.00	0.00	--	0.00	0.00	532.01	-200.07	2.659
41	3.35	100	135	0.00	0.00	--	0.00	0.00	532.01	-189.04	2.814
42	3.45	100	135	0.00	0.00	--	0.00	0.00	532.01	-177.51	2.997

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	Y	B	H	A <sub>sw</sub>	s	cotθ	V <sub>Rcd</sub>	V <sub>Rsd</sub>	V <sub>Rd</sub>	T	FS
	[m]	[cm]	[cm]	[cmq]	[cm]		[kN]	[kN]	[kN]	[kN]	
43	3.55	100	135	0.00	0.00	--	0.00	0.00	532.01	-165.47	3.215
44	3.65	100	135	0.00	0.00	--	0.00	0.00	532.01	-152.93	3.479
45	3.75	100	135	0.00	0.00	--	0.00	0.00	532.01	-139.89	3.803
46	3.85	100	135	0.00	0.00	--	0.00	0.00	532.01	-126.36	4.210
47	3.95	100	135	0.00	0.00	--	0.00	0.00	532.01	-112.32	4.737
48	4.05	100	135	0.00	0.00	--	0.00	0.00	532.01	-97.77	5.441
49	4.15	100	135	0.00	0.00	--	0.00	0.00	532.01	-82.73	6.431
50	4.25	100	135	0.00	0.00	--	0.00	0.00	532.01	-67.19	7.918
51	4.35	100	135	0.00	0.00	--	0.00	0.00	532.01	-51.14	10.403
52	4.45	100	135	0.00	0.00	--	0.00	0.00	532.01	-34.60	15.378
53	4.55	100	135	0.00	0.00	--	0.00	0.00	532.01	-17.55	30.317
54	4.65	100	135	0.00	0.00	--	0.00	0.00	532.01	0.00	100.000

**Combinazione n° 13 - ECC**

n°	Y	B	H	A <sub>sw</sub>	s	cotθ	V <sub>Rcd</sub>	V <sub>Rsd</sub>	V <sub>Rd</sub>	T	FS
	[m]	[cm]	[cm]	[cmq]	[cm]		[kN]	[kN]	[kN]	[kN]	
1	-1.85	100	135	0.00	0.00	--	0.00	0.00	532.01	0.00	100.000
2	-1.75	100	135	0.00	0.00	--	0.00	0.00	532.01	-20.81	25.565
3	-1.66	100	135	0.00	0.00	--	0.00	0.00	532.01	-41.47	12.829
4	-1.56	100	135	0.00	0.00	--	0.00	0.00	532.01	-61.98	8.584
5	-1.46	100	135	0.00	0.00	--	0.00	0.00	532.01	-82.33	6.462
6	-1.37	100	135	0.00	0.00	--	0.00	0.00	532.01	-102.54	5.188
7	-1.27	100	135	0.00	0.00	--	0.00	0.00	532.01	-122.59	4.340
8	-1.18	100	135	0.00	0.00	--	0.00	0.00	532.01	-142.49	3.734
9	-1.08	100	135	0.00	0.00	--	0.00	0.00	532.01	-162.25	3.279
10	-0.98	100	135	0.00	0.00	--	0.00	0.00	532.01	-181.85	2.926
11	-0.89	100	135	0.00	0.00	--	0.00	0.00	532.01	-201.29	2.643
12	-0.79	100	135	0.00	0.00	--	0.00	0.00	532.01	-220.59	2.412
13	-0.69	100	135	0.00	0.00	--	0.00	0.00	532.01	-239.74	2.219
14	-0.60	100	135	0.00	0.00	--	0.00	0.00	532.01	-258.73	2.056
15	-0.50	100	135	0.00	0.00	--	0.00	0.00	532.01	-277.58	1.917
16	0.85	100	135	0.00	0.00	--	0.00	0.00	532.01	-111.14	4.787
17	0.95	100	135	0.00	0.00	--	0.00	0.00	532.01	-111.23	4.783
18	1.05	100	135	0.00	0.00	--	0.00	0.00	532.01	-111.15	4.786
19	1.15	100	135	0.00	0.00	--	0.00	0.00	532.01	-110.91	4.797
20	1.25	100	135	0.00	0.00	--	0.00	0.00	532.01	-110.50	4.814
21	1.35	100	135	0.00	0.00	--	0.00	0.00	532.01	-109.94	4.839
22	1.45	100	135	0.00	0.00	--	0.00	0.00	532.01	-109.21	4.871
23	1.55	100	135	0.00	0.00	--	0.00	0.00	532.01	-108.32	4.912
24	1.65	100	135	0.00	0.00	--	0.00	0.00	532.01	-107.26	4.960
25	1.75	100	135	0.00	0.00	--	0.00	0.00	532.01	-106.05	5.017
26	1.85	100	135	0.00	0.00	--	0.00	0.00	532.01	-104.67	5.083
27	1.95	100	135	0.00	0.00	--	0.00	0.00	532.01	-103.13	5.159
28	2.05	100	135	0.00	0.00	--	0.00	0.00	532.01	-101.42	5.246
29	2.15	100	135	0.00	0.00	--	0.00	0.00	532.01	-99.55	5.344
30	2.25	100	135	0.00	0.00	--	0.00	0.00	532.01	-97.52	5.455
31	2.35	100	135	0.00	0.00	--	0.00	0.00	532.01	-95.33	5.581
32	2.45	100	135	0.00	0.00	--	0.00	0.00	532.01	-92.98	5.722
33	2.55	100	135	0.00	0.00	--	0.00	0.00	532.01	-90.46	5.881
34	2.65	100	135	0.00	0.00	--	0.00	0.00	532.01	-87.78	6.061
35	2.75	100	135	0.00	0.00	--	0.00	0.00	532.01	-84.93	6.264
36	2.85	100	135	0.00	0.00	--	0.00	0.00	532.01	-81.93	6.494
37	2.95	100	135	0.00	0.00	--	0.00	0.00	532.01	-78.76	6.755
38	3.05	100	135	0.00	0.00	--	0.00	0.00	532.01	-75.43	7.053
39	3.15	100	135	0.00	0.00	--	0.00	0.00	532.01	-71.93	7.396
40	3.25	100	135	0.00	0.00	--	0.00	0.00	532.01	-68.28	7.792
41	3.35	100	135	0.00	0.00	--	0.00	0.00	532.01	-64.46	8.254
42	3.45	100	135	0.00	0.00	--	0.00	0.00	532.01	-60.47	8.797
43	3.55	100	135	0.00	0.00	--	0.00	0.00	532.01	-56.33	9.445
44	3.65	100	135	0.00	0.00	--	0.00	0.00	532.01	-52.02	10.227
45	3.75	100	135	0.00	0.00	--	0.00	0.00	532.01	-47.55	11.188
46	3.85	100	135	0.00	0.00	--	0.00	0.00	532.01	-42.92	12.396
47	3.95	100	135	0.00	0.00	--	0.00	0.00	532.01	-38.12	13.955
48	4.05	100	135	0.00	0.00	--	0.00	0.00	532.01	-33.17	16.041
49	4.15	100	135	0.00	0.00	--	0.00	0.00	532.01	-28.04	18.970
50	4.25	100	135	0.00	0.00	--	0.00	0.00	532.01	-22.76	23.374

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	Y	B	H	A <sub>sw</sub>	s	cotθ	V <sub>Rcd</sub>	V <sub>Rsd</sub>	V <sub>Rd</sub>	T	FS
	[m]	[cm]	[cm]	[cmq]	[cm]		[kN]	[kN]	[kN]	[kN]	
51	4.35	100	135	0.00	0.00	--	0.00	0.00	532.01	-17.31	30.726
52	4.45	100	135	0.00	0.00	--	0.00	0.00	532.01	-11.71	45.449
53	4.55	100	135	0.00	0.00	--	0.00	0.00	532.01	-5.93	89.652
54	4.65	100	135	0.00	0.00	--	0.00	0.00	532.01	0.00	100.000

**Verifica a fessurazione****Simbologia adottata**

n°	indice sezione
Y	ordinata sezione espressa in [m]
B	larghezza sezione espressa in [cm]
H	altezza sezione espressa in [cm]
A <sub>f</sub>	area ferri zona tesa espresso in [cmq]
A <sub>eff</sub>	area efficace espressa in [cmq]
M	momento agente espressa in [kNm]
M <sub>pf</sub>	momento di prima fessurazione espressa in [kNm]
ε	deformazione espresso in %
S <sub>m</sub>	spaziatura tra le fessure espressa in [mm]
w	apertura delle fessure espressa in [mm]

**Combinazioni SLEF**ParamentoCombinazione n° 15 - SLEFApertura limite fessure w<sub>lim</sub>=0.30

n°	Y	B	H	A <sub>f</sub>	A <sub>eff</sub>	M	M <sub>pf</sub>	ε	S <sub>m</sub>	w
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kNm]	[%]	[mm]	[mm]
1	0.00	100	50	25.13	1125.00	0.38	579.97	0.0000	0.00	0.000
2	-0.10	100	51	0.00	0.00	0.39	14265.09	0.0000	0.00	0.000
3	-0.20	100	52	0.00	0.00	0.40	622.63	0.0000	0.00	0.000
4	-0.30	100	53	0.00	0.00	0.43	368.11	0.0000	0.00	0.000
5	-0.40	100	54	0.00	0.00	0.48	302.60	0.0000	0.00	0.000
6	-0.50	100	55	0.00	0.00	0.56	294.73	0.0000	0.00	0.000
7	-0.60	100	56	0.00	0.00	0.66	322.41	0.0000	0.00	0.000
8	-0.70	100	57	0.00	0.00	0.80	386.80	0.0000	0.00	0.000
9	-0.80	100	58	0.00	0.00	0.98	505.82	0.0000	0.00	0.000
10	-0.90	100	59	0.00	0.00	1.21	731.87	0.0000	0.00	0.000
11	-1.00	100	59	0.00	0.00	1.48	1245.48	0.0000	0.00	0.000
12	-1.10	100	60	0.00	0.00	1.81	3250.22	0.0000	0.00	0.000
13	-1.20	100	61	0.00	0.00	2.19	8705.01	0.0000	0.00	0.000
14	-1.30	100	62	0.00	0.00	2.64	2133.33	0.0000	0.00	0.000
15	-1.40	100	63	25.13	1125.00	3.16	1313.15	0.0000	0.00	0.000
16	-1.50	100	64	25.13	1125.00	3.76	998.29	0.0000	0.00	0.000
17	-1.60	100	65	25.13	1125.00	4.43	835.10	0.0000	0.00	0.000
18	-1.70	100	66	25.13	1125.00	5.18	737.44	0.0000	0.00	0.000
19	-1.80	100	67	25.13	1125.00	6.02	673.98	0.0000	0.00	0.000
20	-1.90	100	68	25.13	1125.00	6.96	630.60	0.0000	0.00	0.000
21	-2.00	100	69	25.13	1125.00	7.99	600.02	0.0000	0.00	0.000

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## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

n°	Y	B	H	Af	Aeff	M	Mpf	ε	Sm	w
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kNm]	[%]	[mm]	[mm]
22	-2.10	100	70	25.13	1125.00	9.12	578.10	0.0000	0.00	0.000
23	-2.20	100	71	25.13	1125.00	10.37	562.31	0.0000	0.00	0.000
24	-2.30	100	72	25.13	1125.00	11.72	551.02	0.0000	0.00	0.000
25	-2.40	100	73	25.13	1125.00	13.19	543.15	0.0000	0.00	0.000
26	-2.50	100	74	25.13	1125.00	14.78	537.93	0.0000	0.00	0.000
27	-2.60	100	75	25.13	1125.00	16.50	534.82	0.0000	0.00	0.000
28	-2.70	100	76	25.13	1125.00	18.35	533.40	0.0000	0.00	0.000
29	-2.80	100	76	25.13	1125.00	20.34	533.39	0.0000	0.00	0.000
30	-2.90	100	77	25.13	1125.00	22.47	534.54	0.0000	0.00	0.000
31	-3.00	100	78	25.13	1125.00	24.74	536.69	0.0000	0.00	0.000
32	-3.10	100	79	25.13	1125.00	27.17	539.67	0.0000	0.00	0.000
33	-3.20	100	80	25.13	1125.00	29.75	543.39	0.0000	0.00	0.000
34	-3.30	100	81	25.13	1125.00	32.49	547.75	0.0000	0.00	0.000
35	-3.40	100	82	25.13	1125.00	35.40	552.67	0.0000	0.00	0.000
36	-3.50	100	83	25.13	1125.00	38.47	558.09	0.0000	0.00	0.000
37	-3.60	100	84	25.13	1125.00	41.73	563.97	0.0000	0.00	0.000
38	-3.70	100	85	25.13	1125.00	45.16	570.25	0.0000	0.00	0.000
39	-3.80	100	86	25.13	1125.00	48.77	576.90	0.0000	0.00	0.000
40	-3.90	100	87	25.13	1125.00	52.58	583.88	0.0000	0.00	0.000
41	-4.00	100	88	25.13	1125.00	56.58	591.19	0.0000	0.00	0.000
42	-4.10	100	89	25.13	1125.00	60.78	598.77	0.0000	0.00	0.000
43	-4.20	100	90	25.13	1125.00	65.18	606.63	0.0000	0.00	0.000
44	-4.30	100	91	25.13	1125.00	69.79	614.74	0.0000	0.00	0.000
45	-4.40	100	92	25.13	1125.00	74.61	623.09	0.0000	0.00	0.000
46	-4.50	100	93	25.13	1125.00	79.66	631.66	0.0000	0.00	0.000
47	-4.60	100	93	25.13	1125.00	84.92	640.44	0.0000	0.00	0.000
48	-4.70	100	94	25.13	1125.00	90.42	649.43	0.0000	0.00	0.000
49	-4.80	100	95	25.13	1125.00	96.15	658.61	0.0000	0.00	0.000
50	-4.90	100	96	25.13	1125.00	102.11	667.97	0.0000	0.00	0.000
51	-5.00	100	97	25.13	1125.00	108.32	677.51	0.0000	0.00	0.000
52	-5.10	100	98	25.13	1125.00	114.78	687.22	0.0000	0.00	0.000
53	-5.20	100	99	25.13	1125.00	121.48	697.09	0.0000	0.00	0.000
54	-5.30	100	100	25.13	1125.00	128.45	707.13	0.0000	0.00	0.000
55	-5.40	100	101	25.13	1125.00	135.68	717.32	0.0000	0.00	0.000
56	-5.50	100	102	25.13	1125.00	143.17	727.66	0.0000	0.00	0.000
57	-5.60	100	103	25.13	1125.00	150.93	738.14	0.0000	0.00	0.000
58	-5.70	100	104	25.13	1125.00	158.98	748.77	0.0000	0.00	0.000
59	-5.80	100	105	25.13	1125.00	167.30	759.54	0.0000	0.00	0.000
60	-5.90	100	106	25.13	1125.00	175.91	770.45	0.0000	0.00	0.000
61	-6.00	100	107	25.13	1125.00	184.81	781.49	0.0000	0.00	0.000
62	-6.10	100	108	25.13	1125.00	194.00	792.66	0.0000	0.00	0.000
63	-6.20	100	109	25.13	1125.00	203.50	803.97	0.0000	0.00	0.000
64	-6.30	100	110	25.13	1125.00	213.30	815.40	0.0000	0.00	0.000
65	-6.40	100	110	25.13	1125.00	223.41	826.95	0.0000	0.00	0.000
66	-6.50	100	111	25.13	1125.00	233.84	838.63	0.0000	0.00	0.000
67	-6.60	100	112	25.13	1125.00	244.59	850.43	0.0000	0.00	0.000
68	-6.70	100	113	25.13	1125.00	255.66	862.36	0.0000	0.00	0.000
69	-6.80	100	114	25.13	1125.00	267.06	874.40	0.0000	0.00	0.000
70	-6.90	100	115	25.13	1125.00	278.80	886.56	0.0000	0.00	0.000
71	-7.00	100	116	25.13	1125.00	290.87	898.83	0.0000	0.00	0.000
72	-7.10	100	117	25.13	1125.00	303.29	911.23	0.0000	0.00	0.000
73	-7.20	100	118	25.13	1125.00	316.06	923.73	0.0000	0.00	0.000
74	-7.30	100	119	25.13	1125.00	329.18	936.35	0.0000	0.00	0.000
75	-7.40	100	120	25.13	1125.00	342.66	949.09	0.0000	0.00	0.000
76	-7.50	100	121	25.13	1125.00	356.50	961.93	0.0000	0.00	0.000
77	-7.60	100	122	25.13	1125.00	370.72	974.89	0.0000	0.00	0.000
78	-7.70	100	123	25.13	1125.00	385.30	987.95	0.0000	0.00	0.000
79	-7.80	100	124	50.27	1125.00	400.26	1095.28	0.0000	0.00	0.000
80	-7.90	100	125	50.27	1125.00	415.61	1109.28	0.0000	0.00	0.000
81	-8.00	100	126	50.27	1125.00	431.34	1123.38	0.0000	0.00	0.000
82	-8.10	100	127	50.27	1125.00	447.47	1137.60	0.0000	0.00	0.000
83	-8.20	100	128	50.27	1125.00	463.99	1151.93	0.0000	0.00	0.000
84	-8.30	100	128	25.13	1125.00	480.92	1033.46	0.0000	0.00	0.000
85	-8.40	100	129	25.13	1125.00	498.25	1082.45	0.0000	0.00	0.000
86	-8.50	100	130	25.13	1125.00	515.99	1096.38	0.0000	0.00	0.000
87	-8.60	100	131	25.13	1125.00	534.15	1110.41	0.0000	0.00	0.000
88	-8.70	100	132	25.13	1125.00	552.74	1124.55	0.0000	0.00	0.000
89	-8.80	100	133	25.13	1125.00	571.74	1138.79	0.0000	0.00	0.000
90	-8.90	100	134	25.13	1125.00	591.18	1153.13	0.0000	0.00	0.000
91	-9.00	100	135	25.13	1125.00	611.06	1167.58	0.0000	0.00	0.000

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**Mensola valleCombinazione n° 15 - SLEFApertura limite fessure  $w_{lim}=0.30$ 

n°	Y	B	H	Af	Aeff	M	Mpf	$\varepsilon$	Sm	w
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kNm]	[%]	[mm]	[mm]
1	-0.75	100	50	0.00	0.00	0.00	0.00	0.0000	0.00	0.000
2	-0.67	100	50	0.00	0.00	-0.04	0.00	0.0000	0.00	0.000
3	-0.58	100	50	10.18	1125.00	-0.17	-146.40	0.0000	0.00	0.000
4	-0.50	100	50	10.18	1125.00	-0.38	-146.40	0.0000	0.00	0.000

FondazioneCombinazione n° 15 - SLEFApertura limite fessure  $w_{lim}=0.30$ 

n°	Y	B	H	Af	Aeff	M	Mpf	$\varepsilon$	Sm	w
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kNm]	[%]	[mm]	[mm]
1	-1.85	100	135	0.00	0.00	0.00	0.00	0.0000	0.00	0.000
2	-1.75	100	135	27.99	1125.00	0.76	1104.69	0.0000	0.00	0.000
3	-1.66	100	135	27.99	1125.00	3.03	1104.69	0.0000	0.00	0.000
4	-1.56	100	135	27.99	1125.00	6.82	1104.69	0.0000	0.00	0.000
5	-1.46	100	135	27.99	1125.00	12.12	1104.69	0.0000	0.00	0.000
6	-1.37	100	135	27.99	1125.00	18.94	1104.69	0.0000	0.00	0.000
7	-1.27	100	135	27.99	1125.00	27.28	1104.69	0.0000	0.00	0.000
8	-1.18	100	135	27.99	1125.00	37.13	1104.69	0.0000	0.00	0.000
9	-1.08	100	135	27.99	1125.00	48.50	1104.69	0.0000	0.00	0.000
10	-0.98	100	135	27.99	1125.00	61.38	1104.69	0.0000	0.00	0.000
11	-0.89	100	135	27.99	1125.00	75.79	1104.69	0.0000	0.00	0.000
12	-0.79	100	135	27.99	1125.00	91.71	1104.69	0.0000	0.00	0.000
13	-0.69	100	135	27.99	1125.00	109.14	1104.69	0.0000	0.00	0.000
14	-0.60	100	135	27.99	1125.00	128.10	1104.69	0.0000	0.00	0.000
15	-0.50	100	135	27.99	1125.00	148.57	1104.69	0.0000	0.00	0.000
16	0.85	100	135	27.99	1125.00	-49.10	-1104.69	0.0000	0.00	0.000
17	0.95	100	135	27.99	1125.00	-46.50	-1104.69	0.0000	0.00	0.000
18	1.05	100	135	27.99	1125.00	-43.96	-1104.69	0.0000	0.00	0.000
19	1.15	100	135	27.99	1125.00	-41.51	-1104.69	0.0000	0.00	0.000
20	1.25	100	135	27.99	1125.00	-39.12	-1104.69	0.0000	0.00	0.000
21	1.35	100	135	27.99	1125.00	-36.81	-1104.69	0.0000	0.00	0.000
22	1.45	100	135	27.99	1125.00	-34.57	-1104.69	0.0000	0.00	0.000
23	1.55	100	135	27.99	1125.00	-32.41	-1104.69	0.0000	0.00	0.000
24	1.65	100	135	27.99	1125.00	-30.31	-1104.69	0.0000	0.00	0.000
25	1.75	100	135	27.99	1125.00	-28.29	-1104.69	0.0000	0.00	0.000
26	1.85	100	135	27.99	1125.00	-26.34	-1104.69	0.0000	0.00	0.000
27	1.95	100	135	27.99	1125.00	-24.46	-1104.69	0.0000	0.00	0.000
28	2.05	100	135	27.99	1125.00	-22.66	-1104.69	0.0000	0.00	0.000
29	2.15	100	135	27.99	1125.00	-20.92	-1104.69	0.0000	0.00	0.000
30	2.25	100	135	27.99	1125.00	-19.26	-1104.69	0.0000	0.00	0.000
31	2.35	100	135	27.99	1125.00	-17.67	-1104.69	0.0000	0.00	0.000
32	2.45	100	135	27.99	1125.00	-16.15	-1104.69	0.0000	0.00	0.000
33	2.55	100	135	27.99	1125.00	-14.69	-1104.69	0.0000	0.00	0.000
34	2.65	100	135	27.99	1125.00	-13.31	-1104.69	0.0000	0.00	0.000
35	2.75	100	135	27.99	1125.00	-12.00	-1104.69	0.0000	0.00	0.000
36	2.85	100	135	27.99	1125.00	-10.76	-1104.69	0.0000	0.00	0.000
37	2.95	100	135	27.99	1125.00	-9.58	-1104.69	0.0000	0.00	0.000
38	3.05	100	135	27.99	1125.00	-8.48	-1104.69	0.0000	0.00	0.000

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	Y	B	H	Af	Aeff	M	Mpf	ε	Sm	w
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kNm]	[%]	[mm]	[mm]
39	3.15	100	135	27.99	1125.00	-7.44	-1104.69	0.0000	0.00	0.000
40	3.25	100	135	27.99	1125.00	-6.47	-1104.69	0.0000	0.00	0.000
41	3.35	100	135	27.99	1125.00	-5.58	-1104.69	0.0000	0.00	0.000
42	3.45	100	135	27.99	1125.00	-4.75	-1104.69	0.0000	0.00	0.000
43	3.55	100	135	27.99	1125.00	-3.98	-1104.69	0.0000	0.00	0.000
44	3.65	100	135	27.99	1125.00	-3.29	-1104.69	0.0000	0.00	0.000
45	3.75	100	135	27.99	1125.00	-2.66	-1104.69	0.0000	0.00	0.000
46	3.85	100	135	27.99	1125.00	-2.10	-1104.69	0.0000	0.00	0.000
47	3.95	100	135	27.99	1125.00	-1.60	-1104.69	0.0000	0.00	0.000
48	4.05	100	135	27.99	1125.00	-1.18	-1104.69	0.0000	0.00	0.000
49	4.15	100	135	27.99	1125.00	-0.82	-1104.69	0.0000	0.00	0.000
50	4.25	100	135	27.99	1125.00	-0.52	-1104.69	0.0000	0.00	0.000
51	4.35	100	135	27.99	1125.00	-0.29	-1104.69	0.0000	0.00	0.000
52	4.45	100	135	27.99	1125.00	-0.13	-1104.69	0.0000	0.00	0.000
53	4.55	100	135	0.00	0.00	-0.03	0.00	0.0000	0.00	0.000
54	4.65	100	135	0.00	0.00	0.00	0.00	0.0000	0.00	0.000

**Combinazioni SLEQ**ParamentoCombinazione n° 16 - SLEQApertura limite fessure  $w_{lim}=0.20$ 

n°	Y	B	H	Af	Aeff	M	Mpf	ε	Sm	w
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kNm]	[%]	[mm]	[mm]
1	0.00	100	50	25.13	1125.00	0.38	579.97	0.0000	0.00	0.000
2	-0.10	100	51	0.00	0.00	0.39	14265.09	0.0000	0.00	0.000
3	-0.20	100	52	0.00	0.00	0.40	622.63	0.0000	0.00	0.000
4	-0.30	100	53	0.00	0.00	0.43	368.11	0.0000	0.00	0.000
5	-0.40	100	54	0.00	0.00	0.48	302.60	0.0000	0.00	0.000
6	-0.50	100	55	0.00	0.00	0.56	294.73	0.0000	0.00	0.000
7	-0.60	100	56	0.00	0.00	0.66	322.41	0.0000	0.00	0.000
8	-0.70	100	57	0.00	0.00	0.80	386.80	0.0000	0.00	0.000
9	-0.80	100	58	0.00	0.00	0.98	505.82	0.0000	0.00	0.000
10	-0.90	100	59	0.00	0.00	1.21	731.87	0.0000	0.00	0.000
11	-1.00	100	59	0.00	0.00	1.48	1245.48	0.0000	0.00	0.000
12	-1.10	100	60	0.00	0.00	1.81	3250.22	0.0000	0.00	0.000
13	-1.20	100	61	0.00	0.00	2.19	8705.01	0.0000	0.00	0.000
14	-1.30	100	62	0.00	0.00	2.64	2133.33	0.0000	0.00	0.000
15	-1.40	100	63	25.13	1125.00	3.16	1313.15	0.0000	0.00	0.000
16	-1.50	100	64	25.13	1125.00	3.76	998.29	0.0000	0.00	0.000
17	-1.60	100	65	25.13	1125.00	4.43	835.10	0.0000	0.00	0.000
18	-1.70	100	66	25.13	1125.00	5.18	737.44	0.0000	0.00	0.000
19	-1.80	100	67	25.13	1125.00	6.02	673.98	0.0000	0.00	0.000
20	-1.90	100	68	25.13	1125.00	6.96	630.60	0.0000	0.00	0.000
21	-2.00	100	69	25.13	1125.00	7.99	600.02	0.0000	0.00	0.000
22	-2.10	100	70	25.13	1125.00	9.12	578.10	0.0000	0.00	0.000
23	-2.20	100	71	25.13	1125.00	10.37	562.31	0.0000	0.00	0.000
24	-2.30	100	72	25.13	1125.00	11.72	551.02	0.0000	0.00	0.000
25	-2.40	100	73	25.13	1125.00	13.19	543.15	0.0000	0.00	0.000
26	-2.50	100	74	25.13	1125.00	14.78	537.93	0.0000	0.00	0.000
27	-2.60	100	75	25.13	1125.00	16.50	534.82	0.0000	0.00	0.000
28	-2.70	100	76	25.13	1125.00	18.35	533.40	0.0000	0.00	0.000
29	-2.80	100	76	25.13	1125.00	20.34	533.39	0.0000	0.00	0.000
30	-2.90	100	77	25.13	1125.00	22.47	534.54	0.0000	0.00	0.000
31	-3.00	100	78	25.13	1125.00	24.74	536.69	0.0000	0.00	0.000
32	-3.10	100	79	25.13	1125.00	27.17	539.67	0.0000	0.00	0.000
33	-3.20	100	80	25.13	1125.00	29.75	543.39	0.0000	0.00	0.000

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## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

n°	Y	B	H	Af	Aeff	M	Mpf	$\varepsilon$	Sm	w
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kNm]	[%]	[mm]	[mm]
34	-3.30	100	81	25.13	1125.00	32.49	547.75	0.0000	0.00	0.000
35	-3.40	100	82	25.13	1125.00	35.40	552.67	0.0000	0.00	0.000
36	-3.50	100	83	25.13	1125.00	38.47	558.09	0.0000	0.00	0.000
37	-3.60	100	84	25.13	1125.00	41.73	563.97	0.0000	0.00	0.000
38	-3.70	100	85	25.13	1125.00	45.16	570.25	0.0000	0.00	0.000
39	-3.80	100	86	25.13	1125.00	48.77	576.90	0.0000	0.00	0.000
40	-3.90	100	87	25.13	1125.00	52.58	583.88	0.0000	0.00	0.000
41	-4.00	100	88	25.13	1125.00	56.58	591.19	0.0000	0.00	0.000
42	-4.10	100	89	25.13	1125.00	60.78	598.77	0.0000	0.00	0.000
43	-4.20	100	90	25.13	1125.00	65.18	606.63	0.0000	0.00	0.000
44	-4.30	100	91	25.13	1125.00	69.79	614.74	0.0000	0.00	0.000
45	-4.40	100	92	25.13	1125.00	74.61	623.09	0.0000	0.00	0.000
46	-4.50	100	93	25.13	1125.00	79.66	631.66	0.0000	0.00	0.000
47	-4.60	100	93	25.13	1125.00	84.92	640.44	0.0000	0.00	0.000
48	-4.70	100	94	25.13	1125.00	90.42	649.43	0.0000	0.00	0.000
49	-4.80	100	95	25.13	1125.00	96.15	658.61	0.0000	0.00	0.000
50	-4.90	100	96	25.13	1125.00	102.11	667.97	0.0000	0.00	0.000
51	-5.00	100	97	25.13	1125.00	108.32	677.51	0.0000	0.00	0.000
52	-5.10	100	98	25.13	1125.00	114.78	687.22	0.0000	0.00	0.000
53	-5.20	100	99	25.13	1125.00	121.48	697.09	0.0000	0.00	0.000
54	-5.30	100	100	25.13	1125.00	128.45	707.13	0.0000	0.00	0.000
55	-5.40	100	101	25.13	1125.00	135.68	717.32	0.0000	0.00	0.000
56	-5.50	100	102	25.13	1125.00	143.17	727.66	0.0000	0.00	0.000
57	-5.60	100	103	25.13	1125.00	150.93	738.14	0.0000	0.00	0.000
58	-5.70	100	104	25.13	1125.00	158.98	748.77	0.0000	0.00	0.000
59	-5.80	100	105	25.13	1125.00	167.30	759.54	0.0000	0.00	0.000
60	-5.90	100	106	25.13	1125.00	175.91	770.45	0.0000	0.00	0.000
61	-6.00	100	107	25.13	1125.00	184.81	781.49	0.0000	0.00	0.000
62	-6.10	100	108	25.13	1125.00	194.00	792.66	0.0000	0.00	0.000
63	-6.20	100	109	25.13	1125.00	203.50	803.97	0.0000	0.00	0.000
64	-6.30	100	110	25.13	1125.00	213.30	815.40	0.0000	0.00	0.000
65	-6.40	100	110	25.13	1125.00	223.41	826.95	0.0000	0.00	0.000
66	-6.50	100	111	25.13	1125.00	233.84	838.63	0.0000	0.00	0.000
67	-6.60	100	112	25.13	1125.00	244.59	850.43	0.0000	0.00	0.000
68	-6.70	100	113	25.13	1125.00	255.66	862.36	0.0000	0.00	0.000
69	-6.80	100	114	25.13	1125.00	267.06	874.40	0.0000	0.00	0.000
70	-6.90	100	115	25.13	1125.00	278.80	886.56	0.0000	0.00	0.000
71	-7.00	100	116	25.13	1125.00	290.87	898.83	0.0000	0.00	0.000
72	-7.10	100	117	25.13	1125.00	303.29	911.23	0.0000	0.00	0.000
73	-7.20	100	118	25.13	1125.00	316.06	923.73	0.0000	0.00	0.000
74	-7.30	100	119	25.13	1125.00	329.18	936.35	0.0000	0.00	0.000
75	-7.40	100	120	25.13	1125.00	342.66	949.09	0.0000	0.00	0.000
76	-7.50	100	121	25.13	1125.00	356.50	961.93	0.0000	0.00	0.000
77	-7.60	100	122	25.13	1125.00	370.72	974.89	0.0000	0.00	0.000
78	-7.70	100	123	25.13	1125.00	385.30	987.95	0.0000	0.00	0.000
79	-7.80	100	124	50.27	1125.00	400.26	1095.28	0.0000	0.00	0.000
80	-7.90	100	125	50.27	1125.00	415.61	1109.28	0.0000	0.00	0.000
81	-8.00	100	126	50.27	1125.00	431.34	1123.38	0.0000	0.00	0.000
82	-8.10	100	127	50.27	1125.00	447.47	1137.60	0.0000	0.00	0.000
83	-8.20	100	128	50.27	1125.00	463.99	1151.93	0.0000	0.00	0.000
84	-8.30	100	128	25.13	1125.00	480.92	1033.46	0.0000	0.00	0.000
85	-8.40	100	129	25.13	1125.00	498.25	1082.45	0.0000	0.00	0.000
86	-8.50	100	130	25.13	1125.00	515.99	1096.38	0.0000	0.00	0.000
87	-8.60	100	131	25.13	1125.00	534.15	1110.41	0.0000	0.00	0.000
88	-8.70	100	132	25.13	1125.00	552.74	1124.55	0.0000	0.00	0.000
89	-8.80	100	133	25.13	1125.00	571.74	1138.79	0.0000	0.00	0.000
90	-8.90	100	134	25.13	1125.00	591.18	1153.13	0.0000	0.00	0.000
91	-9.00	100	135	25.13	1125.00	611.06	1167.58	0.0000	0.00	0.000

Mensola valle

Combinazione n° 16 - SLEQ

Apertura limite fessure  $w_{lim}=0.20$

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	Y	B	H	Af	Aeff	M	Mpf	ε	Sm	w
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kNm]	[%]	[mm]	[mm]
1	-0.75	100	50	0.00	0.00	0.00	0.00	0.0000	0.00	0.000
2	-0.67	100	50	0.00	0.00	-0.04	0.00	0.0000	0.00	0.000
3	-0.58	100	50	10.18	1125.00	-0.17	-146.40	0.0000	0.00	0.000
4	-0.50	100	50	10.18	1125.00	-0.38	-146.40	0.0000	0.00	0.000

FondazioneCombinazione n° 16 - SLEQApertura limite fessure  $w_{lim}=0.20$ 

n°	Y	B	H	Af	Aeff	M	Mpf	ε	Sm	w
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kNm]	[%]	[mm]	[mm]
1	-1.85	100	135	0.00	0.00	0.00	0.00	0.0000	0.00	0.000
2	-1.75	100	135	27.99	1125.00	0.76	1104.69	0.0000	0.00	0.000
3	-1.66	100	135	27.99	1125.00	3.03	1104.69	0.0000	0.00	0.000
4	-1.56	100	135	27.99	1125.00	6.82	1104.69	0.0000	0.00	0.000
5	-1.46	100	135	27.99	1125.00	12.12	1104.69	0.0000	0.00	0.000
6	-1.37	100	135	27.99	1125.00	18.94	1104.69	0.0000	0.00	0.000
7	-1.27	100	135	27.99	1125.00	27.28	1104.69	0.0000	0.00	0.000
8	-1.18	100	135	27.99	1125.00	37.13	1104.69	0.0000	0.00	0.000
9	-1.08	100	135	27.99	1125.00	48.50	1104.69	0.0000	0.00	0.000
10	-0.98	100	135	27.99	1125.00	61.38	1104.69	0.0000	0.00	0.000
11	-0.89	100	135	27.99	1125.00	75.79	1104.69	0.0000	0.00	0.000
12	-0.79	100	135	27.99	1125.00	91.71	1104.69	0.0000	0.00	0.000
13	-0.69	100	135	27.99	1125.00	109.14	1104.69	0.0000	0.00	0.000
14	-0.60	100	135	27.99	1125.00	128.10	1104.69	0.0000	0.00	0.000
15	-0.50	100	135	27.99	1125.00	148.57	1104.69	0.0000	0.00	0.000
16	0.85	100	135	27.99	1125.00	-49.10	-1104.69	0.0000	0.00	0.000
17	0.95	100	135	27.99	1125.00	-46.50	-1104.69	0.0000	0.00	0.000
18	1.05	100	135	27.99	1125.00	-43.96	-1104.69	0.0000	0.00	0.000
19	1.15	100	135	27.99	1125.00	-41.51	-1104.69	0.0000	0.00	0.000
20	1.25	100	135	27.99	1125.00	-39.12	-1104.69	0.0000	0.00	0.000
21	1.35	100	135	27.99	1125.00	-36.81	-1104.69	0.0000	0.00	0.000
22	1.45	100	135	27.99	1125.00	-34.57	-1104.69	0.0000	0.00	0.000
23	1.55	100	135	27.99	1125.00	-32.41	-1104.69	0.0000	0.00	0.000
24	1.65	100	135	27.99	1125.00	-30.31	-1104.69	0.0000	0.00	0.000
25	1.75	100	135	27.99	1125.00	-28.29	-1104.69	0.0000	0.00	0.000
26	1.85	100	135	27.99	1125.00	-26.34	-1104.69	0.0000	0.00	0.000
27	1.95	100	135	27.99	1125.00	-24.46	-1104.69	0.0000	0.00	0.000
28	2.05	100	135	27.99	1125.00	-22.66	-1104.69	0.0000	0.00	0.000
29	2.15	100	135	27.99	1125.00	-20.92	-1104.69	0.0000	0.00	0.000
30	2.25	100	135	27.99	1125.00	-19.26	-1104.69	0.0000	0.00	0.000
31	2.35	100	135	27.99	1125.00	-17.67	-1104.69	0.0000	0.00	0.000
32	2.45	100	135	27.99	1125.00	-16.15	-1104.69	0.0000	0.00	0.000
33	2.55	100	135	27.99	1125.00	-14.69	-1104.69	0.0000	0.00	0.000
34	2.65	100	135	27.99	1125.00	-13.31	-1104.69	0.0000	0.00	0.000
35	2.75	100	135	27.99	1125.00	-12.00	-1104.69	0.0000	0.00	0.000
36	2.85	100	135	27.99	1125.00	-10.76	-1104.69	0.0000	0.00	0.000
37	2.95	100	135	27.99	1125.00	-9.58	-1104.69	0.0000	0.00	0.000
38	3.05	100	135	27.99	1125.00	-8.48	-1104.69	0.0000	0.00	0.000
39	3.15	100	135	27.99	1125.00	-7.44	-1104.69	0.0000	0.00	0.000
40	3.25	100	135	27.99	1125.00	-6.47	-1104.69	0.0000	0.00	0.000
41	3.35	100	135	27.99	1125.00	-5.58	-1104.69	0.0000	0.00	0.000
42	3.45	100	135	27.99	1125.00	-4.75	-1104.69	0.0000	0.00	0.000
43	3.55	100	135	27.99	1125.00	-3.98	-1104.69	0.0000	0.00	0.000
44	3.65	100	135	27.99	1125.00	-3.29	-1104.69	0.0000	0.00	0.000
45	3.75	100	135	27.99	1125.00	-2.66	-1104.69	0.0000	0.00	0.000
46	3.85	100	135	27.99	1125.00	-2.10	-1104.69	0.0000	0.00	0.000
47	3.95	100	135	27.99	1125.00	-1.60	-1104.69	0.0000	0.00	0.000
48	4.05	100	135	27.99	1125.00	-1.18	-1104.69	0.0000	0.00	0.000
49	4.15	100	135	27.99	1125.00	-0.82	-1104.69	0.0000	0.00	0.000



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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	Y	B	H	Af	Aeff	M	Mpf	$\varepsilon$	Sm	w
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kNm]	[%]	[mm]	[mm]
50	4.25	100	135	27.99	1125.00	-0.52	-1104.69	0.0000	0.00	0.000
51	4.35	100	135	27.99	1125.00	-0.29	-1104.69	0.0000	0.00	0.000
52	4.45	100	135	27.99	1125.00	-0.13	-1104.69	0.0000	0.00	0.000
53	4.55	100	135	0.00	0.00	-0.03	0.00	0.0000	0.00	0.000
54	4.65	100	135	0.00	0.00	0.00	0.00	0.0000	0.00	0.000

**Elenco ferri**

## Simbologia adottata

n°	Indice del ferro
nf	numero ferri
D	diametro ferro espresso in [mm]
L	Lunghezza ferro espresso in [m]
P <sub>ferro</sub>	Peso ferro espresso in [kN]

*Paramento*

n°	Tipo	nf	D [mm]	L [m]	P <sub>f</sub> [kN]	P <sub>gf</sub> [kN]	V <sub>cls</sub> [mc]
1	Diritto inferiore	5	20.00	2.74	0.0662	0.3309	
2	Diritto superiore	8	20.00	3.33	0.0805	0.6438	
3	Diritto superiore	8	20.00	10.00	0.2419	1.9353	
4	Diritto inferiore	5	20.00	10.19	0.2463	1.2317	
5	Ripartitore	40	12.00	1.00	0.0087	0.3483	
<b>Totale al metro</b>						<b>4.8383</b>	<b>8.45</b>
<b>Totale</b>						<b>457.85</b>	<b>8.45</b>

*Fondazione*

n°	Tipo	nf	D [mm]	L [m]	P <sub>f</sub> [kN]	P <sub>gf</sub> [kN]	V <sub>cls</sub> [mc]
1	Diritto superiore	11	18.00	7.83	0.1534	1.6879	
2	Diritto inferiore	11	18.00	7.83	0.1534	1.6879	
3	Ripartitore	26	12.00	1.00	0.0087	0.2264	
<b>Totale al metro</b>						<b>3.8285</b>	<b>8.78</b>
<b>Totale</b>						<b>367.31</b>	<b>8.78</b>

*Mensola valle*

n°	Tipo	nf	D [mm]	L [m]	P <sub>f</sub> [kN]	P <sub>gf</sub> [kN]	V <sub>cls</sub> [mc]
1	Diritto inferiore	4	18.00	1.69	0.0331	0.1324	
2	Diritto superiore	4	18.00	1.69	0.0331	0.1324	
3	Ripartitore	2	12.00	1.00	0.0087	0.0174	
<b>Totale al metro</b>						<b>3.8285</b>	<b>8.78</b>
<b>Totale</b>						<b>367.31</b>	<b>8.78</b>

## 17 ALLEGATO 8 – TABULATI DI CALCOLO - MURO DI SOSTEGNO H10

### Geometria profilo terreno a monte del muro

#### Simbologia adottata

(Sistema di riferimento con origine in testa al muro, ascissa X positiva verso monte, ordinata Y positiva verso l'alto)

n°	numero ordine del punto
X	ascissa del punto espressa in [m]
Y	ordinata del punto espressa in [m]
A	inclinazione del tratto espressa in [°]

n°	X	Y	A
	[m]	[m]	[°]
1	0.00	0.00	0.000
2	1.75	0.00	0.000
3	20.00	0.00	0.000

Inclinazione terreno a valle del muro rispetto all'orizzontale 0.000 [°]

### Falda

#### Simbologia adottata

(Sistema di riferimento con origine in testa al muro, ascissa X positiva verso monte, ordinata Y positiva verso l'alto)

n°	numero ordine del punto
X	ascissa del punto espressa in [m]
Y	ordinata del punto espressa in [m]
A	inclinazione del tratto espressa in [°]

n°	X	Y	A
	[m]	[m]	[°]
1	-4.00	-11.45	0.000
2	20.00	-11.45	0.000

### Geometria muro

#### *Geometria paramento e fondazione*

##### Paramento

Materiale	C32/40	
Altezza paramento	10.00	[m]
Altezza paramento libero	10.00	[m]
Spessore in sommità	0.50	[m]
Spessore all'attacco con la fondazione	1.45	[m]

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

Inclinazione paramento esterno	0.00	[°]
Inclinazione paramento interno	5.40	[°]
Spessore rivestimento	0.20	[m]
Peso sp. rivestimento	20.0000	[kN/mc]

Mensola di marciapiede

Posizione rispetto alla testa del muro	0.00	[m]
Lunghezza	0.25	[m]
Spessore all'estremità libera	0.50	[m]
Spessore all'incastro	0.50	[m]

Fondazione

Materiale	C32/40	
Lunghezza mensola di valle	1.45	[m]
Lunghezza mensola di monte	4.10	[m]
Lunghezza totale	7.00	[m]
Inclinazione piano di posa	0.00	[°]
Spessore	1.45	[m]
Spessore magrone	0.20	[m]

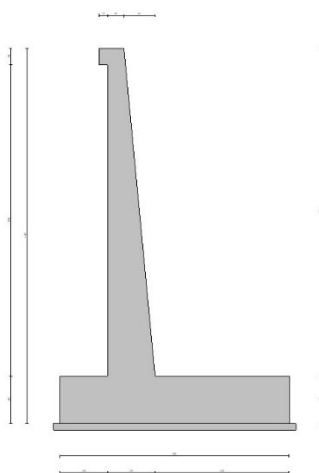


Fig. 1 - Sezione quotata del muro

Descrizione terreniParametri di resistenza

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta****Simbologia adottata**

n°	Indice del terreno
Descr	Descrizione terreno
$\gamma$	Peso di volume del terreno espresso in [kN/mc]
$\gamma_s$	Peso di volume saturo del terreno espresso in [kN/mc]
$\phi$	Angolo d'attrito interno espresso in [°]
$\delta$	Angolo d'attrito terra-muro espresso in [°]
c	Coesione espressa in [kPa]
$c_a$	Adesione terra-muro espressa in [kPa]

**Per calcolo portanza con il metodo di Bustamante-Doix**

Cesp	Coeff. di espansione laterale (solo per il metodo di Bustamante-Doix)
$\tau_l$	Tensione tangenziale limite, espressa in [kPa]

n°	Descr	$\gamma$ [kN/mc]	$\gamma_{sat}$ [kN/mc]	$\phi$ [°]	$\delta$ [°]	c [kPa]	$c_a$ [kPa]	Cesp	$\tau_l$ [kPa]
1	Rilevato	19.0000	19.0000	35.000	23.330	0	0		
2	Terreno	20.0000	20.0000	36.000	24.000	0	0		

**Stratigrafia****Simbologia adottata**

n°	Indice dello strato
H	Spessore dello strato espresso in [m]
$\alpha$	Inclinazione espressa in [°]
Terreno	Terreno dello strato
Kwn, Kwt	Costante di Winkler normale e tangenziale alla superficie espressa in Kg/cm <sup>2</sup> /cm

**Per calcolo pali (solo se presenti)**

Kw	Costante di Winkler orizzontale espressa in Kg/cm <sup>2</sup> /cm
Ks	Coefficiente di spinta
Cesp	Coefficiente di espansione laterale (per tutti i metodi tranne il metodo di Bustamante-Doix)

**Per calcolo della spinta con coeff. di spinta definiti (usati solo se attiva l'opzione 'Usa coeff. di spinta da strato')**

$K_{st_{sta}}$ , $K_{st_{sis}}$	Coeff. di spinta statico e sismico
---------------------------------	------------------------------------

n°	H [m]	$\alpha$ [°]	Terreno	Kwn [Kg/cm <sup>2</sup> ]	Kwt [Kg/cm <sup>2</sup> ]	Kw [Kg/cm <sup>2</sup> ]	Ks	Cesp	$K_{st_{sta}}$	$K_{st_{sis}}$
1	11.45	0.000	Rilevato	0.000	0.000	4.219	0.000	1.000	0.000	0.000
2	20.00	0.000	Terreno	0.000	0.000	2.203	1.000	1.000	0.000	0.000

**Condizioni di carico****Simbologia adottata**

	Carichi verticali positivi verso il basso.
	Carichi orizzontali positivi verso sinistra.
	Momento positivo senso antiorario.
X	Ascissa del punto di applicazione del carico concentrato espressa in [m]
$F_x$	Componente orizzontale del carico concentrato espressa in [kN]
$F_y$	Componente verticale del carico concentrato espressa in [kN]
M	Momento espresso in [kNm]

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**X<sub>i</sub> Ascissa del punto iniziale del carico ripartito espressa in [m]X<sub>f</sub> Ascissa del punto finale del carico ripartito espressa in [m]Q<sub>i</sub> Intensità del carico per x=X<sub>i</sub> espressa in [kN]Q<sub>f</sub> Intensità del carico per x=X<sub>f</sub> espressa in [kN]Condizione n° 1 (Q) - VARIABILECoeff. di combinazione  $\Psi_0=0.75$  -  $\Psi_1=0.75$  -  $\Psi_2=0.00$ *Carichi sul terreno*

n°	Tipo	X	Fx	Fy	M	Xi	Xf	Qi	Qf
		[m]	[kN]	[kN]	[kNm]	[m]	[m]	[kN]	[kN]
1	Distribuito					0.00	3.00	23.5000	23.5000
2	Distribuito					3.00	6.00	12.2000	12.2000
3	Distribuito					6.00	9.00	7.3000	7.3000
4	Distribuito					9.00	20.00	2.5000	2.5000

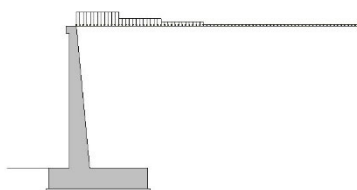


Fig. 2 - Carichi sul terreno

Condizione n° 2 (Urto) - ECCEZIONALE*Carichi sul muro*

n°	Tipo	Dest	X; Y	Fx	Fy	M	Xi	Xf	Qi	Qf
			[m]	[kN]	[kN]	[kNm]	[m]	[m]	[kN]	[kN]
1	Concentrato	Paramento	0.00; 0.00	33.3000	0.0000	33.3000				

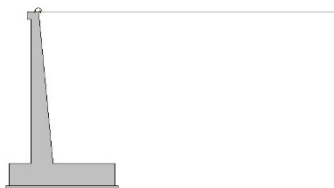


Fig. 3 - Carichi sul muro

Normativa

Normativa usata: **Norme Tecniche sulle Costruzioni 2018 (D.M. 17.01.2018) + Circolare C.S.LL.PP. 21/01/2019 n.7**

Coeff. parziali per le azioni o per l'effetto delle azioni

Carichi	Effetto		Combinazioni statiche				Combinazioni sismiche			
			HYD	UPL	EQU	A1	A2	EQU	A1	A2
Permanenti strutturali	Favorevoli	$\gamma_{G1, fav}$	1.00	0.90	1.00	1.00	1.00	1.00	1.00	1.00
Permanenti strutturali	Sfavorevoli	$\gamma_{G1, sfav}$	1.00	1.10	1.30	1.30	1.00	1.00	1.00	1.00
Permanenti non strutturali	Favorevoli	$\gamma_{G2, fav}$	0.00	0.80	0.80	0.80	0.80	0.00	0.00	0.00
Permanenti non strutturali	Sfavorevoli	$\gamma_{G2, sfav}$	1.00	1.50	1.50	1.50	1.30	1.00	1.00	1.00
Variabili	Favorevoli	$\gamma_{Q, fav}$	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Variabili	Sfavorevoli	$\gamma_{Q, sfav}$	1.00	1.50	1.50	1.50	1.30	1.00	1.00	1.00
Variabili da traffico	Favorevoli	$\gamma_{QT, fav}$	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Variabili da traffico	Sfavorevoli	$\gamma_{QT, sfav}$	1.00	1.50	1.35	1.35	1.15	1.00	1.00	1.00

Coeff. parziali per i parametri geotecnici del terreno

Parametro		Combinazioni statiche		Combinazioni sismiche	
		M1	M2	M1	M2
Tangente dell'angolo di attrito	$\gamma_{\tan(\phi)}$	1.00	1.25	1.00	1.00
Coesione efficace	$\gamma_c$	1.00	1.25	1.00	1.00
Resistenza non drenata	$\gamma_{cu}$	1.00	1.40	1.00	1.00
Peso nell'unità di volume	$\gamma_\gamma$	1.00	1.00	1.00	1.00

Coeff. parziali  $\gamma_R$  per le verifiche agli stati limite ultimi STR e GEO

Verifica	Combinazioni statiche			Combinazioni sismiche		
	R1	R2	R3	R1	R2	R3
Capacità portante	--	--	1.40	--	--	1.20
Scorrimento	--	--	1.10	--	--	1.00
Resistenza terreno a valle	--	--	1.40	--	--	1.20
Ribaltamento	--	--	1.15	--	--	1.00
Stabilità fronte di scavo	--	1.10	--	--	1.20	--

Descrizione combinazioni di carico

Con riferimento alle azioni elementari prima determinate, si sono considerate le seguenti combinazioni di carico:

- Combinazione fondamentale, impiegata per gli stati limite ultimi (SLU):

$$\gamma_{G1} G_1 + \gamma_{G2} G_2 + \gamma_{Q1} Q_{k1} + \gamma_{Q2} Q_{k2} + \gamma_{Q3} Q_{k3} + \dots$$

- Combinazione caratteristica, cosiddetta rara, impiegata per gli stati limite di esercizio (SLE) irreversibili:

$$G_1 + G_2 + Q_{k1} + \Psi_{0,2} Q_{k2} + \Psi_{0,3} Q_{k3} + \dots$$

- Combinazione frequente, impiegata per gli stati limite di esercizio (SLE) reversibili:

$$G_1 + G_2 + \Psi_{1,1} Q_{k1} + \Psi_{2,2} Q_{k2} + \Psi_{2,3} Q_{k3} + \dots$$

- Combinazione quasi permanente, impiegata per gli effetti di lungo periodo:

$$G_1 + G_2 + \Psi_{2,1} Q_{k1} + \Psi_{2,2} Q_{k2} + \Psi_{2,3} Q_{k3} + \dots$$

- Combinazione sismica, impiegata per gli stati limite ultimi connessi all'azione sismica E:

$$E + G_1 + G_2 + \Psi_{2,1} Q_{k1} + \Psi_{2,2} Q_{k2} + \Psi_{2,3} Q_{k3} + \dots$$

- Combinazione eccezionale, impiegata per gli stati limite ultimi connessi alle azioni eccezionali Ad:

$$G_1 + G_2 + A_d + \Psi_{2,1} Q_{k1} + \Psi_{2,2} Q_{k2} + \Psi_{2,3} Q_{k3} + \dots$$

I valori dei coeff.  $\Psi_{0,j}$ ,  $\Psi_{1,j}$ ,  $\Psi_{2,j}$  sono definiti nelle singole condizioni variabili, per i valori dei coeff.  $\gamma_G$  e  $\gamma_Q$ , sono definiti nella tabella normativa.

In particolare si sono considerate le seguenti combinazioni:

#### Simbologia adottata

$\gamma$  Coefficiente di partecipazione della condizione

$\Psi$  Coefficiente di combinazione della condizione

#### Combinazione n° 1 - STR (A1-M1-R3)

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Favorevole
Peso terrapieno	1.00	--	Favorevole
Spinta terreno	1.30	--	Sfavorevole

#### Combinazione n° 2 - STR (A1-M1-R3) H + V

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Favorevole
Peso terrapieno	1.00	--	Favorevole
Spinta terreno	1.00	--	Sfavorevole

#### Combinazione n° 3 - STR (A1-M1-R3)

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Favorevole
Peso terrapieno	1.00	--	Favorevole
Spinta terreno	1.30	--	Sfavorevole
Q	1.50	1.00	Sfavorevole

#### Combinazione n° 4 - STR (A1-M1-R3) H - V

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Sfavorevole



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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

Condizione	$\gamma$	$\Psi$	Effetto
Peso terrapieno	1.00	--	Sfavorevole
Spinta terreno	1.00	--	Sfavorevole

Combinazione n° 5 - GEO (A2-M2-R2)

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Sfavorevole
Peso terrapieno	1.00	--	Sfavorevole
Spinta terreno	1.00	--	Sfavorevole

Combinazione n° 6 - GEO (A2-M2-R2) H + V

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Sfavorevole
Peso terrapieno	1.00	--	Sfavorevole
Spinta terreno	1.00	--	Sfavorevole

Combinazione n° 7 - GEO (A2-M2-R2)

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Sfavorevole
Peso terrapieno	1.00	--	Sfavorevole
Spinta terreno	1.00	--	Sfavorevole
Q	1.30	1.00	Sfavorevole

Combinazione n° 8 - GEO (A2-M2-R2) H - V

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Sfavorevole
Peso terrapieno	1.00	--	Sfavorevole
Spinta terreno	1.00	--	Sfavorevole

Combinazione n° 9 - EQU (A1-M1-R3)

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Favorevole
Peso terrapieno	1.00	--	Favorevole
Spinta terreno	1.30	--	Sfavorevole

Combinazione n° 10 - EQU (A1-M1-R3) H + V

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Favorevole
Peso terrapieno	1.00	--	Favorevole
Spinta terreno	1.00	--	Sfavorevole

Combinazione n° 11 - EQU (A1-M1-R3)

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Favorevole
Peso terrapieno	1.00	--	Favorevole
Spinta terreno	1.30	--	Sfavorevole
Q	1.50	1.00	Sfavorevole

VE407

**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**Combinazione n° 12 - EQU (A1-M1-R3) H - V

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Favorevole
Peso terrapieno	1.00	--	Favorevole
Spinta terreno	1.00	--	Sfavorevole

Combinazione n° 13 - ECC

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Sfavorevole
Peso terrapieno	1.00	--	Sfavorevole
Spinta terreno	1.00	--	Sfavorevole
Urto	1.00	1.00	Sfavorevole

Combinazione n° 14 - SLER

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Sfavorevole
Peso terrapieno	1.00	--	Sfavorevole
Spinta terreno	1.00	--	Sfavorevole
Q	1.00	0.75	Sfavorevole

Combinazione n° 15 - SLEF

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Sfavorevole
Peso terrapieno	1.00	--	Sfavorevole
Spinta terreno	1.00	--	Sfavorevole

Combinazione n° 16 - SLEQ

Condizione	$\gamma$	$\Psi$	Effetto
Peso muro	1.00	--	Sfavorevole
Peso terrapieno	1.00	--	Sfavorevole
Spinta terreno	1.00	--	Sfavorevole

Dati sismici

Comune

Provincia

Regione

Latitudine 42.716470

Longitudine 12.111569

Indice punti di interpolazione -1 - -1 - -1 - -1

Vita nominale 50 anni

Classe d'uso II

Tipo costruzione Normali affollamenti

Vita di riferimento 50 anni

VE407

**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

	Simbolo	U.M.		SLU	SLE
Accelerazione al suolo	$a_g$	[m/s <sup>2</sup> ]		2.894	0.000
Accelerazione al suolo	$a_g/g$	[%]		0.295	0.000
Massimo fattore amplificazione spettro orizzontale	F0			2.423	0.000
Periodo inizio tratto spettro a velocità costante	Tc*			0.343	0.000
Tipo di sottosuolo - Coefficiente stratigrafico	Ss		C	1.271	1.500
Categoria topografica - Coefficiente amplificazione topografica	St		T1	1.000	

Stato limite ...	Coeff. di riduzione $\beta_m$	kh	kv
Ultimo	0.380	14.248	7.124
Ultimo - Ribaltamento	0.570	21.372	10.686
Esercizio	0.470	0.000	0.000

Forma diagramma incremento sismico  **Rettangolare**

**Opzioni di calcolo**Spinta

Metodo di calcolo della spinta	Culmann
Tipo di spinta	Spinta attiva
Terreno a bassa permeabilità	NO
Superficie di spinta limitata	NO

Capacità portante

Metodo di calcolo della portanza	Hansen
Criterio di media calcolo del terreno equivalente (terreni stratificati)	Ponderata
Criterio di riduzione per eccentricità della portanza	Bowles
Criterio di riduzione per rottura locale (punzonamento)	Nessuna
Larghezza fondazione nel terzo termine della formula del carico limite ( $0.5B\gamma N_r$ )	Larghezza effettiva (B)
Fattori di forma e inclinazione del carico	Solo i fattori di inclinazione
Se la fondazione ha larghezza superiore a 2.0 m viene applicato il fattore di riduzione per comportamento a piastra	

Stabilità globale

Metodo di calcolo della stabilità globale	Bishop
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Altro

Partecipazione spinta passiva terreno antistante	0.00
Partecipazione resistenza passiva dente di fondazione	50.00
Componente verticale della spinta nel calcolo delle sollecitazioni	NO
Considera terreno sulla fondazione di valle	NO
Considera spinta e peso acqua fondazione di valle	NO

Spostamenti

Non è stato richiesto il calcolo degli spostamenti

Cedimenti

Non è stato richiesto il calcolo dei cedimenti

Specifiche per le verifiche nelle combinazioni allo Stato Limite Ultimo (SLU)

	SLU	Eccezionale
Coefficiente di sicurezza calcestruzzo a compressione	1.50	1.00
Coefficiente di sicurezza acciaio	1.15	1.00
Fattore di riduzione da resistenza cubica a cilindrica	0.83	0.83
Fattore di riduzione per carichi di lungo periodo	0.85	0.85
Coefficiente di sicurezza per la sezione	1.00	1.00

Specifiche per le verifiche nelle combinazioni allo Stato Limite di Esercizio (SLE)**Paramento e fondazione muro**

Condizioni ambientali      Aggressive

Armatura ad aderenza migliorata      SI

*Verifica a fessurazione*

Sensibilità armatura      Poco sensibile

Metodo di calcolo aperture delle fessure      NTC 2018 - CIRCOLARE 21 gennaio 2019, n. 7 C.S.LL.PP.

Valori limite aperture delle fessure:

$$w_1=0.20$$

$$w_2=0.30$$

$$w_3=0.40$$

*Verifica delle tensioni*

Valori limite delle tensioni nei materiali:

Combinazione	Calcestruzzo	Acciaio
Rara	0.60 $f_{ck}$	0.80 $f_{yk}$
Frequente	1.00 $f_{ck}$	1.00 $f_{yk}$
Quasi permanente	0.45 $f_{ck}$	1.00 $f_{yk}$

## Risultati per combinazione

### Spinta e forze

#### Simbologia adottata

Ic	Indice della combinazione
A	Tipo azione
I	Inclinazione della spinta, espressa in [°]
V	Valore dell'azione, espressa in [kN]
C <sub>x</sub> , C <sub>y</sub>	Componente in direzione X ed Y dell'azione, espressa in [kN]
P <sub>x</sub> , P <sub>y</sub>	Coordinata X ed Y del punto di applicazione dell'azione, espressa in [m]

Ic	A	V [kN]	I [°]	C <sub>x</sub> [kN]	C <sub>y</sub> [kN]	P <sub>x</sub> [m]	P <sub>y</sub> [m]
1	Spinta statica	395.73	23.33	363.38	156.72	5.05	-7.63
	Peso/Inerzia muro			0.00	490.21/0.00	0.79	-8.27
	Peso/Inerzia rivestimento			0.00	40.00	0.00	0.00
	Peso/Inerzia terrapieno			0.00	868.80/0.00	2.75	-4.83
	Peso dell'acqua sulla fondazione di valle				0.00	0.00	0.00
2	Spinta statica	304.41	23.33	279.52	120.55	5.05	-7.63
	Incremento di spinta sismica		135.64	124.55	53.72	5.05	-5.72
	Peso/Inerzia muro			69.85	490.21/34.92	0.79	-8.27
	Peso/Inerzia rivestimento			5.70	40.00	0.00	0.00
	Peso/Inerzia terrapieno			123.79	868.80/61.89	2.75	-4.83
3	Spinta statica	420.81	23.33	386.40	166.65	5.05	-7.42
	Peso/Inerzia muro			0.00	490.21/0.00	0.79	-8.27
	Peso/Inerzia rivestimento			0.00	40.00	0.00	0.00
	Peso/Inerzia terrapieno			0.00	1011.98/0.00	2.71	-4.80
	Peso dell'acqua sulla fondazione di valle				0.00	0.00	0.00
4	Spinta statica	304.41	23.33	279.52	120.55	5.05	-7.63
	Incremento di spinta sismica		95.19	87.41	37.70	5.05	-5.72
	Peso/Inerzia muro			69.85	490.21/-34.92	0.79	-8.27
	Peso/Inerzia rivestimento			5.70	40.00	0.00	0.00
	Peso/Inerzia terrapieno			123.79	868.80/-61.89	2.75	-4.83
13	Spinta statica	304.41	23.33	279.52	120.55	5.05	-7.63
	Peso/Inerzia muro			0.00	490.21/0.00	0.79	-8.27
	Peso/Inerzia rivestimento			0.00	40.00	0.00	0.00
	Peso/Inerzia terrapieno			0.00	868.80/0.00	2.75	-4.83
	Peso dell'acqua sulla fondazione di valle				0.00	0.00	0.00
	Risultante forze sul muro			33.30	0.00	--	--
14	Spinta statica	316.92	23.33	291.00	125.51	5.05	-7.49
	Peso/Inerzia muro			0.00	490.21/0.00	0.79	-8.27
	Peso/Inerzia rivestimento			0.00	40.00	0.00	0.00
	Peso/Inerzia terrapieno			0.00	940.39/0.00	2.73	-4.81
	Peso dell'acqua sulla fondazione di valle				0.00	0.00	0.00
15	Spinta statica	304.41	23.33	279.52	120.55	5.05	-7.63
	Peso/Inerzia muro			0.00	490.21/0.00	0.79	-8.27
	Peso/Inerzia rivestimento			0.00	40.00	0.00	0.00
	Peso/Inerzia terrapieno			0.00	868.80/0.00	2.75	-4.83
	Peso dell'acqua sulla fondazione di valle				0.00	0.00	0.00
16	Spinta statica	304.41	23.33	279.52	120.55	5.05	-7.63
	Peso/Inerzia muro			0.00	490.21/0.00	0.79	-8.27
	Peso/Inerzia rivestimento			0.00	40.00	0.00	0.00
	Peso/Inerzia terrapieno			0.00	868.80/0.00	2.75	-4.83
	Peso dell'acqua sulla fondazione di valle				0.00	0.00	0.00

Risultanti globali

## Simbologia adottata

Cmb	Indice/Tipo combinazione
N	Componente normale al piano di posa, espressa in [kN]
T	Componente parallela al piano di posa, espressa in [kN]
M <sub>r</sub>	Momento ribaltante, espresso in [kNm]
M <sub>s</sub>	Momento stabilizzante, espresso in [kNm]
ecc	Eccentricità risultante, espressa in [m]

Ic	N [kN]	T [kN]	M <sub>r</sub> [kNm]	M <sub>s</sub> [kNm]	ecc [m]
1 - STR (A1-M1-R3)	1555.73	363.38	1386.90	6603.09	0.145
2 - STR (A1-M1-R3)	1670.09	603.40	2887.12	7112.62	0.968
3 - STR (A1-M1-R3)	1708.84	386.40	1558.16	7301.81	0.136
4 - STR (A1-M1-R3)	1460.44	566.26	3061.23	6613.81	1.065
13 - ECC	1519.56	312.82	1481.43	6350.10	0.294

Verifiche geotecniche*Quadro riassuntivo coeff. di sicurezza calcolati*

## Simbologia adottata

Cmb	Indice/Tipo combinazione
S	Sisma (H: componente orizzontale, V: componente verticale)
FS <sub>SCO</sub>	Coeff. di sicurezza allo scorrimento
FS <sub>RIB</sub>	Coeff. di sicurezza al ribaltamento
FS <sub>QLIM</sub>	Coeff. di sicurezza a carico limite
FS <sub>STAB</sub>	Coeff. di sicurezza a stabilità globale
FS <sub>HYD</sub>	Coeff. di sicurezza a sifonamento
FS <sub>SUPL</sub>	Coeff. di sicurezza a sollevamento

Cmb	Sismica	FS <sub>SCO</sub>	FS <sub>RIB</sub>	FS <sub>QLIM</sub>	FS <sub>STAB</sub>	FS <sub>HYD</sub>	FS <sub>SUPL</sub>
1 - STR (A1-M1-R3)		1.906		4.844			
2 - STR (A1-M1-R3)	H + V	1.232		2.158			
3 - STR (A1-M1-R3)		1.969		4.536			
4 - STR (A1-M1-R3)	H - V	1.148		2.149			
5 - GEO (A2-M2-R2)					1.542		
6 - GEO (A2-M2-R2)	H + V				1.529		
7 - GEO (A2-M2-R2)					1.518		
8 - GEO (A2-M2-R2)	H - V				1.452		
9 - EQU (A1-M1-R3)			4.761				
10 - EQU (A1-M1-R3)	H + V		1.947				
11 - EQU (A1-M1-R3)			4.686				
12 - EQU (A1-M1-R3)	H - V		1.632				
13 - ECC		2.163	4.286	5.209	1.928		

*Verifica a scorrimento fondazione*

**Simbologia adottata**

n°	Indice combinazione
Rsa	Resistenza allo scorrimento per attrito, espresso in [kN]
Rpt	Resistenza passiva terreno antistante, espresso in [kN]
Rps	Resistenza passiva sperone, espresso in [kN]
Rp	Resistenza a carichi orizzontali pali (solo per fondazione mista), espresso in [kN]
Rt	Resistenza a carichi orizzontali tiranti (solo se presenti), espresso in [kN]
R	Resistenza allo scorrimento (somma di Rsa+Rpt+Rps+Rp), espresso in [kN]
T	Carico parallelo al piano di posa, espresso in [kN]
FS	Fattore di sicurezza (rapporto R/T)

n°	Rsa	Rpt	Rps	Rp	Rt	R	T	FS
	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	
1 - STR (A1-M1-R3)	692.65	0.00	0.00	--	--	692.65	363.38	1.906
2 - STR (A1-M1-R3) H + V	743.57	0.00	0.00	--	--	743.57	603.40	1.232
3 - STR (A1-M1-R3)	760.82	0.00	0.00	--	--	760.82	386.40	1.969
4 - STR (A1-M1-R3) H - V	650.23	0.00	0.00	--	--	650.23	566.26	1.148
13 - ECC	676.55	0.00	0.00	--	--	676.55	312.82	2.163

**Verifica a carico limite****Simbologia adottata**

n°	Indice combinazione
N	Carico normale totale al piano di posa, espresso in [kN]
Qu	carico limite del terreno, espresso in [kN]
Qd	Portanza di progetto, espresso in [kN]
FS	Fattore di sicurezza (rapporto tra il carico limite e carico agente al piano di posa)

n°	N	Qu	Qd	FS
	[kN]	[kN]	[kN]	
1 - STR (A1-M1-R3)	1555.73	7536.41	5383.15	4.844
2 - STR (A1-M1-R3) H + V	1670.09	3603.62	3003.02	2.158
3 - STR (A1-M1-R3)	1708.84	7750.71	5536.22	4.536
4 - STR (A1-M1-R3) H - V	1460.44	3138.55	2615.46	2.149
13 - ECC	1519.56	7915.81	5654.15	5.209

**Verifica a ribaltamento****Simbologia adottata**

n°	Indice combinazione
Ms	Momento stabilizzante, espresso in [kNm]
Mr	Momento ribaltante, espresso in [kNm]
FS	Fattore di sicurezza (rapporto tra momento stabilizzante e momento ribaltante)

La verifica viene eseguita rispetto allo spigolo inferiore esterno della fondazione

n°	Ms	Mr	FS
	[kNm]	[kNm]	
9 - EQU (A1-M1-R3)	6603.09	1386.90	4.761
10 - EQU (A1-M1-R3) H + V	7531.32	3868.31	1.947
11 - EQU (A1-M1-R3)	7301.81	1558.16	4.686
12 - EQU (A1-M1-R3) H - V	6803.64	4168.44	1.632
13 - ECC	6350.10	1481.43	4.286



*Verifica stabilità globale muro + terreno*

## Simbologia adottata

Ic	Indice/Tipo combinazione
C	Centro superficie di scorrimento, espresso in [m]
R	Raggio, espresso in [m]
FS	Fattore di sicurezza

Ic	C [m]	R [m]	FS
5 - GEO (A2-M2-R2)	-3.36; 1.68	15.60	1.542
6 - GEO (A2-M2-R2) H + V	-3.92; 5.03	18.77	1.529
7 - GEO (A2-M2-R2)	-3.36; 1.68	15.60	1.518
8 - GEO (A2-M2-R2) H - V	-4.47; 5.03	19.05	1.452
13 - ECC	-3.36; 1.68	15.60	1.928

SollecitazioniElementi calcolati a trave

## Simbologia adottata

N	Sforzo normale, espresso in [kN]. Positivo se di compressione.
T	Taglio, espresso in [kN]. Positivo se diretto da monte verso valle
M	Momento, espresso in [kNm]. Positivo se tende le fibre contro terra (a monte)

*Paramento*Combinazione n° 1 - STR (A1-M1-R3)

n°	X [m]	N [kN]	T [kN]	M [kNm]
1	0.00	3.06	0.00	0.38
2	-0.10	4.30	0.03	0.39
3	-0.20	5.56	0.12	0.40
4	-0.30	6.85	0.28	0.44
5	-0.40	8.15	0.49	0.50
6	-0.50	9.48	0.77	0.59
7	-0.60	10.84	1.11	0.71
8	-0.70	12.21	1.51	0.88
9	-0.80	13.61	1.97	1.10
10	-0.90	15.04	2.49	1.38
11	-1.00	16.48	3.07	1.72
12	-1.10	17.95	3.72	2.12
13	-1.20	19.44	4.42	2.60
14	-1.30	20.96	5.19	3.16
15	-1.40	22.50	6.02	3.81
16	-1.50	24.06	6.91	4.55
17	-1.60	25.64	7.86	5.40
18	-1.70	27.25	8.88	6.34
19	-1.80	28.88	9.95	7.40
20	-1.90	30.54	11.09	8.58
21	-2.00	32.22	12.28	9.88
22	-2.10	33.92	13.54	11.31
23	-2.20	35.64	14.86	12.88

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
24	-2.30	37.39	16.24	14.60
25	-2.40	39.16	17.69	16.46
26	-2.50	40.95	19.19	18.48
27	-2.60	42.77	20.76	20.66
28	-2.70	44.61	22.38	23.01
29	-2.80	46.47	24.07	25.53
30	-2.90	48.36	25.82	28.23
31	-3.00	50.27	27.63	31.12
32	-3.10	52.20	29.51	34.21
33	-3.20	54.16	31.44	37.49
34	-3.30	56.14	33.44	40.98
35	-3.40	58.14	35.49	44.68
36	-3.50	60.16	37.61	48.60
37	-3.60	62.21	39.79	52.75
38	-3.70	64.28	42.03	57.12
39	-3.80	66.38	44.34	61.73
40	-3.90	68.50	46.70	66.59
41	-4.00	70.64	49.13	71.69
42	-4.10	72.80	51.61	77.06
43	-4.20	74.99	54.16	82.68
44	-4.30	77.20	56.77	88.57
45	-4.40	79.44	59.44	94.74
46	-4.50	81.69	62.17	101.18
47	-4.60	83.97	64.97	107.92
48	-4.70	86.28	67.82	114.94
49	-4.80	88.60	70.74	122.27
50	-4.90	90.95	73.72	129.90
51	-5.00	93.33	76.76	137.84
52	-5.10	95.72	79.86	146.11
53	-5.20	98.14	83.02	154.69
54	-5.30	100.58	86.24	163.61
55	-5.40	103.05	89.53	172.87
56	-5.50	105.54	92.87	182.46
57	-5.60	108.05	96.28	192.41
58	-5.70	110.59	99.75	202.72
59	-5.80	113.14	103.28	213.38
60	-5.90	115.73	106.87	224.42
61	-6.00	118.33	110.53	235.82
62	-6.10	120.96	114.24	247.61
63	-6.20	123.61	118.02	259.79
64	-6.30	126.28	121.86	272.36
65	-6.40	128.98	125.76	285.33
66	-6.50	131.70	129.72	298.70
67	-6.60	134.45	133.74	312.49
68	-6.70	137.21	137.82	326.69
69	-6.80	140.00	141.97	341.32
70	-6.90	142.82	146.17	356.38
71	-7.00	145.65	150.44	371.88
72	-7.10	148.51	154.77	387.82
73	-7.20	151.40	159.16	404.21
74	-7.30	154.30	163.61	421.06
75	-7.40	157.23	168.12	438.36
76	-7.50	160.18	172.70	456.14
77	-7.60	163.16	177.33	474.39
78	-7.70	166.16	182.03	493.12
79	-7.80	169.18	186.79	512.34
80	-7.90	172.23	191.61	532.05
81	-8.00	175.29	196.49	552.27
82	-8.10	178.39	201.44	572.98
83	-8.20	181.50	206.44	594.21
84	-8.30	184.64	211.51	615.96
85	-8.40	187.80	216.63	638.23
86	-8.50	190.98	221.82	661.03
87	-8.60	194.19	227.07	684.37
88	-8.70	197.42	232.38	708.26
89	-8.80	200.67	237.75	732.69
90	-8.90	203.95	243.19	757.68
91	-9.00	207.25	248.68	783.23
92	-9.10	210.57	254.24	809.35
93	-9.20	213.92	259.86	836.04

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
94	-9.30	217.29	265.54	863.31
95	-9.40	220.68	271.28	891.18
96	-9.50	224.10	277.08	919.63
97	-9.60	227.54	282.95	948.68
98	-9.70	231.00	288.87	978.34
99	-9.80	234.49	294.86	1008.61
100	-9.90	237.99	300.91	1039.50
101	-10.00	241.53	307.02	1071.02

Combinazione n° 2 - STR (A1-M1-R3) H + V

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	0.00	3.28	0.00	0.41
2	-0.10	4.52	1.18	0.47
3	-0.20	5.78	2.42	0.66
4	-0.30	7.06	3.70	0.98
5	-0.40	8.37	5.04	1.44
6	-0.50	9.70	6.42	2.04
7	-0.60	11.06	7.86	2.79
8	-0.70	12.43	9.35	3.69
9	-0.80	13.83	10.88	4.74
10	-0.90	15.25	12.47	5.96
11	-1.00	16.70	14.11	7.35
12	-1.10	18.17	15.80	8.91
13	-1.20	19.66	17.54	10.66
14	-1.30	21.18	19.33	12.58
15	-1.40	22.72	21.17	14.69
16	-1.50	24.28	23.06	17.00
17	-1.60	25.86	25.00	19.50
18	-1.70	27.47	26.99	22.21
19	-1.80	29.10	29.04	25.13
20	-1.90	30.76	31.13	28.27
21	-2.00	32.44	33.27	31.62
22	-2.10	34.14	35.47	35.20
23	-2.20	35.86	37.71	39.01
24	-2.30	37.61	40.01	43.05
25	-2.40	39.38	42.35	47.33
26	-2.50	41.17	44.75	51.86
27	-2.60	42.99	47.19	56.64
28	-2.70	44.83	49.69	61.68
29	-2.80	46.69	52.24	66.98
30	-2.90	48.58	54.84	72.54
31	-3.00	50.49	57.49	78.37
32	-3.10	52.42	60.19	84.48
33	-3.20	54.38	62.94	90.88
34	-3.30	56.36	65.74	97.56
35	-3.40	58.36	68.59	104.53
36	-3.50	60.38	71.49	111.80
37	-3.60	62.43	74.44	119.37
38	-3.70	64.50	77.44	127.25
39	-3.80	66.60	80.50	135.44
40	-3.90	68.72	83.60	143.94
41	-4.00	70.86	86.76	152.78
42	-4.10	73.02	89.96	161.94
43	-4.20	75.21	93.22	171.43
44	-4.30	77.42	96.52	181.26
45	-4.40	79.65	99.88	191.44
46	-4.50	81.91	103.28	201.96
47	-4.60	84.19	106.74	212.84
48	-4.70	86.50	110.25	224.08
49	-4.80	88.82	113.81	235.68
50	-4.90	91.17	117.42	247.65
51	-5.00	93.54	121.08	259.99
52	-5.10	95.94	124.79	272.72
53	-5.20	98.36	128.55	285.83
54	-5.30	100.80	132.36	299.33

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
55	-5.40	103.27	136.22	313.22
56	-5.50	105.76	140.13	327.52
57	-5.60	108.27	144.10	342.22
58	-5.70	110.80	148.11	357.33
59	-5.80	113.36	152.17	372.86
60	-5.90	115.94	156.29	388.81
61	-6.00	118.55	160.45	405.18
62	-6.10	121.18	164.67	421.99
63	-6.20	123.83	168.93	439.23
64	-6.30	126.50	173.25	456.92
65	-6.40	129.20	177.62	475.05
66	-6.50	131.92	182.04	493.63
67	-6.60	134.67	186.50	512.68
68	-6.70	137.43	191.02	532.18
69	-6.80	140.22	195.59	552.15
70	-6.90	143.04	200.21	572.59
71	-7.00	145.87	204.88	593.52
72	-7.10	148.73	209.60	614.92
73	-7.20	151.61	214.37	636.81
74	-7.30	154.52	219.20	659.20
75	-7.40	157.45	224.07	682.08
76	-7.50	160.40	228.99	705.47
77	-7.60	163.38	233.96	729.37
78	-7.70	166.38	238.99	753.78
79	-7.80	169.40	244.06	778.71
80	-7.90	172.44	249.19	804.16
81	-8.00	175.51	254.36	830.15
82	-8.10	178.60	259.59	856.67
83	-8.20	181.72	264.87	883.72
84	-8.30	184.86	270.19	911.33
85	-8.40	188.02	275.57	939.48
86	-8.50	191.20	281.00	968.19
87	-8.60	194.41	286.48	997.46
88	-8.70	197.64	292.01	1027.29
89	-8.80	200.89	297.59	1057.70
90	-8.90	204.17	303.22	1088.68
91	-9.00	207.47	308.90	1120.25
92	-9.10	210.79	314.63	1152.39
93	-9.20	214.14	320.41	1185.13
94	-9.30	217.51	326.25	1218.47
95	-9.40	220.90	332.13	1252.41
96	-9.50	224.32	338.06	1286.96
97	-9.60	227.76	344.05	1322.11
98	-9.70	231.22	350.08	1357.89
99	-9.80	234.70	356.17	1394.29
100	-9.90	238.21	362.30	1431.31
101	-10.00	241.75	368.49	1468.97

Combinazione n° 3 - STR (A1-M1-R3)

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	0.00	3.06	0.00	0.38
2	-0.10	4.30	0.91	0.43
3	-0.20	5.56	1.88	0.58
4	-0.30	6.85	2.91	0.83
5	-0.40	8.15	4.00	1.20
6	-0.50	9.48	5.15	1.68
7	-0.60	10.84	6.37	2.29
8	-0.70	12.21	7.64	3.03
9	-0.80	13.61	8.98	3.91
10	-0.90	15.04	10.38	4.93
11	-1.00	16.48	11.84	6.10
12	-1.10	17.95	13.36	7.42
13	-1.20	19.44	14.94	8.91
14	-1.30	20.96	16.58	10.57
15	-1.40	22.50	18.29	12.40

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
16	-1.50	24.06	20.06	14.41
17	-1.60	25.64	21.88	16.61
18	-1.70	27.25	23.77	19.00
19	-1.80	28.88	25.72	21.60
20	-1.90	30.54	27.74	24.40
21	-2.00	32.22	29.81	27.41
22	-2.10	33.92	31.94	30.64
23	-2.20	35.64	34.14	34.09
24	-2.30	37.39	36.40	37.77
25	-2.40	39.16	38.72	41.70
26	-2.50	40.95	41.10	45.86
27	-2.60	42.77	43.54	50.28
28	-2.70	44.61	46.04	54.95
29	-2.80	46.47	48.61	59.88
30	-2.90	48.36	51.24	65.08
31	-3.00	50.27	53.92	70.56
32	-3.10	52.20	56.67	76.31
33	-3.20	54.16	59.48	82.36
34	-3.30	56.14	62.35	88.69
35	-3.40	58.14	65.29	95.33
36	-3.50	60.16	68.28	102.28
37	-3.60	62.21	71.34	109.53
38	-3.70	64.28	74.46	117.10
39	-3.80	66.38	77.64	125.00
40	-3.90	68.50	80.88	133.23
41	-4.00	70.64	84.18	141.80
42	-4.10	72.80	87.54	150.71
43	-4.20	74.99	90.96	159.97
44	-4.30	77.20	94.45	169.58
45	-4.40	79.44	98.00	179.56
46	-4.50	81.69	101.60	189.91
47	-4.60	83.97	105.24	200.62
48	-4.70	86.28	108.91	211.72
49	-4.80	88.60	112.59	223.19
50	-4.90	90.95	116.26	235.05
51	-5.00	93.33	119.92	247.28
52	-5.10	95.72	123.58	259.88
53	-5.20	98.14	127.24	272.87
54	-5.30	100.58	130.92	286.23
55	-5.40	103.05	134.63	299.98
56	-5.50	105.54	138.40	314.11
57	-5.60	108.05	142.23	328.63
58	-5.70	110.59	146.12	343.55
59	-5.80	113.14	150.07	358.87
60	-5.90	115.73	154.09	374.60
61	-6.00	118.33	158.16	390.75
62	-6.10	120.96	162.31	407.33
63	-6.20	123.61	166.51	424.33
64	-6.30	126.28	170.78	441.77
65	-6.40	128.98	175.11	459.65
66	-6.50	131.70	179.50	477.98
67	-6.60	134.45	183.95	496.77
68	-6.70	137.21	188.47	516.02
69	-6.80	140.00	193.05	535.73
70	-6.90	142.82	197.69	555.92
71	-7.00	145.65	202.39	576.60
72	-7.10	148.51	207.16	597.75
73	-7.20	151.40	211.99	619.40
74	-7.30	154.30	216.88	641.55
75	-7.40	157.23	221.83	664.21
76	-7.50	160.18	226.84	687.38
77	-7.60	163.16	231.92	711.07
78	-7.70	166.16	237.05	735.28
79	-7.80	169.18	242.25	760.02
80	-7.90	172.23	247.52	785.30
81	-8.00	175.29	252.84	811.13
82	-8.10	178.39	258.22	837.50
83	-8.20	181.50	263.67	864.43
84	-8.30	184.64	269.18	891.92
85	-8.40	187.80	274.75	919.98

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
86	-8.50	190.98	280.38	948.62
87	-8.60	194.19	286.08	977.84
88	-8.70	197.42	291.83	1007.65
89	-8.80	200.67	297.65	1038.05
90	-8.90	203.95	303.53	1069.05
91	-9.00	207.25	309.47	1100.65
92	-9.10	210.57	315.47	1132.87
93	-9.20	213.92	321.54	1165.71
94	-9.30	217.29	327.67	1199.18
95	-9.40	220.68	333.85	1233.27
96	-9.50	224.10	340.09	1268.01
97	-9.60	227.54	346.38	1303.38
98	-9.70	231.00	352.70	1339.40
99	-9.80	234.49	359.04	1376.08
100	-9.90	237.99	365.40	1413.40
101	-10.00	241.53	371.78	1451.38

Combinazione n° 4 - STR (A1-M1-R3) H - V

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	0.00	3.06	0.00	0.38
2	-0.10	4.30	0.87	0.43
3	-0.20	5.56	1.79	0.57
4	-0.30	6.85	2.75	0.81
5	-0.40	8.15	3.77	1.16
6	-0.50	9.48	4.84	1.62
7	-0.60	10.84	5.96	2.19
8	-0.70	12.21	7.13	2.88
9	-0.80	13.61	8.35	3.70
10	-0.90	15.04	9.62	4.65
11	-1.00	16.48	10.94	5.74
12	-1.10	17.95	12.32	6.97
13	-1.20	19.44	13.74	8.35
14	-1.30	20.96	15.21	9.88
15	-1.40	22.50	16.74	11.56
16	-1.50	24.06	18.31	13.41
17	-1.60	25.64	19.94	15.42
18	-1.70	27.25	21.61	17.61
19	-1.80	28.88	23.34	19.98
20	-1.90	30.54	25.11	22.52
21	-2.00	32.22	26.94	25.26
22	-2.10	33.92	28.82	28.19
23	-2.20	35.64	30.75	31.32
24	-2.30	37.39	32.72	34.65
25	-2.40	39.16	34.75	38.19
26	-2.50	40.95	36.83	41.94
27	-2.60	42.77	38.96	45.91
28	-2.70	44.61	41.14	50.11
29	-2.80	46.47	43.37	54.54
30	-2.90	48.36	45.66	59.20
31	-3.00	50.27	47.99	64.10
32	-3.10	52.20	50.37	69.24
33	-3.20	54.16	52.80	74.64
34	-3.30	56.14	55.29	80.29
35	-3.40	58.14	57.82	86.20
36	-3.50	60.16	60.41	92.38
37	-3.60	62.21	63.04	98.82
38	-3.70	64.28	65.73	105.55
39	-3.80	66.38	68.47	112.55
40	-3.90	68.50	71.25	119.84
41	-4.00	70.64	74.09	127.42
42	-4.10	72.80	76.98	135.30
43	-4.20	74.99	79.92	143.48
44	-4.30	77.20	82.91	151.96
45	-4.40	79.44	85.95	160.76
46	-4.50	81.69	89.04	169.88

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
47	-4.60	83.97	92.18	179.31
48	-4.70	86.28	95.37	189.08
49	-4.80	88.60	98.61	199.18
50	-4.90	90.95	101.90	209.61
51	-5.00	93.33	105.25	220.39
52	-5.10	95.72	108.64	231.52
53	-5.20	98.14	112.08	242.99
54	-5.30	100.58	115.58	254.83
55	-5.40	103.05	119.12	267.03
56	-5.50	105.54	122.72	279.60
57	-5.60	108.05	126.37	292.55
58	-5.70	110.59	130.06	305.87
59	-5.80	113.14	133.81	319.58
60	-5.90	115.73	137.61	333.68
61	-6.00	118.33	141.46	348.17
62	-6.10	120.96	145.36	363.06
63	-6.20	123.61	149.30	378.35
64	-6.30	126.28	153.30	394.06
65	-6.40	128.98	157.35	410.18
66	-6.50	131.70	161.46	426.72
67	-6.60	134.45	165.61	443.69
68	-6.70	137.21	169.81	461.09
69	-6.80	140.00	174.06	478.92
70	-6.90	142.82	178.37	497.20
71	-7.00	145.65	182.72	515.92
72	-7.10	148.51	187.12	535.09
73	-7.20	151.40	191.58	554.72
74	-7.30	154.30	196.08	574.81
75	-7.40	157.23	200.64	595.37
76	-7.50	160.18	205.25	616.40
77	-7.60	163.16	209.90	637.90
78	-7.70	166.16	214.61	659.89
79	-7.80	169.18	219.37	682.37
80	-7.90	172.23	224.18	705.34
81	-8.00	175.29	229.04	728.81
82	-8.10	178.39	233.95	752.78
83	-8.20	181.50	238.91	777.25
84	-8.30	184.64	243.92	802.24
85	-8.40	187.80	248.98	827.75
86	-8.50	190.98	254.09	853.79
87	-8.60	194.19	259.25	880.35
88	-8.70	197.42	264.46	907.45
89	-8.80	200.67	269.73	935.08
90	-8.90	203.95	275.04	963.26
91	-9.00	207.25	280.41	991.99
92	-9.10	210.57	285.82	1021.27
93	-9.20	213.92	291.29	1051.12
94	-9.30	217.29	296.80	1081.53
95	-9.40	220.68	302.37	1112.51
96	-9.50	224.10	307.99	1144.06
97	-9.60	227.54	313.65	1176.19
98	-9.70	231.00	319.37	1208.91
99	-9.80	234.49	325.14	1242.22
100	-9.90	237.99	330.96	1276.13
101	-10.00	241.53	336.83	1310.64

Combinazione n° 13 - ECC

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	0.00	3.06	33.30	33.68
2	-0.10	4.30	33.32	37.02
3	-0.20	5.56	33.40	40.36
4	-0.30	6.85	33.51	43.72
5	-0.40	8.15	33.68	47.10
6	-0.50	9.48	33.89	50.51
7	-0.60	10.84	34.15	53.94

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
8	-0.70	12.21	34.46	57.41
9	-0.80	13.61	34.81	60.92
10	-0.90	15.04	35.22	64.48
11	-1.00	16.48	35.66	68.08
12	-1.10	17.95	36.16	71.74
13	-1.20	19.44	36.70	75.45
14	-1.30	20.96	37.29	79.23
15	-1.40	22.50	37.93	83.08
16	-1.50	24.06	38.62	87.01
17	-1.60	25.64	39.35	91.01
18	-1.70	27.25	40.13	95.09
19	-1.80	28.88	40.95	99.26
20	-1.90	30.54	41.83	103.53
21	-2.00	32.22	42.75	107.89
22	-2.10	33.92	43.72	112.35
23	-2.20	35.64	44.73	116.93
24	-2.30	37.39	45.80	121.61
25	-2.40	39.16	46.91	126.41
26	-2.50	40.95	48.06	131.33
27	-2.60	42.77	49.27	136.38
28	-2.70	44.61	50.52	141.56
29	-2.80	46.47	51.82	146.88
30	-2.90	48.36	53.16	152.34
31	-3.00	50.27	54.56	157.94
32	-3.10	52.20	56.00	163.70
33	-3.20	54.16	57.49	169.61
34	-3.30	56.14	59.02	175.68
35	-3.40	58.14	60.60	181.92
36	-3.50	60.16	62.23	188.32
37	-3.60	62.21	63.91	194.91
38	-3.70	64.28	65.63	201.67
39	-3.80	66.38	67.40	208.61
40	-3.90	68.50	69.22	215.75
41	-4.00	70.64	71.09	223.08
42	-4.10	72.80	73.00	230.61
43	-4.20	74.99	74.96	238.34
44	-4.30	77.20	76.97	246.28
45	-4.40	79.44	79.02	254.43
46	-4.50	81.69	81.13	262.81
47	-4.60	83.97	83.27	271.40
48	-4.70	86.28	85.47	280.23
49	-4.80	88.60	87.71	289.29
50	-4.90	90.95	90.01	298.58
51	-5.00	93.33	92.34	308.12
52	-5.10	95.72	94.73	317.91
53	-5.20	98.14	97.16	327.94
54	-5.30	100.58	99.64	338.24
55	-5.40	103.05	102.17	348.80
56	-5.50	105.54	104.74	359.62
57	-5.60	108.05	107.36	370.71
58	-5.70	110.59	110.03	382.09
59	-5.80	113.14	112.75	393.74
60	-5.90	115.73	115.51	405.68
61	-6.00	118.33	118.32	417.91
62	-6.10	120.96	121.18	430.43
63	-6.20	123.61	124.08	443.26
64	-6.30	126.28	127.04	456.39
65	-6.40	128.98	130.04	469.83
66	-6.50	131.70	133.08	483.59
67	-6.60	134.45	136.18	497.67
68	-6.70	137.21	139.32	512.07
69	-6.80	140.00	142.50	526.80
70	-6.90	142.82	145.74	541.87
71	-7.00	145.65	149.02	557.27
72	-7.10	148.51	152.35	573.02
73	-7.20	151.40	155.73	589.12
74	-7.30	154.30	159.15	605.57
75	-7.40	157.23	162.63	622.38
76	-7.50	160.18	166.15	639.55
77	-7.60	163.16	169.71	657.10



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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
78	-7.70	166.16	173.32	675.01
79	-7.80	169.18	176.99	693.30
80	-7.90	172.23	180.69	711.98
81	-8.00	175.29	184.45	731.04
82	-8.10	178.39	188.25	750.50
83	-8.20	181.50	192.10	770.35
84	-8.30	184.64	196.00	790.61
85	-8.40	187.80	199.94	811.27
86	-8.50	190.98	203.93	832.34
87	-8.60	194.19	207.97	853.83
88	-8.70	197.42	212.06	875.75
89	-8.80	200.67	216.19	898.08
90	-8.90	203.95	220.37	920.85
91	-9.00	207.25	224.60	944.06
92	-9.10	210.57	228.87	967.70
93	-9.20	213.92	233.19	991.80
94	-9.30	217.29	237.56	1016.34
95	-9.40	220.68	241.98	1041.33
96	-9.50	224.10	246.44	1066.79
97	-9.60	227.54	250.95	1092.71
98	-9.70	231.00	255.51	1119.11
99	-9.80	234.49	260.12	1145.97
100	-9.90	237.99	264.77	1173.32
101	-10.00	241.53	269.47	1201.15

Combinazione n° 14 - SLER

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	0.00	3.06	0.00	0.38
2	-0.10	4.30	0.46	0.41
3	-0.20	5.56	0.97	0.49
4	-0.30	6.85	1.53	0.63
5	-0.40	8.15	2.13	0.83
6	-0.50	9.48	2.78	1.10
7	-0.60	10.84	3.48	1.45
8	-0.70	12.21	4.23	1.88
9	-0.80	13.61	5.02	2.38
10	-0.90	15.04	5.86	2.98
11	-1.00	16.48	6.75	3.67
12	-1.10	17.95	7.68	4.46
13	-1.20	19.44	8.66	5.35
14	-1.30	20.96	9.69	6.35
15	-1.40	22.50	10.77	7.46
16	-1.50	24.06	11.89	8.69
17	-1.60	25.64	13.06	10.04
18	-1.70	27.25	14.28	11.51
19	-1.80	28.88	15.54	13.12
20	-1.90	30.54	16.85	14.87
21	-2.00	32.22	18.21	16.75
22	-2.10	33.92	19.62	18.79
23	-2.20	35.64	21.07	20.97
24	-2.30	37.39	22.57	23.31
25	-2.40	39.16	24.12	25.81
26	-2.50	40.95	25.72	28.48
27	-2.60	42.77	27.36	31.31
28	-2.70	44.61	29.05	34.33
29	-2.80	46.47	30.79	37.52
30	-2.90	48.36	32.57	40.89
31	-3.00	50.27	34.40	44.46
32	-3.10	52.20	36.28	48.22
33	-3.20	54.16	38.21	52.18
34	-3.30	56.14	40.18	56.35
35	-3.40	58.14	42.20	60.72
36	-3.50	60.16	44.27	65.31
37	-3.60	62.21	46.38	70.12
38	-3.70	64.28	48.54	75.15

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
39	-3.80	66.38	50.75	80.41
40	-3.90	68.50	53.01	85.90
41	-4.00	70.64	55.31	91.63
42	-4.10	72.80	57.67	97.60
43	-4.20	74.99	60.06	103.82
44	-4.30	77.20	62.51	110.30
45	-4.40	79.44	65.00	117.03
46	-4.50	81.69	67.54	124.02
47	-4.60	83.97	70.11	131.28
48	-4.70	86.28	72.70	138.81
49	-4.80	88.60	75.30	146.61
50	-4.90	90.95	77.91	154.68
51	-5.00	93.33	80.53	163.02
52	-5.10	95.72	83.16	171.64
53	-5.20	98.14	85.81	180.53
54	-5.30	100.58	88.51	189.70
55	-5.40	103.05	91.25	199.15
56	-5.50	105.54	94.04	208.90
57	-5.60	108.05	96.87	218.93
58	-5.70	110.59	99.76	229.26
59	-5.80	113.14	102.69	239.90
60	-5.90	115.73	105.67	250.84
61	-6.00	118.33	108.70	262.10
62	-6.10	120.96	111.77	273.67
63	-6.20	123.61	114.89	285.57
64	-6.30	126.28	118.06	297.79
65	-6.40	128.98	121.28	310.35
66	-6.50	131.70	124.55	323.24
67	-6.60	134.45	127.86	336.48
68	-6.70	137.21	131.22	350.06
69	-6.80	140.00	134.63	363.99
70	-6.90	142.82	138.09	378.28
71	-7.00	145.65	141.59	392.93
72	-7.10	148.51	145.14	407.95
73	-7.20	151.40	148.74	423.34
74	-7.30	154.30	152.39	439.10
75	-7.40	157.23	156.08	455.24
76	-7.50	160.18	159.82	471.77
77	-7.60	163.16	163.61	488.70
78	-7.70	166.16	167.44	506.01
79	-7.80	169.18	171.33	523.73
80	-7.90	172.23	175.26	541.85
81	-8.00	175.29	179.23	560.38
82	-8.10	178.39	183.26	579.32
83	-8.20	181.50	187.33	598.69
84	-8.30	184.64	191.45	618.48
85	-8.40	187.80	195.62	638.70
86	-8.50	190.98	199.84	659.35
87	-8.60	194.19	204.10	680.44
88	-8.70	197.42	208.41	701.98
89	-8.80	200.67	212.76	723.96
90	-8.90	203.95	217.17	746.40
91	-9.00	207.25	221.62	769.30
92	-9.10	210.57	226.12	792.66
93	-9.20	213.92	230.66	816.48
94	-9.30	217.29	235.26	840.78
95	-9.40	220.68	239.89	865.56
96	-9.50	224.10	244.56	890.82
97	-9.60	227.54	249.26	916.56
98	-9.70	231.00	253.98	942.80
99	-9.80	234.49	258.73	969.52
100	-9.90	237.99	263.50	996.73
101	-10.00	241.53	268.30	1024.44

Combinazione n° 15 - SLEF

VE407

**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	0.00	3.06	0.00	0.38
2	-0.10	4.30	0.02	0.39
3	-0.20	5.56	0.10	0.40
4	-0.30	6.85	0.21	0.43
5	-0.40	8.15	0.38	0.48
6	-0.50	9.48	0.59	0.56
7	-0.60	10.84	0.85	0.66
8	-0.70	12.21	1.16	0.80
9	-0.80	13.61	1.51	0.98
10	-0.90	15.04	1.92	1.21
11	-1.00	16.48	2.36	1.48
12	-1.10	17.95	2.86	1.81
13	-1.20	19.44	3.40	2.19
14	-1.30	20.96	3.99	2.64
15	-1.40	22.50	4.63	3.16
16	-1.50	24.06	5.32	3.76
17	-1.60	25.64	6.05	4.43
18	-1.70	27.25	6.83	5.18
19	-1.80	28.88	7.65	6.02
20	-1.90	30.54	8.53	6.96
21	-2.00	32.22	9.45	7.99
22	-2.10	33.92	10.42	9.12
23	-2.20	35.64	11.43	10.37
24	-2.30	37.39	12.50	11.72
25	-2.40	39.16	13.61	13.19
26	-2.50	40.95	14.76	14.78
27	-2.60	42.77	15.97	16.50
28	-2.70	44.61	17.22	18.35
29	-2.80	46.47	18.52	20.34
30	-2.90	48.36	19.86	22.47
31	-3.00	50.27	21.26	24.74
32	-3.10	52.20	22.70	27.17
33	-3.20	54.16	24.19	29.75
34	-3.30	56.14	25.72	32.49
35	-3.40	58.14	27.30	35.40
36	-3.50	60.16	28.93	38.47
37	-3.60	62.21	30.61	41.73
38	-3.70	64.28	32.33	45.16
39	-3.80	66.38	34.10	48.77
40	-3.90	68.50	35.92	52.58
41	-4.00	70.64	37.79	56.58
42	-4.10	72.80	39.70	60.78
43	-4.20	74.99	41.66	65.18
44	-4.30	77.20	43.67	69.79
45	-4.40	79.44	45.72	74.61
46	-4.50	81.69	47.83	79.66
47	-4.60	83.97	49.97	84.92
48	-4.70	86.28	52.17	90.42
49	-4.80	88.60	54.41	96.15
50	-4.90	90.95	56.71	102.11
51	-5.00	93.33	59.04	108.32
52	-5.10	95.72	61.43	114.78
53	-5.20	98.14	63.86	121.48
54	-5.30	100.58	66.34	128.45
55	-5.40	103.05	68.87	135.68
56	-5.50	105.54	71.44	143.17
57	-5.60	108.05	74.06	150.93
58	-5.70	110.59	76.73	158.98
59	-5.80	113.14	79.45	167.30
60	-5.90	115.73	82.21	175.91
61	-6.00	118.33	85.02	184.81
62	-6.10	120.96	87.88	194.00
63	-6.20	123.61	90.78	203.50
64	-6.30	126.28	93.74	213.30
65	-6.40	128.98	96.74	223.41
66	-6.50	131.70	99.78	233.84
67	-6.60	134.45	102.88	244.59
68	-6.70	137.21	106.02	255.66
69	-6.80	140.00	109.20	267.06
70	-6.90	142.82	112.44	278.80

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
71	-7.00	145.65	115.72	290.87
72	-7.10	148.51	119.05	303.29
73	-7.20	151.40	122.43	316.06
74	-7.30	154.30	125.85	329.18
75	-7.40	157.23	129.33	342.66
76	-7.50	160.18	132.85	356.50
77	-7.60	163.16	136.41	370.72
78	-7.70	166.16	140.02	385.30
79	-7.80	169.18	143.69	400.26
80	-7.90	172.23	147.39	415.61
81	-8.00	175.29	151.15	431.34
82	-8.10	178.39	154.95	447.47
83	-8.20	181.50	158.80	463.99
84	-8.30	184.64	162.70	480.92
85	-8.40	187.80	166.64	498.25
86	-8.50	190.98	170.63	515.99
87	-8.60	194.19	174.67	534.15
88	-8.70	197.42	178.76	552.74
89	-8.80	200.67	182.89	571.74
90	-8.90	203.95	187.07	591.18
91	-9.00	207.25	191.30	611.06
92	-9.10	210.57	195.57	631.37
93	-9.20	213.92	199.89	652.14
94	-9.30	217.29	204.26	673.35
95	-9.40	220.68	208.68	695.01
96	-9.50	224.10	213.14	717.14
97	-9.60	227.54	217.65	739.73
98	-9.70	231.00	222.21	762.80
99	-9.80	234.49	226.82	786.33
100	-9.90	237.99	231.47	810.35
101	-10.00	241.53	236.17	834.85

Combinazione n° 16 - SLEQ

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	0.00	3.06	0.00	0.38
2	-0.10	4.30	0.02	0.39
3	-0.20	5.56	0.10	0.40
4	-0.30	6.85	0.21	0.43
5	-0.40	8.15	0.38	0.48
6	-0.50	9.48	0.59	0.56
7	-0.60	10.84	0.85	0.66
8	-0.70	12.21	1.16	0.80
9	-0.80	13.61	1.51	0.98
10	-0.90	15.04	1.92	1.21
11	-1.00	16.48	2.36	1.48
12	-1.10	17.95	2.86	1.81
13	-1.20	19.44	3.40	2.19
14	-1.30	20.96	3.99	2.64
15	-1.40	22.50	4.63	3.16
16	-1.50	24.06	5.32	3.76
17	-1.60	25.64	6.05	4.43
18	-1.70	27.25	6.83	5.18
19	-1.80	28.88	7.65	6.02
20	-1.90	30.54	8.53	6.96
21	-2.00	32.22	9.45	7.99
22	-2.10	33.92	10.42	9.12
23	-2.20	35.64	11.43	10.37
24	-2.30	37.39	12.50	11.72
25	-2.40	39.16	13.61	13.19
26	-2.50	40.95	14.76	14.78
27	-2.60	42.77	15.97	16.50
28	-2.70	44.61	17.22	18.35
29	-2.80	46.47	18.52	20.34
30	-2.90	48.36	19.86	22.47
31	-3.00	50.27	21.26	24.74

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
32	-3.10	52.20	22.70	27.17
33	-3.20	54.16	24.19	29.75
34	-3.30	56.14	25.72	32.49
35	-3.40	58.14	27.30	35.40
36	-3.50	60.16	28.93	38.47
37	-3.60	62.21	30.61	41.73
38	-3.70	64.28	32.33	45.16
39	-3.80	66.38	34.10	48.77
40	-3.90	68.50	35.92	52.58
41	-4.00	70.64	37.79	56.58
42	-4.10	72.80	39.70	60.78
43	-4.20	74.99	41.66	65.18
44	-4.30	77.20	43.67	69.79
45	-4.40	79.44	45.72	74.61
46	-4.50	81.69	47.83	79.66
47	-4.60	83.97	49.97	84.92
48	-4.70	86.28	52.17	90.42
49	-4.80	88.60	54.41	96.15
50	-4.90	90.95	56.71	102.11
51	-5.00	93.33	59.04	108.32
52	-5.10	95.72	61.43	114.78
53	-5.20	98.14	63.86	121.48
54	-5.30	100.58	66.34	128.45
55	-5.40	103.05	68.87	135.68
56	-5.50	105.54	71.44	143.17
57	-5.60	108.05	74.06	150.93
58	-5.70	110.59	76.73	158.98
59	-5.80	113.14	79.45	167.30
60	-5.90	115.73	82.21	175.91
61	-6.00	118.33	85.02	184.81
62	-6.10	120.96	87.88	194.00
63	-6.20	123.61	90.78	203.50
64	-6.30	126.28	93.74	213.30
65	-6.40	128.98	96.74	223.41
66	-6.50	131.70	99.78	233.84
67	-6.60	134.45	102.88	244.59
68	-6.70	137.21	106.02	255.66
69	-6.80	140.00	109.20	267.06
70	-6.90	142.82	112.44	278.80
71	-7.00	145.65	115.72	290.87
72	-7.10	148.51	119.05	303.29
73	-7.20	151.40	122.43	316.06
74	-7.30	154.30	125.85	329.18
75	-7.40	157.23	129.33	342.66
76	-7.50	160.18	132.85	356.50
77	-7.60	163.16	136.41	370.72
78	-7.70	166.16	140.02	385.30
79	-7.80	169.18	143.69	400.26
80	-7.90	172.23	147.39	415.61
81	-8.00	175.29	151.15	431.34
82	-8.10	178.39	154.95	447.47
83	-8.20	181.50	158.80	463.99
84	-8.30	184.64	162.70	480.92
85	-8.40	187.80	166.64	498.25
86	-8.50	190.98	170.63	515.99
87	-8.60	194.19	174.67	534.15
88	-8.70	197.42	178.76	552.74
89	-8.80	200.67	182.89	571.74
90	-8.90	203.95	187.07	591.18
91	-9.00	207.25	191.30	611.06
92	-9.10	210.57	195.57	631.37
93	-9.20	213.92	199.89	652.14
94	-9.30	217.29	204.26	673.35
95	-9.40	220.68	208.68	695.01
96	-9.50	224.10	213.14	717.14
97	-9.60	227.54	217.65	739.73
98	-9.70	231.00	222.21	762.80
99	-9.80	234.49	226.82	786.33
100	-9.90	237.99	231.47	810.35
101	-10.00	241.53	236.17	834.85

*Mensola valle*Combinazione n° 1 - STR (A1-M1-R3)

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-0.75	0.00	0.00	0.00
2	-0.67	0.00	1.02	0.04
3	-0.58	0.00	2.04	0.17
4	-0.50	0.00	3.06	0.38

Combinazione n° 2 - STR (A1-M1-R3) H + V

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-0.75	0.00	0.00	0.00
2	-0.67	0.00	1.09	0.05
3	-0.58	0.00	2.19	0.18
4	-0.50	0.00	3.28	0.41

Combinazione n° 3 - STR (A1-M1-R3)

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-0.75	0.00	0.00	0.00
2	-0.67	0.00	1.02	0.04
3	-0.58	0.00	2.04	0.17
4	-0.50	0.00	3.06	0.38

Combinazione n° 4 - STR (A1-M1-R3) H - V

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-0.75	0.00	0.00	0.00
2	-0.67	0.00	1.02	0.04
3	-0.58	0.00	2.04	0.17
4	-0.50	0.00	3.06	0.38

Combinazione n° 13 - ECC

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-0.75	0.00	0.00	0.00
2	-0.67	0.00	1.02	0.04
3	-0.58	0.00	2.04	0.17
4	-0.50	0.00	3.06	0.38

Combinazione n° 14 - SLER

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-0.75	0.00	0.00	0.00
2	-0.67	0.00	1.02	0.04
3	-0.58	0.00	2.04	0.17

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
4	-0.50	0.00	3.06	0.38

Combinazione n° 15 - SLEF

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-0.75	0.00	0.00	0.00
2	-0.67	0.00	1.02	0.04
3	-0.58	0.00	2.04	0.17
4	-0.50	0.00	3.06	0.38

Combinazione n° 16 - SLEQ

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-0.75	0.00	0.00	0.00
2	-0.67	0.00	1.02	0.04
3	-0.58	0.00	2.04	0.17
4	-0.50	0.00	3.06	0.38

*Fondazione*Combinazione n° 1 - STR (A1-M1-R3)

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-1.95	0.00	0.00	0.00
2	-1.85	0.00	20.69	1.00
3	-1.76	0.00	41.31	4.00
4	-1.66	0.00	61.86	8.99
5	-1.56	0.00	82.33	15.96
6	-1.47	0.00	102.73	24.90
7	-1.37	0.00	123.06	35.82
8	-1.27	0.00	143.31	48.69
9	-1.18	0.00	163.49	63.52
10	-1.08	0.00	183.59	80.30
11	-0.98	0.00	203.62	99.01
12	-0.89	0.00	223.58	119.66
13	-0.79	0.00	243.46	142.23
14	-0.69	0.00	263.27	166.73
15	-0.60	0.00	283.00	193.13
16	-0.50	0.00	302.67	221.44
17	0.95	0.00	-293.48	-646.97
18	1.05	0.00	-287.90	-617.90
19	1.15	0.00	-282.24	-589.40
20	1.25	0.00	-276.51	-561.46
21	1.35	0.00	-270.69	-534.10
22	1.45	0.00	-264.79	-507.32
23	1.55	0.00	-258.82	-481.14
24	1.65	0.00	-252.77	-455.56
25	1.75	0.00	-246.64	-430.59
26	1.85	0.00	-240.43	-406.24
27	1.95	0.00	-234.14	-382.51
28	2.05	0.00	-227.77	-359.41
29	2.15	0.00	-221.32	-336.96
30	2.25	0.00	-214.79	-315.15
31	2.35	0.00	-208.19	-294.00
32	2.45	0.00	-201.50	-273.52
33	2.55	0.00	-194.74	-253.70
34	2.65	0.00	-187.90	-234.57

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X [m]	N [kN]	T [kN]	M [kNm]
35	2.75	0.00	-180.98	-216.13
36	2.85	0.00	-173.98	-198.38
37	2.95	0.00	-166.90	-181.33
38	3.05	0.00	-159.74	-165.00
39	3.15	0.00	-152.50	-149.39
40	3.25	0.00	-145.19	-134.50
41	3.35	0.00	-137.79	-120.35
42	3.45	0.00	-130.32	-106.95
43	3.55	0.00	-122.76	-94.29
44	3.65	0.00	-115.13	-82.40
45	3.75	0.00	-107.42	-71.27
46	3.85	0.00	-99.63	-60.92
47	3.95	0.00	-91.76	-51.35
48	4.05	0.00	-83.82	-42.57
49	4.15	0.00	-75.79	-34.59
50	4.25	0.00	-67.68	-27.41
51	4.35	0.00	-59.50	-21.05
52	4.45	0.00	-51.24	-15.51
53	4.55	0.00	-42.90	-10.81
54	4.65	0.00	-34.47	-6.94
55	4.75	0.00	-25.97	-3.91
56	4.85	0.00	-17.39	-1.74
57	4.95	0.00	-8.74	-0.44
58	5.05	0.00	0.00	0.00

Combinazione n° 2 - STR (A1-M1-R3) H + V

n°	X [m]	N [kN]	T [kN]	M [kNm]
1	-1.95	0.00	0.00	0.00
2	-1.85	0.00	38.53	1.87
3	-1.76	0.00	76.53	7.43
4	-1.66	0.00	114.00	16.65
5	-1.56	0.00	150.95	29.46
6	-1.47	0.00	187.36	45.81
7	-1.37	0.00	223.24	65.66
8	-1.27	0.00	258.60	88.95
9	-1.18	0.00	293.42	115.64
10	-1.08	0.00	327.72	145.67
11	-0.98	0.00	361.48	178.98
12	-0.89	0.00	394.72	215.54
13	-0.79	0.00	427.43	255.28
14	-0.69	0.00	459.61	298.15
15	-0.60	0.00	491.25	344.12
16	-0.50	0.00	522.37	393.11
17	0.95	0.00	-282.11	-903.68
18	1.05	0.00	-286.56	-875.24
19	1.15	0.00	-290.44	-846.39
20	1.25	0.00	-293.76	-817.17
21	1.35	0.00	-296.51	-787.65
22	1.45	0.00	-298.69	-757.89
23	1.55	0.00	-300.31	-727.93
24	1.65	0.00	-301.36	-697.85
25	1.75	0.00	-301.84	-667.68
26	1.85	0.00	-301.76	-637.50
27	1.95	0.00	-301.11	-607.35
28	2.05	0.00	-299.89	-577.29
29	2.15	0.00	-298.11	-547.39
30	2.25	0.00	-295.76	-517.69
31	2.35	0.00	-292.85	-488.26
32	2.45	0.00	-289.36	-459.14
33	2.55	0.00	-285.31	-430.40
34	2.65	0.00	-280.70	-402.10
35	2.75	0.00	-275.52	-374.28
36	2.85	0.00	-269.77	-347.01
37	2.95	0.00	-263.46	-320.35
38	3.05	0.00	-256.58	-294.34



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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
39	3.15	0.00	-249.13	-269.05
40	3.25	0.00	-241.11	-244.53
41	3.35	0.00	-232.53	-220.85
42	3.45	0.00	-223.39	-198.05
43	3.55	0.00	-213.67	-176.19
44	3.65	0.00	-203.39	-155.33
45	3.75	0.00	-192.55	-135.53
46	3.85	0.00	-181.14	-116.84
47	3.95	0.00	-169.16	-99.32
48	4.05	0.00	-156.61	-83.03
49	4.15	0.00	-143.50	-68.02
50	4.25	0.00	-129.82	-54.35
51	4.35	0.00	-115.58	-42.07
52	4.45	0.00	-100.76	-31.25
53	4.55	0.00	-85.39	-21.94
54	4.65	0.00	-69.44	-14.19
55	4.75	0.00	-52.93	-8.07
56	4.85	0.00	-35.85	-3.62
57	4.95	0.00	-18.21	-0.92
58	5.05	0.00	0.00	0.00

Combinazione n° 3 - STR (A1-M1-R3)

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-1.95	0.00	0.00	0.00
2	-1.85	0.00	22.90	1.11
3	-1.76	0.00	45.73	4.43
4	-1.66	0.00	68.48	9.95
5	-1.56	0.00	91.16	17.66
6	-1.47	0.00	113.76	27.57
7	-1.37	0.00	136.28	39.65
8	-1.27	0.00	158.72	53.91
9	-1.18	0.00	181.09	70.34
10	-1.08	0.00	203.39	88.92
11	-0.98	0.00	225.60	109.66
12	-0.89	0.00	247.74	132.54
13	-0.79	0.00	269.81	157.55
14	-0.69	0.00	291.79	184.70
15	-0.60	0.00	313.70	213.96
16	-0.50	0.00	335.54	245.34
17	0.95	0.00	-315.28	-693.28
18	1.05	0.00	-308.38	-660.36
19	1.15	0.00	-301.39	-628.14
20	1.25	0.00	-294.33	-596.62
21	1.35	0.00	-287.19	-565.81
22	1.45	0.00	-279.96	-535.72
23	1.55	0.00	-272.65	-506.35
24	1.65	0.00	-265.26	-477.72
25	1.75	0.00	-257.79	-449.84
26	1.85	0.00	-250.23	-422.70
27	1.95	0.00	-242.60	-396.33
28	2.05	0.00	-234.88	-370.72
29	2.15	0.00	-227.08	-345.89
30	2.25	0.00	-219.20	-321.84
31	2.35	0.00	-211.24	-298.58
32	2.45	0.00	-203.19	-276.13
33	2.55	0.00	-195.07	-254.48
34	2.65	0.00	-186.86	-233.65
35	2.75	0.00	-178.57	-213.64
36	2.85	0.00	-170.20	-194.47
37	2.95	0.00	-161.74	-176.14
38	3.05	0.00	-153.98	-159.43
39	3.15	0.00	-147.05	-144.37
40	3.25	0.00	-140.05	-130.02
41	3.35	0.00	-132.96	-116.37
42	3.45	0.00	-125.80	-103.43

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
43	3.55	0.00	-118.55	-91.21
44	3.65	0.00	-111.22	-79.72
45	3.75	0.00	-103.80	-68.97
46	3.85	0.00	-96.31	-58.96
47	3.95	0.00	-88.73	-49.71
48	4.05	0.00	-81.08	-41.22
49	4.15	0.00	-73.34	-33.50
50	4.25	0.00	-65.51	-26.55
51	4.35	0.00	-57.61	-20.40
52	4.45	0.00	-49.63	-15.04
53	4.55	0.00	-41.56	-10.48
54	4.65	0.00	-33.41	-6.73
55	4.75	0.00	-25.18	-3.80
56	4.85	0.00	-16.87	-1.69
57	4.95	0.00	-8.48	-0.42
58	5.05	0.00	0.00	0.00

Combinazione n° 4 - STR (A1-M1-R3) H - V

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-1.95	0.00	0.00	0.00
2	-1.85	0.00	34.93	1.69
3	-1.76	0.00	69.35	6.74
4	-1.66	0.00	103.25	15.08
5	-1.56	0.00	136.65	26.68
6	-1.47	0.00	169.54	41.49
7	-1.37	0.00	201.92	59.44
8	-1.27	0.00	233.79	80.51
9	-1.18	0.00	265.15	104.63
10	-1.08	0.00	296.00	131.75
11	-0.98	0.00	326.35	161.84
12	-0.89	0.00	356.18	194.83
13	-0.79	0.00	385.50	230.68
14	-0.69	0.00	414.31	269.34
15	-0.60	0.00	442.62	310.77
16	-0.50	0.00	470.41	354.90
17	0.95	0.00	-392.43	-1117.68
18	1.05	0.00	-393.77	-1078.36
19	1.15	0.00	-394.56	-1038.94
20	1.25	0.00	-394.80	-999.47
21	1.35	0.00	-394.50	-960.00
22	1.45	0.00	-393.65	-920.59
23	1.55	0.00	-392.26	-881.29
24	1.65	0.00	-390.32	-842.16
25	1.75	0.00	-387.84	-803.24
26	1.85	0.00	-384.81	-764.61
27	1.95	0.00	-381.24	-726.30
28	2.05	0.00	-377.12	-688.38
29	2.15	0.00	-372.46	-650.89
30	2.25	0.00	-367.25	-613.90
31	2.35	0.00	-361.49	-577.46
32	2.45	0.00	-355.19	-541.62
33	2.55	0.00	-348.35	-506.44
34	2.65	0.00	-340.96	-471.97
35	2.75	0.00	-333.02	-438.27
36	2.85	0.00	-324.54	-405.38
37	2.95	0.00	-315.52	-373.38
38	3.05	0.00	-305.95	-342.30
39	3.15	0.00	-295.83	-312.21
40	3.25	0.00	-285.17	-283.15
41	3.35	0.00	-273.96	-255.19
42	3.45	0.00	-262.21	-228.38
43	3.55	0.00	-249.91	-202.77
44	3.65	0.00	-237.06	-178.41
45	3.75	0.00	-223.68	-155.37
46	3.85	0.00	-209.74	-133.70

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
47	3.95	0.00	-195.26	-113.44
48	4.05	0.00	-180.24	-94.66
49	4.15	0.00	-164.67	-77.41
50	4.25	0.00	-148.55	-61.75
51	4.35	0.00	-131.89	-47.72
52	4.45	0.00	-114.69	-35.39
53	4.55	0.00	-96.94	-24.80
54	4.65	0.00	-78.64	-16.02
55	4.75	0.00	-59.80	-9.09
56	4.85	0.00	-40.41	-4.08
57	4.95	0.00	-20.48	-1.03
58	5.05	0.00	0.00	0.00

Combinazione n° 13 - ECC

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-1.95	0.00	0.00	0.00
2	-1.85	0.00	22.78	1.10
3	-1.76	0.00	45.41	4.40
4	-1.66	0.00	67.89	9.88
5	-1.56	0.00	90.23	17.52
6	-1.47	0.00	112.43	27.32
7	-1.37	0.00	134.47	39.25
8	-1.27	0.00	156.38	53.31
9	-1.18	0.00	178.13	69.48
10	-1.08	0.00	199.74	87.74
11	-0.98	0.00	221.20	108.09
12	-0.89	0.00	242.52	130.51
13	-0.79	0.00	263.69	154.97
14	-0.69	0.00	284.71	181.48
15	-0.60	0.00	305.59	210.01
16	-0.50	0.00	326.32	240.56
17	0.95	0.00	-126.97	-350.12
18	1.05	0.00	-127.00	-337.42
19	1.15	0.00	-126.87	-324.73
20	1.25	0.00	-126.59	-312.05
21	1.35	0.00	-126.16	-299.42
22	1.45	0.00	-125.56	-286.83
23	1.55	0.00	-124.81	-274.31
24	1.65	0.00	-123.90	-261.87
25	1.75	0.00	-122.84	-249.53
26	1.85	0.00	-121.62	-237.31
27	1.95	0.00	-120.25	-225.21
28	2.05	0.00	-118.71	-213.26
29	2.15	0.00	-117.02	-201.48
30	2.25	0.00	-115.18	-189.87
31	2.35	0.00	-113.18	-178.45
32	2.45	0.00	-111.02	-167.23
33	2.55	0.00	-108.70	-156.25
34	2.65	0.00	-106.23	-145.50
35	2.75	0.00	-103.61	-135.01
36	2.85	0.00	-100.82	-124.78
37	2.95	0.00	-97.88	-114.85
38	3.05	0.00	-94.78	-105.21
39	3.15	0.00	-91.53	-95.90
40	3.25	0.00	-88.12	-86.91
41	3.35	0.00	-84.56	-78.28
42	3.45	0.00	-80.83	-70.01
43	3.55	0.00	-76.95	-62.12
44	3.65	0.00	-72.92	-54.62
45	3.75	0.00	-68.73	-47.54
46	3.85	0.00	-64.38	-40.88
47	3.95	0.00	-59.87	-34.67
48	4.05	0.00	-55.21	-28.91
49	4.15	0.00	-50.40	-23.63
50	4.25	0.00	-45.42	-18.84

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
51	4.35	0.00	-40.29	-14.55
52	4.45	0.00	-35.01	-10.78
53	4.55	0.00	-29.56	-7.55
54	4.65	0.00	-23.96	-4.88
55	4.75	0.00	-18.21	-2.77
56	4.85	0.00	-12.29	-1.24
57	4.95	0.00	-6.23	-0.31
58	5.05	0.00	0.00	0.00

Combinazione n° 14 - SLER

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-1.95	0.00	0.00	0.00
2	-1.85	0.00	19.03	0.92
3	-1.76	0.00	38.06	3.68
4	-1.66	0.00	57.07	8.28
5	-1.56	0.00	76.07	14.71
6	-1.47	0.00	95.05	22.98
7	-1.37	0.00	114.03	33.09
8	-1.27	0.00	132.99	45.03
9	-1.18	0.00	151.95	58.80
10	-1.08	0.00	170.89	74.40
11	-0.98	0.00	189.82	91.84
12	-0.89	0.00	208.74	111.10
13	-0.79	0.00	227.64	132.19
14	-0.69	0.00	246.54	155.11
15	-0.60	0.00	265.42	179.86
16	-0.50	0.00	284.29	206.43
17	0.95	0.00	-51.56	-112.84
18	1.05	0.00	-50.13	-106.89
19	1.15	0.00	-48.69	-101.08
20	1.25	0.00	-47.23	-95.42
21	1.35	0.00	-45.76	-89.90
22	1.45	0.00	-44.28	-84.53
23	1.55	0.00	-42.79	-79.31
24	1.65	0.00	-41.28	-74.24
25	1.75	0.00	-39.76	-69.33
26	1.85	0.00	-38.23	-64.56
27	1.95	0.00	-36.69	-59.95
28	2.05	0.00	-35.13	-55.49
29	2.15	0.00	-33.56	-51.19
30	2.25	0.00	-31.98	-47.04
31	2.35	0.00	-30.39	-43.06
32	2.45	0.00	-28.78	-39.23
33	2.55	0.00	-27.16	-35.57
34	2.65	0.00	-25.53	-32.07
35	2.75	0.00	-23.89	-28.73
36	2.85	0.00	-22.23	-25.56
37	2.95	0.00	-20.56	-22.55
38	3.05	0.00	-19.27	-20.10
39	3.15	0.00	-18.42	-18.21
40	3.25	0.00	-17.56	-16.41
41	3.35	0.00	-16.69	-14.70
42	3.45	0.00	-15.81	-13.07
43	3.55	0.00	-14.92	-11.54
44	3.65	0.00	-14.01	-10.09
45	3.75	0.00	-13.09	-8.74
46	3.85	0.00	-12.16	-7.47
47	3.95	0.00	-11.21	-6.30
48	4.05	0.00	-10.25	-5.23
49	4.15	0.00	-9.29	-4.25
50	4.25	0.00	-8.30	-3.37
51	4.35	0.00	-7.31	-2.59
52	4.45	0.00	-6.30	-1.91
53	4.55	0.00	-5.28	-1.33
54	4.65	0.00	-4.25	-0.86

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
55	4.75	0.00	-3.21	-0.48
56	4.85	0.00	-2.15	-0.22
57	4.95	0.00	-1.08	-0.05
58	5.05	0.00	0.00	0.00

Combinazione n° 15 - SLEF

n°	X	N	T	M
	[m]	[kN]	[kN]	[kNm]
1	-1.95	0.00	0.00	0.00
2	-1.85	0.00	17.93	0.87
3	-1.76	0.00	35.85	3.47
4	-1.66	0.00	53.76	7.80
5	-1.56	0.00	71.66	13.86
6	-1.47	0.00	89.56	21.65
7	-1.37	0.00	107.44	31.17
8	-1.27	0.00	125.30	42.42
9	-1.18	0.00	143.16	55.40
10	-1.08	0.00	161.01	70.10
11	-0.98	0.00	178.85	86.53
12	-0.89	0.00	196.68	104.68
13	-0.79	0.00	214.50	124.55
14	-0.69	0.00	232.31	146.15
15	-0.60	0.00	250.10	169.46
16	-0.50	0.00	267.89	194.50
17	0.95	0.00	-40.70	-89.81
18	1.05	0.00	-39.93	-85.78
19	1.15	0.00	-39.15	-81.82
20	1.25	0.00	-38.36	-77.95
21	1.35	0.00	-37.55	-74.15
22	1.45	0.00	-36.74	-70.44
23	1.55	0.00	-35.91	-66.81
24	1.65	0.00	-35.07	-63.26
25	1.75	0.00	-34.23	-59.79
26	1.85	0.00	-33.37	-56.41
27	1.95	0.00	-32.49	-53.12
28	2.05	0.00	-31.61	-49.91
29	2.15	0.00	-30.72	-46.80
30	2.25	0.00	-29.82	-43.77
31	2.35	0.00	-28.90	-40.83
32	2.45	0.00	-27.97	-37.99
33	2.55	0.00	-27.04	-35.24
34	2.65	0.00	-26.09	-32.58
35	2.75	0.00	-25.13	-30.02
36	2.85	0.00	-24.16	-27.56
37	2.95	0.00	-23.18	-25.19
38	3.05	0.00	-22.18	-22.92
39	3.15	0.00	-21.18	-20.75
40	3.25	0.00	-20.16	-18.69
41	3.35	0.00	-19.14	-16.72
42	3.45	0.00	-18.10	-14.86
43	3.55	0.00	-17.05	-13.10
44	3.65	0.00	-15.99	-11.45
45	3.75	0.00	-14.92	-9.90
46	3.85	0.00	-13.84	-8.47
47	3.95	0.00	-12.75	-7.14
48	4.05	0.00	-11.65	-5.92
49	4.15	0.00	-10.53	-4.81
50	4.25	0.00	-9.41	-3.81
51	4.35	0.00	-8.27	-2.93
52	4.45	0.00	-7.12	-2.16
53	4.55	0.00	-5.96	-1.50
54	4.65	0.00	-4.79	-0.96
55	4.75	0.00	-3.61	-0.54
56	4.85	0.00	-2.42	-0.24
57	4.95	0.00	-1.21	-0.06
58	5.05	0.00	0.00	0.00

Combinazione n° 16 - SLEQ

n°	X [m]	N [kN]	T [kN]	M [kNm]
1	-1.95	0.00	0.00	0.00
2	-1.85	0.00	17.93	0.87
3	-1.76	0.00	35.85	3.47
4	-1.66	0.00	53.76	7.80
5	-1.56	0.00	71.66	13.86
6	-1.47	0.00	89.56	21.65
7	-1.37	0.00	107.44	31.17
8	-1.27	0.00	125.30	42.42
9	-1.18	0.00	143.16	55.40
10	-1.08	0.00	161.01	70.10
11	-0.98	0.00	178.85	86.53
12	-0.89	0.00	196.68	104.68
13	-0.79	0.00	214.50	124.55
14	-0.69	0.00	232.31	146.15
15	-0.60	0.00	250.10	169.46
16	-0.50	0.00	267.89	194.50
17	0.95	0.00	-40.70	-89.81
18	1.05	0.00	-39.93	-85.78
19	1.15	0.00	-39.15	-81.82
20	1.25	0.00	-38.36	-77.95
21	1.35	0.00	-37.55	-74.15
22	1.45	0.00	-36.74	-70.44
23	1.55	0.00	-35.91	-66.81
24	1.65	0.00	-35.07	-63.26
25	1.75	0.00	-34.23	-59.79
26	1.85	0.00	-33.37	-56.41
27	1.95	0.00	-32.49	-53.12
28	2.05	0.00	-31.61	-49.91
29	2.15	0.00	-30.72	-46.80
30	2.25	0.00	-29.82	-43.77
31	2.35	0.00	-28.90	-40.83
32	2.45	0.00	-27.97	-37.99
33	2.55	0.00	-27.04	-35.24
34	2.65	0.00	-26.09	-32.58
35	2.75	0.00	-25.13	-30.02
36	2.85	0.00	-24.16	-27.56
37	2.95	0.00	-23.18	-25.19
38	3.05	0.00	-22.18	-22.92
39	3.15	0.00	-21.18	-20.75
40	3.25	0.00	-20.16	-18.69
41	3.35	0.00	-19.14	-16.72
42	3.45	0.00	-18.10	-14.86
43	3.55	0.00	-17.05	-13.10
44	3.65	0.00	-15.99	-11.45
45	3.75	0.00	-14.92	-9.90
46	3.85	0.00	-13.84	-8.47
47	3.95	0.00	-12.75	-7.14
48	4.05	0.00	-11.65	-5.92
49	4.15	0.00	-10.53	-4.81
50	4.25	0.00	-9.41	-3.81
51	4.35	0.00	-8.27	-2.93
52	4.45	0.00	-7.12	-2.16
53	4.55	0.00	-5.96	-1.50
54	4.65	0.00	-4.79	-0.96
55	4.75	0.00	-3.61	-0.54
56	4.85	0.00	-2.42	-0.24
57	4.95	0.00	-1.21	-0.06
58	5.05	0.00	0.00	0.00

Verifiche strutturali

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta****Verifiche a flessione****Elementi calcolati a trave****Simbologia adottata**

n°	indice sezione
Y	ordinata sezione espressa in [m]
B	larghezza sezione espressa in [cm]
H	altezza sezione espressa in [cm]
Afi	area ferri inferiori espressa in [cmq]
Afs	area ferri superiori espressa in [cmq]
M	momento agente espressa in [kNm]
N	sfuerzo normale agente espressa in [kN]
Mu	momento ultimi espresso in [kNm]
Nu	sfuerzo normale ultimo espressa in [kN]
FS	fattore di sicurezza (rapporto tra sollecitazione ultima e sollecitazione agente)

**Paramento****Combinazione n° 1 - STR (A1-M1-R3)**

n°	Y [m]	B [cm]	H [cm]	Afi [cmq]	Afs [cmq]	M [kNm]	N [kN]	Mu [kNm]	Nu [kN]	FS
1	0.00	100	50	15.71	31.42	0.38	3.06	0.00	0.00	1000.000
2	-0.10	100	51	15.71	31.42	0.39	4.30	0.00	0.00	1000.000
3	-0.20	100	52	15.71	31.42	0.40	5.56	0.00	0.00	1000.000
4	-0.30	100	53	15.71	31.42	0.44	6.85	0.00	0.00	1000.000
5	-0.40	100	54	15.71	31.42	0.50	8.15	0.00	0.00	1000.000
6	-0.50	100	55	15.71	31.42	0.59	9.48	544.96	8809.98	928.973
7	-0.60	100	56	15.71	31.42	0.71	10.84	581.95	8837.79	815.528
8	-0.70	100	57	15.71	31.42	0.88	12.21	635.30	8778.93	718.796
9	-0.80	100	58	15.71	31.42	1.10	13.61	701.74	8655.79	635.845
10	-0.90	100	59	15.71	31.42	1.38	15.04	777.15	8472.23	563.468
11	-1.00	100	59	15.71	31.42	1.72	16.48	858.74	8243.92	500.180
12	-1.10	100	60	15.71	31.42	2.12	17.95	944.50	7987.13	444.938
13	-1.20	100	61	15.71	31.42	2.60	19.44	1031.19	7701.87	396.116
14	-1.30	100	62	15.71	31.42	3.16	20.96	1118.90	7410.70	353.581
15	-1.40	100	63	15.71	31.42	3.81	22.50	1204.38	7106.54	315.878
16	-1.50	100	64	15.71	31.42	4.55	24.06	1289.86	6813.99	283.213
17	-1.60	100	65	15.71	31.42	5.40	25.64	1371.22	6517.38	254.142
18	-1.70	100	66	15.71	31.42	6.34	27.25	1451.85	6238.47	228.910
19	-1.80	100	67	15.71	31.42	7.40	28.88	1524.59	5949.78	205.986
20	-1.90	100	68	15.71	31.42	8.58	30.54	1588.22	5653.87	185.136
21	-2.00	100	69	15.71	31.42	9.88	32.22	1643.45	5358.71	166.333
22	-2.10	100	70	15.71	31.42	11.31	33.92	1667.50	4999.35	147.397
23	-2.20	100	71	15.71	31.42	12.88	35.64	1682.66	4655.32	130.614
24	-2.30	100	72	15.71	31.42	14.60	37.39	1692.41	4335.39	115.953
25	-2.40	100	73	15.71	31.42	16.46	39.16	1690.82	4023.07	102.735
26	-2.50	100	74	15.71	31.42	18.48	40.95	1688.76	3743.18	91.401
27	-2.60	100	75	15.71	31.42	20.66	42.77	1678.96	3476.34	81.280
28	-2.70	100	76	15.71	31.42	23.01	44.61	1667.54	3233.59	72.486
29	-2.80	100	76	15.71	31.42	25.53	46.47	1660.56	3022.98	65.048
30	-2.90	100	77	15.71	31.42	28.23	48.36	1641.87	2812.41	58.156
31	-3.00	100	78	15.71	31.42	31.12	50.27	1628.10	2629.66	52.312
32	-3.10	100	79	15.71	31.42	34.21	52.20	1618.37	2469.70	47.311
33	-3.20	100	80	15.71	31.42	37.49	54.16	1606.82	2321.13	42.859
34	-3.30	100	81	15.71	31.42	40.98	56.14	1591.01	2179.43	38.824
35	-3.40	100	82	15.71	31.42	44.68	58.14	1578.85	2054.34	35.335
36	-3.50	100	83	15.71	31.42	48.60	60.16	1569.74	1943.18	32.298

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## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
37	-3.60	100	84	15.71	31.42	52.75	62.21	1563.24	1843.80	29.637
38	-3.70	100	85	15.71	31.42	57.12	64.28	1556.37	1751.54	27.247
39	-3.80	100	86	15.71	31.42	61.73	66.38	1543.43	1659.58	25.001
40	-3.90	100	87	15.71	31.42	66.59	68.50	1533.08	1577.01	23.023
41	-4.00	100	88	15.71	31.42	71.69	70.64	1524.95	1502.50	21.270
42	-4.10	100	89	15.71	31.42	77.06	72.80	1518.75	1434.94	19.710
43	-4.20	100	90	15.71	31.42	82.68	74.99	1514.22	1373.43	18.315
44	-4.30	100	91	15.71	31.42	88.57	77.20	1511.17	1317.22	17.062
45	-4.40	100	92	15.71	31.42	94.74	79.44	1509.42	1265.65	15.933
46	-4.50	100	93	15.71	31.42	101.18	81.69	1508.82	1218.20	14.912
47	-4.60	100	93	15.71	31.42	107.92	83.97	1509.24	1174.40	13.985
48	-4.70	100	94	15.71	31.42	114.94	86.28	1510.58	1133.86	13.142
49	-4.80	100	95	15.71	31.42	122.27	88.60	1512.75	1096.23	12.372
50	-4.90	100	96	15.71	31.42	129.90	90.95	1515.66	1061.23	11.668
51	-5.00	100	97	15.71	31.42	137.84	93.33	1519.24	1028.59	11.021
52	-5.10	100	98	15.71	31.42	146.11	95.72	1523.43	998.08	10.427
53	-5.20	100	99	15.71	31.42	154.69	98.14	1528.18	969.52	9.879
54	-5.30	100	100	15.71	31.42	163.61	100.58	1533.44	942.72	9.372
55	-5.40	100	101	15.71	31.42	172.87	103.05	1539.17	917.54	8.904
56	-5.50	100	102	15.71	31.42	182.46	105.54	1545.33	893.83	8.469
57	-5.60	100	103	15.71	31.42	192.41	108.05	1551.88	871.47	8.065
58	-5.70	100	104	15.71	31.42	202.72	110.59	1558.80	850.36	7.690
59	-5.80	100	105	15.71	31.42	213.38	113.14	1566.05	830.40	7.339
60	-5.90	100	106	15.71	31.42	224.42	115.73	1573.62	811.49	7.012
61	-6.00	100	107	15.71	31.42	235.82	118.33	1581.49	793.56	6.706
62	-6.10	100	108	15.71	31.42	247.61	120.96	1589.62	776.53	6.420
63	-6.20	100	109	15.71	31.42	259.79	123.61	1598.01	760.35	6.151
64	-6.30	100	110	15.71	31.42	272.36	126.28	1605.57	744.46	5.895
65	-6.40	100	110	15.71	31.42	285.33	128.98	1612.78	729.06	5.652
66	-6.50	100	111	15.71	31.42	298.70	131.70	1620.21	714.38	5.424
67	-6.60	100	112	15.71	31.42	312.49	134.45	1627.84	700.37	5.209
68	-6.70	100	113	15.71	31.42	326.69	137.21	1635.67	686.99	5.007
69	-6.80	100	114	15.71	31.42	341.32	140.00	1643.67	674.20	4.816
70	-6.90	100	115	15.71	31.42	356.38	142.82	1651.85	661.96	4.635
71	-7.00	100	116	15.71	31.42	371.88	145.65	1660.18	650.24	4.464
72	-7.10	100	117	15.71	31.42	387.82	148.51	1668.66	639.00	4.303
73	-7.20	100	118	15.71	31.42	404.21	151.40	1677.28	628.22	4.150
74	-7.30	100	119	15.71	31.42	421.06	154.30	1686.03	617.87	4.004
75	-7.40	100	120	15.71	31.42	438.36	157.23	1694.91	607.93	3.866
76	-7.50	100	121	15.71	31.42	456.14	160.18	1703.91	598.37	3.735
77	-7.60	100	122	15.71	31.42	474.39	163.16	1713.02	589.17	3.611
78	-7.70	100	123	15.71	31.42	493.12	166.16	1722.23	580.31	3.492
79	-7.80	100	124	15.71	31.42	512.34	169.18	1731.54	571.77	3.380
80	-7.90	100	125	15.71	31.42	532.05	172.23	1740.95	563.55	3.272
81	-8.00	100	126	15.71	31.42	552.27	175.29	1750.45	555.61	3.170
82	-8.10	100	127	15.71	31.42	572.98	178.39	1760.03	547.95	3.072
83	-8.20	100	128	15.71	31.42	594.21	181.50	1769.70	540.55	2.978
84	-8.30	100	128	15.71	31.42	615.96	184.64	1779.44	533.40	2.889
85	-8.40	100	129	15.71	31.42	638.23	187.80	1789.26	526.49	2.803
86	-8.50	100	130	15.71	31.42	661.03	190.98	1799.15	519.80	2.722
87	-8.60	100	131	15.71	62.83	684.37	194.19	3491.05	990.58	5.101
88	-8.70	100	132	15.71	62.83	708.26	197.42	3511.67	978.85	4.958
89	-8.80	100	133	15.71	62.83	732.69	200.67	3532.38	967.47	4.821
90	-8.90	100	134	15.71	62.83	757.68	203.95	3553.18	956.44	4.690
91	-9.00	100	135	15.71	62.83	783.23	207.25	3574.07	945.74	4.563
92	-9.10	100	136	15.71	62.83	809.35	210.57	3595.04	935.35	4.442
93	-9.20	100	137	31.42	62.83	836.04	213.92	3668.96	938.79	4.389
94	-9.30	100	138	15.71	31.42	863.31	217.29	1880.44	473.30	2.178
95	-9.40	100	139	15.71	31.42	891.18	220.68	1890.84	468.23	2.122
96	-9.50	100	140	15.71	31.42	919.63	224.10	1901.29	463.31	2.067
97	-9.60	100	141	15.71	31.42	948.68	227.54	1911.77	458.53	2.015
98	-9.70	100	142	15.71	31.42	978.34	231.00	1922.30	453.88	1.965
99	-9.80	100	143	15.71	31.42	1008.61	234.49	1932.87	449.36	1.916
100	-9.90	100	144	15.71	31.42	1039.50	237.99	1943.48	444.96	1.870
101	-10.00	100	145	15.71	31.42	1071.02	241.53	1954.12	440.68	1.825

Combinazione n° 2 - STR (A1-M1-R3) H + V



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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	Y [m]	B [cm]	H [cm]	Afi [cmq]	Afs [cmq]	M [kNm]	N [kN]	Mu [kNm]	Nu [kN]	FS
1	0.00	100	50	15.71	31.42	0.41	3.28	0.00	0.00	1000.000
2	-0.10	100	51	15.71	31.42	0.47	4.52	0.00	0.00	1000.000
3	-0.20	100	52	15.71	31.42	0.66	5.78	0.00	0.00	1000.000
4	-0.30	100	53	15.71	31.42	0.98	7.06	852.41	6138.27	868.853
5	-0.40	100	54	15.71	31.42	1.44	8.37	956.63	5566.39	664.901
6	-0.50	100	55	15.71	31.42	2.04	9.70	1054.42	5017.82	517.199
7	-0.60	100	56	15.71	31.42	2.79	11.06	1131.30	4488.99	406.052
8	-0.70	100	57	15.71	31.42	3.69	12.43	1169.09	3942.91	317.166
9	-0.80	100	58	15.71	31.42	4.74	13.83	1171.31	3415.19	246.916
10	-0.90	100	59	15.71	31.42	5.96	15.25	1160.85	2968.95	194.631
11	-1.00	100	59	15.71	31.42	7.35	16.70	1145.89	2602.55	155.839
12	-1.10	100	60	15.71	31.42	8.91	18.17	1130.67	2304.39	126.828
13	-1.20	100	61	15.71	31.42	10.66	19.66	1113.42	2054.55	104.495
14	-1.30	100	62	15.71	31.42	12.58	21.18	1100.51	1852.72	87.486
15	-1.40	100	63	15.71	31.42	14.69	22.72	1091.63	1687.85	74.302
16	-1.50	100	64	15.71	31.42	17.00	24.28	1079.73	1542.14	63.520
17	-1.60	100	65	15.71	31.42	19.50	25.86	1072.72	1422.48	55.000
18	-1.70	100	66	15.71	31.42	22.21	27.47	1069.43	1322.54	48.143
19	-1.80	100	67	15.71	31.42	25.13	29.10	1065.83	1234.18	42.408
20	-1.90	100	68	15.71	31.42	28.27	30.76	1060.49	1153.94	37.518
21	-2.00	100	69	15.71	31.42	31.62	32.44	1057.60	1084.86	33.447
22	-2.10	100	70	15.71	31.42	35.20	34.14	1056.73	1024.84	30.022
23	-2.20	100	71	15.71	31.42	39.01	35.86	1057.51	972.21	27.111
24	-2.30	100	72	15.71	31.42	43.05	37.61	1059.67	925.70	24.615
25	-2.40	100	73	15.71	31.42	47.33	39.38	1062.98	884.31	22.457
26	-2.50	100	74	15.71	31.42	51.86	41.17	1067.27	847.25	20.579
27	-2.60	100	75	15.71	31.42	56.64	42.99	1072.39	813.87	18.932
28	-2.70	100	76	15.71	31.42	61.68	44.83	1078.23	783.66	17.481
29	-2.80	100	76	15.71	31.42	66.98	46.69	1084.70	756.19	16.195
30	-2.90	100	77	15.71	31.42	72.54	48.58	1091.71	731.10	15.050
31	-3.00	100	78	15.71	31.42	78.37	50.49	1099.21	708.10	14.025
32	-3.10	100	79	15.71	31.42	84.48	52.42	1107.14	686.95	13.105
33	-3.20	100	80	15.71	31.42	90.88	54.38	1115.44	667.42	12.274
34	-3.30	100	81	15.71	31.42	97.56	56.36	1124.09	649.35	11.522
35	-3.40	100	82	15.71	31.42	104.53	58.36	1133.04	632.57	10.840
36	-3.50	100	83	15.71	31.42	111.80	60.38	1142.27	616.96	10.217
37	-3.60	100	84	15.71	31.42	119.37	62.43	1151.75	602.39	9.649
38	-3.70	100	85	15.71	31.42	127.25	64.50	1161.45	588.76	9.128
39	-3.80	100	86	15.71	31.42	135.44	66.60	1171.37	576.00	8.649
40	-3.90	100	87	15.71	31.42	143.94	68.72	1181.48	564.01	8.208
41	-4.00	100	88	15.71	31.42	152.78	70.86	1191.76	552.73	7.801
42	-4.10	100	89	15.71	31.42	161.94	73.02	1202.21	542.11	7.424
43	-4.20	100	90	15.71	31.42	171.43	75.21	1212.80	532.08	7.075
44	-4.30	100	91	15.71	31.42	181.26	77.42	1223.54	522.60	6.750
45	-4.40	100	92	15.71	31.42	191.44	79.65	1234.41	513.62	6.448
46	-4.50	100	93	15.71	31.42	201.96	81.91	1245.40	505.11	6.167
47	-4.60	100	93	15.71	31.42	212.84	84.19	1255.91	496.80	5.901
48	-4.70	100	94	15.71	31.42	224.08	86.50	1266.21	488.77	5.651
49	-4.80	100	95	15.71	31.42	235.68	88.82	1276.59	481.12	5.417
50	-4.90	100	96	15.71	31.42	247.65	91.17	1287.06	473.83	5.197
51	-5.00	100	97	15.71	31.42	259.99	93.54	1297.61	466.88	4.991
52	-5.10	100	98	15.71	31.42	272.72	95.94	1308.23	460.23	4.797
53	-5.20	100	99	15.71	31.42	285.83	98.36	1318.91	453.87	4.614
54	-5.30	100	100	15.71	31.42	299.33	100.80	1329.67	447.78	4.442
55	-5.40	100	101	15.71	31.42	313.22	103.27	1340.48	441.95	4.280
56	-5.50	100	102	15.71	31.42	327.52	105.76	1351.34	436.36	4.126
57	-5.60	100	103	15.71	31.42	342.22	108.27	1362.26	430.98	3.981
58	-5.70	100	104	15.71	31.42	357.33	110.80	1373.23	425.82	3.843
59	-5.80	100	105	15.71	31.42	372.86	113.36	1384.25	420.86	3.713
60	-5.90	100	106	15.71	31.42	388.81	115.94	1395.30	416.09	3.589
61	-6.00	100	107	15.71	31.42	405.18	118.55	1406.41	411.49	3.471
62	-6.10	100	108	15.71	31.42	421.99	121.18	1417.55	407.06	3.359
63	-6.20	100	109	15.71	31.42	439.23	123.83	1428.72	402.79	3.253
64	-6.30	100	110	15.71	31.42	456.92	126.50	1439.94	398.66	3.151
65	-6.40	100	110	15.71	31.42	475.05	129.20	1451.18	394.68	3.055
66	-6.50	100	111	15.71	31.42	493.63	131.92	1462.46	390.83	2.963
67	-6.60	100	112	15.71	31.42	512.68	134.67	1473.77	387.12	2.875
68	-6.70	100	113	15.71	31.42	532.18	137.43	1485.10	383.52	2.791
69	-6.80	100	114	15.71	31.42	552.15	140.22	1496.47	380.04	2.710

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
70	-6.90	100	115	15.71	31.42	572.59	143.04	1507.86	376.67	2.633
71	-7.00	100	116	15.71	31.42	593.52	145.87	1519.27	373.40	2.560
72	-7.10	100	117	15.71	31.42	614.92	148.73	1530.71	370.24	2.489
73	-7.20	100	118	15.71	31.42	636.81	151.61	1542.17	367.17	2.422
74	-7.30	100	119	15.71	31.42	659.20	154.52	1553.65	364.19	2.357
75	-7.40	100	120	15.71	31.42	682.08	157.45	1565.16	361.30	2.295
76	-7.50	100	121	15.71	31.42	705.47	160.40	1576.68	358.49	2.235
77	-7.60	100	122	15.71	31.42	729.37	163.38	1588.22	355.76	2.178
78	-7.70	100	123	15.71	31.42	753.78	166.38	1599.78	353.11	2.122
79	-7.80	100	124	15.71	31.42	778.71	169.40	1611.36	350.53	2.069
80	-7.90	100	125	15.71	31.42	804.16	172.44	1622.95	348.02	2.018
81	-8.00	100	126	15.71	31.42	830.15	175.51	1634.56	345.58	1.969
82	-8.10	100	127	15.71	31.42	856.67	178.60	1646.18	343.21	1.922
83	-8.20	100	128	15.71	31.42	883.72	181.72	1657.82	340.89	1.876
84	-8.30	100	128	15.71	31.42	911.33	184.86	1669.48	338.64	1.832
85	-8.40	100	129	15.71	31.42	939.48	188.02	1681.14	336.45	1.789
86	-8.50	100	130	15.71	31.42	968.19	191.20	1692.83	334.30	1.748
87	-8.60	100	131	15.71	62.83	997.46	194.41	3312.28	645.58	3.321
88	-8.70	100	132	15.71	62.83	1027.29	197.64	3335.64	641.74	3.247
89	-8.80	100	133	15.71	62.83	1057.70	200.89	3359.02	637.99	3.176
90	-8.90	100	134	15.71	62.83	1088.68	204.17	3382.42	634.33	3.107
91	-9.00	100	135	15.71	62.83	1120.25	207.47	3405.83	630.76	3.040
92	-9.10	100	136	15.71	62.83	1152.39	210.79	3429.27	627.27	2.976
93	-9.20	100	137	31.42	62.83	1185.13	214.14	3499.59	632.33	2.953
94	-9.30	100	138	15.71	31.42	1218.47	217.51	1786.69	318.94	1.466
95	-9.40	100	139	15.71	31.42	1252.41	220.90	1798.47	317.22	1.436
96	-9.50	100	140	15.71	31.42	1286.96	224.32	1810.26	315.53	1.407
97	-9.60	100	141	15.71	31.42	1322.11	227.76	1822.05	313.88	1.378
98	-9.70	100	142	15.71	31.42	1357.89	231.22	1833.86	312.27	1.351
99	-9.80	100	143	15.71	31.42	1394.29	234.70	1845.68	310.69	1.324
100	-9.90	100	144	15.71	31.42	1431.31	238.21	1857.50	309.14	1.298
101	-10.00	100	145	15.71	31.42	1468.97	241.75	1869.33	307.63	1.273

Combinazione n° 3 - STR (A1-M1-R3)

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
1	0.00	100	50	15.71	31.42	0.38	3.06	0.00	0.00	1000.000
2	-0.10	100	51	15.71	31.42	0.43	4.30	0.00	0.00	1000.000
3	-0.20	100	52	15.71	31.42	0.58	5.56	0.00	0.00	1000.000
4	-0.30	100	53	15.71	31.42	0.83	6.85	799.47	6579.45	961.000
5	-0.40	100	54	15.71	31.42	1.20	8.15	896.42	6102.32	748.435
6	-0.50	100	55	15.71	31.42	1.68	9.48	993.34	5600.83	590.582
7	-0.60	100	56	15.71	31.42	2.29	10.84	1084.33	5129.35	473.323
8	-0.70	100	57	15.71	31.42	3.03	12.21	1158.05	4666.74	382.101
9	-0.80	100	58	15.71	31.42	3.91	13.61	1207.45	4206.28	308.989
10	-0.90	100	59	15.71	31.42	4.93	15.04	1218.14	3716.54	247.178
11	-1.00	100	59	15.71	31.42	6.10	16.48	1217.28	3289.94	199.609
12	-1.10	100	60	15.71	31.42	7.42	17.95	1208.15	2921.16	162.729
13	-1.20	100	61	15.71	31.42	8.91	19.44	1193.26	2603.20	133.886
14	-1.30	100	62	15.71	31.42	10.57	20.96	1182.55	2345.04	111.887
15	-1.40	100	63	15.71	31.42	12.40	22.50	1166.12	2115.66	94.039
16	-1.50	100	64	15.71	31.42	14.41	24.06	1155.05	1928.17	80.141
17	-1.60	100	65	15.71	31.42	16.61	25.64	1147.52	1771.47	69.077
18	-1.70	100	66	15.71	31.42	19.00	27.25	1135.89	1628.87	59.769
19	-1.80	100	67	15.71	31.42	21.60	28.88	1128.69	1509.52	52.261
20	-1.90	100	68	15.71	31.42	24.40	30.54	1124.81	1408.06	46.107
21	-2.00	100	69	15.71	31.42	27.41	32.22	1122.25	1319.23	40.949
22	-2.10	100	70	15.71	31.42	30.64	33.92	1115.50	1235.02	36.412
23	-2.20	100	71	15.71	31.42	34.09	35.64	1111.27	1161.89	32.599
24	-2.30	100	72	15.71	31.42	37.77	37.39	1109.10	1097.81	29.362
25	-2.40	100	73	15.71	31.42	41.70	39.16	1108.63	1041.21	26.589
26	-2.50	100	74	15.71	31.42	45.86	40.95	1109.59	990.86	24.195
27	-2.60	100	75	15.71	31.42	50.28	42.77	1111.77	945.80	22.114
28	-2.70	100	76	15.71	31.42	54.95	44.61	1114.98	905.24	20.292
29	-2.80	100	76	15.71	31.42	59.88	46.47	1119.08	868.54	18.689
30	-2.90	100	77	15.71	31.42	65.08	48.36	1123.95	835.18	17.270

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
31	-3.00	100	78	15.71	31.42	70.56	50.27	1129.51	804.74	16.009
32	-3.10	100	79	15.71	31.42	76.31	52.20	1135.65	776.84	14.881
33	-3.20	100	80	15.71	31.42	82.36	54.16	1142.33	751.19	13.870
34	-3.30	100	81	15.71	31.42	88.69	56.14	1149.47	727.52	12.960
35	-3.40	100	82	15.71	31.42	95.33	58.14	1157.03	705.63	12.137
36	-3.50	100	83	15.71	31.42	102.28	60.16	1164.97	685.31	11.391
37	-3.60	100	84	15.71	31.42	109.53	62.21	1173.25	666.40	10.712
38	-3.70	100	85	15.71	31.42	117.10	64.28	1181.84	648.77	10.092
39	-3.80	100	86	15.71	31.42	125.00	66.38	1190.70	632.29	9.525
40	-3.90	100	87	15.71	31.42	133.23	68.50	1199.82	616.86	9.006
41	-4.00	100	88	15.71	31.42	141.80	70.64	1209.17	602.37	8.527
42	-4.10	100	89	15.71	31.42	150.71	72.80	1218.74	588.74	8.087
43	-4.20	100	90	15.71	31.42	159.97	74.99	1228.51	575.91	7.680
44	-4.30	100	91	15.71	31.42	169.58	77.20	1238.46	563.80	7.303
45	-4.40	100	92	15.71	31.42	179.56	79.44	1248.57	552.36	6.954
46	-4.50	100	93	15.71	31.42	189.91	81.69	1258.85	541.53	6.629
47	-4.60	100	93	15.71	31.42	200.62	83.97	1269.27	531.27	6.327
48	-4.70	100	94	15.71	31.42	211.72	86.28	1279.62	521.45	6.044
49	-4.80	100	95	15.71	31.42	223.19	88.60	1289.33	511.84	5.777
50	-4.90	100	96	15.71	31.42	235.05	90.95	1299.16	502.72	5.527
51	-5.00	100	97	15.71	31.42	247.28	93.33	1309.12	494.09	5.294
52	-5.10	100	98	15.71	31.42	259.88	95.72	1319.20	485.90	5.076
53	-5.20	100	99	15.71	31.42	272.87	98.14	1329.39	478.14	4.872
54	-5.30	100	100	15.71	31.42	286.23	100.58	1339.69	470.78	4.680
55	-5.40	100	101	15.71	31.42	299.98	103.05	1350.10	463.80	4.501
56	-5.50	100	102	15.71	31.42	314.11	105.54	1360.59	457.16	4.332
57	-5.60	100	103	15.71	31.42	328.63	108.05	1371.18	450.84	4.172
58	-5.70	100	104	15.71	31.42	343.55	110.59	1381.84	444.81	4.022
59	-5.80	100	105	15.71	31.42	358.87	113.14	1392.57	439.05	3.880
60	-5.90	100	106	15.71	31.42	374.60	115.73	1403.37	433.55	3.746
61	-6.00	100	107	15.71	31.42	390.75	118.33	1414.23	428.27	3.619
62	-6.10	100	108	15.71	31.42	407.33	120.96	1425.14	423.21	3.499
63	-6.20	100	109	15.71	31.42	424.33	123.61	1436.11	418.35	3.384
64	-6.30	100	110	15.71	31.42	441.77	126.28	1447.13	413.68	3.276
65	-6.40	100	110	15.71	31.42	459.65	128.98	1458.19	409.18	3.172
66	-6.50	100	111	15.71	31.42	477.98	131.70	1469.29	404.85	3.074
67	-6.60	100	112	15.71	31.42	496.77	134.45	1480.43	400.67	2.980
68	-6.70	100	113	15.71	31.42	516.02	137.21	1491.61	396.63	2.891
69	-6.80	100	114	15.71	31.42	535.73	140.00	1502.82	392.73	2.805
70	-6.90	100	115	15.71	31.42	555.92	142.82	1514.06	388.96	2.724
71	-7.00	100	116	15.71	31.42	576.60	145.65	1525.34	385.32	2.645
72	-7.10	100	117	15.71	31.42	597.75	148.51	1536.64	381.78	2.571
73	-7.20	100	118	15.71	31.42	619.40	151.40	1547.96	378.36	2.499
74	-7.30	100	119	15.71	31.42	641.55	154.30	1559.31	375.04	2.431
75	-7.40	100	120	15.71	31.42	664.21	157.23	1570.69	371.81	2.365
76	-7.50	100	121	15.71	31.42	687.38	160.18	1582.09	368.68	2.302
77	-7.60	100	122	15.71	31.42	711.07	163.16	1593.50	365.64	2.241
78	-7.70	100	123	15.71	31.42	735.28	166.16	1604.94	362.69	2.183
79	-7.80	100	124	15.71	31.42	760.02	169.18	1616.40	359.81	2.127
80	-7.90	100	125	15.71	31.42	785.30	172.23	1627.87	357.01	2.073
81	-8.00	100	126	15.71	31.42	811.13	175.29	1639.36	354.29	2.021
82	-8.10	100	127	15.71	31.42	837.50	178.39	1650.87	351.63	1.971
83	-8.20	100	128	15.71	31.42	864.43	181.50	1662.39	349.04	1.923
84	-8.30	100	128	15.71	31.42	891.92	184.64	1673.93	346.52	1.877
85	-8.40	100	129	15.71	31.42	919.98	187.80	1685.48	344.06	1.832
86	-8.50	100	130	15.71	31.42	948.62	190.98	1697.04	341.66	1.789
87	-8.60	100	131	15.71	62.83	977.84	194.19	3319.33	659.19	3.395
88	-8.70	100	132	15.71	62.83	1007.65	197.42	3342.50	654.87	3.317
89	-8.80	100	133	15.71	62.83	1038.05	200.67	3365.68	650.65	3.242
90	-8.90	100	134	15.71	62.83	1069.05	203.95	3388.88	646.53	3.170
91	-9.00	100	135	15.71	62.83	1100.65	207.25	3412.10	642.49	3.100
92	-9.10	100	136	15.71	62.83	1132.87	210.57	3435.33	638.55	3.032
93	-9.20	100	137	31.42	62.83	1165.71	213.92	3505.67	643.33	3.007
94	-9.30	100	138	15.71	31.42	1199.18	217.29	1789.97	324.34	1.493
95	-9.40	100	139	15.71	31.42	1233.27	220.68	1801.63	322.39	1.461
96	-9.50	100	140	15.71	31.42	1268.01	224.10	1813.30	320.47	1.430
97	-9.60	100	141	15.71	31.42	1303.38	227.54	1824.98	318.60	1.400
98	-9.70	100	142	15.71	31.42	1339.40	231.00	1836.67	316.76	1.371
99	-9.80	100	143	15.71	31.42	1376.08	234.49	1848.36	314.96	1.343
100	-9.90	100	144	15.71	31.42	1413.40	237.99	1860.07	313.21	1.316

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
101	-10.00	100	145	15.71	31.42	1451.38	241.53	1871.79	311.49	1.290

Combinazione n° 4 - STR (A1-M1-R3) H - V

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
1	0.00	100	50	15.71	31.42	0.38	3.06	0.00	0.00	1000.000
2	-0.10	100	51	15.71	31.42	0.43	4.30	0.00	0.00	1000.000
3	-0.20	100	52	15.71	31.42	0.57	5.56	0.00	0.00	1000.000
4	-0.30	100	53	15.71	31.42	0.81	6.85	789.17	6659.61	972.708
5	-0.40	100	54	15.71	31.42	1.16	8.15	883.16	6217.31	762.539
6	-0.50	100	55	15.71	31.42	1.62	9.48	978.43	5743.18	605.592
7	-0.60	100	56	15.71	31.42	2.19	10.84	1067.71	5286.03	487.781
8	-0.70	100	57	15.71	31.42	2.88	12.21	1145.52	4852.71	397.327
9	-0.80	100	58	15.71	31.42	3.70	13.61	1211.55	4453.55	327.153
10	-0.90	100	59	15.71	31.42	4.65	15.04	1232.17	3980.14	264.709
11	-1.00	100	59	15.71	31.42	5.74	16.48	1236.57	3549.01	215.328
12	-1.10	100	60	15.71	31.42	6.97	17.95	1232.51	3173.30	176.775
13	-1.20	100	61	15.71	31.42	8.35	19.44	1226.79	2857.18	146.948
14	-1.30	100	62	15.71	31.42	9.88	20.96	1213.31	2574.76	122.847
15	-1.40	100	63	15.71	31.42	11.56	22.50	1205.41	2345.58	104.258
16	-1.50	100	64	15.71	31.42	13.41	24.06	1191.34	2137.58	88.845
17	-1.60	100	65	15.71	31.42	15.42	25.64	1182.89	1966.73	76.691
18	-1.70	100	66	15.71	31.42	17.61	27.25	1178.00	1822.91	66.889
19	-1.80	100	67	15.71	31.42	19.98	28.88	1168.12	1689.01	58.475
20	-1.90	100	68	15.71	31.42	22.52	30.54	1162.09	1575.58	51.593
21	-2.00	100	69	15.71	31.42	25.26	32.22	1158.99	1478.16	45.882
22	-2.10	100	70	15.71	31.42	28.19	33.92	1158.30	1393.67	41.090
23	-2.20	100	71	15.71	31.42	31.32	35.64	1154.29	1313.69	36.858
24	-2.30	100	72	15.71	31.42	34.65	37.39	1150.30	1241.30	33.199
25	-2.40	100	73	15.71	31.42	38.19	39.16	1148.28	1177.49	30.069
26	-2.50	100	74	15.71	31.42	41.94	40.95	1147.90	1120.84	27.369
27	-2.60	100	75	15.71	31.42	45.91	42.77	1148.90	1070.22	25.023
28	-2.70	100	76	15.71	31.42	50.11	44.61	1151.09	1024.72	22.971
29	-2.80	100	76	15.71	31.42	54.54	46.47	1154.28	983.60	21.165
30	-2.90	100	77	15.71	31.42	59.20	48.36	1158.36	946.28	19.568
31	-3.00	100	78	15.71	31.42	64.10	50.27	1163.20	912.24	18.147
32	-3.10	100	79	15.71	31.42	69.24	52.20	1168.72	881.08	16.878
33	-3.20	100	80	15.71	31.42	74.64	54.16	1174.83	852.45	15.740
34	-3.30	100	81	15.71	31.42	80.29	56.14	1181.47	826.06	14.715
35	-3.40	100	82	15.71	31.42	86.20	58.14	1188.57	801.65	13.788
36	-3.50	100	83	15.71	31.42	92.38	60.16	1196.10	779.01	12.948
37	-3.60	100	84	15.71	31.42	98.82	62.21	1204.01	757.97	12.183
38	-3.70	100	85	15.71	31.42	105.55	64.28	1212.26	738.35	11.486
39	-3.80	100	86	15.71	31.42	112.55	66.38	1220.82	720.02	10.847
40	-3.90	100	87	15.71	31.42	119.84	68.50	1229.67	702.85	10.261
41	-4.00	100	88	15.71	31.42	127.42	70.64	1238.77	686.75	9.722
42	-4.10	100	89	15.71	31.42	135.30	72.80	1248.12	671.61	9.225
43	-4.20	100	90	15.71	31.42	143.48	74.99	1257.68	657.35	8.766
44	-4.30	100	91	15.71	31.42	151.96	77.20	1267.45	643.90	8.340
45	-4.40	100	92	15.71	31.42	160.76	79.44	1277.40	631.19	7.946
46	-4.50	100	93	15.71	31.42	169.88	81.69	1287.53	619.17	7.579
47	-4.60	100	93	15.71	31.42	179.31	83.97	1297.82	607.78	7.238
48	-4.70	100	94	15.71	31.42	189.08	86.28	1308.26	596.96	6.919
49	-4.80	100	95	15.71	31.42	199.18	88.60	1318.84	586.69	6.622
50	-4.90	100	96	15.71	31.42	209.61	90.95	1329.56	576.92	6.343
51	-5.00	100	97	15.71	31.42	220.39	93.33	1340.21	567.53	6.081
52	-5.10	100	98	15.71	31.42	231.52	95.72	1350.12	558.22	5.832
53	-5.20	100	99	15.71	31.42	242.99	98.14	1360.14	549.34	5.597
54	-5.30	100	100	15.71	31.42	254.83	100.58	1370.25	540.85	5.377
55	-5.40	100	101	15.71	31.42	267.03	103.05	1380.45	532.73	5.170
56	-5.50	100	102	15.71	31.42	279.60	105.54	1390.74	524.95	4.974
57	-5.60	100	103	15.71	31.42	292.55	108.05	1401.10	517.49	4.789
58	-5.70	100	104	15.71	31.42	305.87	110.59	1411.54	510.33	4.615
59	-5.80	100	105	15.71	31.42	319.58	113.14	1422.04	503.46	4.450
60	-5.90	100	106	15.71	31.42	333.68	115.73	1432.61	496.86	4.293
61	-6.00	100	107	15.71	31.42	348.17	118.33	1443.24	490.51	4.145

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
62	-6.10	100	108	15.71	31.42	363.06	120.96	1453.93	484.40	4.005
63	-6.20	100	109	15.71	31.42	378.35	123.61	1464.67	478.52	3.871
64	-6.30	100	110	15.71	31.42	394.06	126.28	1475.47	472.84	3.744
65	-6.40	100	110	15.71	31.42	410.18	128.98	1486.31	467.37	3.624
66	-6.50	100	111	15.71	31.42	426.72	131.70	1497.20	462.09	3.509
67	-6.60	100	112	15.71	31.42	443.69	134.45	1508.14	456.99	3.399
68	-6.70	100	113	15.71	31.42	461.09	137.21	1519.11	452.07	3.295
69	-6.80	100	114	15.71	31.42	478.92	140.00	1530.13	447.30	3.195
70	-6.90	100	115	15.71	31.42	497.20	142.82	1541.18	442.70	3.100
71	-7.00	100	116	15.71	31.42	515.92	145.65	1552.27	438.24	3.009
72	-7.10	100	117	15.71	31.42	535.09	148.51	1563.40	433.92	2.922
73	-7.20	100	118	15.71	31.42	554.72	151.40	1574.55	429.73	2.838
74	-7.30	100	119	15.71	31.42	574.81	154.30	1585.74	425.68	2.759
75	-7.40	100	120	15.71	31.42	595.37	157.23	1596.96	421.74	2.682
76	-7.50	100	121	15.71	31.42	616.40	160.18	1608.20	417.93	2.609
77	-7.60	100	122	15.71	31.42	637.90	163.16	1619.48	414.22	2.539
78	-7.70	100	123	15.71	31.42	659.89	166.16	1630.78	410.62	2.471
79	-7.80	100	124	15.71	31.42	682.37	169.18	1642.10	407.13	2.406
80	-7.90	100	125	15.71	31.42	705.34	172.23	1653.45	403.73	2.344
81	-8.00	100	126	15.71	31.42	728.81	175.29	1664.82	400.43	2.284
82	-8.10	100	127	15.71	31.42	752.78	178.39	1676.22	397.21	2.227
83	-8.20	100	128	15.71	31.42	777.25	181.50	1687.63	394.09	2.171
84	-8.30	100	128	15.71	31.42	802.24	184.64	1699.07	391.04	2.118
85	-8.40	100	129	15.71	31.42	827.75	187.80	1710.52	388.08	2.066
86	-8.50	100	130	15.71	31.42	853.79	190.98	1721.99	385.19	2.017
87	-8.60	100	131	15.71	62.83	880.35	194.19	3362.04	741.61	3.819
88	-8.70	100	132	15.71	62.83	907.45	197.42	3385.09	736.45	3.730
89	-8.80	100	133	15.71	62.83	935.08	200.67	3408.18	731.42	3.645
90	-8.90	100	134	15.71	62.83	963.26	203.95	3431.28	726.51	3.562
91	-9.00	100	135	15.71	62.83	991.99	207.25	3454.41	721.71	3.482
92	-9.10	100	136	15.71	62.83	1021.27	210.57	3477.57	717.03	3.405
93	-9.20	100	137	31.42	62.83	1051.12	213.92	3549.34	722.35	3.377
94	-9.30	100	138	15.71	31.42	1081.53	217.29	1814.38	364.53	1.678
95	-9.40	100	139	15.71	31.42	1112.51	220.68	1825.99	362.22	1.641
96	-9.50	100	140	15.71	31.42	1144.06	224.10	1837.62	359.96	1.606
97	-9.60	100	141	15.71	31.42	1176.19	227.54	1849.26	357.75	1.572
98	-9.70	100	142	15.71	31.42	1208.91	231.00	1860.91	355.59	1.539
99	-9.80	100	143	15.71	31.42	1242.22	234.49	1872.58	353.47	1.507
100	-9.90	100	144	15.71	31.42	1276.13	237.99	1884.25	351.41	1.477
101	-10.00	100	145	15.71	31.42	1310.64	241.53	1895.94	349.39	1.447

**Combinazione n° 13 - ECC**

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
1	0.00	100	50	15.71	31.42	33.68	3.06	622.57	56.64	18.483
2	-0.10	100	51	15.71	31.42	37.02	4.30	639.51	74.32	17.276
3	-0.20	100	52	15.71	31.42	40.36	5.56	656.30	90.45	16.261
4	-0.30	100	53	15.71	31.42	43.72	6.85	673.29	105.43	15.400
5	-0.40	100	54	15.71	31.42	47.10	8.15	690.21	119.48	14.654
6	-0.50	100	55	15.71	31.42	50.51	9.48	707.11	132.77	14.000
7	-0.60	100	56	15.71	31.42	53.94	10.84	723.99	145.45	13.422
8	-0.70	100	57	15.71	31.42	57.41	12.21	740.88	157.61	12.905
9	-0.80	100	58	15.71	31.42	60.92	13.61	757.78	169.33	12.439
10	-0.90	100	59	15.71	31.42	64.48	15.04	774.71	180.66	12.015
11	-1.00	100	59	15.71	31.42	68.08	16.48	791.49	191.62	11.626
12	-1.10	100	60	15.71	31.42	71.74	17.95	808.22	202.24	11.266
13	-1.20	100	61	15.71	31.42	75.45	19.44	824.96	212.58	10.933
14	-1.30	100	62	15.71	31.42	79.23	20.96	841.72	222.65	10.623
15	-1.40	100	63	15.71	31.42	83.08	22.50	858.50	232.47	10.333
16	-1.50	100	64	15.71	31.42	87.01	24.06	875.30	242.04	10.060
17	-1.60	100	65	15.71	31.42	91.01	25.64	892.11	251.39	9.803
18	-1.70	100	66	15.71	31.42	95.09	27.25	908.95	260.50	9.559
19	-1.80	100	67	15.71	31.42	99.26	28.88	925.79	269.40	9.327
20	-1.90	100	68	15.71	31.42	103.53	30.54	942.65	278.07	9.105
21	-2.00	100	69	15.71	31.42	107.89	32.22	959.52	286.52	8.894
22	-2.10	100	70	15.71	31.42	112.35	33.92	976.40	294.76	8.690

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## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
23	-2.20	100	71	15.71	31.42	116.93	35.64	993.28	302.77	8.495
24	-2.30	100	72	15.71	31.42	121.61	37.39	1010.17	310.57	8.307
25	-2.40	100	73	15.71	31.42	126.41	39.16	1027.05	318.16	8.125
26	-2.50	100	74	15.71	31.42	131.33	40.95	1043.93	325.52	7.949
27	-2.60	100	75	15.71	31.42	136.38	42.77	1060.80	332.67	7.778
28	-2.70	100	76	15.71	31.42	141.56	44.61	1077.67	339.59	7.613
29	-2.80	100	76	15.71	31.42	146.88	46.47	1094.52	346.30	7.452
30	-2.90	100	77	15.71	31.42	152.34	48.36	1111.35	352.79	7.295
31	-3.00	100	78	15.71	31.42	157.94	50.27	1128.17	359.06	7.143
32	-3.10	100	79	15.71	31.42	163.70	52.20	1144.96	365.12	6.994
33	-3.20	100	80	15.71	31.42	169.61	54.16	1161.74	370.95	6.849
34	-3.30	100	81	15.71	31.42	175.68	56.14	1178.49	376.57	6.708
35	-3.40	100	82	15.71	31.42	181.92	58.14	1195.21	381.97	6.570
36	-3.50	100	83	15.71	31.42	188.32	60.16	1211.90	387.17	6.435
37	-3.60	100	84	15.71	31.42	194.91	62.21	1228.55	392.15	6.303
38	-3.70	100	85	15.71	31.42	201.67	64.28	1245.18	396.92	6.174
39	-3.80	100	86	15.71	31.42	208.61	66.38	1261.77	401.49	6.048
40	-3.90	100	87	15.71	31.42	215.75	68.50	1278.32	405.85	5.925
41	-4.00	100	88	15.71	31.42	223.08	70.64	1294.83	410.02	5.804
42	-4.10	100	89	15.71	31.42	230.61	72.80	1311.30	413.98	5.686
43	-4.20	100	90	15.71	31.42	238.34	74.99	1327.73	417.76	5.571
44	-4.30	100	91	15.71	31.42	246.28	77.20	1344.12	421.35	5.458
45	-4.40	100	92	15.71	31.42	254.43	79.44	1360.47	424.75	5.347
46	-4.50	100	93	15.71	31.42	262.81	81.69	1376.77	427.97	5.239
47	-4.60	100	93	15.71	31.42	271.40	83.97	1393.03	431.01	5.133
48	-4.70	100	94	15.71	31.42	280.23	86.28	1409.25	433.88	5.029
49	-4.80	100	95	15.71	31.42	289.29	88.60	1425.42	436.58	4.927
50	-4.90	100	96	15.71	31.42	298.58	90.95	1441.54	439.12	4.828
51	-5.00	100	97	15.71	31.42	308.12	93.33	1457.62	441.50	4.731
52	-5.10	100	98	15.71	31.42	317.91	95.72	1473.65	443.72	4.635
53	-5.20	100	99	15.71	31.42	327.94	98.14	1489.64	445.80	4.542
54	-5.30	100	100	15.71	31.42	338.24	100.58	1505.58	447.73	4.451
55	-5.40	100	101	15.71	31.42	348.80	103.05	1521.48	449.51	4.362
56	-5.50	100	102	15.71	31.42	359.62	105.54	1537.33	451.17	4.275
57	-5.60	100	103	15.71	31.42	370.71	108.05	1553.13	452.69	4.190
58	-5.70	100	104	15.71	31.42	382.09	110.59	1568.90	454.08	4.106
59	-5.80	100	105	15.71	31.42	393.74	113.14	1584.62	455.36	4.025
60	-5.90	100	106	15.71	31.42	405.68	115.73	1600.29	456.51	3.945
61	-6.00	100	107	15.71	31.42	417.91	118.33	1615.92	457.55	3.867
62	-6.10	100	108	15.71	31.42	430.43	120.96	1631.51	458.48	3.790
63	-6.20	100	109	15.71	31.42	443.26	123.61	1647.06	459.31	3.716
64	-6.30	100	110	15.71	31.42	456.39	126.28	1662.57	460.04	3.643
65	-6.40	100	110	15.71	31.42	469.83	128.98	1678.04	460.67	3.572
66	-6.50	100	111	15.71	31.42	483.59	131.70	1693.46	461.20	3.502
67	-6.60	100	112	15.71	31.42	497.67	134.45	1708.85	461.65	3.434
68	-6.70	100	113	15.71	31.42	512.07	137.21	1724.20	462.02	3.367
69	-6.80	100	114	15.71	31.42	526.80	140.00	1739.51	462.30	3.302
70	-6.90	100	115	15.71	31.42	541.87	142.82	1754.79	462.50	3.238
71	-7.00	100	116	15.71	31.42	557.27	145.65	1770.03	462.63	3.176
72	-7.10	100	117	15.71	31.42	573.02	148.51	1785.24	462.69	3.115
73	-7.20	100	118	15.71	31.42	589.12	151.40	1800.41	462.68	3.056
74	-7.30	100	119	15.71	31.42	605.57	154.30	1815.55	462.61	2.998
75	-7.40	100	120	15.71	31.42	622.38	157.23	1830.65	462.48	2.941
76	-7.50	100	121	15.71	31.42	639.55	160.18	1845.72	462.28	2.886
77	-7.60	100	122	15.71	31.42	657.10	163.16	1860.77	462.04	2.832
78	-7.70	100	123	15.71	31.42	675.01	166.16	1875.78	461.74	2.779
79	-7.80	100	124	15.71	31.42	693.30	169.18	1890.76	461.38	2.727
80	-7.90	100	125	15.71	31.42	711.98	172.23	1905.71	460.99	2.677
81	-8.00	100	126	15.71	31.42	731.04	175.29	1920.64	460.54	2.627
82	-8.10	100	127	15.71	31.42	750.50	178.39	1935.54	460.06	2.579
83	-8.20	100	128	15.71	31.42	770.35	181.50	1950.41	459.53	2.532
84	-8.30	100	128	15.71	31.42	790.61	184.64	1965.25	458.96	2.486
85	-8.40	100	129	15.71	31.42	811.27	187.80	1980.07	458.36	2.441
86	-8.50	100	130	15.71	31.42	832.34	190.98	1994.87	457.73	2.397
87	-8.60	100	131	15.71	62.83	853.83	194.19	3926.40	892.99	4.599
88	-8.70	100	132	15.71	62.83	875.75	197.42	3956.58	891.94	4.518
89	-8.80	100	133	15.71	62.83	898.08	200.67	3986.75	890.83	4.439
90	-8.90	100	134	15.71	62.83	920.85	203.95	4016.91	889.67	4.362
91	-9.00	100	135	15.71	62.83	944.06	207.25	4047.06	888.46	4.287
92	-9.10	100	136	15.71	62.83	967.70	210.57	4077.20	887.21	4.213

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
93	-9.20	100	137	31.42	62.83	991.80	213.92	4147.94	894.67	4.182
94	-9.30	100	138	15.71	31.42	1016.34	217.29	2112.44	451.63	2.078
95	-9.40	100	139	15.71	31.42	1041.33	220.68	2127.04	450.77	2.043
96	-9.50	100	140	15.71	31.42	1066.79	224.10	2141.63	449.89	2.008
97	-9.60	100	141	15.71	31.42	1092.71	227.54	2156.20	448.99	1.973
98	-9.70	100	142	15.71	31.42	1119.11	231.00	2170.75	448.08	1.940
99	-9.80	100	143	15.71	31.42	1145.97	234.49	2185.29	447.15	1.907
100	-9.90	100	144	15.71	31.42	1173.32	237.99	2199.81	446.21	1.875
101	-10.00	100	145	15.71	31.42	1201.15	241.53	2214.32	445.25	1.843

**Mensola valle**
Combinazione n° 1 - STR (A1-M1-R3)

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
1	-0.75	100	50	12.57	12.57	0.00	0.00	0.00	0.00	1000.000
2	-0.67	100	50	12.57	12.57	-0.04	0.00	0.00	0.00	1000.000
3	-0.58	100	50	12.57	12.57	-0.17	0.00	0.00	0.00	1000.000
4	-0.50	100	50	12.57	12.57	-0.38	0.00	-216.42	0.00	564.958

Combinazione n° 2 - STR (A1-M1-R3) H + V

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
1	-0.75	100	50	12.57	12.57	0.00	0.00	0.00	0.00	1000.000
2	-0.67	100	50	12.57	12.57	-0.05	0.00	0.00	0.00	1000.000
3	-0.58	100	50	12.57	12.57	-0.18	0.00	0.00	0.00	1000.000
4	-0.50	100	50	12.57	12.57	-0.41	0.00	-216.42	0.00	527.387

Combinazione n° 3 - STR (A1-M1-R3)

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
1	-0.75	100	50	12.57	12.57	0.00	0.00	0.00	0.00	1000.000
2	-0.67	100	50	12.57	12.57	-0.04	0.00	0.00	0.00	1000.000
3	-0.58	100	50	12.57	12.57	-0.17	0.00	0.00	0.00	1000.000
4	-0.50	100	50	12.57	12.57	-0.38	0.00	-216.42	0.00	564.958

Combinazione n° 4 - STR (A1-M1-R3) H - V

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
1	-0.75	100	50	12.57	12.57	0.00	0.00	0.00	0.00	1000.000
2	-0.67	100	50	12.57	12.57	-0.04	0.00	0.00	0.00	1000.000
3	-0.58	100	50	12.57	12.57	-0.17	0.00	0.00	0.00	1000.000
4	-0.50	100	50	12.57	12.57	-0.38	0.00	-216.42	0.00	564.958

Combinazione n° 13 - ECC

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
1	-0.75	100	50	12.57	12.57	0.00	0.00	0.00	0.00	1000.000
2	-0.67	100	50	12.57	12.57	-0.04	0.00	0.00	0.00	1000.000
3	-0.58	100	50	12.57	12.57	-0.17	0.00	0.00	0.00	1000.000

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
4	-0.50	100	50	12.57	12.57	-0.38	0.00	-250.74	0.00	654.551

**Fondazione**Combinazione n° 1 - STR (A1-M1-R3)

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
1	-1.95	100	145	31.42	31.42	0.00	0.00	0.00	0.00	1000.000
2	-1.85	100	145	31.42	31.42	1.00	0.00	0.00	0.00	1000.000
3	-1.76	100	145	31.42	31.42	4.00	0.00	1683.34	0.00	420.996
4	-1.66	100	145	31.42	31.42	8.99	0.00	1683.34	0.00	187.332
5	-1.56	100	145	31.42	31.42	15.96	0.00	1683.34	0.00	105.500
6	-1.47	100	145	31.42	31.42	24.90	0.00	1683.34	0.00	67.600
7	-1.37	100	145	31.42	31.42	35.82	0.00	1683.34	0.00	47.001
8	-1.27	100	145	31.42	31.42	48.69	0.00	1683.34	0.00	34.573
9	-1.18	100	145	31.42	31.42	63.52	0.00	1683.34	0.00	26.501
10	-1.08	100	145	31.42	31.42	80.30	0.00	1683.34	0.00	20.964
11	-0.98	100	145	31.42	31.42	99.01	0.00	1683.34	0.00	17.002
12	-0.89	100	145	31.42	31.42	119.66	0.00	1683.34	0.00	14.068
13	-0.79	100	145	31.42	31.42	142.23	0.00	1683.34	0.00	11.835
14	-0.69	100	145	31.42	31.42	166.73	0.00	1683.34	0.00	10.096
15	-0.60	100	145	31.42	31.42	193.13	0.00	1683.34	0.00	8.716
16	-0.50	100	145	31.42	31.42	221.44	0.00	1683.34	0.00	7.602
17	0.95	100	145	31.42	31.42	-646.97	0.00	-1683.34	0.00	2.602
18	1.05	100	145	31.42	31.42	-617.90	0.00	-1683.34	0.00	2.724
19	1.15	100	145	31.42	31.42	-589.40	0.00	-1683.34	0.00	2.856
20	1.25	100	145	31.42	31.42	-561.46	0.00	-1683.34	0.00	2.998
21	1.35	100	145	31.42	31.42	-534.10	0.00	-1683.34	0.00	3.152
22	1.45	100	145	31.42	31.42	-507.32	0.00	-1683.34	0.00	3.318
23	1.55	100	145	31.42	31.42	-481.14	0.00	-1683.34	0.00	3.499
24	1.65	100	145	31.42	31.42	-455.56	0.00	-1683.34	0.00	3.695
25	1.75	100	145	31.42	31.42	-430.59	0.00	-1683.34	0.00	3.909
26	1.85	100	145	31.42	31.42	-406.24	0.00	-1683.34	0.00	4.144
27	1.95	100	145	31.42	31.42	-382.51	0.00	-1683.34	0.00	4.401
28	2.05	100	145	31.42	31.42	-359.41	0.00	-1683.34	0.00	4.684
29	2.15	100	145	31.42	31.42	-336.96	0.00	-1683.34	0.00	4.996
30	2.25	100	145	31.42	31.42	-315.15	0.00	-1683.34	0.00	5.341
31	2.35	100	145	31.42	31.42	-294.00	0.00	-1683.34	0.00	5.726
32	2.45	100	145	31.42	31.42	-273.52	0.00	-1683.34	0.00	6.154
33	2.55	100	145	31.42	31.42	-253.70	0.00	-1683.34	0.00	6.635
34	2.65	100	145	31.42	31.42	-234.57	0.00	-1683.34	0.00	7.176
35	2.75	100	145	31.42	31.42	-216.13	0.00	-1683.34	0.00	7.789
36	2.85	100	145	31.42	31.42	-198.38	0.00	-1683.34	0.00	8.486
37	2.95	100	145	31.42	31.42	-181.33	0.00	-1683.34	0.00	9.283
38	3.05	100	145	31.42	31.42	-165.00	0.00	-1683.34	0.00	10.202
39	3.15	100	145	31.42	31.42	-149.39	0.00	-1683.34	0.00	11.268
40	3.25	100	145	31.42	31.42	-134.50	0.00	-1683.34	0.00	12.515
41	3.35	100	145	31.42	31.42	-120.35	0.00	-1683.34	0.00	13.987
42	3.45	100	145	31.42	31.42	-106.95	0.00	-1683.34	0.00	15.740
43	3.55	100	145	31.42	31.42	-94.29	0.00	-1683.34	0.00	17.852
44	3.65	100	145	31.42	31.42	-82.40	0.00	-1683.34	0.00	20.429
45	3.75	100	145	31.42	31.42	-71.27	0.00	-1683.34	0.00	23.619
46	3.85	100	145	31.42	31.42	-60.92	0.00	-1683.34	0.00	27.634
47	3.95	100	145	31.42	31.42	-51.35	0.00	-1683.34	0.00	32.784
48	4.05	100	145	31.42	31.42	-42.57	0.00	-1683.34	0.00	39.547
49	4.15	100	145	31.42	31.42	-34.59	0.00	-1683.34	0.00	48.672
50	4.25	100	145	31.42	31.42	-27.41	0.00	-1683.34	0.00	61.412
51	4.35	100	145	31.42	31.42	-21.05	0.00	-1683.34	0.00	79.966
52	4.45	100	145	31.42	31.42	-15.51	0.00	-1683.34	0.00	108.510
53	4.55	100	145	31.42	31.42	-10.81	0.00	-1683.34	0.00	155.779
54	4.65	100	145	31.42	31.42	-6.94	0.00	-1683.34	0.00	242.665
55	4.75	100	145	31.42	31.42	-3.91	0.00	-1683.34	0.00	430.100
56	4.85	100	145	31.42	31.42	-1.74	0.00	-1683.34	0.00	964.806
57	4.95	100	145	31.42	31.42	-0.44	0.00	0.00	0.00	1000.000



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## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
58	5.05	100	145	31.42	31.42	0.00	0.00	0.00	0.00	1000.000

## Combinazione n° 2 - STR (A1-M1-R3) H + V

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
1	-1.95	100	145	31.42	31.42	0.00	0.00	0.00	0.00	1000.000
2	-1.85	100	145	31.42	31.42	1.87	0.00	1683.34	0.00	901.840
3	-1.76	100	145	31.42	31.42	7.43	0.00	1683.34	0.00	226.495
4	-1.66	100	145	31.42	31.42	16.65	0.00	1683.34	0.00	101.128
5	-1.56	100	145	31.42	31.42	29.46	0.00	1683.34	0.00	57.148
6	-1.47	100	145	31.42	31.42	45.81	0.00	1683.34	0.00	36.745
7	-1.37	100	145	31.42	31.42	65.66	0.00	1683.34	0.00	25.637
8	-1.27	100	145	31.42	31.42	88.95	0.00	1683.34	0.00	18.924
9	-1.18	100	145	31.42	31.42	115.64	0.00	1683.34	0.00	14.557
10	-1.08	100	145	31.42	31.42	145.67	0.00	1683.34	0.00	11.556
11	-0.98	100	145	31.42	31.42	178.98	0.00	1683.34	0.00	9.405
12	-0.89	100	145	31.42	31.42	215.54	0.00	1683.34	0.00	7.810
13	-0.79	100	145	31.42	31.42	255.28	0.00	1683.34	0.00	6.594
14	-0.69	100	145	31.42	31.42	298.15	0.00	1683.34	0.00	5.646
15	-0.60	100	145	31.42	31.42	344.12	0.00	1683.34	0.00	4.892
16	-0.50	100	145	31.42	31.42	393.11	0.00	1683.34	0.00	4.282
17	0.95	100	145	31.42	31.42	-903.68	0.00	-1683.34	0.00	1.863
18	1.05	100	145	31.42	31.42	-875.24	0.00	-1683.34	0.00	1.923
19	1.15	100	145	31.42	31.42	-846.39	0.00	-1683.34	0.00	1.989
20	1.25	100	145	31.42	31.42	-817.17	0.00	-1683.34	0.00	2.060
21	1.35	100	145	31.42	31.42	-787.65	0.00	-1683.34	0.00	2.137
22	1.45	100	145	31.42	31.42	-757.89	0.00	-1683.34	0.00	2.221
23	1.55	100	145	31.42	31.42	-727.93	0.00	-1683.34	0.00	2.312
24	1.65	100	145	31.42	31.42	-697.85	0.00	-1683.34	0.00	2.412
25	1.75	100	145	31.42	31.42	-667.68	0.00	-1683.34	0.00	2.521
26	1.85	100	145	31.42	31.42	-637.50	0.00	-1683.34	0.00	2.641
27	1.95	100	145	31.42	31.42	-607.35	0.00	-1683.34	0.00	2.772
28	2.05	100	145	31.42	31.42	-577.29	0.00	-1683.34	0.00	2.916
29	2.15	100	145	31.42	31.42	-547.39	0.00	-1683.34	0.00	3.075
30	2.25	100	145	31.42	31.42	-517.69	0.00	-1683.34	0.00	3.252
31	2.35	100	145	31.42	31.42	-488.26	0.00	-1683.34	0.00	3.448
32	2.45	100	145	31.42	31.42	-459.14	0.00	-1683.34	0.00	3.666
33	2.55	100	145	31.42	31.42	-430.40	0.00	-1683.34	0.00	3.911
34	2.65	100	145	31.42	31.42	-402.10	0.00	-1683.34	0.00	4.186
35	2.75	100	145	31.42	31.42	-374.28	0.00	-1683.34	0.00	4.498
36	2.85	100	145	31.42	31.42	-347.01	0.00	-1683.34	0.00	4.851
37	2.95	100	145	31.42	31.42	-320.35	0.00	-1683.34	0.00	5.255
38	3.05	100	145	31.42	31.42	-294.34	0.00	-1683.34	0.00	5.719
39	3.15	100	145	31.42	31.42	-269.05	0.00	-1683.34	0.00	6.257
40	3.25	100	145	31.42	31.42	-244.53	0.00	-1683.34	0.00	6.884
41	3.35	100	145	31.42	31.42	-220.85	0.00	-1683.34	0.00	7.622
42	3.45	100	145	31.42	31.42	-198.05	0.00	-1683.34	0.00	8.500
43	3.55	100	145	31.42	31.42	-176.19	0.00	-1683.34	0.00	9.554
44	3.65	100	145	31.42	31.42	-155.33	0.00	-1683.34	0.00	10.837
45	3.75	100	145	31.42	31.42	-135.53	0.00	-1683.34	0.00	12.421
46	3.85	100	145	31.42	31.42	-116.84	0.00	-1683.34	0.00	14.407
47	3.95	100	145	31.42	31.42	-99.32	0.00	-1683.34	0.00	16.949
48	4.05	100	145	31.42	31.42	-83.03	0.00	-1683.34	0.00	20.275
49	4.15	100	145	31.42	31.42	-68.02	0.00	-1683.34	0.00	24.749
50	4.25	100	145	31.42	31.42	-54.35	0.00	-1683.34	0.00	30.975
51	4.35	100	145	31.42	31.42	-42.07	0.00	-1683.34	0.00	40.012
52	4.45	100	145	31.42	31.42	-31.25	0.00	-1683.34	0.00	53.869
53	4.55	100	145	31.42	31.42	-21.94	0.00	-1683.34	0.00	76.736
54	4.65	100	145	31.42	31.42	-14.19	0.00	-1683.34	0.00	118.624
55	4.75	100	145	31.42	31.42	-8.07	0.00	-1683.34	0.00	208.666
56	4.85	100	145	31.42	31.42	-3.62	0.00	-1683.34	0.00	464.605
57	4.95	100	145	31.42	31.42	-0.92	0.00	0.00	0.00	1000.000
58	5.05	100	145	31.42	31.42	0.00	0.00	0.00	0.00	1000.000

## Combinazione n° 3 - STR (A1-M1-R3)

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## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

n°	Y [m]	B [cm]	H [cm]	Afi [cmq]	Afs [cmq]	M [kNm]	N [kN]	Mu [kNm]	Nu [kN]	FS
1	-1.95	100	145	31.42	31.42	0.00	0.00	0.00	0.00	1000.000
2	-1.85	100	145	31.42	31.42	1.11	0.00	0.00	0.00	1000.000
3	-1.76	100	145	31.42	31.42	4.43	0.00	1683.34	0.00	380.360
4	-1.66	100	145	31.42	31.42	9.95	0.00	1683.34	0.00	169.237
5	-1.56	100	145	31.42	31.42	17.66	0.00	1683.34	0.00	95.302
6	-1.47	100	145	31.42	31.42	27.57	0.00	1683.34	0.00	61.061
7	-1.37	100	145	31.42	31.42	39.65	0.00	1683.34	0.00	42.451
8	-1.27	100	145	31.42	31.42	53.91	0.00	1683.34	0.00	31.224
9	-1.18	100	145	31.42	31.42	70.34	0.00	1683.34	0.00	23.932
10	-1.08	100	145	31.42	31.42	88.92	0.00	1683.34	0.00	18.931
11	-0.98	100	145	31.42	31.42	109.66	0.00	1683.34	0.00	15.351
12	-0.89	100	145	31.42	31.42	132.54	0.00	1683.34	0.00	12.701
13	-0.79	100	145	31.42	31.42	157.55	0.00	1683.34	0.00	10.684
14	-0.69	100	145	31.42	31.42	184.70	0.00	1683.34	0.00	9.114
15	-0.60	100	145	31.42	31.42	213.96	0.00	1683.34	0.00	7.867
16	-0.50	100	145	31.42	31.42	245.34	0.00	1683.34	0.00	6.861
17	0.95	100	145	31.42	31.42	-693.28	0.00	-1683.34	0.00	2.428
18	1.05	100	145	31.42	31.42	-660.36	0.00	-1683.34	0.00	2.549
19	1.15	100	145	31.42	31.42	-628.14	0.00	-1683.34	0.00	2.680
20	1.25	100	145	31.42	31.42	-596.62	0.00	-1683.34	0.00	2.821
21	1.35	100	145	31.42	31.42	-565.81	0.00	-1683.34	0.00	2.975
22	1.45	100	145	31.42	31.42	-535.72	0.00	-1683.34	0.00	3.142
23	1.55	100	145	31.42	31.42	-506.35	0.00	-1683.34	0.00	3.324
24	1.65	100	145	31.42	31.42	-477.72	0.00	-1683.34	0.00	3.524
25	1.75	100	145	31.42	31.42	-449.84	0.00	-1683.34	0.00	3.742
26	1.85	100	145	31.42	31.42	-422.70	0.00	-1683.34	0.00	3.982
27	1.95	100	145	31.42	31.42	-396.33	0.00	-1683.34	0.00	4.247
28	2.05	100	145	31.42	31.42	-370.72	0.00	-1683.34	0.00	4.541
29	2.15	100	145	31.42	31.42	-345.89	0.00	-1683.34	0.00	4.867
30	2.25	100	145	31.42	31.42	-321.84	0.00	-1683.34	0.00	5.230
31	2.35	100	145	31.42	31.42	-298.58	0.00	-1683.34	0.00	5.638
32	2.45	100	145	31.42	31.42	-276.13	0.00	-1683.34	0.00	6.096
33	2.55	100	145	31.42	31.42	-254.48	0.00	-1683.34	0.00	6.615
34	2.65	100	145	31.42	31.42	-233.65	0.00	-1683.34	0.00	7.205
35	2.75	100	145	31.42	31.42	-213.64	0.00	-1683.34	0.00	7.879
36	2.85	100	145	31.42	31.42	-194.47	0.00	-1683.34	0.00	8.656
37	2.95	100	145	31.42	31.42	-176.14	0.00	-1683.34	0.00	9.557
38	3.05	100	145	31.42	31.42	-159.43	0.00	-1683.34	0.00	10.559
39	3.15	100	145	31.42	31.42	-144.37	0.00	-1683.34	0.00	11.660
40	3.25	100	145	31.42	31.42	-130.02	0.00	-1683.34	0.00	12.947
41	3.35	100	145	31.42	31.42	-116.37	0.00	-1683.34	0.00	14.466
42	3.45	100	145	31.42	31.42	-103.43	0.00	-1683.34	0.00	16.275
43	3.55	100	145	31.42	31.42	-91.21	0.00	-1683.34	0.00	18.456
44	3.65	100	145	31.42	31.42	-79.72	0.00	-1683.34	0.00	21.115
45	3.75	100	145	31.42	31.42	-68.97	0.00	-1683.34	0.00	24.407
46	3.85	100	145	31.42	31.42	-58.96	0.00	-1683.34	0.00	28.549
47	3.95	100	145	31.42	31.42	-49.71	0.00	-1683.34	0.00	33.863
48	4.05	100	145	31.42	31.42	-41.22	0.00	-1683.34	0.00	40.839
49	4.15	100	145	31.42	31.42	-33.50	0.00	-1683.34	0.00	50.252
50	4.25	100	145	31.42	31.42	-26.55	0.00	-1683.34	0.00	63.391
51	4.35	100	145	31.42	31.42	-20.40	0.00	-1683.34	0.00	82.526
52	4.45	100	145	31.42	31.42	-15.04	0.00	-1683.34	0.00	111.960
53	4.55	100	145	31.42	31.42	-10.48	0.00	-1683.34	0.00	160.698
54	4.65	100	145	31.42	31.42	-6.73	0.00	-1683.34	0.00	250.277
55	4.75	100	145	31.42	31.42	-3.80	0.00	-1683.34	0.00	443.499
56	4.85	100	145	31.42	31.42	-1.69	0.00	-1683.34	0.00	994.659
57	4.95	100	145	31.42	31.42	-0.42	0.00	0.00	0.00	1000.000
58	5.05	100	145	31.42	31.42	0.00	0.00	0.00	0.00	1000.000

## Combinazione n° 4 - STR (A1-M1-R3) H - V

n°	Y [m]	B [cm]	H [cm]	Afi [cmq]	Afs [cmq]	M [kNm]	N [kN]	Mu [kNm]	Nu [kN]	FS
1	-1.95	100	145	31.42	31.42	0.00	0.00	0.00	0.00	1000.000
2	-1.85	100	145	31.42	31.42	1.69	0.00	1683.34	0.00	994.724
3	-1.76	100	145	31.42	31.42	6.74	0.00	1683.34	0.00	249.893

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	Y [m]	B [cm]	H [cm]	Afi [cmq]	Afs [cmq]	M [kNm]	N [kN]	Mu [kNm]	Nu [kN]	FS
4	-1.66	100	145	31.42	31.42	15.08	0.00	1683.34	0.00	111.608
5	-1.56	100	145	31.42	31.42	26.68	0.00	1683.34	0.00	63.088
6	-1.47	100	145	31.42	31.42	41.49	0.00	1683.34	0.00	40.576
7	-1.37	100	145	31.42	31.42	59.44	0.00	1683.34	0.00	28.318
8	-1.27	100	145	31.42	31.42	80.51	0.00	1683.34	0.00	20.909
9	-1.18	100	145	31.42	31.42	104.63	0.00	1683.34	0.00	16.089
10	-1.08	100	145	31.42	31.42	131.75	0.00	1683.34	0.00	12.776
11	-0.98	100	145	31.42	31.42	161.84	0.00	1683.34	0.00	10.401
12	-0.89	100	145	31.42	31.42	194.83	0.00	1683.34	0.00	8.640
13	-0.79	100	145	31.42	31.42	230.68	0.00	1683.34	0.00	7.297
14	-0.69	100	145	31.42	31.42	269.34	0.00	1683.34	0.00	6.250
15	-0.60	100	145	31.42	31.42	310.77	0.00	1683.34	0.00	5.417
16	-0.50	100	145	31.42	31.42	354.90	0.00	1683.34	0.00	4.743
17	0.95	100	145	31.42	31.42	-1117.68	0.00	-1683.34	0.00	1.506
18	1.05	100	145	31.42	31.42	-1078.36	0.00	-1683.34	0.00	1.561
19	1.15	100	145	31.42	31.42	-1038.94	0.00	-1683.34	0.00	1.620
20	1.25	100	145	31.42	31.42	-999.47	0.00	-1683.34	0.00	1.684
21	1.35	100	145	31.42	31.42	-960.00	0.00	-1683.34	0.00	1.753
22	1.45	100	145	31.42	31.42	-920.59	0.00	-1683.34	0.00	1.829
23	1.55	100	145	31.42	31.42	-881.29	0.00	-1683.34	0.00	1.910
24	1.65	100	145	31.42	31.42	-842.16	0.00	-1683.34	0.00	1.999
25	1.75	100	145	31.42	31.42	-803.24	0.00	-1683.34	0.00	2.096
26	1.85	100	145	31.42	31.42	-764.61	0.00	-1683.34	0.00	2.202
27	1.95	100	145	31.42	31.42	-726.30	0.00	-1683.34	0.00	2.318
28	2.05	100	145	31.42	31.42	-688.38	0.00	-1683.34	0.00	2.445
29	2.15	100	145	31.42	31.42	-650.89	0.00	-1683.34	0.00	2.586
30	2.25	100	145	31.42	31.42	-613.90	0.00	-1683.34	0.00	2.742
31	2.35	100	145	31.42	31.42	-577.46	0.00	-1683.34	0.00	2.915
32	2.45	100	145	31.42	31.42	-541.62	0.00	-1683.34	0.00	3.108
33	2.55	100	145	31.42	31.42	-506.44	0.00	-1683.34	0.00	3.324
34	2.65	100	145	31.42	31.42	-471.97	0.00	-1683.34	0.00	3.567
35	2.75	100	145	31.42	31.42	-438.27	0.00	-1683.34	0.00	3.841
36	2.85	100	145	31.42	31.42	-405.38	0.00	-1683.34	0.00	4.152
37	2.95	100	145	31.42	31.42	-373.38	0.00	-1683.34	0.00	4.508
38	3.05	100	145	31.42	31.42	-342.30	0.00	-1683.34	0.00	4.918
39	3.15	100	145	31.42	31.42	-312.21	0.00	-1683.34	0.00	5.392
40	3.25	100	145	31.42	31.42	-283.15	0.00	-1683.34	0.00	5.945
41	3.35	100	145	31.42	31.42	-255.19	0.00	-1683.34	0.00	6.596
42	3.45	100	145	31.42	31.42	-228.38	0.00	-1683.34	0.00	7.371
43	3.55	100	145	31.42	31.42	-202.77	0.00	-1683.34	0.00	8.302
44	3.65	100	145	31.42	31.42	-178.41	0.00	-1683.34	0.00	9.435
45	3.75	100	145	31.42	31.42	-155.37	0.00	-1683.34	0.00	10.834
46	3.85	100	145	31.42	31.42	-133.70	0.00	-1683.34	0.00	12.591
47	3.95	100	145	31.42	31.42	-113.44	0.00	-1683.34	0.00	14.839
48	4.05	100	145	31.42	31.42	-94.66	0.00	-1683.34	0.00	17.782
49	4.15	100	145	31.42	31.42	-77.41	0.00	-1683.34	0.00	21.745
50	4.25	100	145	31.42	31.42	-61.75	0.00	-1683.34	0.00	27.262
51	4.35	100	145	31.42	31.42	-47.72	0.00	-1683.34	0.00	35.275
52	4.45	100	145	31.42	31.42	-35.39	0.00	-1683.34	0.00	47.569
53	4.55	100	145	31.42	31.42	-24.80	0.00	-1683.34	0.00	67.872
54	4.65	100	145	31.42	31.42	-16.02	0.00	-1683.34	0.00	105.087
55	4.75	100	145	31.42	31.42	-9.09	0.00	-1683.34	0.00	185.140
56	4.85	100	145	31.42	31.42	-4.08	0.00	-1683.34	0.00	412.851
57	4.95	100	145	31.42	31.42	-1.03	0.00	0.00	0.00	1000.000
58	5.05	100	145	31.42	31.42	0.00	0.00	0.00	0.00	1000.000

Combinazione n° 13 - ECC

n°	Y [m]	B [cm]	H [cm]	Afi [cmq]	Afs [cmq]	M [kNm]	N [kN]	Mu [kNm]	Nu [kN]	FS
1	-1.95	100	145	31.42	31.42	0.00	0.00	0.00	0.00	1000.000
2	-1.85	100	145	31.42	31.42	1.10	0.00	0.00	0.00	1000.000
3	-1.76	100	145	31.42	31.42	4.40	0.00	1939.49	0.00	440.894
4	-1.66	100	145	31.42	31.42	9.88	0.00	1939.49	0.00	196.373
5	-1.56	100	145	31.42	31.42	17.52	0.00	1939.49	0.00	110.698
6	-1.47	100	145	31.42	31.42	27.32	0.00	1939.49	0.00	70.999
7	-1.37	100	145	31.42	31.42	39.25	0.00	1939.49	0.00	49.411

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## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

n°	Y	B	H	Afi	Afs	M	N	Mu	Nu	FS
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kN]	[kNm]	[kN]	
8	-1.27	100	145	31.42	31.42	53.31	0.00	1939.49	0.00	36.381
9	-1.18	100	145	31.42	31.42	69.48	0.00	1939.49	0.00	27.915
10	-1.08	100	145	31.42	31.42	87.74	0.00	1939.49	0.00	22.104
11	-0.98	100	145	31.42	31.42	108.09	0.00	1939.49	0.00	17.943
12	-0.89	100	145	31.42	31.42	130.51	0.00	1939.49	0.00	14.861
13	-0.79	100	145	31.42	31.42	154.97	0.00	1939.49	0.00	12.515
14	-0.69	100	145	31.42	31.42	181.48	0.00	1939.49	0.00	10.687
15	-0.60	100	145	31.42	31.42	210.01	0.00	1939.49	0.00	9.235
16	-0.50	100	145	31.42	31.42	240.56	0.00	1939.49	0.00	8.063
17	0.95	100	145	31.42	31.42	-350.12	0.00	-1939.49	0.00	5.539
18	1.05	100	145	31.42	31.42	-337.42	0.00	-1939.49	0.00	5.748
19	1.15	100	145	31.42	31.42	-324.73	0.00	-1939.49	0.00	5.973
20	1.25	100	145	31.42	31.42	-312.05	0.00	-1939.49	0.00	6.215
21	1.35	100	145	31.42	31.42	-299.42	0.00	-1939.49	0.00	6.478
22	1.45	100	145	31.42	31.42	-286.83	0.00	-1939.49	0.00	6.762
23	1.55	100	145	31.42	31.42	-274.31	0.00	-1939.49	0.00	7.070
24	1.65	100	145	31.42	31.42	-261.87	0.00	-1939.49	0.00	7.406
25	1.75	100	145	31.42	31.42	-249.53	0.00	-1939.49	0.00	7.772
26	1.85	100	145	31.42	31.42	-237.31	0.00	-1939.49	0.00	8.173
27	1.95	100	145	31.42	31.42	-225.21	0.00	-1939.49	0.00	8.612
28	2.05	100	145	31.42	31.42	-213.26	0.00	-1939.49	0.00	9.094
29	2.15	100	145	31.42	31.42	-201.48	0.00	-1939.49	0.00	9.626
30	2.25	100	145	31.42	31.42	-189.87	0.00	-1939.49	0.00	10.215
31	2.35	100	145	31.42	31.42	-178.45	0.00	-1939.49	0.00	10.869
32	2.45	100	145	31.42	31.42	-167.23	0.00	-1939.49	0.00	11.597
33	2.55	100	145	31.42	31.42	-156.25	0.00	-1939.49	0.00	12.413
34	2.65	100	145	31.42	31.42	-145.50	0.00	-1939.49	0.00	13.330
35	2.75	100	145	31.42	31.42	-135.01	0.00	-1939.49	0.00	14.366
36	2.85	100	145	31.42	31.42	-124.78	0.00	-1939.49	0.00	15.543
37	2.95	100	145	31.42	31.42	-114.85	0.00	-1939.49	0.00	16.888
38	3.05	100	145	31.42	31.42	-105.21	0.00	-1939.49	0.00	18.434
39	3.15	100	145	31.42	31.42	-95.90	0.00	-1939.49	0.00	20.225
40	3.25	100	145	31.42	31.42	-86.91	0.00	-1939.49	0.00	22.316
41	3.35	100	145	31.42	31.42	-78.28	0.00	-1939.49	0.00	24.777
42	3.45	100	145	31.42	31.42	-70.01	0.00	-1939.49	0.00	27.705
43	3.55	100	145	31.42	31.42	-62.12	0.00	-1939.49	0.00	31.224
44	3.65	100	145	31.42	31.42	-54.62	0.00	-1939.49	0.00	35.509
45	3.75	100	145	31.42	31.42	-47.54	0.00	-1939.49	0.00	40.800
46	3.85	100	145	31.42	31.42	-40.88	0.00	-1939.49	0.00	47.444
47	3.95	100	145	31.42	31.42	-34.67	0.00	-1939.49	0.00	55.948
48	4.05	100	145	31.42	31.42	-28.91	0.00	-1939.49	0.00	67.087
49	4.15	100	145	31.42	31.42	-23.63	0.00	-1939.49	0.00	82.083
50	4.25	100	145	31.42	31.42	-18.84	0.00	-1939.49	0.00	102.966
51	4.35	100	145	31.42	31.42	-14.55	0.00	-1939.49	0.00	133.305
52	4.45	100	145	31.42	31.42	-10.78	0.00	-1939.49	0.00	179.864
53	4.55	100	145	31.42	31.42	-7.55	0.00	-1939.49	0.00	256.770
54	4.65	100	145	31.42	31.42	-4.88	0.00	-1939.49	0.00	397.770
55	4.75	100	145	31.42	31.42	-2.77	0.00	-1939.49	0.00	701.149
56	4.85	100	145	31.42	31.42	-1.24	0.00	0.00	0.00	1000.000
57	4.95	100	145	31.42	31.42	-0.31	0.00	0.00	0.00	1000.000
58	5.05	100	145	31.42	31.42	0.00	0.00	0.00	0.00	1000.000

## Verifiche a taglio

## Simbologia adottata

Is	indice sezione
Y	ordinata sezione espressa in [m]
B	larghezza sezione espressa in [cm]
H	altezza sezione espressa in [cm]
A <sub>sw</sub>	area ferri a taglio espressa in [cmq]
cotgθ	inclinazione delle bielle compresse, θ inclinazione dei puntoni di calcestruzzo
V <sub>Rcd</sub>	resistenza di progetto a 'taglio compressione' espressa in [kN]

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**
 $V_{Rsd}$  resistenza di progetto a 'taglio trazione' espressa in [kN]

 $V_{Rd}$  resistenza di progetto a taglio espresso in [kN]. Per elementi con armature trasversali resistenti al taglio ( $A_{sw} > 0.0$ )  $V_{Rd} = \min(V_{Rcd}, V_{Rsd})$ .

T taglio agente espressa in [kN]

FS fattore di sicurezza (rapporto tra sollecitazione resistente e sollecitazione agente)

## Paramento

### Combinazione n° 1 - STR (A1-M1-R3)

n°	Y [m]	B [cm]	H [cm]	$A_{sw}$ [cmq]	s [cm]	cot $\theta$	$V_{Rcd}$ [kN]	$V_{Rsd}$ [kN]	$V_{Rd}$ [kN]	T [kN]	FS
1	0.00	100	50	0.00	0.00	--	0.00	0.00	299.34	0.00	100.000
2	-0.10	100	51	0.00	0.00	--	0.00	0.00	302.37	0.03	9727.826
3	-0.20	100	52	0.00	0.00	--	0.00	0.00	305.39	0.12	2456.207
4	-0.30	100	53	0.00	0.00	--	0.00	0.00	308.39	0.28	1105.377
5	-0.40	100	54	0.00	0.00	--	0.00	0.00	311.36	0.49	629.936
6	-0.50	100	55	0.00	0.00	--	0.00	0.00	314.32	0.77	407.900
7	-0.60	100	56	0.00	0.00	--	0.00	0.00	317.27	1.11	286.264
8	-0.70	100	57	0.00	0.00	--	0.00	0.00	320.20	1.51	212.412
9	-0.80	100	58	0.00	0.00	--	0.00	0.00	323.11	1.97	164.185
10	-0.90	100	59	0.00	0.00	--	0.00	0.00	326.00	2.49	130.931
11	-1.00	100	59	0.00	0.00	--	0.00	0.00	328.88	3.07	107.017
12	-1.10	100	60	0.00	0.00	--	0.00	0.00	331.75	3.72	89.230
13	-1.20	100	61	0.00	0.00	--	0.00	0.00	334.60	4.42	75.632
14	-1.30	100	62	0.00	0.00	--	0.00	0.00	337.44	5.19	64.997
15	-1.40	100	63	0.00	0.00	--	0.00	0.00	340.27	6.02	56.518
16	-1.50	100	64	0.00	0.00	--	0.00	0.00	343.08	6.91	49.643
17	-1.60	100	65	0.00	0.00	--	0.00	0.00	345.88	7.86	43.990
18	-1.70	100	66	0.00	0.00	--	0.00	0.00	348.67	8.88	39.283
19	-1.80	100	67	0.00	0.00	--	0.00	0.00	351.44	9.95	35.320
20	-1.90	100	68	0.00	0.00	--	0.00	0.00	354.21	11.09	31.950
21	-2.00	100	69	0.00	0.00	--	0.00	0.00	356.96	12.28	29.060
22	-2.10	100	70	0.00	0.00	--	0.00	0.00	359.70	13.54	26.561
23	-2.20	100	71	0.00	0.00	--	0.00	0.00	362.44	14.86	24.386
24	-2.30	100	72	0.00	0.00	--	0.00	0.00	365.16	16.24	22.479
25	-2.40	100	73	0.00	0.00	--	0.00	0.00	367.87	17.69	20.799
26	-2.50	100	74	0.00	0.00	--	0.00	0.00	370.57	19.19	19.309
27	-2.60	100	75	0.00	0.00	--	0.00	0.00	373.27	20.76	17.982
28	-2.70	100	76	0.00	0.00	--	0.00	0.00	375.95	22.38	16.795
29	-2.80	100	76	0.00	0.00	--	0.00	0.00	378.62	24.07	15.728
30	-2.90	100	77	0.00	0.00	--	0.00	0.00	381.29	25.82	14.766
31	-3.00	100	78	0.00	0.00	--	0.00	0.00	383.95	27.63	13.894
32	-3.10	100	79	0.00	0.00	--	0.00	0.00	386.60	29.51	13.102
33	-3.20	100	80	0.00	0.00	--	0.00	0.00	389.24	31.44	12.380
34	-3.30	100	81	0.00	0.00	--	0.00	0.00	391.87	33.44	11.720
35	-3.40	100	82	0.00	0.00	--	0.00	0.00	394.50	35.49	11.115
36	-3.50	100	83	0.00	0.00	--	0.00	0.00	397.12	37.61	10.558
37	-3.60	100	84	0.00	0.00	--	0.00	0.00	399.73	39.79	10.045
38	-3.70	100	85	0.00	0.00	--	0.00	0.00	402.33	42.03	9.572
39	-3.80	100	86	0.00	0.00	--	0.00	0.00	404.93	44.34	9.133
40	-3.90	100	87	0.00	0.00	--	0.00	0.00	407.52	46.70	8.726
41	-4.00	100	88	0.00	0.00	--	0.00	0.00	410.10	49.13	8.348
42	-4.10	100	89	0.00	0.00	--	0.00	0.00	412.68	51.61	7.996
43	-4.20	100	90	0.00	0.00	--	0.00	0.00	415.25	54.16	7.667
44	-4.30	100	91	0.00	0.00	--	0.00	0.00	417.82	56.77	7.360
45	-4.40	100	92	0.00	0.00	--	0.00	0.00	420.38	59.44	7.072
46	-4.50	100	93	0.00	0.00	--	0.00	0.00	422.93	62.17	6.802
47	-4.60	100	93	0.00	0.00	--	0.00	0.00	425.48	64.97	6.549
48	-4.70	100	94	0.00	0.00	--	0.00	0.00	428.02	67.82	6.311
49	-4.80	100	95	0.00	0.00	--	0.00	0.00	430.56	70.74	6.087
50	-4.90	100	96	0.00	0.00	--	0.00	0.00	433.09	73.72	5.875
51	-5.00	100	97	0.00	0.00	--	0.00	0.00	435.62	76.76	5.675
52	-5.10	100	98	0.00	0.00	--	0.00	0.00	438.14	79.86	5.486
53	-5.20	100	99	0.00	0.00	--	0.00	0.00	440.65	83.02	5.308
54	-5.30	100	100	0.00	0.00	--	0.00	0.00	443.17	86.24	5.139
55	-5.40	100	101	0.00	0.00	--	0.00	0.00	445.67	89.53	4.978

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## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

n°	Y	B	H	A <sub>sw</sub>	s	cotθ	V <sub>Rcd</sub>	V <sub>Rsd</sub>	V <sub>Rd</sub>	T	FS
	[m]	[cm]	[cm]	[cmq]	[cm]		[kN]	[kN]	[kN]	[kN]	
56	-5.50	100	102	0.00	0.00	--	0.00	0.00	448.18	92.87	4.826
57	-5.60	100	103	0.00	0.00	--	0.00	0.00	450.68	96.28	4.681
58	-5.70	100	104	0.00	0.00	--	0.00	0.00	453.17	99.75	4.543
59	-5.80	100	105	0.00	0.00	--	0.00	0.00	455.66	103.28	4.412
60	-5.90	100	106	0.00	0.00	--	0.00	0.00	458.15	106.87	4.287
61	-6.00	100	107	0.00	0.00	--	0.00	0.00	460.63	110.53	4.168
62	-6.10	100	108	0.00	0.00	--	0.00	0.00	463.11	114.24	4.054
63	-6.20	100	109	0.00	0.00	--	0.00	0.00	465.58	118.02	3.945
64	-6.30	100	110	0.00	0.00	--	0.00	0.00	468.05	121.86	3.841
65	-6.40	100	110	0.00	0.00	--	0.00	0.00	470.52	125.76	3.742
66	-6.50	100	111	0.00	0.00	--	0.00	0.00	472.98	129.72	3.646
67	-6.60	100	112	0.00	0.00	--	0.00	0.00	475.44	133.74	3.555
68	-6.70	100	113	0.00	0.00	--	0.00	0.00	477.90	137.82	3.468
69	-6.80	100	114	0.00	0.00	--	0.00	0.00	480.35	141.97	3.384
70	-6.90	100	115	0.00	0.00	--	0.00	0.00	482.80	146.17	3.303
71	-7.00	100	116	0.00	0.00	--	0.00	0.00	485.25	150.44	3.226
72	-7.10	100	117	0.00	0.00	--	0.00	0.00	487.69	154.77	3.151
73	-7.20	100	118	0.00	0.00	--	0.00	0.00	490.13	159.16	3.080
74	-7.30	100	119	0.00	0.00	--	0.00	0.00	492.57	163.61	3.011
75	-7.40	100	120	0.00	0.00	--	0.00	0.00	495.01	168.12	2.944
76	-7.50	100	121	0.00	0.00	--	0.00	0.00	497.44	172.70	2.880
77	-7.60	100	122	0.00	0.00	--	0.00	0.00	499.87	177.33	2.819
78	-7.70	100	123	0.00	0.00	--	0.00	0.00	502.30	182.03	2.759
79	-7.80	100	124	0.00	0.00	--	0.00	0.00	504.72	186.79	2.702
80	-7.90	100	125	0.00	0.00	--	0.00	0.00	507.15	191.61	2.647
81	-8.00	100	126	0.00	0.00	--	0.00	0.00	509.57	196.49	2.593
82	-8.10	100	127	0.00	0.00	--	0.00	0.00	511.99	201.44	2.542
83	-8.20	100	128	0.00	0.00	--	0.00	0.00	514.40	206.44	2.492
84	-8.30	100	128	0.00	0.00	--	0.00	0.00	516.81	211.51	2.444
85	-8.40	100	129	0.00	0.00	--	0.00	0.00	519.23	216.63	2.397
86	-8.50	100	130	0.00	0.00	--	0.00	0.00	521.64	221.82	2.352
87	-8.60	100	131	0.00	0.00	--	0.00	0.00	524.05	227.07	2.308
88	-8.70	100	132	0.00	0.00	--	0.00	0.00	526.46	232.38	2.266
89	-8.80	100	133	0.00	0.00	--	0.00	0.00	528.87	237.75	2.224
90	-8.90	100	134	0.00	0.00	--	0.00	0.00	531.28	243.19	2.183
91	-9.00	100	135	0.00	0.00	--	0.00	0.00	533.69	248.68	2.143
92	-9.10	100	136	0.00	0.00	--	0.00	0.00	536.10	254.24	2.103
93	-9.20	100	137	0.00	0.00	--	0.00	0.00	538.51	259.86	2.064
94	-9.30	100	138	0.00	0.00	--	0.00	0.00	540.92	265.54	2.025
95	-9.40	100	139	0.00	0.00	--	0.00	0.00	543.33	271.28	1.987
96	-9.50	100	140	0.00	0.00	--	0.00	0.00	545.74	277.08	1.949
97	-9.60	100	141	0.00	0.00	--	0.00	0.00	548.15	282.95	1.912
98	-9.70	100	142	0.00	0.00	--	0.00	0.00	550.56	288.87	1.875
99	-9.80	100	143	0.00	0.00	--	0.00	0.00	552.97	294.86	1.839
100	-9.90	100	144	0.00	0.00	--	0.00	0.00	555.38	300.91	1.803
101	-10.00	100	145	0.00	0.00	--	0.00	0.00	557.79	307.02	1.768

## Combinazione n° 2 - STR (A1-M1-R3) H + V

n°	Y	B	H	A <sub>sw</sub>	s	cotθ	V <sub>Rcd</sub>	V <sub>Rsd</sub>	V <sub>Rd</sub>	T	FS
	[m]	[cm]	[cm]	[cmq]	[cm]		[kN]	[kN]	[kN]	[kN]	
1	0.00	100	50	0.00	0.00	--	0.00	0.00	299.37	0.00	100.000
2	-0.10	100	51	0.00	0.00	--	0.00	0.00	302.41	1.18	255.478
3	-0.20	100	52	0.00	0.00	--	0.00	0.00	305.42	2.42	126.285
4	-0.30	100	53	0.00	0.00	--	0.00	0.00	308.42	3.70	83.270
5	-0.40	100	54	0.00	0.00	--	0.00	0.00	311.39	5.04	61.795
6	-0.50	100	55	0.00	0.00	--	0.00	0.00	314.36	6.42	48.930
7	-0.60	100	56	0.00	0.00	--	0.00	0.00	317.30	7.86	40.365
8	-0.70	100	57	0.00	0.00	--	0.00	0.00	320.23	9.35	34.259
9	-0.80	100	58	0.00	0.00	--	0.00	0.00	323.14	10.88	29.688
10	-0.90	100	59	0.00	0.00	--	0.00	0.00	326.03	12.47	26.141
11	-1.00	100	59	0.00	0.00	--	0.00	0.00	328.91	14.11	23.310
12	-1.10	100	60	0.00	0.00	--	0.00	0.00	331.78	15.80	21.000
13	-1.20	100	61	0.00	0.00	--	0.00	0.00	334.63	17.54	19.080
14	-1.30	100	62	0.00	0.00	--	0.00	0.00	337.47	19.33	17.460
15	-1.40	100	63	0.00	0.00	--	0.00	0.00	340.30	21.17	16.076
16	-1.50	100	64	0.00	0.00	--	0.00	0.00	343.11	23.06	14.879

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## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
17	-1.60	100	65	0.00	0.00	--	0.00	0.00	345.91	25.00	13.836
18	-1.70	100	66	0.00	0.00	--	0.00	0.00	348.70	26.99	12.918
19	-1.80	100	67	0.00	0.00	--	0.00	0.00	351.47	29.04	12.105
20	-1.90	100	68	0.00	0.00	--	0.00	0.00	354.24	31.13	11.380
21	-2.00	100	69	0.00	0.00	--	0.00	0.00	356.99	33.27	10.730
22	-2.10	100	70	0.00	0.00	--	0.00	0.00	359.73	35.47	10.143
23	-2.20	100	71	0.00	0.00	--	0.00	0.00	362.47	37.71	9.612
24	-2.30	100	72	0.00	0.00	--	0.00	0.00	365.19	40.01	9.128
25	-2.40	100	73	0.00	0.00	--	0.00	0.00	367.90	42.35	8.687
26	-2.50	100	74	0.00	0.00	--	0.00	0.00	370.60	44.75	8.282
27	-2.60	100	75	0.00	0.00	--	0.00	0.00	373.30	47.19	7.910
28	-2.70	100	76	0.00	0.00	--	0.00	0.00	375.98	49.69	7.566
29	-2.80	100	76	0.00	0.00	--	0.00	0.00	378.66	52.24	7.248
30	-2.90	100	77	0.00	0.00	--	0.00	0.00	381.32	54.84	6.954
31	-3.00	100	78	0.00	0.00	--	0.00	0.00	383.98	57.49	6.679
32	-3.10	100	79	0.00	0.00	--	0.00	0.00	386.63	60.19	6.424
33	-3.20	100	80	0.00	0.00	--	0.00	0.00	389.27	62.94	6.185
34	-3.30	100	81	0.00	0.00	--	0.00	0.00	391.90	65.74	5.962
35	-3.40	100	82	0.00	0.00	--	0.00	0.00	394.53	68.59	5.752
36	-3.50	100	83	0.00	0.00	--	0.00	0.00	397.15	71.49	5.555
37	-3.60	100	84	0.00	0.00	--	0.00	0.00	399.76	74.44	5.370
38	-3.70	100	85	0.00	0.00	--	0.00	0.00	402.36	77.44	5.196
39	-3.80	100	86	0.00	0.00	--	0.00	0.00	404.96	80.50	5.031
40	-3.90	100	87	0.00	0.00	--	0.00	0.00	407.55	83.60	4.875
41	-4.00	100	88	0.00	0.00	--	0.00	0.00	410.14	86.76	4.727
42	-4.10	100	89	0.00	0.00	--	0.00	0.00	412.71	89.96	4.588
43	-4.20	100	90	0.00	0.00	--	0.00	0.00	415.28	93.22	4.455
44	-4.30	100	91	0.00	0.00	--	0.00	0.00	417.85	96.52	4.329
45	-4.40	100	92	0.00	0.00	--	0.00	0.00	420.41	99.88	4.209
46	-4.50	100	93	0.00	0.00	--	0.00	0.00	422.96	103.28	4.095
47	-4.60	100	93	0.00	0.00	--	0.00	0.00	425.51	106.74	3.986
48	-4.70	100	94	0.00	0.00	--	0.00	0.00	428.05	110.25	3.883
49	-4.80	100	95	0.00	0.00	--	0.00	0.00	430.59	113.81	3.783
50	-4.90	100	96	0.00	0.00	--	0.00	0.00	433.12	117.42	3.689
51	-5.00	100	97	0.00	0.00	--	0.00	0.00	435.65	121.08	3.598
52	-5.10	100	98	0.00	0.00	--	0.00	0.00	438.17	124.79	3.511
53	-5.20	100	99	0.00	0.00	--	0.00	0.00	440.69	128.55	3.428
54	-5.30	100	100	0.00	0.00	--	0.00	0.00	443.20	132.36	3.348
55	-5.40	100	101	0.00	0.00	--	0.00	0.00	445.71	136.22	3.272
56	-5.50	100	102	0.00	0.00	--	0.00	0.00	448.21	140.13	3.198
57	-5.60	100	103	0.00	0.00	--	0.00	0.00	450.71	144.10	3.128
58	-5.70	100	104	0.00	0.00	--	0.00	0.00	453.20	148.11	3.060
59	-5.80	100	105	0.00	0.00	--	0.00	0.00	455.69	152.17	2.995
60	-5.90	100	106	0.00	0.00	--	0.00	0.00	458.18	156.29	2.932
61	-6.00	100	107	0.00	0.00	--	0.00	0.00	460.66	160.45	2.871
62	-6.10	100	108	0.00	0.00	--	0.00	0.00	463.14	164.67	2.813
63	-6.20	100	109	0.00	0.00	--	0.00	0.00	465.61	168.93	2.756
64	-6.30	100	110	0.00	0.00	--	0.00	0.00	468.08	173.25	2.702
65	-6.40	100	110	0.00	0.00	--	0.00	0.00	470.55	177.62	2.649
66	-6.50	100	111	0.00	0.00	--	0.00	0.00	473.01	182.04	2.598
67	-6.60	100	112	0.00	0.00	--	0.00	0.00	475.47	186.50	2.549
68	-6.70	100	113	0.00	0.00	--	0.00	0.00	477.93	191.02	2.502
69	-6.80	100	114	0.00	0.00	--	0.00	0.00	480.38	195.59	2.456
70	-6.90	100	115	0.00	0.00	--	0.00	0.00	482.83	200.21	2.412
71	-7.00	100	116	0.00	0.00	--	0.00	0.00	485.28	204.88	2.369
72	-7.10	100	117	0.00	0.00	--	0.00	0.00	487.72	209.60	2.327
73	-7.20	100	118	0.00	0.00	--	0.00	0.00	490.17	214.37	2.286
74	-7.30	100	119	0.00	0.00	--	0.00	0.00	492.60	219.20	2.247
75	-7.40	100	120	0.00	0.00	--	0.00	0.00	495.04	224.07	2.209
76	-7.50	100	121	0.00	0.00	--	0.00	0.00	497.47	228.99	2.172
77	-7.60	100	122	0.00	0.00	--	0.00	0.00	499.90	233.96	2.137
78	-7.70	100	123	0.00	0.00	--	0.00	0.00	502.33	238.99	2.102
79	-7.80	100	124	0.00	0.00	--	0.00	0.00	504.76	244.06	2.068
80	-7.90	100	125	0.00	0.00	--	0.00	0.00	507.18	249.19	2.035
81	-8.00	100	126	0.00	0.00	--	0.00	0.00	509.60	254.36	2.003
82	-8.10	100	127	0.00	0.00	--	0.00	0.00	512.02	259.59	1.972
83	-8.20	100	128	0.00	0.00	--	0.00	0.00	514.43	264.87	1.942
84	-8.30	100	128	0.00	0.00	--	0.00	0.00	516.85	270.19	1.913
85	-8.40	100	129	0.00	0.00	--	0.00	0.00	519.26	275.57	1.884
86	-8.50	100	130	0.00	0.00	--	0.00	0.00	521.67	281.00	1.856

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	Y	B	H	A <sub>sw</sub>	s	cotθ	V <sub>Rcd</sub>	V <sub>Rsd</sub>	V <sub>Rd</sub>	T	FS
	[m]	[cm]	[cm]	[cmq]	[cm]		[kN]	[kN]	[kN]	[kN]	
87	-8.60	100	131	0.00	0.00	--	0.00	0.00	616.11	286.48	2.151
88	-8.70	100	132	0.00	0.00	--	0.00	0.00	618.88	292.01	2.119
89	-8.80	100	133	0.00	0.00	--	0.00	0.00	621.64	297.59	2.089
90	-8.90	100	134	0.00	0.00	--	0.00	0.00	624.39	303.22	2.059
91	-9.00	100	135	0.00	0.00	--	0.00	0.00	627.15	308.90	2.030
92	-9.10	100	136	0.00	0.00	--	0.00	0.00	629.90	314.63	2.002
93	-9.20	100	137	0.00	0.00	--	0.00	0.00	670.34	320.41	2.092
94	-9.30	100	138	0.00	0.00	--	0.00	0.00	540.88	326.25	1.658
95	-9.40	100	139	0.00	0.00	--	0.00	0.00	543.27	332.13	1.636
96	-9.50	100	140	0.00	0.00	--	0.00	0.00	545.66	338.06	1.614
97	-9.60	100	141	0.00	0.00	--	0.00	0.00	548.05	344.05	1.593
98	-9.70	100	142	0.00	0.00	--	0.00	0.00	550.44	350.08	1.572
99	-9.80	100	143	0.00	0.00	--	0.00	0.00	552.83	356.17	1.552
100	-9.90	100	144	0.00	0.00	--	0.00	0.00	555.22	362.30	1.532
101	-10.00	100	145	0.00	0.00	--	0.00	0.00	557.60	368.49	1.513

## Combinazione n° 3 - STR (A1-M1-R3)

n°	Y	B	H	A <sub>sw</sub>	s	cotθ	V <sub>Rcd</sub>	V <sub>Rsd</sub>	V <sub>Rd</sub>	T	FS
	[m]	[cm]	[cm]	[cmq]	[cm]		[kN]	[kN]	[kN]	[kN]	
1	0.00	100	50	0.00	0.00	--	0.00	0.00	299.34	0.00	100.000
2	-0.10	100	51	0.00	0.00	--	0.00	0.00	302.37	0.91	333.250
3	-0.20	100	52	0.00	0.00	--	0.00	0.00	305.39	1.88	162.711
4	-0.30	100	53	0.00	0.00	--	0.00	0.00	308.39	2.91	106.054
5	-0.40	100	54	0.00	0.00	--	0.00	0.00	311.36	4.00	77.852
6	-0.50	100	55	0.00	0.00	--	0.00	0.00	314.32	5.15	61.010
7	-0.60	100	56	0.00	0.00	--	0.00	0.00	317.27	6.37	49.838
8	-0.70	100	57	0.00	0.00	--	0.00	0.00	320.20	7.64	41.902
9	-0.80	100	58	0.00	0.00	--	0.00	0.00	323.11	8.98	35.988
10	-0.90	100	59	0.00	0.00	--	0.00	0.00	326.00	10.38	31.417
11	-1.00	100	59	0.00	0.00	--	0.00	0.00	328.88	11.84	27.786
12	-1.10	100	60	0.00	0.00	--	0.00	0.00	331.75	13.36	24.837
13	-1.20	100	61	0.00	0.00	--	0.00	0.00	334.60	14.94	22.397
14	-1.30	100	62	0.00	0.00	--	0.00	0.00	337.44	16.58	20.348
15	-1.40	100	63	0.00	0.00	--	0.00	0.00	340.27	18.29	18.605
16	-1.50	100	64	0.00	0.00	--	0.00	0.00	343.08	20.06	17.107
17	-1.60	100	65	0.00	0.00	--	0.00	0.00	345.88	21.88	15.806
18	-1.70	100	66	0.00	0.00	--	0.00	0.00	348.67	23.77	14.667
19	-1.80	100	67	0.00	0.00	--	0.00	0.00	351.44	25.72	13.662
20	-1.90	100	68	0.00	0.00	--	0.00	0.00	354.21	27.74	12.771
21	-2.00	100	69	0.00	0.00	--	0.00	0.00	356.96	29.81	11.975
22	-2.10	100	70	0.00	0.00	--	0.00	0.00	359.70	31.94	11.260
23	-2.20	100	71	0.00	0.00	--	0.00	0.00	362.44	34.14	10.616
24	-2.30	100	72	0.00	0.00	--	0.00	0.00	365.16	36.40	10.032
25	-2.40	100	73	0.00	0.00	--	0.00	0.00	367.87	38.72	9.501
26	-2.50	100	74	0.00	0.00	--	0.00	0.00	370.57	41.10	9.017
27	-2.60	100	75	0.00	0.00	--	0.00	0.00	373.27	43.54	8.573
28	-2.70	100	76	0.00	0.00	--	0.00	0.00	375.95	46.04	8.165
29	-2.80	100	76	0.00	0.00	--	0.00	0.00	378.62	48.61	7.789
30	-2.90	100	77	0.00	0.00	--	0.00	0.00	381.29	51.24	7.442
31	-3.00	100	78	0.00	0.00	--	0.00	0.00	383.95	53.92	7.120
32	-3.10	100	79	0.00	0.00	--	0.00	0.00	386.60	56.67	6.822
33	-3.20	100	80	0.00	0.00	--	0.00	0.00	389.24	59.48	6.544
34	-3.30	100	81	0.00	0.00	--	0.00	0.00	391.87	62.35	6.285
35	-3.40	100	82	0.00	0.00	--	0.00	0.00	394.50	65.29	6.042
36	-3.50	100	83	0.00	0.00	--	0.00	0.00	397.12	68.28	5.816
37	-3.60	100	84	0.00	0.00	--	0.00	0.00	399.73	71.34	5.603
38	-3.70	100	85	0.00	0.00	--	0.00	0.00	402.33	74.46	5.404
39	-3.80	100	86	0.00	0.00	--	0.00	0.00	404.93	77.64	5.216
40	-3.90	100	87	0.00	0.00	--	0.00	0.00	407.52	80.88	5.039
41	-4.00	100	88	0.00	0.00	--	0.00	0.00	410.10	84.18	4.872
42	-4.10	100	89	0.00	0.00	--	0.00	0.00	412.68	87.54	4.714
43	-4.20	100	90	0.00	0.00	--	0.00	0.00	415.25	90.96	4.565
44	-4.30	100	91	0.00	0.00	--	0.00	0.00	417.82	94.45	4.424
45	-4.40	100	92	0.00	0.00	--	0.00	0.00	420.38	98.00	4.290
46	-4.50	100	93	0.00	0.00	--	0.00	0.00	422.93	101.60	4.163
47	-4.60	100	93	0.00	0.00	--	0.00	0.00	425.48	105.24	4.043



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## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
48	-4.70	100	94	0.00	0.00	--	0.00	0.00	428.02	108.91	3.930
49	-4.80	100	95	0.00	0.00	--	0.00	0.00	430.56	112.59	3.824
50	-4.90	100	96	0.00	0.00	--	0.00	0.00	433.09	116.26	3.725
51	-5.00	100	97	0.00	0.00	--	0.00	0.00	435.62	119.92	3.632
52	-5.10	100	98	0.00	0.00	--	0.00	0.00	438.14	123.58	3.545
53	-5.20	100	99	0.00	0.00	--	0.00	0.00	440.65	127.24	3.463
54	-5.30	100	100	0.00	0.00	--	0.00	0.00	443.17	130.92	3.385
55	-5.40	100	101	0.00	0.00	--	0.00	0.00	445.67	134.63	3.310
56	-5.50	100	102	0.00	0.00	--	0.00	0.00	448.18	138.40	3.238
57	-5.60	100	103	0.00	0.00	--	0.00	0.00	450.68	142.23	3.169
58	-5.70	100	104	0.00	0.00	--	0.00	0.00	453.17	146.12	3.101
59	-5.80	100	105	0.00	0.00	--	0.00	0.00	455.66	150.07	3.036
60	-5.90	100	106	0.00	0.00	--	0.00	0.00	458.15	154.09	2.973
61	-6.00	100	107	0.00	0.00	--	0.00	0.00	460.63	158.16	2.912
62	-6.10	100	108	0.00	0.00	--	0.00	0.00	463.11	162.31	2.853
63	-6.20	100	109	0.00	0.00	--	0.00	0.00	465.58	166.51	2.796
64	-6.30	100	110	0.00	0.00	--	0.00	0.00	468.05	170.78	2.741
65	-6.40	100	110	0.00	0.00	--	0.00	0.00	470.52	175.11	2.687
66	-6.50	100	111	0.00	0.00	--	0.00	0.00	472.98	179.50	2.635
67	-6.60	100	112	0.00	0.00	--	0.00	0.00	475.44	183.95	2.585
68	-6.70	100	113	0.00	0.00	--	0.00	0.00	477.90	188.47	2.536
69	-6.80	100	114	0.00	0.00	--	0.00	0.00	480.35	193.05	2.488
70	-6.90	100	115	0.00	0.00	--	0.00	0.00	482.80	197.69	2.442
71	-7.00	100	116	0.00	0.00	--	0.00	0.00	485.25	202.39	2.398
72	-7.10	100	117	0.00	0.00	--	0.00	0.00	487.69	207.16	2.354
73	-7.20	100	118	0.00	0.00	--	0.00	0.00	490.13	211.99	2.312
74	-7.30	100	119	0.00	0.00	--	0.00	0.00	492.57	216.88	2.271
75	-7.40	100	120	0.00	0.00	--	0.00	0.00	495.01	221.83	2.232
76	-7.50	100	121	0.00	0.00	--	0.00	0.00	497.44	226.84	2.193
77	-7.60	100	122	0.00	0.00	--	0.00	0.00	499.87	231.92	2.155
78	-7.70	100	123	0.00	0.00	--	0.00	0.00	502.30	237.05	2.119
79	-7.80	100	124	0.00	0.00	--	0.00	0.00	504.72	242.25	2.083
80	-7.90	100	125	0.00	0.00	--	0.00	0.00	507.15	247.52	2.049
81	-8.00	100	126	0.00	0.00	--	0.00	0.00	509.57	252.84	2.015
82	-8.10	100	127	0.00	0.00	--	0.00	0.00	511.99	258.22	1.983
83	-8.20	100	128	0.00	0.00	--	0.00	0.00	514.40	263.67	1.951
84	-8.30	100	128	0.00	0.00	--	0.00	0.00	516.81	269.18	1.920
85	-8.40	100	129	0.00	0.00	--	0.00	0.00	519.23	274.75	1.890
86	-8.50	100	130	0.00	0.00	--	0.00	0.00	521.64	280.38	1.860
87	-8.60	100	131	0.00	0.00	--	0.00	0.00	524.05	286.08	1.831
88	-8.70	100	132	0.00	0.00	--	0.00	0.00	526.46	291.83	1.802
89	-8.80	100	133	0.00	0.00	--	0.00	0.00	528.87	297.65	1.773
90	-8.90	100	134	0.00	0.00	--	0.00	0.00	531.28	303.53	1.745
91	-9.00	100	135	0.00	0.00	--	0.00	0.00	533.69	309.47	1.717
92	-9.10	100	136	0.00	0.00	--	0.00	0.00	536.10	315.47	1.690
93	-9.20	100	137	0.00	0.00	--	0.00	0.00	538.51	321.54	1.663
94	-9.30	100	138	0.00	0.00	--	0.00	0.00	540.92	327.67	1.637
95	-9.40	100	139	0.00	0.00	--	0.00	0.00	543.33	333.85	1.611
96	-9.50	100	140	0.00	0.00	--	0.00	0.00	545.74	340.09	1.586
97	-9.60	100	141	0.00	0.00	--	0.00	0.00	548.15	346.38	1.561
98	-9.70	100	142	0.00	0.00	--	0.00	0.00	550.56	352.70	1.537
99	-9.80	100	143	0.00	0.00	--	0.00	0.00	552.97	359.04	1.513
100	-9.90	100	144	0.00	0.00	--	0.00	0.00	555.38	365.40	1.490
101	-10.00	100	145	0.00	0.00	--	0.00	0.00	557.79	371.78	1.467

## Combinazione n° 4 - STR (A1-M1-R3) H - V

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
1	0.00	100	50	0.00	0.00	--	0.00	0.00	299.34	0.00	100.000
2	-0.10	100	51	0.00	0.00	--	0.00	0.00	302.37	0.87	348.730
3	-0.20	100	52	0.00	0.00	--	0.00	0.00	305.39	1.79	171.061
4	-0.30	100	53	0.00	0.00	--	0.00	0.00	308.39	2.75	111.977
5	-0.40	100	54	0.00	0.00	--	0.00	0.00	311.36	3.77	82.531
6	-0.50	100	55	0.00	0.00	--	0.00	0.00	314.32	4.84	64.922
7	-0.60	100	56	0.00	0.00	--	0.00	0.00	317.27	5.96	53.224
8	-0.70	100	57	0.00	0.00	--	0.00	0.00	320.20	7.13	44.902

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
9	-0.80	100	58	0.00	0.00	--	0.00	0.00	323.11	8.35	38.688
10	-0.90	100	59	0.00	0.00	--	0.00	0.00	326.00	9.62	33.879
11	-1.00	100	59	0.00	0.00	--	0.00	0.00	328.88	10.94	30.051
12	-1.10	100	60	0.00	0.00	--	0.00	0.00	331.75	12.32	26.936
13	-1.20	100	61	0.00	0.00	--	0.00	0.00	334.60	13.74	24.354
14	-1.30	100	62	0.00	0.00	--	0.00	0.00	337.44	15.21	22.182
15	-1.40	100	63	0.00	0.00	--	0.00	0.00	340.27	16.74	20.331
16	-1.50	100	64	0.00	0.00	--	0.00	0.00	343.08	18.31	18.737
17	-1.60	100	65	0.00	0.00	--	0.00	0.00	345.88	19.94	17.350
18	-1.70	100	66	0.00	0.00	--	0.00	0.00	348.67	21.61	16.134
19	-1.80	100	67	0.00	0.00	--	0.00	0.00	351.44	23.34	15.060
20	-1.90	100	68	0.00	0.00	--	0.00	0.00	354.21	25.11	14.105
21	-2.00	100	69	0.00	0.00	--	0.00	0.00	356.96	26.94	13.250
22	-2.10	100	70	0.00	0.00	--	0.00	0.00	359.70	28.82	12.482
23	-2.20	100	71	0.00	0.00	--	0.00	0.00	362.44	30.75	11.788
24	-2.30	100	72	0.00	0.00	--	0.00	0.00	365.16	32.72	11.159
25	-2.40	100	73	0.00	0.00	--	0.00	0.00	367.87	34.75	10.585
26	-2.50	100	74	0.00	0.00	--	0.00	0.00	370.57	36.83	10.061
27	-2.60	100	75	0.00	0.00	--	0.00	0.00	373.27	38.96	9.580
28	-2.70	100	76	0.00	0.00	--	0.00	0.00	375.95	41.14	9.138
29	-2.80	100	76	0.00	0.00	--	0.00	0.00	378.62	43.37	8.729
30	-2.90	100	77	0.00	0.00	--	0.00	0.00	381.29	45.66	8.351
31	-3.00	100	78	0.00	0.00	--	0.00	0.00	383.95	47.99	8.001
32	-3.10	100	79	0.00	0.00	--	0.00	0.00	386.60	50.37	7.675
33	-3.20	100	80	0.00	0.00	--	0.00	0.00	389.24	52.80	7.371
34	-3.30	100	81	0.00	0.00	--	0.00	0.00	391.87	55.29	7.088
35	-3.40	100	82	0.00	0.00	--	0.00	0.00	394.50	57.82	6.823
36	-3.50	100	83	0.00	0.00	--	0.00	0.00	397.12	60.41	6.574
37	-3.60	100	84	0.00	0.00	--	0.00	0.00	399.73	63.04	6.341
38	-3.70	100	85	0.00	0.00	--	0.00	0.00	402.33	65.73	6.121
39	-3.80	100	86	0.00	0.00	--	0.00	0.00	404.93	68.47	5.914
40	-3.90	100	87	0.00	0.00	--	0.00	0.00	407.52	71.25	5.719
41	-4.00	100	88	0.00	0.00	--	0.00	0.00	410.10	74.09	5.535
42	-4.10	100	89	0.00	0.00	--	0.00	0.00	412.68	76.98	5.361
43	-4.20	100	90	0.00	0.00	--	0.00	0.00	415.25	79.92	5.196
44	-4.30	100	91	0.00	0.00	--	0.00	0.00	417.82	82.91	5.040
45	-4.40	100	92	0.00	0.00	--	0.00	0.00	420.38	85.95	4.891
46	-4.50	100	93	0.00	0.00	--	0.00	0.00	422.93	89.04	4.750
47	-4.60	100	93	0.00	0.00	--	0.00	0.00	425.48	92.18	4.616
48	-4.70	100	94	0.00	0.00	--	0.00	0.00	428.02	95.37	4.488
49	-4.80	100	95	0.00	0.00	--	0.00	0.00	430.56	98.61	4.366
50	-4.90	100	96	0.00	0.00	--	0.00	0.00	433.09	101.90	4.250
51	-5.00	100	97	0.00	0.00	--	0.00	0.00	435.62	105.25	4.139
52	-5.10	100	98	0.00	0.00	--	0.00	0.00	438.14	108.64	4.033
53	-5.20	100	99	0.00	0.00	--	0.00	0.00	440.65	112.08	3.931
54	-5.30	100	100	0.00	0.00	--	0.00	0.00	443.17	115.58	3.834
55	-5.40	100	101	0.00	0.00	--	0.00	0.00	445.67	119.12	3.741
56	-5.50	100	102	0.00	0.00	--	0.00	0.00	448.18	122.72	3.652
57	-5.60	100	103	0.00	0.00	--	0.00	0.00	450.68	126.37	3.566
58	-5.70	100	104	0.00	0.00	--	0.00	0.00	453.17	130.06	3.484
59	-5.80	100	105	0.00	0.00	--	0.00	0.00	455.66	133.81	3.405
60	-5.90	100	106	0.00	0.00	--	0.00	0.00	458.15	137.61	3.329
61	-6.00	100	107	0.00	0.00	--	0.00	0.00	460.63	141.46	3.256
62	-6.10	100	108	0.00	0.00	--	0.00	0.00	463.11	145.36	3.186
63	-6.20	100	109	0.00	0.00	--	0.00	0.00	465.58	149.30	3.118
64	-6.30	100	110	0.00	0.00	--	0.00	0.00	468.05	153.30	3.053
65	-6.40	100	110	0.00	0.00	--	0.00	0.00	470.52	157.35	2.990
66	-6.50	100	111	0.00	0.00	--	0.00	0.00	472.98	161.46	2.929
67	-6.60	100	112	0.00	0.00	--	0.00	0.00	475.44	165.61	2.871
68	-6.70	100	113	0.00	0.00	--	0.00	0.00	477.90	169.81	2.814
69	-6.80	100	114	0.00	0.00	--	0.00	0.00	480.35	174.06	2.760
70	-6.90	100	115	0.00	0.00	--	0.00	0.00	482.80	178.37	2.707
71	-7.00	100	116	0.00	0.00	--	0.00	0.00	485.25	182.72	2.656
72	-7.10	100	117	0.00	0.00	--	0.00	0.00	487.69	187.12	2.606
73	-7.20	100	118	0.00	0.00	--	0.00	0.00	490.13	191.58	2.558
74	-7.30	100	119	0.00	0.00	--	0.00	0.00	492.57	196.08	2.512
75	-7.40	100	120	0.00	0.00	--	0.00	0.00	495.01	200.64	2.467
76	-7.50	100	121	0.00	0.00	--	0.00	0.00	497.44	205.25	2.424
77	-7.60	100	122	0.00	0.00	--	0.00	0.00	499.87	209.90	2.381
78	-7.70	100	123	0.00	0.00	--	0.00	0.00	502.30	214.61	2.341

VE407

## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
79	-7.80	100	124	0.00	0.00	--	0.00	0.00	504.72	219.37	2.301
80	-7.90	100	125	0.00	0.00	--	0.00	0.00	507.15	224.18	2.262
81	-8.00	100	126	0.00	0.00	--	0.00	0.00	509.57	229.04	2.225
82	-8.10	100	127	0.00	0.00	--	0.00	0.00	511.99	233.95	2.188
83	-8.20	100	128	0.00	0.00	--	0.00	0.00	514.40	238.91	2.153
84	-8.30	100	128	0.00	0.00	--	0.00	0.00	516.81	243.92	2.119
85	-8.40	100	129	0.00	0.00	--	0.00	0.00	519.23	248.98	2.085
86	-8.50	100	130	0.00	0.00	--	0.00	0.00	521.64	254.09	2.053
87	-8.60	100	131	0.00	0.00	--	0.00	0.00	616.08	259.25	2.376
88	-8.70	100	132	0.00	0.00	--	0.00	0.00	618.84	264.46	2.340
89	-8.80	100	133	0.00	0.00	--	0.00	0.00	621.60	269.73	2.305
90	-8.90	100	134	0.00	0.00	--	0.00	0.00	624.36	275.04	2.270
91	-9.00	100	135	0.00	0.00	--	0.00	0.00	627.12	280.41	2.236
92	-9.10	100	136	0.00	0.00	--	0.00	0.00	629.87	285.82	2.204
93	-9.20	100	137	0.00	0.00	--	0.00	0.00	670.31	291.29	2.301
94	-9.30	100	138	0.00	0.00	--	0.00	0.00	540.84	296.80	1.822
95	-9.40	100	139	0.00	0.00	--	0.00	0.00	543.24	302.37	1.797
96	-9.50	100	140	0.00	0.00	--	0.00	0.00	545.63	307.99	1.772
97	-9.60	100	141	0.00	0.00	--	0.00	0.00	548.02	313.65	1.747
98	-9.70	100	142	0.00	0.00	--	0.00	0.00	550.41	319.37	1.723
99	-9.80	100	143	0.00	0.00	--	0.00	0.00	552.80	325.14	1.700
100	-9.90	100	144	0.00	0.00	--	0.00	0.00	555.18	330.96	1.678
101	-10.00	100	145	0.00	0.00	--	0.00	0.00	557.57	336.83	1.655

## Combinazione n° 13 - ECC

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
1	0.00	100	50	0.00	0.00	--	0.00	0.00	299.34	33.30	8.989
2	-0.10	100	51	0.00	0.00	--	0.00	0.00	302.37	33.32	9.074
3	-0.20	100	52	0.00	0.00	--	0.00	0.00	305.39	33.40	9.145
4	-0.30	100	53	0.00	0.00	--	0.00	0.00	308.39	33.51	9.202
5	-0.40	100	54	0.00	0.00	--	0.00	0.00	311.36	33.68	9.245
6	-0.50	100	55	0.00	0.00	--	0.00	0.00	314.32	33.89	9.274
7	-0.60	100	56	0.00	0.00	--	0.00	0.00	317.27	34.15	9.290
8	-0.70	100	57	0.00	0.00	--	0.00	0.00	320.20	34.46	9.292
9	-0.80	100	58	0.00	0.00	--	0.00	0.00	323.11	34.81	9.281
10	-0.90	100	59	0.00	0.00	--	0.00	0.00	326.00	35.22	9.257
11	-1.00	100	59	0.00	0.00	--	0.00	0.00	328.88	35.66	9.222
12	-1.10	100	60	0.00	0.00	--	0.00	0.00	331.75	36.16	9.175
13	-1.20	100	61	0.00	0.00	--	0.00	0.00	334.60	36.70	9.116
14	-1.30	100	62	0.00	0.00	--	0.00	0.00	337.44	37.29	9.048
15	-1.40	100	63	0.00	0.00	--	0.00	0.00	340.27	37.93	8.971
16	-1.50	100	64	0.00	0.00	--	0.00	0.00	343.08	38.62	8.884
17	-1.60	100	65	0.00	0.00	--	0.00	0.00	345.88	39.35	8.790
18	-1.70	100	66	0.00	0.00	--	0.00	0.00	348.67	40.13	8.689
19	-1.80	100	67	0.00	0.00	--	0.00	0.00	351.44	40.95	8.581
20	-1.90	100	68	0.00	0.00	--	0.00	0.00	354.21	41.83	8.468
21	-2.00	100	69	0.00	0.00	--	0.00	0.00	356.96	42.75	8.350
22	-2.10	100	70	0.00	0.00	--	0.00	0.00	359.70	43.72	8.228
23	-2.20	100	71	0.00	0.00	--	0.00	0.00	362.44	44.73	8.102
24	-2.30	100	72	0.00	0.00	--	0.00	0.00	365.16	45.80	7.974
25	-2.40	100	73	0.00	0.00	--	0.00	0.00	367.87	46.91	7.843
26	-2.50	100	74	0.00	0.00	--	0.00	0.00	370.57	48.06	7.710
27	-2.60	100	75	0.00	0.00	--	0.00	0.00	373.27	49.27	7.576
28	-2.70	100	76	0.00	0.00	--	0.00	0.00	375.95	50.52	7.442
29	-2.80	100	76	0.00	0.00	--	0.00	0.00	378.62	51.82	7.307
30	-2.90	100	77	0.00	0.00	--	0.00	0.00	381.29	53.16	7.172
31	-3.00	100	78	0.00	0.00	--	0.00	0.00	383.95	54.56	7.038
32	-3.10	100	79	0.00	0.00	--	0.00	0.00	386.60	56.00	6.904
33	-3.20	100	80	0.00	0.00	--	0.00	0.00	389.24	57.49	6.771
34	-3.30	100	81	0.00	0.00	--	0.00	0.00	391.87	59.02	6.640
35	-3.40	100	82	0.00	0.00	--	0.00	0.00	394.50	60.60	6.510
36	-3.50	100	83	0.00	0.00	--	0.00	0.00	397.12	62.23	6.381
37	-3.60	100	84	0.00	0.00	--	0.00	0.00	399.73	63.91	6.255
38	-3.70	100	85	0.00	0.00	--	0.00	0.00	402.33	65.63	6.130
39	-3.80	100	86	0.00	0.00	--	0.00	0.00	404.93	67.40	6.007

VE407

## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
40	-3.90	100	87	0.00	0.00	--	0.00	0.00	407.52	69.22	5.887
41	-4.00	100	88	0.00	0.00	--	0.00	0.00	410.10	71.09	5.769
42	-4.10	100	89	0.00	0.00	--	0.00	0.00	412.68	73.00	5.653
43	-4.20	100	90	0.00	0.00	--	0.00	0.00	415.25	74.96	5.540
44	-4.30	100	91	0.00	0.00	--	0.00	0.00	417.82	76.97	5.428
45	-4.40	100	92	0.00	0.00	--	0.00	0.00	420.38	79.02	5.320
46	-4.50	100	93	0.00	0.00	--	0.00	0.00	422.93	81.13	5.213
47	-4.60	100	93	0.00	0.00	--	0.00	0.00	425.48	83.27	5.109
48	-4.70	100	94	0.00	0.00	--	0.00	0.00	428.02	85.47	5.008
49	-4.80	100	95	0.00	0.00	--	0.00	0.00	430.56	87.71	4.909
50	-4.90	100	96	0.00	0.00	--	0.00	0.00	433.09	90.01	4.812
51	-5.00	100	97	0.00	0.00	--	0.00	0.00	435.62	92.34	4.717
52	-5.10	100	98	0.00	0.00	--	0.00	0.00	438.14	94.73	4.625
53	-5.20	100	99	0.00	0.00	--	0.00	0.00	440.65	97.16	4.535
54	-5.30	100	100	0.00	0.00	--	0.00	0.00	443.17	99.64	4.448
55	-5.40	100	101	0.00	0.00	--	0.00	0.00	445.67	102.17	4.362
56	-5.50	100	102	0.00	0.00	--	0.00	0.00	448.18	104.74	4.279
57	-5.60	100	103	0.00	0.00	--	0.00	0.00	450.68	107.36	4.198
58	-5.70	100	104	0.00	0.00	--	0.00	0.00	453.17	110.03	4.119
59	-5.80	100	105	0.00	0.00	--	0.00	0.00	455.66	112.75	4.041
60	-5.90	100	106	0.00	0.00	--	0.00	0.00	458.15	115.51	3.966
61	-6.00	100	107	0.00	0.00	--	0.00	0.00	460.63	118.32	3.893
62	-6.10	100	108	0.00	0.00	--	0.00	0.00	463.11	121.18	3.822
63	-6.20	100	109	0.00	0.00	--	0.00	0.00	465.58	124.08	3.752
64	-6.30	100	110	0.00	0.00	--	0.00	0.00	468.05	127.04	3.684
65	-6.40	100	110	0.00	0.00	--	0.00	0.00	470.52	130.04	3.618
66	-6.50	100	111	0.00	0.00	--	0.00	0.00	472.98	133.08	3.554
67	-6.60	100	112	0.00	0.00	--	0.00	0.00	475.44	136.18	3.491
68	-6.70	100	113	0.00	0.00	--	0.00	0.00	477.90	139.32	3.430
69	-6.80	100	114	0.00	0.00	--	0.00	0.00	480.35	142.50	3.371
70	-6.90	100	115	0.00	0.00	--	0.00	0.00	482.80	145.74	3.313
71	-7.00	100	116	0.00	0.00	--	0.00	0.00	485.25	149.02	3.256
72	-7.10	100	117	0.00	0.00	--	0.00	0.00	487.69	152.35	3.201
73	-7.20	100	118	0.00	0.00	--	0.00	0.00	490.13	155.73	3.147
74	-7.30	100	119	0.00	0.00	--	0.00	0.00	492.57	159.15	3.095
75	-7.40	100	120	0.00	0.00	--	0.00	0.00	495.01	162.63	3.044
76	-7.50	100	121	0.00	0.00	--	0.00	0.00	497.44	166.15	2.994
77	-7.60	100	122	0.00	0.00	--	0.00	0.00	499.87	169.71	2.945
78	-7.70	100	123	0.00	0.00	--	0.00	0.00	502.30	173.32	2.898
79	-7.80	100	124	0.00	0.00	--	0.00	0.00	504.72	176.99	2.852
80	-7.90	100	125	0.00	0.00	--	0.00	0.00	507.15	180.69	2.807
81	-8.00	100	126	0.00	0.00	--	0.00	0.00	509.57	184.45	2.763
82	-8.10	100	127	0.00	0.00	--	0.00	0.00	511.99	188.25	2.720
83	-8.20	100	128	0.00	0.00	--	0.00	0.00	514.40	192.10	2.678
84	-8.30	100	128	0.00	0.00	--	0.00	0.00	516.81	196.00	2.637
85	-8.40	100	129	0.00	0.00	--	0.00	0.00	519.23	199.94	2.597
86	-8.50	100	130	0.00	0.00	--	0.00	0.00	521.64	203.93	2.558
87	-8.60	100	131	0.00	0.00	--	0.00	0.00	524.05	207.97	2.520
88	-8.70	100	132	0.00	0.00	--	0.00	0.00	526.46	212.06	2.483
89	-8.80	100	133	0.00	0.00	--	0.00	0.00	528.87	216.19	2.447
90	-8.90	100	134	0.00	0.00	--	0.00	0.00	531.28	220.37	2.412
91	-9.00	100	135	0.00	0.00	--	0.00	0.00	533.69	224.60	2.378
92	-9.10	100	136	0.00	0.00	--	0.00	0.00	536.10	228.87	2.345
93	-9.20	100	137	0.00	0.00	--	0.00	0.00	538.51	233.19	2.313
94	-9.30	100	138	0.00	0.00	--	0.00	0.00	540.92	237.56	2.282
95	-9.40	100	139	0.00	0.00	--	0.00	0.00	543.33	241.98	2.252
96	-9.50	100	140	0.00	0.00	--	0.00	0.00	545.74	246.44	2.223
97	-9.60	100	141	0.00	0.00	--	0.00	0.00	548.15	250.95	2.195
98	-9.70	100	142	0.00	0.00	--	0.00	0.00	550.56	255.51	2.168
99	-9.80	100	143	0.00	0.00	--	0.00	0.00	552.97	260.12	2.142
100	-9.90	100	144	0.00	0.00	--	0.00	0.00	555.38	264.77	2.117
101	-10.00	100	145	0.00	0.00	--	0.00	0.00	557.79	269.47	2.093

## Mensola valle

Combinazione n° 1 - STR (A1-M1-R3)

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VE407

**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
1	-0.75	100	50	0.00	0.00	--	0.00	0.00	242.41	0.00	100.000
2	-0.67	100	50	0.00	0.00	--	0.00	0.00	242.41	1.02	237.298
3	-0.58	100	50	0.00	0.00	--	0.00	0.00	242.41	2.04	118.649
4	-0.50	100	50	0.00	0.00	--	0.00	0.00	242.41	3.06	79.099

Combinazione n° 2 - STR (A1-M1-R3) H + V

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
1	-0.75	100	50	0.00	0.00	--	0.00	0.00	242.41	0.00	100.000
2	-0.67	100	50	0.00	0.00	--	0.00	0.00	242.41	1.09	221.517
3	-0.58	100	50	0.00	0.00	--	0.00	0.00	242.41	2.19	110.759
4	-0.50	100	50	0.00	0.00	--	0.00	0.00	242.41	3.28	73.839

Combinazione n° 3 - STR (A1-M1-R3)

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
1	-0.75	100	50	0.00	0.00	--	0.00	0.00	242.41	0.00	100.000
2	-0.67	100	50	0.00	0.00	--	0.00	0.00	242.41	1.02	237.298
3	-0.58	100	50	0.00	0.00	--	0.00	0.00	242.41	2.04	118.649
4	-0.50	100	50	0.00	0.00	--	0.00	0.00	242.41	3.06	79.099

Combinazione n° 4 - STR (A1-M1-R3) H - V

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
1	-0.75	100	50	0.00	0.00	--	0.00	0.00	242.41	0.00	100.000
2	-0.67	100	50	0.00	0.00	--	0.00	0.00	242.41	1.02	237.298
3	-0.58	100	50	0.00	0.00	--	0.00	0.00	242.41	2.04	118.649
4	-0.50	100	50	0.00	0.00	--	0.00	0.00	242.41	3.06	79.099

Combinazione n° 13 - ECC

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
1	-0.75	100	50	0.00	0.00	--	0.00	0.00	242.41	0.00	100.000
2	-0.67	100	50	0.00	0.00	--	0.00	0.00	242.41	1.02	237.298
3	-0.58	100	50	0.00	0.00	--	0.00	0.00	242.41	2.04	118.649
4	-0.50	100	50	0.00	0.00	--	0.00	0.00	242.41	3.06	79.099

**Fondazione**Combinazione n° 1 - STR (A1-M1-R3)

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
1	-1.95	100	145	0.00	0.00	--	0.00	0.00	575.94	0.00	100.000
2	-1.85	100	145	0.00	0.00	--	0.00	0.00	575.94	-20.69	27.831
3	-1.76	100	145	0.00	0.00	--	0.00	0.00	575.94	-41.31	13.940
4	-1.66	100	145	0.00	0.00	--	0.00	0.00	575.94	-61.86	9.310
5	-1.56	100	145	0.00	0.00	--	0.00	0.00	575.94	-82.33	6.995
6	-1.47	100	145	0.00	0.00	--	0.00	0.00	575.94	-102.73	5.606
7	-1.37	100	145	0.00	0.00	--	0.00	0.00	575.94	-123.06	4.680

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	Y	B	H	A <sub>sw</sub>	s	cotθ	V <sub>Rcd</sub>	V <sub>Rsd</sub>	V <sub>Rd</sub>	T	FS
	[m]	[cm]	[cm]	[cmq]	[cm]		[kN]	[kN]	[kN]	[kN]	
8	-1.27	100	145	0.00	0.00	--	0.00	0.00	575.94	-143.31	4.019
9	-1.18	100	145	0.00	0.00	--	0.00	0.00	575.94	-163.49	3.523
10	-1.08	100	145	0.00	0.00	--	0.00	0.00	575.94	-183.59	3.137
11	-0.98	100	145	0.00	0.00	--	0.00	0.00	575.94	-203.62	2.828
12	-0.89	100	145	0.00	0.00	--	0.00	0.00	575.94	-223.58	2.576
13	-0.79	100	145	0.00	0.00	--	0.00	0.00	575.94	-243.46	2.366
14	-0.69	100	145	0.00	0.00	--	0.00	0.00	575.94	-263.27	2.188
15	-0.60	100	145	0.00	0.00	--	0.00	0.00	575.94	-283.00	2.035
16	-0.50	100	145	0.00	0.00	--	0.00	0.00	575.94	-302.67	1.903
17	0.95	100	145	0.00	0.00	--	0.00	0.00	575.94	-293.48	1.962
18	1.05	100	145	0.00	0.00	--	0.00	0.00	575.94	-287.90	2.000
19	1.15	100	145	0.00	0.00	--	0.00	0.00	575.94	-282.24	2.041
20	1.25	100	145	0.00	0.00	--	0.00	0.00	575.94	-276.51	2.083
21	1.35	100	145	0.00	0.00	--	0.00	0.00	575.94	-270.69	2.128
22	1.45	100	145	0.00	0.00	--	0.00	0.00	575.94	-264.79	2.175
23	1.55	100	145	0.00	0.00	--	0.00	0.00	575.94	-258.82	2.225
24	1.65	100	145	0.00	0.00	--	0.00	0.00	575.94	-252.77	2.279
25	1.75	100	145	0.00	0.00	--	0.00	0.00	575.94	-246.64	2.335
26	1.85	100	145	0.00	0.00	--	0.00	0.00	575.94	-240.43	2.395
27	1.95	100	145	0.00	0.00	--	0.00	0.00	575.94	-234.14	2.460
28	2.05	100	145	0.00	0.00	--	0.00	0.00	575.94	-227.77	2.529
29	2.15	100	145	0.00	0.00	--	0.00	0.00	575.94	-221.32	2.602
30	2.25	100	145	0.00	0.00	--	0.00	0.00	575.94	-214.79	2.681
31	2.35	100	145	0.00	0.00	--	0.00	0.00	575.94	-208.19	2.766
32	2.45	100	145	0.00	0.00	--	0.00	0.00	575.94	-201.50	2.858
33	2.55	100	145	0.00	0.00	--	0.00	0.00	575.94	-194.74	2.957
34	2.65	100	145	0.00	0.00	--	0.00	0.00	575.94	-187.90	3.065
35	2.75	100	145	0.00	0.00	--	0.00	0.00	575.94	-180.98	3.182
36	2.85	100	145	0.00	0.00	--	0.00	0.00	575.94	-173.98	3.310
37	2.95	100	145	0.00	0.00	--	0.00	0.00	575.94	-166.90	3.451
38	3.05	100	145	0.00	0.00	--	0.00	0.00	575.94	-159.74	3.605
39	3.15	100	145	0.00	0.00	--	0.00	0.00	575.94	-152.50	3.777
40	3.25	100	145	0.00	0.00	--	0.00	0.00	575.94	-145.19	3.967
41	3.35	100	145	0.00	0.00	--	0.00	0.00	575.94	-137.79	4.180
42	3.45	100	145	0.00	0.00	--	0.00	0.00	575.94	-130.32	4.419
43	3.55	100	145	0.00	0.00	--	0.00	0.00	575.94	-122.76	4.691
44	3.65	100	145	0.00	0.00	--	0.00	0.00	575.94	-115.13	5.002
45	3.75	100	145	0.00	0.00	--	0.00	0.00	575.94	-107.42	5.361
46	3.85	100	145	0.00	0.00	--	0.00	0.00	575.94	-99.63	5.781
47	3.95	100	145	0.00	0.00	--	0.00	0.00	575.94	-91.76	6.276
48	4.05	100	145	0.00	0.00	--	0.00	0.00	575.94	-83.82	6.871
49	4.15	100	145	0.00	0.00	--	0.00	0.00	575.94	-75.79	7.599
50	4.25	100	145	0.00	0.00	--	0.00	0.00	575.94	-67.68	8.509
51	4.35	100	145	0.00	0.00	--	0.00	0.00	575.94	-59.50	9.680
52	4.45	100	145	0.00	0.00	--	0.00	0.00	575.94	-51.24	11.241
53	4.55	100	145	0.00	0.00	--	0.00	0.00	575.94	-42.90	13.427
54	4.65	100	145	0.00	0.00	--	0.00	0.00	575.94	-34.47	16.706
55	4.75	100	145	0.00	0.00	--	0.00	0.00	575.94	-25.97	22.174
56	4.85	100	145	0.00	0.00	--	0.00	0.00	575.94	-17.39	33.110
57	4.95	100	145	0.00	0.00	--	0.00	0.00	575.94	-8.74	65.920
58	5.05	100	145	0.00	0.00	--	0.00	0.00	575.94	0.00	100.000

Combinazione n° 2 - STR (A1-M1-R3) H + V

n°	Y	B	H	A <sub>sw</sub>	s	cotθ	V <sub>Rcd</sub>	V <sub>Rsd</sub>	V <sub>Rd</sub>	T	FS
	[m]	[cm]	[cm]	[cmq]	[cm]		[kN]	[kN]	[kN]	[kN]	
1	-1.95	100	145	0.00	0.00	--	0.00	0.00	575.94	0.00	100.000
2	-1.85	100	145	0.00	0.00	--	0.00	0.00	575.94	-38.53	14.948
3	-1.76	100	145	0.00	0.00	--	0.00	0.00	575.94	-76.53	7.525
4	-1.66	100	145	0.00	0.00	--	0.00	0.00	575.94	-114.00	5.052
5	-1.56	100	145	0.00	0.00	--	0.00	0.00	575.94	-150.95	3.816
6	-1.47	100	145	0.00	0.00	--	0.00	0.00	575.94	-187.36	3.074
7	-1.37	100	145	0.00	0.00	--	0.00	0.00	575.94	-223.24	2.580
8	-1.27	100	145	0.00	0.00	--	0.00	0.00	575.94	-258.60	2.227
9	-1.18	100	145	0.00	0.00	--	0.00	0.00	575.94	-293.42	1.963
10	-1.08	100	145	0.00	0.00	--	0.00	0.00	575.94	-327.72	1.757
11	-0.98	100	145	0.00	0.00	--	0.00	0.00	575.94	-361.48	1.593

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## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
12	-0.89	100	145	0.00	0.00	--	0.00	0.00	575.94	-394.72	1.459
13	-0.79	100	145	0.00	0.00	--	0.00	0.00	575.94	-427.43	1.347
14	-0.69	100	145	0.00	0.00	--	0.00	0.00	575.94	-459.61	1.253
15	-0.60	100	145	0.00	0.00	--	0.00	0.00	575.94	-491.25	1.172
16	-0.50	100	145	0.00	0.00	--	0.00	0.00	575.94	-522.37	1.103
17	0.95	100	145	0.00	0.00	--	0.00	0.00	575.94	-282.11	2.042
18	1.05	100	145	0.00	0.00	--	0.00	0.00	575.94	-286.56	2.010
19	1.15	100	145	0.00	0.00	--	0.00	0.00	575.94	-290.44	1.983
20	1.25	100	145	0.00	0.00	--	0.00	0.00	575.94	-293.76	1.961
21	1.35	100	145	0.00	0.00	--	0.00	0.00	575.94	-296.51	1.942
22	1.45	100	145	0.00	0.00	--	0.00	0.00	575.94	-298.69	1.928
23	1.55	100	145	0.00	0.00	--	0.00	0.00	575.94	-300.31	1.918
24	1.65	100	145	0.00	0.00	--	0.00	0.00	575.94	-301.36	1.911
25	1.75	100	145	0.00	0.00	--	0.00	0.00	575.94	-301.84	1.908
26	1.85	100	145	0.00	0.00	--	0.00	0.00	575.94	-301.76	1.909
27	1.95	100	145	0.00	0.00	--	0.00	0.00	575.94	-301.11	1.913
28	2.05	100	145	0.00	0.00	--	0.00	0.00	575.94	-299.89	1.920
29	2.15	100	145	0.00	0.00	--	0.00	0.00	575.94	-298.11	1.932
30	2.25	100	145	0.00	0.00	--	0.00	0.00	575.94	-295.76	1.947
31	2.35	100	145	0.00	0.00	--	0.00	0.00	575.94	-292.85	1.967
32	2.45	100	145	0.00	0.00	--	0.00	0.00	575.94	-289.36	1.990
33	2.55	100	145	0.00	0.00	--	0.00	0.00	575.94	-285.31	2.019
34	2.65	100	145	0.00	0.00	--	0.00	0.00	575.94	-280.70	2.052
35	2.75	100	145	0.00	0.00	--	0.00	0.00	575.94	-275.52	2.090
36	2.85	100	145	0.00	0.00	--	0.00	0.00	575.94	-269.77	2.135
37	2.95	100	145	0.00	0.00	--	0.00	0.00	575.94	-263.46	2.186
38	3.05	100	145	0.00	0.00	--	0.00	0.00	575.94	-256.58	2.245
39	3.15	100	145	0.00	0.00	--	0.00	0.00	575.94	-249.13	2.312
40	3.25	100	145	0.00	0.00	--	0.00	0.00	575.94	-241.11	2.389
41	3.35	100	145	0.00	0.00	--	0.00	0.00	575.94	-232.53	2.477
42	3.45	100	145	0.00	0.00	--	0.00	0.00	575.94	-223.39	2.578
43	3.55	100	145	0.00	0.00	--	0.00	0.00	575.94	-213.67	2.695
44	3.65	100	145	0.00	0.00	--	0.00	0.00	575.94	-203.39	2.832
45	3.75	100	145	0.00	0.00	--	0.00	0.00	575.94	-192.55	2.991
46	3.85	100	145	0.00	0.00	--	0.00	0.00	575.94	-181.14	3.180
47	3.95	100	145	0.00	0.00	--	0.00	0.00	575.94	-169.16	3.405
48	4.05	100	145	0.00	0.00	--	0.00	0.00	575.94	-156.61	3.677
49	4.15	100	145	0.00	0.00	--	0.00	0.00	575.94	-143.50	4.014
50	4.25	100	145	0.00	0.00	--	0.00	0.00	575.94	-129.82	4.436
51	4.35	100	145	0.00	0.00	--	0.00	0.00	575.94	-115.58	4.983
52	4.45	100	145	0.00	0.00	--	0.00	0.00	575.94	-100.76	5.716
53	4.55	100	145	0.00	0.00	--	0.00	0.00	575.94	-85.39	6.745
54	4.65	100	145	0.00	0.00	--	0.00	0.00	575.94	-69.44	8.294
55	4.75	100	145	0.00	0.00	--	0.00	0.00	575.94	-52.93	10.881
56	4.85	100	145	0.00	0.00	--	0.00	0.00	575.94	-35.85	16.063
57	4.95	100	145	0.00	0.00	--	0.00	0.00	575.94	-18.21	31.627
58	5.05	100	145	0.00	0.00	--	0.00	0.00	575.94	0.00	100.000

## Combinazione n° 3 - STR (A1-M1-R3)

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
1	-1.95	100	145	0.00	0.00	--	0.00	0.00	575.94	0.00	100.000
2	-1.85	100	145	0.00	0.00	--	0.00	0.00	575.94	-22.90	25.146
3	-1.76	100	145	0.00	0.00	--	0.00	0.00	575.94	-45.73	12.594
4	-1.66	100	145	0.00	0.00	--	0.00	0.00	575.94	-68.48	8.410
5	-1.56	100	145	0.00	0.00	--	0.00	0.00	575.94	-91.16	6.318
6	-1.47	100	145	0.00	0.00	--	0.00	0.00	575.94	-113.76	5.063
7	-1.37	100	145	0.00	0.00	--	0.00	0.00	575.94	-136.28	4.226
8	-1.27	100	145	0.00	0.00	--	0.00	0.00	575.94	-158.72	3.629
9	-1.18	100	145	0.00	0.00	--	0.00	0.00	575.94	-181.09	3.180
10	-1.08	100	145	0.00	0.00	--	0.00	0.00	575.94	-203.39	2.832
11	-0.98	100	145	0.00	0.00	--	0.00	0.00	575.94	-225.60	2.553
12	-0.89	100	145	0.00	0.00	--	0.00	0.00	575.94	-247.74	2.325
13	-0.79	100	145	0.00	0.00	--	0.00	0.00	575.94	-269.81	2.135
14	-0.69	100	145	0.00	0.00	--	0.00	0.00	575.94	-291.79	1.974
15	-0.60	100	145	0.00	0.00	--	0.00	0.00	575.94	-313.70	1.836

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## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

n°	Y	B	H	A <sub>sw</sub>	s	cotθ	V <sub>Rcd</sub>	V <sub>Rsd</sub>	V <sub>Rd</sub>	T	FS
	[m]	[cm]	[cm]	[cmq]	[cm]		[kN]	[kN]	[kN]	[kN]	
16	-0.50	100	145	0.00	0.00	--	0.00	0.00	575.94	-335.54	1.716
17	0.95	100	145	0.00	0.00	--	0.00	0.00	575.94	-315.28	1.827
18	1.05	100	145	0.00	0.00	--	0.00	0.00	575.94	-308.38	1.868
19	1.15	100	145	0.00	0.00	--	0.00	0.00	575.94	-301.39	1.911
20	1.25	100	145	0.00	0.00	--	0.00	0.00	575.94	-294.33	1.957
21	1.35	100	145	0.00	0.00	--	0.00	0.00	575.94	-287.19	2.005
22	1.45	100	145	0.00	0.00	--	0.00	0.00	575.94	-279.96	2.057
23	1.55	100	145	0.00	0.00	--	0.00	0.00	575.94	-272.65	2.112
24	1.65	100	145	0.00	0.00	--	0.00	0.00	575.94	-265.26	2.171
25	1.75	100	145	0.00	0.00	--	0.00	0.00	575.94	-257.79	2.234
26	1.85	100	145	0.00	0.00	--	0.00	0.00	575.94	-250.23	2.302
27	1.95	100	145	0.00	0.00	--	0.00	0.00	575.94	-242.60	2.374
28	2.05	100	145	0.00	0.00	--	0.00	0.00	575.94	-234.88	2.452
29	2.15	100	145	0.00	0.00	--	0.00	0.00	575.94	-227.08	2.536
30	2.25	100	145	0.00	0.00	--	0.00	0.00	575.94	-219.20	2.627
31	2.35	100	145	0.00	0.00	--	0.00	0.00	575.94	-211.24	2.726
32	2.45	100	145	0.00	0.00	--	0.00	0.00	575.94	-203.19	2.834
33	2.55	100	145	0.00	0.00	--	0.00	0.00	575.94	-195.07	2.953
34	2.65	100	145	0.00	0.00	--	0.00	0.00	575.94	-186.86	3.082
35	2.75	100	145	0.00	0.00	--	0.00	0.00	575.94	-178.57	3.225
36	2.85	100	145	0.00	0.00	--	0.00	0.00	575.94	-170.20	3.384
37	2.95	100	145	0.00	0.00	--	0.00	0.00	575.94	-161.74	3.561
38	3.05	100	145	0.00	0.00	--	0.00	0.00	575.94	-153.98	3.740
39	3.15	100	145	0.00	0.00	--	0.00	0.00	575.94	-147.05	3.917
40	3.25	100	145	0.00	0.00	--	0.00	0.00	575.94	-140.05	4.112
41	3.35	100	145	0.00	0.00	--	0.00	0.00	575.94	-132.96	4.332
42	3.45	100	145	0.00	0.00	--	0.00	0.00	575.94	-125.80	4.578
43	3.55	100	145	0.00	0.00	--	0.00	0.00	575.94	-118.55	4.858
44	3.65	100	145	0.00	0.00	--	0.00	0.00	575.94	-111.22	5.178
45	3.75	100	145	0.00	0.00	--	0.00	0.00	575.94	-103.80	5.548
46	3.85	100	145	0.00	0.00	--	0.00	0.00	575.94	-96.31	5.980
47	3.95	100	145	0.00	0.00	--	0.00	0.00	575.94	-88.73	6.491
48	4.05	100	145	0.00	0.00	--	0.00	0.00	575.94	-81.08	7.104
49	4.15	100	145	0.00	0.00	--	0.00	0.00	575.94	-73.34	7.853
50	4.25	100	145	0.00	0.00	--	0.00	0.00	575.94	-65.51	8.791
51	4.35	100	145	0.00	0.00	--	0.00	0.00	575.94	-57.61	9.997
52	4.45	100	145	0.00	0.00	--	0.00	0.00	575.94	-49.63	11.605
53	4.55	100	145	0.00	0.00	--	0.00	0.00	575.94	-41.56	13.858
54	4.65	100	145	0.00	0.00	--	0.00	0.00	575.94	-33.41	17.238
55	4.75	100	145	0.00	0.00	--	0.00	0.00	575.94	-25.18	22.872
56	4.85	100	145	0.00	0.00	--	0.00	0.00	575.94	-16.87	34.141
57	4.95	100	145	0.00	0.00	--	0.00	0.00	575.94	-8.48	67.953
58	5.05	100	145	0.00	0.00	--	0.00	0.00	575.94	0.00	100.000

## Combinazione n° 4 - STR (A1-M1-R3) H - V

n°	Y	B	H	A <sub>sw</sub>	s	cotθ	V <sub>Rcd</sub>	V <sub>Rsd</sub>	V <sub>Rd</sub>	T	FS
	[m]	[cm]	[cm]	[cmq]	[cm]		[kN]	[kN]	[kN]	[kN]	
1	-1.95	100	145	0.00	0.00	--	0.00	0.00	575.94	0.00	100.000
2	-1.85	100	145	0.00	0.00	--	0.00	0.00	575.94	-34.93	16.489
3	-1.76	100	145	0.00	0.00	--	0.00	0.00	575.94	-69.35	8.305
4	-1.66	100	145	0.00	0.00	--	0.00	0.00	575.94	-103.25	5.578
5	-1.56	100	145	0.00	0.00	--	0.00	0.00	575.94	-136.65	4.215
6	-1.47	100	145	0.00	0.00	--	0.00	0.00	575.94	-169.54	3.397
7	-1.37	100	145	0.00	0.00	--	0.00	0.00	575.94	-201.92	2.852
8	-1.27	100	145	0.00	0.00	--	0.00	0.00	575.94	-233.79	2.463
9	-1.18	100	145	0.00	0.00	--	0.00	0.00	575.94	-265.15	2.172
10	-1.08	100	145	0.00	0.00	--	0.00	0.00	575.94	-296.00	1.946
11	-0.98	100	145	0.00	0.00	--	0.00	0.00	575.94	-326.35	1.765
12	-0.89	100	145	0.00	0.00	--	0.00	0.00	575.94	-356.18	1.617
13	-0.79	100	145	0.00	0.00	--	0.00	0.00	575.94	-385.50	1.494
14	-0.69	100	145	0.00	0.00	--	0.00	0.00	575.94	-414.31	1.390
15	-0.60	100	145	0.00	0.00	--	0.00	0.00	575.94	-442.62	1.301
16	-0.50	100	145	0.00	0.00	--	0.00	0.00	575.94	-470.41	1.224
17	0.95	100	145	0.00	0.00	--	0.00	0.00	575.94	-392.43	1.468
18	1.05	100	145	0.00	0.00	--	0.00	0.00	575.94	-393.77	1.463
19	1.15	100	145	0.00	0.00	--	0.00	0.00	575.94	-394.56	1.460



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## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

n°	Y	B	H	A <sub>sw</sub>	s	cotθ	V <sub>Rcd</sub>	V <sub>Rsd</sub>	V <sub>Rd</sub>	T	FS
	[m]	[cm]	[cm]	[cmq]	[cm]		[kN]	[kN]	[kN]	[kN]	
20	1.25	100	145	0.00	0.00	--	0.00	0.00	575.94	-394.80	1.459
21	1.35	100	145	0.00	0.00	--	0.00	0.00	575.94	-394.50	1.460
22	1.45	100	145	0.00	0.00	--	0.00	0.00	575.94	-393.65	1.463
23	1.55	100	145	0.00	0.00	--	0.00	0.00	575.94	-392.26	1.468
24	1.65	100	145	0.00	0.00	--	0.00	0.00	575.94	-390.32	1.476
25	1.75	100	145	0.00	0.00	--	0.00	0.00	575.94	-387.84	1.485
26	1.85	100	145	0.00	0.00	--	0.00	0.00	575.94	-384.81	1.497
27	1.95	100	145	0.00	0.00	--	0.00	0.00	575.94	-381.24	1.511
28	2.05	100	145	0.00	0.00	--	0.00	0.00	575.94	-377.12	1.527
29	2.15	100	145	0.00	0.00	--	0.00	0.00	575.94	-372.46	1.546
30	2.25	100	145	0.00	0.00	--	0.00	0.00	575.94	-367.25	1.568
31	2.35	100	145	0.00	0.00	--	0.00	0.00	575.94	-361.49	1.593
32	2.45	100	145	0.00	0.00	--	0.00	0.00	575.94	-355.19	1.621
33	2.55	100	145	0.00	0.00	--	0.00	0.00	575.94	-348.35	1.653
34	2.65	100	145	0.00	0.00	--	0.00	0.00	575.94	-340.96	1.689
35	2.75	100	145	0.00	0.00	--	0.00	0.00	575.94	-333.02	1.729
36	2.85	100	145	0.00	0.00	--	0.00	0.00	575.94	-324.54	1.775
37	2.95	100	145	0.00	0.00	--	0.00	0.00	575.94	-315.52	1.825
38	3.05	100	145	0.00	0.00	--	0.00	0.00	575.94	-305.95	1.882
39	3.15	100	145	0.00	0.00	--	0.00	0.00	575.94	-295.83	1.947
40	3.25	100	145	0.00	0.00	--	0.00	0.00	575.94	-285.17	2.020
41	3.35	100	145	0.00	0.00	--	0.00	0.00	575.94	-273.96	2.102
42	3.45	100	145	0.00	0.00	--	0.00	0.00	575.94	-262.21	2.196
43	3.55	100	145	0.00	0.00	--	0.00	0.00	575.94	-249.91	2.305
44	3.65	100	145	0.00	0.00	--	0.00	0.00	575.94	-237.06	2.429
45	3.75	100	145	0.00	0.00	--	0.00	0.00	575.94	-223.68	2.575
46	3.85	100	145	0.00	0.00	--	0.00	0.00	575.94	-209.74	2.746
47	3.95	100	145	0.00	0.00	--	0.00	0.00	575.94	-195.26	2.950
48	4.05	100	145	0.00	0.00	--	0.00	0.00	575.94	-180.24	3.195
49	4.15	100	145	0.00	0.00	--	0.00	0.00	575.94	-164.67	3.498
50	4.25	100	145	0.00	0.00	--	0.00	0.00	575.94	-148.55	3.877
51	4.35	100	145	0.00	0.00	--	0.00	0.00	575.94	-131.89	4.367
52	4.45	100	145	0.00	0.00	--	0.00	0.00	575.94	-114.69	5.022
53	4.55	100	145	0.00	0.00	--	0.00	0.00	575.94	-96.94	5.941
54	4.65	100	145	0.00	0.00	--	0.00	0.00	575.94	-78.64	7.324
55	4.75	100	145	0.00	0.00	--	0.00	0.00	575.94	-59.80	9.631
56	4.85	100	145	0.00	0.00	--	0.00	0.00	575.94	-40.41	14.252
57	4.95	100	145	0.00	0.00	--	0.00	0.00	575.94	-20.48	28.125
58	5.05	100	145	0.00	0.00	--	0.00	0.00	575.94	0.00	100.000

## Combinazione n° 13 - ECC

n°	Y	B	H	A <sub>sw</sub>	s	cotθ	V <sub>Rcd</sub>	V <sub>Rsd</sub>	V <sub>Rd</sub>	T	FS
	[m]	[cm]	[cm]	[cmq]	[cm]		[kN]	[kN]	[kN]	[kN]	
1	-1.95	100	145	0.00	0.00	--	0.00	0.00	575.94	0.00	100.000
2	-1.85	100	145	0.00	0.00	--	0.00	0.00	575.94	-22.78	25.285
3	-1.76	100	145	0.00	0.00	--	0.00	0.00	575.94	-45.41	12.683
4	-1.66	100	145	0.00	0.00	--	0.00	0.00	575.94	-67.89	8.483
5	-1.56	100	145	0.00	0.00	--	0.00	0.00	575.94	-90.23	6.383
6	-1.47	100	145	0.00	0.00	--	0.00	0.00	575.94	-112.43	5.123
7	-1.37	100	145	0.00	0.00	--	0.00	0.00	575.94	-134.47	4.283
8	-1.27	100	145	0.00	0.00	--	0.00	0.00	575.94	-156.38	3.683
9	-1.18	100	145	0.00	0.00	--	0.00	0.00	575.94	-178.13	3.233
10	-1.08	100	145	0.00	0.00	--	0.00	0.00	575.94	-199.74	2.883
11	-0.98	100	145	0.00	0.00	--	0.00	0.00	575.94	-221.20	2.604
12	-0.89	100	145	0.00	0.00	--	0.00	0.00	575.94	-242.52	2.375
13	-0.79	100	145	0.00	0.00	--	0.00	0.00	575.94	-263.69	2.184
14	-0.69	100	145	0.00	0.00	--	0.00	0.00	575.94	-284.71	2.023
15	-0.60	100	145	0.00	0.00	--	0.00	0.00	575.94	-305.59	1.885
16	-0.50	100	145	0.00	0.00	--	0.00	0.00	575.94	-326.32	1.765
17	0.95	100	145	0.00	0.00	--	0.00	0.00	575.94	-126.97	4.536
18	1.05	100	145	0.00	0.00	--	0.00	0.00	575.94	-127.00	4.535
19	1.15	100	145	0.00	0.00	--	0.00	0.00	575.94	-126.87	4.539
20	1.25	100	145	0.00	0.00	--	0.00	0.00	575.94	-126.59	4.550
21	1.35	100	145	0.00	0.00	--	0.00	0.00	575.94	-126.16	4.565
22	1.45	100	145	0.00	0.00	--	0.00	0.00	575.94	-125.56	4.587
23	1.55	100	145	0.00	0.00	--	0.00	0.00	575.94	-124.81	4.614

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**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	Y [m]	B [cm]	H [cm]	A <sub>sw</sub> [cmq]	s [cm]	cotθ	V <sub>Rcd</sub> [kN]	V <sub>Rsd</sub> [kN]	V <sub>Rd</sub> [kN]	T [kN]	FS
24	1.65	100	145	0.00	0.00	--	0.00	0.00	575.94	-123.90	4.648
25	1.75	100	145	0.00	0.00	--	0.00	0.00	575.94	-122.84	4.688
26	1.85	100	145	0.00	0.00	--	0.00	0.00	575.94	-121.62	4.735
27	1.95	100	145	0.00	0.00	--	0.00	0.00	575.94	-120.25	4.790
28	2.05	100	145	0.00	0.00	--	0.00	0.00	575.94	-118.71	4.852
29	2.15	100	145	0.00	0.00	--	0.00	0.00	575.94	-117.02	4.922
30	2.25	100	145	0.00	0.00	--	0.00	0.00	575.94	-115.18	5.000
31	2.35	100	145	0.00	0.00	--	0.00	0.00	575.94	-113.18	5.089
32	2.45	100	145	0.00	0.00	--	0.00	0.00	575.94	-111.02	5.188
33	2.55	100	145	0.00	0.00	--	0.00	0.00	575.94	-108.70	5.298
34	2.65	100	145	0.00	0.00	--	0.00	0.00	575.94	-106.23	5.421
35	2.75	100	145	0.00	0.00	--	0.00	0.00	575.94	-103.61	5.559
36	2.85	100	145	0.00	0.00	--	0.00	0.00	575.94	-100.82	5.712
37	2.95	100	145	0.00	0.00	--	0.00	0.00	575.94	-97.88	5.884
38	3.05	100	145	0.00	0.00	--	0.00	0.00	575.94	-94.78	6.076
39	3.15	100	145	0.00	0.00	--	0.00	0.00	575.94	-91.53	6.292
40	3.25	100	145	0.00	0.00	--	0.00	0.00	575.94	-88.12	6.536
41	3.35	100	145	0.00	0.00	--	0.00	0.00	575.94	-84.56	6.811
42	3.45	100	145	0.00	0.00	--	0.00	0.00	575.94	-80.83	7.125
43	3.55	100	145	0.00	0.00	--	0.00	0.00	575.94	-76.95	7.484
44	3.65	100	145	0.00	0.00	--	0.00	0.00	575.94	-72.92	7.898
45	3.75	100	145	0.00	0.00	--	0.00	0.00	575.94	-68.73	8.380
46	3.85	100	145	0.00	0.00	--	0.00	0.00	575.94	-64.38	8.946
47	3.95	100	145	0.00	0.00	--	0.00	0.00	575.94	-59.87	9.619
48	4.05	100	145	0.00	0.00	--	0.00	0.00	575.94	-55.21	10.431
49	4.15	100	145	0.00	0.00	--	0.00	0.00	575.94	-50.40	11.428
50	4.25	100	145	0.00	0.00	--	0.00	0.00	575.94	-45.42	12.680
51	4.35	100	145	0.00	0.00	--	0.00	0.00	575.94	-40.29	14.294
52	4.45	100	145	0.00	0.00	--	0.00	0.00	575.94	-35.01	16.453
53	4.55	100	145	0.00	0.00	--	0.00	0.00	575.94	-29.56	19.482
54	4.65	100	145	0.00	0.00	--	0.00	0.00	575.94	-23.96	24.035
55	4.75	100	145	0.00	0.00	--	0.00	0.00	575.94	-18.21	31.634
56	4.85	100	145	0.00	0.00	--	0.00	0.00	575.94	-12.29	46.847
57	4.95	100	145	0.00	0.00	--	0.00	0.00	575.94	-6.23	92.516
58	5.05	100	145	0.00	0.00	--	0.00	0.00	575.94	0.00	100.000

**Verifica a fessurazione****Simbologia adottata**

n°	indice sezione
Y	ordinata sezione espressa in [m]
B	larghezza sezione espresso in [cm]
H	altezza sezione espressa in [cm]
A <sub>f</sub>	area ferri zona tesa espresso in [cmq]
A <sub>eff</sub>	area efficace espressa in [cmq]
M	momento agente espressa in [kNm]
M <sub>pf</sub>	momento di prima fessurazione espressa in [kNm]
ε	deformazione espresso in %
S <sub>m</sub>	spaziatura tra le fessure espressa in [mm]
w	apertura delle fessure espressa in [mm]

**Combinazioni SLEF****Paramento**

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## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

Combinazione n° 15 - SLEF

Apertura limite fessure  $w_{lim}=0.30$ 

n°	Y	B	H	Af	Aeff	M	Mpf	$\varepsilon$	Sm	w
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kNm]	[%]	[mm]	[mm]
1	0.00	100	50	31.42	1000.00	0.38	612.11	0.0000	0.00	0.000
2	-0.10	100	51	0.00	0.00	0.39	14731.75	0.0000	0.00	0.000
3	-0.20	100	52	0.00	0.00	0.40	655.05	0.0000	0.00	0.000
4	-0.30	100	53	0.00	0.00	0.43	387.15	0.0000	0.00	0.000
5	-0.40	100	54	0.00	0.00	0.48	318.07	0.0000	0.00	0.000
6	-0.50	100	55	0.00	0.00	0.56	309.60	0.0000	0.00	0.000
7	-0.60	100	56	0.00	0.00	0.66	338.45	0.0000	0.00	0.000
8	-0.70	100	57	0.00	0.00	0.80	405.76	0.0000	0.00	0.000
9	-0.80	100	58	0.00	0.00	0.98	530.23	0.0000	0.00	0.000
10	-0.90	100	59	0.00	0.00	1.21	766.53	0.0000	0.00	0.000
11	-1.00	100	59	0.00	0.00	1.48	1302.97	0.0000	0.00	0.000
12	-1.10	100	60	0.00	0.00	1.81	3390.73	0.0000	0.00	0.000
13	-1.20	100	61	0.00	0.00	2.19	9198.95	0.0000	0.00	0.000
14	-1.30	100	62	0.00	0.00	2.64	2236.55	0.0000	0.00	0.000
15	-1.40	100	63	31.42	1000.00	3.16	1374.70	0.0000	0.00	0.000
16	-1.50	100	64	31.42	1000.00	3.76	1044.17	0.0000	0.00	0.000
17	-1.60	100	65	31.42	1000.00	4.43	872.89	0.0000	0.00	0.000
18	-1.70	100	66	31.42	1000.00	5.18	770.34	0.0000	0.00	0.000
19	-1.80	100	67	31.42	1000.00	6.02	703.65	0.0000	0.00	0.000
20	-1.90	100	68	31.42	1000.00	6.96	658.02	0.0000	0.00	0.000
21	-2.00	100	69	31.42	1000.00	7.99	625.81	0.0000	0.00	0.000
22	-2.10	100	70	31.42	1000.00	9.12	602.65	0.0000	0.00	0.000
23	-2.20	100	71	31.42	1000.00	10.37	585.92	0.0000	0.00	0.000
24	-2.30	100	72	31.42	1000.00	11.72	573.91	0.0000	0.00	0.000
25	-2.40	100	73	31.42	1000.00	13.19	565.47	0.0000	0.00	0.000
26	-2.50	100	74	31.42	1000.00	14.78	559.79	0.0000	0.00	0.000
27	-2.60	100	75	31.42	1000.00	16.50	556.32	0.0000	0.00	0.000
28	-2.70	100	76	31.42	1000.00	18.35	554.63	0.0000	0.00	0.000
29	-2.80	100	76	31.42	1000.00	20.34	554.40	0.0000	0.00	0.000
30	-2.90	100	77	31.42	1000.00	22.47	555.38	0.0000	0.00	0.000
31	-3.00	100	78	31.42	1000.00	24.74	557.40	0.0000	0.00	0.000
32	-3.10	100	79	31.42	1000.00	27.17	560.30	0.0000	0.00	0.000
33	-3.20	100	80	31.42	1000.00	29.75	563.95	0.0000	0.00	0.000
34	-3.30	100	81	31.42	1000.00	32.49	568.28	0.0000	0.00	0.000
35	-3.40	100	82	31.42	1000.00	35.40	573.18	0.0000	0.00	0.000
36	-3.50	100	83	31.42	1000.00	38.47	578.61	0.0000	0.00	0.000
37	-3.60	100	84	31.42	1000.00	41.73	584.51	0.0000	0.00	0.000
38	-3.70	100	85	31.42	1000.00	45.16	590.82	0.0000	0.00	0.000
39	-3.80	100	86	31.42	1000.00	48.77	597.52	0.0000	0.00	0.000
40	-3.90	100	87	31.42	1000.00	52.58	604.57	0.0000	0.00	0.000
41	-4.00	100	88	31.42	1000.00	56.58	611.94	0.0000	0.00	0.000
42	-4.10	100	89	31.42	1000.00	60.78	619.61	0.0000	0.00	0.000
43	-4.20	100	90	31.42	1000.00	65.18	627.56	0.0000	0.00	0.000
44	-4.30	100	91	31.42	1000.00	69.79	635.76	0.0000	0.00	0.000
45	-4.40	100	92	31.42	1000.00	74.61	644.21	0.0000	0.00	0.000
46	-4.50	100	93	31.42	1000.00	79.66	652.89	0.0000	0.00	0.000
47	-4.60	100	93	31.42	1000.00	84.92	661.78	0.0000	0.00	0.000
48	-4.70	100	94	31.42	1000.00	90.42	670.88	0.0000	0.00	0.000
49	-4.80	100	95	31.42	1000.00	96.15	680.18	0.0000	0.00	0.000
50	-4.90	100	96	31.42	1000.00	102.11	689.67	0.0000	0.00	0.000
51	-5.00	100	97	31.42	1000.00	108.32	699.34	0.0000	0.00	0.000
52	-5.10	100	98	31.42	1000.00	114.78	709.18	0.0000	0.00	0.000
53	-5.20	100	99	31.42	1000.00	121.48	719.19	0.0000	0.00	0.000
54	-5.30	100	100	31.42	1000.00	128.45	729.36	0.0000	0.00	0.000
55	-5.40	100	101	31.42	1000.00	135.68	739.69	0.0000	0.00	0.000
56	-5.50	100	102	31.42	1000.00	143.17	750.18	0.0000	0.00	0.000
57	-5.60	100	103	31.42	1000.00	150.93	760.81	0.0000	0.00	0.000
58	-5.70	100	104	31.42	1000.00	158.98	771.59	0.0000	0.00	0.000
59	-5.80	100	105	31.42	1000.00	167.30	782.51	0.0000	0.00	0.000
60	-5.90	100	106	31.42	1000.00	175.91	793.57	0.0000	0.00	0.000
61	-6.00	100	107	31.42	1000.00	184.81	804.76	0.0000	0.00	0.000
62	-6.10	100	108	31.42	1000.00	194.00	816.09	0.0000	0.00	0.000

VE407

## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

n°	Y	B	H	Af	Aeff	M	Mpf	$\varepsilon$	Sm	w
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kNm]	[%]	[mm]	[mm]
63	-6.20	100	109	31.42	1000.00	203.50	827.55	0.0000	0.00	0.000
64	-6.30	100	110	31.42	1000.00	213.30	839.14	0.0000	0.00	0.000
65	-6.40	100	110	31.42	1000.00	223.41	850.86	0.0000	0.00	0.000
66	-6.50	100	111	31.42	1000.00	233.84	862.70	0.0000	0.00	0.000
67	-6.60	100	112	31.42	1000.00	244.59	874.66	0.0000	0.00	0.000
68	-6.70	100	113	31.42	1000.00	255.66	886.75	0.0000	0.00	0.000
69	-6.80	100	114	31.42	1000.00	267.06	898.95	0.0000	0.00	0.000
70	-6.90	100	115	31.42	1000.00	278.80	911.28	0.0000	0.00	0.000
71	-7.00	100	116	31.42	1000.00	290.87	923.72	0.0000	0.00	0.000
72	-7.10	100	117	31.42	1000.00	303.29	936.28	0.0000	0.00	0.000
73	-7.20	100	118	31.42	1000.00	316.06	948.96	0.0000	0.00	0.000
74	-7.30	100	119	31.42	1000.00	329.18	961.75	0.0000	0.00	0.000
75	-7.40	100	120	31.42	1000.00	342.66	974.65	0.0000	0.00	0.000
76	-7.50	100	121	31.42	1000.00	356.50	987.66	0.0000	0.00	0.000
77	-7.60	100	122	31.42	1000.00	370.72	1000.79	0.0000	0.00	0.000
78	-7.70	100	123	31.42	1000.00	385.30	1014.03	0.0000	0.00	0.000
79	-7.80	100	124	31.42	1000.00	400.26	1027.38	0.0000	0.00	0.000
80	-7.90	100	125	31.42	1000.00	415.61	1040.84	0.0000	0.00	0.000
81	-8.00	100	126	31.42	1000.00	431.34	1054.40	0.0000	0.00	0.000
82	-8.10	100	127	31.42	1000.00	447.47	1068.08	0.0000	0.00	0.000
83	-8.20	100	128	31.42	1000.00	463.99	1081.86	0.0000	0.00	0.000
84	-8.30	100	128	31.42	1000.00	480.92	1095.75	0.0000	0.00	0.000
85	-8.40	100	129	31.42	1000.00	498.25	1109.75	0.0000	0.00	0.000
86	-8.50	100	130	31.42	1000.00	515.99	1123.85	0.0000	0.00	0.000
87	-8.60	100	131	62.83	1000.00	534.15	1264.72	0.0000	0.00	0.000
88	-8.70	100	132	62.83	1000.00	552.74	1279.93	0.0000	0.00	0.000
89	-8.80	100	133	62.83	1000.00	571.74	1295.26	0.0000	0.00	0.000
90	-8.90	100	134	62.83	1000.00	591.18	1310.69	0.0000	0.00	0.000
91	-9.00	100	135	62.83	1000.00	611.06	1326.22	0.0000	0.00	0.000
92	-9.10	100	136	62.83	1000.00	631.37	1341.87	0.0000	0.00	0.000
93	-9.20	100	137	62.83	1000.00	652.14	1396.43	0.0000	0.00	0.000
94	-9.30	100	138	31.42	1000.00	673.35	1240.44	0.0000	0.00	0.000
95	-9.40	100	139	31.42	1000.00	695.01	1255.48	0.0000	0.00	0.000
96	-9.50	100	140	31.42	1000.00	717.14	1270.63	0.0000	0.00	0.000
97	-9.60	100	141	31.42	1000.00	739.73	1285.87	0.0000	0.00	0.000
98	-9.70	100	142	31.42	1000.00	762.80	1301.22	0.0000	0.00	0.000
99	-9.80	100	143	31.42	1000.00	786.33	1316.67	0.0000	0.00	0.000
100	-9.90	100	144	31.42	1000.00	810.35	1332.22	0.0000	0.00	0.000
101	-10.00	100	145	31.42	1000.00	834.85	1347.87	0.0000	0.00	0.000

Mensola valle

Combinazione n° 15 - SLEF

Apertura limite fessure  $w_{lim}=0.30$ 

n°	Y	B	H	Af	Aeff	M	Mpf	$\varepsilon$	Sm	w
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kNm]	[%]	[mm]	[mm]
1	-0.75	100	50	0.00	0.00	0.00	0.00	0.0000	0.00	0.000
2	-0.67	100	50	0.00	0.00	-0.04	0.00	0.0000	0.00	0.000
3	-0.58	100	50	12.57	1000.00	-0.17	-151.15	0.0000	0.00	0.000
4	-0.50	100	50	12.57	1000.00	-0.38	-151.15	0.0000	0.00	0.000

Fondazione

Combinazione n° 15 - SLEF

Apertura limite fessure  $w_{lim}=0.30$

VE407

**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	Y [m]	B [cm]	H [cm]	Af [cmq]	Aeff [cmq]	M [kNm]	Mpf [kNm]	ε [%]	Sm [mm]	w [mm]
1	-1.95	100	145	0.00	0.00	0.00	0.00	0.0000	0.00	0.000
2	-1.85	100	145	31.42	1000.00	0.87	1287.03	0.0000	0.00	0.000
3	-1.76	100	145	31.42	1000.00	3.47	1287.03	0.0000	0.00	0.000
4	-1.66	100	145	31.42	1000.00	7.80	1287.03	0.0000	0.00	0.000
5	-1.56	100	145	31.42	1000.00	13.86	1287.03	0.0000	0.00	0.000
6	-1.47	100	145	31.42	1000.00	21.65	1287.03	0.0000	0.00	0.000
7	-1.37	100	145	31.42	1000.00	31.17	1287.03	0.0000	0.00	0.000
8	-1.27	100	145	31.42	1000.00	42.42	1287.03	0.0000	0.00	0.000
9	-1.18	100	145	31.42	1000.00	55.40	1287.03	0.0000	0.00	0.000
10	-1.08	100	145	31.42	1000.00	70.10	1287.03	0.0000	0.00	0.000
11	-0.98	100	145	31.42	1000.00	86.53	1287.03	0.0000	0.00	0.000
12	-0.89	100	145	31.42	1000.00	104.68	1287.03	0.0000	0.00	0.000
13	-0.79	100	145	31.42	1000.00	124.55	1287.03	0.0000	0.00	0.000
14	-0.69	100	145	31.42	1000.00	146.15	1287.03	0.0000	0.00	0.000
15	-0.60	100	145	31.42	1000.00	169.46	1287.03	0.0000	0.00	0.000
16	-0.50	100	145	31.42	1000.00	194.50	1287.03	0.0000	0.00	0.000
17	0.95	100	145	31.42	1000.00	-89.81	-1287.03	0.0000	0.00	0.000
18	1.05	100	145	31.42	1000.00	-85.78	-1287.03	0.0000	0.00	0.000
19	1.15	100	145	31.42	1000.00	-81.82	-1287.03	0.0000	0.00	0.000
20	1.25	100	145	31.42	1000.00	-77.95	-1287.03	0.0000	0.00	0.000
21	1.35	100	145	31.42	1000.00	-74.15	-1287.03	0.0000	0.00	0.000
22	1.45	100	145	31.42	1000.00	-70.44	-1287.03	0.0000	0.00	0.000
23	1.55	100	145	31.42	1000.00	-66.81	-1287.03	0.0000	0.00	0.000
24	1.65	100	145	31.42	1000.00	-63.26	-1287.03	0.0000	0.00	0.000
25	1.75	100	145	31.42	1000.00	-59.79	-1287.03	0.0000	0.00	0.000
26	1.85	100	145	31.42	1000.00	-56.41	-1287.03	0.0000	0.00	0.000
27	1.95	100	145	31.42	1000.00	-53.12	-1287.03	0.0000	0.00	0.000
28	2.05	100	145	31.42	1000.00	-49.91	-1287.03	0.0000	0.00	0.000
29	2.15	100	145	31.42	1000.00	-46.80	-1287.03	0.0000	0.00	0.000
30	2.25	100	145	31.42	1000.00	-43.77	-1287.03	0.0000	0.00	0.000
31	2.35	100	145	31.42	1000.00	-40.83	-1287.03	0.0000	0.00	0.000
32	2.45	100	145	31.42	1000.00	-37.99	-1287.03	0.0000	0.00	0.000
33	2.55	100	145	31.42	1000.00	-35.24	-1287.03	0.0000	0.00	0.000
34	2.65	100	145	31.42	1000.00	-32.58	-1287.03	0.0000	0.00	0.000
35	2.75	100	145	31.42	1000.00	-30.02	-1287.03	0.0000	0.00	0.000
36	2.85	100	145	31.42	1000.00	-27.56	-1287.03	0.0000	0.00	0.000
37	2.95	100	145	31.42	1000.00	-25.19	-1287.03	0.0000	0.00	0.000
38	3.05	100	145	31.42	1000.00	-22.92	-1287.03	0.0000	0.00	0.000
39	3.15	100	145	31.42	1000.00	-20.75	-1287.03	0.0000	0.00	0.000
40	3.25	100	145	31.42	1000.00	-18.69	-1287.03	0.0000	0.00	0.000
41	3.35	100	145	31.42	1000.00	-16.72	-1287.03	0.0000	0.00	0.000
42	3.45	100	145	31.42	1000.00	-14.86	-1287.03	0.0000	0.00	0.000
43	3.55	100	145	31.42	1000.00	-13.10	-1287.03	0.0000	0.00	0.000
44	3.65	100	145	31.42	1000.00	-11.45	-1287.03	0.0000	0.00	0.000
45	3.75	100	145	31.42	1000.00	-9.90	-1287.03	0.0000	0.00	0.000
46	3.85	100	145	31.42	1000.00	-8.47	-1287.03	0.0000	0.00	0.000
47	3.95	100	145	31.42	1000.00	-7.14	-1287.03	0.0000	0.00	0.000
48	4.05	100	145	31.42	1000.00	-5.92	-1287.03	0.0000	0.00	0.000
49	4.15	100	145	31.42	1000.00	-4.81	-1287.03	0.0000	0.00	0.000
50	4.25	100	145	31.42	1000.00	-3.81	-1287.03	0.0000	0.00	0.000
51	4.35	100	145	31.42	1000.00	-2.93	-1287.03	0.0000	0.00	0.000
52	4.45	100	145	31.42	1000.00	-2.16	-1287.03	0.0000	0.00	0.000
53	4.55	100	145	31.42	1000.00	-1.50	-1287.03	0.0000	0.00	0.000
54	4.65	100	145	31.42	1000.00	-0.96	-1287.03	0.0000	0.00	0.000
55	4.75	100	145	31.42	1000.00	-0.54	-1287.03	0.0000	0.00	0.000
56	4.85	100	145	31.42	1000.00	-0.24	-1287.03	0.0000	0.00	0.000
57	4.95	100	145	0.00	0.00	-0.06	0.00	0.0000	0.00	0.000
58	5.05	100	145	0.00	0.00	0.00	0.00	0.0000	0.00	0.000

**Combinazioni SLEQ**Paramento

VE407

## Relazione Tecnica e di Calcolo - Muri su fondazione diretta

Combinazione n° 16 - SLEQ

Apertura limite fessure  $w_{lim}=0.20$ 

n°	Y [m]	B [cm]	H [cm]	Af [cmq]	Aeff [cmq]	M [kNm]	Mpf [kNm]	ε [%]	Sm [mm]	w [mm]
1	0.00	100	50	31.42	1000.00	0.38	612.11	0.0000	0.00	0.000
2	-0.10	100	51	0.00	0.00	0.39	14731.75	0.0000	0.00	0.000
3	-0.20	100	52	0.00	0.00	0.40	655.05	0.0000	0.00	0.000
4	-0.30	100	53	0.00	0.00	0.43	387.15	0.0000	0.00	0.000
5	-0.40	100	54	0.00	0.00	0.48	318.07	0.0000	0.00	0.000
6	-0.50	100	55	0.00	0.00	0.56	309.60	0.0000	0.00	0.000
7	-0.60	100	56	0.00	0.00	0.66	338.45	0.0000	0.00	0.000
8	-0.70	100	57	0.00	0.00	0.80	405.76	0.0000	0.00	0.000
9	-0.80	100	58	0.00	0.00	0.98	530.23	0.0000	0.00	0.000
10	-0.90	100	59	0.00	0.00	1.21	766.53	0.0000	0.00	0.000
11	-1.00	100	59	0.00	0.00	1.48	1302.97	0.0000	0.00	0.000
12	-1.10	100	60	0.00	0.00	1.81	3390.73	0.0000	0.00	0.000
13	-1.20	100	61	0.00	0.00	2.19	9198.95	0.0000	0.00	0.000
14	-1.30	100	62	0.00	0.00	2.64	2236.55	0.0000	0.00	0.000
15	-1.40	100	63	31.42	1000.00	3.16	1374.70	0.0000	0.00	0.000
16	-1.50	100	64	31.42	1000.00	3.76	1044.17	0.0000	0.00	0.000
17	-1.60	100	65	31.42	1000.00	4.43	872.89	0.0000	0.00	0.000
18	-1.70	100	66	31.42	1000.00	5.18	770.34	0.0000	0.00	0.000
19	-1.80	100	67	31.42	1000.00	6.02	703.65	0.0000	0.00	0.000
20	-1.90	100	68	31.42	1000.00	6.96	658.02	0.0000	0.00	0.000
21	-2.00	100	69	31.42	1000.00	7.99	625.81	0.0000	0.00	0.000
22	-2.10	100	70	31.42	1000.00	9.12	602.65	0.0000	0.00	0.000
23	-2.20	100	71	31.42	1000.00	10.37	585.92	0.0000	0.00	0.000
24	-2.30	100	72	31.42	1000.00	11.72	573.91	0.0000	0.00	0.000
25	-2.40	100	73	31.42	1000.00	13.19	565.47	0.0000	0.00	0.000
26	-2.50	100	74	31.42	1000.00	14.78	559.79	0.0000	0.00	0.000
27	-2.60	100	75	31.42	1000.00	16.50	556.32	0.0000	0.00	0.000
28	-2.70	100	76	31.42	1000.00	18.35	554.63	0.0000	0.00	0.000
29	-2.80	100	76	31.42	1000.00	20.34	554.40	0.0000	0.00	0.000
30	-2.90	100	77	31.42	1000.00	22.47	555.38	0.0000	0.00	0.000
31	-3.00	100	78	31.42	1000.00	24.74	557.40	0.0000	0.00	0.000
32	-3.10	100	79	31.42	1000.00	27.17	560.30	0.0000	0.00	0.000
33	-3.20	100	80	31.42	1000.00	29.75	563.95	0.0000	0.00	0.000
34	-3.30	100	81	31.42	1000.00	32.49	568.28	0.0000	0.00	0.000
35	-3.40	100	82	31.42	1000.00	35.40	573.18	0.0000	0.00	0.000
36	-3.50	100	83	31.42	1000.00	38.47	578.61	0.0000	0.00	0.000
37	-3.60	100	84	31.42	1000.00	41.73	584.51	0.0000	0.00	0.000
38	-3.70	100	85	31.42	1000.00	45.16	590.82	0.0000	0.00	0.000
39	-3.80	100	86	31.42	1000.00	48.77	597.52	0.0000	0.00	0.000
40	-3.90	100	87	31.42	1000.00	52.58	604.57	0.0000	0.00	0.000
41	-4.00	100	88	31.42	1000.00	56.58	611.94	0.0000	0.00	0.000
42	-4.10	100	89	31.42	1000.00	60.78	619.61	0.0000	0.00	0.000
43	-4.20	100	90	31.42	1000.00	65.18	627.56	0.0000	0.00	0.000
44	-4.30	100	91	31.42	1000.00	69.79	635.76	0.0000	0.00	0.000
45	-4.40	100	92	31.42	1000.00	74.61	644.21	0.0000	0.00	0.000
46	-4.50	100	93	31.42	1000.00	79.66	652.89	0.0000	0.00	0.000
47	-4.60	100	93	31.42	1000.00	84.92	661.78	0.0000	0.00	0.000
48	-4.70	100	94	31.42	1000.00	90.42	670.88	0.0000	0.00	0.000
49	-4.80	100	95	31.42	1000.00	96.15	680.18	0.0000	0.00	0.000
50	-4.90	100	96	31.42	1000.00	102.11	689.67	0.0000	0.00	0.000
51	-5.00	100	97	31.42	1000.00	108.32	699.34	0.0000	0.00	0.000
52	-5.10	100	98	31.42	1000.00	114.78	709.18	0.0000	0.00	0.000
53	-5.20	100	99	31.42	1000.00	121.48	719.19	0.0000	0.00	0.000
54	-5.30	100	100	31.42	1000.00	128.45	729.36	0.0000	0.00	0.000
55	-5.40	100	101	31.42	1000.00	135.68	739.69	0.0000	0.00	0.000
56	-5.50	100	102	31.42	1000.00	143.17	750.18	0.0000	0.00	0.000
57	-5.60	100	103	31.42	1000.00	150.93	760.81	0.0000	0.00	0.000
58	-5.70	100	104	31.42	1000.00	158.98	771.59	0.0000	0.00	0.000
59	-5.80	100	105	31.42	1000.00	167.30	782.51	0.0000	0.00	0.000
60	-5.90	100	106	31.42	1000.00	175.91	793.57	0.0000	0.00	0.000
61	-6.00	100	107	31.42	1000.00	184.81	804.76	0.0000	0.00	0.000
62	-6.10	100	108	31.42	1000.00	194.00	816.09	0.0000	0.00	0.000
63	-6.20	100	109	31.42	1000.00	203.50	827.55	0.0000	0.00	0.000

VE407

**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	Y	B	H	Af	Aeff	M	Mpf	ε	Sm	w
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kNm]	[%]	[mm]	[mm]
64	-6.30	100	110	31.42	1000.00	213.30	839.14	0.0000	0.00	0.000
65	-6.40	100	110	31.42	1000.00	223.41	850.86	0.0000	0.00	0.000
66	-6.50	100	111	31.42	1000.00	233.84	862.70	0.0000	0.00	0.000
67	-6.60	100	112	31.42	1000.00	244.59	874.66	0.0000	0.00	0.000
68	-6.70	100	113	31.42	1000.00	255.66	886.75	0.0000	0.00	0.000
69	-6.80	100	114	31.42	1000.00	267.06	898.95	0.0000	0.00	0.000
70	-6.90	100	115	31.42	1000.00	278.80	911.28	0.0000	0.00	0.000
71	-7.00	100	116	31.42	1000.00	290.87	923.72	0.0000	0.00	0.000
72	-7.10	100	117	31.42	1000.00	303.29	936.28	0.0000	0.00	0.000
73	-7.20	100	118	31.42	1000.00	316.06	948.96	0.0000	0.00	0.000
74	-7.30	100	119	31.42	1000.00	329.18	961.75	0.0000	0.00	0.000
75	-7.40	100	120	31.42	1000.00	342.66	974.65	0.0000	0.00	0.000
76	-7.50	100	121	31.42	1000.00	356.50	987.66	0.0000	0.00	0.000
77	-7.60	100	122	31.42	1000.00	370.72	1000.79	0.0000	0.00	0.000
78	-7.70	100	123	31.42	1000.00	385.30	1014.03	0.0000	0.00	0.000
79	-7.80	100	124	31.42	1000.00	400.26	1027.38	0.0000	0.00	0.000
80	-7.90	100	125	31.42	1000.00	415.61	1040.84	0.0000	0.00	0.000
81	-8.00	100	126	31.42	1000.00	431.34	1054.40	0.0000	0.00	0.000
82	-8.10	100	127	31.42	1000.00	447.47	1068.08	0.0000	0.00	0.000
83	-8.20	100	128	31.42	1000.00	463.99	1081.86	0.0000	0.00	0.000
84	-8.30	100	128	31.42	1000.00	480.92	1095.75	0.0000	0.00	0.000
85	-8.40	100	129	31.42	1000.00	498.25	1109.75	0.0000	0.00	0.000
86	-8.50	100	130	31.42	1000.00	515.99	1123.85	0.0000	0.00	0.000
87	-8.60	100	131	62.83	1000.00	534.15	1264.72	0.0000	0.00	0.000
88	-8.70	100	132	62.83	1000.00	552.74	1279.93	0.0000	0.00	0.000
89	-8.80	100	133	62.83	1000.00	571.74	1295.26	0.0000	0.00	0.000
90	-8.90	100	134	62.83	1000.00	591.18	1310.69	0.0000	0.00	0.000
91	-9.00	100	135	62.83	1000.00	611.06	1326.22	0.0000	0.00	0.000
92	-9.10	100	136	62.83	1000.00	631.37	1341.87	0.0000	0.00	0.000
93	-9.20	100	137	62.83	1000.00	652.14	1396.43	0.0000	0.00	0.000
94	-9.30	100	138	31.42	1000.00	673.35	1240.44	0.0000	0.00	0.000
95	-9.40	100	139	31.42	1000.00	695.01	1255.48	0.0000	0.00	0.000
96	-9.50	100	140	31.42	1000.00	717.14	1270.63	0.0000	0.00	0.000
97	-9.60	100	141	31.42	1000.00	739.73	1285.87	0.0000	0.00	0.000
98	-9.70	100	142	31.42	1000.00	762.80	1301.22	0.0000	0.00	0.000
99	-9.80	100	143	31.42	1000.00	786.33	1316.67	0.0000	0.00	0.000
100	-9.90	100	144	31.42	1000.00	810.35	1332.22	0.0000	0.00	0.000
101	-10.00	100	145	31.42	1000.00	834.85	1347.87	0.0000	0.00	0.000

Mensola valleCombinazione n° 16 - SLEQApertura limite fessure  $w_{lim}=0.20$ 

n°	Y	B	H	Af	Aeff	M	Mpf	ε	Sm	w
	[m]	[cm]	[cm]	[cmq]	[cmq]	[kNm]	[kNm]	[%]	[mm]	[mm]
1	-0.75	100	50	0.00	0.00	0.00	0.00	0.0000	0.00	0.000
2	-0.67	100	50	0.00	0.00	-0.04	0.00	0.0000	0.00	0.000
3	-0.58	100	50	12.57	1000.00	-0.17	-151.15	0.0000	0.00	0.000
4	-0.50	100	50	12.57	1000.00	-0.38	-151.15	0.0000	0.00	0.000

FondazioneCombinazione n° 16 - SLEQApertura limite fessure  $w_{lim}=0.20$

VE407

**Relazione Tecnica e di Calcolo - Muri su fondazione diretta**

n°	Y [m]	B [cm]	H [cm]	Af [cmq]	Aeff [cmq]	M [kNm]	Mpf [kNm]	ε [%]	Sm [mm]	w [mm]
1	-1.95	100	145	0.00	0.00	0.00	0.00	0.0000	0.00	0.000
2	-1.85	100	145	31.42	1000.00	0.87	1287.03	0.0000	0.00	0.000
3	-1.76	100	145	31.42	1000.00	3.47	1287.03	0.0000	0.00	0.000
4	-1.66	100	145	31.42	1000.00	7.80	1287.03	0.0000	0.00	0.000
5	-1.56	100	145	31.42	1000.00	13.86	1287.03	0.0000	0.00	0.000
6	-1.47	100	145	31.42	1000.00	21.65	1287.03	0.0000	0.00	0.000
7	-1.37	100	145	31.42	1000.00	31.17	1287.03	0.0000	0.00	0.000
8	-1.27	100	145	31.42	1000.00	42.42	1287.03	0.0000	0.00	0.000
9	-1.18	100	145	31.42	1000.00	55.40	1287.03	0.0000	0.00	0.000
10	-1.08	100	145	31.42	1000.00	70.10	1287.03	0.0000	0.00	0.000
11	-0.98	100	145	31.42	1000.00	86.53	1287.03	0.0000	0.00	0.000
12	-0.89	100	145	31.42	1000.00	104.68	1287.03	0.0000	0.00	0.000
13	-0.79	100	145	31.42	1000.00	124.55	1287.03	0.0000	0.00	0.000
14	-0.69	100	145	31.42	1000.00	146.15	1287.03	0.0000	0.00	0.000
15	-0.60	100	145	31.42	1000.00	169.46	1287.03	0.0000	0.00	0.000
16	-0.50	100	145	31.42	1000.00	194.50	1287.03	0.0000	0.00	0.000
17	0.95	100	145	31.42	1000.00	-89.81	-1287.03	0.0000	0.00	0.000
18	1.05	100	145	31.42	1000.00	-85.78	-1287.03	0.0000	0.00	0.000
19	1.15	100	145	31.42	1000.00	-81.82	-1287.03	0.0000	0.00	0.000
20	1.25	100	145	31.42	1000.00	-77.95	-1287.03	0.0000	0.00	0.000
21	1.35	100	145	31.42	1000.00	-74.15	-1287.03	0.0000	0.00	0.000
22	1.45	100	145	31.42	1000.00	-70.44	-1287.03	0.0000	0.00	0.000
23	1.55	100	145	31.42	1000.00	-66.81	-1287.03	0.0000	0.00	0.000
24	1.65	100	145	31.42	1000.00	-63.26	-1287.03	0.0000	0.00	0.000
25	1.75	100	145	31.42	1000.00	-59.79	-1287.03	0.0000	0.00	0.000
26	1.85	100	145	31.42	1000.00	-56.41	-1287.03	0.0000	0.00	0.000
27	1.95	100	145	31.42	1000.00	-53.12	-1287.03	0.0000	0.00	0.000
28	2.05	100	145	31.42	1000.00	-49.91	-1287.03	0.0000	0.00	0.000
29	2.15	100	145	31.42	1000.00	-46.80	-1287.03	0.0000	0.00	0.000
30	2.25	100	145	31.42	1000.00	-43.77	-1287.03	0.0000	0.00	0.000
31	2.35	100	145	31.42	1000.00	-40.83	-1287.03	0.0000	0.00	0.000
32	2.45	100	145	31.42	1000.00	-37.99	-1287.03	0.0000	0.00	0.000
33	2.55	100	145	31.42	1000.00	-35.24	-1287.03	0.0000	0.00	0.000
34	2.65	100	145	31.42	1000.00	-32.58	-1287.03	0.0000	0.00	0.000
35	2.75	100	145	31.42	1000.00	-30.02	-1287.03	0.0000	0.00	0.000
36	2.85	100	145	31.42	1000.00	-27.56	-1287.03	0.0000	0.00	0.000
37	2.95	100	145	31.42	1000.00	-25.19	-1287.03	0.0000	0.00	0.000
38	3.05	100	145	31.42	1000.00	-22.92	-1287.03	0.0000	0.00	0.000
39	3.15	100	145	31.42	1000.00	-20.75	-1287.03	0.0000	0.00	0.000
40	3.25	100	145	31.42	1000.00	-18.69	-1287.03	0.0000	0.00	0.000
41	3.35	100	145	31.42	1000.00	-16.72	-1287.03	0.0000	0.00	0.000
42	3.45	100	145	31.42	1000.00	-14.86	-1287.03	0.0000	0.00	0.000
43	3.55	100	145	31.42	1000.00	-13.10	-1287.03	0.0000	0.00	0.000
44	3.65	100	145	31.42	1000.00	-11.45	-1287.03	0.0000	0.00	0.000
45	3.75	100	145	31.42	1000.00	-9.90	-1287.03	0.0000	0.00	0.000
46	3.85	100	145	31.42	1000.00	-8.47	-1287.03	0.0000	0.00	0.000
47	3.95	100	145	31.42	1000.00	-7.14	-1287.03	0.0000	0.00	0.000
48	4.05	100	145	31.42	1000.00	-5.92	-1287.03	0.0000	0.00	0.000
49	4.15	100	145	31.42	1000.00	-4.81	-1287.03	0.0000	0.00	0.000
50	4.25	100	145	31.42	1000.00	-3.81	-1287.03	0.0000	0.00	0.000
51	4.35	100	145	31.42	1000.00	-2.93	-1287.03	0.0000	0.00	0.000
52	4.45	100	145	31.42	1000.00	-2.16	-1287.03	0.0000	0.00	0.000
53	4.55	100	145	31.42	1000.00	-1.50	-1287.03	0.0000	0.00	0.000
54	4.65	100	145	31.42	1000.00	-0.96	-1287.03	0.0000	0.00	0.000
55	4.75	100	145	31.42	1000.00	-0.54	-1287.03	0.0000	0.00	0.000
56	4.85	100	145	31.42	1000.00	-0.24	-1287.03	0.0000	0.00	0.000
57	4.95	100	145	0.00	0.00	-0.06	0.00	0.0000	0.00	0.000
58	5.05	100	145	0.00	0.00	0.00	0.00	0.0000	0.00	0.000



**Elenco ferri**

## Simbologia adottata

n°	Indice del ferro
nf	numero ferri
D	diametro ferro espresso in [mm]
L	Lunghezza ferro espresso in [m]
P <sub>ferro</sub>	Peso ferro espresso in [kN]

*Paramento*

n°	Tipo	nf	D [mm]	L [m]	P <sub>f</sub> [kN]	P <sub>gf</sub> [kN]	V <sub>cls</sub> [mc]
1	Diritto superiore	10	20.00	3.61	0.0874	0.8737	
2	Diritto inferiore	5	20.00	10.75	0.2600	1.2999	
3	Diritto superiore	10	20.00	10.79	0.2610	2.6098	
4	Diritto inferiore	5	20.00	3.00	0.0726	0.3628	
5	Ripartitore	40	12.00	1.00	0.0087	0.3483	
<b>Totale al metro</b>						<b>5.8427</b>	<b>9.85</b>
<b>Totale</b>						<b>560.27</b>	<b>9.85</b>

*Fondazione*

n°	Tipo	nf	D [mm]	L [m]	P <sub>f</sub> [kN]	P <sub>gf</sub> [kN]	V <sub>cls</sub> [mc]
1	Diritto superiore	10	20.00	8.50	0.2055	2.0546	
2	Diritto inferiore	10	20.00	8.50	0.2055	2.0546	
3	Ripartitore	34	12.00	1.00	0.0087	0.2960	
<b>Totale al metro</b>						<b>4.7012</b>	<b>10.14</b>
<b>Totale</b>						<b>449.20</b>	<b>10.14</b>

*Mensola valle*

n°	Tipo	nf	D [mm]	L [m]	P <sub>f</sub> [kN]	P <sub>gf</sub> [kN]	V <sub>cls</sub> [mc]
1	Diritto inferiore	4	20.00	1.85	0.0447	0.1790	
2	Diritto superiore	4	20.00	1.85	0.0447	0.1790	
3	Ripartitore	2	12.00	1.00	0.0087	0.0174	
<b>Totale al metro</b>						<b>4.7012</b>	<b>10.14</b>
<b>Totale</b>						<b>449.20</b>	<b>10.14</b>