ANAS S.p.A.

Direzione Progettazione e Realizzazione Lavori

S.S. N. 9 "VIA EMILIA"
VARIANTE DI CASALPUSTERLENGO ED ELIMINAZIONE PASSAGGIO A LIVELLO SULLA S.P. EX S.S. N.234

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VISTO: IL RESPONSABILE DEL PROCEDIMENTO	IL RESPONSABILE DELLA INTEGRAZIONE DELLE PRESTAZIONI SPECIALISTICHE	PROGETTISTA	GEOLOGO	IL COORDINATORE DELLA SICUREZZA IN FASE DI PROGETTAZIONE
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HO02

H - PROGETTO STRUTTURALE OPERE PRINCIPALI

CV01 - CAVALCAVIA STRADA VICINALE DELLE COSTE

RELAZIONE DI CALCOLO PILE

CODICE PROGETTO			NOME FILE	REVISIONE	SCALA:
PROGETTO	LIV. PROG.	N. PROG.	HO02-S07CV01STRRE02_C.dwg		
COMI	E	1701	CODICE ELAB. S07CV01STRRE02	C	------

REV.	DESCRIZIONE	DATA	REDATTO	VERIFICATO	APPROVATO
D					
C	EMISSIONE A SEGUITO DI ISTRUTTORIA	LUGLIO 2018	ING. NICOLA LIGAS	PROF. ING. LUIGI MONTERISI	ING. VALERIO BAJETTI
B	EMISSIONE A SEGUITO DI ISTRUTTORIA	GIUGNO 2018	ING. NICOLA LIGAS	PROF. ING. LUIGI MONTERISI	ING. VALERIO BAJETTI
A	EMISSIONE	DICEMBRE 2017	ING. NICOLA LIGAS	PROF. ING. LUIGI MONTERISI	ING. VALERIO BAJETTI

SOMMARIO

1 GENERALITÀ

1.1 PREMESSE

La presente relazione riporta i calcoli statici relativi alla progettazione esecutiva del Cavalcavia Strada Vicinale Delle Coste, intersecante alla Pk. 5+059.88 la Variante di Casalpusterlengo alla S.S. n. 9 "Via Emilia". L'opera in oggetto presenta uno schema statico di trave continua su tre campate aventi luci tra gli assi di appoggio pari a 31+38+31 m.

L'impalcato è composto, da quattro travi continue in acciaio a doppio T ad altezza variabile sostenenti la soletta di scorrimento stradale in calcestruzzo armato ordinario.

In riguardo agli aspetti sismici, l'impalcato è isolato alla sommità delle pile e spalle mediante isolatori elastomerici armati.

L'impalcato, in previsione di un futuro allargamento della strada è stato calcolato per una sezione tipo F2 anziché F urbana; la larghezza totale dell'impalcato rimane 12.30 m.

Dimensioni dell'impalcato:

Larghezza marciapiedi	= 1.90 m	**(2.90 m)**
Larghezza carreggiata, categoria F2	= 8.50 m	**(6,50 m)**
Larghezza totale soletta	= 12.30 m	
Numero delle travi	= 4	
Interasse travi	= 3.20 m	
Altezza delle travi (variabile)	= 1.00÷2.00 m	
Spessore soletta	= 30 cm	(lastra 6 cm + getto 24 cm)

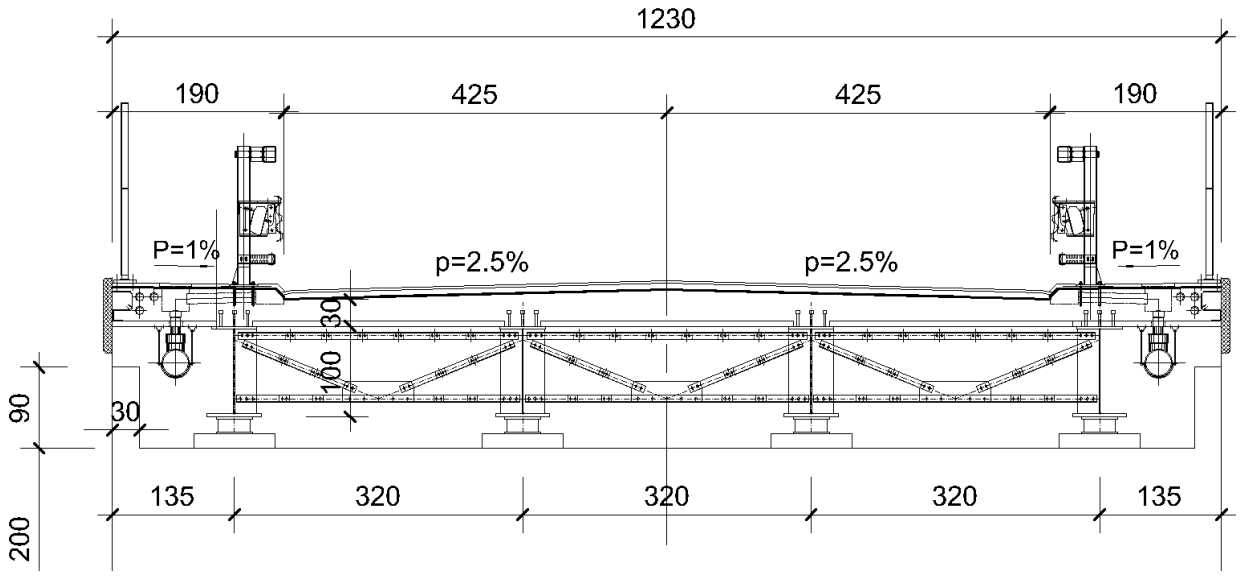


FIGURA 1 - SEZIONE TIPICA IMPALCATO (SU SPALLA)

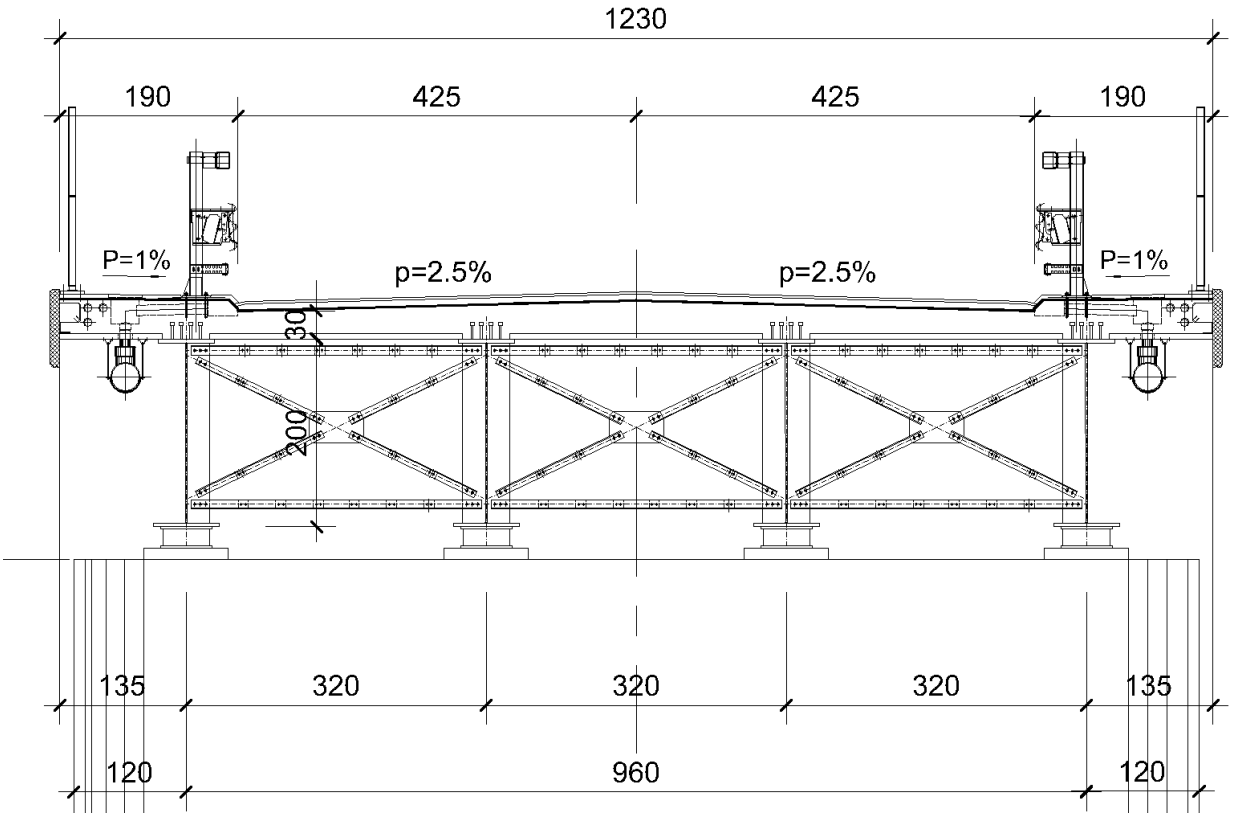


FIGURA 2- SEZIONE IMPALCATO (SU PILA)

1.2 NORMATIVA

Nella redazione dei calcoli statici ci si è attenuti alle prescrizioni della Normativa vigente; in particolare:

· **Legge n°1086 del 05/11/1971**
"Norme per la disciplina delle opere in conglomerato cementizio armato, normale e precompresso ed a struttura metallica"

- Legge n°64 del 02/02/1974:"Provvedimenti per le costruzioni con particolari prescrizioni per le zone sismiche"

· **Decreto Ministeriale 14/01/2008**
"Norme tecniche per le costruzioni"

- Circolare Min. 02/02/2009, n° 617
"Istruzioni per l'applicazione delle Norme tecniche per le costruzioni di cui al D.M. 14/01/2008"

- UNI EN 1993-1-1:2005
"Eurocodice 3 – Progettazione delle strutture in acciaio – Parte 1-1: Regole generali e regole per gli edifici"

- UNI EN 1993-1-5:2007
"Eurocodice 3 - Progettazione delle strutture in acciaio – Parte 1-5: Elementi strutturali a lastra"

- UNI EN 1993-1-9:2005
"Eurocodice 3 - Progettazione delle strutture in acciaio – Parte 1-9: Fatica"

- UNI EN 1993-1-10:2005
"Eurocodice 3 - Progettazione delle strutture in acciaio – Parte 1-10: Resilienza del materiale e proprietà attraverso lo spessore"

- UNI EN 1993-2:2007
"Eurocodice 3 - Progettazione delle strutture in acciaio – Parte 2: Ponti in acciaio"

- UNI EN 1994-1-1:2005
"Eurocodice 4 - Progettazione delle strutture composte acciaio-calcestruzzo – Parte 1-1: Regole generali e regole per gli edifici"

- UNI EN 1994-2:2006
"Eurocodice 4 - Progettazione delle strutture composte acciaio-calcestruzzo – Parte 2: Regole generali e regole per i ponti"

1.3 MATERIALI

I materiali di previsto impiego sono elencati nelle seguenti tabelle:

Calcestruzzo (rif. par. 11.2.10 DM 14.01.2008)		
Resistenza caratteristica cubica a 28 gg del calcestruzzo Rck	**40**	N/mm^2
Resistenza caratteristica cilindrica	**32**	N/mm^2
Resistenza cilindrica media **fcm** = fck+8	40.00	N/mm^2
Resistenza media a trazione semplice assiale **fctm** = 0,30*fck^(2/3)	3.02	N/mm^2
Resistenza caratteristica a trazione semplice assiale **fctk** = 0,7*fctm	2.12	N/mm^2
Resistenza media a trazione per flessione **fcfm** = 1,2*fctm	3.63	N/mm^2
Modulo elastico secante tra 0 e 0,40 fcm **Ecm** = 22000 (fcm/10)^0,3	33346	N/mm^2
Coefficiente di Poisson (cls fessurato/non fessurato)	0/0,2	
Coefficiente di dilatazione termica **α**	1.0E-5	1/C°
Coefficiente riduttivo per le resistenze di lunga durata **αcc**	0.85	
Coefficiente parziale di sicurezza relativo al calcestruzzo **γc**	1.5	
Resistenza di calcolo a compressione del calcestruzzo **fcd** = αcc fck/ γc (per spessori > 50 mm)	18.13	N/mm^2
Resistenza di calcolo a compressione del calcestruzzo **fcd** = 0.8 αcc fck/ γc (per spessori ≤ 50 mm)	14.51	N/mm^2
Resistenza di calcolo a trazione del calcestruzzo **fctd** = fctk/ γc (per spessori > 50 mm)	1.41	N/mm^2
Resistenza di calcolo a trazione del calcestruzzo **fctd** = 0.8 fctk/ γc (per spessori ≤ 50 mm)	1.13	N/mm^2
Stati Limite di Esercizio: Tensione massima di compressione per combinazioni caratteristiche **σc** = 0.6 fck	19.20	N/mm^2
Stati Limite di Esercizio: Tensione massima di compressione per combinazioni quasi permanenti **σc** = 0.45 fck	14.40	N/mm^2
Tensione tangenziale di aderenza caratteristica acciaio-calcestruzzo **fbk** = 2,25 η fctk (η =1)	4.76	N/mm^2
Tensione tangenziale di aderenza di calcolo acciaio-calcestruzzo **fbd** = fbk/ γc	3.18	N/mm^2

Acciaio per cemento armato B450C (rif. par. 11.3.2.1 DM 14.01.2008)		
Valore nominale della tensione caratteristica di snervamento **fy,nom**	**450**	N/mm^2
Valore nominale della tensione caratteristica di rottura **ft,nom**	**540**	N/mm^2
Coefficiente parziale di sicurezza relativo all'acciaio **γs**	1.15	
Resistenza di calcolo dell'acciaio **fyd** = fyk/ γs	391.3	N/mm^2
Stati Limite di Esercizio: Tensione massima per combinazioni caratteristiche **σs** = 0.8 fyk	360.0	N/mm^2

Acciaio per strutture (rif. par. 11.3.4 DM 14.01.2008)		
Tipo acciaio	**S 355 W**	
Modulo elastico **E**	210000	N/mm^2
Coefficiente di Poisson **ν**	0.3	
Modulo di elasticità trasversale G	80769	N/mm^2
Coefficiente di dilatazione termica **α**	1.2E-05	1/C°
Tensione caratteristica di snervamento **fyk** (spessore <= 40 mm)	355	N/mm^2
Tensione caratteristica di rottura **ftk** (spessore <= 40 mm)	510	N/mm^2
Tensione caratteristica di snervamento **fyk** (40 mm < spessore <= 80 mm)	335	N/mm^2
Tensione caratteristica di rottura **ftk** (40 mm < spessore <= 80 mm)	490	N/mm^2

Coefficienti di omogeneizzazione:

- sezioni composte acciaio/cls: $m = E_s / E_c = 210000 / 33346 = 6.3$
- sezioni in cls. armato: $m = 15$

Acciaio connettori trave/soletta tipo "Nelson" tipo: S 235 J2+C450

tensione caratteristica di snervamento $f_{yk} \geq 350$ N/mm^2

tensione caratteristica di rottura: $f_{tk} \geq 450$ N/mm^2

2 MODELLAZIONE STRUTTURALE

Il viadotto è stato schematizzato in un modello ad elementi finiti di tipo "trave" (beam), risolto mediante il programma di calcolo "MIDAS/Civil 2015", versione 1.2, realizzato da "MIDAS Information Technology, Co., Ltd.; Areum B/D 4° floor, 258-1 Seohyeon-dong, Bundang-gu, Seongnam, Gyeonggi-do, 463-824, Korea"; distribuito in Italia da "CSPFea s.c., via Zuccherificio 5/D, 35042 Este (PD)".

L'affidabilità del codice di calcolo è assicurata da una vasta documentazione teorica e di supporto e da una serie di esempi di verifica in cui i risultati ottenuti sono confrontati con risultati teorici tratti dalla letteratura specialistica o, in mancanza, con risultati di altri codici di calcolo indipendenti.

Il programma, ancorché utilizzabile come codice agli "elementi finiti" di tipo generale, è stato scelto perché volto soprattutto al calcolo di ponti (semplici, continui, strallati, sospesi, ecc.) consentendo tra l'altro la gestione di fasi costruttive successive, l'introduzione di cavi di precompressione, il calcolo delle relative perdite immediate (attrito) e differite (ritiro, fluage, rilassamento) e una gestione semi-automatica di ricerca degli effetti massimi e minimi dovuti ai carichi mobili, nonché la possibilità di effettuare analisi dinamiche lineari con spettro di risposta o dinamiche non lineari (time-history).

La modellazione è stata estesa all'impalcato e ai fusti delle pile, la base dei fusti è considerata incastrata; le spalle sono solamente descritte con un vincolo di incastro.

L'analisi globale della struttura è condotta secondo il metodo "Elastico"; tutti gli elementi strutturali sono considerati indefinitamente elastici.

Viene condotta un'analisi statica per le condizioni di carico relative a permanenti, carichi mobili, frenamento, vento, carichi termici, e un'analisi dinamica lineare per gli effetti delle azioni sismiche.

Si allegano i dati della modellazione strutturale e la spiegazione delle convenzioni usate nei files di dati del programma.

L'impalcato segue longitudinalmente l'asse coordinato X (da sinistra verso destra), le pile seguono l'asse Z (dall'alto verso il basso); l'asse Y (trasversale) forma con i precedenti una terna destrorsa.

I nodi degli elementi strutturali sono posizionati secondo la disposizione reale; quando necessario sono tra loro collegati da "vincoli rigidi".

La numerazione degli elementi è la seguente (xxx: numeri variabili):

- travi principali: da 101÷401 a 140÷440 ordinati per X crescente (+1) e quindi per Y crescente (+100 per ogni trave)
- trasversi intermedi: 1xxx, ordinati per Y, Z e X crescenti
- trasversi su pile: 2xxx, ordinati per Y, Z, e X crescenti

- controventi: 3xxx, ordinati per X, Y e Z crescenti
- pile: 4xxx, ordinati per Z crescente e quindi per X crescente

Per la ripartizione trasversale dei carichi si sono inoltre schematizzati elementi trasversali fittizi rappresentanti la soletta.

La soletta considerata nelle sezioni composte è limitata alla parte gettata in opera, esclusa quindi la lastra prefabbricata inferiore, di 6 cm di spessore.

Si è assunta un'accelerazione gravitazionale pari a g = 9,806 m/s^2.

Le unità di misura utilizzate sono coerenti con il Sistema Internazionale:

lunghezze:	m	(metri)
masse:	t	(tonnellate)
forze	kN	(kilo-Newton)

I materiali usati nella modellazione hanno le caratteristiche di calcolo seguenti:

a) calcestruzzo (C32/40):

- modulo di elasticità: E = 33345 N/mm^2
- coefficiente di Poisson: v = 0,20
- coefficiente di dilatazione termica: α = 0.00001 C^{-1}
- peso specifico: γ = 25 kN/m^3
- massa specifica: m = 2.55 t/m^3

b) acciaio strutturale viadotto (S355W):

- modulo di elasticità: E = 210000 N/mm^2
- coefficiente di Poisson: v = 0.30
- coefficiente di dilatazione termica: α = 0.000012 C^{-1}
- peso specifico(*): γ = 88.6 kN/m^3
- massa specifica(*): m = 9.03 t/m^3

NOTA (*): le caratteristiche volumiche dell'acciaio son aumentate del 15% per tener conto degli elementi non schematizzati nel modello (irrigidimenti, piastre, bulloni, saldature, connettori).

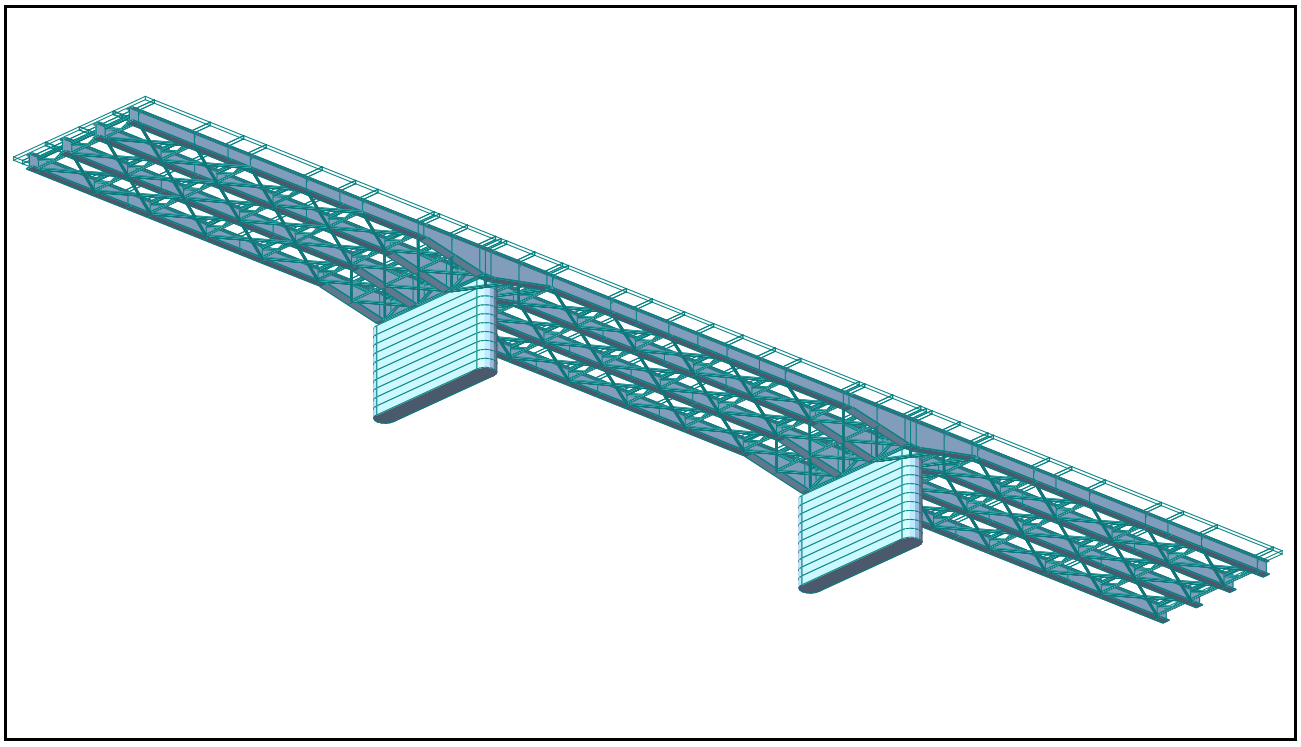


FIGURA 3 - SCHEMA DI CALCOLO –ASSONOMETRIA

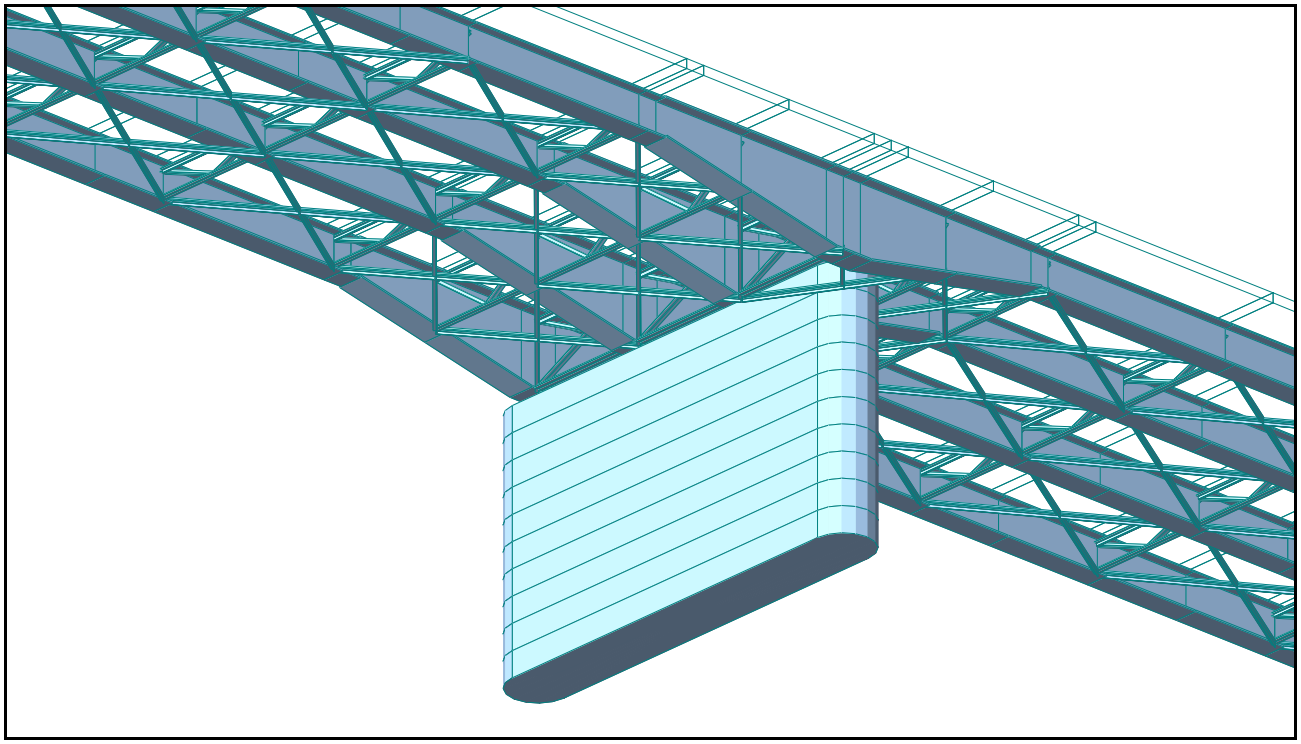


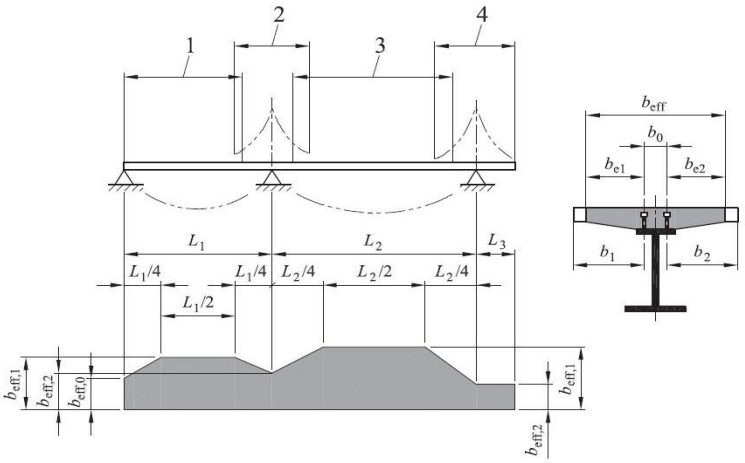
FIGURA 4 - SCHEMA DI CALCOLO – PARTICOLARE SU PILA

2.1 LARGHEZZE "EFFICACI" DI SOLETTA COLLABORANTE

Nel calcolo delle sezioni composte si tiene conto di una larghezza di soletta collaborante determinata secondo NTC 2008 # 4.3.2.3; il calcolo è riassunto nella seguente tabella.

TRAVE CONTINUA - CALCOLO DELLE LARGHEZZE EFFICACI DI SOLETTA COLLABORANTE - NTC 2008, § 4.3.2.3.

Legenda
1 $L_e = 0{,}85L_1$ per $b_{eff,1}$
2 $L_e = 0{,}25(L_1 + L_2)$ per $b_{eff,2}$
3 $L_e = 0{,}70L_2$ per $b_{eff,1}$
4 $L_e = 2L_3$ per $b_{eff,2}$



CAVALCAVIA STR.VIC. DELLE COSTE TRAVI ESTERNE	Appoggio / Campata	Estremità / Intermedio	Luce (m)	b_0 (m)	b_1 (m)	b_2 (m)	L_e (m)	L_e / 8 (m)	b_{e1} (m)	b_{e2} (m)	β_1	β_2	b_{eff} (m)
Spalla 1	Appoggio	Estremità		0.300	1.450	1.200	26.350	3.294	1.450	1.200	1.000	1.000	2.950
	Campata	Estremità	31.000	0.300	1.450	1.200	26.350	3.294	1.450	1.200	1.000	1.000	2.950
Pila 1	Appoggio	Intermedio		0.300	1.450	1.200	17.250	2.156	1.450	1.200	1.000	1.000	2.950
	Campata	Intermedio	38.000	0.300	1.450	1.200	26.600	3.325	1.450	1.200	1.000	1.000	2.950
Pila 2	Appoggio	Intermedio		0.300	1.450	1.200	17.250	2.156	1.450	1.200	1.000	1.000	2.950
	Campata	Estremità	31.000	0.300	1.450	1.200	26.350	3.294	1.450	1.200	1.000	1.000	2.950
Spalla 2	Appoggio	Estremità		0.300	1.450	1.200	26.350	3.294	1.450	1.200	1.000	1.000	2.950

CAVALCAVIA STR.VIC. DELLE COSTE TRAVI INTERNE	Appoggio / Campata	Estremità / Intermedio	Luce (m)	b_0 (m)	b_1 (m)	b_2 (m)	L_e (m)	L_e / 8 (m)	b_{e1} (m)	b_{e2} (m)	β_1	β_2	b_{eff} (m)
Spalla 1	Appoggio	Estremità		0.300	1.450	1.450	26.350	3.294	1.450	1.450	1.000	1.000	3.200
	Campata	Estremità	31.000	0.300	1.450	1.450	26.350	3.294	1.450	1.450	1.000	1.000	3.200
Pila 1	Appoggio	Intermedio		0.300	1.450	1.450	17.250	2.156	1.450	1.450	1.000	1.000	3.200
	Campata	Intermedio	38.000	0.300	1.450	1.450	26.600	3.325	1.450	1.450	1.000	1.000	3.200
Pila 2	Appoggio	Intermedio		0.300	1.450	1.450	17.250	2.156	1.450	1.450	1.000	1.000	3.200
	Campata	Estremità	31.000	0.300	1.450	1.450	26.350	3.294	1.450	1.450	1.000	1.000	3.200
Spalla 2	Appoggio	Estremità		0.300	1.450	1.450	26.350	3.294	1.450	1.450	1.000	1.000	3.200

3 DISPOSITIVI DI APPOGGIO E ISOLAMENTO

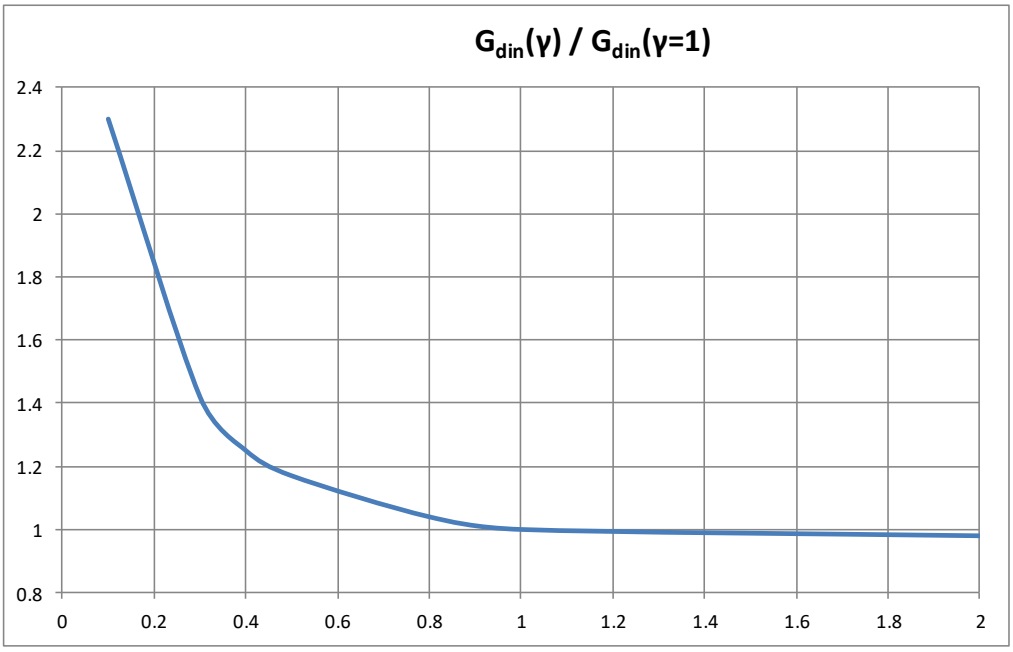
Alla sommità delle pile e spalle sono disposti apparecchi di appoggio antisismici costituiti da isolatori elastomerici armati, costituiti da strati alternati di lamiere di acciaio ed elastomero, collegati mediante vulcanizzazione.

Gli isolatori sono caratterizzati da una elevata rigidezza verticale, una ridotta rigidezza orizzontale e una modesta capacità dissipativa; queste caratteristiche consentono, rispettivamente, di sostenere i carichi verticali senza apprezzabili cedimenti, di contenere gli spostamenti sismici orizzontali dell' impalcato e aumentare i periodi di vibrazione dell'impalcato in modo da limitare le forze dinamiche orizzontali trasmesse dall'impalcato alle pile/spalle.

Le caratteristiche di progetto degli isolatori sono riportate nella seguente tabella

Caratteristiche di progetto isolatore		SPALLE	PILE	
Diametro elastomero	Øg=	300	450	mm
Spessore totale elastomero	te=	76	78	mm
Altezza totale escluse piastre di ancoraggio	h=	152	154	mm
Altezza totale comprese piastre di ancoraggio	H=	202	204	mm
Lato piastre di ancoraggio	Z=	350	500	mm
Modulo di elasticità tang. dinamico elastomero (γ = d/te = 1)	G(din)=	1.4	1.4	N/mmq
Deformazione massima statica di progetto SLU/SLD (d/te ≤ 1)	du=	76	78	mm
Deformazione massima sismica di progetto SLC (d/te ≤ 2)	dc=	152	156	mm
Rigidezza orizzontale equivalente (γ = d/te = 1)	Ke=	1.30	2.85	kN/mm
Rigidezza verticale	Kv=	768	1794	kN/mm

Il modulo tangenziale dinamico e quindi la rigidezza orizzontale equivalente sono definiti per una deformazione di taglio $\gamma = \frac{\Delta}{t_e} = 1$; G_{din} varia molto nel campo $\gamma < 1$ mentre per valori $1 < \gamma < 2$ risulta pressoché costante; la variazione media del modulo dinamico tangenziale in funzione della deformazione di taglio è rappresentata nel seguente grafico.



4 ANALISI DEI CARICHI

Qui di seguito si riporta l'analisi dei carichi eseguita distinguendo tra carichi permanenti ed accidentali.

4.1 CARICHI PERMANENTI

a) calcestruzzo pile:

- peso specifico: $\gamma = 25$ kN/m^3
- massa specifica: m = 2.55 t/m^3

b) acciaio strutturale: si definisce un incremento forfetario del 15% per tener conto degli elementi non rappresentati nel modello (piastrame, bulloneria, saldature, ecc.):

- peso specifico: $\gamma = 88.5$ kN/m^3
- massa specifica: m = 9.00 t/m^3

c) peso soletta: il peso viene assegnato sulle singole travi (sezione reagente solo acciaio):

- travi esterne: $g_1 = 25 \times (0.30 + 0.33) / 2 \times (1.35 + 1.60) = 23.23$ kN/m
- travi interne: $g_1 = 25 \times (0.33 + 0.41) / 2 \times 3.20 = 29.60$ kN/m

4.2 SOVRACCARICHI PERMANENTI (FINITURE)

Le finiture vengono assegnate sulle singole travi (con soletta collaborante) con la loro eccentricità Y rispetto all'asse trave:

- trave esterna:

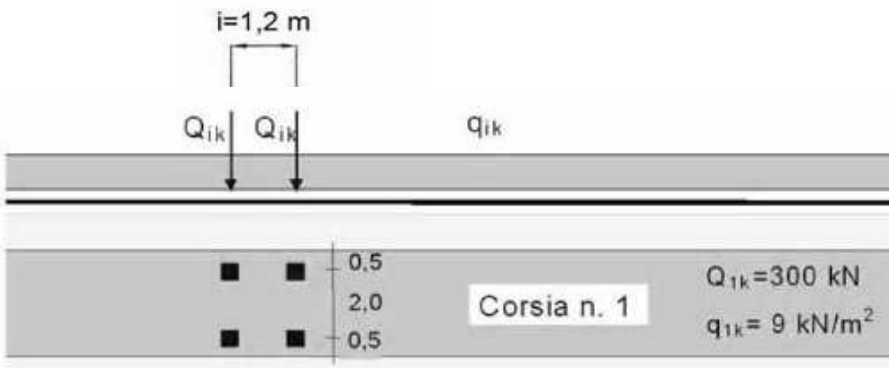
	- pavimentazione:	g_2 = 2.5 x 1.05 = 2.63 kN/m	e = -1.075 m
	- cordolo:	g_2 = 25 x 0.15 x 1.90 = 7.13 kN/m	e = +0.40 m
	- veletta:	g_2 = 25 x 0.1 x 0.8 = 2 kN/m	e = +1.375 m
	- sicurvia:	g_2 = 0.8 kN/m	e = -0.15 m
	- parapetto:	g_2 = 0.5 kN/m	e = +1.25 m
	- Totale finiture:	g_2 = 13.06 kN/m	e = +0.25 m
- travi interne:	- pavimentazione:	g_2 = 2.5 x 3.2 = 8 kN/m	e = 0

4.3 CARICHI MOBILI DI ESERCIZIO

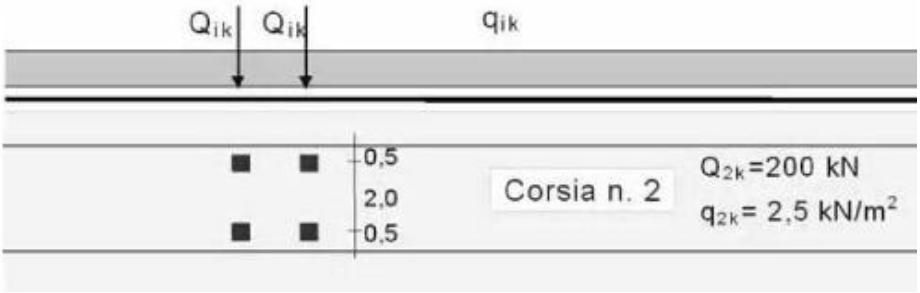
L'impalcato si considera caricato secondo lo schema di carico 1 previsto dal D.M. 14/02/2008:

- una colonna di carico costituita da:
  - Q_{1k} mezzo convenzionale da 600 kN a due assi
  - q_{1k} carico ripartito pari a 9 kN/m^2 (27 kN/m)

Lo schema longitudinale della colonna è il seguente:



- una seconda colonna di carico analoga alla precedente ma con carichi pari a:
  - Q_{2k} mezzo convenzionale da 400 kN a due assi
  - q_{2k} carico ripartito pari a 2.5 kN/m^2 (7.5 kN/m)



L'area rimanente viene caricata con un carico q_{rk} pari a 2.5 kN/m^2.
Sui marciapiedi si assume lo schema di carico 5, pari a 5.0 kN/m^2 che, in combinazione con i precedenti, assume il valore di 2.5 kN/m^2.
Lo schema complessivo di carico è rappresentato nelle seguenti figure, fermo restando che le corsie di carico possono essere scambiate o trascurate se più gravose per l'elemento considerato.

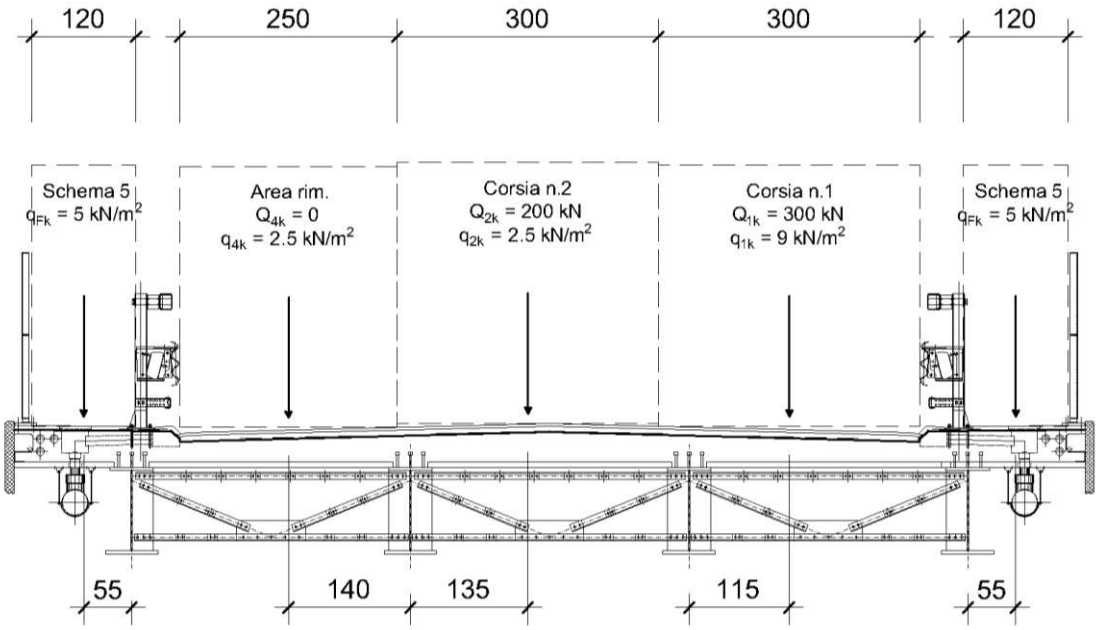


FIGURA 5 – CARICHI VARIABILI – DISPOSIZIONE A DX

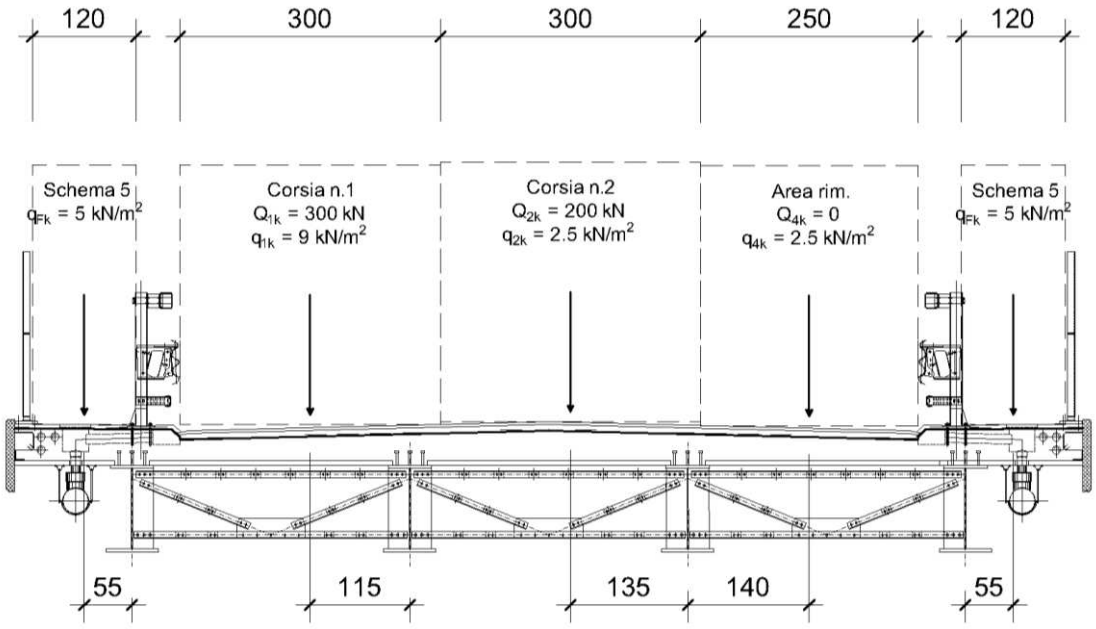


FIGURA 6 – CARICHI VARIABILI – DISPOSIZIONE A SX

Il D.M. del 2008, in accordo con quanto previsto dagli eurocodici, considera il coefficiente dinamico già compreso nel valore dei carichi mobili. La disposizione longitudinale e trasversale più gravosa dei carichi viene determinata automaticamente dal programma di calcolo per ogni sezione e componente di sollecitazione massima e minima.

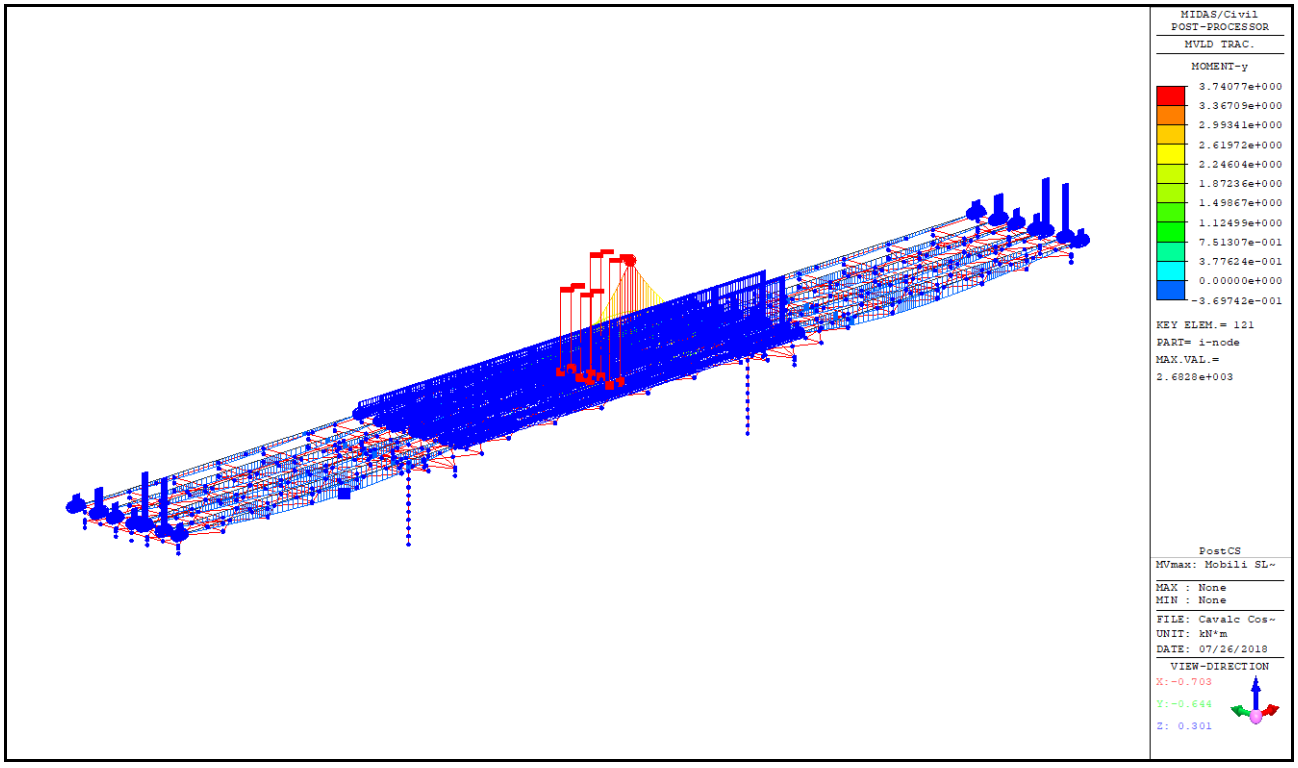
Per la valutazione degli effetti dei carichi mobili agli stati limite di esercizio si applicano ai carichi i coefficienti di combinazione (NTC2008):

- Carichi tandem: $\psi_0 = 0.75$ $\psi_1 = 0.75$ $\psi_2 = 0$
- Carichi distribuiti: $\psi_0 = 0.4$ $\psi_1 = 0.4$ $\psi_2 = 0$

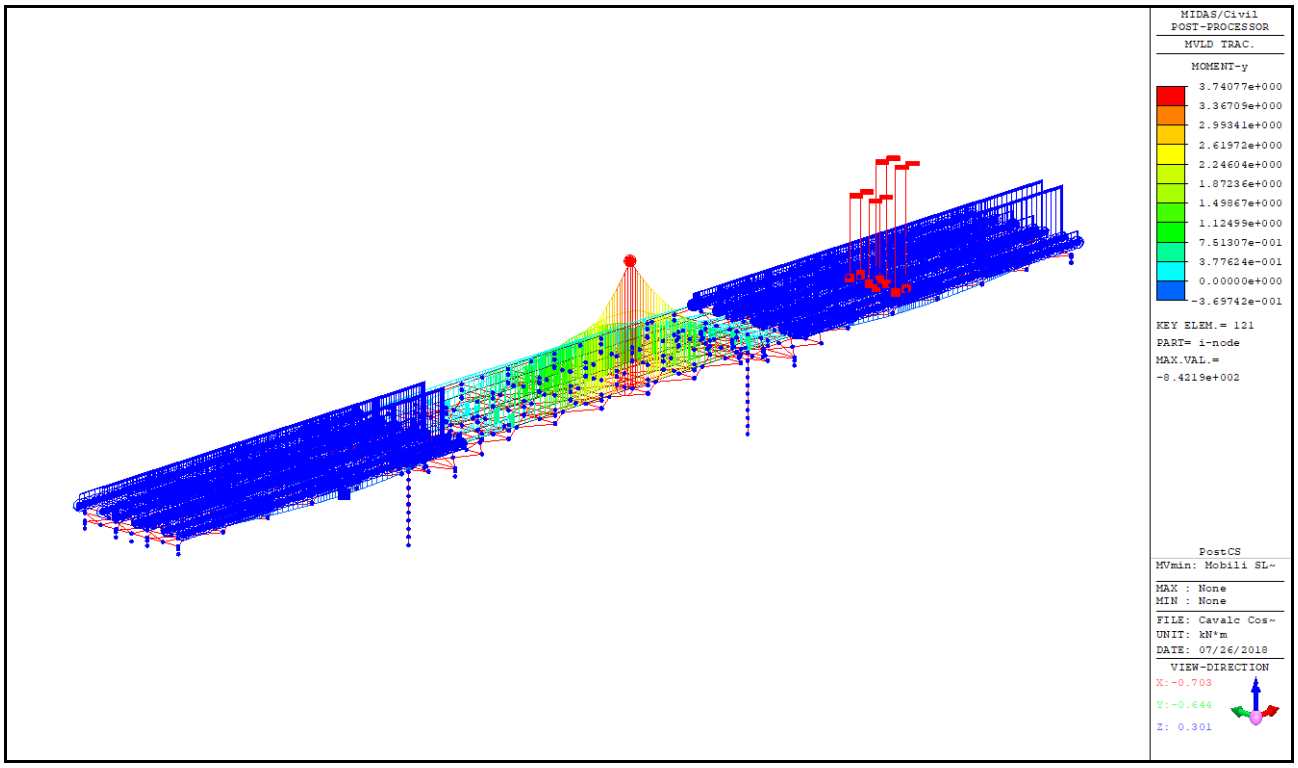
L'applicazione dei carichi mobili al modello strutturale è composta dei seguenti passi:

- definizione delle corsie di carico (Traffic Line Lanes) come sequenza di elementi (travi composte), caricati con la effettiva eccentricità trasversale;
- definizione degli schemi di carico transitanti sulle corsie e/o marciapiedi (Vehicles)
- definizione dei casi di carico (Moving Load Cases); per ognuno di essi si definiscono le corsie da caricare e gli schemi di carico transitanti e se considerare i coefficienti ψ (SLE) o no (SLU);
- definizione della discretizzazione dei punti di carico, assunto pari a 1/10 della lunghezza del singolo elemento caricato, nel presente caso quindi 25÷50 cm.

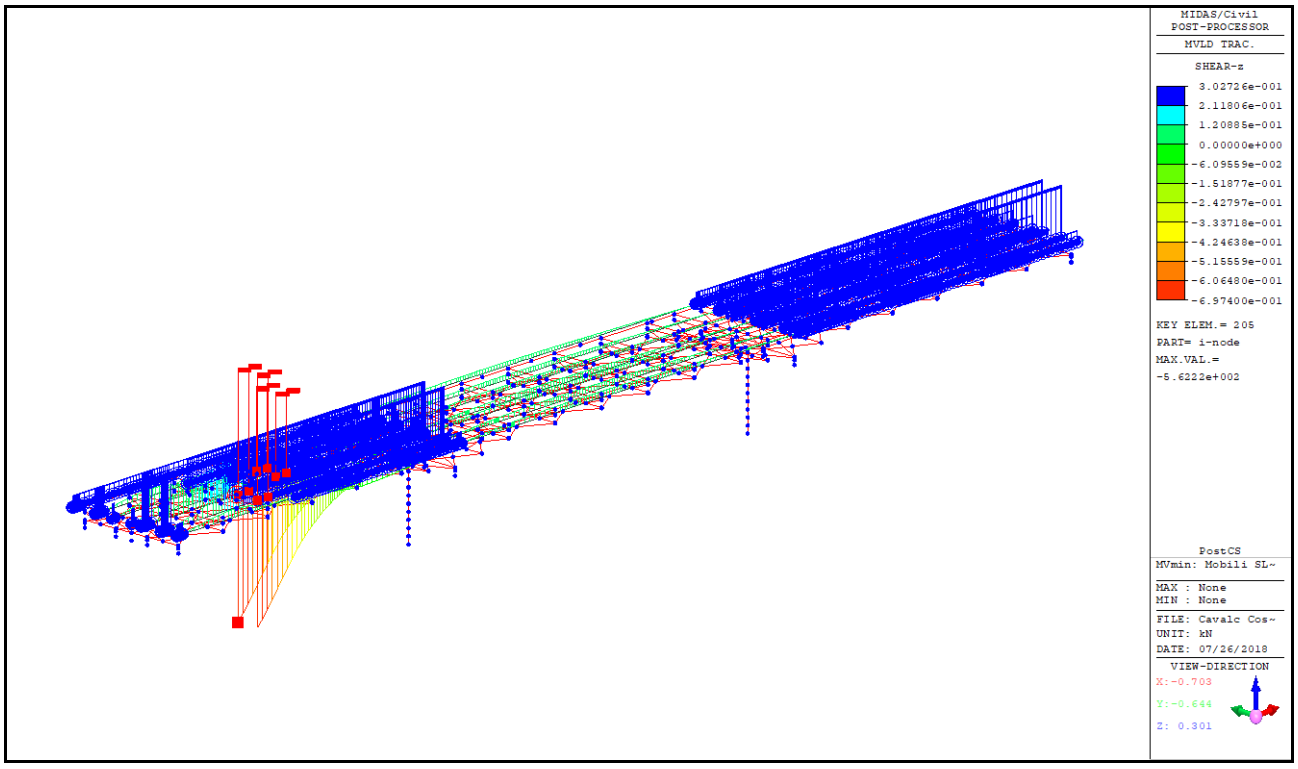
Nel calcolo vengono quindi generate le linee d'influenza per ogni colonna di carico, ognuna delle quali provoca il massimo o il minimo di una singola componente di sforzo (N, Vy, Vz, Mx, My, Mz) per un nodo di un elemento del modello; ciò è esteso a tutti i nodi ed elementi presenti nel modello di calcolo; ovviamente se viene ricercato il massimo vengono caricati solo i tratti aventi linea d'influenza positiva e viceversa per i minimi.
Seguono alcuni esempi grafici.



CARICHI MOBILI SLU A DX - DISPOSIZIONE MASSIMO MY ELEMENTO 121, NODO INIZIALE (TRAVE ESTERNA MEZZERIA)



CARICHI MOBILI SLU A DX - DISPOSIZIONE MINIMO MY ELEMENTO 121, NODO INIZIALE (TRAVE ESTERNA MEZZERIA)



CARICHI MOBILI SLU A DX - DISPOSIZIONE MINIMO FZ ELEMENTO 205, NODO INIZIALE (TRAVE INTERNA CAMPATA LATERALE)

4.4 CARICHI MOBILI PER VERIFICHE A FATICA

4.4.1 VERIFICHE PER VITA ILLIMITATA

Le verifiche a fatica per vita illimitata (NTC 5.1.4.3) vengono eseguite per le anime e le saldature delle travi.
L'impalcato si considera caricato secondo il modello di carico a fatica 2, applicato sulla corsia lenta; il veicolo più gravoso è risultato essere il 3°: semirimorchio a 5 assi per un peso complessivo di 630 kN.

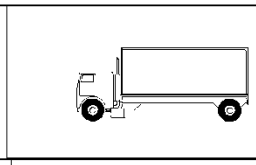
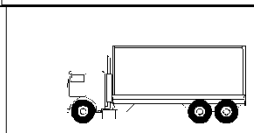
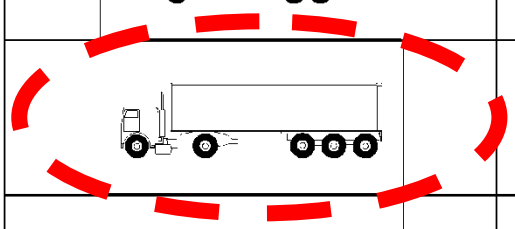
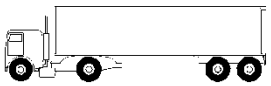
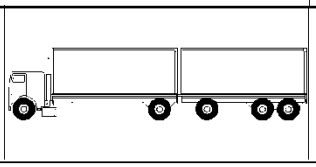
SAGOMA del VEICOLO	Distanza tra gli assi (m)	Carico frequente per asse (kN)	Tipo di ruota (Tab. 5.1.IX)
	4,5	90 190	A B
	4,20 1,30	80 140 140	A B B
	3,20 5,20 1,30 1,30	90 180 120 120 120	A B C C C
	3,40 6,00 1,80	90 190 140 140	A B B B
	4,80 3,60 4,40 1,30	90 180 120 110 110	A B C C C

FIGURA 7 – MODELLO DI CARICO AI FATICA N. 2

4.4.2 VERIFICHE A DANNEGGIAMENTO

Le verifiche a danneggiamento si effettuano per i connettori trave/soletta (pioli Nelson).
L'impalcato si considera caricato secondo il modello di carico a fatica 3, applicato sulla corsia lenta; il modello consiste in 4 assi di 120 kN di peso (480 kN totali).

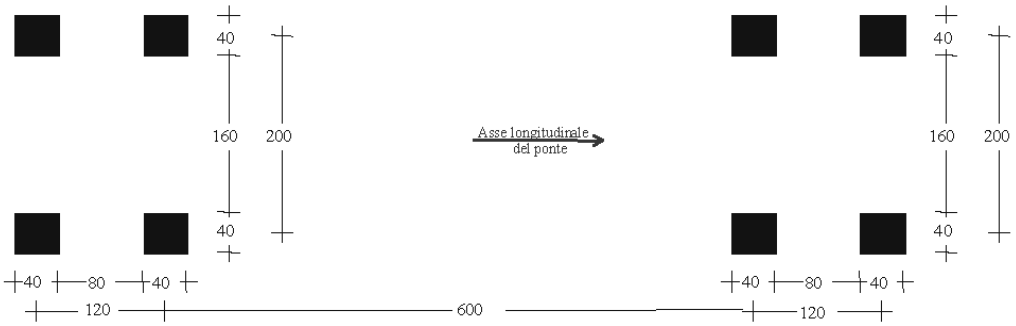
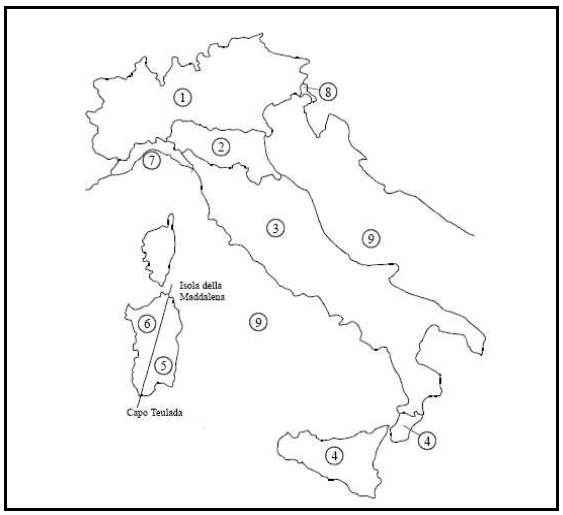


FIGURA 8 – MODELLO DI CARICO AI FATICA N.3

4.5 AZIONE DEL VENTO TRASVERSALE

Nel D.M. 2008 si valuta l'azione del vento in base alla zona considerata e non ad un valore convenzionale; l'opera si trova in zona 1) Valle d'Aosta, Piemonte, Lombardia, Trentino Alto Adige, Veneto, Friuli Venezia Giulia (con l'eccezione della provincia di Trieste).



NTC 2008 - Figura 3.3.1

La pressione esterna è definita da:

$$p = q \cdot c_e \cdot c_p \cdot c_d$$

La pressione cinetica di riferimento q (in N/m²) in zona 1 è data dall'espressione:

$$q_b = \frac{1}{2} \cdot \rho \cdot v_b^2 = \frac{1}{2} \cdot 1.25 \cdot 25^2 = 391 \text{ N/m}^2 \quad (0.391 \text{ kN/m}^2)$$

dove: $\rho = 1.25$ kg/m^3 densità dell'aria, assunta costante

$v_b(T_R)$ è la velocità di riferimento del vento (in m/s)

$v_{b,0} = 25$ m/s $(a_S < a_0)$

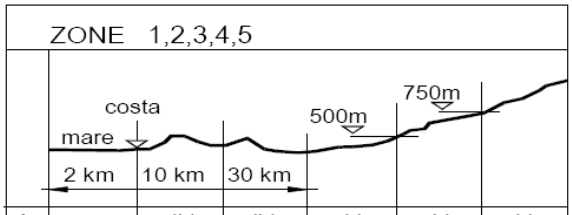
considerando un'altitudine sul livello del mare del sito: $a_s = 70$ m e un periodo di ritorno di 50 anni.

c_e è il coefficiente di esposizione; avendo una classe di rugosità D

Classi di rugosità del terreno

Classe di rugosità del terreno	Descrizione
A	Aree urbane in cui almeno il 15% della superficie sia coperto da edifici la cui altezza media superi i 15 m
B	Aree urbane (non di classe A), suburbane, industriali e boschive
C	Aree con ostacoli diffusi (alberi, case, muri, recinzioni); aree con rugosità non riconducibile alle classi A, B, D
D	Aree prive di ostacoli (aperta campagna, aeroporti, aree agricole, pascoli, zone paludose o sabbiose, superfici innevate o ghiacciate, mare, laghi,….)

in zona 1, si ottiene una categoria di esposizione II



A	- -	IV	IV	V	V	V
B	- -	III	III	IV	IV	IV
C	- -	*	III	III	IV	IV
D	I	II	II	II	III	**

* Categoria II in zona 1,2,3,4
Categoria III in zona 5

** Categoria III in zona 2,3,4,5
Categoria IV in zona 1

a cui corrispondono i seguenti parametri per la definizione del coefficiente di esposizione

Parametri per la definizione del coefficiente dì esposizione

Categoria di esposizione del sito	k_r	Z_0 (m)	Z_{min} (m)
I	0,17	0,01	2
II	0,19	0,05	4
III	0,20	0,10	5
IV	0,22	0,30	8
V	0,23	0,70	12

Con l'opera in costruzione avente altezza massima sul terreno (compresi carichi mobili):

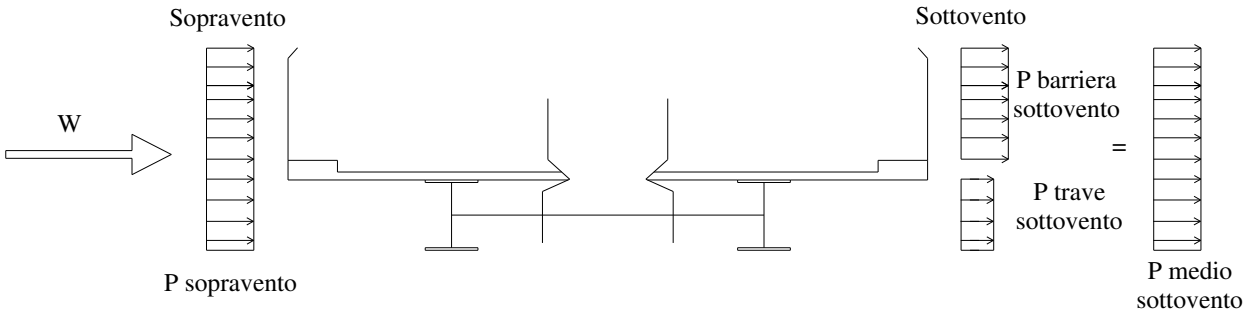
$z \approx 12\ m > z_{min} = 4\ m$

$c_e(z) = k_r^2 \cdot c_t \cdot \alpha \cdot [7 + c_t \cdot \alpha] = 0.19^2 \cdot 68.4 = 2.47$

dove $\alpha = \ln(z/z_0) = \ln(12/0.05) = 5.48$; $c_t = 1$

c_d è il coefficiente dinamico; posto pari ad uno

c_p è il coefficiente di forma; nel caso di travi multiple (Circ. 02/02/2009, C3.3.10.4) si ha, per i vari elementi:



- travi principali, altezza h = 1 m, distanza reciproca media d = 3.2 m:

a) lato sopravento: $c_{p1} = 1.4$

b) lato sottovento: $d / h = 3.2 / 1 = 3.2$ ($2 < d/h < 5$)

$\mu = 0.52$

$c_{p2} = 1.4 \times (0.52 + 0.52^2 + 0.52^3 + 0.52^4) = 1.41$

- travi principali, altezza h = 2 m, distanza reciproca media d = 3.2 m:

a) lato sopravento: $c_{p1} = 1.4$

b) lato sottovento: $d / h = 3.2 / 2 = 1.6$ ($d/h < 2$)

$\mu = 0.2$

$c_{p2} = 1.4 \times (0.2 + 0.2^2 + 0.2^3 + 0.2^4) = 0.35$

- soletta, cordolo, sicurvia: per il solo lato sopravento si ha:

$c_p = 1.2$

La pressione esterna sulle strutture è quindi definita dalle espressioni seguenti:

a) impalcato con travi h = 1 m:

a1) lato sopravento: $p = q \cdot c_e \cdot c_p \cdot c_d = 0.391 \cdot 2.47 \cdot (1.4 \cdot 1.0 + 1.2 \cdot 1.45) =$
$= 1.35 + 1.68 = 3.03$ kN/m

con eccentricità rispetto al piano stradale di riferimento:

$e_z = (-1.35 \cdot 0.90 + 1.68 \cdot 0.27) / 3.03 = -0.25$ m

a2) lato sottovento: $p = q \cdot c_e \cdot c_p \cdot c_d = 0.391 \cdot 2.47 \cdot (1.41 \cdot 1.0 + 1.2 \cdot 1.15) =$
$= 1.36 + 1.33 = 2.69$ kN/m

con eccentricità rispetto al piano stradale:

$e_z = (-1.36 \cdot 0.90 + 1.33 \cdot 1.15) / 2.69 = +0.11$ m

b) impalcato con travi h = 2 m:

b1) lato sopravento: $p = q \cdot c_e \cdot c_p \cdot c_d = 0.391 \cdot 2.47 \cdot (1.4 \cdot 2.0 + 1.2 \cdot 1.45) =$
$= 2.70 + 1.68 = 4.38$ kN/m

con eccentricità rispetto al piano stradale di riferimento:

$e_z = (-2.70 \cdot 1.40 + 1.68 \cdot 0.27) / 4.38 = -0.76$ m

b2) lato sottovento: $p = q \cdot c_e \cdot c_p \cdot c_d = 0.391 \cdot 2.47 \cdot (0.35 \cdot 2.0 + 1.2 \cdot 1.15) =$
$= 0.68 + 1.33 = 2.01$ kN/m

con eccentricità rispetto al piano stradale:

$e_z = (-0.68 \cdot 1.40 + 1.33 \cdot 1.15) / 2.01 = +0.29$ m

Sulle pile si ha: $p = 0.391 \cdot 2.47 \cdot 1.50 = 1.45$ kN/m

La pressione dovuta ai carichi mobili, per l'altezza pari a 2.0 vale:

$p = 0.391 \cdot 2.47 \cdot 1.2 \cdot 2.00 = 2.32$ kN/m

con eccentricità rispetto al piano stradale:

$e_z = 1 + 2.00 / 2 = +2.00$ m

Vento su pile: $0.391 \times 1.2 \times 2.47 \times 1.5 = 1.74$ kN/m

-

4.6 AZIONE DI FRENAMENTO

L'azione di frenamento è funzione del carico verticale totale agente sulla corsia convenzionale n. 1 ed è uguale a:

$F_f = 0.6 \times (2xQ_{1k}) + 0.10q_{1k} \times w_1 \times L =$

$= 0.6 \times (2x300) + 0.10 \times 9 \times 3 \times 101.60 = 634.3$ kN $\quad (180 \text{ kN} \le F_f \le 900 \text{ kN})$

L'azione si considera uniformemente distribuita sulle travi principali:

$$q_x = \frac{634.3}{4 \times 101.6} = 1.56 \text{ kN/m/trave}$$

4.7 DILATAZIONE TERMICA DIFFERENZIALE

Si assume che le travi dell'impalcato (sezioni miste acciaio/cls.) siano soggette alla variazione termica differenziale: $\Delta T/H = \pm 5°$.

4.8 DILATAZIONE TERMICA UNIFORME

Si assume che le travi dell'impalcato (sezioni miste acciaio/cls.) siano soggette alla variazione termica uniforme: $\Delta T = \pm 15°$.

4.9 AZIONI SISMICHE

La stima dei parametri spettrali necessari per la definizione dell'azione sismica è stata effettuata utilizzando le informazioni disponibili nel reticolo di riferimento (tabella 1 – Allegato B – D.M. 14 gennaio 2008).
Considerando l'ubicazione del sito in oggetto (Lat: 45.1727; Long: 9.6368) ed ipotizzando una costruzione caratterizzata da:

- una vita nominale di 50 anni, ricadente in classe d'uso pari a IV (ponti di importanza critica per il mantenimento delle vie di comunicazione…);
- una categoria topografica T1;
- una categoria C per il sottosuolo;

Si hanno i seguenti valori dei **parametri spettrali**:

STATO LIMITE	T_R [anni]	a_g [g]	F_o [-]	T_C^* [s]
SLO	60	0.0375	2.575	0.226
SLD	101	0.0458	2.539	0.257
SLV	949	0.1003	2.541	0.297
SLC	1950	0.1273	2.528	0.305

Le espressioni dello spettro elastico S_e di risposta secondo le NTC-08 sono le seguenti:

$$0 \le T < T_B \qquad S_e(T) = a_g \cdot S \cdot \eta \cdot F_o \cdot \left[\frac{T}{T_B} + \frac{1}{\eta \cdot F_o} \left(1 - \frac{T}{T_B} \right) \right]$$

$$T_B \le T < T_C \qquad S_e(T) = a_g \cdot S \cdot \eta \cdot F_o$$

$$T_C \le T < T_D \qquad S_e(T) = a_g \cdot S \cdot \eta \cdot F_o \cdot \left(\frac{T_C}{T} \right)$$

$$T_D \le T \qquad S_e(T) = a_g \cdot S \cdot \eta \cdot F_o \cdot \left(\frac{T_C T_D}{T^2} \right)$$

Trattandosi di struttura sismicamente isolata si assume:

- coefficiente di smorzamento viscoso convenzionale: $\xi = 5\ \%$
- fattore di smorzamento viscoso: $\eta = \sqrt{\frac{10}{5+\xi}} = 1$
- fattore di struttura: $q = 1$

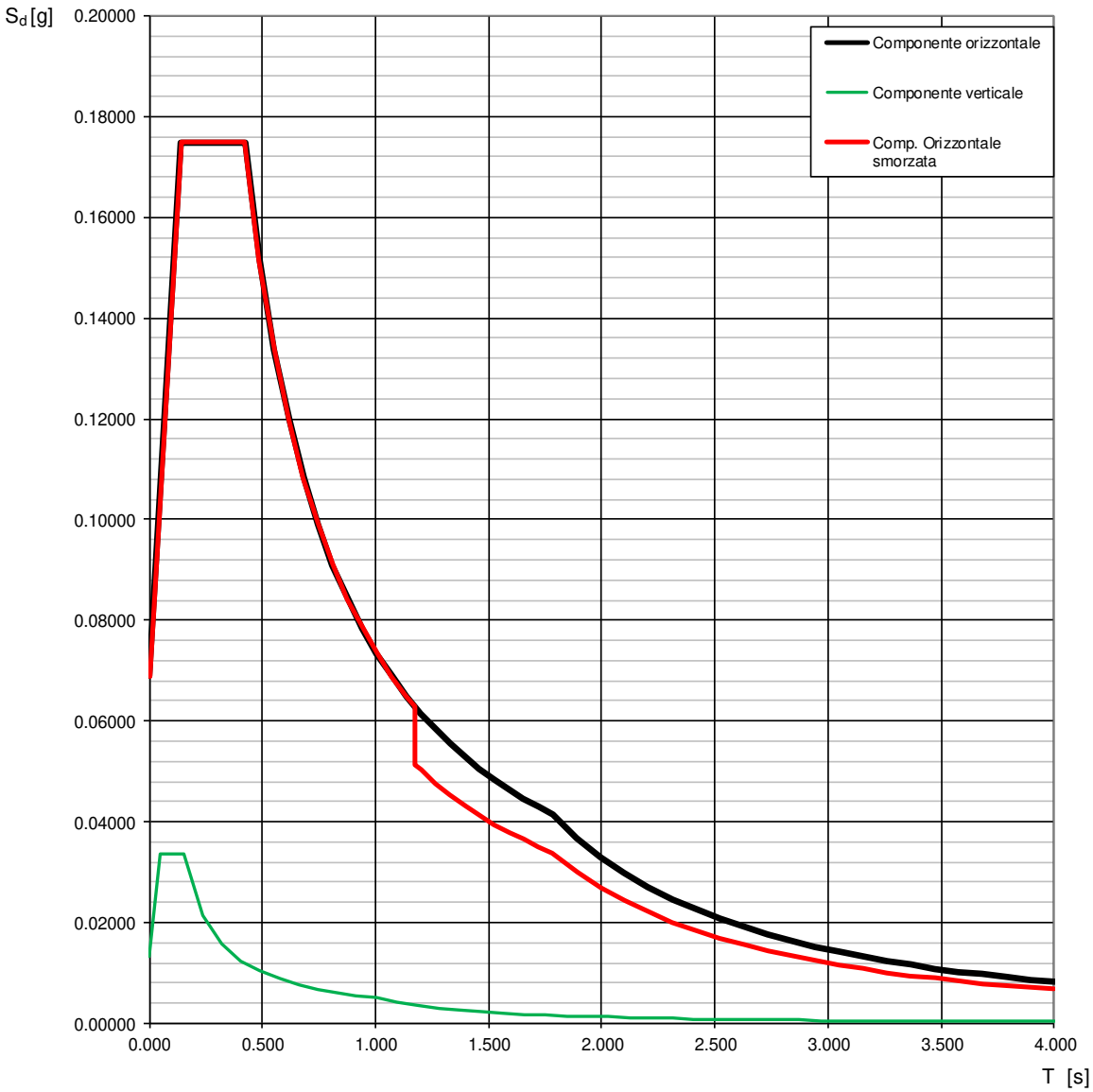
Lo spettro elastico definito viene ridotto per tutto il campo di periodi $T \ge 0{,}8T_{is}$, assumendo:

- periodo di vibrazione struttura isolata: $T_{is} = 1.464$ s
- coefficiente di smorzamento viscoso isolatori: $\xi = 10\ \%$

-coefficiente riduttivo $\eta = \sqrt{\frac{10}{5+\xi}} = \sqrt{\frac{10}{5+10}} = 0.816$ (≥ 0.55).

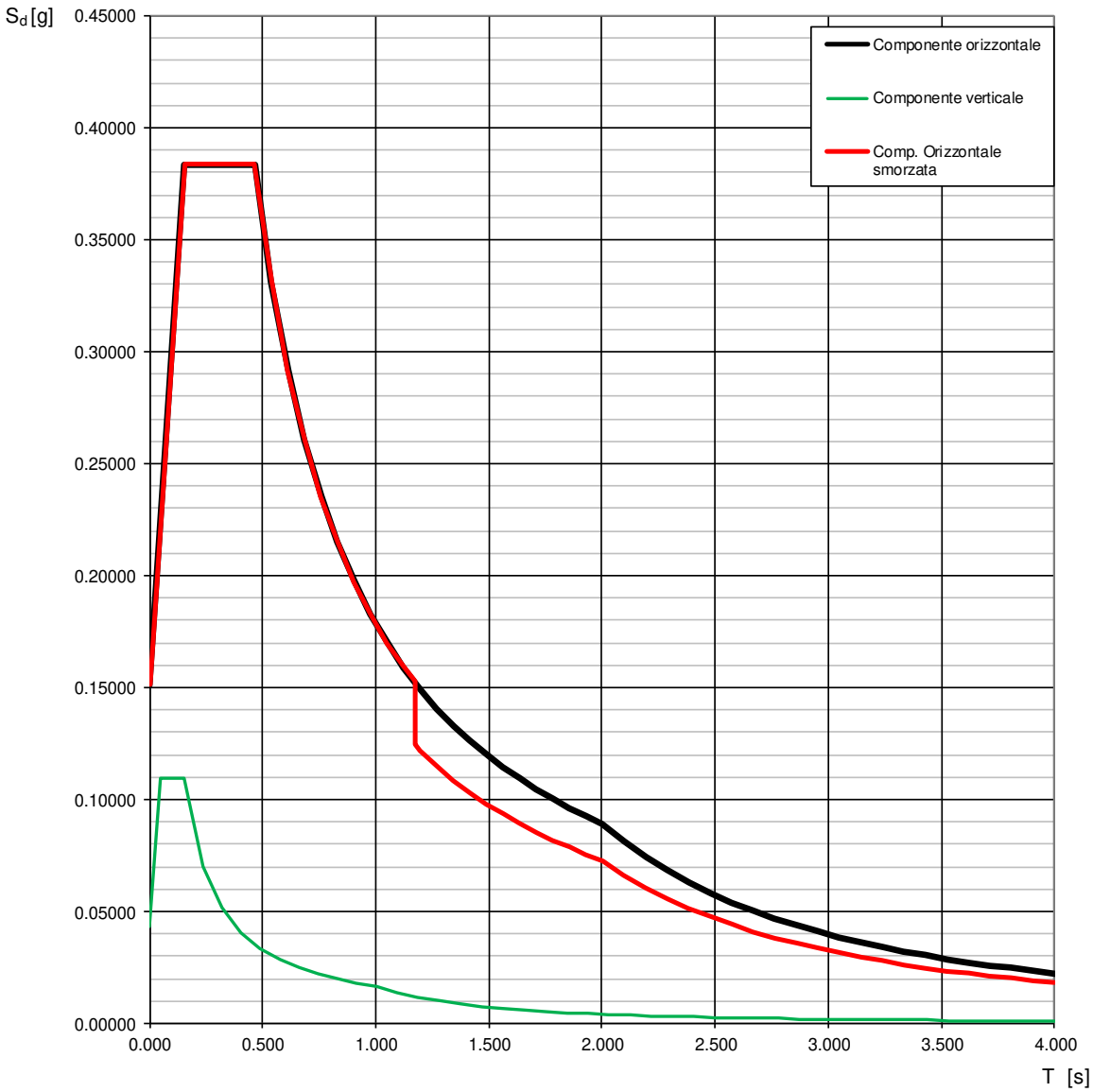
Si ottengono i seguenti andamenti degli spettri. Noto il periodo (ascissa) si ricava il relativo coefficiente sismico (ordinata).

Spettri di risposta elastici (componenti orizz. e vert.) per lo stato limite: SLD



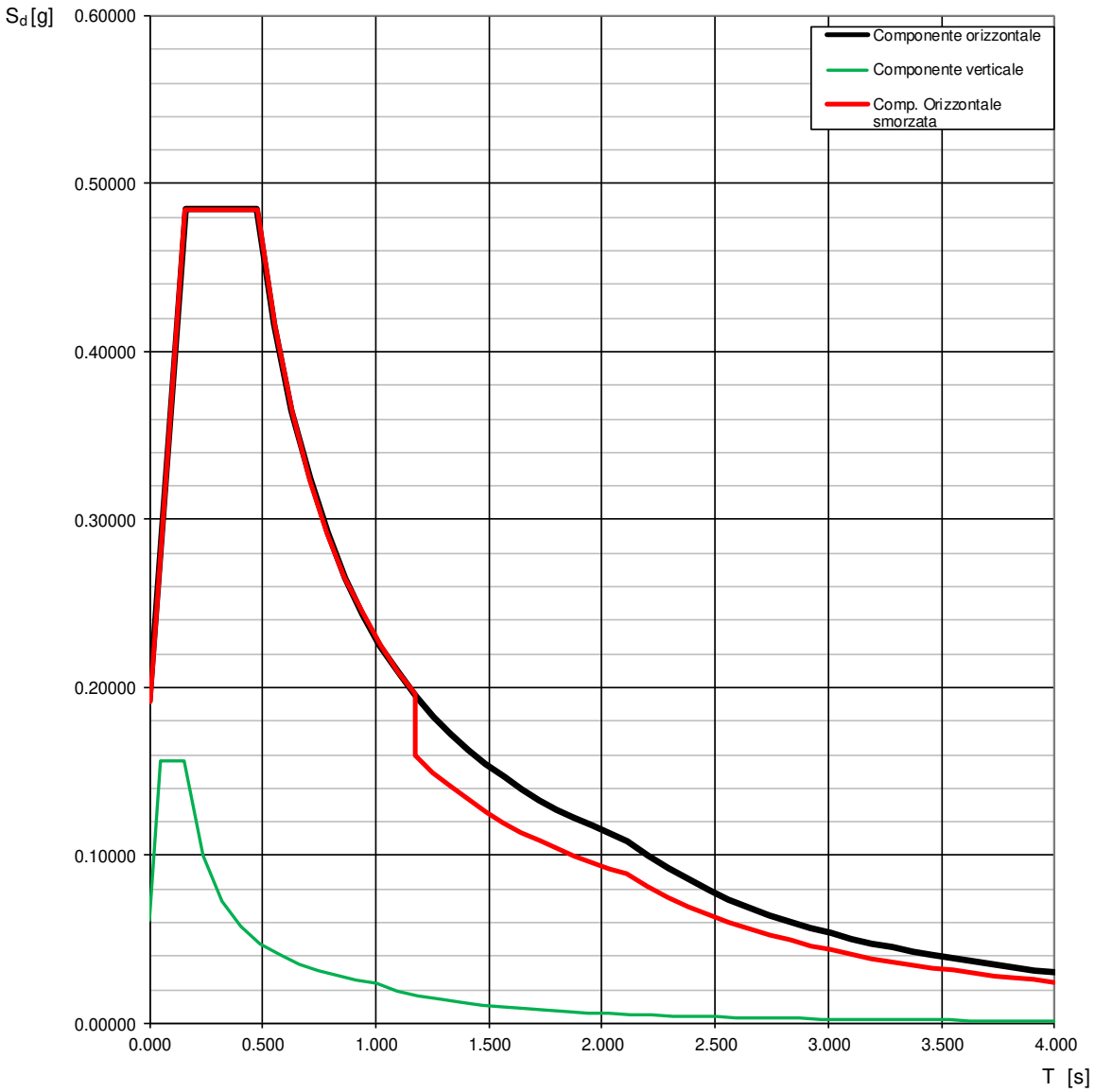
Spettri di risposta elastici e smorzati SLD

Spettri di risposta elastici (componenti orizz. e vert.) per lo stato limite: SLV



Spettri di risposta elastici e smorzati SLV

Spettri di risposta elastici (componenti orizz. e vert.) per lo stato limite: SLC



Spettri di risposta elastici e smorzati SLC

4.10 FENOMENI DEFORMATIVI LENTI DELLA SOLETTA IN CALCESTRUZZO

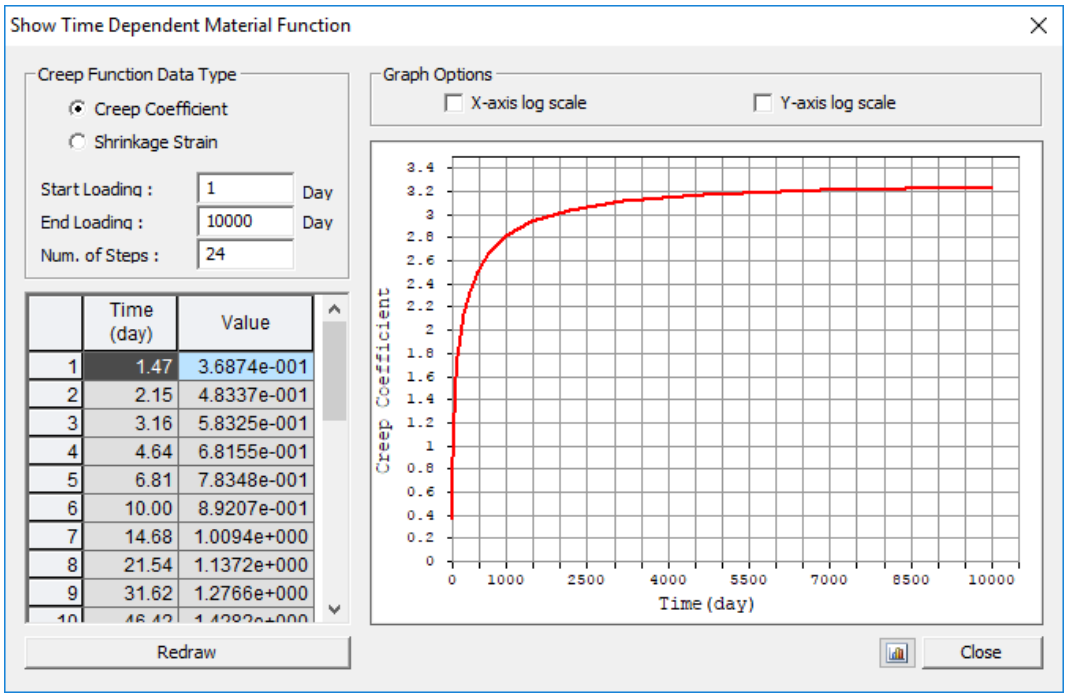
Come già detto, l'influenza di ritiro e fluage della soletta sulla struttura metallica viene considerata automaticamente dal programma di calcolo sulla base delle relazioni stabilite dal codice EN 1992-2 con i seguenti dati:

- resistenza caratteristica cilindrica a 28 gg: f_{ck} = 32 N/mm^2
- umidità relativa ambiente: 70 %
- perimetro esposto all'atmosfera: h = 2 x Ac / u = 0.30 m
- calcestruzzo a indurimento normale: N
- età del calcestruzzo iniziale per il ritiro: 1 gg

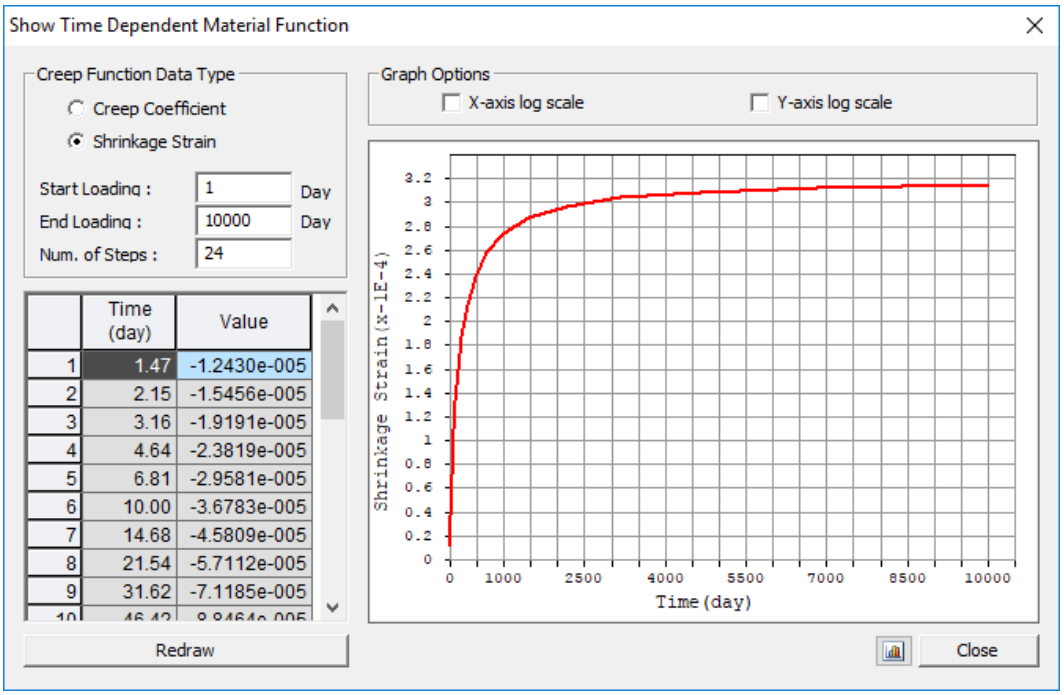
La variazione della resistenza caratteristica del calcestruzzo nel tempo viene determinata con la formula:

$$f_c(t) = f_{ck} \times e^{0{,}25 \times \left[1 - \left(\frac{28}{t}\right)^{0{,}5}\right]}.$$

Si ottengono i seguenti diagrammi di fluage e ritiro:



CREEP (FLUAGE)



SHRINKAGE (RITIRO)

5 COMBINAZIONI DI CARICO

I coefficienti moltiplicativi delle singole azioni sono riassunti nelle tabelle seguenti, per le condizioni di carico statiche e sismiche.
Nelle seguenti tabelle i carichi permanenti (pesi e finiture) non appaiono esplicitamente in combinazione perché il loro contributo alle sollecitazioni deriva dagli schemi statici in fase costruttiva (diversi che nella fase di esercizio) e sono quindi accumulati nei "Dead Load" e "Erection Load 1".

Le combinazioni di carico "GEN" (generali) sono utilizzate per le reazioni, gli appoggi e comunque tutto ciò che non è di acciaio e/o composto acciaio/cls.
Le combinazioni di carico "ST" sono viceversa utilizzate per le strutture in acciaio e/o acciaio/cls.
Ogni combinazione di verifica viene generata in rispetto dei par. 2.5.3, 5.1.3.12 e 7.3.5 delle NTC 2008; segue una descrizione dettagliata di esempio.

Combinazione: "ST SLU Mobili": combinazione di verifica strutturale allo SLU in cui i "Carichi Mobili" sono il carico variabile dominante mentre gli altri (Vento, Frenamento, Termici) sono assunti attraverso i coefficienti di combinazione ψ_0.
Preliminarmente per i carichi variabili che possono avere segno opposto si generano le combinazioni "negative" che vengono poi inviluppate in modo da ottenere i massimi e i minimi.

1) "Termico unif. -15°": combinazione: "Termico unif. +15°" x (-1)
2) "Termico diff. -5°/H": combinazione: "Termico diff. +5°/H" x (-1)
6) "Termico unif. INV": inviluppo delle comb. "Termico unif. +15°" e "Termico unif. -15°"
7) "Termico diff. INV": inviluppo delle comb. "Termico diff. +5°/H" e "Termico diff. -5°/H"

Analogamente si inviluppano le comndizioni dei carichi mobili disposti "a sinistra" e "a destra":
11) "Mobili SLU INV": inviluppo delle comb. "Mobili SLU Dx" e "Mobili SLU Sx"

La generazione della combinazione di cui sopra comprende quindi la somma dei seguenti casi di carico (riferimento alle tabelle NTC 2008):
- "Dead Load" x 1.35: pesi strutturali permanenti (tab. 5.1.V)
- "Erection Load 1" x 1.5: peso finiture (permanenti non strutturali), (tab. 5.1.V)
- "Creep secondary" x 1.2: parte reale (iperstatica) dell'effetto del fluage della soletta in cls. (tab. 5.1.V)
- "Shrinkage secondary" x 1.2: parte reale (iperstatica) del ritiro della soletta in cls. (tab. 5.1.V)
- "Mobili SLU INV" x 1.35: inviluppo carichi mobili; carico variabile dominante (tab. 5.1.V)
- "Vento strutture" x (1.5 x 0.6) = 0.9: carico variabile (tab. 5.1.V e tab. 5.1.VI)
- "Vento Mobili" x (1.5 x 0.6) = 0.9: carico variabile(tab. 5.1.V e tab. 5.1.VI)
- "Termico unif. INV" x (1.2 x 0.6) = 0.72: carico variabile (tab. 5.1.V e tab. 5.1.VI)
- "Termico diff. INV" x (1.2 x 0.6) = 0.72: carico variabile (tab. 5.1.V e tab. 5.1.VI)

La combinazione così composta è di tipo "Strength/Stress", utilizzata per le verifiche allo SLU; le altre combinazioni dello stesso tipo sono ottenute per rotazione del carico variabile dominante.

CAVALCAVIA STRADA VICINALE DELLE COSTE - COMBINAZIONI DI CARICO - GENERALE

NUMERO COMBINAZIONE	NOME COMBINAZIONE	Active/Inactive	Add/Envelope/ABS/SRSS	Peso acciaio	Peso soletta	Finiture	Vento Strutture (Y+)	Vento Mobili (Y+)	Frenamento (X+)	Termico unif. +15°	Termico diff. +5°/H	SLD long X+	SLD trasv Y+	SLD vert Z+	SLV long X+	SLV trasv Y+	SLV vert Z+	SLC long X+	SLC trasv Y+	SLC vert Z+	Mobili SLU-DX	Mobili SLU-SX	Mobili SLE-DX	Mobili SLE-SX	Fatica VITA ILL:	Fatica DANN.ACC.
			TIPO CARICO	ST	ST	ST	ST	ST	ST	ST	ST	RS	RS	RS	RS	RS	RS	RS	RS	RS	MV	MV	MV	MV	MV	MV
1	Vento Strutture (Y-)	Inactive	Add				-1																			
2	Vento Mobili (Y-)	Inactive	Add					-1																		
3	Frenamento (X-)	Inactive	Add						-1																	
4	Termico unif. -15°	Inactive	Add							-1																
5	Termico diff. -5°/H	Inactive	Add								-1															
6	SLD Long (X-)	Inactive	Add									-1														
7	SLD Trasv (Y-)	Inactive	Add										-1													
8	SLD Vert (Z-)	Inactive	Add											-1												
9	SLV Long (X-)	Inactive	Add												-1											
10	SLV Trasv (Y-)	Inactive	Add													-1										
11	SLV Vert (Z-)	Inactive	Add														-1									
12	SLC Long (X-)	Inactive	Add															-1								
13	SLC Trasv (Y-)	Inactive	Add																-1							
14	SLC Vert (Z-)	Inactive	Add																	-1						
15	Vento Strutture INV	Inactive	Envelope				1																			
16	Vento Mobili INV	Inactive	Envelope					1																		
17	Frenamento INV	Inactive	Envelope						1																	
18	Termico unif. INV	Inactive	Envelope							1																
19	Termico diff. INV	Inactive	Envelope								1															
20	SLD Long INV	Inactive	Envelope									1														
21	SLD Trasv INV	Inactive	Envelope										1													
22	SLD Vert INV	Inactive	Envelope											1												
23	SLV Long INV	Inactive	Envelope												1											
24	SLV Trasv INV	Inactive	Envelope													1										
25	SLV Vert INV	Inactive	Envelope														1									
26	SLC Long INV	Inactive	Envelope															1								
27	SLC Trasv INV	Inactive	Envelope																1							
28	SLC Vert INV	Inactive	Envelope																	1						
29	Mobili SLU INV	Inactive	Envelope																		1	1				
30	Mobili SLE INV	Inactive	Envelope																				1	1		
31	GEN SLU Mobili	Active	Add																							
32	GEN SLU Vento	Active	Add																							
33	GEN SLU Frenamento	Active	Add																							
34	GEN SLU Termico	Active	Add																							
35	GEN SLD Long	Active	Add																							
36	GEN SLD Trasv	Active	Add																							
37	GEN SLD Vert	Active	Add																							
38	GEN SLV Long	Active	Add																							
39	GEN SLV Trasv	Active	Add																							
40	GEN SLV Vert	Active	Add																							
41	GEN SLC Long	Active	Add																							
42	GEN SLC Trasv	Active	Add																							
43	GEN SLC Vert	Active	Add																							
44	GEN RARA Mobili	Active	Add																							
45	GEN RARA Vento	Active	Add																							
46	GEN RARA Frenam	Active	Add																							
47	GEN RARA Termico	Active	Add																							
48	GEN FREQ Mobili	Active	Add																							
49	GEN FREQ Vento	Active	Add																							
50	GEN FREQ Termico	Active	Add																							
51	GEN Q.P.	Active	Add																							

NUMERO COMBINAZIONE	NOME COMBINAZIONE	Dead Load	Erection Load 1	Erection Load 2	Erection Load 3	Tendon Primary	Tendon Secondary	Creep Primary	Creep Secondary	Shrinkage Primary	Shrinkage Secondary	Summation	Vento Strutture (Y-)	Vento Mobili (Y-)	Frenamento (X-)	Termico unif. -15°	Termico diff. -5°/H	SLD Long (X-)	SLD Trasv (Y-)	SLD Vert (Z-)	SLV Long (X-)	SLV Trasv (Y-)	SLV Vert (Z-)	SLC Long (X-)	SLC Trasv (Y-)	SLC Vert (Z-)
	TIPO CARICO	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CB	CB	CB	CB	CB	CB	CB	CB	CB	CB	CB	CB	CB	CB
1	Vento Strutture (Y-)																									
2	Vento Mobili (Y-)																									
3	Frenamento (X-)																									
4	Termico unif. -15°																									
5	Termico diff. -5°/H																									
6	SLD Long (X-)																									
7	SLD Trasv (Y-)																									
8	SLD Vert (Z-)																									
9	SLV Long (X-)																									
10	SLV Trasv (Y-)																									
11	SLV Vert (Z-)																									
12	SLC Long (X-)																									
13	SLC Trasv (Y-)																									
14	SLC Vert (Z-)																									
15	Vento Strutture INV												1													
16	Vento Mobili INV													1												
17	Frenamento INV														1											
18	Termico unif. INV															1										
19	Termico diff. INV																1									
20	SLD Long INV																	1								
21	SLD Trasv INV																		1							
22	SLD Vert INV																			1						
23	SLV Long INV																				1					
24	SLV Trasv INV																					1				
25	SLV Vert INV																						1			
26	SLC Long INV																							1		
27	SLC Trasv INV																								1	
28	SLC Vert INV																									1
29	Mobili SLU INV																									
30	Mobili SLE INV																									
31	GEN SLU Mobili	1.35	1.5						1.2		1.2															
32	GEN SLU Vento	1.35	1.5						1.2		1.2															
33	GEN SLU Frenamento	1.35	1.5						1.2		1.2															
34	GEN SLU Termico	1.35	1.5						1.2		1.2															
35	GEN SLD Long											1														
36	GEN SLD Trasv											1														
37	GEN SLD Vert											1														
38	GEN SLV Long											1														
39	GEN SLV Trasv											1														
40	GEN SLV Vert											1														
41	GEN SLC Long											1														
42	GEN SLC Trasv											1														
43	GEN SLC Vert											1														
44	GEN RARA Mobili											1														
45	GEN RARA Vento											1														
46	GEN RARA Frenam											1														
47	GEN RARA Termico											1														
48	GEN FREQ Mobili											1														
49	GEN FREQ Vento											1														
50	GEN FREQ Termico											1														
51	GEN Q.P.											1														

NUMERO COMBINAZIONE	NOME COMBINAZIONE	Vento Strutture INV	Vento Mobili INV	Frenamento INV	Termico unif. INV	Termico diff. INV	SLD Long INV	SLD Trasv INV	SLD Vert INV	SLV Long INV	SLV Trasv INV	SLV Vert INV	SLC Long INV	SLC Trasv INV	SLC Vert INV	Mobili SLU INV	Mobili SLE INV
	TIPO CARICO	CB	CB	CB	CB	CB	CB	CB	CB	CB	CB	CB	CB	CB	CB	CB	CB
1	Vento Strutture (Y-)																
2	Vento Mobili (Y-)																
3	Frenamento (X-)																
4	Termico unif. -15°																
5	Termico diff. -5°/H																
6	SLD Long (X-)																
7	SLD Trasv (Y-)																
8	SLD Vert (Z-)																
9	SLV Long (X-)																
10	SLV Trasv (Y-)																
11	SLV Vert (Z-)																
12	SLC Long (X-)																
13	SLC Trasv (Y-)																
14	SLC Vert (Z-)																
15	Vento Strutture INV																
16	Vento Mobili INV																
17	Frenamento INV																
18	Termico unif. INV																
19	Termico diff. INV																
20	SLD Long INV																
21	SLD Trasv INV																
22	SLD Vert INV																
23	SLV Long INV																
24	SLV Trasv INV																
25	SLV Vert INV																
26	SLC Long INV																
27	SLC Trasv INV																
28	SLC Vert INV																
29	Mobili SLU INV																
30	Mobili SLE INV																
31	GEN SLU Mobili	0.9	0.9		0.72	0.72										1.35	
32	GEN SLU Vento	1.5	1.5		0.72	0.72											1.35
33	GEN SLU Frenamento			1.35	0.72	0.72											1.35
34	GEN SLU Termico	0.9	0.9		1.2	1.2											1.35
35	GEN SLD Long				0.5	0.5	1	0.3	0.3								
36	GEN SLD Trasv				0.5	0.5	0.3	1	0.3								
37	GEN SLD Vert				0.5	0.5	0.3	0.3	1								
38	GEN SLV Long				0.5	0.5				1	0.3	0.3					
39	GEN SLV Trasv				0.5	0.5				0.3	1	0.3					
40	GEN SLV Vert				0.5	0.5				0.3	0.3	1					
41	GEN SLC Long				0.5	0.5							1	0.3	0.3		
42	GEN SLC Trasv				0.5	0.5							0.3	1	0.3		
43	GEN SLC Vert				0.5	0.5							0.3	0.3	1		
44	GEN RARA Mobili	0.6	0.6		0.6	0.6										1	
45	GEN RARA Vento	1	1		0.6	0.6											1
46	GEN RARA Frenam			1	0.6	0.6											1
47	GEN RARA Termico	0.6	0.6		1	1											1
48	GEN FREQ Mobili				0.5	0.5											1
49	GEN FREQ Vento	0.2	0.2		0.5	0.5											
50	GEN FREQ Termico				0.6	0.6											
51	GEN Q.P.				0.5	0.5											

LEGENDA CARICHI:

ST:	CARICHI STATICI PERMANENTI (FASE FINALE)
ST:	CARICHI STATICI VARIABILI
RS:	CARICHI SISMICI DA ANALISI MODALE CON SPETTRO DI RISPOSTA (CQC)
TH:	CARICHI SISMICI DA ANALISI DINAMICA NON LINEARE (Time History)
MV:	CARICHI MOBILI (RICERCA MASSIMI E MINIMI)
SM:	CEDIMENTI VINCOLARI (RICERCA MASSIMI E MINIMI)
CS	CARICHI STATICI PERMANENTI (FASI COSTRUTTIVE)
CB:	COMBINAZIONI DI CARICHI INTERMEDIE:
CB:	COMBINAZIONI DI CARICHI FINALI DI VERIFICA:

Inactive: Combinazioni intermedie non visualizzate
Active: Combinazioni finali visualizzate

Add: Somma di carichi con coefficienti moltiplicativi dati
Envelope: Inviluppo di carichi (massimi e minimi)

CAVALCAVIA STRADA VICINALE DELLE COSTE - COMBINAZIONI DI CARICO - ACCIAIO/SEZIONI COMPOSTE - IMPALCATO

			TIPO CARICO	ST	ST	ST	ST	ST	ST	ST	ST	RS	RS	RS	RS	RS	RS	RS	RS	RS
NUMERO COMBINAZIONE	NOME COMBINAZIONE	Strength/Stress /Serviceability	Add/Envelope	Peso acciaio e pile	Peso soletta	Finiture	Vento Strutture (Y+)	Vento Mobili (Y+)	Frenamento (X+)	Termico unif. +15°	Termico diff. +5°/H	SLD long X+	SLD trasv Y+	SLD vert Z+	SLV long X+	SLV trasv Y+	SLV vert Z+	SLC long X+	SLC trasv Y+	SLC vert Z+
1	Vento Strutture (Y-)	Inactive	Add				-1													
2	Vento Mobili (Y-)	Inactive	Add					-1												
3	Frenamento (X-)	Inactive	Add						-1											
4	Termico unif. -15°	Inactive	Add							-1										
5	Termico diff. -5°/H	Inactive	Add								-1									
6	SLV Long (X-)	Inactive	Add												-1					
7	SLV Trasv (Y-)	Inactive	Add													-1				
8	SLV Vert (Z-)	Inactive	Add														-1			
9	Vento Strutture INV	Inactive	Envelope				1													
10	Vento Mobili INV	Inactive	Envelope					1												
11	Frenamento INV	Inactive	Envelope						1											
12	Termico unif. INV	Inactive	Envelope							1										
13	Termico diff. INV	Inactive	Envelope								1									
14	SLV Long INV	Inactive	Envelope												1					
15	SLV Trasv INV	Inactive	Envelope													1				
16	SLV Vert INV	Inactive	Envelope														1			
17	Mobili SLU INV	Inactive	Envelope																	
18	Mobili SLE INV	Inactive	Envelope																	
19	ST SLU Mobili	Strength/Stress	Add																	
20	ST SLU Vento	Strength/Stress	Add																	
21	ST SLU Frenamento	Strength/Stress	Add																	
22	ST SLU Termico	Strength/Stress	Add																	
23	ST SLV Long	Strength/Stress	Add																	
24	ST SLV Trasv	Strength/Stress	Add																	
25	ST SLV Vert	Strength/Stress	Add																	
26	ST FATICA VITA ILL.	Inactive	Add																	
27	ST FATICA DANN.ACC.	Inactive	Add																	
28	ST RARA Mobili	Serviceability	Add																	
29	ST RARA Vento	Serviceability	Add																	
30	ST RARA Frenamento	Serviceability	Add																	
31	ST RARA Termico	Serviceability	Add																	
32	ST FREQ Mobili	Serviceability	Add																	
33	ST FREQ Vento	Serviceability	Add																	
34	ST FREQ Termico	Serviceability	Add																	
35	ST Q.P.	Serviceability	Add																	

	TIPO CARICO	MV	MV	MV	MV	MV	MV	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS
NUMERO COMBINAZIONE	NOME COMBINAZIONE	Mobili SLU-DX	Mobili SLU-SX	Mobili SLE-DX	Mobili SLE-SX	Fatica VITA ILL:	Fatica DANN.ACC.	Dead Load	Erection Load 1	Erection Load 2	Erection Load 3	Tendon Primary	Tendon Secondary	Creep Primary	Creep Secondary	Shrinkage Primary	Shrinkage Secondary	Summation
1	Vento Strutture (Y-)																	
2	Vento Mobili (Y-)																	
3	Frenamento (X-)																	
4	Termico unif. -15°																	
5	Termico diff. -5°/H																	
6	SLV Long (X-)																	
7	SLV Trasv (Y-)																	
8	SLV Vert (Z-)																	
9	Vento Strutture INV																	
10	Vento Mobili INV																	
11	Frenamento INV																	
12	Termico unif. INV																	
13	Termico diff. INV																	
14	SLV Long INV																	
15	SLV Trasv INV																	
16	SLV Vert INV																	
17	Mobili SLU INV	1	1															
18	Mobili SLE INV			1	1													
19	ST SLU Mobili							1.35	1.5						1.2		1.2	
20	ST SLU Vento							1.35	1.5						1.2		1.2	
21	ST SLU Frenamento							1.35	1.5						1.2		1.2	
22	ST SLU Termico							1.35	1.5						1.2		1.2	
23	ST SLV Long																	1
24	ST SLV Trasv																	1
25	ST SLV Vert																	1
26	ST FATICA VITA ILL.					1												1
27	ST FATICA DANN.ACC.						1											1
28	ST RARA Mobili																	1
29	ST RARA Vento																	1
30	ST RARA Frenamento																	1
31	ST RARA Termico																	1
32	ST FREQ Mobili																	1
33	ST FREQ Vento																	1
34	ST FREQ Termico																	1
35	ST Q.P.																	1

	TIPO CARICO	CB	CB	CB	CB	CB	CB	CB	CB	CB	CB	CB	CB	CB	CB	CB	CB	CB	CB
NUMERO COMBINAZIONE	NOME COMBINAZIONE	Vento Strutture (Y-)	Vento Mobili (Y-)	Frenamento (X-)	Termico unif. -15°	Termico diff. -5°/H	SLV Long (X-)	SLV Trasv (Y-)	SLV Vert (Z-)	Vento Strutture INV	Vento Mobili INV	Frenamento INV	Termico unif. INV	Termico diff. INV	SLV Long INV	SLV Trasv INV	SLV Vert INV	Mobili SLU INV	Mobili SLE INV
1	Vento Strutture (Y-)																		
2	Vento Mobili (Y-)																		
3	Frenamento (X-)																		
4	Termico unif. -15°																		
5	Termico diff. -5°/H																		
6	SLV Long (X-)																		
7	SLV Trasv (Y-)																		
8	SLV Vert (Z-)																		
9	Vento Strutture INV	1																	
10	Vento Mobili INV		1																
11	Frenamento INV			1															
12	Termico unif. INV				1														
13	Termico diff. INV					1													
14	SLV Long INV						1												
15	SLV Trasv INV							1											
16	SLV Vert INV								1										
17	Mobili SLU INV																		
18	Mobili SLE INV																		
19	ST SLU Mobili									0.9	0.9		0.72	0.72				1.35	
20	ST SLU Vento									1.5	1.5		0.72	0.72					1.35
21	ST SLU Frenamento											1.35	0.72	0.72					1.35
22	ST SLU Termico									0.9	0.9		1.2	1.2					1.35
23	ST SLV Long												0.5	0.5	1	0.3	0.3		
24	ST SLV Trasv												0.5	0.5	0.3	1	0.3		
25	ST SLV Vert												0.5	0.5	0.3	0.3	1		
26	ST FATICA VITA ILL.																		
27	ST FATICA DANN.ACC.																		
28	ST RARA Mobili									0.6	0.6		0.6	0.6				1	
29	ST RARA Vento									1	1		0.6	0.6					1
30	ST RARA Frenamento											1	0.6	0.6					1
31	ST RARA Termico									0.6	0.6		1	1					1
32	ST FREQ Mobili												0.5	0.5					1
33	ST FREQ Vento									0.2	0.2		0.5	0.5					
34	ST FREQ Termico												0.6	0.6					
35	ST Q.P.												0.5	0.5					

LEGENDA CARICHI:		
	ST:	CARICHI STATICI PERMANENTI (FASE FINALE)
	ST:	CARICHI STATICI VARIABILI
	RS:	CARICHI SISMICI DA ANALISI MODALE CON SPETTRO DI RISPOSTA (CQC)
	TH:	CARICHI SISMICI DA ANALISI DINAMICA NON LINEARE (Time History)
	MV:	CARICHI MOBILI (RICERCA MASSIMI E MINIMI)
	SM:	CEDIMENTI VINCOLARI (RICERCA MASSIMI E MINIMI)
	CS	CARICHI STATICI PERMANENTI (FASI COSTRUTTIVE)
	CB:	COMBINAZIONI DI CARICHI INTERMEDIE
	CB:	COMBINAZIONI DI CARICHI FINALI DI VERIFICA

Inactive: Combinazioni intermedie non visualizzate
Strength/Stress: Combinazioni per verifiche allo stato limite ultimo
Serviceability: Combinazioni per verifiche allo stato limite di esercizio (rare/frequenti/quasi permanenti)

Add: Somma di carichi con coefficienti moltiplicativi dati
Envelope: Inviluppo di carichi (massimi e minimi)

6 CALCOLO DELLE SOLLECITAZIONI

Le travi composte acciaio-calcestruzzo vengono analizzate dal programma secondo le fasi di costruzione (construction stage):

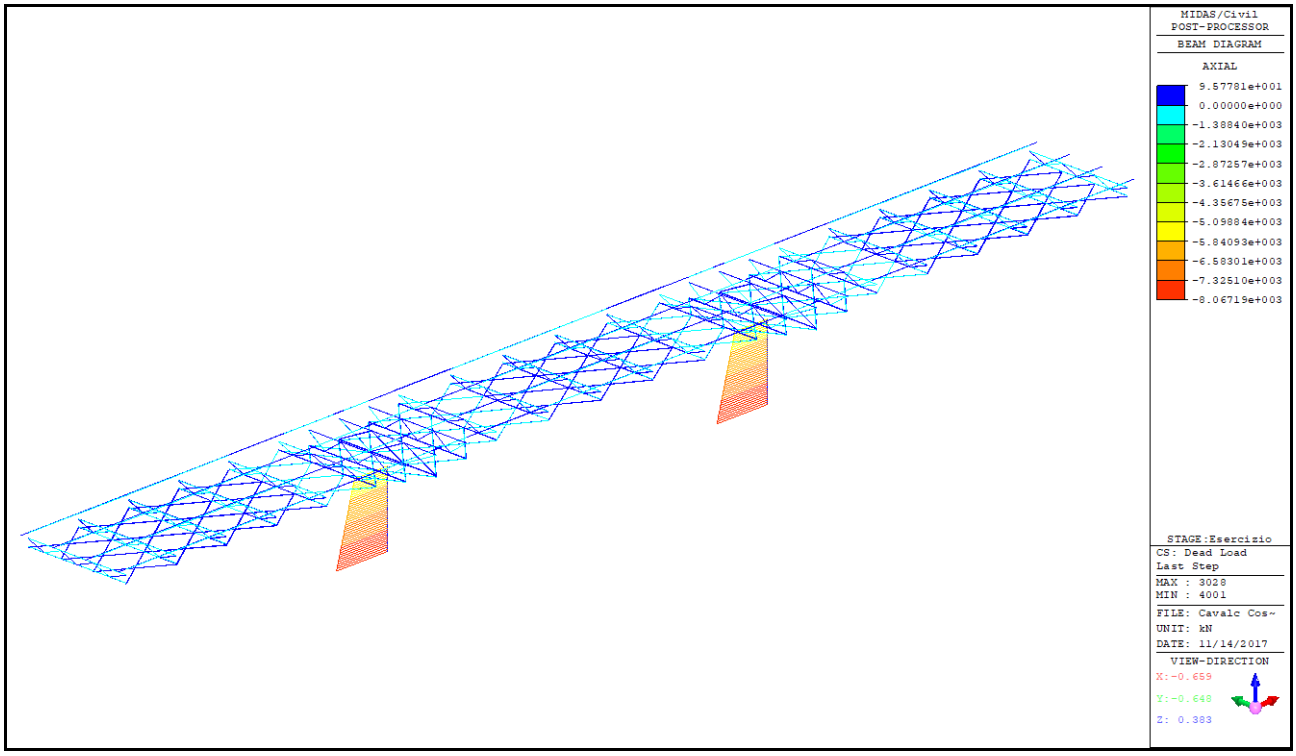
- fase 1: corrisponde alla fase costruttiva fino al getto della soletta (30 giorni):
  - sezione reagente: trave di acciaio (soletta non reagente)
  - carichi applicati: peso strutture acciaio e peso soletta
- fase 2: corrisponde a una fase costruttiva di lunga durata (10000 giorni) in cui la soletta ha caratteristiche elastiche variabili nel tempo e si tiene conto dei fenomeni di interazione lenti di ritiro e fluage, valutati secondo gli schemi EN 1992-2:
  - sezione reagente: trave di acciaio e soletta (con modulo variabile)
  - carichi applicati: finiture, ritiro, fluage della soletta
- fase 3: corrisponde alla fase di esercizio:
  - sezione reagente: trave acciaio + soletta (modulo costante)
  - carichi applicati: carichi di esercizio (vento, carichi mobili, termici, frenamento, sisma)

Si è assunta un'accelerazione gravitazionale pari a g = 9,806 m/s^2.

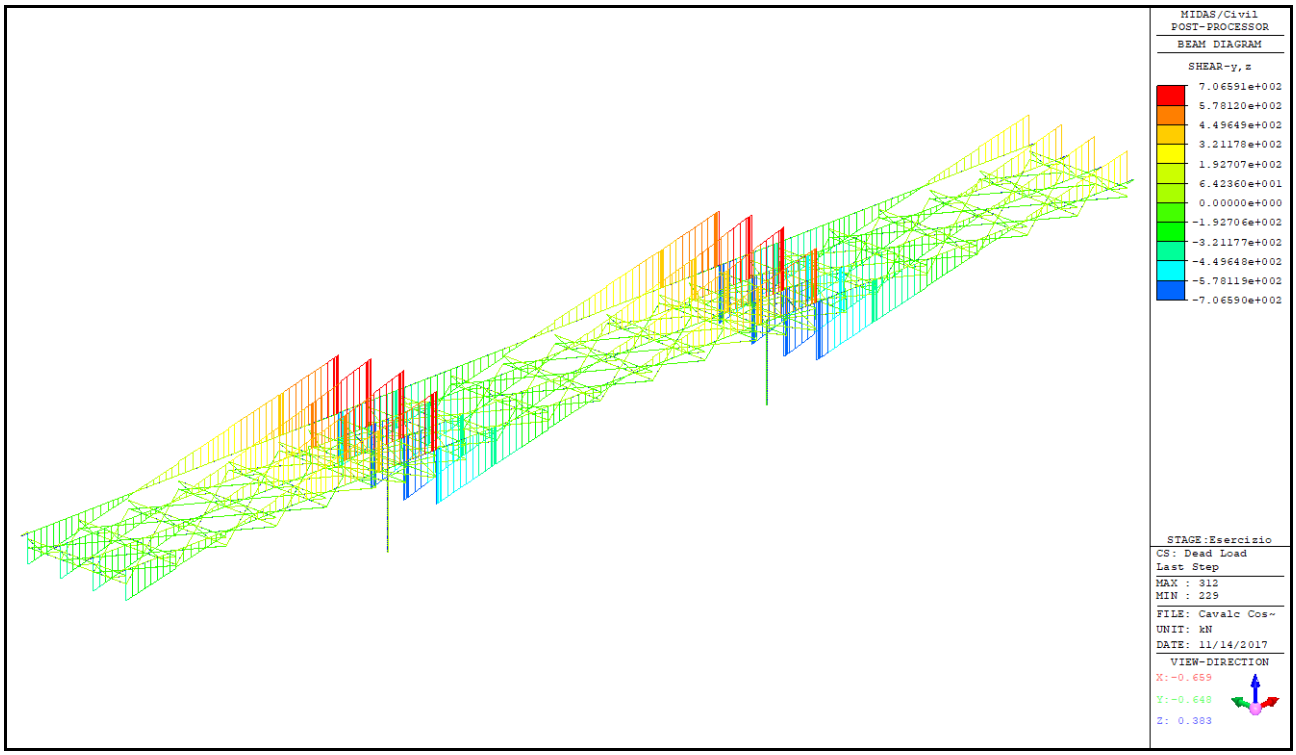
Le unità di misura utilizzate sono coerenti con il Sistema Internazionale:

lunghezze:	m	(metri)
masse:	t	(tonnellate)
forze	kN	(kilo-Newton)

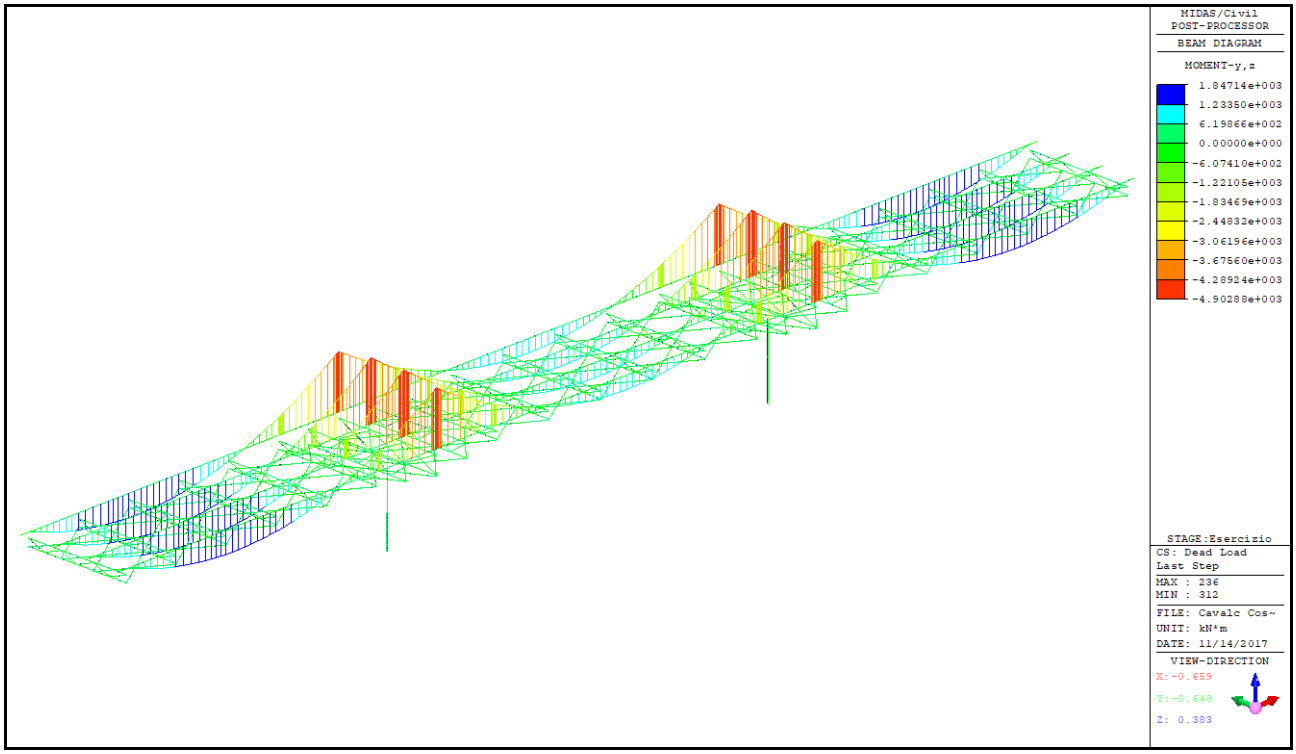
Seguono diagrammi delle azioni calcolate sulle travi composte dell'impalcato e le pile per le singole condizioni di carico (variabili inviluppati ±).



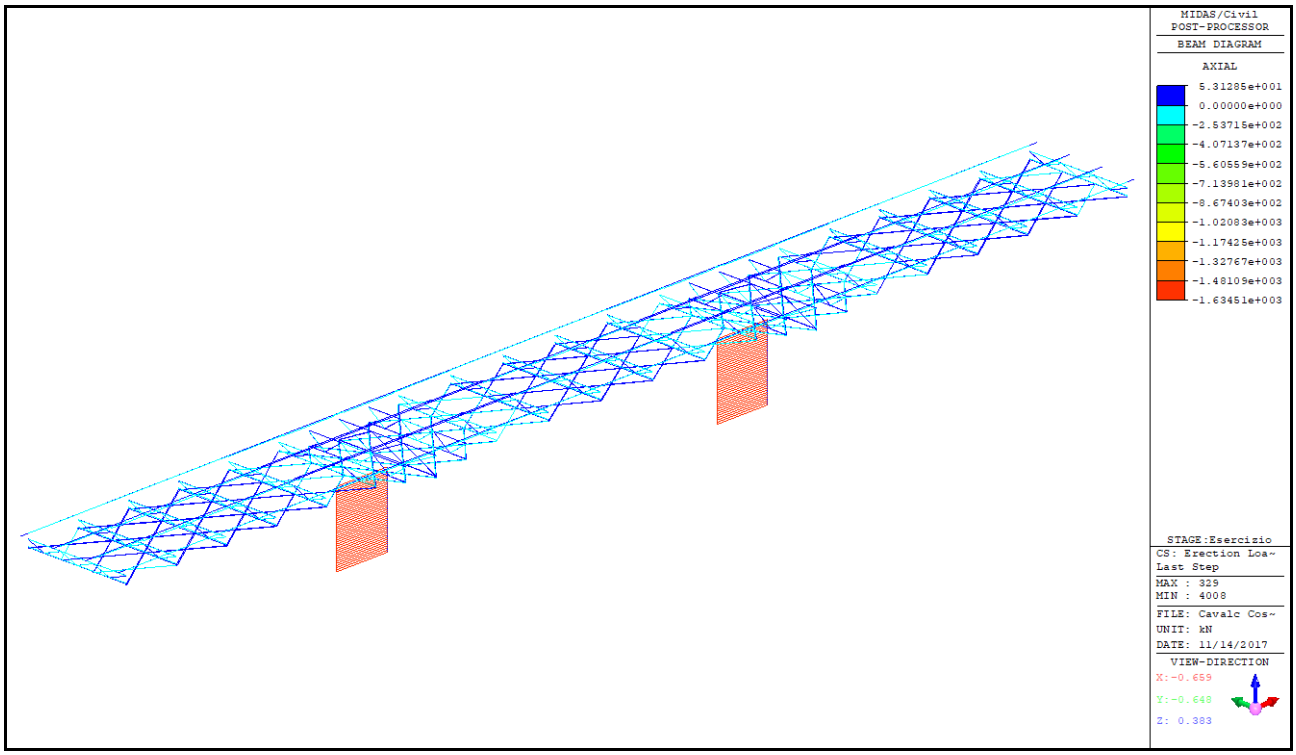
Peso travi e soletta (dead loads) - Diagramma sforzi assiali



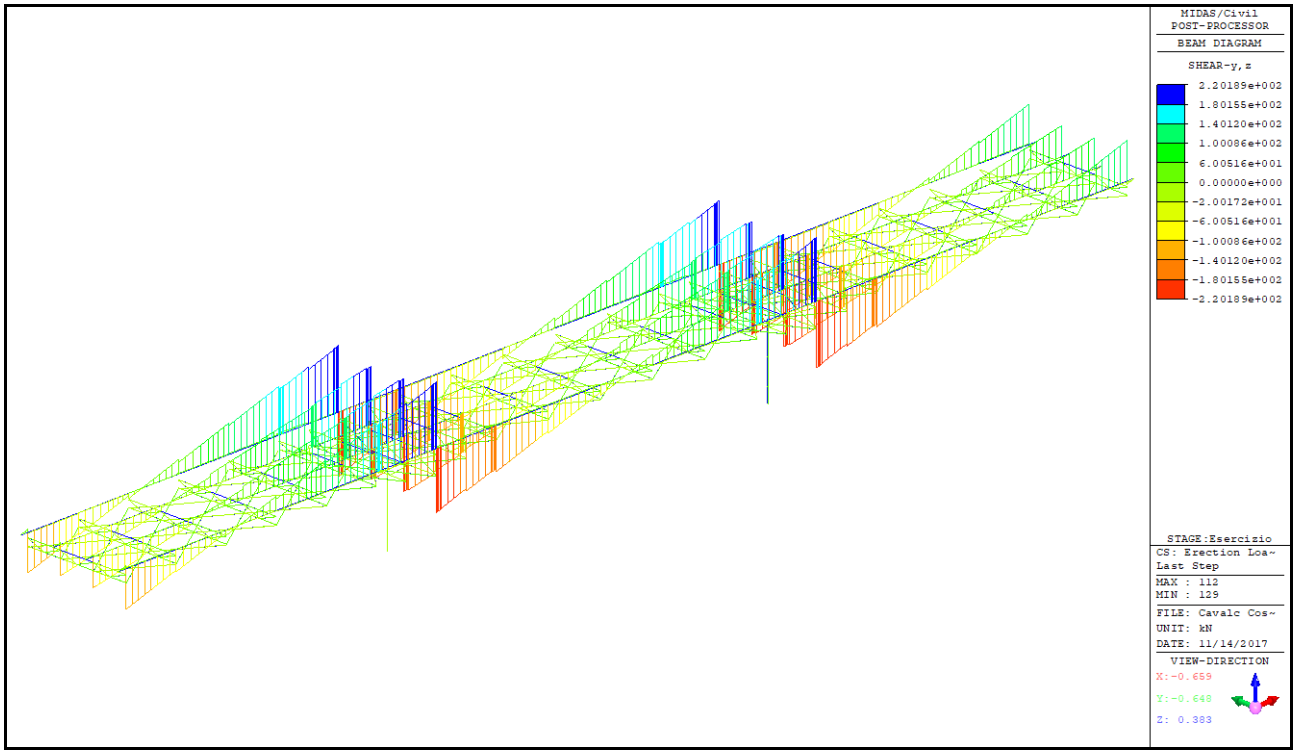
Peso travi e soletta (dead loads)- Diagramma sforzi taglianti



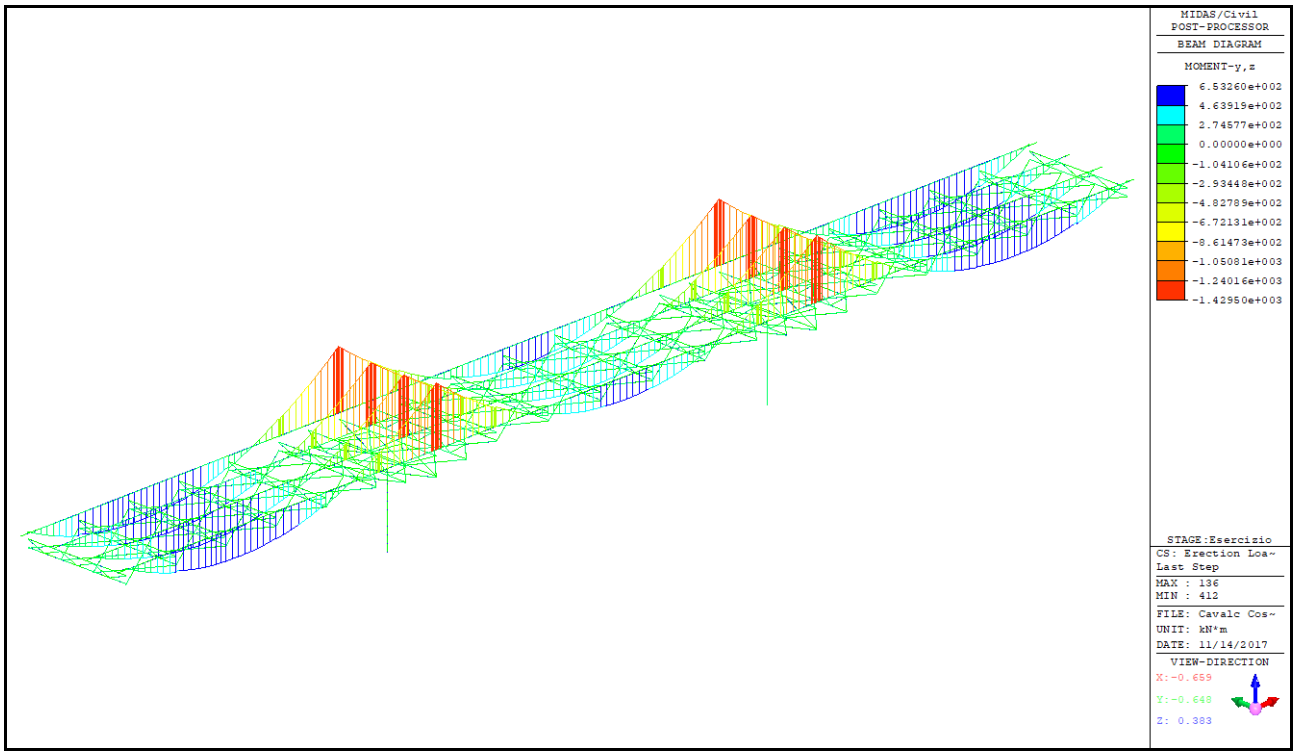
Peso travi e soletta (dead loads) - Diagramma momenti flettenti



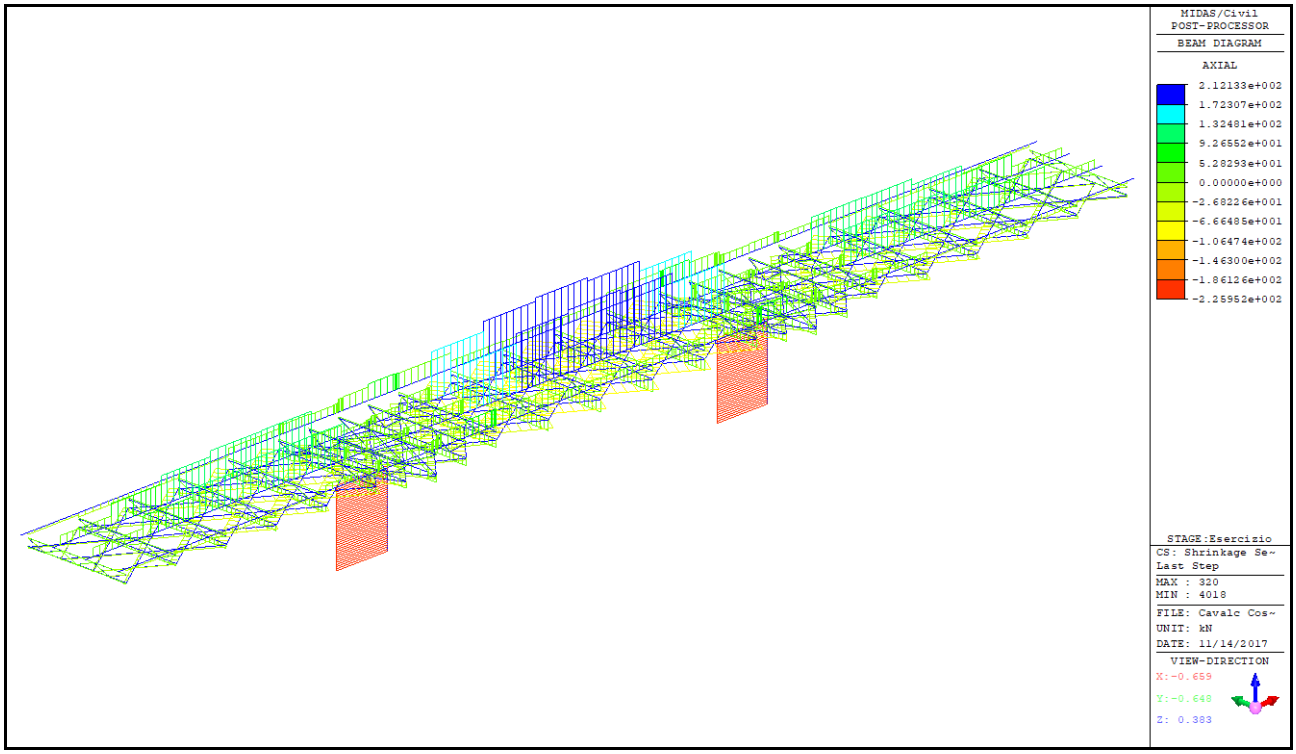
Finiture – Diagramma sforzi assiali



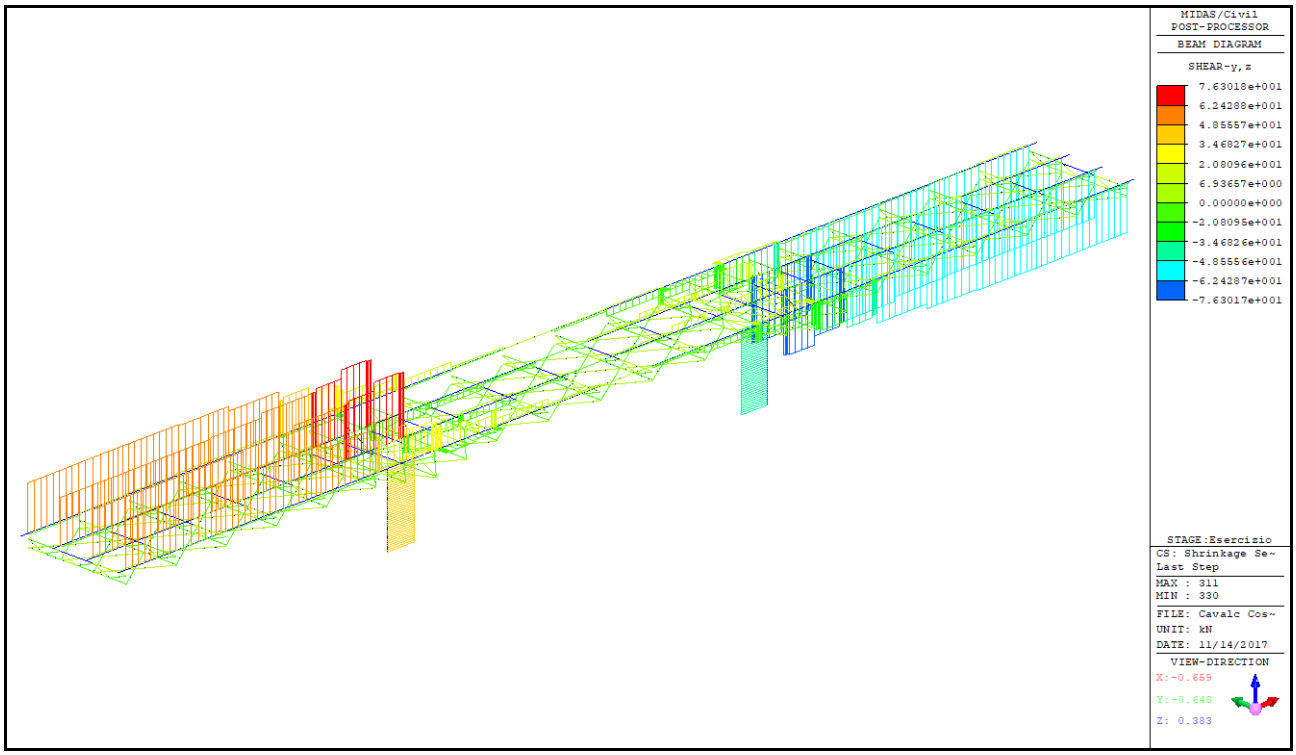
Finiture – Diagramma sforzi taglianti



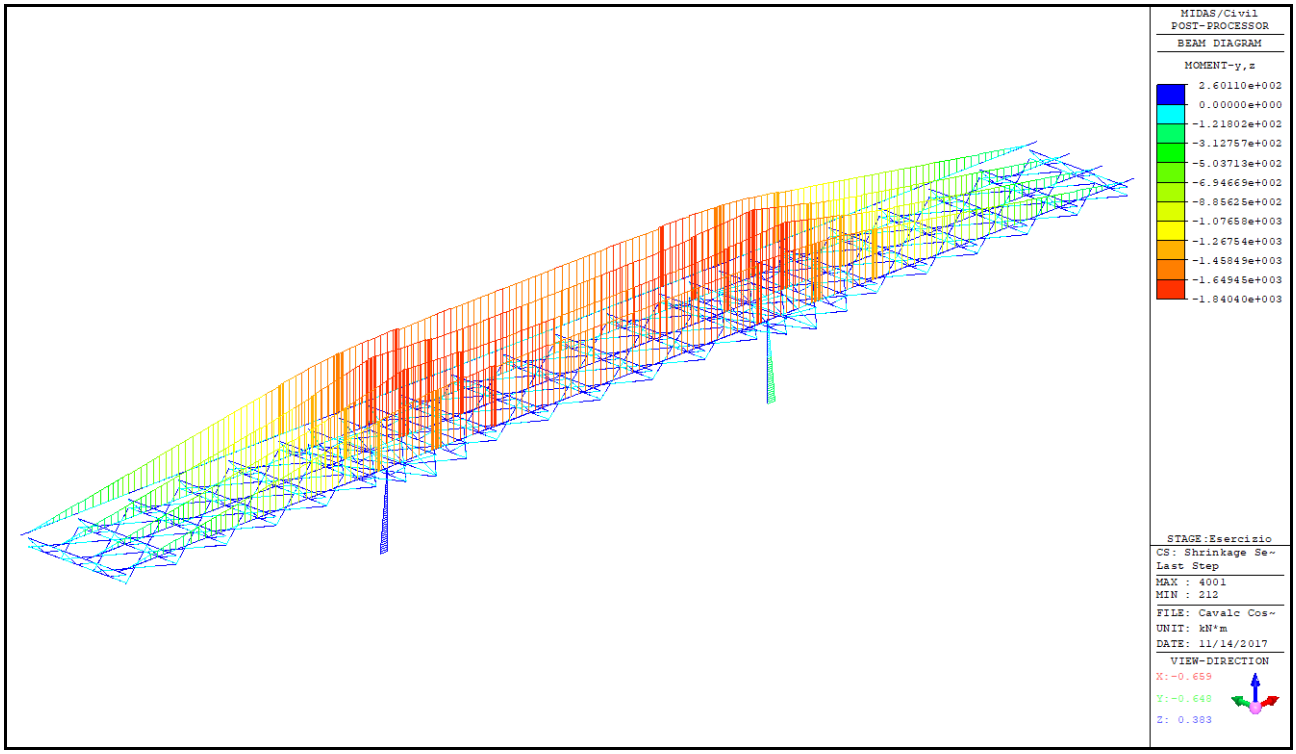
Finiture – Diagramma momenti flettenti



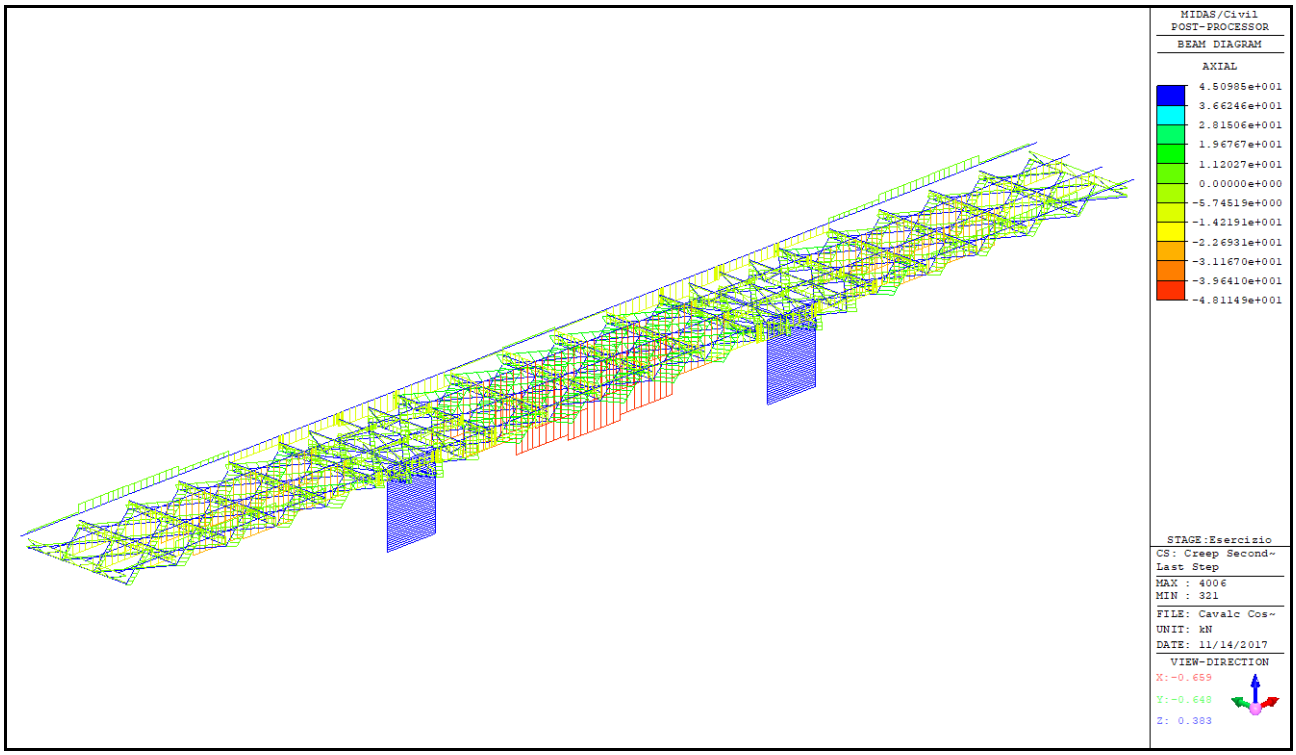
Ritiro soletta - Diagramma sforzi assiali



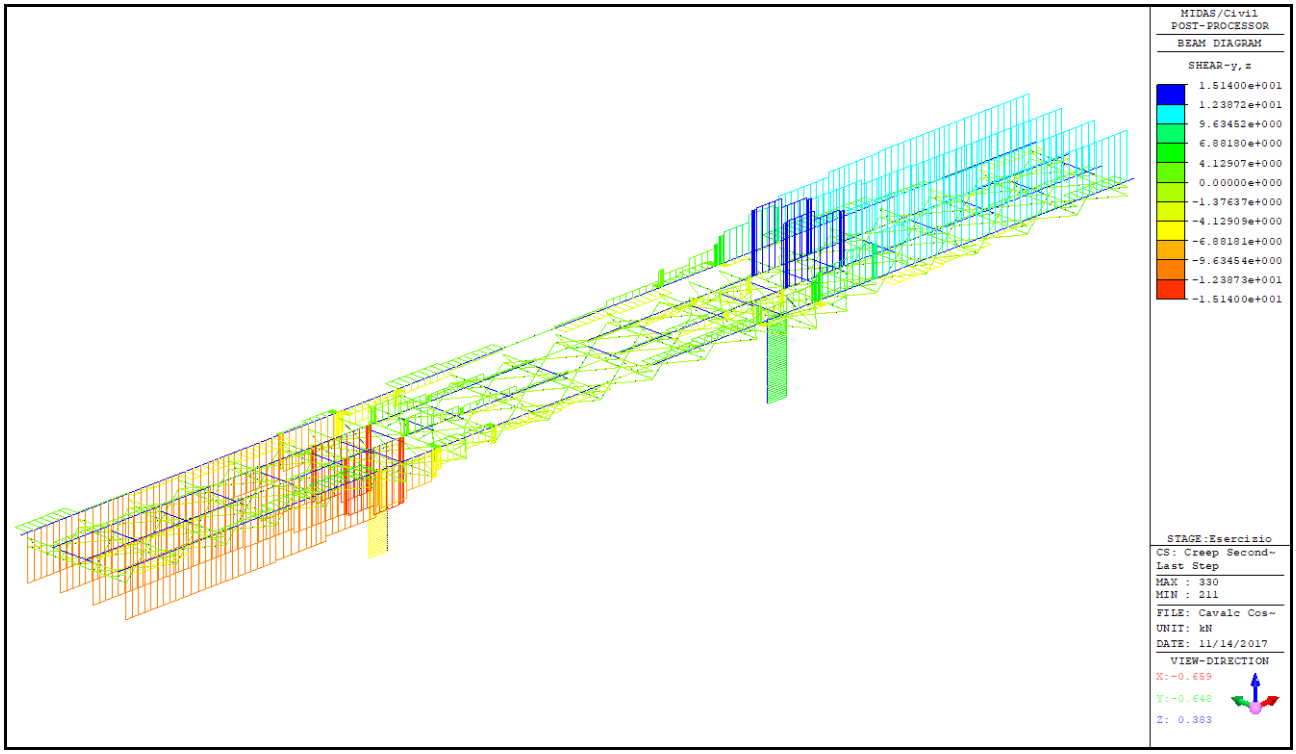
Ritiro soletta - Diagramma sforzi taglianti



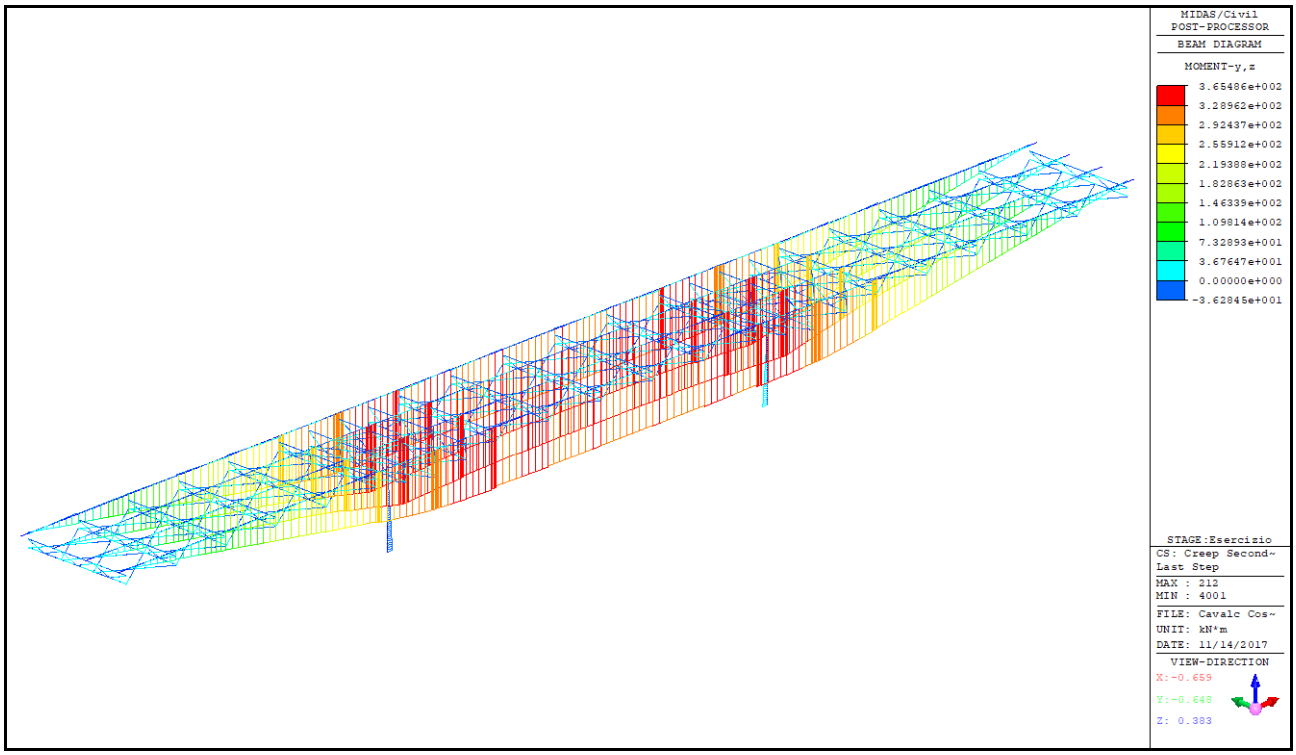
Ritiro soletta - Diagramma momenti flettenti



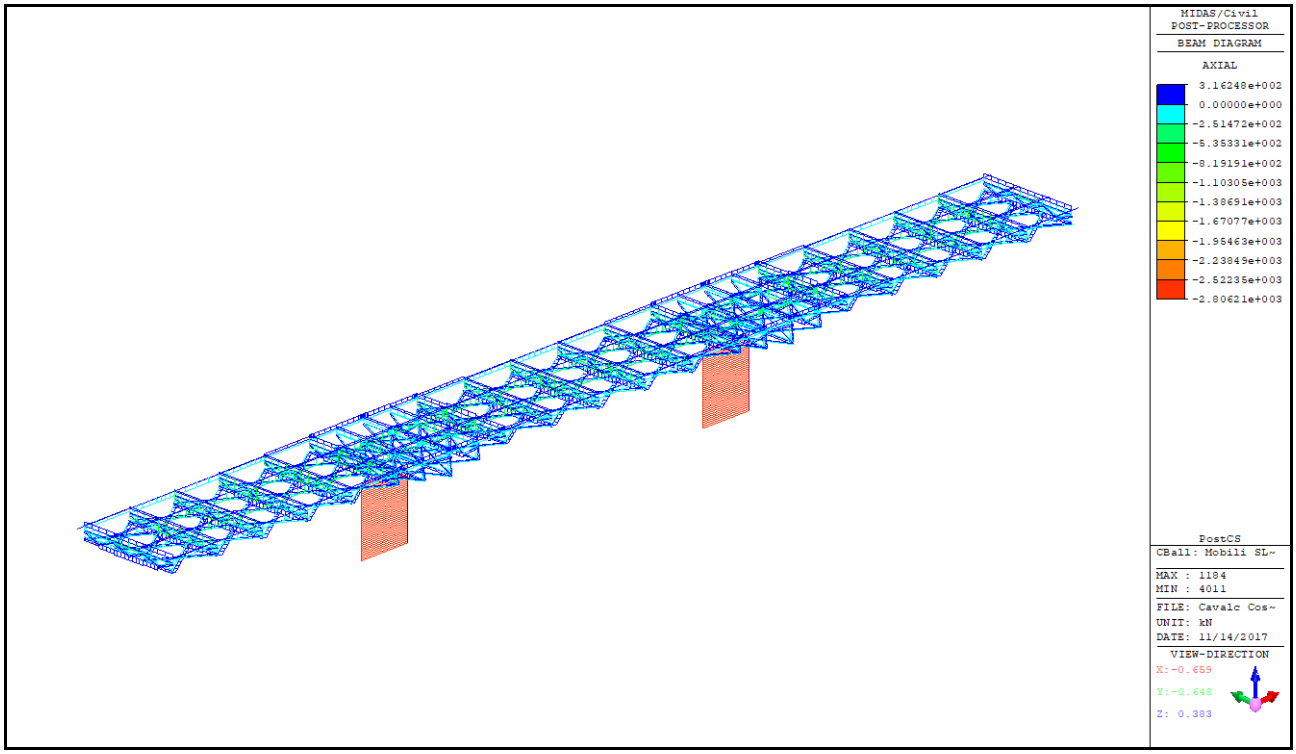
Fluage soletta - Diagramma sforzi assiali



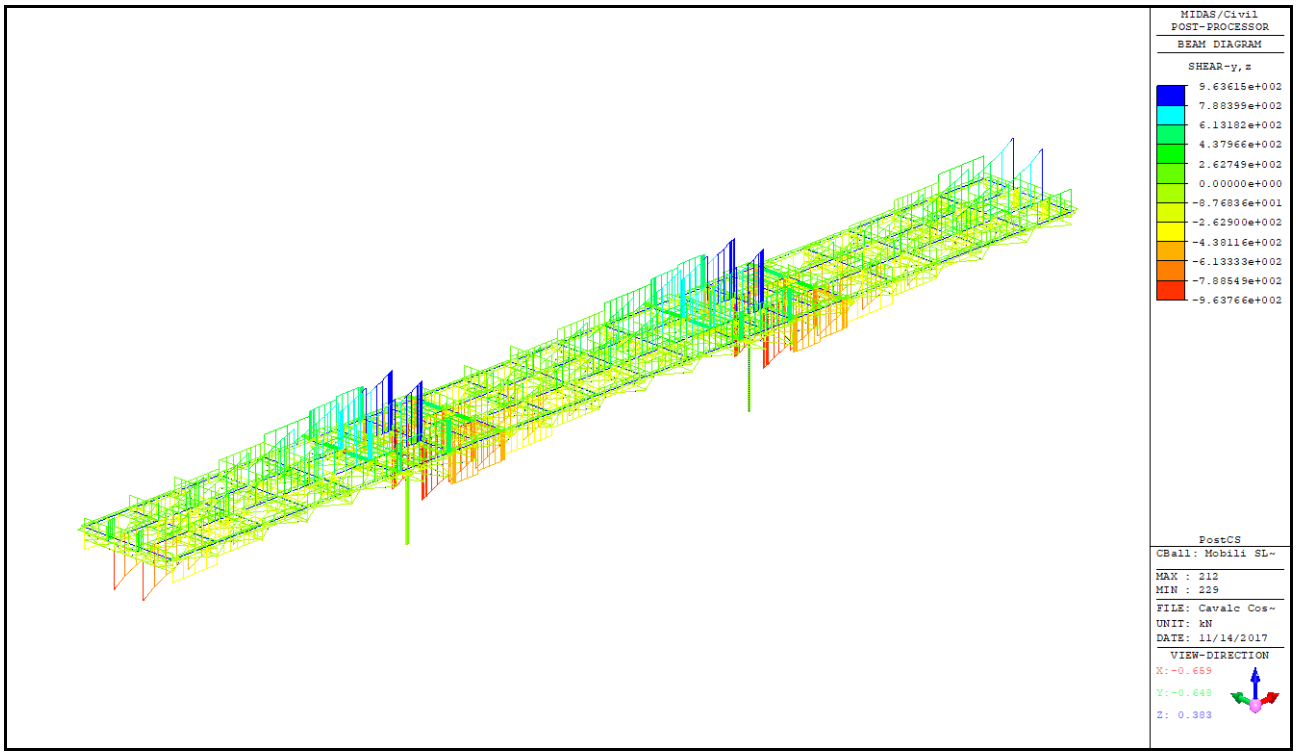
Fluage soletta - Diagramma sforzi taglianti



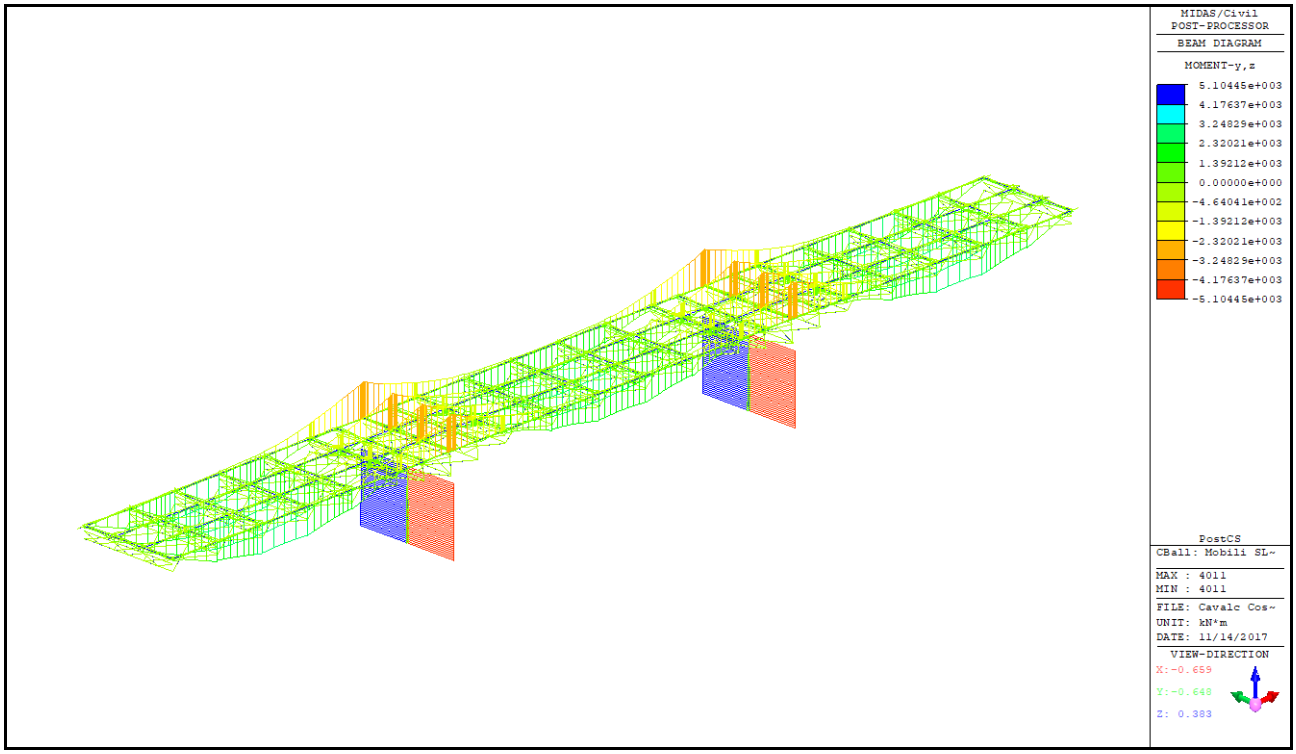
Fluage soletta - Diagramma momenti flettenti



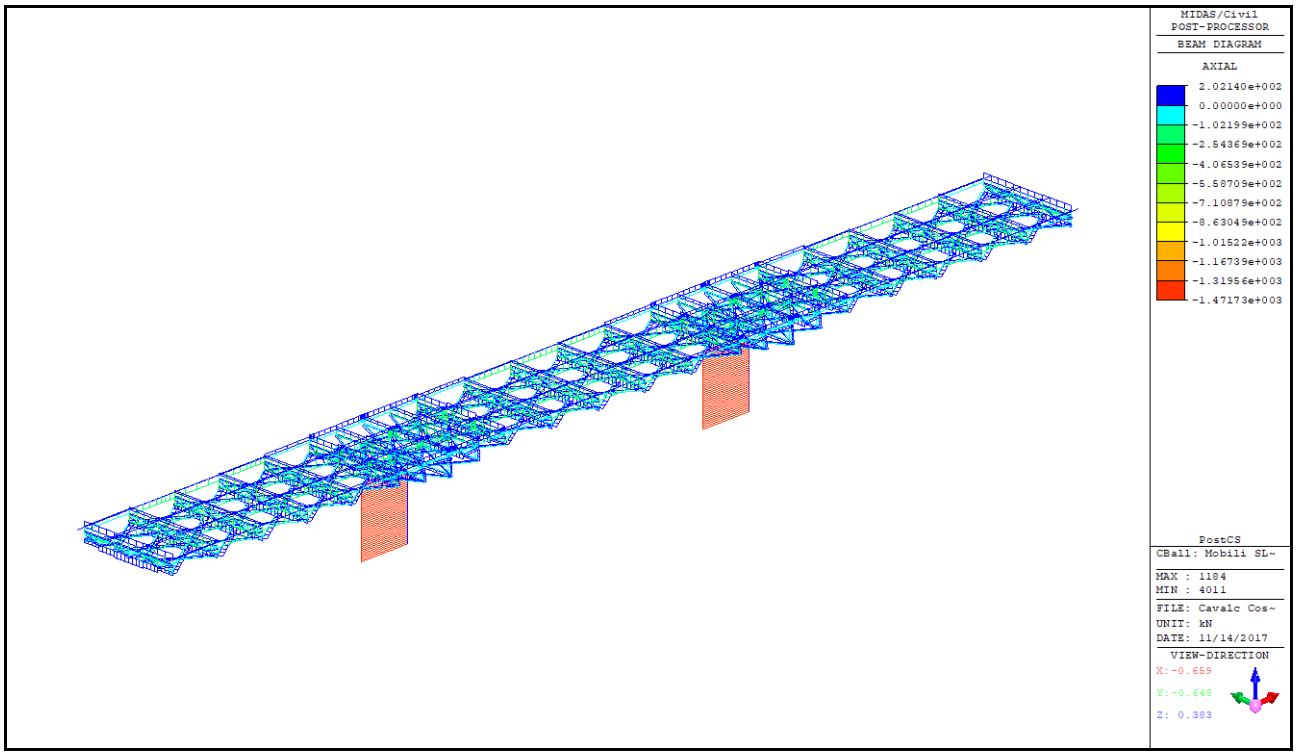
Inviluppo carichi mobili SLU - Diagramma sforzi assiali



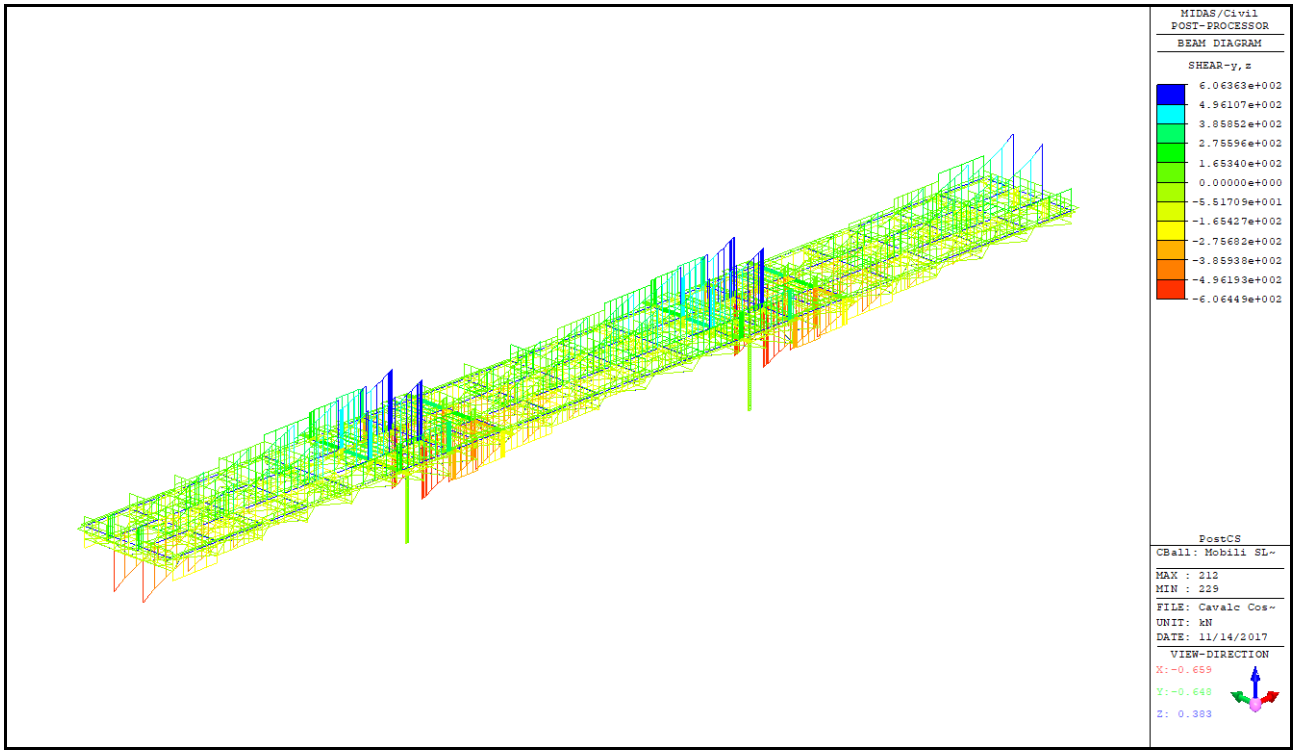
Inviluppo carichi mobili SLU - Diagramma sforzi taglianti



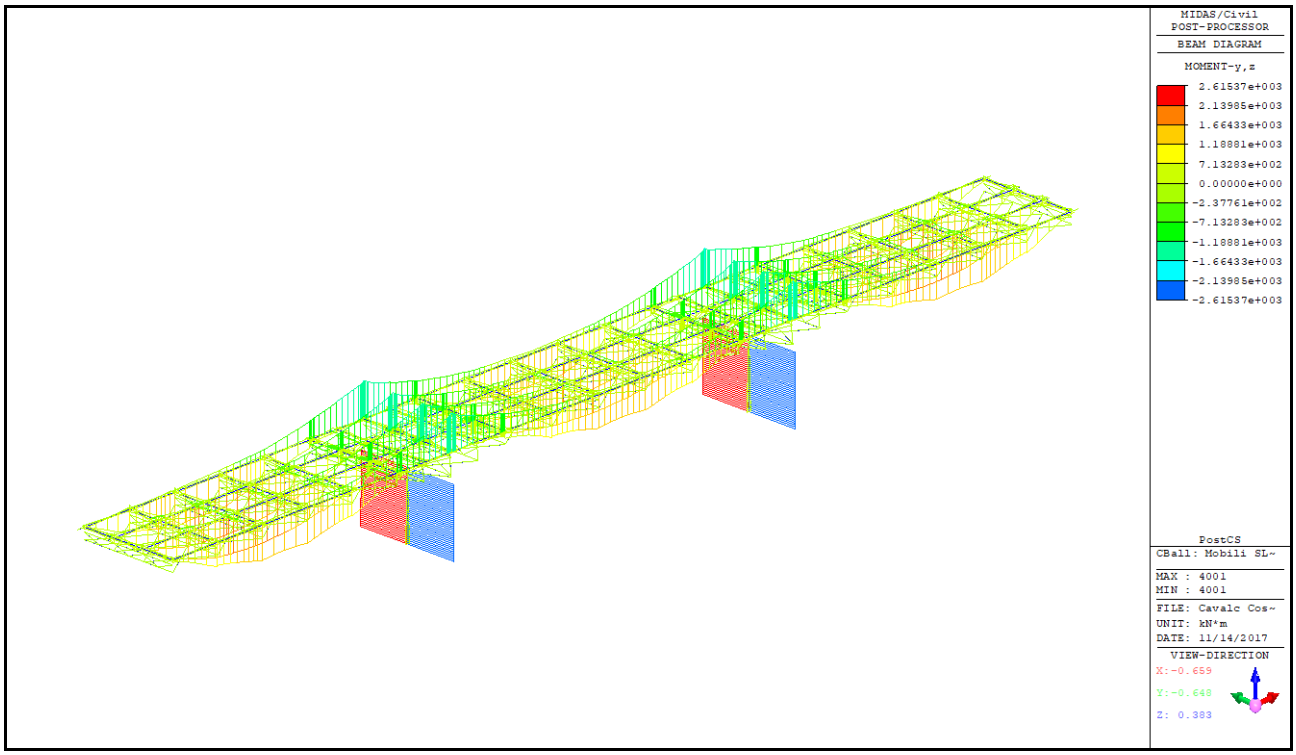
Inviluppo carichi mobili SLU - Diagramma momenti flettenti



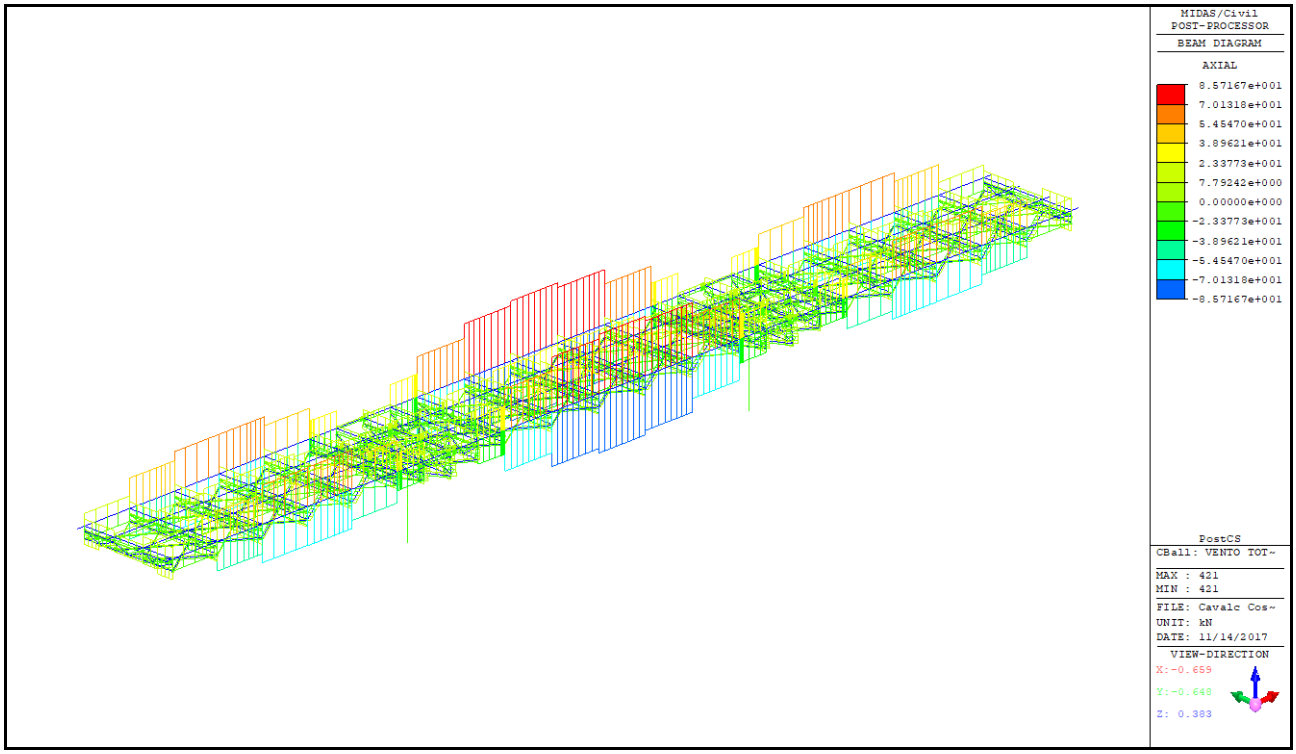
Inviluppo carichi mobili SLE - Diagramma sforzi assiali



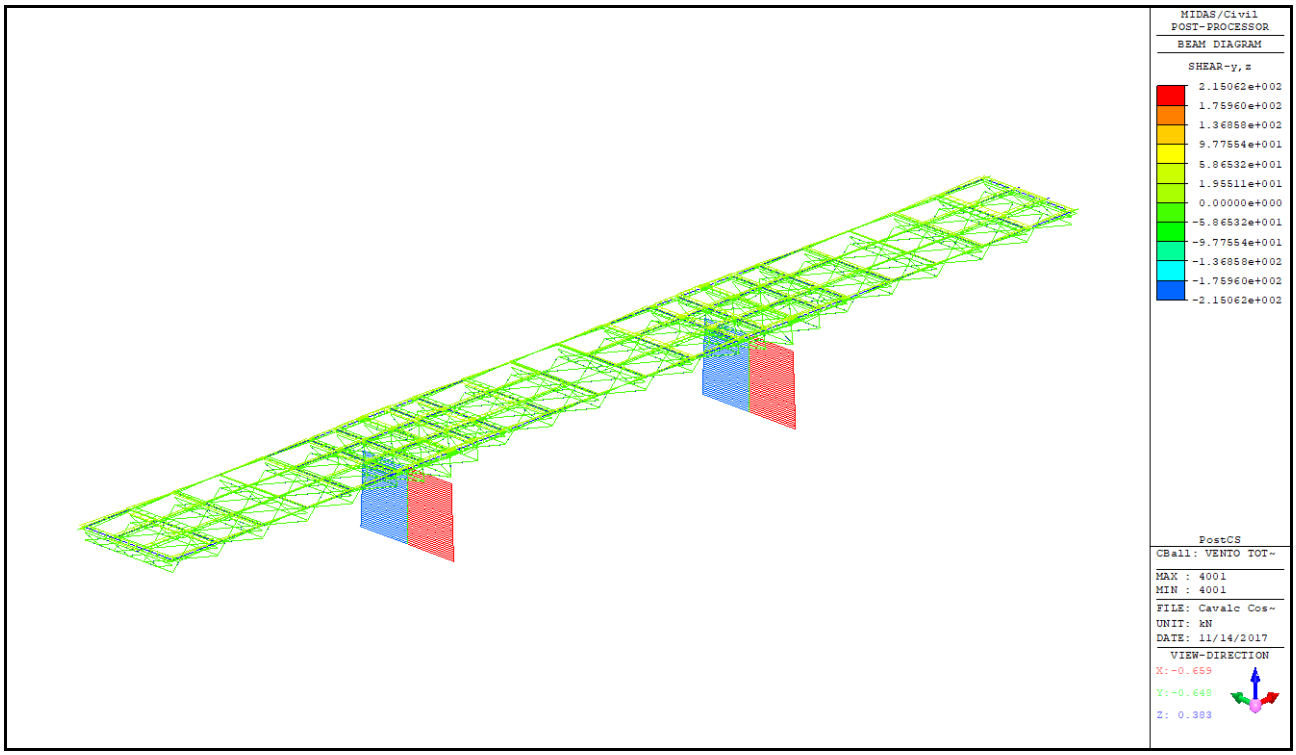
Inviluppo carichi mobili SLE - Diagramma sforzi taglianti



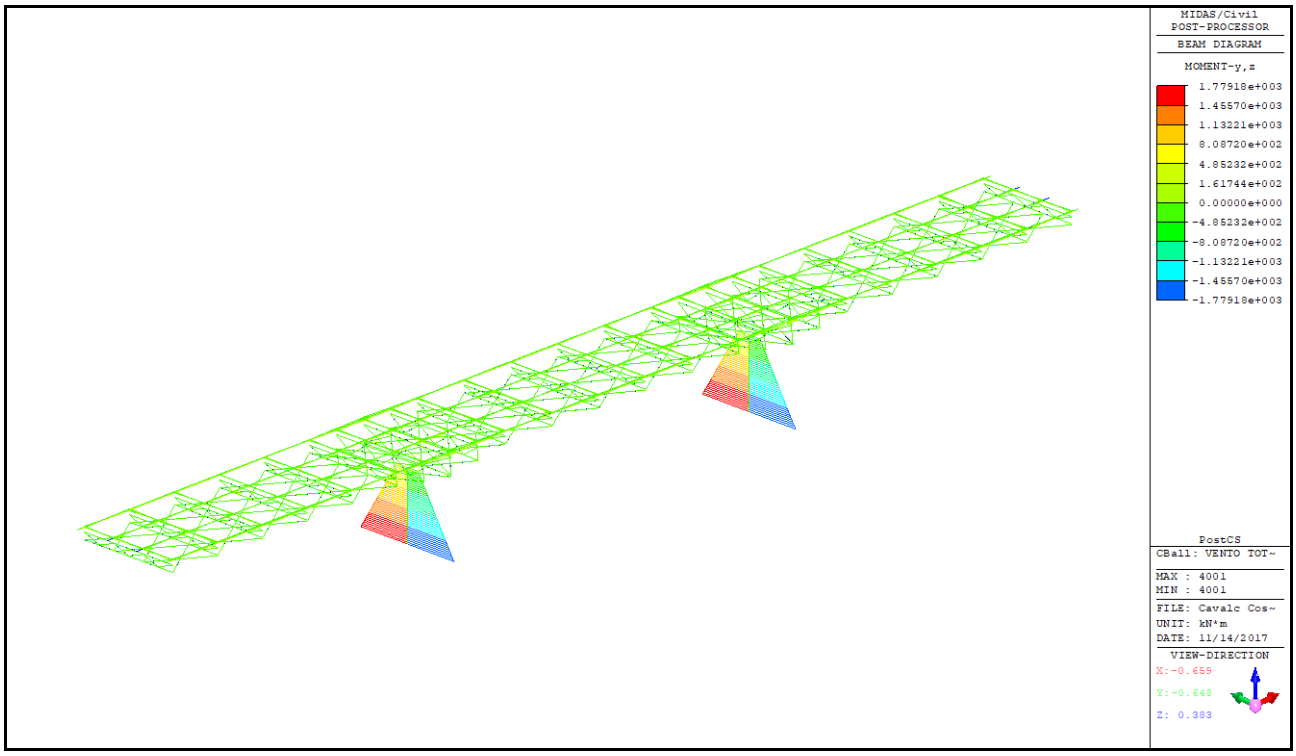
Inviluppo carichi mobili SLE - Diagramma momenti flettenti



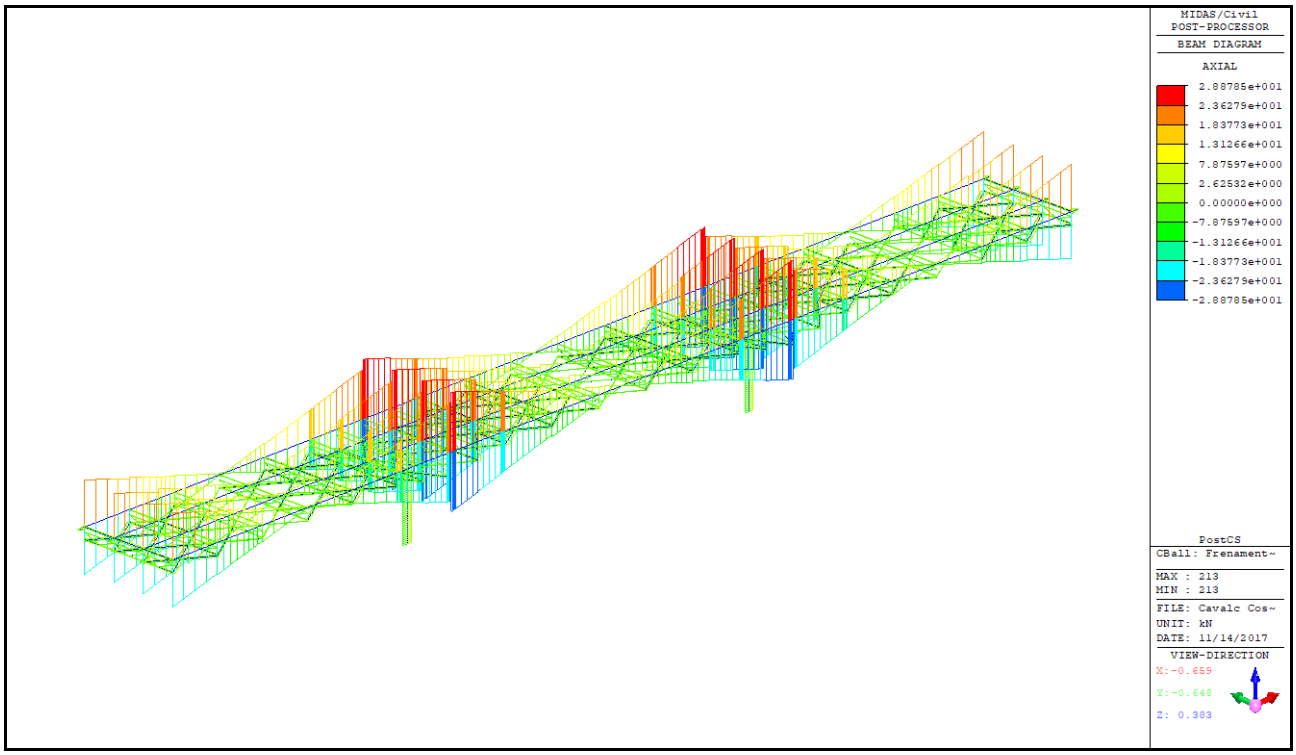
Vento trasversale (strutture e mobili) - Diagramma sforzi assiali



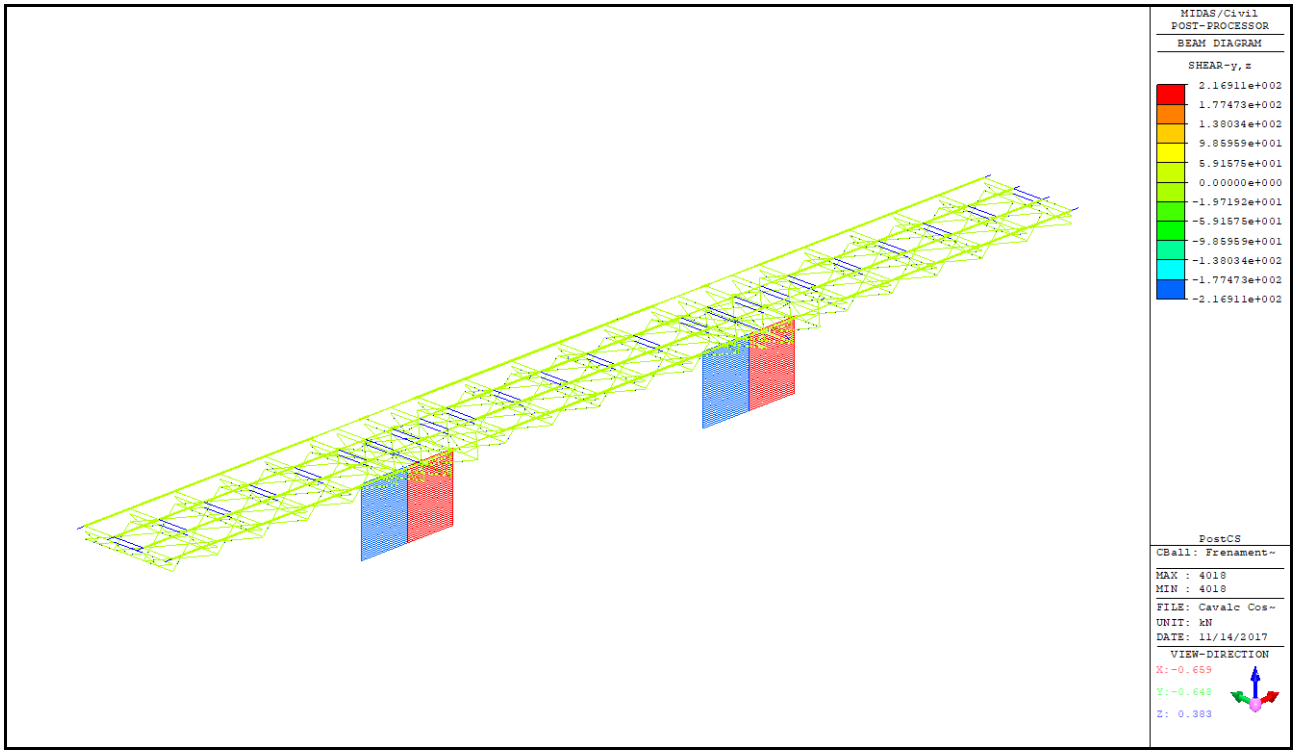
Vento trasversale (strutture e mobili) - Diagramma sforzi taglianti



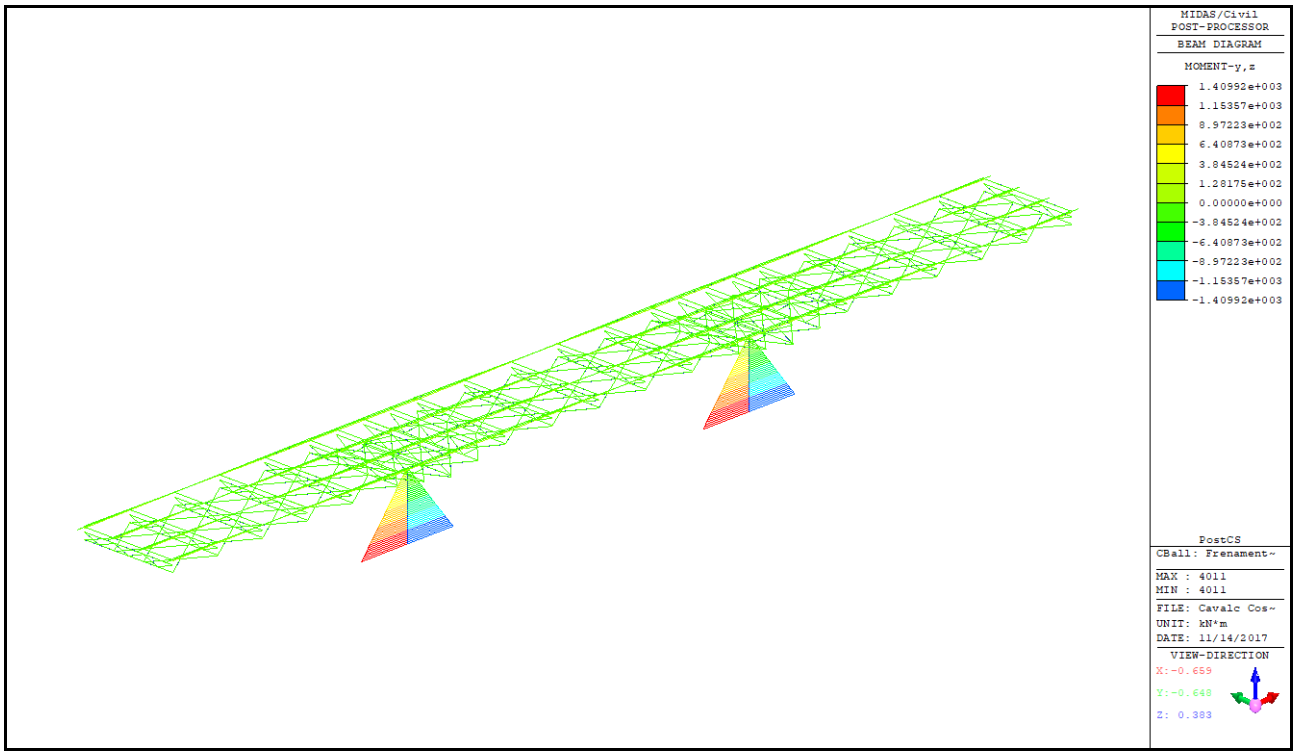
Vento trasversale (strutture e mobili) - Diagramma momenti flettenti



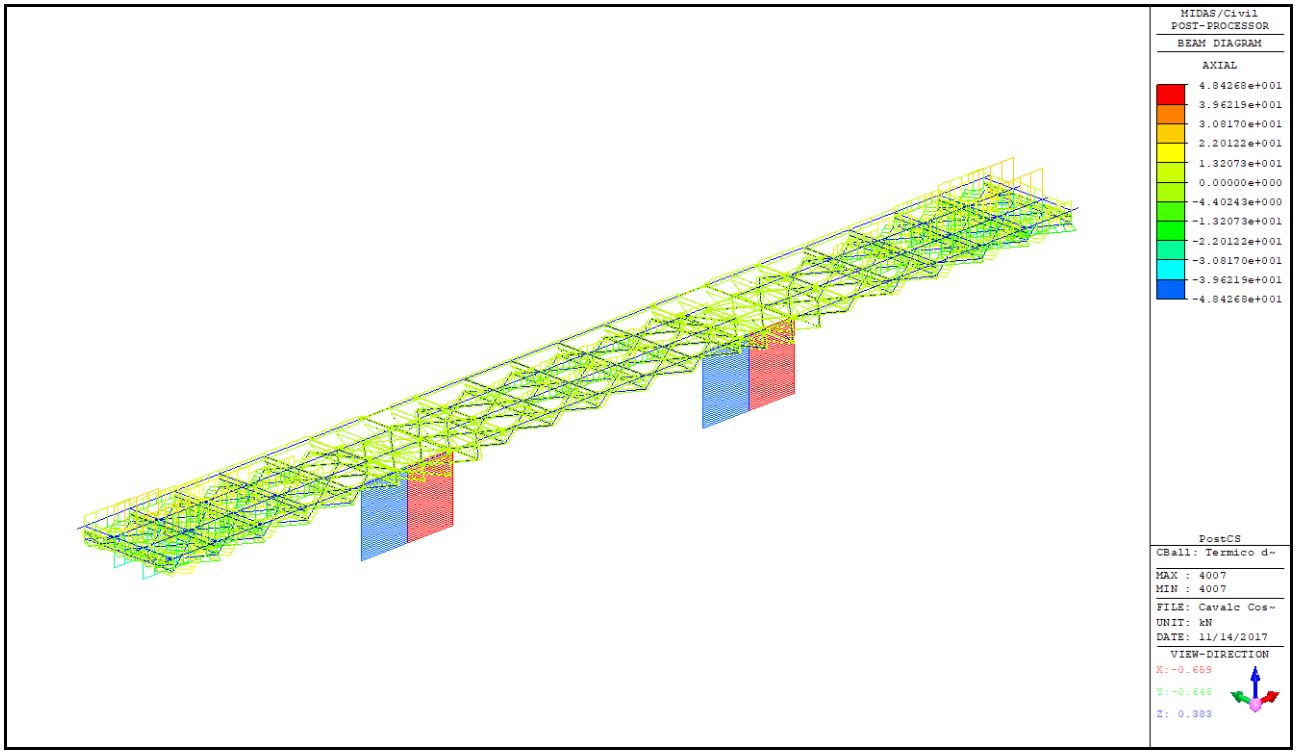
Frenamento - Diagramma sforzi assiali



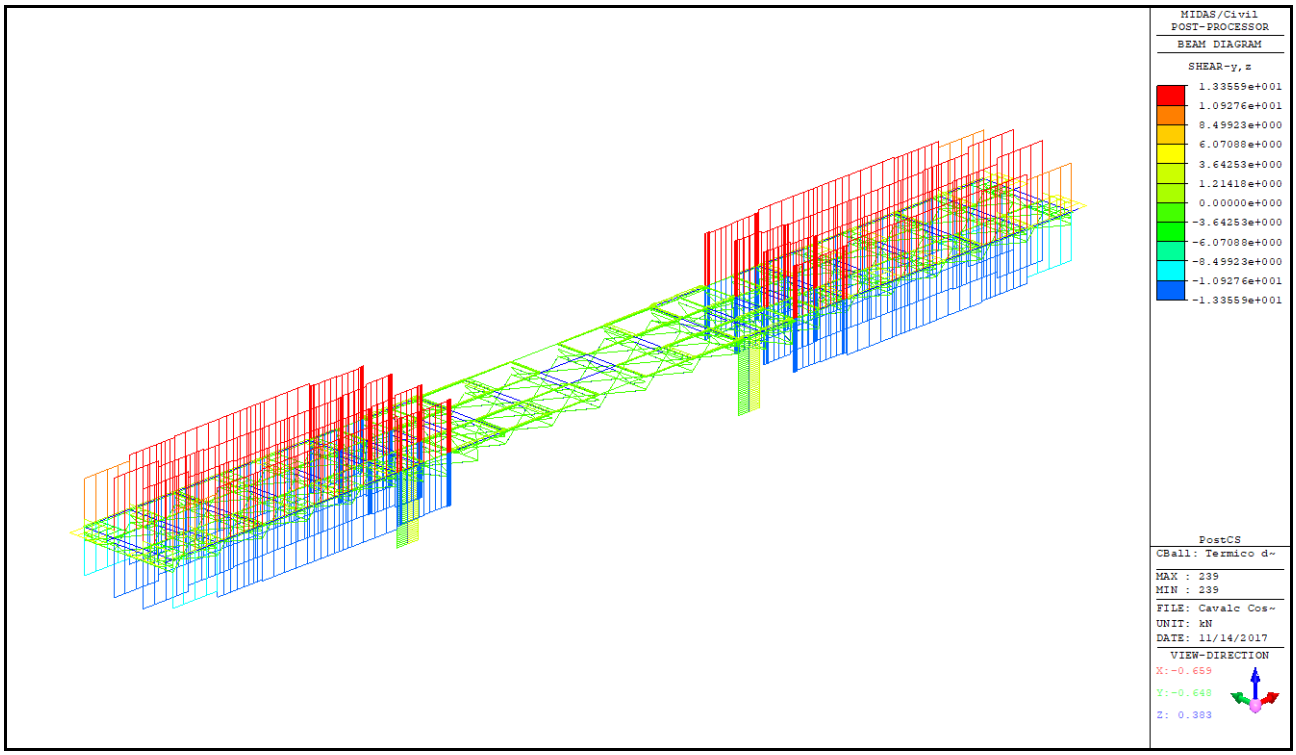
Frenamento - Diagramma sforzi taglianti



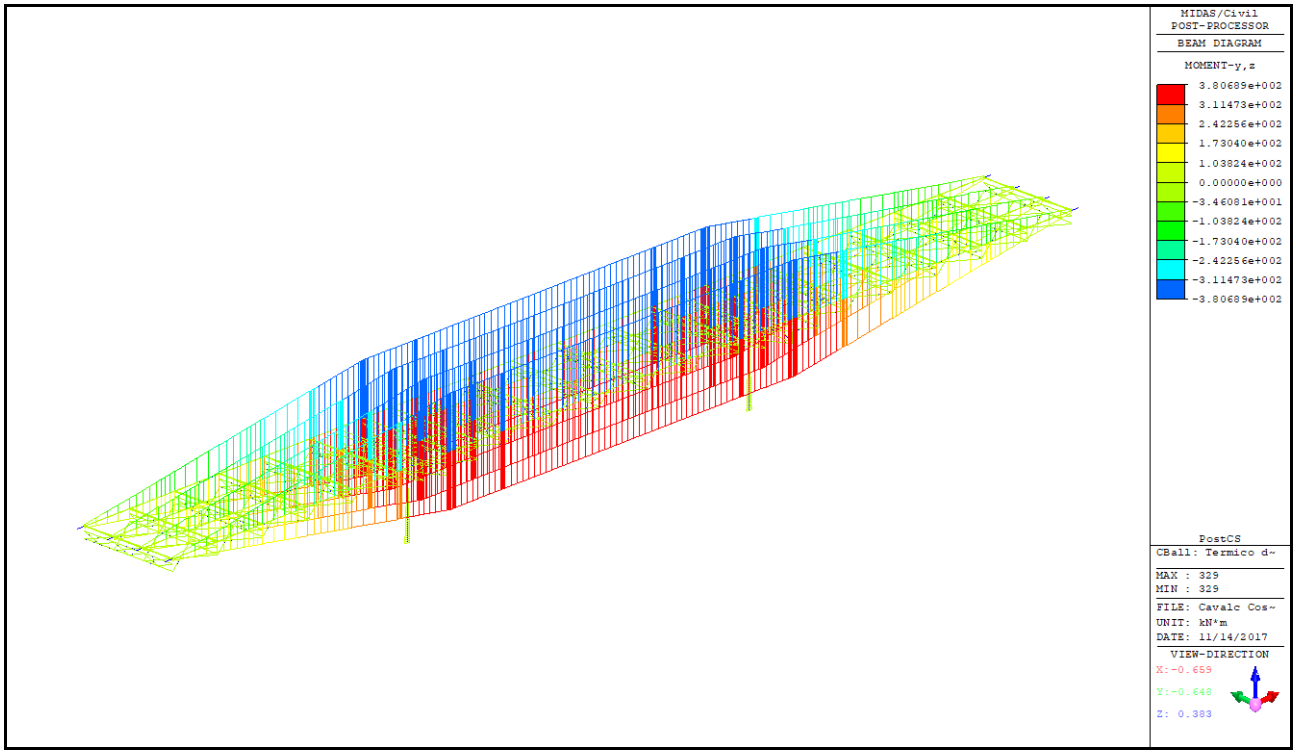
Frenamento - Diagramma momenti flettenti



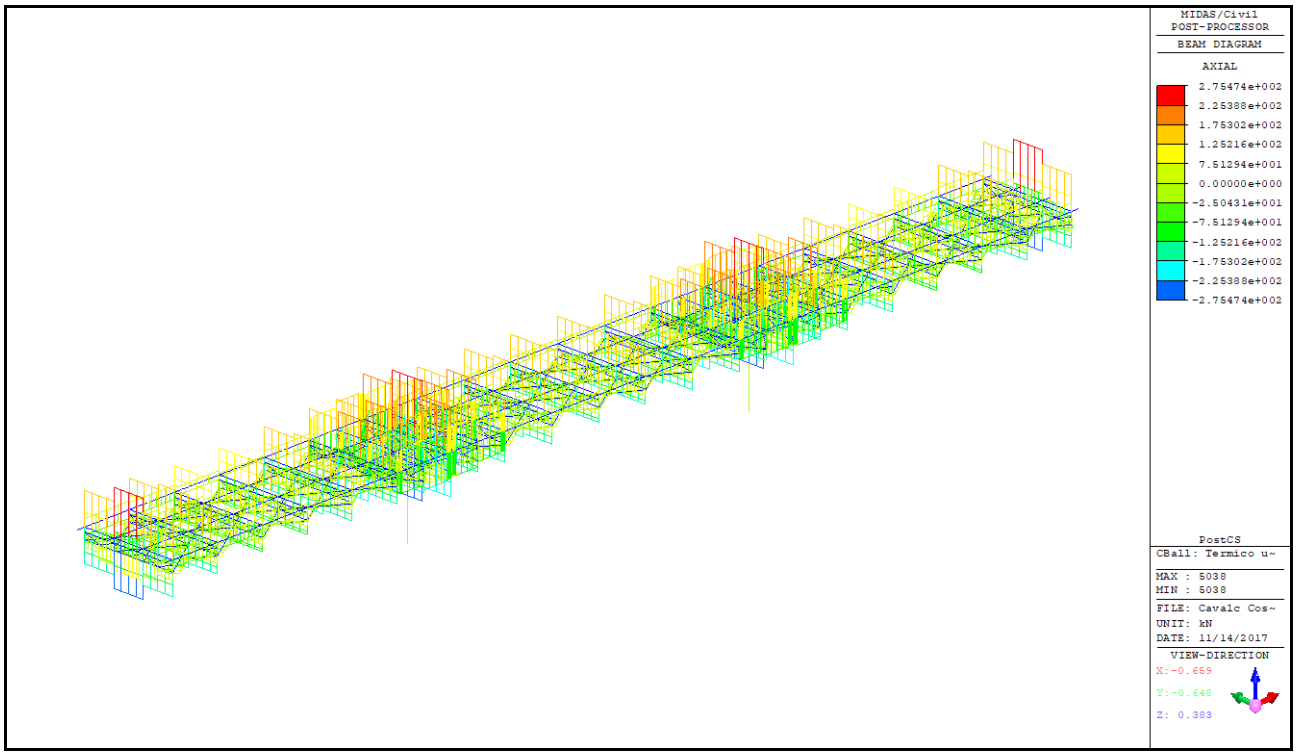
Inviluppo differenziale termico ±5°/H - Diagramma sforzi assiali



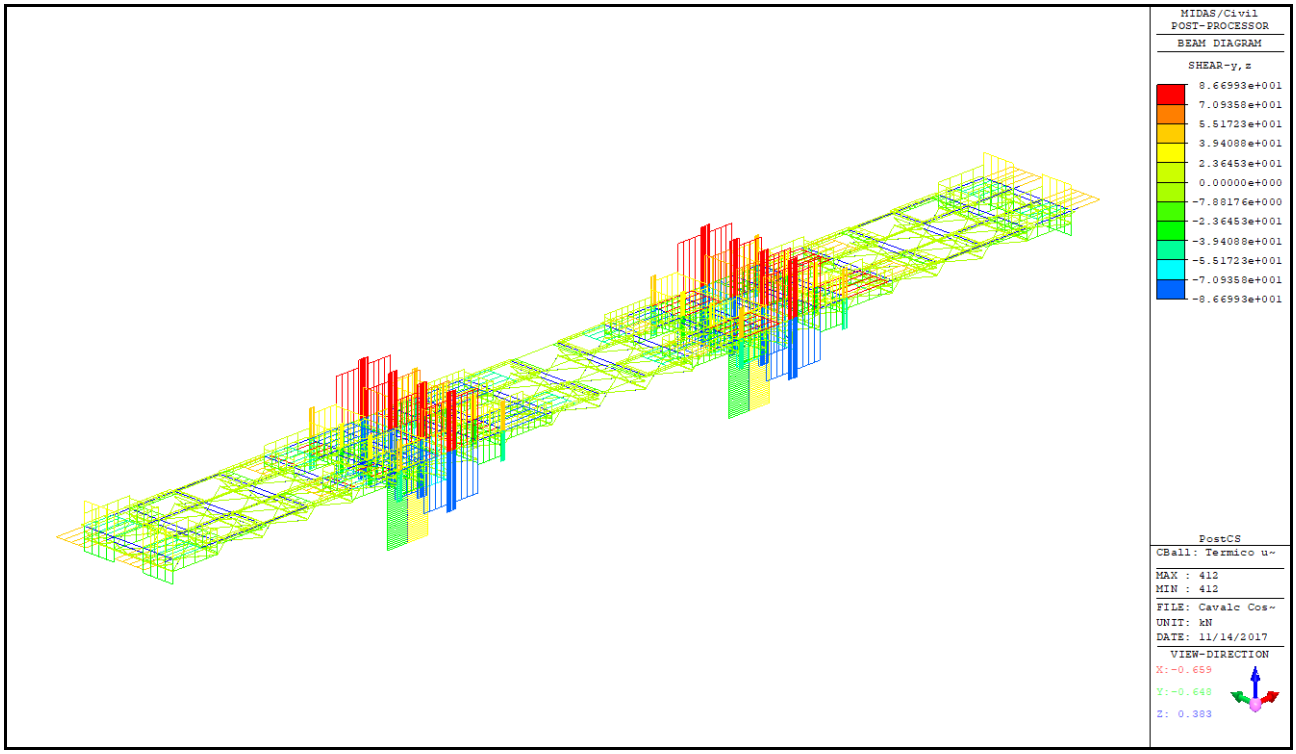
Inviluppo differenziale termico ±5°/H - Diagramma sforzi taglianti



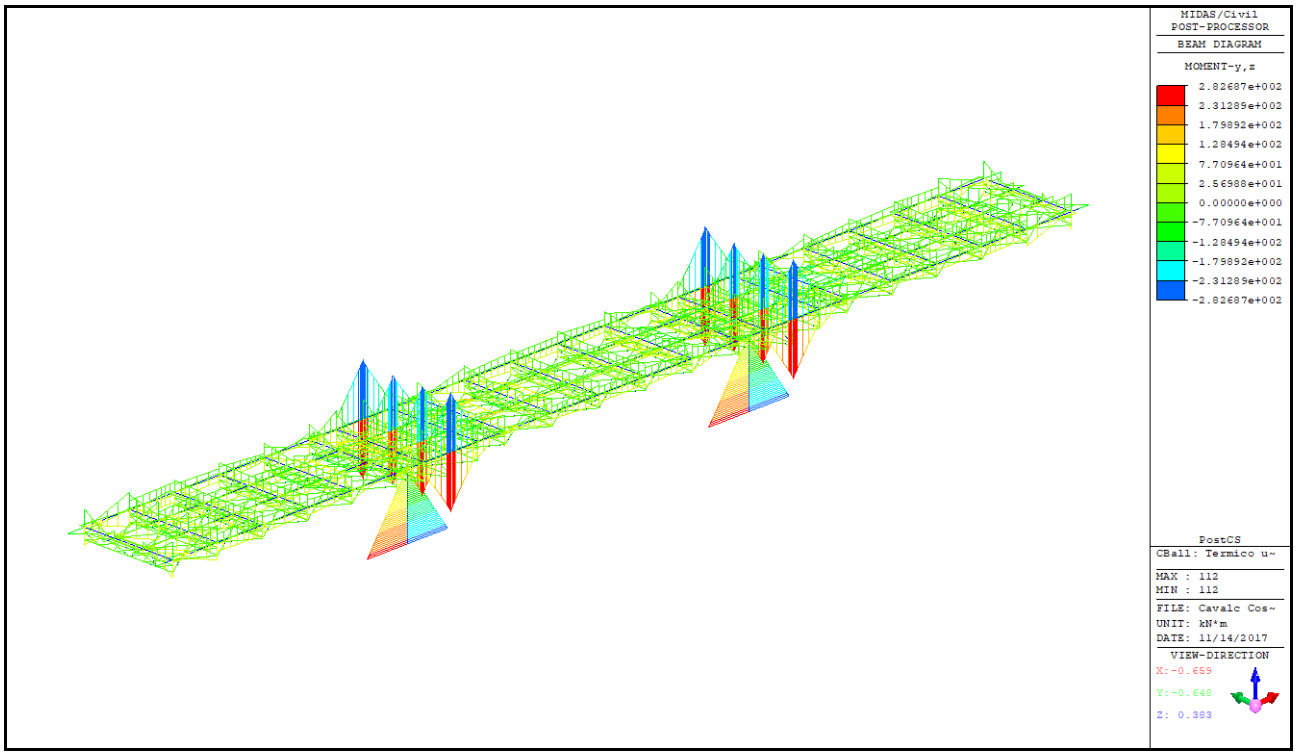
Inviluppo differenziale termico ±5°/H - Diagramma momenti flettenti



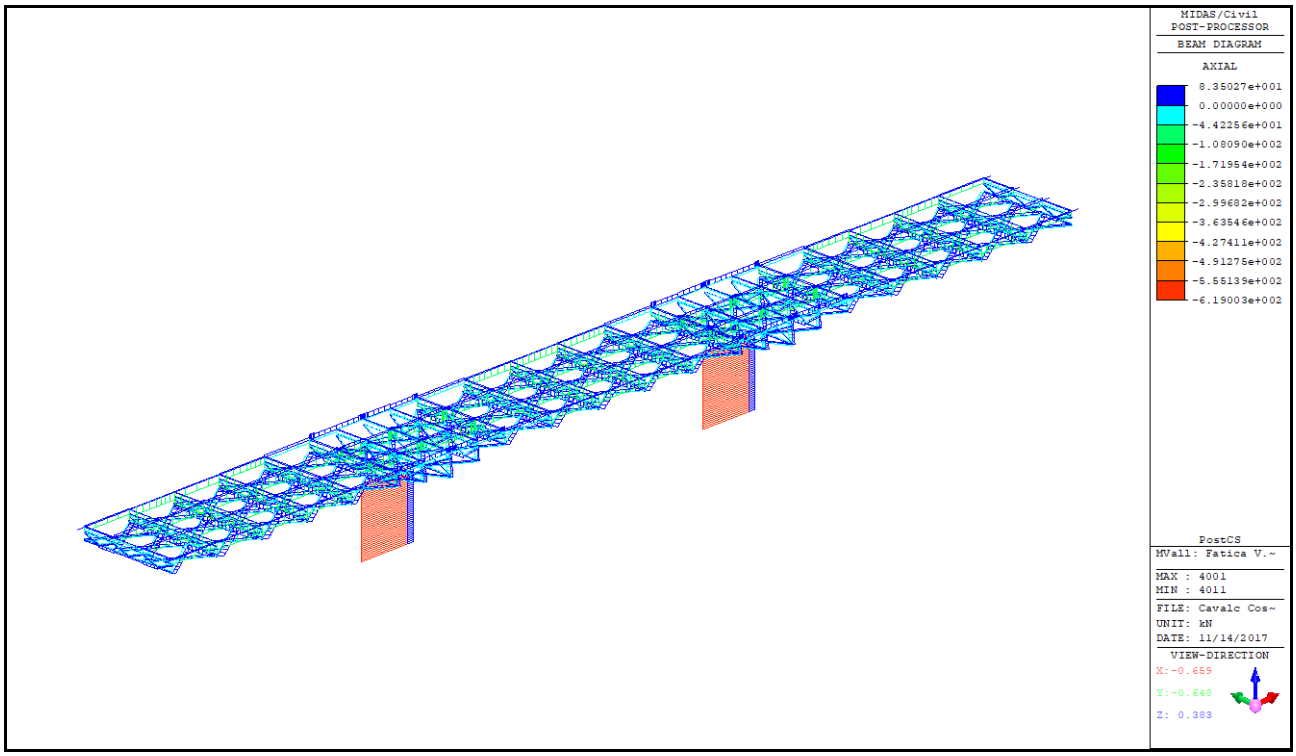
Inviluppo termico uniforme ±15°- Diagramma sforzi assiali



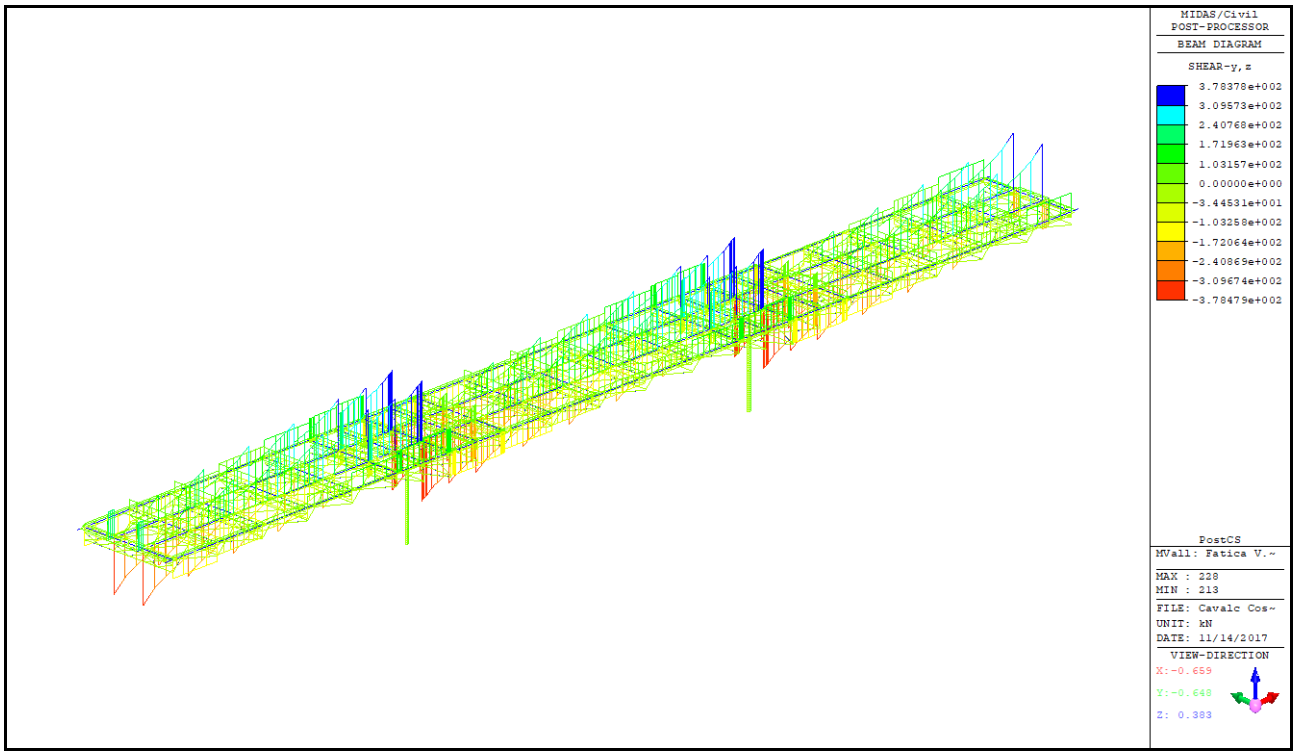
Inviluppo termico uniforme ±15°- Diagramma sforzi taglianti



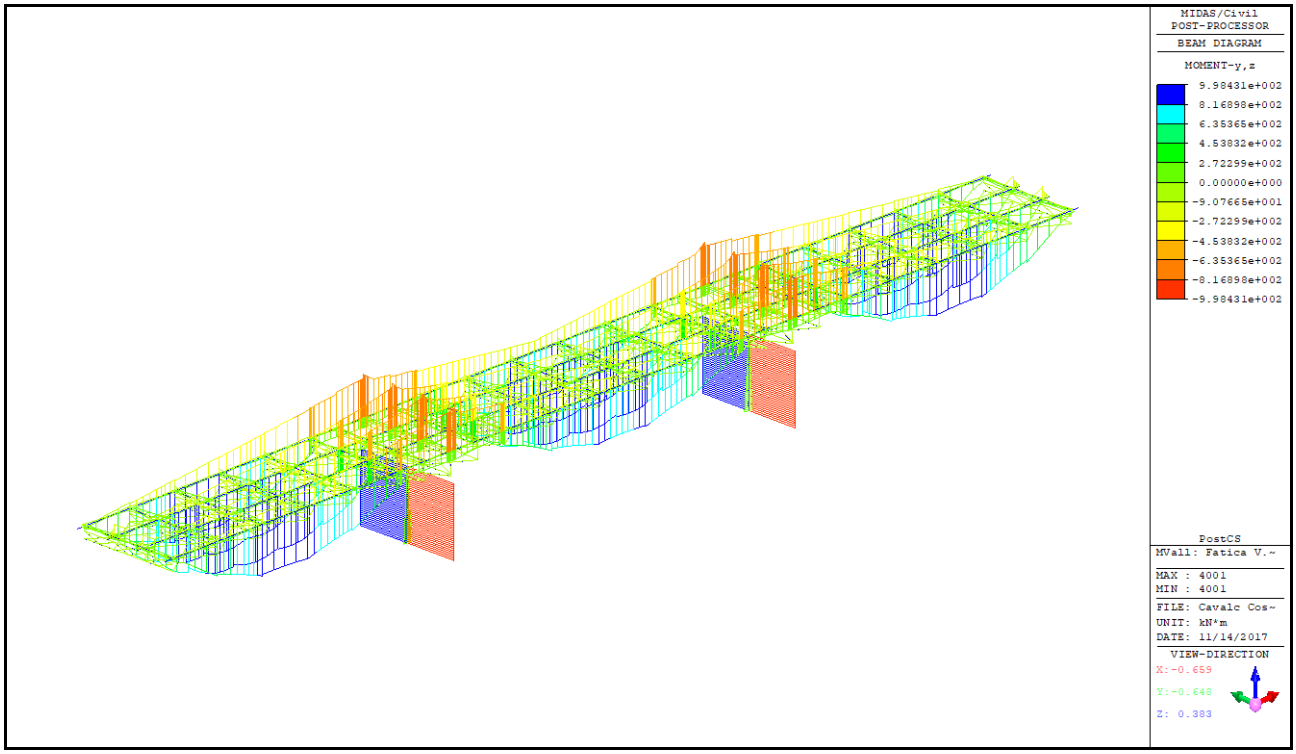
Inviluppo termico uniforme ±15° - Diagramma momenti flettenti



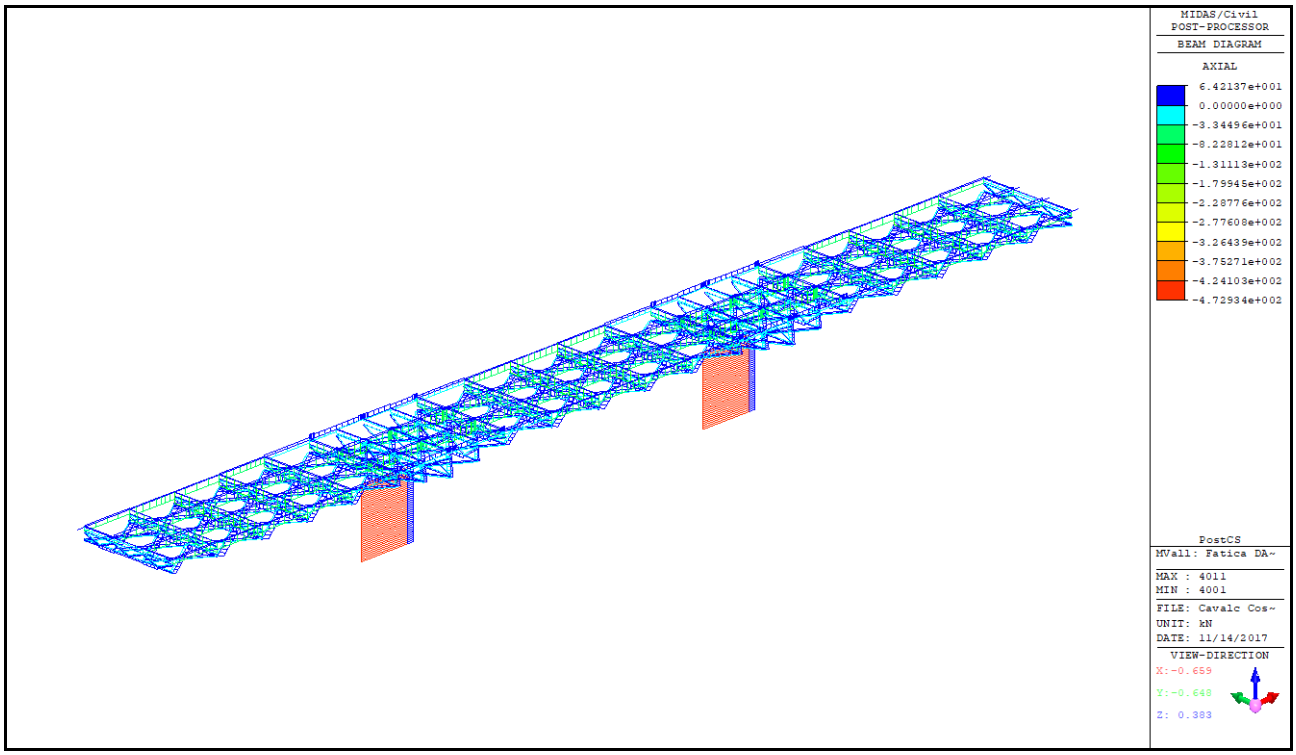
Carichi mobili fatica schema 2 (vita ill.) - Diagramma sforzi assiali



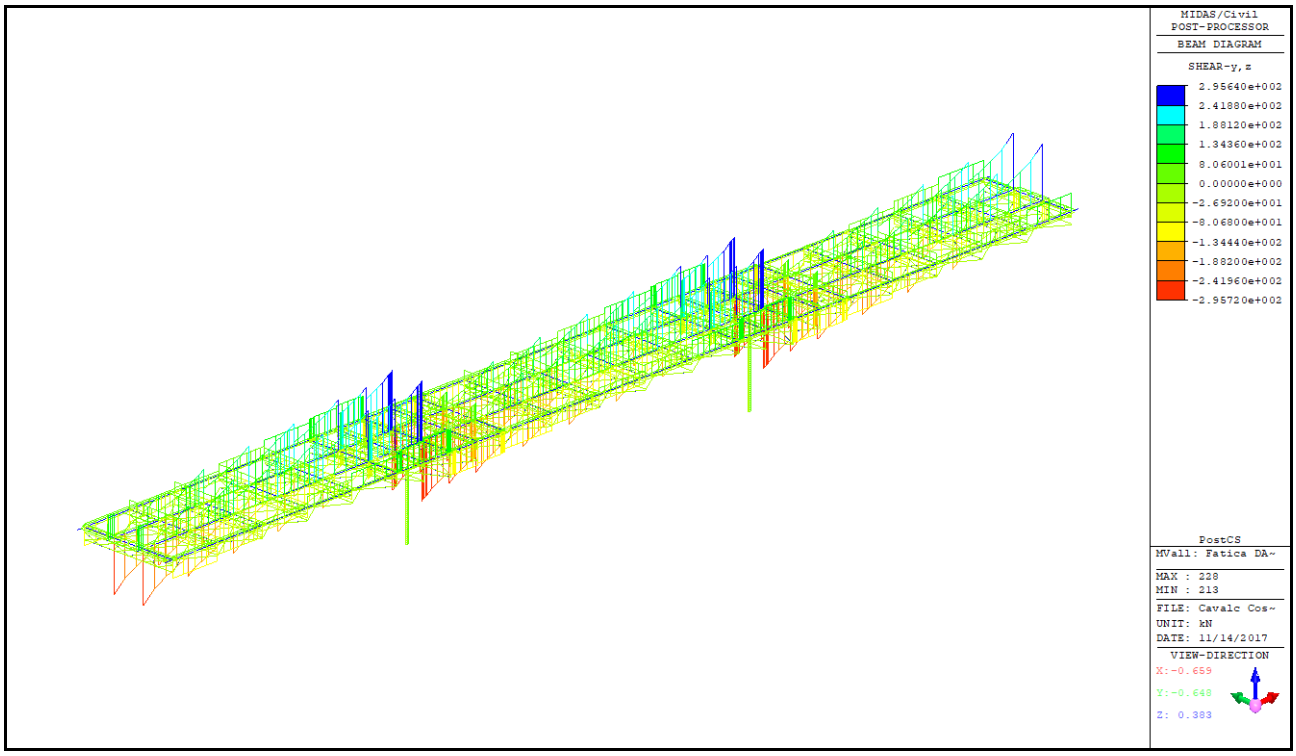
Carichi mobili fatica schema 2 (vita ill.) - Diagramma sforzi taglianti



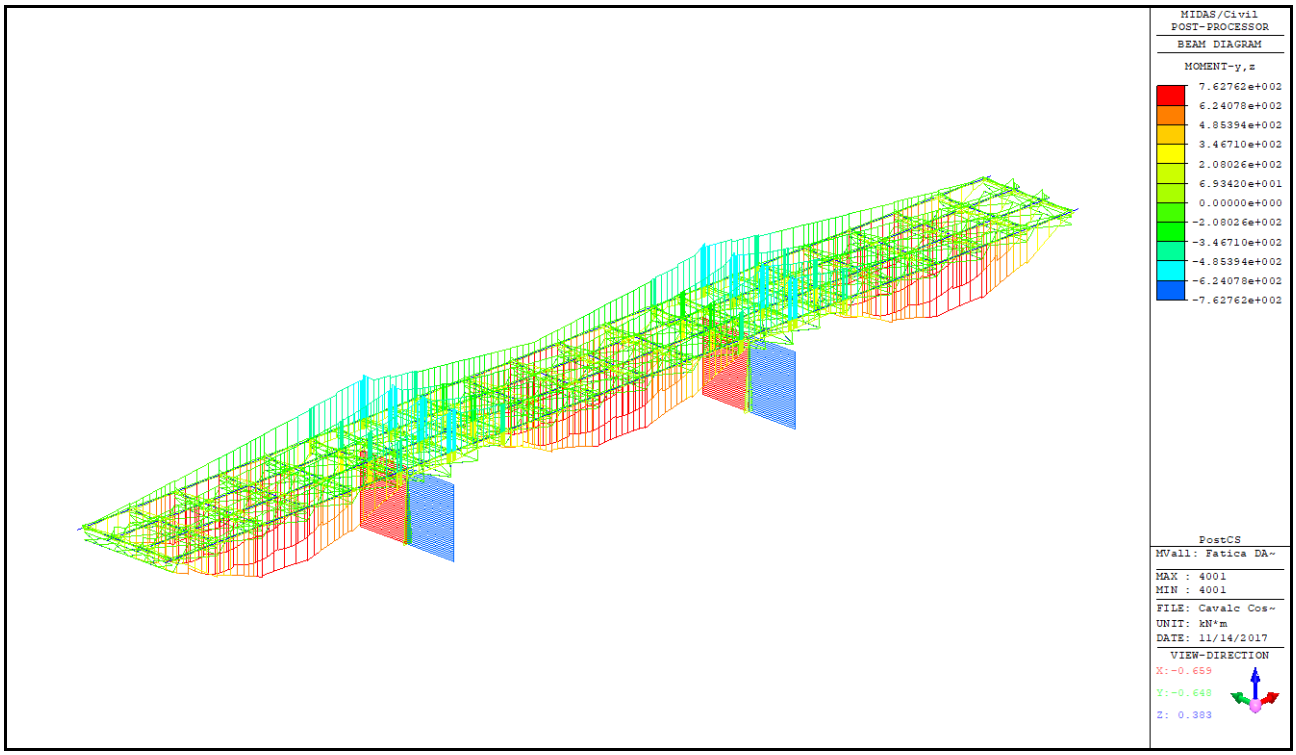
Carichi mobili fatica schema 2 (vita ill.) - Diagramma momenti flettenti



Inviluppo carichi mobili fatica schema 3 (dann.) - Diagramma sforzi assiali



Inviluppo carichi mobili fatica schema 3 (dann.) - Diagramma sforzi taglianti



Inviluppo carichi mobili fatica schema 3 (dann.) - Diagramma momenti flettenti

7 RISPOSTA SISMICA DELLA STRUTTURA

Sono stati determinati 40 modi di vibrazione con il metodo "Ritz Vectors"; i periodi determinati variano da 1.464 s a 0.0050 s; le masse eccitate risultano:
- dir. X: 98.64 %
- dir. Y: 96.31 %
- dir. Z: 97.26 %

Seguono schermate programma di calcolo.

Mode	UX	UY	UZ	RX
EIGENVALUE ANALYSIS				
Mode No	Frequency (rad/sec)	Frequency (cycle/sec)	Period (sec)	Tolerance
1	4.292395	0.683156	1.463795	0.0000e+000
2	4.292751	0.683212	1.463673	0.0000e+000
3	4.722273	0.751573	1.330543	0.0000e+000
4	10.895521	1.734076	0.576676	0.0000e+000
5	15.842581	2.521425	0.396601	0.0000e+000
6	16.485615	2.623767	0.381131	0.0000e+000
7	20.012120	3.185028	0.313969	0.0000e+000
8	21.257564	3.383246	0.295574	0.0000e+000
9	22.235819	3.538941	0.282570	0.0000e+000
10	26.913124	4.283357	0.233462	0.0000e+000
11	41.422767	6.592638	0.151684	0.0000e+000
12	41.797864	6.652337	0.150323	0.0000e+000
13	54.068619	8.605288	0.116208	0.0000e+000
14	56.818588	9.042959	0.110583	0.0000e+000
15	58.542898	9.317392	0.107326	0.0000e+000
16	59.801574	9.517716	0.105067	0.0000e+000
17	63.597120	10.121796	0.098797	0.0000e+000
18	65.840852	10.478897	0.095430	0.0000e+000
19	66.110041	10.521740	0.095041	0.0000e+000
20	78.893888	12.556352	0.079641	0.0000e+000
21	78.977427	12.569648	0.079557	0.0000e+000
22	88.279309	14.050088	0.071174	0.0000e+000
23	100.165410	15.941820	0.062728	0.0000e+000
24	104.792633	16.678266	0.059958	0.0000e+000
25	104.824685	16.683367	0.059940	0.0000e+000
26	107.146589	17.052909	0.058641	0.0000e+000
27	115.862130	18.440031	0.054230	0.0000e+000
28	119.077052	18.951701	0.052766	0.0000e+000
29	121.393708	19.320409	0.051759	0.0000e+000
30	123.238566	19.614027	0.050984	0.0000e+000
31	150.775182	23.996615	0.041673	0.0000e+000
32	185.205907	29.476436	0.033925	0.0000e+000
33	231.323159	36.816224	0.027162	0.0000e+000
34	235.290632	37.447667	0.026704	0.0000e+000
35	308.072793	49.031308	0.020395	0.0000e+000
36	494.647898	78.725658	0.012702	0.0000e+000
37	503.006808	80.056020	0.012491	0.0000e+000
38	656.964697	104.559179	0.009564	0.0000e+000
39	902.185816	143.587332	0.006964	0.0000e+000
40	1266.496332	201.569152	0.004961	0.0000e+000

MODAL PARTICIPATION MASSES PRINTOUT

Mode No	TRAN-X		TRAN-Y		TRAN-Z		ROTN-X		ROTN-Y		ROTN-Z	
	MASS(%)	SUM(%)	MASS(%)	SUM(%)	MASS(%)	SUM(%)	MASS(%)	SUM(%)	MASS(%)	SUM(%)	MASS(%)	SUM(%)
1	76.61	76.61	0.00	0.00	0.00	0.00	0.00	0.00	0.22	0.22	0.00	0.00
2	0.00	76.61	76.42	76.42	0.00	0.00	8.86	8.86	0.00	0.22	0.00	0.00
3	0.00	76.61	0.00	76.42	0.00	0.00	0.00	8.86	0.00	0.22	88.59	88.59
4	0.00	76.61	0.00	76.42	0.04	0.04	0.00	8.86	0.00	0.22	0.00	88.59
5	0.00	76.61	0.01	76.43	0.00	0.04	1.22	10.08	0.00	0.22	0.00	88.59
6	0.00	76.61	0.00	76.43	0.00	0.04	0.00	10.08	51.13	51.35	0.00	88.59
7	0.00	76.61	0.00	76.43	0.00	0.04	3.93	14.01	0.00	51.35	0.00	88.59
8	0.00	76.61	0.00	76.43	51.73	51.76	0.00	14.01	0.00	51.35	0.00	88.59
9	0.00	76.61	0.00	76.43	0.00	51.76	0.00	14.01	0.00	51.35	0.00	88.59
10	0.00	76.61	0.00	76.43	0.00	51.76	35.13	49.14	0.00	51.35	0.00	88.59
11	0.00	76.61	0.00	76.43	0.00	51.76	0.00	49.14	0.00	51.35	0.00	88.59
12	0.00	76.61	0.00	76.43	0.00	51.76	0.00	49.14	9.85	61.20	0.00	88.59
13	0.00	76.61	0.00	76.43	0.32	52.09	0.00	49.14	0.00	61.20	0.00	88.59
14	0.00	76.61	0.00	76.43	0.00	52.09	0.00	49.14	0.00	61.20	0.00	88.59
15	0.00	76.61	0.00	76.43	0.00	52.09	0.16	49.30	0.00	61.20	0.00	88.59
16	0.00	76.61	0.00	76.43	0.00	52.09	0.00	49.30	0.12	61.33	0.00	88.59
17	0.00	76.61	0.00	76.43	0.00	52.09	0.00	49.30	0.00	61.33	0.00	88.59
18	0.00	76.61	0.00	76.43	0.00	52.09	0.00	49.30	0.02	61.35	0.00	88.59
19	0.00	76.61	0.00	76.43	0.02	52.11	0.00	49.30	0.00	61.35	0.00	88.59
20	0.00	76.61	0.00	76.43	0.12	52.23	0.00	49.30	0.00	61.35	0.00	88.59
21	0.00	76.61	0.00	76.43	0.00	52.23	0.71	50.01	0.00	61.35	0.00	88.59
22	0.00	76.61	0.00	76.43	3.59	55.81	0.00	50.01	0.00	61.35	0.00	88.59
23	0.00	76.61	0.00	76.43	0.01	55.82	0.00	50.01	0.00	61.35	0.00	88.59
24	0.00	76.61	0.00	76.43	0.00	55.82	0.02	50.03	3.62	64.97	0.00	88.59
25	0.00	76.61	0.00	76.43	1.31	57.13	0.00	50.03	0.00	64.97	0.00	88.59
26	0.00	76.61	0.00	76.43	0.00	57.13	9.23	59.26	0.01	64.98	0.00	88.59
27	0.00	76.61	0.00	76.43	11.35	68.48	0.00	59.26	0.00	64.98	0.00	88.59
28	0.01	76.62	0.00	76.43	0.00	68.48	0.00	59.26	0.09	65.07	0.00	88.59
29	0.00	76.62	0.00	76.43	0.04	68.52	0.00	59.26	0.00	65.07	0.00	88.59
30	15.25	91.88	0.00	76.43	0.00	68.52	0.00	59.26	0.19	65.26	0.00	88.59
31	0.00	91.88	0.00	76.43	0.00	68.53	0.00	59.26	0.00	65.26	0.00	88.59
32	0.00	91.88	0.00	76.43	1.78	70.31	0.00	59.26	0.00	65.26	0.00	88.59
33	0.00	91.88	0.04	76.47	0.00	70.31	3.23	62.49	0.00	65.26	0.00	88.59
34	0.00	91.88	0.00	76.47	5.34	75.65	0.00	62.49	0.00	65.26	0.00	88.59
35	0.00	91.88	0.00	76.47	1.97	77.62	0.00	62.49	0.00	65.26	0.00	88.59
36	0.00	91.88	19.84	96.31	0.00	77.62	17.51	80.00	0.00	65.26	0.00	88.59
37	0.00	91.88	0.00	96.31	0.92	78.54	0.00	80.00	0.00	65.26	0.00	88.59
38	4.90	96.78	0.00	96.31	0.00	78.54	0.00	80.00	0.57	65.83	0.00	88.59
39	0.00	96.78	0.00	96.31	18.72	97.26	0.00	80.00	0.00	65.83	0.00	88.59
40	1.86	98.64	0.00	96.31	0.00	97.26	0.00	80.00	0.64	66.47	0.00	88.59

8 VERIFICA DELLE TRAVI COMPOSTE ACCIAIO/CALCESTRUZZO

Le travature principali dell'impalcato sono così composte:

- altezza travi metalliche (variabile): $h = 1000 \div 2000$ mm
- larghezza piattabanda superiore (variabile): $b_s = 500 \div 600$ mm
- larghezza piattabanda inferiore (variabile): $b_i = 600 \div 700$ mm
- spessore piattabande (variabile): $s = 30 \div 40$ mm
- spessore anima (variabile): $t = 12 \div 20$ mm
- soletta cls. collaborante: Travi centrali: b x h = 3200 x 240 mm
  Travi laterali: b x h = 3450 x 240 mm
- distanza soletta collaborante/trave: 60 mm

Nei casi in cui la soletta in cls. risulti tesa si trascura il contributo della stessa e si considera unicamente il contributo delle armature longitudinali superiori e inferiori:

- conci C4: 1 Ø 20 / 10 cm
- conci C3, C5: 1 Ø 20 / 20 cm
- altri tratti: 1 Ø 16 / 20 cm
- ricoprimento armature inferiori: 8 cm
- ricoprimento armature superiori: 5 cm

Si riporta la verifica dettagliata di una singola sezione, presa ad esempio di calcolo; seguono i tabulati delle verifiche condensate delle singole sezioni, asta per asta, eseguite secondo NTC 2008 ed EuroCodice 4-2.

Element Number : 208
Position Information : J

1 Design Condition

1.1 Design Parameters

- Partial factors

γ_C for concrete	1.50	γ_V for headed sutd	1.25
γ_S for reinforcing steel	1.15	γ_{Ff} for equivalent constant Amplitude stress range	1.00
γ_{M0} for structural steel	1.05	γ_{Mf} for fatigue strength	1.15
γ_{M1} for structural steel	1.10	$\gamma_{Mf,s}$ for fatigue strength of studs in shear	1.00

1.2 Material Information

- Structural steel

f_{sk} = 355.000 MPa , E_s = 210000.000 MPa

- Concrete

f_{ck} = 32.000 MPa , E_{cm} = 33000.000 MPa

- Reinforcement

f_{yk} = 450.000 MPa , E_r = 210000.000 MPa

1.3 Sectional Information

Slab

B_c	3200.000	mm	t_c	240.000	mm	H_h	60.000	mm

Girder

H_w	930.000	mm	B_1	500.000	mm	B_2	600.000	mm
t_w	20.000	mm	t_{f1}	30.000	mm	t_{f2}	40.000	mm

Before

$A_{,a}$	57600.000	mm^2
$I_{y,a}$	10104070000.000	mm^4
$I_{z,a}$	1033120000.000	mm^4
$C_{y,a}$	300.000	mm
$C_{z,a}$	427.917	mm

After

$A_{,c}$	179547.347	mm^2
$I_{y,c}$	32817703285.987	mm^4
$I_{z,c}$	105094855844.263	mm^4
$C_{y,c}$	1600.000	mm
$C_{z,c}$	938.727	mm

Crack

$A_{,c}$	67648.000	mm^2
$I_{y,c}$	14825070227.696	mm^4
$I_{z,c}$	9574171327.412	mm^4
$C_{y,c}$	1600.000	mm
$C_{z,c}$	537.398	mm

2 Bending Resistance

2.1 Negative Moment

- Design load

Load combination name : ST SLU Mobili

$N_{a,Ed}$ = 0.328 kN
$N_{c,Ed}$ = 128.913 kN
$M_{a,Ed}$ = -1868.615 kN · m
$M_{c,Ed}$ = -3639.410 kN · m

- Stress

Top Flange

Left	y_1	-250.000	mm	z_1	462.602	mm	σ_1	220.199 MPa
	y_2	-10.000	mm	z_2	462.602	mm	σ_2	221.232 MPa
Right	y_1	250.000	mm	z_1	462.602	mm	σ_1	222.350 MPa
	y_2	10.000	mm	z_2	462.602	mm	σ_2	221.318 MPa

Bottom Flange

Left	y_1	-300.000	mm	z_1	-537.398	mm	σ_1	-210.443 MPa
	y_2	-10.000	mm	z_2	-537.398	mm	σ_2	-209.195 MPa
Right	y_1	300.000	mm	z_1	-537.398	mm	σ_1	-207.862 MPa
	y_2	10.000	mm	z_2	-537.398	mm	σ_2	-209.109 MPa

Web

Right	y_1	0.000	mm	z_1	432.602	mm	σ_1	208.362 MPa
	y_2	0.000	mm	z_2	-497.398	mm	σ_2	-191.935 MPa

- Classification of sections

Part	Class
Top flange	1
Web	1
Bottom flange	1
Section	1

- Plastic resistance moment, $M_{pl,Rd}$

Plastic NA = 570.734 mm

N_{slab} = 0.000 kN
N_{rebar} = 3931.826 kN
$N_{g,top}$ = 7771.230 kN (Upper side of PNA)
$N_{g,bot}$ = 11703.056 kN (Lower side of PNA)

$M_{pl,Rd}$ = 10397.595 kN · m
M_{Rd} = $M_{pl,Rd}$ = 10397.595 kN · m

M_{Rd} = 10397.595 kN · m > M_{Ed} = -5508.025 kN · m …OK

3 Resistance to Vertical Shear

- Design load

Load combination name : ST SLU Mobili

N_{Ed} = 66.553 kN
$M_{a,Ed}$ = -1868.615 kN · m
$M_{c,Ed}$ = -1178.987 kN · m
$V_{Ed,a}$ = 635.621 kN
$V_{Ed,c}$ = 1329.456 kN
V_{Ed} = 1965.077 kN

- Stress

Top Flange

Left	y_1	-250.000	mm	z_1	462.602	mm	σ_1	136.431 MPa
	y_2	-10.000	mm	z_2	462.602	mm	σ_2	143.292 MPa
Right	y_1	250.000	mm	z_1	462.602	mm	σ_1	150.725 MPa
	y_2	10.000	mm	z_2	462.602	mm	σ_2	143.864 MPa

Bottom Flange

Left	y_1	-300.000	mm	z_1	-537.398	mm	σ_1	-129.462 MPa
	y_2	-10.000	mm	z_2	-537.398	mm	σ_2	-121.171 MPa
Right	y_1	300.000	mm	z_1	-537.398	mm	σ_1	-112.309 MPa
	y_2	10.000	mm	z_2	-537.398	mm	σ_2	-120.600 MPa

Web

Right	y_1	0.000	mm	z_1	432.602	mm	σ_1	135.644 MPa
	y_2	0.000	mm	z_2	-497.398	mm	σ_2	-110.307 MPa

- Classification of sections

Part	Class
Top flange	1
Web	1
Bottom flange	1
Section	1

- Plastic resistance moment, $M_{pl,Rd}$

Plastic NA = 570.734 mm

N_{slab} = 0.000 kN
$N_{g,top}$ = 7771.230 kN
$N_{g,bot}$ = 11703.056 kN

$M_{pl,Rd}$ = 10397.595 kN · m

- Calculation. $V_{pl,Rd}$

Web

$k_\tau = 5.34+4.00 \cdot (h_w/a)^2+k_{\tau st}$ = 5.478 when a/h_w = 5.376 ≥ 1

where, h_w = 930.000 mm

$2.1/t \cdot (I_{sl}/h_w)^{1/3}$ = 0.000

$k_{\tau st} = 9 \cdot (h_w/a)^2 \cdot ((I_{sl} / (t^3 \cdot h_w))^3)^{1/4} > 2.1/t \cdot (I_{sl}/h_w)^{1/3}$ = 0.000

I_{sl} = 0.000 mm^4

t = 20.000 mm

$V_{pl,Rd} = A_v \cdot (fy / \sqrt{(3)}) / \gamma_{M0}$ = 4356.850 kN
V_{Rd} = 4356.850 kN
V_{Edi} = V_{Ed} / Num. of Web = 1965.077 kN

V_{Edi} / V_{Rd} = 0.451 ≤ 1.0 … OK

4 Resistance to Lateral Torsional Buckling

- Design load

Load combination name : ST SLU Mobili

N_{Ed} = 129.241 kN
M_{Ed} = -3639.410 kN · m
V_1 = 701.074 kN
V_2 = 1225.615 kN
M_1 = -590.808 kN · m
M_2 = -5508.025 kN · m
$M_{pl,Rd}$ = 10397.595 kN · m
$M_{el,Rd}$ = 9012.415 kN · m

- $M_{b,Rd}$ Buckling resistance moment

L = 5000.000 m
c = C_d / I = 0.000
γ = c · L^4 / (E · I) = 0.000
μ = V_2 / V_1 = 0.572
Φ = 2 · (1-M_2/M_1) / (1+μ) = 1.136
m_1 = 1+0.44 · (1+μ) · $\Phi^{1.5}$+(3+2 · Φ) · γ/(350-50 · μ) = 1.837
m_2 = 1+0.44 · (1+μ) · $\Phi^{1.5}$+(0.195+(0.05+μ/100) · Φ) · $\gamma^{0.5}$ = 1.838
m = Min(m_1, m_2) = 1.837
α_{LT} = 0.490
λ_{LT} = 1.103 · L/b · √(f_y/Em) · √(1+A_{wc}/(3 · A = 0.297
Φ_{LT} = 0.5 · (1+α_{LT} · (λ_{LT} - 0.2)+λ_{LT}^2) = 0.568

$$X_{LT} = \frac{1}{\Phi_{LT} + \sqrt{(\Phi_{LT}^2 - \lambda_{LT}^2)}} = 0.950447408$$

M_{Rd} = 10397.595 kN · m
$M_{b,Rd}$ = X_{LT} · M_{Rd} = 9882.367 kN · m

- $N_{b,Rd}$ Buckling resistance moment

$X_{LT,N}$ = 0.885
$N_{b,Rd}$ = X_{LT} · Area · f_{yd} = 20231.850 kN

$$\text{Combined Ratio} = \frac{N_{Ed}}{N_{b,Rd}} + \frac{M_{Ed}}{M_{b,Rd}} = 0.374661117$$

5 Resistance to Longitudinal Shear

- Design load

Load combination name : ST SLU Mobili

$N_{c,el}$ = 0.000 kN
$N_{c,f}$ = 0.000 kN
M_{Ed} = -3047.602 kN · m
V_{Ed} = 1329.456 kN
$M_{pl,Rd}$ = 10397.595 kN · m
$M_{el,Rd}$ = 9012.415 kN · m

- Shear resistance of a single connector

$P_{Rd,1} = 0.8 \cdot f_u \cdot \pi \cdot d^2 / 4 / \gamma_V$ = 111.478 kN
$P_{Rd,2} = 0.29 \cdot \alpha \cdot d^2 \cdot \sqrt{(f_{ck} \cdot E_{cm})} / \gamma_V$ = 117.497 kN
$P_{Rd} = \text{Min}(P_{Rd,1}, P_{Rd,2})$ = 111.478 kN

where, f_u = 450.000 MPa
α = 1 for $h_{sc}/d > 4$
Num. = 4
d = 22.200 mm
h_{sc} = 175.000 mm
Space = 200.000 mm

- Verification

$v_{L,Ed} = V_{Ed} \cdot (A \cdot z / I)$ = 1197.022 kN/m
$v_{L,Rd} = P_{Rd} \cdot \text{Num./Space}$ = 2229.556 kN/m
$v_{L,Ed} \leq v_{L,Rd}$ … OK

6 Resistance to Fatigue

- Design load

Load combination name : ST FATICA DANN.ACC.

M_y = -2606.366 kN · m

- Shear stress range for the connector

$\Delta\tau = F_{sc} / A_{sc}$ = 53.983 MPa
where, F_{sc} = $v_{L,Ed}$ · space of stud / number of stud = 20.896 kN
A_{sc} = 387.076 mm^2

- Damage equivalent factor

$\lambda_v = \lambda_{v,1} \cdot \lambda_{v,2} \cdot \lambda_{v,3} \cdot \lambda_{v,4}$ = 1.484
where, $\lambda_{v,1}$ = 1.550
$\lambda_{v,2}$ = 1.100
$\lambda_{v,3}$ = 0.871
$\lambda_{v,4}$ = 1.000

- Equivalent constant amplitude range of shear stress related to 2 million cycles

$\Delta\tau_{E,2} = \lambda_v \cdot \Delta\tau$ = 80.126 MPa

- Verification

$\gamma_{Ff} \cdot \Delta\tau_{E,2} / (\Delta\tau_c / \gamma_{Mf,s})$ = 0.890 ≤ 1

7 Stress Limitation

- In the structural steel

Characteristic load combination name : ST RARA Mobili

$\sigma_{Ed,ser}$ = -168.153 MPa (Top-right fiber in the flange)

$\tau_{Ed,ser}$ = 48.246 MPa (Neutral axis in the web)

$\sigma_{Ed,ser}$	≤	$f_y / \gamma_{M,ser}$		
-168.153 MPa	≤	355.000 MPa	…	OK
$\tau_{Ed,ser}$	≤	$f_y / (\sqrt{3} \cdot \gamma_{M,ser})$		
48.246 MPa	≤	204.959 MPa	…	OK
$\sqrt{(\sigma_{Ed,ser}^2 + 3\tau_{Ed,ser}^2)}$	≤	$f_y / \gamma_{M,ser}$		
187.772 MPa	≤	355.000 MPa	…	OK

- In the concrete of the slab

Characteristic load combination name : ST RARA Mobili

$\sigma_c \leq k_1 f_{ck}$

0.000 MPa	≤	19.200 MPa	…	OK

- In the reinforcement

Load combination name : ST RARA Mobili

$\sigma_s \leq k_3 f_{yk}$

141.475 MPa	≤	360.000 MPa	…	OK

8 Longitudinal Shear for SLS(Serviceability limit state)

- Shear resistance of a single connector

Load combination name : ST RARA Mobili

$P_{Rd,1} = 0.8 \cdot f_u \cdot \pi \cdot d^2 / 4 / \gamma_V$ = 111.478 kN

$P_{Rd,2} = 0.29 \cdot \alpha \cdot d^2 \cdot \sqrt{(f_{ck} \cdot E_{cm})} / \gamma_V$ = 117.497 kN

$P_{Rd} = \text{Min}(P_{Rd,1}, P_{Rd,2})$ = 111.478 kN

$P_{Rd,ser} = k_s \cdot P_{Rd}$ = 66.887 kN

where, f_u = 450.000 MPa

α = 1 for $h_{sc}/d > 4$

Num. = 4

d = 22.200 mm

h_{sc} = 175.000 mm

Space = 200.000 mm

k_s = 0.600

- Verification

$v_{L,Ed} = V_{Ed} \cdot (A \cdot z / I)$ = 880.219 kN/m

$v_{L,Rd} = P_{Rd,ser} \cdot \text{Num.}/\text{Space}$ = 1337.733 kN/m

$v_{L,Ed} \leq v_{L,Rd}$ … OK

8.1 VERIFICHE DI RESISTENZA A FLESSIONE ALLO SLU

Si riportano le verifiche allo stato limite ultimo per flessione delle sezioni composte travi-soletta.
I coefficienti parziali per SLU assunti sono i seguenti:

$\gamma_c = 1.5$ materiale calcestruzzo

$\gamma_s = 1.15$ acciaio armature soletta

$\gamma_{M0} = 1.05$ acciaio strutturale: resistenza sezioni

Seguono i tabulati di calcolo per ogni asta considerata, per le combinazione di carichi positiva e negativa più gravose.
Dati tabulati:

Elem Property: nome delle caratteristiche geometriche dell'elemento
Elem: numero dell'elemento
Position: nodo iniziale (I) o finale (J) dell'elemento
Lcom: combinazione di carico positivo o negativo più gravosa
Type: sollecitazione (massima o minima)
Top class: classificazione flangia superiore
Bot class: classificazione flangia inferiore
Web class: classificazione anima
Sect. class: classificazione complessiva sezione
Ma,Ed: momento di calcolo applicato alla trave in acciaio isolata
Mc,Ed: momento di calcolo applicato alla sezione composta
Mpl,Rd: momento resistente plastico, per sezioni di classe 1 e 2
Mel,Rd: momento resistente elastico, per sezioni di classe 3, efficace per classe 4
M_Rd: momento resistente effettivo della sezione

La condizione di verifica della sezione è la seguente:

Verification ratio: $$\frac{Ma,Ed + Mc,Ed}{M\_Rd} \leq 1$$

Elem property	Elem number	Position [node]	Positive/ Negative	Lcom	Type	Top Class	Bot Class	Web Class	Sect. Class	Ma,Ed (kN*m)	Mc,Ed (kN*m)	Mpl,Rd (kN*m)	Mel,Rd (kN*m)	M_Rd (kN*m)	Verif. Ratio
Concio 1	101	I[719]	Neg	ST SLV Long	FX-MIN	2	3	4	4	0.00	-0.54	8011.39	6350.05	6350.05	0.000
Concio 1	101	I[719]	Pos	ST SLV Long	FX-MAX	1	1	1	1	0.00	0.54	10750.90	9086.69	10750.90	0.000
Concio 1	101	J[720]	Neg	ST SLU Mobili	FY-MIN	1	3	3	3	-11.84	-7.57	8011.39	6361.88	6361.88	0.003
Concio 1	101	J[720]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 1	102	I[720]	Neg	ST SLU Mobili	MY-MIN	3	3	3	3	-28.84	-219.22	8011.39	6378.89	6378.89	0.039
Concio 1	102	I[720]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	-28.84	234.58	10750.90	9099.36	10750.90	0.019
Concio 1	102	J[721]	Neg	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 1	102	J[721]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	1715.27	2913.83	10750.90	8332.74	10750.90	0.431
Concio 1	103	I[721]	Neg	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 1	103	I[721]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	1698.32	2694.39	10750.90	8340.20	10750.90	0.409
Concio 1	103	J[722]	Neg	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 1	103	J[722]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	2239.98	3469.25	10750.90	8102.11	10750.90	0.531
Concio 2	104	I[722]	Neg	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 2	104	I[722]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	2245.48	3474.74	12635.70	10220.13	12635.70	0.453
Concio 2	104	J[723]	Neg	ST SLV Vert	FX-MIN	2	1	1	2	1792.77	-35.27	9000.58	4849.14	9000.58	0.195
Concio 2	104	J[723]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	2420.25	3991.54	12635.70	10144.81	12635.70	0.507
Concio 2	105	I[723]	Neg	ST SLV Vert	FX-MIN	2	1	1	2	1794.66	-15.93	9000.58	4847.26	9000.58	0.198
Concio 2	105	I[723]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	2422.78	3925.98	12635.70	10143.72	12635.70	0.502
Concio 2	105	J[724]	Neg	ST SLU Mobili	MY-MIN	2	1	1	2	2065.20	-320.02	9000.58	4576.72	9000.58	0.194
Concio 2	105	J[724]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	2065.20	3534.51	12635.70	10297.83	12635.70	0.443
Concio 2	106	I[724]	Neg	ST SLU Frenamento	FZ-MIN	2	1	1	2	2075.58	-66.99	9000.58	4566.34	9000.58	0.223
Concio 2	106	I[724]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	2075.58	3628.39	12635.70	10293.36	12635.70	0.451
Concio 2	106	J[725]	Neg	ST SLU Mobili	FX-MAX	2	1	1	2	1334.18	-13.39	9000.58	5307.74	9000.58	0.147
Concio 2	106	J[725]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	1334.18	2392.44	12635.70	10612.89	12635.70	0.295
Concio 3	107	I[725]	Neg	ST SLU Mobili	FX-MAX	2	1	1	2	1333.75	-14.15	10249.33	6601.91	10249.33	0.129
Concio 3	107	I[725]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	1333.75	2393.75	13386.70	11130.45	13386.70	0.278
Concio 3	107	J[726]	Neg	ST SLU Termico	MY-MIN	1	1	1	1	649.93	-1506.13	10249.33	7285.73	10249.33	0.084
Concio 3	107	J[726]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	649.93	1684.35	13386.70	11454.11	13386.70	0.174
Concio 3	108	I[726]	Neg	ST SLU Termico	MY-MIN	1	1	1	1	672.33	-1468.17	10249.33	7263.33	10249.33	0.078
Concio 3	108	I[726]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	672.33	1894.47	13386.70	11443.51	13386.70	0.192
Concio 3	108	J[727]	Neg	ST SLU Mobili	MY-MIN	1	1	1	1	-1780.61	-3803.37	10249.33	8981.76	10249.33	0.545

Concio 3	108	J[727]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 3	109	I[727]	Neg	ST SLU Mobili	MY-MIN	1	1	1	1	-1773.87	-3798.71	10249.33	8982.85	10249.33	0.544
Concio 3	109	I[727]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 3	109	J[728]	Neg	ST SLU Mobili	MY-MIN	1	1	1	1	-2069.35	-4124.14	10249.33	8935.28	10249.33	0.604
Concio 3	109	J[728]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 4 H=var	110	I[728]	Neg	ST SLU Mobili	MY-MIN	1	3	3	3	-2066.80	-4138.85	13376.13	10789.26	10789.26	0.575
Concio 4 H=var	110	I[728]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 4 H=var	110	J[729]	Neg	ST SLU Mobili	MY-MIN	1	3	3	3	-3709.10	-5890.05	21530.83	16954.86	16954.86	0.566
Concio 4 H=var	110	J[729]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 4 H=var	111	I[729]	Neg	ST SLU Mobili	MY-MIN	1	3	3	3	-3712.67	-5918.69	21530.83	16954.36	16954.36	0.568
Concio 4 H=var	111	I[729]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 4 H=var	111	J[730]	Neg	ST SLU Mobili	MY-MIN	1	3	4	4	-5595.01	-7955.76	30530.77	23228.13	23228.13	0.583
Concio 4 H=var	111	J[730]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 4 H=200	112	I[730]	Neg	ST SLU Mobili	MY-MIN	1	3	4	4	-5595.01	-7955.76	30530.77	23227.77	23227.77	0.583
Concio 4 H=200	112	I[730]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 4 H=200	112	J[731]	Neg	ST SLU Mobili	MY-MIN	1	3	4	4	-5999.98	-8469.75	30530.77	23191.04	23191.04	0.624
Concio 4 H=200	112	J[731]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 4 H=200	113	I[731]	Neg	ST SLU Mobili	MY-MIN	1	3	4	4	-5993.07	-8529.23	30530.77	23191.67	23191.67	0.626
Concio 4 H=200	113	I[731]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 4 H=200	113	J[732]	Neg	ST SLU Mobili	MY-MIN	1	3	4	4	-5613.22	-8014.01	30530.77	23226.12	23226.12	0.587
Concio 4 H=200	113	J[732]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 4 H=var	114	I[732]	Neg	ST SLU Mobili	MY-MIN	1	3	4	4	-5613.22	-8014.01	30530.77	23226.28	23226.28	0.587
Concio 4 H=var	114	I[732]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 4 H=var	114	J[733]	Neg	ST SLU Mobili	MY-MIN	1	3	3	3	-3854.55	-6023.03	21530.83	16934.68	16934.68	0.583
Concio 4 H=var	114	J[733]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 4 H=var	115	I[733]	Neg	ST SLU Mobili	MY-MIN	1	3	3	3	-3846.81	-5992.83	21530.83	16935.75	16935.75	0.581
Concio 4 H=var	115	I[733]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 4 H=var	115	J[734]	Neg	ST SLU Mobili	MY-MIN	1	3	3	3	-2332.48	-4477.12	13376.13	10741.68	10741.68	0.634
Concio 4 H=var	115	J[734]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 5	116	I[734]	Neg	ST SLU Mobili	MY-MIN	1	1	1	1	-2335.71	-4433.49	10249.33	8738.08	10249.33	0.660
Concio 5	116	I[734]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 5	116	J[735]	Neg	ST SLU Mobili	MY-MIN	1	1	1	1	-2066.62	-4161.98	10249.33	8935.72	10249.33	0.608
Concio 5	116	J[735]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 5	117	I[735]	Neg	ST SLU Mobili	MY-MIN	1	1	1	1	-2068.61	-4129.44	10249.33	8935.40	10249.33	0.605
Concio 5	117	I[735]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 5	117	J[736]	Neg	ST SLU Termico	MY-MIN	1	1	1	1	185.45	-2299.61	10249.33	7750.21	10249.33	0.206
Concio 5	117	J[736]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	185.45	1188.90	13386.70	11673.95	13386.70	0.103
Concio 5	118	I[736]	Neg	ST SLU Termico	MY-MIN	1	1	1	1	165.39	-2251.76	10249.33	7770.27	10249.33	0.204
Concio 5	118	I[736]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	165.39	972.99	13386.70	11683.45	13386.70	0.085
Concio 5	118	J[737]	Neg	ST SLU Termico	MY-MIN	1	1	1	1	797.40	-1892.73	10249.33	7138.26	10249.33	0.107
Concio 5	118	J[737]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	797.40	1591.79	13386.70	11384.31	13386.70	0.178
Concio 6	119	I[737]	Neg	ST SLU Termico	MY-MIN	1	2	2	2	797.64	-1893.90	8775.51	5736.30	8775.51	0.125
Concio 6	119	I[737]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	797.64	1589.78	12181.58	10517.11	12181.58	0.196
Concio 6	119	J[738]	Neg	ST SLU Mobili	MX-MIN	2	1	2	2	1309.89	-80.26	8775.51	5224.04	8775.51	0.140
Concio 6	119	J[738]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	1309.89	2548.79	12181.58	10310.73	12181.58	0.317
Concio 6	120	I[738]	Neg	ST SLU Termico	FZ-MIN	2	1	2	2	1303.38	-151.21	8775.51	5230.56	8775.51	0.131
Concio 6	120	I[738]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	1303.38	2463.61	12181.58	10313.36	12181.58	0.309
Concio 6	120	J[739]	Neg	ST SLU Frenamento	MX-MIN	2	1	2	2	1429.64	-174.19	8775.51	5104.30	8775.51	0.143
Concio 6	120	J[739]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	1429.64	2385.83	12181.58	10262.49	12181.58	0.313
Concio 6	121	I[739]	Neg	ST SLU Frenamento	MX-MIN	2	1	2	2	1429.64	-174.19	8775.51	5104.30	8775.51	0.143
Concio 6	121	I[739]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	1429.64	2385.83	12181.58	10262.49	12181.58	0.313
Concio 6	121	J[740]	Neg	ST SLU Frenamento	MX-MIN	2	1	2	2	1303.38	-173.38	8775.51	5230.56	8775.51	0.129
Concio 6	121	J[740]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	1303.38	2463.44	12181.58	10313.36	12181.58	0.309
Concio 6	122	I[740]	Neg	ST SLU Termico	MX-MIN	2	1	2	2	1309.89	-97.72	8775.51	5224.04	8775.51	0.138
Concio 6	122	I[740]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	1309.89	2548.82	12181.58	10310.73	12181.58	0.317
Concio 6	122	J[741]	Neg	ST SLU Termico	MY-MIN	1	2	2	2	797.64	-1893.75	8775.51	5736.30	8775.51	0.125
Concio 6	122	J[741]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	797.64	1589.62	12181.58	10517.12	12181.58	0.196
Concio 5	123	I[741]	Neg	ST SLU Termico	MY-MIN	1	1	1	1	797.40	-1892.60	10249.33	7138.26	10249.33	0.107
Concio 5	123	I[741]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	797.40	1591.63	13386.70	11384.31	13386.70	0.178
Concio 5	123	J[742]	Neg	ST SLU Termico	MY-MIN	1	1	1	1	165.39	-2251.48	10249.33	7770.27	10249.33	0.204
Concio 5	123	J[742]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	165.39	972.68	13386.70	11683.45	13386.70	0.085
Concio 5	124	I[742]	Neg	ST SLU Termico	MY-MIN	1	1	1	1	185.45	-2299.41	10249.33	7750.21	10249.33	0.206
Concio 5	124	I[742]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	185.45	1188.66	13386.70	11673.95	13386.70	0.103
Concio 5	124	J[743]	Neg	ST SLU Mobili	MY-MIN	1	1	1	1	-2068.61	-4130.24	10249.33	8935.40	10249.33	0.605
Concio 5	124	J[743]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 5	125	I[743]	Neg	ST SLU Mobili	MY-MIN	1	1	1	1	-2066.62	-4162.71	10249.33	8935.72	10249.33	0.608
Concio 5	125	I[743]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 5	125	J[744]	Neg	ST SLU Mobili	MY-MIN	1	1	1	1	-2335.71	-4434.22	10249.33	8738.08	10249.33	0.661
Concio 5	125	J[744]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 4 H=var	126	I[744]	Neg	ST SLU Mobili	MY-MIN	1	3	3	3	-2332.49	-4477.90	13376.13	10741.68	10741.68	0.634
Concio 4 H=var	126	I[744]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 4 H=var	126	J[745]	Neg	ST SLU Mobili	MY-MIN	1	3	3	3	-3846.82	-5993.57	21530.83	16935.75	16935.75	0.581
Concio 4 H=var	126	J[745]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 4 H=var	127	I[745]	Neg	ST SLU Mobili	MY-MIN	1	3	3	3	-3854.55	-6024.18	21530.83	16934.68	16934.68	0.583
Concio 4 H=var	127	I[745]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 4 H=var	127	J[746]	Neg	ST SLU Mobili	MY-MIN	1	3	4	4	-5613.22	-8014.29	30530.77	23226.28	23226.28	0.587
Concio 4 H=var	127	J[746]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 4 H=200	128	I[746]	Neg	ST SLU Mobili	MY-MIN	1	3	4	4	-5613.22	-8014.29	30530.77	23226.12	23226.12	0.587
Concio 4 H=200	128	I[746]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 4 H=200	128	J[747]	Neg	ST SLU Mobili	MY-MIN	1	3	4	4	-5993.07	-8529.38	30530.77	23191.67	23191.67	0.626

Concio 4 H=200	128	J[747]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 4 H=200	129	I[747]	Neg	ST SLU Mobili	MY-MIN	1	3	4	4	-5999.98	-8469.97	30530.77	23191.04	23191.04	0.624
Concio 4 H=200	129	I[747]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 4 H=200	129	J[748]	Neg	ST SLU Mobili	MY-MIN	1	3	4	4	-5595.01	-7955.85	30530.77	23227.77	23227.77	0.583
Concio 4 H=200	129	J[748]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 4 H=var	130	I[748]	Neg	ST SLU Mobili	MY-MIN	1	3	4	4	-5595.01	-7955.85	30530.77	23228.13	23228.13	0.583
Concio 4 H=var	130	I[748]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 4 H=var	130	J[749]	Neg	ST SLU Mobili	MY-MIN	1	3	3	3	-3712.67	-5917.90	21530.83	16954.36	16954.36	0.568
Concio 4 H=var	130	J[749]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 4 H=var	131	I[749]	Neg	ST SLU Mobili	MY-MIN	1	3	3	3	-3709.1	-5889.59	21530.83	16954.86	16954.9	0.566
Concio 4 H=var	131	I[749]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 4 H=var	131	J[750]	Neg	ST SLU Mobili	MY-MIN	1	3	3	3	-2066.80	-4138.29	13376.13	10789.26	10789.26	0.575
Concio 4 H=var	131	J[750]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 3	132	I[750]	Neg	ST SLU Mobili	MY-MIN	1	1	1	1	-2069.35	-4123.62	10249.33	8935.28	10249.33	0.604
Concio 3	132	I[750]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 3	132	J[751]	Neg	ST SLU Mobili	MY-MIN	1	1	1	1	-1773.87	-3798.11	10249.33	8982.85	10249.33	0.544
Concio 3	132	J[751]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 3	133	I[751]	Neg	ST SLU Mobili	MY-MIN	1	1	1	1	-1780.61	-3802.82	10249.33	8981.76	10249.33	0.545
Concio 3	133	I[751]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 3	133	J[752]	Neg	ST SLU Termico	MY-MIN	1	1	1	1	672.33	-1468.36	10249.33	7263.33	10249.33	0.078
Concio 3	133	J[752]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	672.33	1894.73	13386.70	11443.51	13386.70	0.192
Concio 3	134	I[752]	Neg	ST SLU Termico	MY-MIN	1	1	1	1	649.93	-1506.29	10249.33	7285.73	10249.33	0.084
Concio 3	134	I[752]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	649.93	1684.75	13386.70	11454.11	13386.70	0.174
Concio 3	134	J[753]	Neg	ST SLU Termico	FZ-MAX	2	1	1	2	1333.75	-0.41	10249.33	6601.91	10249.33	0.130
Concio 3	134	J[753]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	1333.75	2393.98	13386.70	11130.45	13386.70	0.278
Concio 2	135	I[753]	Neg	ST SLU Mobili	FX-MAX	2	1	1	2	1334.18	-13.26	9000.58	5307.74	9000.58	0.147
Concio 2	135	I[753]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	1334.18	2392.65	12635.70	10612.89	12635.70	0.295
Concio 2	135	J[754]	Neg	ST SLU Mobili	MY-MIN	2	1	1	2	2075.58	-329.72	9000.58	4566.34	9000.58	0.194
Concio 2	135	J[754]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	2075.58	3628.60	12635.70	10293.36	12635.70	0.451
Concio 2	136	I[754]	Neg	ST SLU Mobili	MY-MIN	2	1	1	2	2065.20	-319.93	9000.58	4576.72	9000.58	0.194
Concio 2	136	I[754]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	2065.20	3534.90	12635.70	10297.83	12635.70	0.443
Concio 2	136	J[755]	Neg	ST SLV Vert	FX-MIN	2	1	1	2	1794.66	-15.93	9000.58	4847.26	9000.58	0.198
Concio 2	136	J[755]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	2422.78	3925.90	12635.70	10143.72	12635.70	0.502
Concio 2	137	I[755]	Neg	ST SLV Vert	FX-MIN	2	1	1	2	1792.77	-35.27	9000.58	4849.14	9000.58	0.195
Concio 2	137	I[755]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	2420.25	3991.52	12635.70	10144.81	12635.70	0.507
Concio 2	137	J[756]	Neg	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 2	137	J[756]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	2245.48	3474.88	12635.70	10220.13	12635.70	0.453
Concio 1	138	I[756]	Neg	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 1	138	I[756]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	2239.98	3469.39	10750.90	8102.11	10750.90	0.531
Concio 1	138	J[757]	Neg	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 1	138	J[757]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	1698.31	2694.45	10750.90	8340.20	10750.90	0.409
Concio 1	139	I[757]	Neg	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 1	139	I[757]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	1715.27	2913.94	10750.90	8332.74	10750.90	0.431
Concio 1	139	J[758]	Neg	ST SLU Mobili	MY-MIN	3	3	3	3	-28.84	-219.33	8011.39	6378.89	6378.89	0.039
Concio 1	139	J[758]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	-28.84	234.61	10750.90	9099.36	10750.90	0.019
Concio 1	140	I[758]	Neg	ST SLU Mobili	FX-MIN	1	3	3	3	-11.84	-7.56	8011.39	6361.88	6361.88	0.003
Concio 1	140	I[758]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 1	140	J[759]	Neg	ST SLV Long	FX-MIN	2	3	4	4	0.00	-0.54	8011.39	6350.05	6350.05	0.000
Concio 1	140	J[759]	Pos	ST SLV Long	FX-MAX	1	1	1	1	0.00	0.54	10750.90	9086.69	10750.90	0.000
Concio 1	201	I[760]	Neg	ST SLV Long	FX-MIN	2	3	4	4	0.00	-0.53	8093.91	6479.08	6479.08	0.000
Concio 1	201	I[760]	Pos	ST SLV Long	FX-MAX	1	1	1	1	0.00	0.53	10954.92	9129.34	10954.92	0.000
Concio 1	201	J[761]	Neg	ST SLU Mobili	MY-MIN	1	3	3	3	-14.59	-342.22	8093.91	6493.67	6493.67	0.055
Concio 1	201	J[761]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 1	202	I[761]	Neg	ST SLU Mobili	MY-MIN	1	3	3	3	-43.60	-508.53	8093.91	6522.69	6522.69	0.085
Concio 1	202	I[761]	Pos	ST SLU Frenamento	MY-MAX	1	3	1	3	-43.60	109.93	10954.92	9148.80	9148.80	0.007
Concio 1	202	J[762]	Neg	ST SLV Vert	FX-MIN	2	1	3	2	1311.79	-5.85	7686.47	5167.29	7686.47	0.170
Concio 1	202	J[762]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	1770.92	3205.56	10954.92	8338.97	10954.92	0.454
Concio 1	203	I[762]	Neg	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 1	203	I[762]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	1739.67	2954.33	10954.92	8352.92	10954.92	0.428
Concio 1	203	J[763]	Neg	ST SLV Vert	FX-MIN	2	1	3	2	1710.79	-7.19	7686.47	4768.30	7686.47	0.222
Concio 1	203	J[763]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	2309.56	3887.82	10954.92	8098.58	10954.92	0.566
Concio 2	204	I[763]	Neg	ST SLV Vert	FX-MIN	2	1	1	2	1718.06	-6.14	9113.78	5058.62	9113.78	0.188
Concio 2	204	I[763]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	2319.39	3892.39	12846.08	10223.21	12846.08	0.484
Concio 2	204	J[764]	Neg	ST SLV Vert	FX-MIN	2	1	1	2	1829.61	-69.46	9113.78	4947.07	9113.78	0.193
Concio 2	204	J[764]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	2469.97	4082.61	12846.08	10157.35	12846.08	0.510
Concio 2	205	I[764]	Neg	ST SLV Vert	FX-MIN	2	1	1	2	1831.79	-46.67	9113.78	4944.89	9113.78	0.196
Concio 2	205	I[764]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	2472.91	4038.81	12846.08	10156.06	12846.08	0.507
Concio 2	205	J[765]	Neg	ST SLU Mobili	MY-MIN	2	1	1	2	2119.09	-205.39	9113.78	4657.59	9113.78	0.210
Concio 2	205	J[765]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	2119.09	3703.25	12846.08	10310.81	12846.08	0.453
Concio 2	206	I[765]	Neg	ST SLU Mobili	MY-MIN	2	1	1	2	2132.13	-190.21	9113.78	4644.55	9113.78	0.213
Concio 2	206	I[765]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	2132.13	3756.67	12846.08	10305.10	12846.08	0.458
Concio 2	206	J[766]	Neg	ST SLV Vert	FX-MAX	2	1	1	2	1041.46	-150.97	9113.78	5735.22	9113.78	0.098
Concio 2	206	J[766]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	1405.98	2943.67	12846.08	10622.68	12846.08	0.339
Concio 3	207	I[766]	Neg	ST SLV Vert	FX-MAX	2	1	1	2	1040.76	-152.91	10397.59	7099.99	10397.59	0.085
Concio 3	207	I[766]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	1405.03	2944.20	13602.15	11144.52	13602.15	0.320
Concio 3	207	J[767]	Neg	ST SLU Vento	MY-MIN	3	1	1	3	688.37	-1345.82	10397.59	7452.38	7452.38	0.088
Concio 3	207	J[767]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	688.37	2074.43	13602.15	11488.93	13602.15	0.203
Concio 3	208	I[767]	Neg	ST SLU Mobili	MY-MIN	3	1	1	3	723.94	-1314.74	10397.59	7416.82	7416.82	0.080
Concio 3	208	I[767]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	723.94	2269.94	13602.15	11471.84	13602.15	0.220
Concio 3	208	J[768]	Neg	ST SLU Mobili	MY-MIN	1	1	1	1	-1868.61	-3639.41	10397.59	9012.41	10397.59	0.530

Concio 3	208	J[768]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 3	209	I[768]	Neg	ST SLU Mobili	MY-MIN	1	1	1	1	-1856.67	-3620.74	10397.59	9014.43	10397.59	0.527
Concio 3	209	I[768]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 3	209	J[769]	Neg	ST SLU Mobili	MY-MIN	1	1	1	1	-2177.49	-3913.46	10397.59	8960.42	10397.59	0.586
Concio 3	209	J[769]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 4 H=var	210	I[769]	Neg	ST SLU Mobili	MY-MIN	1	3	3	3	-2175.02	-3941.62	13534.54	10850.42	10850.42	0.564
Concio 4 H=var	210	I[769]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 4 H=var	210	J[770]	Neg	ST SLU Mobili	MY-MIN	1	3	3	3	-3976.11	-5671.43	21870.53	17021.59	17021.59	0.567
Concio 4 H=var	210	J[770]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 4 H=var	211	I[770]	Neg	ST SLU Mobili	MY-MIN	1	3	3	3	-3971.18	-5634.42	21870.53	17022.32	17022.32	0.564
Concio 4 H=var	211	I[770]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 4 H=var	211	J[771]	Neg	ST SLU Mobili	MY-MIN	1	3	4	4	-6125.40	-7840.84	31054.78	23251.25	23251.25	0.601
Concio 4 H=var	211	J[771]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 4 H=200	212	I[771]	Neg	ST SLU Mobili	MY-MIN	1	3	4	4	-6125.40	-7840.84	31054.78	23250.97	23250.97	0.601
Concio 4 H=200	212	I[771]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 4 H=200	212	J[772]	Neg	ST SLU Mobili	MY-MIN	1	3	4	4	-6590.37	-8339.12	31054.78	23206.68	23206.68	0.643
Concio 4 H=200	212	J[772]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 4 H=200	213	I[772]	Neg	ST SLU Mobili	MY-MIN	1	3	4	4	-6588.15	-8414.24	31054.78	23206.89	23206.89	0.646
Concio 4 H=200	213	I[772]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 4 H=200	213	J[773]	Neg	ST SLU Mobili	MY-MIN	1	3	4	4	-6149.50	-7845.60	31054.78	23248.67	23248.67	0.602
Concio 4 H=200	213	J[773]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 4 H=var	214	I[773]	Neg	ST SLU Mobili	MY-MIN	1	3	4	4	-6149.50	-7845.60	31054.78	23248.84	23248.84	0.602
Concio 4 H=var	214	I[773]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 4 H=var	214	J[774]	Neg	ST SLU Mobili	MY-MIN	1	3	3	3	-4126.44	-5793.63	21870.53	16999.37	16999.37	0.584
Concio 4 H=var	214	J[774]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 4 H=var	215	I[774]	Neg	ST SLU Mobili	MY-MIN	1	3	3	3	-4132.44	-5834.60	21870.53	16998.48	16998.48	0.586
Concio 4 H=var	215	I[774]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 4 H=var	215	J[775]	Neg	ST SLU Mobili	MY-MIN	1	3	3	3	-2459.01	-4297.51	13534.54	10796.42	10796.42	0.626
Concio 4 H=var	215	J[775]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 5	216	I[775]	Neg	ST SLU Mobili	MY-MIN	1	1	1	1	-2461.48	-4290.34	10397.59	8830.17	10397.59	0.649
Concio 5	216	I[775]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 5	216	J[776]	Neg	ST SLU Mobili	MY-MIN	1	1	1	1	-2166.19	-4019.61	10397.59	8962.33	10397.59	0.595
Concio 5	216	J[776]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 5	217	I[776]	Neg	ST SLU Mobili	MY-MIN	1	1	1	1	-2173.04	-4041.37	10397.59	8961.17	10397.59	0.598
Concio 5	217	I[776]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 5	217	J[777]	Neg	ST SLU Termico	MY-MIN	1	1	1	1	239.95	-2198.24	10397.59	7900.80	10397.59	0.188
Concio 5	217	J[777]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	239.95	1524.86	13602.15	11704.43	13602.15	0.130
Concio 5	218	I[777]	Neg	ST SLU Termico	MY-MIN	1	1	1	1	204.93	-2217.43	10397.59	7935.82	10397.59	0.194
Concio 5	218	I[777]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	204.93	1324.88	13602.15	11721.26	13602.15	0.112
Concio 5	218	J[778]	Neg	ST SLU Termico	MY-MIN	1	1	1	1	877.49	-1855.47	10397.59	7263.27	10397.59	0.094
Concio 5	218	J[778]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	877.49	2118.94	13602.15	11398.04	13602.15	0.220
Concio 6	219	I[778]	Neg	ST SLU Termico	MY-MIN	1	2	2	2	878.84	-1853.30	8891.06	5791.23	8891.06	0.110
Concio 6	219	I[778]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	878.84	2119.14	12388.93	10524.18	12388.93	0.242
Concio 6	219	J[779]	Neg	ST SLU Frenamento	FY-MIN	2	1	2	2	1377.38	-283.10	8891.06	5292.69	8891.06	0.123
Concio 6	219	J[779]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	1377.38	2643.11	12388.93	10320.42	12388.93	0.325
Concio 6	220	I[779]	Neg	ST SLU Termico	FX-MIN	2	1	2	2	1367.28	-144.26	8891.06	5302.78	8891.06	0.138
Concio 6	220	I[779]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	1367.28	2588.54	12388.93	10324.55	12388.93	0.319
Concio 6	220	J[780]	Neg	ST SLV Vert	FX-MAX	2	1	2	2	1127.86	-518.39	8891.06	5542.21	8891.06	0.069
Concio 6	220	J[780]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	1522.61	2800.01	12388.93	10261.07	12388.93	0.349
Concio 6	221	I[780]	Neg	ST SLV Vert	FX-MAX	2	1	2	2	1127.86	-518.39	8891.06	5542.21	8891.06	0.069
Concio 6	221	I[780]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	1522.61	2800.01	12388.93	10261.07	12388.93	0.349
Concio 6	221	J[781]	Neg	ST SLU Termico	FY-MIN	2	1	2	2	1367.28	-77.49	8891.06	5302.78	8891.06	0.145
Concio 6	221	J[781]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	1367.28	2588.95	12388.93	10324.55	12388.93	0.319
Concio 6	222	I[781]	Neg	ST SLU Termico	MX-MIN	2	1	2	2	1377.38	-101.87	8891.06	5292.69	8891.06	0.143
Concio 6	222	I[781]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	1377.38	2642.71	12388.93	10320.42	12388.93	0.324
Concio 6	222	J[782]	Neg	ST SLU Termico	MY-MIN	1	2	2	2	878.84	-1853.22	8891.06	5791.23	8891.06	0.110
Concio 6	222	J[782]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	878.84	2118.64	12388.93	10524.18	12388.93	0.242
Concio 5	223	I[782]	Neg	ST SLU Termico	MY-MIN	1	1	1	1	877.49	-1855.39	10397.59	7263.27	10397.59	0.094
Concio 5	223	I[782]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	877.49	2118.44	13602.15	11398.04	13602.15	0.220
Concio 5	223	J[783]	Neg	ST SLU Termico	MY-MIN	1	1	1	1	204.93	-2217.30	10397.59	7935.82	10397.59	0.194
Concio 5	223	J[783]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	204.93	1325.59	13602.15	11721.26	13602.15	0.113
Concio 5	224	I[783]	Neg	ST SLU Termico	MY-MIN	1	1	1	1	239.95	-2198.33	10397.59	7900.80	10397.59	0.188
Concio 5	224	I[783]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	239.95	1524.76	13602.15	11704.43	13602.15	0.130
Concio 5	224	J[784]	Neg	ST SLU Mobili	MY-MIN	1	1	1	1	-2173.03	-4041.81	10397.59	8961.17	10397.59	0.598
Concio 5	224	J[784]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 5	225	I[784]	Neg	ST SLU Mobili	MY-MIN	1	1	1	1	-2166.19	-4019.92	10397.59	8962.33	10397.59	0.595
Concio 5	225	I[784]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 5	225	J[785]	Neg	ST SLU Mobili	MY-MIN	1	1	1	1	-2461.47	-4290.64	10397.59	8830.17	10397.59	0.649
Concio 5	225	J[785]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 4 H=var	226	I[785]	Neg	ST SLU Mobili	MY-MIN	1	3	3	3	-2459.00	-4297.65	13534.54	10796.42	10796.42	0.626
Concio 4 H=var	226	I[785]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 4 H=var	226	J[786]	Neg	ST SLU Mobili	MY-MIN	1	3	3	3	-4132.44	-5834.68	21870.53	16998.48	16998.48	0.586
Concio 4 H=var	226	J[786]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 4 H=var	227	I[786]	Neg	ST SLU Mobili	MY-MIN	1	3	3	3	-4126.43	-5794.19	21870.53	16999.37	16999.37	0.584
Concio 4 H=var	227	I[786]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 4 H=var	227	J[787]	Neg	ST SLU Mobili	MY-MIN	1	3	4	4	-6149.50	-7845.95	31054.78	23248.84	23248.84	0.602
Concio 4 H=var	227	J[787]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 4 H=200	228	I[787]	Neg	ST SLU Mobili	MY-MIN	1	3	4	4	-6149.50	-7845.95	31054.78	23248.67	23248.67	0.602
Concio 4 H=200	228	I[787]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 4 H=200	228	J[788]	Neg	ST SLU Mobili	MY-MIN	1	3	4	4	-6588.15	-8414.41	31054.78	23206.89	23206.89	0.646

Concio 4 H=200	228	J[788]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 4 H=200	229	I[788]	Neg	ST SLU Mobili	MY-MIN	1	3	4	4	-6590.37	-8339.18	31054.78	23206.68	23206.68	0.643
Concio 4 H=200	229	I[788]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 4 H=200	229	J[789]	Neg	ST SLU Mobili	MY-MIN	1	3	4	4	-6125.40	-7840.74	31054.78	23250.97	23250.97	0.601
Concio 4 H=200	229	J[789]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 4 H=var	230	I[789]	Neg	ST SLU Mobili	MY-MIN	1	3	4	4	-6125.40	-7840.74	31054.78	23251.25	23251.25	0.601
Concio 4 H=var	230	I[789]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 4 H=var	230	J[790]	Neg	ST SLU Mobili	MY-MIN	1	3	3	3	-3971.19	-5634.26	21870.53	17022.32	17022.32	0.564
Concio 4 H=var	230	J[790]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 4 H=var	231	I[790]	Neg	ST SLU Mobili	MY-MIN	1	3	3	3	-3976.12	-5671.54	21870.53	17021.59	17021.59	0.567
Concio 4 H=var	231	I[790]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 4 H=var	231	J[791]	Neg	ST SLU Mobili	MY-MIN	1	3	3	3	-2175.02	-3941.58	13534.54	10850.42	10850.42	0.564
Concio 4 H=var	231	J[791]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 3	232	I[791]	Neg	ST SLU Mobili	MY-MIN	1	1	1	1	-2177.49	-3913.34	10397.59	8960.42	10397.59	0.586
Concio 3	232	I[791]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 3	232	J[792]	Neg	ST SLU Mobili	MY-MIN	1	1	1	1	-1856.67	-3620.53	10397.59	9014.43	10397.59	0.527
Concio 3	232	J[792]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 3	233	I[792]	Neg	ST SLU Mobili	MY-MIN	1	1	1	1	-1868.62	-3639.07	10397.59	9012.41	10397.59	0.530
Concio 3	233	I[792]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 3	233	J[793]	Neg	ST SLU Mobili	MY-MIN	3	1	1	3	723.94	-1314.57	10397.59	7416.82	7416.82	0.080
Concio 3	233	J[793]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	723.94	2270.06	13602.15	11471.84	13602.15	0.220
Concio 3	234	I[793]	Neg	ST SLU Vento	MY-MIN	3	1	1	3	688.37	-1345.97	10397.59	7452.38	7452.38	0.088
Concio 3	234	I[793]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	688.37	2073.77	13602.15	11488.93	13602.15	0.203
Concio 3	234	J[794]	Neg	ST SLV Vert	FX-MAX	2	1	1	2	1040.76	-152.91	10397.59	7099.99	10397.59	0.085
Concio 3	234	J[794]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	1405.03	2944.82	13602.15	11144.52	13602.15	0.320
Concio 2	235	I[794]	Neg	ST SLV Vert	FX-MAX	2	1	1	2	1041.46	-150.97	9113.78	5735.22	9113.78	0.098
Concio 2	235	I[794]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	1405.98	2944.28	12846.08	10622.68	12846.08	0.339
Concio 2	235	J[795]	Neg	ST SLU Mobili	MY-MIN	2	1	1	2	2132.13	-190.23	9113.78	4644.55	9113.78	0.213
Concio 2	235	J[795]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	2132.13	3757.63	12846.08	10305.10	12846.08	0.458
Concio 2	236	I[795]	Neg	ST SLU Mobili	MY-MIN	2	1	1	2	2119.09	-205.43	9113.78	4657.59	9113.78	0.210
Concio 2	236	I[795]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	2119.09	3703.09	12846.08	10310.81	12846.08	0.453
Concio 2	236	J[796]	Neg	ST SLV Vert	FX-MIN	2	1	1	2	1831.79	-46.67	9113.78	4944.89	9113.78	0.196
Concio 2	236	J[796]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	2472.91	4039.32	12846.08	10156.06	12846.08	0.507
Concio 2	237	I[796]	Neg	ST SLV Vert	FX-MIN	2	1	1	2	1829.61	-69.46	9113.78	4947.07	9113.78	0.193
Concio 2	237	I[796]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	2469.97	4082.03	12846.08	10157.35	12846.08	0.510
Concio 2	237	J[797]	Neg	ST SLV Vert	FX-MIN	2	1	1	2	1718.06	-6.14	9113.78	5058.62	9113.78	0.188
Concio 2	237	J[797]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	2319.39	3892.22	12846.08	10223.21	12846.08	0.484
Concio 1	238	I[797]	Neg	ST SLV Vert	FX-MIN	2	1	3	2	1710.79	-7.19	7686.47	4768.30	7686.47	0.222
Concio 1	238	I[797]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	2309.56	3888.16	10954.92	8098.58	10954.92	0.566
Concio 1	238	J[798]	Neg	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 1	238	J[798]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	1739.67	2954.47	10954.92	8352.92	10954.92	0.428
Concio 1	239	I[798]	Neg	ST SLV Vert	FX-MIN	2	1	3	2	1311.79	-5.85	7686.47	5167.29	7686.47	0.170
Concio 1	239	I[798]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	1770.92	3205.45	10954.92	8338.97	10954.92	0.454
Concio 1	239	J[799]	Neg	ST SLU Mobili	MY-MIN	1	3	3	3	-43.60	-508.66	8093.91	6522.69	6522.69	0.085
Concio 1	239	J[799]	Pos	ST SLU Frenamento	MY-MAX	1	3	1	3	-43.60	109.86	10954.92	9148.80	9148.80	0.007
Concio 1	240	I[799]	Neg	ST SLU Mobili	MY-MIN	1	3	3	3	-14.59	-342.19	8093.91	6493.67	6493.67	0.055
Concio 1	240	I[799]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 1	240	J[800]	Neg	ST SLV Long	FX-MIN	2	3	4	4	0.00	-0.53	8093.91	6479.08	6479.08	0.000
Concio 1	240	J[800]	Pos	ST SLV Long	FX-MAX	1	1	1	1	0.00	0.53	10954.92	9129.34	10954.92	0.000
Concio 1	301	I[801]	Neg	ST SLV Long	FX-MIN	2	3	4	4	0.00	-0.53	8093.91	6479.08	6479.08	0.000
Concio 1	301	I[801]	Pos	ST SLV Long	FX-MAX	1	1	1	1	0.00	0.53	10954.92	9129.34	10954.92	0.000
Concio 1	301	J[802]	Neg	ST SLU Mobili	FY-MAX	1	3	3	3	-14.59	-342.22	8093.91	6493.67	6493.67	0.055
Concio 1	301	J[802]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 1	302	I[802]	Neg	ST SLU Mobili	MY-MIN	1	3	3	3	-43.60	-507.62	8093.91	6522.69	6522.69	0.085
Concio 1	302	I[802]	Pos	ST SLU Frenamento	MY-MAX	1	3	1	3	-43.60	109.93	10954.92	9148.80	9148.80	0.007
Concio 1	302	J[803]	Neg	ST SLV Vert	FX-MIN	2	1	3	2	1311.79	-5.85	7686.47	5167.29	7686.47	0.170
Concio 1	302	J[803]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	1770.92	3211.15	10954.92	8338.97	10954.92	0.455
Concio 1	303	I[803]	Neg	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 1	303	I[803]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	1739.67	2956.43	10954.92	8352.92	10954.92	0.429
Concio 1	303	J[804]	Neg	ST SLV Vert	FX-MIN	2	1	3	2	1710.79	-7.19	7686.47	4768.30	7686.47	0.222
Concio 1	303	J[804]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	2309.56	3891.56	10954.92	8098.58	10954.92	0.566
Concio 2	304	I[804]	Neg	ST SLV Vert	FX-MIN	2	1	1	2	1718.06	-6.14	9113.78	5058.62	9113.78	0.188
Concio 2	304	I[804]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	2319.39	3896.17	12846.08	10223.21	12846.08	0.484
Concio 2	304	J[805]	Neg	ST SLV Vert	FX-MIN	2	1	1	2	1829.61	-69.46	9113.78	4947.07	9113.78	0.193
Concio 2	304	J[805]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	2469.97	4087.64	12846.08	10157.35	12846.08	0.510
Concio 2	305	I[805]	Neg	ST SLV Vert	FX-MIN	2	1	1	2	1831.79	-46.67	9113.78	4944.89	9113.78	0.196
Concio 2	305	I[805]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	2472.91	4041.96	12846.08	10156.06	12846.08	0.507
Concio 2	305	J[806]	Neg	ST SLU Mobili	MY-MIN	2	1	1	2	2119.09	-207.88	9113.78	4657.59	9113.78	0.210
Concio 2	305	J[806]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	2119.09	3705.75	12846.08	10310.81	12846.08	0.453
Concio 2	306	I[806]	Neg	ST SLU Mobili	MY-MIN	2	1	1	2	2132.13	-194.90	9113.78	4644.55	9113.78	0.213
Concio 2	306	I[806]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	2132.13	3761.36	12846.08	10305.10	12846.08	0.459
Concio 2	306	J[807]	Neg	ST SLV Vert	FX-MAX	2	1	1	2	1041.46	-150.97	9113.78	5735.22	9113.78	0.098
Concio 2	306	J[807]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	1405.98	2946.09	12846.08	10622.68	12846.08	0.339
Concio 3	307	I[807]	Neg	ST SLV Vert	FX-MAX	2	1	1	2	1040.76	-152.91	10397.59	7099.99	10397.59	0.085
Concio 3	307	I[807]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	1405.03	2946.65	13602.15	11144.52	13602.15	0.320
Concio 3	307	J[808]	Neg	ST SLU Termico	MY-MIN	1	1	1	1	688.37	-1475.23	10397.59	7452.38	10397.59	0.076
Concio 3	307	J[808]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	688.37	2075.37	13602.15	11488.93	13602.15	0.203
Concio 3	308	I[808]	Neg	ST SLU Vento	MY-MIN	3	1	1	3	723.94	-1313.97	10397.59	7416.82	7416.82	0.080
Concio 3	308	I[808]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	723.94	2272.68	13602.15	11471.84	13602.15	0.220
Concio 3	308	J[809]	Neg	ST SLU Mobili	MY-MIN	1	1	1	1	-1868.61	-3642.92	10397.59	9012.41	10397.59	0.530

Concio 3	308	J[809]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 3	309	I[809]	Neg	ST SLU Mobili	MY-MIN	1	1	1	1	-1856.67	-3623.79	10397.59	9014.43	10397.59	0.527
Concio 3	309	I[809]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 3	309	J[810]	Neg	ST SLU Mobili	MY-MIN	1	1	1	1	-2177.49	-3918.52	10397.59	8960.42	10397.59	0.586
Concio 3	309	J[810]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 4 H=var	310	I[810]	Neg	ST SLU Mobili	MY-MIN	1	3	3	3	-2175.02	-3942.81	13534.54	10850.42	10850.42	0.564
Concio 4 H=var	310	I[810]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 4 H=var	310	J[811]	Neg	ST SLU Mobili	MY-MIN	1	3	3	3	-3976.11	-5680.10	21870.53	17021.59	17021.59	0.567
Concio 4 H=var	310	J[811]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 4 H=var	311	I[811]	Neg	ST SLU Mobili	MY-MIN	1	3	3	3	-3971.18	-5641.27	21870.53	17022.32	17022.32	0.565
Concio 4 H=var	311	I[811]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 4 H=var	311	J[812]	Neg	ST SLU Mobili	MY-MIN	1	3	4	4	-6125.40	-7855.62	31054.78	23251.25	23251.25	0.601
Concio 4 H=var	311	J[812]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 4 H=200	312	I[812]	Neg	ST SLU Mobili	MY-MIN	1	3	4	4	-6125.40	-7855.62	31054.78	23250.97	23250.97	0.601
Concio 4 H=200	312	I[812]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 4 H=200	312	J[813]	Neg	ST SLU Mobili	MY-MIN	1	3	4	4	-6590.37	-8355.76	31054.78	23206.68	23206.68	0.644
Concio 4 H=200	312	J[813]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 4 H=200	313	I[813]	Neg	ST SLU Mobili	MY-MIN	1	3	4	4	-6588.15	-8431.02	31054.78	23206.89	23206.89	0.647
Concio 4 H=200	313	I[813]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 4 H=200	313	J[814]	Neg	ST SLU Mobili	MY-MIN	1	3	4	4	-6149.50	-7860.39	31054.78	23248.67	23248.67	0.603
Concio 4 H=200	313	J[814]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 4 H=var	314	I[814]	Neg	ST SLU Mobili	MY-MIN	1	3	4	4	-6149.50	-7860.39	31054.78	23248.84	23248.84	0.603
Concio 4 H=var	314	I[814]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 4 H=var	314	J[815]	Neg	ST SLU Mobili	MY-MIN	1	3	3	3	-4126.44	-5799.96	21870.53	16999.37	16999.37	0.584
Concio 4 H=var	314	J[815]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 4 H=var	315	I[815]	Neg	ST SLU Mobili	MY-MIN	1	3	3	3	-4132.44	-5842.90	21870.53	16998.48	16998.48	0.587
Concio 4 H=var	315	I[815]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 4 H=var	315	J[816]	Neg	ST SLU Mobili	MY-MIN	1	3	3	3	-2459.01	-4298.17	13534.54	10796.42	10796.42	0.626
Concio 4 H=var	315	J[816]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 5	316	I[816]	Neg	ST SLU Mobili	MY-MIN	1	1	1	1	-2461.48	-4295.78	10397.59	8830.17	10397.59	0.650
Concio 5	316	I[816]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 5	316	J[817]	Neg	ST SLU Mobili	MY-MIN	1	1	1	1	-2166.19	-4022.06	10397.59	8962.33	10397.59	0.595
Concio 5	316	J[817]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 5	317	I[817]	Neg	ST SLU Mobili	MY-MIN	1	1	1	1	-2173.04	-4045.63	10397.59	8961.17	10397.59	0.598
Concio 5	317	I[817]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 5	317	J[818]	Neg	ST SLU Termico	MY-MIN	1	1	1	1	239.95	-2201.47	10397.59	7900.80	10397.59	0.189
Concio 5	317	J[818]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	239.95	1528.09	13602.15	11704.43	13602.15	0.130
Concio 5	318	I[818]	Neg	ST SLU Termico	MY-MIN	1	1	1	1	204.93	-2219.32	10397.59	7935.82	10397.59	0.194
Concio 5	318	I[818]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	204.93	1326.76	13602.15	11721.26	13602.15	0.113
Concio 5	318	J[819]	Neg	ST SLU Mobili	MY-MIN	3	1	1	3	877.49	-1614.72	10397.59	7263.27	7263.27	0.102
Concio 5	318	J[819]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	877.49	2122.36	13602.15	11398.04	13602.15	0.221
Concio 6	319	I[819]	Neg	ST SLU Termico	MY-MIN	1	2	2	2	878.84	-1856.65	8891.06	5791.23	8891.06	0.110
Concio 6	319	I[819]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	878.84	2122.49	12388.93	10524.18	12388.93	0.242
Concio 6	319	J[820]	Neg	ST SLU Termico	MX-MIN	2	1	2	2	1377.38	-107.61	8891.06	5292.69	8891.06	0.143
Concio 6	319	J[820]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	1377.38	2648.40	12388.93	10320.42	12388.93	0.325
Concio 6	320	I[820]	Neg	ST SLU Termico	FY-MIN	2	1	2	2	1367.28	-127.89	8891.06	5302.78	8891.06	0.139
Concio 6	320	I[820]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	1367.28	2592.04	12388.93	10324.55	12388.93	0.320
Concio 6	320	J[821]	Neg	ST SLV Vert	FX-MAX	2	1	2	2	1127.86	-518.39	8891.06	5542.21	8891.06	0.069
Concio 6	320	J[821]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	1522.61	2803.50	12388.93	10261.07	12388.93	0.349
Concio 6	321	I[821]	Neg	ST SLV Vert	FX-MAX	2	1	2	2	1127.86	-518.39	8891.06	5542.21	8891.06	0.069
Concio 6	321	I[821]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	1522.61	2803.50	12388.93	10261.07	12388.93	0.349
Concio 6	321	J[822]	Neg	ST SLV Vert	FX-MAX	2	1	2	2	1012.80	-550.49	8891.06	5657.27	8891.06	0.052
Concio 6	321	J[822]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	1367.28	2592.44	12388.93	10324.55	12388.93	0.320
Concio 6	322	I[822]	Neg	ST SLU Termico	MZ-MIN	2	1	2	2	1377.38	-139.32	8891.06	5292.69	8891.06	0.139
Concio 6	322	I[822]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	1377.38	2648.06	12388.93	10320.42	12388.93	0.325
Concio 6	322	J[823]	Neg	ST SLU Termico	MY-MIN	1	2	2	2	878.84	-1856.59	8891.06	5791.23	8891.06	0.110
Concio 6	322	J[823]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	878.84	2122.01	12388.93	10524.18	12388.93	0.242
Concio 5	323	I[823]	Neg	ST SLU Mobili	MY-MIN	3	1	1	3	877.49	-1614.65	10397.59	7263.27	7263.27	0.101
Concio 5	323	I[823]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	877.49	2121.88	13602.15	11398.04	13602.15	0.221
Concio 5	323	J[824]	Neg	ST SLU Termico	MY-MIN	1	1	1	1	204.93	-2219.17	10397.59	7935.82	10397.59	0.194
Concio 5	323	J[824]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	204.93	1327.46	13602.15	11721.26	13602.15	0.113
Concio 5	324	I[824]	Neg	ST SLU Termico	MY-MIN	1	1	1	1	239.95	-2201.33	10397.59	7900.80	10397.59	0.189
Concio 5	324	I[824]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	239.95	1527.76	13602.15	11704.43	13602.15	0.130
Concio 5	324	J[825]	Neg	ST SLU Mobili	MY-MIN	1	1	1	1	-2173.03	-4046.19	10397.59	8961.17	10397.59	0.598
Concio 5	324	J[825]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 5	325	I[825]	Neg	ST SLU Mobili	MY-MIN	1	1	1	1	-2166.19	-4022.46	10397.59	8962.33	10397.59	0.595
Concio 5	325	I[825]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 5	325	J[826]	Neg	ST SLU Mobili	MY-MIN	1	1	1	1	-2461.47	-4296.16	10397.59	8830.17	10397.59	0.650
Concio 5	325	J[826]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 4 H=var	326	I[826]	Neg	ST SLU Mobili	MY-MIN	1	3	3	3	-2459.00	-4298.55	13534.54	10796.42	10796.42	0.626
Concio 4 H=var	326	I[826]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 4 H=var	326	J[827]	Neg	ST SLU Mobili	MY-MIN	1	3	3	3	-4132.44	-5843.26	21870.53	16998.48	16998.48	0.587
Concio 4 H=var	326	J[827]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 4 H=var	327	I[827]	Neg	ST SLU Mobili	MY-MIN	1	3	3	3	-4126.43	-5800.88	21870.53	16999.37	16999.37	0.584
Concio 4 H=var	327	I[827]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 4 H=var	327	J[828]	Neg	ST SLU Mobili	MY-MIN	1	3	4	4	-6149.50	-7860.73	31054.78	23248.84	23248.84	0.603
Concio 4 H=var	327	J[828]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 4 H=200	328	I[828]	Neg	ST SLU Mobili	MY-MIN	1	3	4	4	-6149.50	-7860.73	31054.78	23248.67	23248.67	0.603
Concio 4 H=200	328	I[828]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 4 H=200	328	J[829]	Neg	ST SLU Mobili	MY-MIN	1	3	4	4	-6588.15	-8431.09	31054.78	23206.89	23206.89	0.647

Concio 4 H=200	328	J[829]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 4 H=200	329	I[829]	Neg	ST SLU Mobili	MY-MIN	1	3	4	4	-6590.37	-8355.90	31054.78	23206.68	23206.68	0.644
Concio 4 H=200	329	I[829]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 4 H=200	329	J[830]	Neg	ST SLU Mobili	MY-MIN	1	3	4	4	-6125.40	-7855.52	31054.78	23250.97	23250.97	0.601
Concio 4 H=200	329	J[830]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 4 H=var	330	I[830]	Neg	ST SLU Mobili	MY-MIN	1	3	4	4	-6125.40	-7855.52	31054.78	23251.25	23251.25	0.601
Concio 4 H=var	330	I[830]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 4 H=var	330	J[831]	Neg	ST SLU Mobili	MY-MIN	1	3	3	3	-3971.19	-5640.94	21870.53	17022.32	17022.32	0.565
Concio 4 H=var	330	J[831]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 4 H=var	331	I[831]	Neg	ST SLU Mobili	MY-MIN	1	3	3	3	-3976.12	-5679.91	21870.53	17021.59	17021.59	0.567
Concio 4 H=var	331	I[831]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 4 H=var	331	J[832]	Neg	ST SLU Mobili	MY-MIN	1	3	3	3	-2175.02	-3942.53	13534.54	10850.42	10850.42	0.564
Concio 4 H=var	331	J[832]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 3	332	I[832]	Neg	ST SLU Mobili	MY-MIN	1	1	1	1	-2177.49	-3918.30	10397.59	8960.42	10397.59	0.586
Concio 3	332	I[832]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 3	332	J[833]	Neg	ST SLU Mobili	MY-MIN	1	1	1	1	-1856.67	-3623.48	10397.59	9014.43	10397.59	0.527
Concio 3	332	J[833]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 3	333	I[833]	Neg	ST SLU Mobili	MY-MIN	1	1	1	1	-1868.62	-3642.53	10397.59	9012.41	10397.59	0.530
Concio 3	333	I[833]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 3	333	J[834]	Neg	ST SLU Vento	MY-MIN	3	1	1	3	723.94	-1314.15	10397.59	7416.82	7416.82	0.080
Concio 3	333	J[834]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	723.94	2273.02	13602.15	11471.84	13602.15	0.220
Concio 3	334	I[834]	Neg	ST SLU Termico	MY-MIN	1	1	1	1	688.37	-1475.34	10397.59	7452.38	10397.59	0.076
Concio 3	334	I[834]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	688.37	2074.72	13602.15	11488.93	13602.15	0.203
Concio 3	334	J[835]	Neg	ST SLV Vert	FX-MAX	2	1	1	2	1040.76	-152.91	10397.59	7099.99	10397.59	0.085
Concio 3	334	J[835]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	1405.03	2947.25	13602.15	11144.52	13602.15	0.320
Concio 2	335	I[835]	Neg	ST SLV Vert	FX-MAX	2	1	1	2	1041.46	-150.97	9113.78	5735.22	9113.78	0.098
Concio 2	335	I[835]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	1405.98	2946.67	12846.08	10622.68	12846.08	0.339
Concio 2	335	J[836]	Neg	ST SLU Mobili	MY-MIN	2	1	1	2	2132.13	-194.84	9113.78	4644.55	9113.78	0.213
Concio 2	335	J[836]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	2132.13	3762.24	12846.08	10305.10	12846.08	0.459
Concio 2	336	I[836]	Neg	ST SLU Mobili	MY-MIN	2	1	1	2	2119.09	-207.89	9113.78	4657.59	9113.78	0.210
Concio 2	336	I[836]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	2119.09	3705.55	12846.08	10310.81	12846.08	0.453
Concio 2	336	J[837]	Neg	ST SLV Vert	FX-MIN	2	1	1	2	1831.79	-46.67	9113.78	4944.89	9113.78	0.196
Concio 2	336	J[837]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	2472.91	4042.28	12846.08	10156.06	12846.08	0.507
Concio 2	337	I[837]	Neg	ST SLV Vert	FX-MIN	2	1	1	2	1829.61	-69.46	9113.78	4947.07	9113.78	0.193
Concio 2	337	I[837]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	2469.97	4086.89	12846.08	10157.35	12846.08	0.510
Concio 2	337	J[838]	Neg	ST SLV Vert	FX-MIN	2	1	1	2	1718.06	-6.14	9113.78	5058.62	9113.78	0.188
Concio 2	337	J[838]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	2319.39	3895.98	12846.08	10223.21	12846.08	0.484
Concio 1	338	I[838]	Neg	ST SLV Vert	FX-MIN	2	1	3	2	1710.79	-7.19	7686.47	4768.30	7686.47	0.222
Concio 1	338	I[838]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	2309.56	3891.88	10954.92	8098.58	10954.92	0.566
Concio 1	338	J[839]	Neg	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 1	338	J[839]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	1739.67	2956.55	10954.92	8352.92	10954.92	0.429
Concio 1	339	I[839]	Neg	ST SLV Vert	FX-MIN	2	1	3	2	1311.79	-5.85	7686.47	5167.29	7686.47	0.170
Concio 1	339	I[839]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	1770.92	3211.07	10954.92	8338.97	10954.92	0.455
Concio 1	339	J[840]	Neg	ST SLU Mobili	MY-MIN	1	3	3	3	-43.60	-507.76	8093.91	6522.69	6522.69	0.085
Concio 1	339	J[840]	Pos	ST SLU Frenamento	MY-MAX	1	3	1	3	-43.60	109.86	10954.92	9148.80	9148.80	0.007
Concio 1	340	I[840]	Neg	ST SLU Mobili	FY-MAX	1	3	3	3	-14.59	-342.19	8093.91	6493.67	6493.67	0.055
Concio 1	340	I[840]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 1	340	J[841]	Neg	ST SLV Long	FX-MIN	2	3	4	4	0.00	-0.53	8093.91	6479.08	6479.08	0.000
Concio 1	340	J[841]	Pos	ST SLV Long	FX-MAX	1	1	1	1	0.00	0.53	10954.92	9129.34	10954.92	0.000
Concio 1	401	I[842]	Neg	ST SLV Long	FX-MIN	2	3	4	4	0.00	-0.54	8011.39	6350.05	6350.05	0.000
Concio 1	401	I[842]	Pos	ST SLV Long	FX-MAX	1	1	1	1	0.00	0.54	10750.90	9086.69	10750.90	0.000
Concio 1	401	J[843]	Neg	ST SLU Mobili	FX-MAX	1	3	3	3	-11.84	-7.57	8011.39	6361.88	6361.88	0.003
Concio 1	401	J[843]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 1	402	I[843]	Neg	ST SLU Mobili	MY-MIN	1	3	3	3	-28.84	-218.60	8011.39	6378.89	6378.89	0.039
Concio 1	402	I[843]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	-28.84	233.97	10750.90	9099.36	10750.90	0.019
Concio 1	402	J[844]	Neg	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 1	402	J[844]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	1715.27	2902.81	10750.90	8332.74	10750.90	0.430
Concio 1	403	I[844]	Neg	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 1	403	I[844]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	1698.32	2688.33	10750.90	8340.20	10750.90	0.408
Concio 1	403	J[845]	Neg	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 1	403	J[845]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	2239.98	3461.94	10750.90	8102.11	10750.90	0.530
Concio 2	404	I[845]	Neg	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 2	404	I[845]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	2245.48	3467.56	12635.70	10220.13	12635.70	0.452
Concio 2	404	J[846]	Neg	ST SLV Vert	FX-MIN	2	1	1	2	1792.77	-35.27	9000.58	4849.14	9000.58	0.195
Concio 2	404	J[846]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	2420.25	3983.52	12635.70	10144.81	12635.70	0.507
Concio 2	405	I[846]	Neg	ST SLV Vert	FX-MIN	2	1	1	2	1794.66	-15.93	9000.58	4847.26	9000.58	0.198
Concio 2	405	I[846]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	2422.78	3919.39	12635.70	10143.72	12635.70	0.502
Concio 2	405	J[847]	Neg	ST SLU Mobili	MY-MIN	2	1	1	2	2065.20	-314.62	9000.58	4576.72	9000.58	0.194
Concio 2	405	J[847]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	2065.20	3529.10	12635.70	10297.83	12635.70	0.443
Concio 2	406	I[847]	Neg	ST SLU Frenamento	FZ-MIN	2	1	1	2	2075.58	-66.99	9000.58	4566.34	9000.58	0.223
Concio 2	406	I[847]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	2075.58	3621.15	12635.70	10293.36	12635.70	0.451
Concio 2	406	J[848]	Neg	ST SLU Mobili	FX-MAX	2	1	1	2	1334.18	-17.95	9000.58	5307.74	9000.58	0.146
Concio 2	406	J[848]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	1334.18	2387.88	12635.70	10612.89	12635.70	0.295
Concio 3	407	I[848]	Neg	ST SLU Mobili	FX-MAX	2	1	1	2	1333.75	-18.70	10249.33	6601.91	10249.33	0.128
Concio 3	407	I[848]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	1333.75	2389.20	13386.70	11130.45	13386.70	0.278
Concio 3	407	J[849]	Neg	ST SLU Termico	MY-MIN	1	1	1	1	649.93	-1503.36	10249.33	7285.73	10249.33	0.083
Concio 3	407	J[849]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	649.93	1681.58	13386.70	11454.11	13386.70	0.174
Concio 3	408	I[849]	Neg	ST SLU Termico	MY-MIN	1	1	1	1	672.33	-1460.74	10249.33	7263.33	10249.33	0.077
Concio 3	408	I[849]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	672.33	1887.04	13386.70	11443.51	13386.70	0.191
Concio 3	408	J[850]	Neg	ST SLU Mobili	MY-MIN	1	1	1	1	-1780.61	-3794.98	10249.33	8981.76	10249.33	0.544

Concio 3	408	J[850]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 3	409	I[850]	Neg	ST SLU Mobili	MY-MIN	1	1	1	1	-1773.87	-3794.88	10249.33	8982.85	10249.33	0.543
Concio 3	409	I[850]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 3	409	J[851]	Neg	ST SLU Mobili	MY-MIN	1	1	1	1	-2069.35	-4117.79	10249.33	8935.28	10249.33	0.604
Concio 3	409	J[851]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 4 H=var	410	I[851]	Neg	ST SLU Mobili	MY-MIN	1	3	3	3	-2066.80	-4135.77	13376.13	10789.26	10789.26	0.575
Concio 4 H=var	410	I[851]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 4 H=var	410	J[852]	Neg	ST SLU Mobili	MY-MIN	1	3	3	3	-3709.10	-5879.70	21530.83	16954.86	16954.86	0.566
Concio 4 H=var	410	J[852]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 4 H=var	411	I[852]	Neg	ST SLU Mobili	MY-MIN	1	3	3	3	-3712.67	-5909.27	21530.83	16954.36	16954.36	0.568
Concio 4 H=var	411	I[852]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 4 H=var	411	J[853]	Neg	ST SLU Mobili	MY-MIN	1	3	4	4	-5595.01	-7938.38	30530.77	23228.13	23228.13	0.583
Concio 4 H=var	411	J[853]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 4 H=200	412	I[853]	Neg	ST SLU Mobili	MY-MIN	1	3	4	4	-5595.01	-7938.38	30530.77	23227.77	23227.77	0.583
Concio 4 H=200	412	I[853]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 4 H=200	412	J[854]	Neg	ST SLU Mobili	MY-MIN	1	3	4	4	-5999.98	-8450.57	30530.77	23191.04	23191.04	0.623
Concio 4 H=200	412	J[854]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 4 H=200	413	I[854]	Neg	ST SLU Mobili	MY-MIN	1	3	4	4	-5993.07	-8510.08	30530.77	23191.67	23191.67	0.625
Concio 4 H=200	413	I[854]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 4 H=200	413	J[855]	Neg	ST SLU Mobili	MY-MIN	1	3	4	4	-5613.22	-7996.70	30530.77	23226.12	23226.12	0.586
Concio 4 H=200	413	J[855]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 4 H=var	414	I[855]	Neg	ST SLU Mobili	MY-MIN	1	3	4	4	-5613.22	-7996.70	30530.77	23226.28	23226.28	0.586
Concio 4 H=var	414	I[855]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 4 H=var	414	J[856]	Neg	ST SLU Mobili	MY-MIN	1	3	3	3	-3854.55	-6013.86	21530.83	16934.68	16934.68	0.583
Concio 4 H=var	414	J[856]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 4 H=var	415	I[856]	Neg	ST SLU Mobili	MY-MIN	1	3	3	3	-3846.81	-5982.65	21530.83	16935.75	16935.75	0.580
Concio 4 H=var	415	I[856]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 4 H=var	415	J[857]	Neg	ST SLU Mobili	MY-MIN	1	3	3	3	-2332.48	-4474.00	13376.13	10741.68	10741.68	0.634
Concio 4 H=var	415	J[857]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 5	416	I[857]	Neg	ST SLU Mobili	MY-MIN	1	1	1	1	-2335.71	-4426.71	10249.33	8738.08	10249.33	0.660
Concio 5	416	I[857]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 5	416	J[858]	Neg	ST SLU Mobili	MY-MIN	1	1	1	1	-2066.62	-4157.66	10249.33	8935.72	10249.33	0.607
Concio 5	416	J[858]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 5	417	I[858]	Neg	ST SLU Mobili	MY-MIN	1	1	1	1	-2068.61	-4120.48	10249.33	8935.40	10249.33	0.604
Concio 5	417	I[858]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 5	417	J[859]	Neg	ST SLU Termico	MY-MIN	1	1	1	1	185.45	-2292.60	10249.33	7750.21	10249.33	0.206
Concio 5	417	J[859]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	185.45	1181.88	13386.70	11673.95	13386.70	0.102
Concio 5	418	I[859]	Neg	ST SLU Termico	MY-MIN	1	1	1	1	165.39	-2249.41	10249.33	7770.27	10249.33	0.203
Concio 5	418	I[859]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	165.39	970.65	13386.70	11683.45	13386.70	0.085
Concio 5	418	J[860]	Neg	ST SLU Termico	MY-MIN	1	1	1	1	797.40	-1888.85	10249.33	7138.26	10249.33	0.106
Concio 5	418	J[860]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	797.40	1587.91	13386.70	11384.31	13386.70	0.178
Concio 6	419	I[860]	Neg	ST SLU Termico	MY-MIN	1	2	2	2	797.64	-1890.00	8775.51	5736.30	8775.51	0.124
Concio 6	419	I[860]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	797.64	1585.89	12181.58	10517.11	12181.58	0.196
Concio 6	419	J[861]	Neg	ST SLU Termico	MX-MIN	2	1	2	2	1309.89	-92.44	8775.51	5224.04	8775.51	0.139
Concio 6	419	J[861]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	1309.89	2542.96	12181.58	10310.73	12181.58	0.316
Concio 6	420	I[861]	Neg	ST SLU Mobili	MZ-MIN	2	1	2	2	1303.38	-48.20	8775.51	5230.56	8775.51	0.143
Concio 6	420	I[861]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	1303.38	2459.24	12181.58	10313.36	12181.58	0.309
Concio 6	420	J[862]	Neg	ST SLU Frenamento	MX-MIN	2	1	2	2	1429.64	-201.08	8775.51	5104.30	8775.51	0.140
Concio 6	420	J[862]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	1429.64	2381.46	12181.58	10262.49	12181.58	0.313
Concio 6	421	I[862]	Neg	ST SLU Frenamento	MX-MIN	2	1	2	2	1429.64	-201.08	8775.51	5104.30	8775.51	0.140
Concio 6	421	I[862]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	1429.64	2381.46	12181.58	10262.49	12181.58	0.313
Concio 6	421	J[863]	Neg	ST SLU Mobili	MZ-MIN	2	1	2	2	1303.38	-48.14	8775.51	5230.56	8775.51	0.143
Concio 6	421	J[863]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	1303.38	2459.08	12181.58	10313.36	12181.58	0.309
Concio 6	422	I[863]	Neg	ST SLU Mobili	MX-MIN	2	1	2	2	1309.89	-74.44	8775.51	5224.04	8775.51	0.141
Concio 6	422	I[863]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	1309.89	2542.95	12181.58	10310.73	12181.58	0.316
Concio 6	422	J[864]	Neg	ST SLU Termico	MY-MIN	1	2	2	2	797.64	-1889.87	8775.51	5736.30	8775.51	0.124
Concio 6	422	J[864]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	797.64	1585.74	12181.58	10517.12	12181.58	0.196
Concio 5	423	I[864]	Neg	ST SLU Termico	MY-MIN	1	1	1	1	797.40	-1888.73	10249.33	7138.26	10249.33	0.106
Concio 5	423	I[864]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	797.40	1587.76	13386.70	11384.31	13386.70	0.178
Concio 5	423	J[865]	Neg	ST SLU Termico	MY-MIN	1	1	1	1	165.39	-2249.18	10249.33	7770.27	10249.33	0.203
Concio 5	423	J[865]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	165.39	970.38	13386.70	11683.45	13386.70	0.085
Concio 5	424	I[865]	Neg	ST SLU Termico	MY-MIN	1	1	1	1	185.45	-2292.42	10249.33	7750.21	10249.33	0.206
Concio 5	424	I[865]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	185.45	1181.66	13386.70	11673.95	13386.70	0.102
Concio 5	424	J[866]	Neg	ST SLU Mobili	MY-MIN	1	1	1	1	-2068.61	-4121.01	10249.33	8935.40	10249.33	0.604
Concio 5	424	J[866]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 5	425	I[866]	Neg	ST SLU Mobili	MY-MIN	1	1	1	1	-2066.62	-4158.13	10249.33	8935.72	10249.33	0.607
Concio 5	425	I[866]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 5	425	J[867]	Neg	ST SLU Mobili	MY-MIN	1	1	1	1	-2335.71	-4427.17	10249.33	8738.08	10249.33	0.660
Concio 5	425	J[867]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 4 H=var	426	I[867]	Neg	ST SLU Mobili	MY-MIN	1	3	3	3	-2332.49	-4474.42	13376.13	10741.68	10741.68	0.634
Concio 4 H=var	426	I[867]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 4 H=var	426	J[868]	Neg	ST SLU Mobili	MY-MIN	1	3	3	3	-3846.82	-5982.96	21530.83	16935.75	16935.75	0.580
Concio 4 H=var	426	J[868]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 4 H=var	427	I[868]	Neg	ST SLU Mobili	MY-MIN	1	3	3	3	-3854.55	-6014.53	21530.83	16934.68	16934.68	0.583
Concio 4 H=var	427	I[868]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 4 H=var	427	J[869]	Neg	ST SLU Mobili	MY-MIN	1	3	4	4	-5613.22	-7996.85	30530.77	23226.28	23226.28	0.586
Concio 4 H=var	427	J[869]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 4 H=200	428	I[869]	Neg	ST SLU Mobili	MY-MIN	1	3	4	4	-5613.22	-7996.85	30530.77	23226.12	23226.12	0.586
Concio 4 H=200	428	I[869]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 4 H=200	428	J[870]	Neg	ST SLU Mobili	MY-MIN	1	3	4	4	-5993.07	-8510.17	30530.77	23191.67	23191.67	0.625

Concio 4 H=200	428	J[870]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 4 H=200	429	I[870]	Neg	ST SLU Mobili	MY-MIN	1	3	4	4	-5999.98	-8450.85	30530.77	23191.04	23191.04	0.623
Concio 4 H=200	429	I[870]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 4 H=200	429	J[871]	Neg	ST SLU Mobili	MY-MIN	1	3	4	4	-5595.01	-7938.61	30530.77	23227.77	23227.77	0.583
Concio 4 H=200	429	J[871]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 4 H=var	430	I[871]	Neg	ST SLU Mobili	MY-MIN	1	3	4	4	-5595.01	-7938.61	30530.77	23228.13	23228.13	0.583
Concio 4 H=var	430	I[871]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 4 H=var	430	J[872]	Neg	ST SLU Mobili	MY-MIN	1	3	3	3	-3712.67	-5908.96	21530.83	16954.36	16954.36	0.568
Concio 4 H=var	430	J[872]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 4 H=var	431	I[872]	Neg	ST SLU Mobili	MY-MIN	1	3	3	3	-3709.10	-5879.67	21530.83	16954.86	16954.86	0.566
Concio 4 H=var	431	I[872]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 4 H=var	431	J[873]	Neg	ST SLU Mobili	MY-MIN	1	3	3	3	-2066.80	-4135.57	13376.13	10789.26	10789.26	0.575
Concio 4 H=var	431	J[873]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 3	432	I[873]	Neg	ST SLU Mobili	MY-MIN	1	1	1	1	-2069.35	-4117.53	10249.33	8935.28	10249.33	0.604
Concio 3	432	I[873]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 3	432	J[874]	Neg	ST SLU Mobili	MY-MIN	1	1	1	1	-1773.87	-3794.53	10249.33	8982.85	10249.33	0.543
Concio 3	432	J[874]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 3	433	I[874]	Neg	ST SLU Mobili	MY-MIN	1	1	1	1	-1780.61	-3794.70	10249.33	8981.76	10249.33	0.544
Concio 3	433	I[874]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 3	433	J[875]	Neg	ST SLU Termico	MY-MIN	1	1	1	1	672.33	-1460.92	10249.33	7263.33	10249.33	0.077
Concio 3	433	J[875]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	672.33	1887.29	13386.70	11443.51	13386.70	0.191
Concio 3	434	I[875]	Neg	ST SLU Termico	MY-MIN	1	1	1	1	649.93	-1503.49	10249.33	7285.73	10249.33	0.083
Concio 3	434	I[875]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	649.93	1681.95	13386.70	11454.11	13386.70	0.174
Concio 3	434	J[876]	Neg	ST SLU Termico	FZ-MAX	2	1	1	2	1333.75	-4.95	10249.33	6601.91	10249.33	0.130
Concio 3	434	J[876]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	1333.75	2389.44	13386.70	11130.45	13386.70	0.278
Concio 2	435	I[876]	Neg	ST SLU Termico	FZ-MAX	2	1	1	2	1334.18	-4.39	9000.58	5307.74	9000.58	0.148
Concio 2	435	I[876]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	1334.18	2388.10	12635.70	10612.89	12635.70	0.295
Concio 2	435	J[877]	Neg	ST SLU Mobili	MY-MIN	2	1	1	2	2075.58	-322.54	9000.58	4566.34	9000.58	0.195
Concio 2	435	J[877]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	2075.58	3621.42	12635.70	10293.36	12635.70	0.451
Concio 2	436	I[877]	Neg	ST SLU Mobili	MY-MIN	2	1	1	2	2065.20	-314.56	9000.58	4576.72	9000.58	0.195
Concio 2	436	I[877]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	2065.20	3529.52	12635.70	10297.83	12635.70	0.443
Concio 2	436	J[878]	Neg	ST SLV Vert	FX-MIN	2	1	1	2	1794.66	-15.93	9000.58	4847.26	9000.58	0.198
Concio 2	436	J[878]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	2422.78	3919.35	12635.70	10143.72	12635.70	0.502
Concio 2	437	I[878]	Neg	ST SLV Vert	FX-MIN	2	1	1	2	1792.77	-35.27	9000.58	4849.14	9000.58	0.195
Concio 2	437	I[878]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	2420.25	3983.53	12635.70	10144.81	12635.70	0.507
Concio 2	437	J[879]	Neg	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 2	437	J[879]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	2245.48	3467.72	12635.70	10220.13	12635.70	0.452
Concio 1	438	I[879]	Neg	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 1	438	I[879]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	2239.98	3462.10	10750.90	8102.11	10750.90	0.530
Concio 1	438	J[880]	Neg	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 1	438	J[880]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	1698.31	2688.41	10750.90	8340.20	10750.90	0.408
Concio 1	439	I[880]	Neg	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 1	439	I[880]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	1715.27	2902.93	10750.90	8332.74	10750.90	0.430
Concio 1	439	J[881]	Neg	ST SLU Mobili	MY-MIN	1	3	3	3	-28.84	-218.72	8011.39	6378.89	6378.89	0.039
Concio 1	439	J[881]	Pos	ST SLU Mobili	MY-MAX	1	1	1	1	-28.84	233.99	10750.90	9099.36	10750.90	0.019
Concio 1	440	I[881]	Neg	ST SLU Mobili	MY-MIN	1	3	3	3	-11.84	-7.56	8011.39	6361.88	6361.88	0.003
Concio 1	440	I[881]	Pos	-	-	-	-	-	-	-	-	-	-	-	0.000
Concio 1	440	J[882]	Neg	ST SLV Long	FX-MIN	2	3	4	4	0.00	-0.54	8011.39	6350.05	6350.05	0.000
Concio 1	440	J[882]	Pos	ST SLV Long	FX-MAX	1	1	1	1	0.00	0.54	10750.90	9086.69	10750.90	0.000

8.2 VERIFICHE DI RESISTENZA AL TAGLIO VERTICALE ALLO SLU

Si effettuano le verifiche allo stato limite ultimo per taglio verticale delle sezioni composte travi-soletta.
Seguono i tabulati di calcolo per ogni asta considerata, per le combinazione di carichi più gravose.
Dati tabulati:

- Elem Property: nome delle caratteristiche geometriche dell'elemento
- Elem: numero dell'elemento
- Position: nodo iniziale (I) o finale (J) dell'elemento
- Lcom: combinazione di carico My positivo o negativo più gravosa
- Type: sollecitazione (massima o minima)
- Top class: classificazione flangia superiore
- Bot class: classificazione flangia inferiore
- Web class: classificazione anima
- Sect. class: classificazione complessiva sezione
- N_Ed: sforzo assiale di calcolo
- M_Ed: momento di calcolo
- V_Ed: sforzo tagliante di calcolo

Vpl,Rd: resistenza al taglio della sezione di acciaio (≥ V_Ed)
Vb,Rd: resistenza all'instabilità per taglio dell'anima di acciaio (≥ V_Ed)

La condizione di verifica della sezione è la seguente:

Verification ratio: $$\frac{V\_Ed}{\min\left(V_{pl,Rd}, V_{b,Rd}\right)} \leq 1$$

Elem property	Elem number	Position	Lcom	Type	Top Class	Bot Class	Web Class	Sect. Class	N_Ed (kN)	M_Ed (kN*m)	V_Ed (kN)	Vpl,Rd (kN)	Vb,Rd (kN)	Verif. Ratio
Concio 1	101	I[719]	ST SLV Vert	FX-MAX	1	1	1	1	0.80	4.11	1.81	3302.77	2574.42	0.001
Concio 1	101	J[720]	ST SLU Mobili	MZ-MAX	1	3	3	3	0.00	25.65	48.50	3302.77	2574.41	0.019
Concio 1	102	I[720]	ST SLU Mobili	FZ-MIN	3	3	4	4	-172.65	285.67	-1107.88	3302.77	2574.22	0.430
Concio 1	102	J[721]	ST SLU Mobili	FZ-MIN	1	1	1	1	-172.65	95283.96	-804.73	3302.77	2478.97	0.325
Concio 1	103	I[721]	ST SLU Mobili	FZ-MIN	1	1	1	1	-251.07	95409.25	-603.23	3302.77	2478.97	0.243
Concio 1	103	J[722]	ST SLU Mobili	FZ-MIN	1	1	1	1	-251.07	124961.03	-421.34	3302.77	2478.97	0.170
Concio 2	104	I[722]	ST SLU Mobili	FZ-MIN	1	1	1	1	-251.07	70591.38	-421.34	3267.64	2478.30	0.170
Concio 2	104	J[723]	ST SLU Mobili	FZ-MIN	1	1	1	1	-251.07	76200.21	-298.69	3267.64	2478.30	0.121
Concio 2	105	I[723]	ST SLU Mobili	FZ-MAX	1	1	1	1	-17.09	74893.28	141.75	3267.64	2478.30	0.057
Concio 2	105	J[724]	ST SLU Mobili	FZ-MAX	1	1	1	1	-13.75	63569.64	440.77	3267.64	2478.30	0.178
Concio 2	106	I[724]	ST SLU Mobili	FZ-MAX	1	1	1	1	-50.59	64951.10	630.34	3267.64	2478.30	0.254
Concio 2	106	J[725]	ST SLU Mobili	FZ-MAX	1	1	1	1	-50.59	41883.29	814.33	3267.64	2478.30	0.329
Concio 3	107	I[725]	ST SLU Mobili	FZ-MAX	1	1	1	1	-50.59	35199.81	814.33	4356.85	4158.81	0.196
Concio 3	107	J[726]	ST SLU Mobili	FZ-MAX	1	1	1	1	-50.59	17505.76	938.10	4356.85	4158.81	0.226
Concio 3	108	I[726]	ST SLU Mobili	FZ-MAX	1	1	1	1	76.27	17736.56	1109.60	4356.85	4158.81	0.267
Concio 3	108	J[727]	ST SLU Mobili	FZ-MAX	1	1	1	1	76.27	5128.13	1419.02	4356.85	4158.81	0.341
Concio 3	109	I[727]	ST SLU Mobili	FZ-MAX	1	1	1	1	247.72	4824.28	1521.02	4356.85	4158.81	0.366
Concio 3	109	J[728]	ST SLU Mobili	FZ-MAX	1	1	1	1	247.72	5767.50	1551.96	4356.85	4158.81	0.373
Concio 4 H=var	110	I[728]	ST SLU Mobili	FZ-MAX	1	3	3	3	169.02	6495.90	1560.34	4310.00	4114.09	0.379
Concio 4 H=var	110	J[729]	ST SLU Mobili	FZ-MAX	1	3	3	3	165.50	11173.87	1725.22	6652.39	4865.83	0.355
Concio 4 H=var	111	I[729]	ST SLU Mobili	FZ-MAX	1	3	3	3	179.41	10899.91	1800.64	6652.39	4875.19	0.369
Concio 4 H=var	111	J[730]	ST SLU Mobili	FZ-MAX	1	3	4	4	175.61	14143.60	1968.43	8994.79	5364.31	0.367
Concio 4 H=200	112	I[730]	ST SLU Mobili	FZ-MAX	1	3	4	4	266.91	14297.30	1963.55	8994.79	5360.12	0.366
Concio 4 H=200	112	J[731]	ST SLU Mobili	FZ-MAX	1	3	4	4	266.91	15341.45	1997.40	8994.79	5330.47	0.375
Concio 4 H=200	113	I[731]	ST SLU Mobili	FZ-MIN	1	3	4	4	91.32	16455.92	-1863.44	8994.79	5296.51	0.352
Concio 4 H=200	113	J[732]	ST SLU Mobili	FZ-MIN	1	3	4	4	91.32	15395.96	-1829.59	8994.79	5328.86	0.343
Concio 4 H=var	114	I[732]	ST SLU Mobili	FZ-MIN	1	3	4	4	-6.49	15277.81	-1837.48	8994.79	5332.17	0.345
Concio 4 H=var	114	J[733]	ST SLU Mobili	FZ-MIN	1	3	3	3	-2.69	12058.86	-1669.70	6652.39	4833.91	0.345
Concio 4 H=var	115	I[733]	ST SLU Mobili	FZ-MIN	1	3	3	3	-22.82	12454.65	-1590.30	6652.39	4818.33	0.330
Concio 4 H=var	115	J[734]	ST SLU Mobili	FZ-MIN	1	3	3	3	-19.31	8080.62	-1425.42	4310.00	4114.09	0.346
Concio 5	116	I[734]	ST SLU Mobili	FZ-MIN	1	1	1	1	56.23	7279.81	-1412.49	4356.85	4158.81	0.340
Concio 5	116	J[735]	ST SLU Mobili	FZ-MIN	1	1	1	1	56.23	6389.18	-1381.55	4356.85	4158.81	0.332
Concio 5	117	I[735]	ST SLU Mobili	FZ-MIN	1	1	1	1	-55.75	6768.93	-1278.87	4356.85	4158.81	0.308
Concio 5	117	J[736]	ST SLU Mobili	FZ-MIN	1	1	1	1	-55.75	4541.40	-957.07	4356.85	4158.81	0.230
Concio 5	118	I[736]	ST SLU Mobili	FZ-MIN	2	1	1	2	-216.84	206.66	-785.51	4356.85	4158.81	0.189
Concio 5	118	J[737]	ST SLU Mobili	FZ-MIN	1	1	1	1	-216.84	20768.69	-643.17	4356.85	4158.81	0.155
Concio 6	119	I[737]	ST SLU Mobili	FZ-MIN	1	1	1	1	-216.84	28233.76	-643.17	2614.11	1592.23	0.404
Concio 6	119	J[738]	ST SLU Mobili	FZ-MIN	1	1	1	1	-216.84	46415.28	-466.29	2614.11	1592.23	0.293
Concio 6	120	I[738]	ST SLU Mobili	FZ-MIN	1	1	1	1	-247.92	45796.00	-277.18	2614.11	1592.23	0.174
Concio 6	120	J[739]	ST SLU Mobili	FZ-MIN	1	1	1	1	-247.92	50402.47	-118.59	2614.11	1592.23	0.074
Concio 6	121	I[739]	ST SLU Mobili	FZ-MIN	1	1	1	1	-247.92	50402.47	-118.59	2614.11	1592.23	0.074
Concio 6	121	J[740]	ST SLU Mobili	FZ-MAX	1	1	1	1	3.35	45584.57	277.17	2614.11	1592.23	0.174
Concio 6	122	I[740]	ST SLU Mobili	FZ-MAX	1	1	1	1	5.16	46327.45	466.33	2614.11	1592.23	0.293
Concio 6	122	J[741]	ST SLU Mobili	FZ-MAX	1	1	1	1	5.16	28116.97	643.21	2614.11	1592.23	0.404
Concio 5	123	I[741]	ST SLU Mobili	FZ-MAX	1	1	1	1	5.16	20830.81	643.21	4356.85	4158.81	0.155
Concio 5	123	J[742]	ST SLU Mobili	FZ-MAX	1	1	1	1	5.16	4420.62	785.55	4356.85	4158.81	0.189
Concio 5	124	I[742]	ST SLU Mobili	FZ-MAX	1	1	1	1	112.70	4785.95	957.15	4356.85	4158.81	0.230
Concio 5	124	J[743]	ST SLU Mobili	FZ-MAX	1	1	1	1	112.70	6212.96	1278.95	4356.85	4158.81	0.308
Concio 5	125	I[743]	ST SLU Mobili	FZ-MAX	1	1	1	1	262.01	5860.25	1381.55	4356.85	4158.81	0.332
Concio 5	125	J[744]	ST SLU Mobili	FZ-MAX	1	1	1	1	262.01	6730.11	1412.49	4356.85	4158.81	0.340
Concio 4 H=var	126	I[744]	ST SLU Mobili	FZ-MAX	1	3	3	3	188.70	7548.67	1425.43	4310.00	4114.09	0.346
Concio 4 H=var	126	J[745]	ST SLU Mobili	FZ-MAX	1	3	3	3	185.18	11766.75	1590.31	6652.39	4844.76	0.328
Concio 4 H=var	127	I[745]	ST SLU Mobili	FZ-MAX	1	3	3	3	185.50	11456.29	1669.45	6652.39	4855.93	0.344
Concio 4 H=var	127	J[746]	ST SLU Mobili	FZ-MAX	1	3	4	4	181.70	14293.79	1837.24	8994.79	5360.22	0.343
Concio 4 H=200	128	I[746]	ST SLU Mobili	FZ-MAX	1	3	4	4	267.92	14400.93	1829.34	8994.79	5357.27	0.341
Concio 4 H=200	128	J[747]	ST SLU Mobili	FZ-MAX	1	3	4	4	267.92	15376.11	1863.19	8994.79	5329.45	0.350
Concio 4 H=200	129	I[747]	ST SLU Mobili	FZ-MIN	1	3	4	4	77.74	16426.91	-1997.70	8994.79	5297.42	0.377
Concio 4 H=200	129	J[748]	ST SLU Mobili	FZ-MIN	1	3	4	4	77.74	15290.61	-1963.85	8994.79	5331.96	0.368
Concio 4 H=var	130	I[748]	ST SLU Mobili	FZ-MIN	1	3	4	4	-26.92	15104.90	-1968.71	8994.79	5336.70	0.369
Concio 4 H=var	130	J[749]	ST SLU Mobili	FZ-MIN	1	3	3	3	-23.12	11468.21	-1800.92	6652.39	4854.97	0.371
Concio 4 H=var	131	I[749]	ST SLU Mobili	FZ-MIN	1	3	3	3	-38.04	11827.16	-1725.25	6652.39	4841.61	0.356
Concio 4 H=var	131	J[750]	ST SLU Mobili	FZ-MIN	1	3	3	3	-34.53	6920.71	-1560.37	4310.00	4114.09	0.379
Concio 3	132	I[750]	ST SLU Mobili	FZ-MIN	1	1	1	1	48.18	6246.71	-1552.00	4356.85	4158.81	0.373
Concio 3	132	J[751]	ST SLU Mobili	FZ-MIN	1	1	1	1	48.18	5257.43	-1521.06	4356.85	4158.81	0.366

Concio 3	133	I[751]	ST SLU Mobili	FZ-MIN	1	1	1	1	-71.96	5615.80	-1418.98	4356.85	4158.81	0.341
Concio 3	133	J[752]	ST SLU Mobili	FZ-MIN	1	1	1	1	-71.96	17650.34	-1109.55	4356.85	4158.81	0.267
Concio 3	134	I[752]	ST SLU Mobili	FZ-MIN	1	1	1	1	-210.01	17504.88	-938.08	4356.85	4158.81	0.226
Concio 3	134	J[753]	ST SLU Mobili	FZ-MIN	1	1	1	1	-210.01	35211.24	-814.32	4356.85	4158.81	0.196
Concio 2	135	I[753]	ST SLU Mobili	FZ-MIN	1	1	1	1	-210.01	41964.59	-814.32	3267.64	2478.30	0.329
Concio 2	135	J[754]	ST SLU Mobili	FZ-MIN	1	1	1	1	-210.01	65050.84	-630.33	3267.64	2478.30	0.254
Concio 2	136	I[754]	ST SLU Mobili	FZ-MIN	1	1	1	1	-193.95	63742.99	-440.76	3267.64	2478.30	0.178
Concio 2	136	J[755]	ST SLU Mobili	FZ-MIN	1	1	1	1	-197.29	75145.41	-141.73	3267.64	2478.30	0.057
Concio 2	137	I[755]	ST SLU Mobili	FZ-MAX	1	1	1	1	-81.95	76014.51	298.68	3267.64	2478.30	0.121
Concio 2	137	J[756]	ST SLU Mobili	FZ-MAX	1	1	1	1	-81.95	70355.01	421.34	3267.64	2478.30	0.170
Concio 1	138	I[756]	ST SLU Mobili	FZ-MAX	1	1	1	1	-81.95	124308.92	421.34	3302.77	2478.97	0.170
Concio 1	138	J[757]	ST SLU Mobili	FZ-MAX	1	1	1	1	-81.95	94681.12	603.23	3302.77	2478.97	0.243
Concio 1	139	I[757]	ST SLU Mobili	FZ-MAX	1	1	1	1	-55.68	94929.10	804.75	3302.77	2478.97	0.325
Concio 1	139	J[758]	ST SLU Mobili	FZ-MAX	3	3	3	3	-55.68	178.19	1107.89	3302.77	2574.34	0.430
Concio 1	140	I[758]	ST SLU Mobili	FZ-MIN	1	3	3	3	0.00	25.65	-48.50	3302.77	2574.41	0.019
Concio 1	140	J[759]	ST SLV Vert	FX-MAX	1	1	1	1	0.80	4.11	1.81	3302.77	2574.42	0.001
Concio 1	201	I[760]	ST SLV Vert	FX-MAX	1	1	1	1	0.82	6.84	1.91	3302.77	2574.42	0.001
Concio 1	201	J[761]	ST SLU Mobili	FZ-MAX	1	3	3	3	0.00	365.04	486.98	3302.77	2574.10	0.189
Concio 1	202	I[761]	ST SLU Mobili	FZ-MIN	3	3	4	4	-201.40	420.01	-1727.32	3302.77	2573.99	0.671
Concio 1	202	J[762]	ST SLU Mobili	FZ-MIN	1	1	1	1	-193.80	165228.94	-837.66	3302.77	2478.97	0.338
Concio 1	203	I[762]	ST SLU Mobili	FZ-MIN	1	1	1	1	-233.80	165729.63	-1124.82	3302.77	2478.97	0.454
Concio 1	203	J[763]	ST SLU Mobili	FZ-MIN	1	1	1	1	-207.28	217247.10	-636.97	3302.77	2478.97	0.257
Concio 2	204	I[763]	ST SLU Mobili	FZ-MIN	1	1	1	1	-207.28	94382.65	-636.97	3267.64	2478.30	0.257
Concio 2	204	J[764]	ST SLU Mobili	FZ-MAX	1	1	1	1	-10.77	98463.76	575.09	3267.64	2478.30	0.232
Concio 2	205	I[764]	ST SLU Mobili	FZ-MIN	1	1	1	1	-190.76	99567.92	-680.80	3267.64	2478.30	0.275
Concio 2	205	J[765]	ST SLU Mobili	FZ-MAX	1	1	1	1	-100.21	85928.09	1003.71	3267.64	2478.30	0.405
Concio 2	206	I[765]	ST SLU Mobili	FZ-MAX	1	1	1	1	-118.05	86329.75	667.12	3267.64	2478.30	0.269
Concio 2	206	J[766]	ST SLU Mobili	FZ-MAX	1	1	1	1	-5.71	57627.46	1132.24	3267.64	2478.30	0.457
Concio 3	207	I[766]	ST SLU Mobili	FZ-MAX	1	1	1	1	-5.71	46791.37	1132.24	4356.85	4158.81	0.272
Concio 3	207	J[767]	ST SLU Mobili	FZ-MAX	1	1	1	1	-50.49	24076.48	1452.63	4356.85	4158.81	0.349
Concio 3	208	I[767]	ST SLU Mobili	FZ-MAX	1	1	1	1	-6.95	24228.93	1173.06	4356.85	4158.81	0.282
Concio 3	208	J[768]	ST SLU Mobili	FZ-MAX	1	1	1	1	66.55	4581.62	1965.08	4356.85	4158.81	0.473
Concio 3	209	I[768]	ST SLU Mobili	FZ-MAX	1	1	1	1	45.92	4186.35	1751.12	4356.85	4158.81	0.421
Concio 3	209	J[769]	ST SLU Mobili	FZ-MAX	1	1	1	1	92.77	5172.48	1826.87	4356.85	4158.81	0.439
Concio 4 H=var	210	I[769]	ST SLU Mobili	FZ-MAX	1	3	3	3	23.18	6011.45	1820.72	4310.00	4114.09	0.443
Concio 4 H=var	210	J[770]	ST SLU Mobili	FZ-MAX	1	3	3	3	182.70	11183.69	2257.83	6652.39	4869.00	0.464
Concio 4 H=var	211	I[770]	ST SLU Mobili	FZ-MAX	1	3	3	3	97.47	10774.80	2156.38	6652.39	4882.65	0.442
Concio 4 H=var	211	J[771]	ST SLU Mobili	FZ-MAX	1	3	4	4	180.62	14325.15	2602.75	8994.79	5362.09	0.485
Concio 4 H=200	212	I[771]	ST SLU Mobili	FZ-MAX	1	3	4	4	284.44	14461.06	2598.30	8994.79	5358.39	0.485
Concio 4 H=200	212	J[772]	ST SLU Mobili	FZ-MAX	1	3	4	4	260.88	15692.94	2685.08	8994.79	5323.29	0.504
Concio 4 H=200	213	I[772]	ST SLU Mobili	FZ-MIN	1	3	4	4	53.06	16584.53	-2546.40	8994.79	5296.10	0.481
Concio 4 H=200	213	J[773]	ST SLU Mobili	FZ-MIN	1	3	4	4	66.02	15360.03	-2459.67	8994.79	5333.06	0.461
Concio 4 H=var	214	I[773]	ST SLU Mobili	FZ-MIN	1	3	4	4	-61.65	15157.70	-2464.33	8994.79	5337.36	0.462
Concio 4 H=var	214	J[774]	ST SLU Mobili	FZ-MIN	1	3	3	3	-142.09	11842.41	-2017.97	6652.39	4842.45	0.417
Concio 4 H=var	215	I[774]	ST SLU Mobili	FZ-MIN	1	3	3	3	2.24	12299.87	-2122.78	6652.39	4829.14	0.440
Concio 4 H=var	215	J[775]	ST SLU Mobili	FZ-MIN	1	3	3	3	-162.34	7593.42	-1686.61	4310.00	4114.09	0.410
Concio 5	216	I[775]	ST SLU Mobili	FZ-MIN	1	1	1	1	-77.07	6654.94	-1692.82	4356.85	4158.81	0.407
Concio 5	216	J[776]	ST SLU Mobili	FZ-MIN	1	1	1	1	-113.55	5749.55	-1617.22	4356.85	4158.81	0.389
Concio 5	217	I[776]	ST SLU Mobili	FZ-MIN	1	1	1	1	22.97	6196.83	-1839.17	4356.85	4158.81	0.442
Concio 5	217	J[777]	ST SLU Mobili	FZ-MIN	1	1	1	1	-53.82	8155.68	-1018.21	4356.85	4158.81	0.245
Concio 5	218	I[777]	ST SLU Mobili	FZ-MIN	1	1	1	1	-30.10	7803.23	-1309.68	4356.85	4158.81	0.315
Concio 5	218	J[778]	ST SLU Mobili	FZ-MIN	1	1	1	1	12.19	29144.59	-941.94	4356.85	4158.81	0.226
Concio 6	219	I[778]	ST SLU Mobili	FZ-MIN	1	1	1	1	12.19	42184.76	-941.94	2614.11	1592.23	0.592
Concio 6	219	J[779]	ST SLU Mobili	FZ-MIN	1	1	1	1	-105.54	65410.68	-497.29	2614.11	1592.23	0.312
Concio 6	220	I[779]	ST SLU Mobili	FZ-MIN	1	1	1	1	-97.57	65068.01	-846.98	2614.11	1592.23	0.532
Concio 6	220	J[780]	ST SLU Mobili	FZ-MIN	1	1	1	1	-52.49	72328.46	-431.71	2614.11	1592.23	0.271
Concio 6	221	I[780]	ST SLU Mobili	FZ-MIN	1	1	1	1	-52.49	72328.46	-431.71	2614.11	1592.23	0.271
Concio 6	221	J[781]	ST SLU Mobili	FZ-MAX	1	1	1	1	5.29	65084.43	846.80	2614.11	1592.23	0.532
Concio 6	222	I[781]	ST SLU Mobili	FZ-MAX	1	1	1	1	-19.19	65628.96	497.15	2614.11	1592.23	0.312
Concio 6	222	J[782]	ST SLU Mobili	FZ-MAX	1	1	1	1	98.55	42389.95	941.76	2614.11	1592.23	0.591
Concio 5	223	I[782]	ST SLU Mobili	FZ-MAX	1	1	1	1	98.55	29455.07	941.76	4356.85	4158.81	0.226
Concio 5	223	J[783]	ST SLU Mobili	FZ-MAX	1	1	1	1	56.34	8103.31	1309.52	4356.85	4158.81	0.315
Concio 5	224	I[783]	ST SLU Mobili	FZ-MAX	1	1	1	1	54.47	8445.54	1018.09	4356.85	4158.81	0.245
Concio 5	224	J[784]	ST SLU Mobili	FZ-MAX	1	1	1	1	131.34	5627.24	1838.93	4356.85	4158.81	0.442
Concio 5	225	I[784]	ST SLU Mobili	FZ-MAX	1	1	1	1	53.85	5231.35	1616.98	4356.85	4158.81	0.389
Concio 5	225	J[785]	ST SLU Mobili	FZ-MAX	1	1	1	1	101.03	6114.91	1692.57	4356.85	4158.81	0.407
Concio 4 H=var	226	I[785]	ST SLU Mobili	FZ-MAX	1	3	3	3	34.14	7079.50	1686.37	4310.00	4114.09	0.410
Concio 4 H=var	226	J[786]	ST SLU Mobili	FZ-MAX	1	3	3	3	194.27	11721.08	2122.60	6652.39	4850.28	0.438
Concio 4 H=var	227	I[786]	ST SLU Mobili	FZ-MAX	1	3	3	3	106.49	11314.32	2017.68	6652.39	4864.53	0.415
Concio 4 H=var	227	J[787]	ST SLU Mobili	FZ-MAX	1	3	4	4	193.75	14419.33	2464.01	8994.79	5359.53	0.460
Concio 4 H=200	228	I[787]	ST SLU Mobili	FZ-MAX	1	3	3	3	291.68	16891.65	2459.35	8994.79	5286.38	0.465
Concio 4 H=200	228	J[788]	ST SLU Mobili	FZ-MAX	1	3	4	4	270.43	15705.27	2546.08	8994.79	5322.93	0.478
Concio 4 H=200	229	I[788]	ST SLU Mobili	FZ-MIN	1	3	4	4	58.05	16561.63	-2685.40	8994.79	5296.81	0.507
Concio 4 H=200	229	J[789]	ST SLU Mobili	FZ-MIN	1	3	4	4	71.46	15255.87	-2598.63	8994.79	5336.07	0.487
Concio 4 H=var	230	I[789]	ST SLU Mobili	FZ-MIN	1	3	4	4	-60.06	15046.52	-2603.07	8994.79	5340.60	0.487
Concio 4 H=var	230	J[790]	ST SLU Mobili	FZ-MIN	1	3	3	3	-138.09	11238.58	-2156.68	6652.39	4864.08	0.443
Concio 4 H=var	231	I[790]	ST SLU Mobili	FZ-MIN	1	3	3	3	10.36	11699.59	-2258.02	6652.39	4851.05	0.465
Concio 4 H=var	231	J[791]	ST SLU Mobili	FZ-MIN	1	3	3	3	-155.75	6453.58	-1820.97	4310.00	4114.09	0.443
Concio 3	232	I[791]	ST SLU Mobili	FZ-MIN	1	1	1	1	-65.17	5596.83	-1827.13	4356.85	4158.81	0.439
Concio 3	232	J[792]	ST SLU Mobili	FZ-MIN	1	1	1	1	-103.33	4620.58	-1751.37	4356.85	4158.81	0.421

Concio 3	233	I[792]	ST SLU Mobili	FZ-MIN	1	1	1	1	-17.84	5033.37	-1965.32	4356.85	4158.81	0.473
Concio 3	233	J[793]	ST SLU Mobili	FZ-MIN	1	1	1	1	-91.27	24029.52	-1173.19	4356.85	4158.81	0.282
Concio 3	234	I[793]	ST SLU Mobili	FZ-MIN	1	1	1	1	-121.79	23889.61	-1452.83	4356.85	4158.81	0.349
Concio 3	234	J[794]	ST SLU Mobili	FZ-MIN	1	1	1	1	-76.94	46626.92	-1132.47	4356.85	4158.81	0.272
Concio 2	235	I[794]	ST SLU Mobili	FZ-MIN	1	1	1	1	-76.94	57508.59	-1132.47	3267.64	2478.30	0.457
Concio 2	235	J[795]	ST SLU Mobili	FZ-MIN	1	1	1	1	-189.23	86244.49	-667.36	3267.64	2478.30	0.269
Concio 2	236	I[795]	ST SLU Mobili	FZ-MIN	1	1	1	1	-191.02	85923.45	-1004.00	3267.64	2478.30	0.405
Concio 2	236	J[796]	ST SLU Mobili	FZ-MAX	1	1	1	1	-99.98	99493.23	680.52	3267.64	2478.30	0.275
Concio 2	237	I[796]	ST SLU Mobili	FZ-MIN	1	1	1	1	-120.75	98579.33	-575.32	3267.64	2478.30	0.232
Concio 2	237	J[797]	ST SLU Mobili	FZ-MAX	1	1	1	1	-97.32	94223.26	636.73	3267.64	2478.30	0.257
Concio 1	238	I[797]	ST SLU Mobili	FZ-MAX	1	1	1	1	-97.32	216535.65	636.73	3302.77	2478.97	0.257
Concio 1	238	J[798]	ST SLU Mobili	FZ-MAX	1	1	1	1	-123.75	164951.31	1124.54	3302.77	2478.97	0.454
Concio 1	239	I[798]	ST SLU Mobili	MY-MAX	1	1	1	1	-71.25	164428.75	837.44	3302.77	2478.97	0.338
Concio 1	239	J[799]	ST SLU Mobili	FZ-MAX	3	3	3	3	-78.72	302.14	1726.93	3302.77	2574.20	0.671
Concio 1	240	I[799]	ST SLU Mobili	MY-MIN	1	3	3	3	0.00	365.02	-486.98	3302.77	2574.10	0.189
Concio 1	240	J[800]	ST SLV Vert	FX-MAX	1	1	1	1	0.82	6.84	1.91	3302.77	2574.42	0.001
Concio 1	301	I[801]	ST SLV Vert	FX-MAX	1	1	1	1	0.82	6.84	1.91	3302.77	2574.42	0.001
Concio 1	301	J[802]	ST SLU Mobili	FY-MAX	1	3	3	3	0.00	365.04	486.98	3302.77	2574.10	0.189
Concio 1	302	I[802]	ST SLU Mobili	FZ-MIN	1	3	4	4	-198.83	418.03	-1728.26	3302.77	2573.99	0.671
Concio 1	302	J[803]	ST SLU Mobili	FZ-MIN	1	1	1	1	-191.22	165200.99	-838.60	3302.77	2478.97	0.338
Concio 1	303	I[803]	ST SLU Mobili	FZ-MIN	1	1	1	1	-232.53	165716.45	-1125.37	3302.77	2478.97	0.454
Concio 1	303	J[804]	ST SLU Mobili	FZ-MIN	1	1	1	1	-206.00	217232.27	-637.52	3302.77	2478.97	0.257
Concio 2	304	I[804]	ST SLU Mobili	FZ-MIN	1	1	1	1	-206.00	94374.23	-637.52	3267.64	2478.30	0.257
Concio 2	304	J[805]	ST SLU Mobili	FZ-MAX	1	1	1	1	-12.04	98473.27	575.61	3267.64	2478.30	0.232
Concio 2	305	I[805]	ST SLU Mobili	FZ-MIN	1	1	1	1	-189.08	99558.80	-680.90	3267.64	2478.30	0.275
Concio 2	305	J[806]	ST SLU Mobili	FZ-MAX	1	1	1	1	-101.89	85936.70	1003.81	3267.64	2478.30	0.405
Concio 2	306	I[806]	ST SLU Mobili	FZ-MAX	1	1	1	1	-122.38	86350.16	667.88	3267.64	2478.30	0.269
Concio 2	306	J[807]	ST SLU Mobili	FZ-MAX	1	1	1	1	-10.04	57645.60	1133.00	3267.64	2478.30	0.457
Concio 3	307	I[807]	ST SLU Mobili	FZ-MAX	1	1	1	1	-10.04	46806.74	1133.00	4356.85	4158.81	0.272
Concio 3	307	J[808]	ST SLU Mobili	FZ-MAX	1	1	1	1	-54.82	24090.33	1453.39	4356.85	4158.81	0.349
Concio 3	308	I[808]	ST SLU Mobili	FZ-MAX	1	1	1	1	-16.69	24260.70	1174.23	4356.85	4158.81	0.282
Concio 3	308	J[809]	ST SLU Mobili	FZ-MAX	1	1	1	1	56.82	4576.37	1966.25	4356.85	4158.81	0.473
Concio 3	309	I[809]	ST SLU Mobili	FZ-MAX	1	1	1	1	40.58	4182.35	1752.51	4356.85	4158.81	0.421
Concio 3	309	J[810]	ST SLU Mobili	FZ-MAX	1	1	1	1	87.43	5166.47	1828.27	4356.85	4158.81	0.440
Concio 4 H=var	310	I[810]	ST SLU Mobili	FZ-MAX	1	3	3	3	18.17	6008.81	1823.08	4310.00	4114.09	0.443
Concio 4 H=var	310	J[811]	ST SLU Mobili	FZ-MAX	1	3	3	3	177.69	11173.06	2260.18	6652.39	4869.36	0.464
Concio 4 H=var	311	I[811]	ST SLU Mobili	FZ-MAX	1	3	3	3	93.37	10766.34	2159.32	6652.39	4882.93	0.442
Concio 4 H=var	311	J[812]	ST SLU Mobili	FZ-MAX	1	3	4	4	176.52	14308.78	2605.69	8994.79	5362.53	0.486
Concio 4 H=200	312	I[812]	ST SLU Mobili	FZ-MAX	1	3	4	4	279.78	14444.47	2600.18	8994.79	5358.85	0.485
Concio 4 H=200	312	J[813]	ST SLU Mobili	FZ-MAX	1	3	4	4	256.23	15674.50	2686.96	8994.79	5323.84	0.505
Concio 4 H=200	313	I[813]	ST SLU Mobili	FZ-MIN	1	3	4	4	58.36	16603.35	-2548.27	8994.79	5295.50	0.481
Concio 4 H=200	313	J[814]	ST SLU Mobili	FZ-MIN	1	3	4	4	71.32	15376.87	-2461.54	8994.79	5332.57	0.462
Concio 4 H=var	314	I[814]	ST SLU Mobili	FZ-MIN	1	3	4	4	-56.92	15179.26	-2467.31	8994.79	5336.86	0.462
Concio 4 H=var	314	J[815]	ST SLU Mobili	FZ-MIN	1	3	3	3	-137.36	11850.58	-2020.95	6652.39	4842.27	0.417
Concio 4 H=var	315	I[815]	ST SLU Mobili	FZ-MIN	1	3	3	3	8.79	12310.73	-2125.27	6652.39	4828.74	0.440
Concio 4 H=var	315	J[816]	ST SLU Mobili	FZ-MIN	1	3	3	3	-155.79	7595.99	-1689.10	4310.00	4114.09	0.411
Concio 5	316	I[816]	ST SLU Mobili	FZ-MIN	1	1	1	1	-70.18	6661.60	-1694.21	4356.85	4158.81	0.407
Concio 5	316	J[817]	ST SLU Mobili	FZ-MIN	1	1	1	1	-106.66	5753.23	-1618.61	4356.85	4158.81	0.389
Concio 5	317	I[817]	ST SLU Mobili	FZ-MIN	1	1	1	1	33.19	6202.91	-1840.37	4356.85	4158.81	0.443
Concio 5	317	J[818]	ST SLU Mobili	FZ-MIN	1	1	1	1	-43.60	8121.97	-1019.41	4356.85	4158.81	0.245
Concio 5	318	I[818]	ST SLU Mobili	FZ-MIN	1	1	1	1	-25.25	7786.88	-1310.35	4356.85	4158.81	0.315
Concio 5	318	J[819]	ST SLU Mobili	FZ-MIN	1	1	1	1	17.03	29126.71	-942.61	4356.85	4158.81	0.227
Concio 6	319	I[819]	ST SLU Mobili	FZ-MIN	1	1	1	1	17.03	42160.99	-942.61	2614.11	1592.23	0.592
Concio 6	319	J[820]	ST SLU Mobili	FZ-MIN	1	1	1	1	-100.69	65384.98	-497.95	2614.11	1592.23	0.313
Concio 6	320	I[820]	ST SLU Mobili	FZ-MIN	1	1	1	1	-93.80	65048.62	-846.98	2614.11	1592.23	0.532
Concio 6	320	J[821]	ST SLU Mobili	FZ-MIN	1	1	1	1	-48.72	72309.08	-431.71	2614.11	1592.23	0.271
Concio 6	321	I[821]	ST SLU Mobili	FZ-MIN	1	1	1	1	-48.72	72309.08	-431.71	2614.11	1592.23	0.271
Concio 6	321	J[822]	ST SLU Mobili	FZ-MAX	1	1	1	1	1.51	65103.81	846.80	2614.11	1592.23	0.532
Concio 6	322	I[822]	ST SLU Mobili	FZ-MAX	1	1	1	1	-23.95	65654.36	497.83	2614.11	1592.23	0.313
Concio 6	322	J[823]	ST SLU Mobili	FZ-MAX	1	1	1	1	93.79	42413.37	942.44	2614.11	1592.23	0.592
Concio 5	323	I[823]	ST SLU Mobili	FZ-MAX	1	1	1	1	93.79	29472.71	942.44	4356.85	4158.81	0.227
Concio 5	323	J[824]	ST SLU Mobili	FZ-MAX	1	1	1	1	51.58	8119.39	1310.20	4356.85	4158.81	0.315
Concio 5	324	I[824]	ST SLU Mobili	FZ-MAX	1	1	1	1	44.59	8478.03	1019.27	4356.85	4158.81	0.245
Concio 5	324	J[825]	ST SLU Mobili	FZ-MAX	1	1	1	1	121.46	5621.09	1840.11	4356.85	4158.81	0.442
Concio 5	325	I[825]	ST SLU Mobili	FZ-MAX	1	1	1	1	47.07	5227.60	1618.36	4356.85	4158.81	0.389
Concio 5	325	J[826]	ST SLU Mobili	FZ-MAX	1	1	1	1	94.24	6108.18	1693.95	4356.85	4158.81	0.407
Concio 4 H=var	326	I[826]	ST SLU Mobili	FZ-MAX	1	3	3	3	27.69	7076.72	1688.84	4310.00	4114.09	0.411
Concio 4 H=var	326	J[827]	ST SLU Mobili	FZ-MAX	1	3	3	3	187.82	11709.99	2125.07	6652.39	4850.68	0.438
Concio 4 H=var	327	I[827]	ST SLU Mobili	FZ-MAX	1	3	3	3	101.91	11305.84	2020.73	6652.39	4864.82	0.415
Concio 4 H=var	327	J[828]	ST SLU Mobili	FZ-MAX	1	3	4	4	189.17	14402.77	2467.07	8994.79	5359.98	0.460
Concio 4 H=200	328	I[828]	ST SLU Mobili	FZ-MAX	1	3	4	4	286.52	14528.99	2461.30	8994.79	5356.53	0.459
Concio 4 H=200	328	J[829]	ST SLU Mobili	FZ-MAX	1	3	4	4	265.28	15686.60	2548.03	8994.79	5323.48	0.479
Concio 4 H=200	329	I[829]	ST SLU Mobili	FZ-MIN	1	3	4	4	62.85	16580.20	-2687.21	8994.79	5296.23	0.507
Concio 4 H=200	329	J[830]	ST SLU Mobili	FZ-MIN	1	3	4	4	76.26	15272.50	-2600.44	8994.79	5335.59	0.487
Concio 4 H=var	330	I[830]	ST SLU Mobili	FZ-MIN	1	3	4	4	-55.82	15067.36	-2605.94	8994.79	5340.11	0.488
Concio 4 H=var	330	J[831]	ST SLU Mobili	FZ-MIN	1	3	3	3	-133.85	11246.72	-2159.56	6652.39	4863.89	0.444
Concio 4 H=var	331	I[831]	ST SLU Mobili	FZ-MIN	1	3	3	3	15.47	11709.96	-2260.41	6652.39	4850.68	0.466
Concio 4 H=var	331	J[832]	ST SLU Mobili	FZ-MIN	1	3	3	3	-150.64	6456.01	-1823.36	4310.00	4114.09	0.443
Concio 3	332	I[832]	ST SLU Mobili	FZ-MIN	1	1	1	1	-59.74	5602.77	-1828.55	4356.85	4158.81	0.440

Concio 3	332	J[833]	ST SLU Mobili	FZ-MIN	1	1	1	1	-97.89	4624.50	-1752.79	4356.85	4158.81	0.421
Concio 3	333	I[833]	ST SLU Mobili	FZ-MIN	1	1	1	1	-8.04	5038.58	-1966.52	4356.85	4158.81	0.473
Concio 3	333	J[834]	ST SLU Mobili	FZ-MIN	1	1	1	1	-81.48	23997.34	-1174.39	4356.85	4158.81	0.282
Concio 3	334	I[834]	ST SLU Mobili	FZ-MIN	1	1	1	1	-117.36	23875.43	-1453.57	4356.85	4158.81	0.350
Concio 3	334	J[835]	ST SLU Mobili	FZ-MIN	1	1	1	1	-72.51	46611.26	-1133.21	4356.85	4158.81	0.272
Concio 2	335	I[835]	ST SLU Mobili	FZ-MIN	1	1	1	1	-72.51	57490.09	-1133.21	3267.64	2478.30	0.457
Concio 2	335	J[836]	ST SLU Mobili	FZ-MIN	1	1	1	1	-184.79	86223.78	-668.10	3267.64	2478.30	0.270
Concio 2	336	I[836]	ST SLU Mobili	FZ-MIN	1	1	1	1	-189.30	85914.75	-1004.09	3267.64	2478.30	0.405
Concio 2	336	J[837]	ST SLU Mobili	FZ-MAX	1	1	1	1	-101.70	99502.43	680.60	3267.64	2478.30	0.275
Concio 2	337	I[837]	ST SLU Mobili	FZ-MIN	1	1	1	1	-119.46	98569.79	-575.87	3267.64	2478.30	0.232
Concio 2	337	J[838]	ST SLU Mobili	FZ-MAX	1	1	1	1	-98.60	94231.70	637.28	3267.64	2478.30	0.257
Concio 1	338	I[838]	ST SLU Mobili	FZ-MAX	1	1	1	1	-98.60	216550.56	637.28	3302.77	2478.97	0.257
Concio 1	338	J[839]	ST SLU Mobili	FZ-MAX	1	1	1	1	-125.04	164964.57	1125.09	3302.77	2478.97	0.454
Concio 1	339	I[839]	ST SLU Mobili	MY-MAX	1	1	1	1	-73.83	164456.75	838.39	3302.77	2478.97	0.338
Concio 1	339	J[840]	ST SLU Mobili	FZ-MAX	1	3	3	3	-81.30	303.37	1727.87	3302.77	2574.20	0.671
Concio 1	340	I[840]	ST SLU Mobili	FY-MAX	1	3	3	3	0.00	365.02	-486.98	3302.77	2574.10	0.189
Concio 1	340	J[841]	ST SLV Vert	FX-MAX	1	1	1	1	0.82	6.84	1.91	3302.77	2574.42	0.001
Concio 1	401	I[842]	ST SLV Vert	FX-MAX	1	1	1	1	0.80	4.11	1.81	3302.77	2574.42	0.001
Concio 1	401	J[843]	ST SLU Mobili	MZ-MIN	1	3	3	3	0.00	25.65	48.50	3302.77	2574.41	0.019
Concio 1	402	I[843]	ST SLU Mobili	FZ-MIN	1	3	4	4	-171.29	284.49	-1105.60	3302.77	2574.22	0.429
Concio 1	402	J[844]	ST SLU Mobili	FZ-MIN	1	1	1	1	-171.29	95287.55	-802.45	3302.77	2478.97	0.324
Concio 1	403	I[844]	ST SLU Mobili	FZ-MIN	1	1	1	1	-246.70	95391.40	-602.81	3302.77	2478.97	0.243
Concio 1	403	J[845]	ST SLU Mobili	FZ-MIN	1	1	1	1	-246.70	124944.44	-420.92	3302.77	2478.97	0.170
Concio 2	404	I[845]	ST SLU Mobili	FZ-MIN	1	1	1	1	-246.70	70585.54	-420.92	3267.64	2478.30	0.170
Concio 2	404	J[846]	ST SLU Mobili	FZ-MIN	1	1	1	1	-246.70	76195.21	-298.27	3267.64	2478.30	0.120
Concio 2	405	I[846]	ST SLU Mobili	FZ-MAX	1	1	1	1	-21.62	74900.17	141.41	3267.64	2478.30	0.057
Concio 2	405	J[847]	ST SLU Mobili	FZ-MAX	1	1	1	1	-18.27	63577.71	440.43	3267.64	2478.30	0.178
Concio 2	406	I[847]	ST SLU Mobili	FZ-MAX	1	1	1	1	-51.96	64947.93	629.45	3267.64	2478.30	0.254
Concio 2	406	J[848]	ST SLU Mobili	FZ-MAX	1	1	1	1	-51.96	41882.79	813.44	3267.64	2478.30	0.328
Concio 3	407	I[848]	ST SLU Mobili	FZ-MAX	1	1	1	1	-51.96	35198.72	813.44	4356.85	4158.81	0.196
Concio 3	407	J[849]	ST SLU Mobili	FZ-MAX	1	1	1	1	-51.96	17506.45	937.21	4356.85	4158.81	0.225
Concio 3	408	I[849]	ST SLU Mobili	FZ-MAX	1	1	1	1	82.24	17714.03	1106.81	4356.85	4158.81	0.266
Concio 3	408	J[850]	ST SLU Mobili	FZ-MAX	1	1	1	1	82.24	5137.61	1416.23	4356.85	4158.81	0.341
Concio 3	409	I[850]	ST SLU Mobili	FZ-MAX	1	1	1	1	253.93	4829.25	1517.55	4356.85	4158.81	0.365
Concio 3	409	J[851]	ST SLU Mobili	FZ-MAX	1	1	1	1	253.93	5774.99	1548.49	4356.85	4158.81	0.372
Concio 4 H=var	410	I[851]	ST SLU Mobili	FZ-MAX	1	3	3	3	175.52	6500.86	1557.44	4310.00	4114.09	0.379
Concio 4 H=var	410	J[852]	ST SLU Mobili	FZ-MAX	1	3	3	3	172.00	11186.76	1722.32	6652.39	4865.38	0.354
Concio 4 H=var	411	I[852]	ST SLU Mobili	FZ-MAX	1	3	3	3	173.68	10907.09	1797.47	6652.39	4874.95	0.369
Concio 4 H=var	411	J[853]	ST SLU Mobili	FZ-MAX	1	3	4	4	169.87	14158.71	1965.25	8994.79	5363.90	0.366
Concio 4 H=200	412	I[853]	ST SLU Mobili	FZ-MAX	1	3	4	4	263.30	14313.25	1959.96	8994.79	5359.69	0.366
Concio 4 H=200	412	J[854]	ST SLU Mobili	FZ-MAX	1	3	4	4	263.30	15359.20	1993.81	8994.79	5329.94	0.374
Concio 4 H=200	413	I[854]	ST SLU Mobili	FZ-MIN	1	3	4	4	93.34	16437.58	-1859.76	8994.79	5297.09	0.351
Concio 4 H=200	413	J[855]	ST SLU Mobili	FZ-MIN	1	3	4	4	93.34	15379.46	-1825.91	8994.79	5329.35	0.343
Concio 4 H=var	414	I[855]	ST SLU Mobili	FZ-MIN	1	3	4	4	-2.22	15266.43	-1834.24	8994.79	5332.61	0.344
Concio 4 H=var	414	J[856]	ST SLU Mobili	FZ-MIN	1	3	3	3	1.58	12051.36	-1666.46	6652.39	4834.26	0.345
Concio 4 H=var	415	I[856]	ST SLU Mobili	FZ-MIN	1	3	3	3	-29.64	12441.81	-1587.49	6652.39	4818.64	0.329
Concio 4 H=var	415	J[857]	ST SLU Mobili	FZ-MIN	1	3	3	3	-26.13	8075.54	-1422.61	4310.00	4114.09	0.346
Concio 5	416	I[857]	ST SLU Mobili	FZ-MIN	1	1	1	1	49.69	7271.83	-1409.07	4356.85	4158.81	0.339
Concio 5	416	J[858]	ST SLU Mobili	FZ-MIN	1	1	1	1	49.69	6383.67	-1378.13	4356.85	4158.81	0.331
Concio 5	417	I[858]	ST SLU Mobili	FZ-MIN	1	1	1	1	-62.10	6758.81	-1276.22	4356.85	4158.81	0.307
Concio 5	417	J[859]	ST SLU Mobili	FZ-MIN	1	1	1	1	-62.10	4564.49	-954.42	4356.85	4158.81	0.229
Concio 5	418	I[859]	ST SLU Mobili	FZ-MIN	2	1	1	2	-215.89	204.16	-784.84	4356.85	4158.81	0.189
Concio 5	418	J[860]	ST SLU Mobili	FZ-MIN	1	1	1	1	-215.89	20770.17	-642.51	4356.85	4158.81	0.154
Concio 6	419	I[860]	ST SLU Mobili	FZ-MIN	1	1	1	1	-215.89	28234.47	-642.51	2614.11	1592.23	0.404
Concio 6	419	J[861]	ST SLU Mobili	FZ-MIN	1	1	1	1	-215.89	46417.94	-465.62	2614.11	1592.23	0.292
Concio 6	420	I[861]	ST SLU Mobili	FZ-MIN	1	1	1	1	-245.45	45792.11	-277.18	2614.11	1592.23	0.174
Concio 6	420	J[862]	ST SLU Mobili	FZ-MIN	1	1	1	1	-245.45	50398.57	-118.59	2614.11	1592.23	0.074
Concio 6	421	I[862]	ST SLU Mobili	FZ-MIN	1	1	1	1	-245.45	50398.57	-118.59	2614.11	1592.23	0.074
Concio 6	421	J[863]	ST SLU Mobili	FZ-MAX	1	1	1	1	0.88	45588.47	277.17	2614.11	1592.23	0.174
Concio 6	422	I[863]	ST SLU Mobili	FZ-MAX	1	1	1	1	4.15	46324.98	465.64	2614.11	1592.23	0.292
Concio 6	422	J[864]	ST SLU Mobili	FZ-MAX	1	1	1	1	4.15	28116.48	642.53	2614.11	1592.23	0.404
Concio 5	423	I[864]	ST SLU Mobili	FZ-MAX	1	1	1	1	4.15	20829.49	642.53	4356.85	4158.81	0.154
Concio 5	423	J[865]	ST SLU Mobili	FZ-MAX	1	1	1	1	4.15	4420.88	784.87	4356.85	4158.81	0.189
Concio 5	424	I[865]	ST SLU Mobili	FZ-MAX	1	1	1	1	118.78	4763.56	954.45	4356.85	4158.81	0.230
Concio 5	424	J[866]	ST SLU Mobili	FZ-MAX	1	1	1	1	118.78	6223.30	1276.25	4356.85	4158.81	0.307
Concio 5	425	I[866]	ST SLU Mobili	FZ-MAX	1	1	1	1	268.28	5865.98	1378.12	4356.85	4158.81	0.331
Concio 5	425	J[867]	ST SLU Mobili	FZ-MAX	1	1	1	1	268.28	6738.32	1409.07	4356.85	4158.81	0.339
Concio 4 H=var	426	I[867]	ST SLU Mobili	FZ-MAX	1	3	3	3	195.25	7554.03	1422.59	4310.00	4114.09	0.346
Concio 4 H=var	426	J[868]	ST SLU Mobili	FZ-MAX	1	3	3	3	191.74	11779.92	1587.47	6652.39	4844.28	0.328
Concio 4 H=var	427	I[868]	ST SLU Mobili	FZ-MAX	1	3	3	3	181.22	11464.27	1666.35	6652.39	4855.64	0.343
Concio 4 H=var	427	J[869]	ST SLU Mobili	FZ-MAX	1	3	4	4	177.42	14309.54	1834.14	8994.79	5359.79	0.342
Concio 4 H=200	428	I[869]	ST SLU Mobili	FZ-MAX	1	3	4	4	265.86	14417.55	1825.81	8994.79	5356.82	0.341
Concio 4 H=200	428	J[870]	ST SLU Mobili	FZ-MAX	1	3	4	4	265.86	15394.50	1859.66	8994.79	5328.90	0.349
Concio 4 H=200	429	I[870]	ST SLU Mobili	FZ-MIN	1	3	4	4	81.32	16409.21	-1993.95	8994.79	5297.98	0.376
Concio 4 H=200	429	J[871]	ST SLU Mobili	FZ-MIN	1	3	4	4	81.32	15274.78	-1960.10	8994.79	5332.42	0.368
Concio 4 H=var	430	I[871]	ST SLU Mobili	FZ-MIN	1	3	4	4	-21.18	15095.62	-1965.40	8994.79	5337.11	0.368
Concio 4 H=var	430	J[872]	ST SLU Mobili	FZ-MIN	1	3	3	3	-17.38	11461.51	-1797.61	6652.39	4855.34	0.370
Concio 4 H=var	431	I[872]	ST SLU Mobili	FZ-MIN	1	3	3	3	-44.81	11814.60	-1722.39	6652.39	4841.91	0.356
Concio 4 H=var	431	J[873]	ST SLU Mobili	FZ-MIN	1	3	3	3	-41.29	6916.04	-1557.51	4310.00	4114.09	0.379

Concio 3	432	I[873]	ST SLU Mobili	FZ-MIN	1	1	1	1	41.70	6239.44	-1548.54	4356.85	4158.81	0.372
Concio 3	432	J[874]	ST SLU Mobili	FZ-MIN	1	1	1	1	41.70	5252.66	-1517.59	4356.85	4158.81	0.365
Concio 3	433	I[874]	ST SLU Mobili	FZ-MIN	1	1	1	1	-78.20	5606.53	-1416.24	4356.85	4158.81	0.341
Concio 3	433	J[875]	ST SLU Mobili	FZ-MIN	1	1	1	1	-78.20	17673.58	-1106.82	4356.85	4158.81	0.266
Concio 3	434	I[875]	ST SLU Mobili	FZ-MIN	1	1	1	1	-208.72	17504.41	-937.21	4356.85	4158.81	0.225
Concio 3	434	J[876]	ST SLU Mobili	FZ-MIN	1	1	1	1	-208.72	35212.52	-813.44	4356.85	4158.81	0.196
Concio 2	435	I[876]	ST SLU Mobili	FZ-MIN	1	1	1	1	-208.72	41965.30	-813.44	3267.64	2478.30	0.328
Concio 2	435	J[877]	ST SLU Mobili	FZ-MIN	1	1	1	1	-208.72	65054.18	-629.46	3267.64	2478.30	0.254
Concio 2	436	I[877]	ST SLU Mobili	FZ-MIN	1	1	1	1	-189.45	63734.96	-440.42	3267.64	2478.30	0.178
Concio 2	436	J[878]	ST SLU Mobili	FZ-MIN	1	1	1	1	-192.79	75138.55	-141.39	3267.64	2478.30	0.057
Concio 2	437	I[878]	ST SLU Mobili	FZ-MAX	1	1	1	1	-86.32	76019.51	298.26	3267.64	2478.30	0.120
Concio 2	437	J[879]	ST SLU Mobili	FZ-MAX	1	1	1	1	-86.32	70360.84	420.92	3267.64	2478.30	0.170
Concio 1	438	I[879]	ST SLU Mobili	FZ-MAX	1	1	1	1	-86.32	124325.48	420.92	3302.77	2478.97	0.170
Concio 1	438	J[880]	ST SLU Mobili	FZ-MAX	1	1	1	1	-86.32	94698.93	602.81	3302.77	2478.97	0.243
Concio 1	439	I[880]	ST SLU Mobili	FZ-MAX	1	1	1	1	-57.04	94925.50	802.47	3302.77	2478.97	0.324
Concio 1	439	J[881]	ST SLU Mobili	FZ-MAX	1	3	3	3	-57.04	178.98	1105.61	3302.77	2574.34	0.429
Concio 1	440	I[881]	ST SLU Mobili	FZ-MIN	1	3	3	3	0.00	25.65	-48.50	3302.77	2574.41	0.019
Concio 1	440	J[882]	ST SLV Vert	FX-MAX	1	1	1	1	0.80	4.11	1.81	3302.77	2574.42	0.001

8.3 VERIFICHE ALL'INSTABILITÀ FLESSO-TORSIONALE DELL'ANIMA

Si effettuano le verifiche allo stato limite ultimo per instabilità flesso-torsionale delle sezioni composte trave-soletta secondo lo schema ad U invertita (Circ. 02/02/2009, C4.3.4.4).
I coefficienti parziali per SLU assunti sono i seguenti:

$\gamma_{M1} = 1.10$ acciaio strutturale: resistenza all'instabilità (ponti)

Seguono i tabulati di calcolo per ogni asta considerata, per le combinazione di carichi più gravose.
Dati tabulati:

Elem Property: nome delle caratteristiche geometriche dell'elemento
Elem: numero dell'elemento
Position: nodo iniziale (I) o finale (J) dell'elemento
Lcom: combinazione di carico positivo o negativo più gravosa
Type: sollecitazione (massima o minima)
Sect. class: classificazione complessiva sezione
N_Ed: sforzo assiale di calcolo
M_Ed: momento di calcolo
Nb,Rd: sforzo assiale resistente all'instabilità del corrente compresso
Mb,Rd: momento resistente all'instabilità
Mcr: momento critico

Interaction ratio: condizione di verifica: $\frac{N\_Ed}{Nb,Rd} + \frac{M\_Ed}{Mb,Rd} \leq 1$

Elem property	Elem number	Position	Lcom	Type	Sect. Class	N_Ed (kN)	M_Ed (kN*m)	Nb,Rd (kN)	Mb,Rd (kN*m)	Mcr (kN*m)	Interaction Ratio
Concio 1	101	I[719]	ST SLV Long	FX-MIN	4	-1.71	-0.54	17963.00	6350.05	109.91	0.000
Concio 1	101	J[720]	ST SLU Frenamento	FY-MIN	3	-1.68	-7.34	17963.00	6361.88	112.41	0.001
Concio 1	102	I[720]	ST SLU Mobili	MY-MIN	3	-155.91	-219.22	15885.38	6119.92	21.89	0.046
Concio 1	102	J[721]	ST SLU Mobili	MY-MAX	1	-119.62	2913.83	46848.01	10026.33	45.33	0.293
Concio 1	103	I[721]	ST SLU Mobili	MY-MAX	1	-298.75	2694.39	51956.43	10426.89	45.48	0.264
Concio 1	103	J[722]	ST SLU Mobili	MY-MAX	1	-291.05	3469.25	51956.43	10426.89	45.48	0.338
Concio 2	104	I[722]	ST SLU Mobili	MY-MAX	1	-291.05	3474.74	55693.51	12635.70	90.26	0.280
Concio 2	104	J[723]	ST SLU Mobili	MY-MAX	1	-249.55	3991.54	55693.51	12635.70	90.26	0.320
Concio 2	105	I[723]	ST SLU Mobili	MY-MAX	1	-261.35	3925.98	46533.18	11024.13	38.77	0.362
Concio 2	105	J[724]	ST SLU Mobili	MY-MAX	1	-258.54	3534.51	46533.18	11024.13	38.77	0.326
Concio 2	106	I[724]	ST SLU Mobili	MY-MAX	1	-180.16	3628.39	52741.05	12306.57	69.87	0.298
Concio 2	106	J[725]	ST SLU Mobili	MY-MAX	1	-229.70	2392.44	52741.05	12306.57	69.87	0.199
Concio 3	107	I[725]	ST SLU Mobili	MY-MAX	1	-229.70	2393.75	57024.39	13386.70	112.30	0.183
Concio 3	107	J[726]	ST SLU Termico	MY-MIN	1	-171.49	-1506.13	22659.14	10249.33	91.81	0.155
Concio 3	108	I[726]	ST SLU Termico	MY-MIN	1	-49.95	-1468.17	20044.03	9701.81	30.63	0.154
Concio 3	108	J[727]	ST SLU Mobili	MY-MIN	1	-33.75	-3803.37	20044.03	9727.55	30.93	0.393
Concio 3	109	I[727]	ST SLU Mobili	MY-MIN	1	43.44	-3798.71	22659.14	10249.33	169.80	0.373
Concio 3	109	J[728]	ST SLU Mobili	MY-MIN	1	42.37	-4124.14	22659.14	10249.33	169.80	0.404
Concio 4 H=var	110	I[728]	ST SLU Mobili	MY-MIN	3	-75.50	-4138.85	29959.30	10789.26	78.05	0.386
Concio 4 H=var	110	J[729]	ST SLU Mobili	MY-MIN	3	-87.18	-5890.05	33340.25	16954.86	77.94	0.350

Concio 4 H=var	111	I[729]	ST SLU Mobili	MY-MIN	3	-76.41	-5918.69	33340.25	16954.36	75.02	0.351
Concio 4 H=var	111	J[730]	ST SLU Mobili	MY-MIN	4	-92.30	-7955.76	36721.20	23228.13	75.71	0.345
Concio 4 H=200	112	I[730]	ST SLU Mobili	MY-MIN	4	66.11	-7955.76	36721.20	23227.77	330.21	0.344
Concio 4 H=200	112	J[731]	ST SLU Mobili	MY-MIN	4	94.04	-8469.75	36721.20	23191.04	330.21	0.368
Concio 4 H=200	113	I[731]	ST SLU Mobili	MY-MIN	4	106.73	-8529.23	36721.20	23191.67	329.87	0.371
Concio 4 H=200	113	J[732]	ST SLU Mobili	MY-MIN	4	101.60	-8014.01	36721.20	23226.12	329.87	0.348
Concio 4 H=var	114	I[732]	ST SLU Mobili	MY-MIN	4	-67.67	-8014.01	36721.20	23226.28	75.06	0.347
Concio 4 H=var	114	J[733]	ST SLU Mobili	MY-MIN	3	-23.72	-6023.03	33340.25	16934.68	74.38	0.356
Concio 4 H=var	115	I[733]	ST SLU Mobili	MY-MIN	3	-29.64	-5992.83	33340.25	16935.75	75.87	0.355
Concio 4 H=var	115	J[734]	ST SLU Mobili	MY-MIN	3	-17.03	-4477.12	29959.30	10741.68	75.98	0.417
Concio 5	116	I[734]	ST SLU Mobili	MY-MIN	1	86.69	-4433.49	22659.14	10249.33	167.90	0.436
Concio 5	116	J[735]	ST SLU Mobili	MY-MIN	1	88.22	-4161.98	22659.14	10249.33	167.90	0.410
Concio 5	117	I[735]	ST SLU Mobili	MY-MIN	1	28.43	-4129.44	19837.42	9545.33	26.84	0.434
Concio 5	117	J[736]	ST SLU Termico	MY-MIN	1	40.19	-2299.61	19837.42	9502.16	26.18	0.244
Concio 5	118	I[736]	ST SLU Termico	MY-MIN	1	-130.76	-2251.76	22659.14	10249.33	47.21	0.226
Concio 5	118	J[737]	ST SLU Termico	MY-MIN	1	-102.44	-1892.73	22659.14	10249.33	47.21	0.189
Concio 6	119	I[737]	ST SLU Termico	MY-MIN	2	-102.44	-1893.90	18653.73	8775.51	35.03	0.221
Concio 6	119	J[738]	ST SLU Mobili	MY-MAX	1	-98.68	2548.79	52344.97	11938.70	70.87	0.215
Concio 6	120	I[738]	ST SLU Mobili	MY-MAX	1	-161.07	2463.61	53194.79	11955.87	64.12	0.209
Concio 6	120	J[739]	ST SLU Mobili	MY-MAX	1	-198.24	2385.83	53194.79	11955.87	64.12	0.203
Concio 6	121	I[739]	ST SLU Mobili	MY-MAX	1	-198.24	2385.83	53194.79	11955.88	64.12	0.203
Concio 6	121	J[740]	ST SLU Mobili	MY-MAX	1	-161.11	2463.44	53194.79	11955.88	64.12	0.209
Concio 6	122	I[740]	ST SLU Mobili	MY-MAX	1	-98.56	2548.82	52344.97	11938.60	70.87	0.215
Concio 6	122	J[741]	ST SLU Termico	MY-MIN	2	-102.47	-1893.75	18653.73	8775.51	35.03	0.221
Concio 5	123	I[741]	ST SLU Termico	MY-MIN	1	-102.47	-1892.60	22659.14	10249.33	47.21	0.189
Concio 5	123	J[742]	ST SLU Termico	MY-MIN	1	-130.83	-2251.48	22659.14	10249.33	47.21	0.225
Concio 5	124	I[742]	ST SLU Termico	MY-MIN	1	40.07	-2299.41	19837.42	9504.35	26.18	0.244
Concio 5	124	J[743]	ST SLU Mobili	MY-MIN	1	28.32	-4130.24	19837.42	9547.34	26.84	0.434
Concio 5	125	I[743]	ST SLU Mobili	MY-MIN	1	88.19	-4162.71	22659.14	10249.33	167.90	0.410
Concio 5	125	J[744]	ST SLU Mobili	MY-MIN	1	86.66	-4434.22	22659.14	10249.33	167.90	0.437
Concio 4 H=var	126	I[744]	ST SLU Mobili	MY-MIN	3	-17.05	-4477.90	29959.30	10741.68	75.98	0.417
Concio 4 H=var	126	J[745]	ST SLU Mobili	MY-MIN	3	-29.66	-5993.57	33340.25	16935.75	75.87	0.355
Concio 4 H=var	127	I[745]	ST SLU Mobili	MY-MIN	3	-23.60	-6024.18	33340.25	16934.68	74.38	0.356
Concio 4 H=var	127	J[746]	ST SLU Mobili	MY-MIN	4	-67.59	-8014.29	36721.20	23226.28	75.06	0.347
Concio 4 H=200	128	I[746]	ST SLU Mobili	MY-MIN	4	101.65	-8014.29	36721.20	23226.12	329.86	0.348
Concio 4 H=200	128	J[747]	ST SLU Mobili	MY-MIN	4	106.77	-8529.38	36721.20	23191.67	329.86	0.371
Concio 4 H=200	129	I[747]	ST SLU Mobili	MY-MIN	4	94.11	-8469.97	36721.20	23191.04	330.21	0.368
Concio 4 H=200	129	J[748]	ST SLU Mobili	MY-MIN	4	66.00	-7955.85	36721.20	23227.77	330.21	0.344
Concio 4 H=var	130	I[748]	ST SLU Mobili	MY-MIN	4	-92.43	-7955.85	36721.20	23228.13	75.71	0.345
Concio 4 H=var	130	J[749]	ST SLU Mobili	MY-MIN	3	-76.53	-5917.90	33340.25	16954.36	75.03	0.351
Concio 4 H=var	131	I[749]	ST SLU Mobili	MY-MIN	3	-87.14	-5889.59	33340.25	16954.86	77.94	0.350
Concio 4 H=var	131	J[750]	ST SLU Mobili	MY-MIN	3	-75.45	-4138.29	29959.30	10789.26	78.05	0.386
Concio 3	132	I[750]	ST SLU Mobili	MY-MIN	1	42.41	-4123.62	22659.14	10249.33	169.80	0.404
Concio 3	132	J[751]	ST SLU Mobili	MY-MIN	1	43.49	-3798.11	22659.14	10249.33	169.80	0.373
Concio 3	133	I[751]	ST SLU Mobili	MY-MIN	1	-33.62	-3802.82	20044.03	9725.08	30.93	0.393
Concio 3	133	J[752]	ST SLU Termico	MY-MIN	1	-49.82	-1468.36	20044.03	9699.27	30.63	0.154
Concio 3	134	I[752]	ST SLU Termico	MY-MIN	1	-171.45	-1506.29	22659.14	10249.33	91.80	0.155
Concio 3	134	J[753]	ST SLU Mobili	MY-MAX	1	-229.75	2393.98	57024.39	13386.70	112.29	0.183
Concio 2	135	I[753]	ST SLU Mobili	MY-MAX	1	-229.75	2392.65	52741.05	12306.77	69.87	0.199
Concio 2	135	J[754]	ST SLU Mobili	MY-MAX	1	-180.35	3628.60	52741.05	12306.77	69.87	0.298
Concio 2	136	I[754]	ST SLU Mobili	MY-MAX	1	-258.47	3534.90	46533.18	11025.43	38.77	0.326
Concio 2	136	J[755]	ST SLU Mobili	MY-MAX	1	-261.42	3925.90	46533.18	11025.43	38.77	0.362
Concio 2	137	I[755]	ST SLU Mobili	MY-MAX	1	-249.48	3991.52	55693.51	12635.70	90.26	0.320
Concio 2	137	J[756]	ST SLU Mobili	MY-MAX	1	-291.04	3474.88	55693.51	12635.70	90.26	0.280
Concio 1	138	I[756]	ST SLU Mobili	MY-MAX	1	-291.04	3469.39	51956.43	10426.75	45.48	0.338
Concio 1	138	J[757]	ST SLU Mobili	MY-MAX	1	-298.83	2694.45	51956.43	10426.75	45.48	0.264
Concio 1	139	I[757]	ST SLU Mobili	MY-MAX	1	-119.58	2913.94	46848.01	10024.84	45.33	0.293
Concio 1	139	J[758]	ST SLU Mobili	MX-MIN	3	-156.02	-218.27	15885.38	6093.55	21.22	0.046
Concio 1	140	I[758]	ST SLU Frenamento	MY-MIN	3	-1.68	-7.34	17963.00	6361.88	112.41	0.001
Concio 1	140	J[759]	ST SLV Long	FX-MIN	4	-1.71	-0.54	17963.00	6350.05	109.91	0.000
Concio 1	201	I[760]	ST SLV Long	FX-MIN	4	-1.76	-0.53	18098.91	6479.08	110.09	0.000
Concio 1	201	J[761]	ST SLU Mobili	MY-MIN	3	0.00	-342.22	18098.91	6493.67	112.51	0.053
Concio 1	202	I[761]	ST SLU Mobili	FY-MIN	3	-361.82	-467.20	16005.57	6252.66	22.39	0.097
Concio 1	202	J[762]	ST SLU Mobili	MY-MAX	1	-170.15	3205.56	49645.95	10274.39	46.44	0.315
Concio 1	203	I[762]	ST SLU Mobili	MY-MAX	1	-346.83	2954.33	55059.46	10642.35	45.95	0.284
Concio 1	203	J[763]	ST SLU Mobili	MY-MAX	1	-330.74	3887.82	55059.46	10642.35	45.95	0.371
Concio 2	204	I[763]	ST SLU Mobili	MY-MAX	1	-330.74	3892.39	58902.07	12846.08	87.85	0.309
Concio 2	204	J[764]	ST SLU Mobili	MY-MAX	1	-391.05	4082.61	58902.07	12846.08	87.85	0.324
Concio 2	205	I[764]	ST SLU Mobili	MY-MAX	1	-409.46	4038.81	49214.00	11204.67	38.67	0.369
Concio 2	205	J[765]	ST SLU Mobili	MY-MAX	1	-397.44	3703.25	49214.00	11204.67	38.67	0.339
Concio 2	206	I[765]	ST SLU Mobili	MY-MAX	1	-276.23	3756.67	55779.51	12475.36	66.65	0.306
Concio 2	206	J[766]	ST SLU Mobili	MY-MAX	1	-204.11	2943.67	55779.51	12475.36	66.65	0.240
Concio 3	207	I[766]	ST SLU Mobili	MY-MAX	1	-204.11	2944.20	60219.77	13602.15	112.19	0.220
Concio 3	207	J[767]	ST SLU Vento	MY-MIN	3	-112.92	-1345.82	22871.47	7452.38	112.47	0.186
Concio 3	208	I[767]	ST SLU Mobili	MY-MIN	3	156.95	-1314.74	20231.85	7049.29	31.64	0.194
Concio 3	208	J[768]	ST SLU Mobili	MY-MIN	1	129.24	-3639.41	20231.85	9882.37	31.64	0.375
Concio 3	209	I[768]	ST SLU Mobili	MY-MIN	1	21.07	-3620.74	22871.47	10397.59	170.21	0.349
Concio 3	209	J[769]	ST SLU Mobili	MY-MIN	1	18.70	-3913.46	22871.47	10397.59	170.21	0.377
Concio 4 H=var	210	I[769]	ST SLU Mobili	MY-MIN	3	-99.68	-3941.62	30596.27	10850.42	79.59	0.367
Concio 4 H=var	210	J[770]	ST SLU Mobili	MY-MIN	3	-120.80	-5671.43	33977.22	17021.59	79.18	0.337

Concio 4 H=var	211	I[770]	ST SLU Mobili	MY-MIN	3	-218.23	-5634.42	33977.22	17022.32	76.72	0.337
Concio 4 H=var	211	J[771]	ST SLU Mobili	MY-MIN	4	-248.76	-7840.84	37358.17	23251.25	77.24	0.344
Concio 4 H=200	212	I[771]	ST SLU Mobili	MY-MIN	4	-68.56	-7840.84	37358.17	23250.97	332.45	0.339
Concio 4 H=200	212	J[772]	ST SLU Mobili	MY-MIN	4	-141.65	-8339.12	37358.17	23206.68	332.45	0.363
Concio 4 H=200	213	I[772]	ST SLU Mobili	MY-MIN	4	-154.27	-8414.24	37358.17	23206.89	332.94	0.367
Concio 4 H=200	213	J[773]	ST SLU Mobili	MY-MIN	4	-128.09	-7845.60	37358.17	23248.67	332.94	0.341
Concio 4 H=var	214	I[773]	ST SLU Mobili	MY-MIN	4	-315.38	-7845.60	37358.17	23248.84	76.27	0.346
Concio 4 H=var	214	J[774]	ST SLU Mobili	MY-MIN	3	-213.65	-5793.63	33977.22	16999.37	75.76	0.347
Concio 4 H=var	215	I[774]	ST SLU Mobili	MY-MIN	3	-117.65	-5834.60	33977.22	16998.48	77.17	0.347
Concio 4 H=var	215	J[775]	ST SLU Mobili	MY-MIN	3	-96.55	-4297.51	30596.27	10796.42	77.58	0.401
Concio 5	216	I[775]	ST SLU Mobili	MY-MIN	1	9.72	-4290.34	22871.47	10397.59	168.63	0.413
Concio 5	216	J[776]	ST SLU Mobili	MY-MIN	1	12.55	-4019.61	22871.47	10397.59	168.63	0.387
Concio 5	217	I[776]	ST SLU Mobili	MY-MIN	1	183.81	-4041.37	20023.30	9704.32	27.49	0.426
Concio 5	217	J[777]	ST SLU Termico	MY-MIN	1	170.75	-2198.24	20023.30	9661.76	26.70	0.236
Concio 5	218	I[777]	ST SLU Termico	MY-MIN	1	-2.25	-2217.43	22871.47	10397.59	48.38	0.213
Concio 5	218	J[778]	ST SLU Termico	MY-MIN	1	4.34	-1855.47	22871.47	10397.59	48.38	0.179
Concio 6	219	I[778]	ST SLU Termico	MY-MIN	2	4.34	-1853.30	18787.18	8891.06	38.25	0.209
Concio 6	219	J[779]	ST SLU Mobili	MY-MAX	1	-154.38	2643.11	55412.36	12098.88	65.96	0.221
Concio 6	220	I[779]	ST SLU Mobili	MY-MAX	1	-251.55	2588.54	56311.98	12178.14	67.04	0.217
Concio 6	220	J[780]	ST SLU Mobili	MY-MAX	1	-182.96	2800.01	56311.98	12178.14	67.04	0.233
Concio 6	221	I[780]	ST SLU Mobili	MY-MAX	1	-182.96	2800.01	56311.98	12181.87	67.03	0.233
Concio 6	221	J[781]	ST SLU Mobili	MY-MAX	1	-251.57	2588.95	56311.98	12181.87	67.03	0.217
Concio 6	222	I[781]	ST SLU Mobili	MY-MAX	1	-154.39	2642.71	55412.36	12085.70	65.97	0.222
Concio 6	222	J[782]	ST SLU Termico	MY-MIN	2	4.39	-1853.22	18787.18	8891.06	38.25	0.209
Concio 5	223	I[782]	ST SLU Termico	MY-MIN	1	4.39	-1855.39	22871.47	10397.59	48.38	0.179
Concio 5	223	J[783]	ST SLU Termico	MY-MIN	1	-2.19	-2217.30	22871.47	10397.59	48.38	0.213
Concio 5	224	I[783]	ST SLU Termico	MY-MIN	1	170.95	-2198.33	20023.30	9663.47	26.70	0.236
Concio 5	224	J[784]	ST SLU Mobili	MY-MIN	1	183.99	-4041.81	20023.30	9705.43	27.49	0.426
Concio 5	225	I[784]	ST SLU Mobili	MY-MIN	1	12.82	-4019.92	22871.47	10397.59	168.63	0.387
Concio 5	225	J[785]	ST SLU Mobili	MY-MIN	1	9.98	-4290.64	22871.47	10397.59	168.63	0.413
Concio 4 H=var	226	I[785]	ST SLU Mobili	MY-MIN	3	-96.29	-4297.65	30596.27	10796.42	77.58	0.401
Concio 4 H=var	226	J[786]	ST SLU Mobili	MY-MIN	3	-117.38	-5834.68	33977.22	16998.48	77.17	0.347
Concio 4 H=var	227	I[786]	ST SLU Mobili	MY-MIN	3	-213.42	-5794.19	33977.22	16999.37	75.76	0.347
Concio 4 H=var	227	J[787]	ST SLU Mobili	MY-MIN	4	-315.08	-7845.95	37358.17	23248.84	76.27	0.346
Concio 4 H=200	228	I[787]	ST SLU Mobili	MY-MIN	4	-127.82	-7845.95	37358.17	23248.67	332.94	0.341
Concio 4 H=200	228	J[788]	ST SLU Mobili	MY-MIN	4	-154.00	-8414.41	37358.17	23206.89	332.94	0.367
Concio 4 H=200	229	I[788]	ST SLU Mobili	MY-MIN	4	-141.88	-8339.18	37358.17	23206.68	332.45	0.363
Concio 4 H=200	229	J[789]	ST SLU Mobili	MY-MIN	4	-68.75	-7840.74	37358.17	23250.97	332.45	0.339
Concio 4 H=var	230	I[789]	ST SLU Mobili	MY-MIN	4	-248.97	-7840.74	37358.17	23251.25	77.24	0.344
Concio 4 H=var	230	J[790]	ST SLU Mobili	MY-MIN	3	-218.45	-5634.26	33977.22	17022.32	76.72	0.337
Concio 4 H=var	231	I[790]	ST SLU Mobili	MY-MIN	3	-121.08	-5671.54	33977.22	17021.59	79.18	0.337
Concio 4 H=var	231	J[791]	ST SLU Mobili	MY-MIN	3	-99.95	-3941.58	30596.27	10850.42	79.60	0.367
Concio 3	232	I[791]	ST SLU Mobili	MY-MIN	1	18.44	-3913.34	22871.47	10397.59	170.21	0.377
Concio 3	232	J[792]	ST SLU Mobili	MY-MIN	1	20.81	-3620.53	22871.47	10397.59	170.21	0.349
Concio 3	233	I[792]	ST SLU Mobili	MY-MIN	1	129.04	-3639.07	20231.85	9880.80	31.64	0.375
Concio 3	233	J[793]	ST SLU Mobili	MY-MIN	3	156.75	-1314.57	20231.85	7048.18	31.64	0.194
Concio 3	234	I[793]	ST SLU Vento	MY-MIN	3	-113.03	-1345.97	22871.47	7452.38	112.46	0.186
Concio 3	234	J[794]	ST SLU Mobili	MY-MAX	1	-204.02	2944.82	60219.77	13602.15	112.21	0.220
Concio 2	235	I[794]	ST SLU Mobili	MY-MAX	1	-204.02	2944.28	55779.51	12483.91	66.65	0.240
Concio 2	235	J[795]	ST SLU Mobili	MY-MAX	1	-276.20	3757.63	55779.51	12483.91	66.65	0.306
Concio 2	236	I[795]	ST SLU Mobili	MY-MAX	1	-397.38	3703.09	49214.00	11201.96	38.67	0.339
Concio 2	236	J[796]	ST SLU Mobili	MY-MAX	1	-409.46	4039.32	49214.00	11201.96	38.67	0.369
Concio 2	237	I[796]	ST SLU Mobili	MY-MAX	1	-391.07	4082.03	58902.07	12846.08	87.85	0.324
Concio 2	237	J[797]	ST SLU Mobili	MY-MAX	1	-330.77	3892.22	58902.07	12846.08	87.85	0.309
Concio 1	238	I[797]	ST SLU Mobili	MY-MAX	1	-330.77	3888.16	55059.46	10634.94	45.95	0.372
Concio 1	238	J[798]	ST SLU Mobili	MY-MAX	1	-346.81	2954.47	55059.46	10634.94	45.95	0.284
Concio 1	239	I[798]	ST SLU Mobili	MY-MAX	1	-170.16	3205.45	49645.95	10231.78	46.44	0.317
Concio 1	239	J[799]	ST SLU Mobili	MZ-MIN	3	-361.65	-467.40	16005.57	6256.54	22.59	0.097
Concio 1	240	I[799]	ST SLU Mobili	MY-MIN	3	0.00	-342.19	18098.91	6493.67	112.51	0.053
Concio 1	240	J[800]	ST SLV Long	FX-MIN	4	-1.76	-0.53	18098.91	6479.08	110.09	0.000
Concio 1	301	I[801]	ST SLV Long	FX-MIN	4	-1.76	-0.53	18098.91	6479.08	110.09	0.000
Concio 1	301	J[802]	ST SLU Mobili	FY-MAX	3	0.00	-342.22	18098.91	6493.67	112.51	0.053
Concio 1	302	I[802]	ST SLU Mobili	MY-MIN	3	-229.04	-507.62	16005.57	6263.81	23.82	0.095
Concio 1	302	J[803]	ST SLU Mobili	MY-MAX	1	-172.73	3211.15	49645.95	10274.61	46.45	0.316
Concio 1	303	I[803]	ST SLU Mobili	MY-MAX	1	-348.11	2956.43	55059.46	10642.43	45.95	0.284
Concio 1	303	J[804]	ST SLU Mobili	MY-MAX	1	-332.02	3891.56	55059.46	10642.43	45.95	0.372
Concio 2	304	I[804]	ST SLU Mobili	MY-MAX	1	-332.02	3896.17	58902.07	12846.08	87.86	0.309
Concio 2	304	J[805]	ST SLU Mobili	MY-MAX	1	-392.33	4087.64	58902.07	12846.08	87.86	0.325
Concio 2	305	I[805]	ST SLU Mobili	MY-MAX	1	-411.15	4041.96	49214.00	11204.71	38.67	0.369
Concio 2	305	J[806]	ST SLU Mobili	MY-MAX	1	-399.12	3705.75	49214.00	11204.71	38.67	0.339
Concio 2	306	I[806]	ST SLU Mobili	MY-MAX	1	-280.56	3761.36	55779.51	12475.45	66.66	0.307
Concio 2	306	J[807]	ST SLU Mobili	MY-MAX	1	-208.44	2946.09	55779.51	12475.45	66.66	0.240
Concio 3	307	I[807]	ST SLU Mobili	MY-MAX	1	-208.44	2946.65	60219.77	13602.15	112.20	0.220
Concio 3	307	J[808]	ST SLU Mobili	MY-MAX	1	-289.94	2075.37	60219.77	13602.15	112.20	0.157
Concio 3	308	I[808]	ST SLU Vento	MY-MIN	3	135.61	-1313.97	20231.85	7039.09	31.38	0.193
Concio 3	308	J[809]	ST SLU Mobili	MY-MIN	1	138.97	-3642.92	20231.85	9882.15	31.63	0.376
Concio 3	309	I[809]	ST SLU Mobili	MY-MIN	1	26.41	-3623.79	22871.47	10397.59	170.23	0.350
Concio 3	309	J[810]	ST SLU Mobili	MY-MIN	1	24.04	-3918.52	22871.47	10397.59	170.23	0.378
Concio 4 H=var	310	I[810]	ST SLU Mobili	MY-MIN	3	-94.67	-3942.81	30596.27	10850.42	79.62	0.367
Concio 4 H=var	310	J[811]	ST SLU Mobili	MY-MIN	3	-115.79	-5680.10	33977.22	17021.59	79.20	0.337

Concio 4 H=var	311	I[811]	ST SLU Mobili	MY-MIN	3	-214.13	-5641.27	33977.22	17022.32	76.73	0.338
Concio 4 H=var	311	J[812]	ST SLU Mobili	MY-MIN	4	-244.66	-7855.62	37358.17	23251.25	77.25	0.344
Concio 4 H=200	312	I[812]	ST SLU Mobili	MY-MIN	4	-63.91	-7855.62	37358.17	23250.97	332.46	0.340
Concio 4 H=200	312	J[813]	ST SLU Mobili	MY-MIN	4	-136.99	-8355.76	37358.17	23206.68	332.46	0.364
Concio 4 H=200	313	I[813]	ST SLU Mobili	MY-MIN	4	-148.97	-8431.02	37358.17	23206.89	332.95	0.367
Concio 4 H=200	313	J[814]	ST SLU Mobili	MY-MIN	4	-122.79	-7860.39	37358.17	23248.67	332.95	0.341
Concio 4 H=var	314	I[814]	ST SLU Mobili	MY-MIN	4	-310.65	-7860.39	37358.17	23248.84	76.28	0.346
Concio 4 H=var	314	J[815]	ST SLU Mobili	MY-MIN	3	-208.92	-5799.96	33977.22	16999.37	75.77	0.347
Concio 4 H=var	315	I[815]	ST SLU Mobili	MY-MIN	3	-111.10	-5842.90	33977.22	16998.48	77.20	0.347
Concio 4 H=var	315	J[816]	ST SLU Mobili	MY-MIN	3	-90.00	-4298.17	30596.27	10796.42	77.60	0.401
Concio 5	316	I[816]	ST SLU Mobili	MY-MIN	1	16.61	-4295.78	22871.47	10397.59	168.67	0.414
Concio 5	316	J[817]	ST SLU Mobili	MY-MIN	1	19.44	-4022.06	22871.47	10397.59	168.67	0.388
Concio 5	317	I[817]	ST SLU Mobili	MY-MIN	1	194.03	-4045.63	20023.30	9704.04	27.48	0.427
Concio 5	317	J[818]	ST SLU Termico	MY-MIN	1	180.96	-2201.47	20023.30	9661.49	26.69	0.237
Concio 5	318	I[818]	ST SLU Termico	MY-MIN	1	2.60	-2219.32	22871.47	10397.59	48.34	0.214
Concio 5	318	J[819]	ST SLU Mobili	MY-MIN	3	0.64	-1614.72	22871.47	7263.27	51.16	0.222
Concio 6	319	I[819]	ST SLU Termico	MY-MIN	2	9.19	-1856.65	18787.18	8891.06	38.13	0.209
Concio 6	319	J[820]	ST SLU Mobili	MY-MAX	1	-159.22	2648.40	55412.36	12099.02	65.97	0.222
Concio 6	320	I[820]	ST SLU Mobili	MY-MAX	1	-255.32	2592.04	56311.98	12178.12	67.04	0.217
Concio 6	320	J[821]	ST SLU Mobili	MY-MAX	1	-186.73	2803.50	56311.98	12178.12	67.04	0.234
Concio 6	321	I[821]	ST SLU Mobili	MY-MAX	1	-186.73	2803.50	56311.98	12181.85	67.03	0.234
Concio 6	321	J[822]	ST SLU Mobili	MY-MAX	1	-255.34	2592.44	56311.98	12181.85	67.03	0.217
Concio 6	322	I[822]	ST SLU Mobili	MY-MAX	1	-159.15	2648.06	55412.36	12085.77	65.97	0.222
Concio 6	322	J[823]	ST SLU Termico	MY-MIN	2	9.15	-1856.59	18787.18	8891.06	38.13	0.209
Concio 5	323	I[823]	ST SLU Mobili	MY-MIN	3	0.61	-1614.65	22871.47	7263.27	51.16	0.222
Concio 5	323	J[824]	ST SLU Termico	MY-MIN	1	2.57	-2219.17	22871.47	10397.59	48.34	0.214
Concio 5	324	I[824]	ST SLU Termico	MY-MIN	1	180.83	-2201.33	20023.30	9663.34	26.69	0.237
Concio 5	324	J[825]	ST SLU Mobili	MY-MIN	1	193.87	-4046.19	20023.30	9705.29	27.48	0.427
Concio 5	325	I[825]	ST SLU Mobili	MY-MIN	1	19.60	-4022.46	22871.47	10397.59	168.67	0.388
Concio 5	325	J[826]	ST SLU Mobili	MY-MIN	1	16.77	-4296.16	22871.47	10397.59	168.67	0.414
Concio 4 H=var	326	I[826]	ST SLU Mobili	MY-MIN	3	-89.84	-4298.55	30596.27	10796.42	77.60	0.401
Concio 4 H=var	326	J[827]	ST SLU Mobili	MY-MIN	3	-110.93	-5843.26	33977.22	16998.48	77.20	0.347
Concio 4 H=var	327	I[827]	ST SLU Mobili	MY-MIN	3	-208.84	-5800.88	33977.22	16999.37	75.77	0.347
Concio 4 H=var	327	J[828]	ST SLU Mobili	MY-MIN	4	-310.50	-7860.73	37358.17	23248.84	76.28	0.346
Concio 4 H=200	328	I[828]	ST SLU Mobili	MY-MIN	4	-122.66	-7860.73	37358.17	23248.67	332.95	0.341
Concio 4 H=200	328	J[829]	ST SLU Mobili	MY-MIN	4	-148.85	-8431.09	37358.17	23206.89	332.95	0.367
Concio 4 H=200	329	I[829]	ST SLU Mobili	MY-MIN	4	-137.09	-8355.90	37358.17	23206.68	332.46	0.364
Concio 4 H=200	329	J[830]	ST SLU Mobili	MY-MIN	4	-63.96	-7855.52	37358.17	23250.97	332.46	0.340
Concio 4 H=var	330	I[830]	ST SLU Mobili	MY-MIN	4	-244.73	-7855.52	37358.17	23251.25	77.25	0.344
Concio 4 H=var	330	J[831]	ST SLU Mobili	MY-MIN	3	-214.21	-5640.94	33977.22	17022.32	76.73	0.338
Concio 4 H=var	331	I[831]	ST SLU Mobili	MY-MIN	3	-115.97	-5679.91	33977.22	17021.59	79.20	0.337
Concio 4 H=var	331	J[832]	ST SLU Mobili	MY-MIN	3	-94.84	-3942.53	30596.27	10850.42	79.62	0.367
Concio 3	332	I[832]	ST SLU Mobili	MY-MIN	1	23.88	-3918.30	22871.47	10397.59	170.24	0.378
Concio 3	332	J[833]	ST SLU Mobili	MY-MIN	1	26.25	-3623.48	22871.47	10397.59	170.24	0.350
Concio 3	333	I[833]	ST SLU Mobili	MY-MIN	1	138.84	-3642.53	20231.85	9880.47	31.63	0.376
Concio 3	333	J[834]	ST SLU Vento	MY-MIN	3	135.39	-1314.15	20231.85	7037.82	31.38	0.193
Concio 3	334	I[834]	ST SLU Mobili	MY-MAX	1	-290.05	2074.72	60219.77	13602.15	112.22	0.157
Concio 3	334	J[835]	ST SLU Mobili	MY-MAX	1	-208.45	2947.25	60219.77	13602.15	112.22	0.220
Concio 2	335	I[835]	ST SLU Mobili	MY-MAX	1	-208.45	2946.67	55779.51	12484.04	66.66	0.240
Concio 2	335	J[836]	ST SLU Mobili	MY-MAX	1	-280.64	3762.24	55779.51	12484.04	66.66	0.306
Concio 2	336	I[836]	ST SLU Mobili	MY-MAX	1	-399.09	3705.55	49214.00	11201.99	38.67	0.339
Concio 2	336	J[837]	ST SLU Mobili	MY-MAX	1	-411.17	4042.28	49214.00	11201.99	38.67	0.369
Concio 2	337	I[837]	ST SLU Mobili	MY-MAX	1	-392.36	4086.89	58902.07	12846.08	87.86	0.325
Concio 2	337	J[838]	ST SLU Mobili	MY-MAX	1	-332.06	3895.98	58902.07	12846.08	87.86	0.309
Concio 1	338	I[838]	ST SLU Mobili	MY-MAX	1	-332.06	3891.88	55059.46	10634.99	45.95	0.372
Concio 1	338	J[839]	ST SLU Mobili	MY-MAX	1	-348.10	2956.55	55059.46	10634.99	45.95	0.284
Concio 1	339	I[839]	ST SLU Mobili	MY-MAX	1	-172.74	3211.07	49645.95	10231.90	46.45	0.317
Concio 1	339	J[840]	ST SLU Mobili	FY-MIN	3	-359.07	-466.49	16005.57	6254.90	22.39	0.097
Concio 1	340	I[840]	ST SLU Mobili	FY-MAX	3	0.00	-342.19	18098.91	6493.67	112.51	0.053
Concio 1	340	J[841]	ST SLV Long	FX-MIN	4	-1.76	-0.53	18098.91	6479.08	110.09	0.000
Concio 1	401	I[842]	ST SLV Long	FX-MIN	4	-1.71	-0.54	17963.00	6350.05	109.91	0.000
Concio 1	401	J[843]	ST SLU Frenamento	MY-MIN	3	-1.68	-7.34	17963.00	6361.88	112.41	0.001
Concio 1	402	I[843]	ST SLU Mobili	MX-MIN	3	-154.65	-217.61	15885.38	6092.20	21.21	0.046
Concio 1	402	J[844]	ST SLU Mobili	MY-MAX	1	-120.98	2902.81	46848.01	10026.29	45.33	0.292
Concio 1	403	I[844]	ST SLU Mobili	MY-MAX	1	-303.13	2688.33	51956.43	10426.92	45.48	0.264
Concio 1	403	J[845]	ST SLU Mobili	MY-MAX	1	-295.42	3461.94	51956.43	10426.92	45.48	0.338
Concio 2	404	I[845]	ST SLU Mobili	MY-MAX	1	-295.42	3467.56	55693.51	12635.70	90.26	0.280
Concio 2	404	J[846]	ST SLU Mobili	MY-MAX	1	-253.93	3983.52	55693.51	12635.70	90.26	0.320
Concio 2	405	I[846]	ST SLU Mobili	MY-MAX	1	-265.87	3919.39	46533.18	11024.10	38.77	0.361
Concio 2	405	J[847]	ST SLU Mobili	MY-MAX	1	-263.06	3529.10	46533.18	11024.10	38.77	0.326
Concio 2	406	I[847]	ST SLU Mobili	MY-MAX	1	-181.53	3621.15	52741.05	12306.56	69.87	0.298
Concio 2	406	J[848]	ST SLU Mobili	MY-MAX	1	-231.07	2387.88	52741.05	12306.56	69.87	0.198
Concio 3	407	I[848]	ST SLU Mobili	MY-MAX	1	-231.07	2389.20	57024.39	13386.70	112.30	0.183
Concio 3	407	J[849]	ST SLU Termico	MY-MIN	1	-170.12	-1503.36	22659.14	10249.33	92.13	0.154
Concio 3	408	I[849]	ST SLU Termico	MY-MIN	1	-55.92	-1460.74	20044.03	9702.44	30.65	0.153
Concio 3	408	J[850]	ST SLU Mobili	MY-MIN	1	-39.72	-3794.98	20044.03	9728.10	30.95	0.392
Concio 3	409	I[850]	ST SLU Mobili	MY-MIN	1	37.23	-3794.88	22659.14	10249.33	169.77	0.372
Concio 3	409	J[851]	ST SLU Mobili	MY-MIN	1	36.16	-4117.79	22659.14	10249.33	169.77	0.403
Concio 4 H=var	410	I[851]	ST SLU Mobili	MY-MIN	3	-82.00	-4135.77	29959.30	10789.26	78.04	0.386
Concio 4 H=var	410	J[852]	ST SLU Mobili	MY-MIN	3	-93.68	-5879.70	33340.25	16954.86	77.92	0.350

Concio 4 H=var	411	I[852]	ST SLU Mobili	MY-MIN	3	-70.68	-5909.27	33340.25	16954.36	75.01	0.351
Concio 4 H=var	411	J[853]	ST SLU Mobili	MY-MIN	4	-86.57	-7938.38	36721.20	23228.13	75.70	0.344
Concio 4 H=200	412	I[853]	ST SLU Mobili	MY-MIN	4	69.72	-7938.38	36721.20	23227.77	330.20	0.344
Concio 4 H=200	412	J[854]	ST SLU Mobili	MY-MIN	4	97.65	-8450.57	36721.20	23191.04	330.20	0.367
Concio 4 H=200	413	I[854]	ST SLU Mobili	MY-MIN	4	108.76	-8510.08	36721.20	23191.67	329.86	0.370
Concio 4 H=200	413	J[855]	ST SLU Mobili	MY-MIN	4	103.63	-7996.70	36721.20	23226.12	329.86	0.347
Concio 4 H=var	414	I[855]	ST SLU Mobili	MY-MIN	4	-63.40	-7996.70	36721.20	23226.28	75.05	0.346
Concio 4 H=var	414	J[856]	ST SLU Mobili	MY-MIN	3	-19.46	-6013.86	33340.25	16934.68	74.37	0.356
Concio 4 H=var	415	I[856]	ST SLU Mobili	MY-MIN	3	-36.45	-5982.65	33340.25	16935.75	75.85	0.354
Concio 4 H=var	415	J[857]	ST SLU Mobili	MY-MIN	3	-23.84	-4474.00	29959.30	10741.68	75.96	0.417
Concio 5	416	I[857]	ST SLU Mobili	MY-MIN	1	80.16	-4426.71	22659.14	10249.33	167.88	0.435
Concio 5	416	J[858]	ST SLU Mobili	MY-MIN	1	81.68	-4157.66	22659.14	10249.33	167.88	0.409
Concio 5	417	I[858]	ST SLU Mobili	MY-MIN	1	22.09	-4120.48	19837.42	9545.94	26.85	0.433
Concio 5	417	J[859]	ST SLU Termico	MY-MIN	1	33.84	-2292.60	19837.42	9502.73	26.19	0.243
Concio 5	418	I[859]	ST SLU Termico	MY-MIN	1	-129.81	-2249.41	22659.14	10249.33	47.24	0.225
Concio 5	418	J[860]	ST SLU Termico	MY-MIN	1	-101.49	-1888.85	22659.14	10249.33	47.24	0.189
Concio 6	419	I[860]	ST SLU Termico	MY-MIN	2	-101.49	-1890.00	18653.73	8775.51	35.11	0.221
Concio 6	419	J[861]	ST SLU Mobili	MY-MAX	1	-99.63	2542.96	52344.97	11938.73	70.87	0.215
Concio 6	420	I[861]	ST SLU Mobili	MY-MAX	1	-163.53	2459.24	53194.79	11955.87	64.12	0.209
Concio 6	420	J[862]	ST SLU Mobili	MY-MAX	1	-200.71	2381.46	53194.79	11955.87	64.12	0.203
Concio 6	421	I[862]	ST SLU Mobili	MY-MAX	1	-200.71	2381.46	53194.79	11955.88	64.12	0.203
Concio 6	421	J[863]	ST SLU Mobili	MY-MAX	1	-163.58	2459.08	53194.79	11955.88	64.12	0.209
Concio 6	422	I[863]	ST SLU Mobili	MY-MAX	1	-99.57	2542.95	52344.97	11938.64	70.87	0.215
Concio 6	422	J[864]	ST SLU Termico	MY-MIN	2	-101.46	-1889.87	18653.73	8775.51	35.11	0.221
Concio 5	423	I[864]	ST SLU Termico	MY-MIN	1	-101.46	-1888.73	22659.14	10249.33	47.24	0.189
Concio 5	423	J[865]	ST SLU Termico	MY-MIN	1	-129.82	-2249.18	22659.14	10249.33	47.24	0.225
Concio 5	424	I[865]	ST SLU Termico	MY-MIN	1	33.99	-2292.42	19837.42	9504.67	26.19	0.243
Concio 5	424	J[866]	ST SLU Mobili	MY-MIN	1	22.24	-4121.01	19837.42	9547.64	26.85	0.433
Concio 5	425	I[866]	ST SLU Mobili	MY-MIN	1	81.92	-4158.13	22659.14	10249.33	167.87	0.409
Concio 5	425	J[867]	ST SLU Mobili	MY-MIN	1	80.39	-4427.17	22659.14	10249.33	167.87	0.436
Concio 4 H=var	426	I[867]	ST SLU Mobili	MY-MIN	3	-23.61	-4474.42	29959.30	10741.68	75.96	0.417
Concio 4 H=var	426	J[868]	ST SLU Mobili	MY-MIN	3	-36.22	-5982.96	33340.25	16935.75	75.85	0.354
Concio 4 H=var	427	I[868]	ST SLU Mobili	MY-MIN	3	-19.33	-6014.53	33340.25	16934.68	74.37	0.356
Concio 4 H=var	427	J[869]	ST SLU Mobili	MY-MIN	4	-63.32	-7996.85	36721.20	23226.28	75.05	0.346
Concio 4 H=200	428	I[869]	ST SLU Mobili	MY-MIN	4	103.71	-7996.85	36721.20	23226.12	329.86	0.347
Concio 4 H=200	428	J[870]	ST SLU Mobili	MY-MIN	4	108.84	-8510.17	36721.20	23191.67	329.86	0.370
Concio 4 H=200	429	I[870]	ST SLU Mobili	MY-MIN	4	97.70	-8450.85	36721.20	23191.04	330.21	0.367
Concio 4 H=200	429	J[871]	ST SLU Mobili	MY-MIN	4	69.59	-7938.61	36721.20	23227.77	330.21	0.344
Concio 4 H=var	430	I[871]	ST SLU Mobili	MY-MIN	4	-86.69	-7938.61	36721.20	23228.13	75.70	0.344
Concio 4 H=var	430	J[872]	ST SLU Mobili	MY-MIN	3	-70.79	-5908.96	33340.25	16954.36	75.01	0.351
Concio 4 H=var	431	I[872]	ST SLU Mobili	MY-MIN	3	-93.90	-5879.67	33340.25	16954.86	77.92	0.350
Concio 4 H=var	431	J[873]	ST SLU Mobili	MY-MIN	3	-82.22	-4135.57	29959.30	10789.26	78.04	0.386
Concio 3	432	I[873]	ST SLU Mobili	MY-MIN	1	35.94	-4117.53	22659.14	10249.33	169.77	0.403
Concio 3	432	J[874]	ST SLU Mobili	MY-MIN	1	37.01	-3794.53	22659.14	10249.33	169.77	0.372
Concio 3	433	I[874]	ST SLU Mobili	MY-MIN	1	-39.86	-3794.70	20044.03	9725.89	30.95	0.392
Concio 3	433	J[875]	ST SLU Termico	MY-MIN	1	-56.06	-1460.92	20044.03	9700.08	30.65	0.153
Concio 3	434	I[875]	ST SLU Termico	MY-MIN	1	-170.16	-1503.49	22659.14	10249.33	92.12	0.154
Concio 3	434	J[876]	ST SLU Mobili	MY-MAX	1	-231.03	2389.44	57024.39	13386.70	112.29	0.183
Concio 2	435	I[876]	ST SLU Mobili	MY-MAX	1	-231.03	2388.10	52741.05	12306.75	69.87	0.198
Concio 2	435	J[877]	ST SLU Mobili	MY-MAX	1	-181.64	3621.42	52741.05	12306.75	69.87	0.298
Concio 2	436	I[877]	ST SLU Mobili	MY-MAX	1	-262.97	3529.52	46533.18	11025.35	38.77	0.326
Concio 2	436	J[878]	ST SLU Mobili	MY-MAX	1	-265.93	3919.35	46533.18	11025.35	38.77	0.361
Concio 2	437	I[878]	ST SLU Mobili	MY-MAX	1	-253.84	3983.53	55693.51	12635.70	90.26	0.320
Concio 2	437	J[879]	ST SLU Mobili	MY-MAX	1	-295.40	3467.72	55693.51	12635.70	90.26	0.280
Concio 1	438	I[879]	ST SLU Mobili	MY-MAX	1	-295.40	3462.10	51956.43	10426.78	45.48	0.338
Concio 1	438	J[880]	ST SLU Mobili	MY-MAX	1	-303.20	2688.41	51956.43	10426.78	45.48	0.264
Concio 1	439	I[880]	ST SLU Mobili	MY-MAX	1	-120.93	2902.93	46848.01	10024.92	45.33	0.292
Concio 1	439	J[881]	ST SLU Mobili	MY-MIN	3	-154.56	-218.72	15885.38	6123.53	21.88	0.045
Concio 1	440	I[881]	ST SLU Frenamento	MY-MIN	3	-1.68	-7.34	17963.00	6361.88	112.41	0.001
Concio 1	440	J[882]	ST SLV Long	FX-MIN	4	-1.71	-0.54	17963.00	6350.05	109.91	0.000

8.4 VERIFICA DELLE TENSIONI IN ESERCIZIO

Si effettuano le verifiche allo stato limite di esercizio (SLE) delle tensioni massime nell'acciaio delle travi, nel calcestruzzo della soletta e nelle armature della soletta.
Seguono i tabulati di calcolo per ogni asta considerata, per le combinazioni di carichi più gravose.
Dati tabulati:

Elem: numero dell'elemento
Position: nodo iniziale (I) o finale (J) dell'elemento

Lcom: combinazione di carico più gravosa
Type: tipo combinazione (caratteristica, frequente, quasi permanente)

Flange travi in acciaio:

Sigma_Ed_ser: tensione assiale massima
Tau_Ed_ser: tensione tangenziale massima
SQRT(sigma^2+3 tau^2): tensione ideale
ALW = $f_{yk} / \gamma_{M,ser}$: tensione limite

Soletta in calcestruzzo:

Sigma_c: tensione assiale massima
k*fck: tensione limite (comb. caratteristica: $k_1 = 0.6$; quasi perm.: $k_2 = 0.45$)

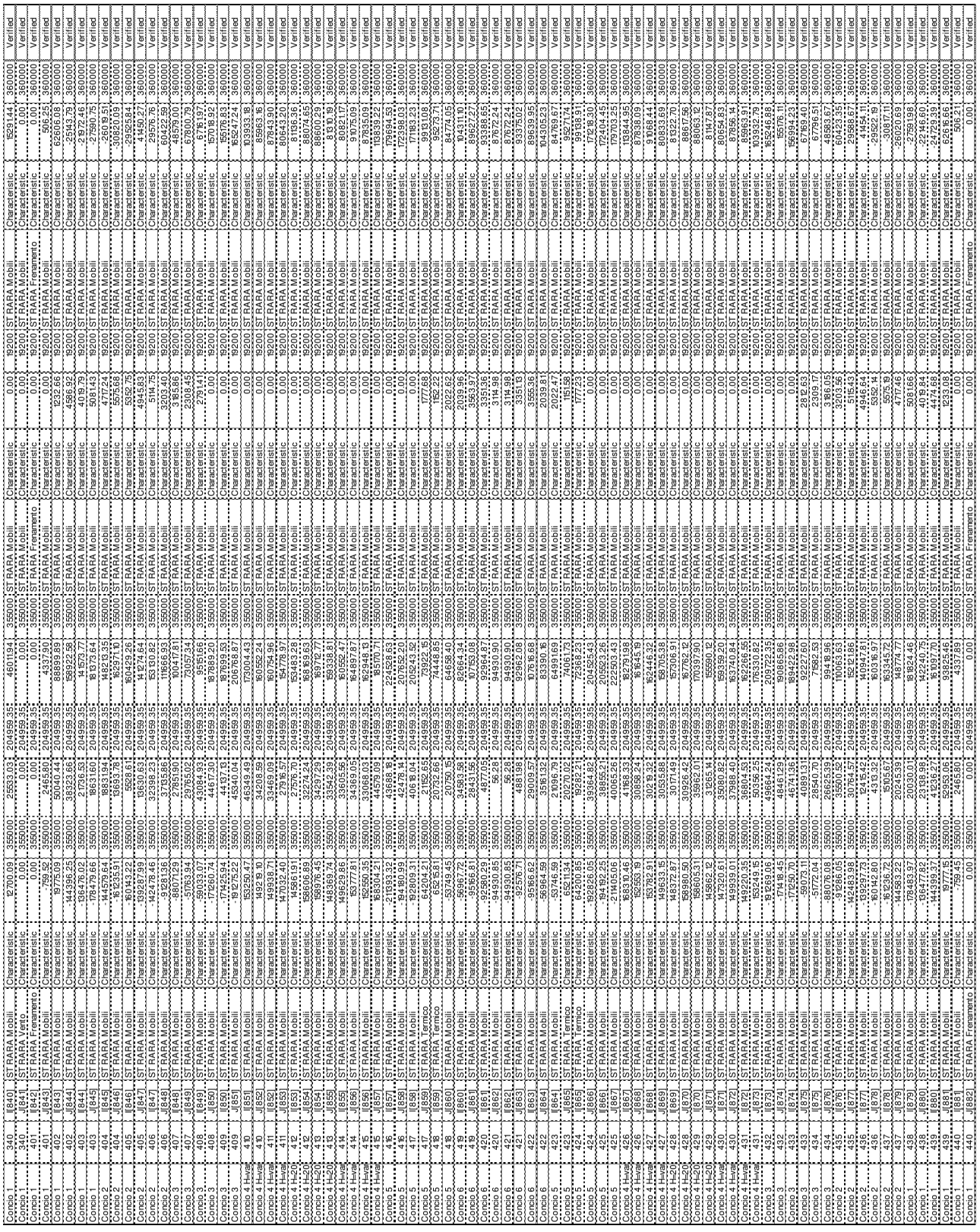
Armatura soletta:

Sigma_s: tensione assiale massima
k*fsk: tensione limite (comb. caratteristica: $k_3 = 0.8$)

Elem property	Elem number	Position	Top and Bottom Flange of Structural Steel							Concrete Deck				Reinforcement in Deck				VERIFICATIO
			Lcom	Type	Sigma_Ed,ser (kN/m^2)	ALW (kN/m^2)	Tau_Ed,ser (kN/m^2)	ALW (kN/m^2)	SQRT(sigma^2 +3tau^2) (kN/m^2)	ALW (kN/m^2)	Lcom	Type	Sigma_c (kN/m^2)	k*fck (kN/m^2)	Lcom	Type	Sigma_s (kN/m^2)	k*fsk (kN/m^2)	
Concio 1	101	I[719]	ST RARA Frenamento	Characteristic	0.00	355000	0.00	204959.35	0.00	355000	ST RARA Frenamento	Characteristic	0.00	19200	ST RARA Frenamento	Characteristic	0.00	360000	Verified
Concio 1	101	J[720]	ST RARA Vento	Characteristic	-792.46	355000	2363.67	204959.35	4170.00	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	728.78	360000	Verified
Concio 1	102	I[720]	ST RARA Mobili	Characteristic	23223.86	355000	53060.00	204959.35	94791.55	355000	ST RARA Mobili	Characteristic	1221.58	19200	ST RARA Mobili	Characteristic	64114.65	360000	Verified
Concio 1	102	J[721]	ST RARA Mobili	Characteristic	-144932.16	355000	38215.75	204959.35	159331.94	355000	ST RARA Mobili	Characteristic	4799.11	19200	ST RARA Mobili	Characteristic	-26415.77	360000	Verified
Concio 1	103	I[721]	ST RARA Mobili	Characteristic	-136637.02	355000	21716.76	204959.35	141719.90	355000	ST RARA Mobili	Characteristic	4217.23	19200	ST RARA Mobili	Characteristic	-23057.09	360000	Verified
Concio 1	103	J[722]	ST RARA Mobili	Characteristic	-178558.64	355000	18611.83	204959.35	181445.28	355000	ST RARA Mobili	Characteristic	5099.72	19200	ST RARA Mobili	Characteristic	-27694.11	360000	Verified
Concio 2	104	I[722]	ST RARA Mobili	Characteristic	-144621.41	355000	18811.95	204959.35	148246.49	355000	ST RARA Mobili	Characteristic	4734.72	19200	ST RARA Mobili	Characteristic	-26119.31	360000	Verified
Concio 2	104	J[723]	ST RARA Mobili	Characteristic	-161458.00	355000	13673.80	204959.35	163185.80	355000	ST RARA Mobili	Characteristic	5786.11	19200	ST RARA Mobili	Characteristic	-32084.77	360000	Verified
Concio 2	105	I[723]	ST RARA Mobili	Characteristic	-160234.95	355000	5545.02	204959.35	160522.53	355000	ST RARA Mobili	Characteristic	5403.79	19200	ST RARA Mobili	Characteristic	-29828.75	360000	Verified
Concio 2	105	J[724]	ST RARA Mobili	Characteristic	-139538.07	355000	13647.04	204959.35	141525.96	355000	ST RARA Mobili	Characteristic	5044.54	19200	ST RARA Mobili	Characteristic	31027.63	360000	Verified
Concio 2	106	I[724]	ST RARA Mobili	Characteristic	-142713.52	355000	32440.81	204959.35	153376.55	355000	ST RARA Mobili	Characteristic	5187.49	19200	ST RARA Mobili	Characteristic	37323.28	360000	Verified
Concio 2	106	J[725]	ST RARA Mobili	Characteristic	-91295.12	355000	37178.44	204959.35	111720.67	355000	ST RARA Mobili	Characteristic	3187.96	19200	ST RARA Mobili	Characteristic	54761.89	360000	Verified
Concio 3	107	I[725]	ST RARA Mobili	Characteristic	-88080.16	355000	27883.83	204959.35	100452.17	355000	ST RARA Mobili	Characteristic	3170.40	19200	ST RARA Mobili	Characteristic	44658.51	360000	Verified
Concio 3	107	J[726]	ST RARA Mobili	Characteristic	-51933.67	355000	29796.96	204959.35	73216.68	355000	ST RARA Mobili	Characteristic	2396.98	19200	ST RARA Mobili	Characteristic	63431.61	360000	Verified
Concio 3	108	I[726]	ST RARA Mobili	Characteristic	-59352.96	355000	43114.89	204959.35	95391.06	355000	ST RARA Mobili	Characteristic	2953.62	19200	ST RARA Mobili	Characteristic	75419.88	360000	Verified
Concio 3	108	J[727]	ST RARA Mobili	Characteristic	-169154.85	355000	44517.44	204959.35	185899.89	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	144221.85	360000	Verified
Concio 3	109	I[727]	ST RARA Mobili	Characteristic	-169864.80	355000	44012.64	204959.35	186186.43	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	145815.94	360000	Verified
Concio 3	109	J[728]	ST RARA Mobili	Characteristic	-190110.32	355000	45215.54	204959.35	205609.50	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	157885.88	360000	Verified
Concio 4 H-var	110	I[728]	ST RARA Mobili	Characteristic	152207.18	355000	46244.43	204959.35	171996.13	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	99820.03	360000	Verified
Concio 4 H-var	110	J[729]	ST RARA Mobili	Characteristic	148534.53	355000	34140.52	204959.35	159872.55	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	88749.97	360000	Verified
Concio 4 H-var	111	I[729]	ST RARA Mobili	Characteristic	148892.01	355000	33394.62	204959.35	159732.37	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	83094.97	360000	Verified
Concio 4 H-var	111	J[730]	ST RARA Mobili	Characteristic	148250.59	355000	31682.66	204959.35	158081.03	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	81829.42	360000	Verified
Concio 4 H-20	112	I[730]	ST RARA Mobili	Characteristic	146789.81	355000	27514.25	204959.35	154331.95	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	81458.01	360000	Verified
Concio 4 H-20	112	J[731]	ST RARA Mobili	Characteristic	159865.06	355000	32211.79	204959.35	169321.10	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	92455.82	360000	Verified
Concio 4 H-20	113	I[731]	ST RARA Mobili	Characteristic	160490.56	355000	34361.24	204959.35	171170.40	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	94054.63	360000	Verified
Concio 4 H-20	113	J[732]	ST RARA Mobili	Characteristic	149435.19	355000	33606.33	204959.35	160371.55	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	85021.80	360000	Verified
Concio 4 H-var	114	I[732]	ST RARA Mobili	Characteristic	150698.63	355000	33661.84	204959.35	161584.14	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	84477.29	360000	Verified
Concio 4 H-var	114	J[733]	ST RARA Mobili	Characteristic	152451.10	355000	34445.14	204959.35	163709.32	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	85265.37	360000	Verified
Concio 4 H-var	115	I[733]	ST RARA Mobili	Characteristic	151653.69	355000	33134.01	204959.35	162149.40	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	93857.88	360000	Verified
Concio 4 H-var	115	J[734]	ST RARA Mobili	Characteristic	167113.32	355000	44680.94	204959.35	184163.03	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	109145.24	360000	Verified
Concio 5	116	I[734]	ST RARA Mobili	Characteristic	-210049.78	355000	43810.54	204959.35	223336.07	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	171280.54	360000	Verified
Concio 5	116	J[735]	ST RARA Mobili	Characteristic	-192367.54	355000	42600.51	204959.35	206033.20	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	161567.54	360000	Verified
Concio 5	117	I[735]	ST RARA Mobili	Characteristic	-190258.67	355000	40712.85	204959.35	202906.31	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	157478.96	360000	Verified
Concio 5	117	J[736]	ST RARA Termico	Characteristic	65218.34	355000	21247.46	204959.35	74885.21	355000	ST RARA Mobili	Characteristic	1968.56	19200	ST RARA Mobili	Characteristic	106114.89	360000	Verified
Concio 5	118	I[736]	ST RARA Termico	Characteristic	65375.40	355000	20756.61	204959.35	74608.67	355000	ST RARA Mobili	Characteristic	1253.55	19200	ST RARA Mobili	Characteristic	94618.99	360000	Verified
Concio 5	118	J[737]	ST RARA Mobili	Characteristic	-53737.77	355000	20726.20	204959.35	64625.65	355000	ST RARA Mobili	Characteristic	1962.75	19200	ST RARA Mobili	Characteristic	79727.32	360000	Verified
Concio 6	119	I[737]	ST RARA Mobili	Characteristic	-56962.84	355000	34543.67	204959.35	82610.90	355000	ST RARA Mobili	Characteristic	1980.12	19200	ST RARA Mobili	Characteristic	96928.05	360000	Verified
Concio 6	119	J[738]	ST RARA Mobili	Characteristic	-95437.57	355000	28391.65	204959.35	107361.95	355000	ST RARA Mobili	Characteristic	3674.78	19200	ST RARA Mobili	Characteristic	96692.70	360000	Verified
Concio 6	120	I[738]	ST RARA Mobili	Characteristic	-92622.33	355000	4876.92	204959.35	93006.72	355000	ST RARA Mobili	Characteristic	3400.77	19200	ST RARA Mobili	Characteristic	88066.57	360000	Verified
Concio 6	120	J[739]	ST RARA Mobili	Characteristic	-94934.10	355000	56.15	204959.35	94934.15	355000	ST RARA Mobili	Characteristic	3050.55	19200	ST RARA Mobili	Characteristic	81238.31	360000	Verified
Concio 6	121	I[739]	ST RARA Mobili	Characteristic	-94934.10	355000	56.15	204959.35	94934.15	355000	ST RARA Mobili	Characteristic	3050.55	19200	ST RARA Mobili	Characteristic	81238.31	360000	Verified
Concio 6	121	J[740]	ST RARA Mobili	Characteristic	-92618.66	355000	4882.11	204959.35	93003.87	355000	ST RARA Mobili	Characteristic	3400.41	19200	ST RARA Mobili	Characteristic	88062.27	360000	Verified
Concio 6	122	I[740]	ST RARA Mobili	Characteristic	-95438.55	355000	29050.37	204959.35	107890.17	355000	ST RARA Mobili	Characteristic	3682.95	19200	ST RARA Mobili	Characteristic	96687.54	360000	Verified
Concio 6	122	J[741]	ST RARA Mobili	Characteristic	-56959.77	355000	35202.12	204959.35	83438.50	355000	ST RARA Mobili	Characteristic	1979.92	19200	ST RARA Mobili	Characteristic	96926.73	360000	Verified
Concio 5	123	I[741]	ST RARA Mobili	Characteristic	-53734.96	355000	21121.27	204959.35	65005.92	355000	ST RARA Mobili	Characteristic	1962.55	19200	ST RARA Mobili	Characteristic	79725.88	360000	Verified
Concio 5	123	J[742]	ST RARA Termico	Characteristic	65368.61	355000	20245.54	204959.35	74180.20	355000	ST RARA Mobili	Characteristic	1252.82	19200	ST RARA Mobili	Characteristic	94604.41	360000	Verified
Concio 5	124	I[742]	ST RARA Termico	Characteristic	65212.59	355000	19185.67	204959.35	73191.19	355000	ST RARA Mobili	Characteristic	1967.95	19200	ST RARA Mobili	Characteristic	106103.03	360000	Verified
Concio 5	124	J[743]	ST RARA Mobili	Characteristic	-190285.25	355000	39268.27	204959.35	202075.40	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	157452.20	360000	Verified
Concio 5	125	I[743]	ST RARA Mobili	Characteristic	-192401.53	355000	38732.56	204959.35	203762.07	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	161690.11	360000	Verified
Concio 5	125	J[744]	ST RARA Mobili	Characteristic	-210080.80	355000	39942.59	204959.35	221179.05	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	171385.42	360000	Verified
Concio 4 H-var	126	I[744]	ST RARA Mobili	Characteristic	167140.36	355000	41065.31	204959.35	181645.20	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	109202.58	360000	Verified
Concio 4 H-var	126	J[745]	ST RARA Mobili	Characteristic	151663.69	355000	30791.49	204959.35	160767.60	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	93885.74	360000	Verified
Concio 4 H-var	127	I[745]	ST RARA Mobili	Characteristic	152457.87	355000	30146.42	204959.35	161151.54	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	85246.41	360000	Verified
Concio 4 H-var	127	J[746]	ST RARA Mobili	Characteristic	150693.95	355000	30481.96	204959.35	159675.04	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	84453.89	360000	Verified
Concio 4 H-20	128	I[746]	ST RARA Mobili	Characteristic	149429.61	355000	30110.18	204959.35	158269.00	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	84994.52	360000	Verified
Concio 4 H-20	128	J[747]	ST RARA Mobili	Characteristic	160501.96	355000	30865.11	204959.35	169171.06	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	94098.52	360000	Verified
Concio 4 H-20	129	I[747]	ST RARA Mobili	Characteristic	159862.85	355000	36027.08	204959.35	171609.96	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	92444.06	360000	Verified
Concio 4 H-20	129	J[748]	ST RARA Mobili	Characteristic	146798.84	355000	31330.21	204959.35	156507.65	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	81119.58	360000	Verified
Concio 4 H-var	130	I[748]	ST RARA Mobili	Characteristic	147971.40	355000	31316.42	204959.35	157599.78	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	80102.45	360000	Verified
Concio 4 H-var	130	J[749]	ST RARA Mobili	Characteristic	148890.56	355000	38066.03	204959.35	162835.71	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	83118.27	360000	Verified
Concio 4 H-var	131	I[749]	ST RARA Mobili	Characteristic	148528.50	355000	36871.79	204959.35	161676.54	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	88722.96	360000	Verified
Concio 4 H-var	131	J[750]	ST RARA Mobili	Characteristic	152185.34	355000	50460.06	204959.35	175496.53	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	99768.39	360000	Verified
Concio 3	132	I[750]	ST RARA Mobili	Characteristic	190085.24	355000	49788.37	204959.35	208731.99	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	157790.03	360000	Verified
Concio 3	132	J[751]	ST RARA Mobili	Characteristic	169834.91	355000	48585.42	204959.35	189540.30	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	145699.74	360000	Verified
Concio 3	133	I[751]	ST RARA Mobili	Characteristic	169134.68	355000	46839.41	204959.35	187585.53	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	144150.95	360000	Verified
Concio 3	133	J[752]	ST RARA Mobili	Characteristic	-59323.44	355000	40863.04	204959.35	92350.60	355000	ST RARA Mobili	Characteristic	2946.29	19200	ST RARA Mobili	Characteristic	75434.06	360000	Verified
Concio 3	134	I[752]	ST RARA Mobili	Characteristic	-51942.05	355000	28509.37	204959.35	71668.19	355000	ST RARA Mobili	Characteristic	2397.85	19200	ST RARA Mobili	Characteristic	63448.77	360000	Verified
Concio 3	134	J[753]	ST RARA Mobili	Characteristic	-88084.60	355000	26594.06	204959.35	99401.35	355000	ST RARA Mobili	Characteristic	3170.75	19200	ST RARA Mobili	Characteristic	44664.90	360000	Verified
Concio 2	135	I[753]	ST RARA Mobili	Characteristic	-91299.39	355000	35458.75	204959.35	110034.30	355000	ST RARA Mobili	Characteristic	3188.28	19200	ST RARA Mobili	Characteristic	54769.43	360000	Verified
Concio 2	135	J[754]	ST RARA Mobili	Characteristic	-142717.28	355000	30722.80	204959.35	152315.11	355000	ST RARA Mobili	Characteristic	5187.97	19200	ST RARA Mobili	Characteristic	37317.66	360000	Verified
Concio 2	136	I[754]	ST RARA Mobili	Characteristic	-139547.19	355000	12399.12	204959.35	141190.06	355000	ST RARA Mobili	Characteristic	5045.37	19200	ST RARA Mobili	Characteristic	31019.23	360000	Verified
Concio 2	136	J[755]	ST RARA Mobili	Characteristic	-160233.46	355000	4297.02	204959.35	160406.21	355000	ST RARA Mobili	Characteristic	5403.23	19200	ST RARA Mobili	Characteristic	-29825.45	360000	Verified
Concio 2	137	I[755]	ST RARA Mobili	Characteristic	-161457.29	355000	15125.58	204959.35	163568.96	355000	ST RARA Mobili	Characteristic	5785.67	19200	ST RARA Mobili	Characteristic	-32082.11	360000	Verified
Concio 2	137	J[756]	ST RARA Mobili	Characteristic	-144624.55	355000	20265.29	204959.35	148823.08	355000	ST RARA Mobili	Characteristic	4734.88	19200	ST RARA Mobili	Characteristic	-26120.19	360000	Verified
Concio 1	138	I[756]	ST RARA Mobili	Characteristic	-178562.41	355000	20049.71	204959.35	181907.96	355000	ST RARA Mobili	Characteristic	5099.90	19200	ST RARA Mobili	Characteristic	-27695.02	360000	Verified
Concio 1	138	J[757]	ST RARA Mobili	Characteristic	-136638.24	355000	23158.68	204959.35	142404.29	355000	ST RARA Mobili	Characteristic	4217.37	19200	ST RARA Mobili	Characteristic	-23057.94	360000	Verified
Concio 1	139	I[757]	ST RARA Mobili	Characteristic	-144935.17	355000	41344.10	204959.35	161660.78	355000	ST RARA Mobili	Characteristic	4799.59	19200	ST RARA Mobili	Characteristic	-26418.56	360000	Verified
Concio 1	139	J[758]	ST RARA Mobili	Characteristic	23227.56	355000	49931.93	204959.35	89549.51	355000	ST RARA Mobili	Characteristic	1222.03	19200	ST RARA Mobili	Characteristic	64127.01	360000	Verified

Concio 1	140	I[758]	ST RARA Vento	Characteristic	-792.43	355000	2363.67	204959.35	4169.99	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	728.73	360000	Verified
Concio 1	140	J[759]	ST RARA Frenamento	Characteristic	0.00	355000	0.00	204959.35	0.00	355000	ST RARA Frenamento	Characteristic	0.00	19200	ST RARA Frenamento	Characteristic	0.00	360000	Verified
Concio 1	201	I[760]	ST RARA Frenamento	Characteristic	0.00	355000	0.00	204959.35	0.00	355000	ST RARA Frenamento	Characteristic	0.00	19200	ST RARA Frenamento	Characteristic	0.00	360000	Verified
Concio 1	201	J[761]	ST RARA Mobili	Characteristic	1270100	355000	25533.04	204959.35	46012.21	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	15292.59	360000	Verified
Concio 1	202	I[761]	ST RARA Mobili	Characteristic	39954.87	355000	71477.95	204959.35	130091.05	355000	ST RARA Mobili	Characteristic	616.71	19200	ST RARA Mobili	Characteristic	111202.70	360000	Verified
Concio 1	202	J[762]	ST RARA Mobili	Characteristic	-154374.55	355000	19056.78	204959.35	157863.82	355000	ST RARA Mobili	Characteristic	4646.39	19200	ST RARA Mobili	Characteristic	-29233.25	360000	Verified
Concio 1	203	I[762]	ST RARA Mobili	Characteristic	-144687.81	355000	30041.20	204959.35	153759.50	355000	ST RARA Mobili	Characteristic	4652.03	19200	ST RARA Mobili	Characteristic	-25639.35	360000	Verified
Concio 1	203	J[763]	ST RARA Mobili	Characteristic	-191299.49	355000	9676.21	204959.35	192032.24	355000	ST RARA Mobili	Characteristic	5399.17	19200	ST RARA Mobili	Characteristic	-29070.77	360000	Verified
Concio 2	204	I[763]	ST RARA Mobili	Characteristic	-155017.78	355000	9780.25	204959.35	155940.60	355000	ST RARA Mobili	Characteristic	4997.07	19200	ST RARA Mobili	Characteristic	-27351.90	360000	Verified
Concio 2	204	J[764]	ST RARA Mobili	Characteristic	163463.43	355000	5644.22	204959.35	163755.50	355000	ST RARA Mobili	Characteristic	535130	19200	ST RARA Mobili	Characteristic	-29367.68	360000	Verified
Concio 2	205	I[764]	ST RARA Mobili	Characteristic	-162948.33	355000	1112.82	204959.35	164083.03	355000	ST RARA Mobili	Characteristic	5417.83	19200	ST RARA Mobili	Characteristic	-29802.66	360000	Verified
Concio 2	205	J[765]	ST RARA Mobili	Characteristic	-143661.19	355000	28772.68	204959.35	152059.66	355000	ST RARA Mobili	Characteristic	4896.41	19200	ST RARA Mobili	Characteristic	-26922.73	360000	Verified
Concio 2	206	I[765]	ST RARA Mobili	Characteristic	-146244.16	355000	35522.02	204959.35	158659.37	355000	ST RARA Mobili	Characteristic	4794.50	19200	ST RARA Mobili	Characteristic	34773.79	360000	Verified
Concio 2	206	J[766]	ST RARA Mobili	Characteristic	-105196.06	355000	55938.08	204959.35	143015.45	355000	ST RARA Mobili	Characteristic	3695.24	19200	ST RARA Mobili	Characteristic	52530.82	360000	Verified
Concio 3	207	I[766]	ST RARA Mobili	Characteristic	-101344.24	355000	41953.56	204959.35	124703.48	355000	ST RARA Mobili	Characteristic	3673.91	19200	ST RARA Mobili	Characteristic	43663.81	360000	Verified
Concio 3	207	J[767]	ST RARA Mobili	Characteristic	-60559.05	355000	39474.06	204959.35	91334.56	355000	ST RARA Mobili	Characteristic	2872.76	19200	ST RARA Mobili	Characteristic	65785.95	360000	Verified
Concio 3	208	I[767]	ST RARA Mobili	Characteristic	-67959.90	355000	46562.09	204959.35	105463.89	355000	ST RARA Mobili	Characteristic	2846.58	19200	ST RARA Mobili	Characteristic	70917.87	360000	Verified
Concio 3	208	J[768]	ST RARA Mobili	Characteristic	-168152.53	355000	48245.82	204959.35	187771.81	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	141475.27	360000	Verified
Concio 3	209	I[768]	ST RARA Mobili	Characteristic	-167499.32	355000	46106.36	204959.35	185562.42	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	221777.31	360000	Verified
Concio 3	209	J[769]	ST RARA Mobili	Characteristic	-186625.01	355000	48009.58	204959.35	204312.64	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	188934.08	360000	Verified
Concio 4 H=var	210	I[769]	ST RARA Mobili	Characteristic	150159.91	355000	48857.32	204959.35	172363.31	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	107766.44	360000	Verified
Concio 4 H=var	210	J[770]	ST RARA Mobili	Characteristic	149349.10	355000	38107.81	204959.35	163284.32	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	89584.43	360000	Verified
Concio 4 H=var	211	I[770]	ST RARA Mobili	Characteristic	148623.80	355000	38004.96	204959.35	162548.97	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	78703.62	360000	Verified
Concio 4 H=var	211	J[771]	ST RARA Mobili	Characteristic	154219.45	355000	32967.25	204959.35	164451.08	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	90812.23	360000	Verified
Concio 4 H=20	212	I[771]	ST RARA Mobili	Characteristic	152919.15	355000	32879.92	204959.35	163179.46	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	93448.63	360000	Verified
Concio 4 H=20	212	J[772]	ST RARA Mobili	Characteristic	163559.25	355000	37780.23	204959.35	176163.75	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	105763.79	360000	Verified
Concio 4 H=20	213	I[772]	ST RARA Mobili	Characteristic	164581.83	355000	39432.32	204959.35	178190.63	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	107690.83	360000	Verified
Concio 4 H=20	213	J[773]	ST RARA Mobili	Characteristic	153045.45	355000	37562.83	204959.35	166300.35	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	94807.71	360000	Verified
Concio 4 H=var	214	I[773]	ST RARA Mobili	Characteristic	154488.96	355000	37174.19	204959.35	167369.65	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	92209.11	360000	Verified
Concio 4 H=var	214	J[774]	ST RARA Mobili	Characteristic	153736.78	355000	37957.80	204959.35	167204.61	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	84431.31	360000	Verified
Concio 4 H=var	215	I[774]	ST RARA Mobili	Characteristic	154323.75	355000	36264.35	204959.35	166616.71	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	93718.93	360000	Verified
Concio 4 H=var	215	J[775]	ST RARA Mobili	Characteristic	166381.08	355000	46013.49	204959.35	184484.12	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	116113.90	360000	Verified
Concio 5	216	I[775]	ST RARA Mobili	Characteristic	-208115.60	355000	45686.00	204959.35	222651.60	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	213635.25	360000	Verified
Concio 5	216	J[776]	ST RARA Mobili	Characteristic	-190639.06	355000	43777.58	204959.35	205165.01	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	244308.86	360000	Verified
Concio 5	217	I[776]	ST RARA Mobili	Characteristic	191937.09	355000	44546.81	204959.35	206864.93	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	158591.88	360000	Verified
Concio 5	217	J[777]	ST RARA Termico	Characteristic	58243.61	355000	21841.10	204959.35	69450.84	355000	ST RARA Mobili	Characteristic	1837.16	19200	ST RARA Mobili	Characteristic	100743.34	360000	Verified
Concio 5	218	I[777]	ST RARA Termico	Characteristic	61615.13	355000	21871.04	204959.35	72328.77	355000	ST RARA Mobili	Characteristic	1746.68	19200	ST RARA Mobili	Characteristic	95726.40	360000	Verified
Concio 5	218	J[778]	ST RARA Mobili	Characteristic	-66770.07	355000	17926.71	204959.35	73636.56	355000	ST RARA Mobili	Characteristic	2462.29	19200	ST RARA Mobili	Characteristic	78909.59	360000	Verified
Concio 6	219	I[778]	ST RARA Mobili	Characteristic	-71005.74	355000	29877.86	204959.35	87862.82	355000	ST RARA Mobili	Characteristic	2484.67	19200	ST RARA Mobili	Characteristic	96246.60	360000	Verified
Concio 6	219	J[779]	ST RARA Mobili	Characteristic	-98613.51	355000	5253.89	204959.35	99032.49	355000	ST RARA Mobili	Characteristic	3174.38	19200	ST RARA Mobili	Characteristic	94028.41	360000	Verified
Concio 6	220	I[779]	ST RARA Mobili	Characteristic	-96364.87	355000	1916.49	204959.35	96422.03	355000	ST RARA Mobili	Characteristic	3328.13	19200	ST RARA Mobili	Characteristic	85349.73	360000	Verified
Concio 6	220	J[780]	ST RARA Mobili	Characteristic	-106332.98	355000	2652.25	204959.35	106432.17	355000	ST RARA Mobili	Characteristic	3436.79	19200	ST RARA Mobili	Characteristic	78282.16	360000	Verified
Concio 6	221	I[780]	ST RARA Mobili	Characteristic	-106332.98	355000	2652.25	204959.35	106432.17	355000	ST RARA Mobili	Characteristic	3436.79	19200	ST RARA Mobili	Characteristic	78282.16	360000	Verified
Concio 6	221	J[781]	ST RARA Mobili	Characteristic	-96374.45	355000	24958.05	204959.35	105625.50	355000	ST RARA Mobili	Characteristic	3328.85	19200	ST RARA Mobili	Characteristic	85355.26	360000	Verified
Concio 6	222	I[781]	ST RARA Mobili	Characteristic	-98604.20	355000	32476.23	204959.35	113520.50	355000	ST RARA Mobili	Characteristic	3173.72	19200	ST RARA Mobili	Characteristic	94033.81	360000	Verified
Concio 6	222	J[782]	ST RARA Mobili	Characteristic	-70994.23	355000	57099.75	204959.35	121742.86	355000	ST RARA Mobili	Characteristic	2484.18	19200	ST RARA Mobili	Characteristic	96248.97	360000	Verified
Concio 5	223	I[782]	ST RARA Mobili	Characteristic	-66759.53	355000	34259.85	204959.35	89319.91	355000	ST RARA Mobili	Characteristic	2461.81	19200	ST RARA Mobili	Characteristic	78910.89	360000	Verified
Concio 5	223	J[783]	ST RARA Termico	Characteristic	61611.52	355000	21542.36	204959.35	72029.15	355000	ST RARA Mobili	Characteristic	1748.03	19200	ST RARA Mobili	Characteristic	95722.77	360000	Verified
Concio 5	224	I[783]	ST RARA Termico	Characteristic	58246.26	355000	20182.99	204959.35	67931.48	355000	ST RARA Mobili	Characteristic	1841.68	19200	ST RARA Mobili	Characteristic	100761.61	360000	Verified
Concio 5	224	J[784]	ST RARA Mobili	Characteristic	-191947.64	355000	43502.77	204959.35	206207.10	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	158604.42	360000	Verified
Concio 5	225	I[784]	ST RARA Mobili	Characteristic	-190647.84	355000	41211.66	204959.35	203572.59	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	238020.39	360000	Verified
Concio 5	225	J[785]	ST RARA Mobili	Characteristic	-208124.72	355000	43120.18	204959.35	221119.76	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	205177.74	360000	Verified
Concio 4 H=var	226	I[785]	ST RARA Mobili	Characteristic	166382.10	355000	43961.68	204959.35	182977.84	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	118001.57	360000	Verified
Concio 4 H=var	226	J[786]	ST RARA Mobili	Characteristic	154326.26	355000	34934.98	204959.35	165764.75	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	93683.43	360000	Verified
Concio 4 H=var	227	I[786]	ST RARA Mobili	Characteristic	153739.20	355000	34762.62	204959.35	165109.24	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	81422.88	360000	Verified
Concio 4 H=var	227	J[787]	ST RARA Mobili	Characteristic	154487.03	355000	34809.60	204959.35	165835.37	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	91361.71	360000	Verified
Concio 4 H=20	228	I[787]	ST RARA Mobili	Characteristic	153043.79	355000	34806.21	204959.35	164489.57	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	93952.92	360000	Verified
Concio 4 H=20	228	J[788]	ST RARA Mobili	Characteristic	164577.12	355000	36674.15	204959.35	176410.34	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	106094.55	360000	Verified
Concio 4 H=20	229	I[788]	ST RARA Mobili	Characteristic	163565.58	355000	40906.25	204959.35	178251.69	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	107383.82	360000	Verified
Concio 4 H=20	229	J[789]	ST RARA Mobili	Characteristic	152916.04	355000	36002.82	204959.35	165142.14	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	94313.28	360000	Verified
Concio 4 H=var	230	I[789]	ST RARA Mobili	Characteristic	154216.36	355000	35720.22	204959.35	166164.04	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	91668.31	360000	Verified
Concio 4 H=var	230	J[790]	ST RARA Mobili	Characteristic	148626.96	355000	41727.32	204959.35	165267.90	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	78717.89	360000	Verified
Concio 4 H=var	231	I[790]	ST RARA Mobili	Characteristic	149349.21	355000	39968.50	204959.35	164613.58	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	89707.44	360000	Verified
Concio 4 H=var	231	I[791]	ST RARA Mobili	Characteristic	150161.17	355000	51729.09	204959.35	174860.16	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	108022.44	360000	Verified
Concio 3	232	I[791]	ST RARA Mobili	Characteristic	186619.83	355000	59338.69	204959.35	206721.90	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	196697.62	360000	Verified
Concio 3	232	J[792]	ST RARA Mobili	Characteristic	-167492.84	355000	49435.44	204959.35	188110.17	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	226858.36	360000	Verified
Concio 3	233	I[792]	ST RARA Mobili	Characteristic	-168144.12	355000	50068.58	204959.35	189190.46	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	141467.93	360000	Verified
Concio 3	233	J[793]	ST RARA Mobili	Characteristic	-67963.44	355000	28621.84	204959.35	84122.88	355000	ST RARA Mobili	Characteristic	2846.55	19200	ST RARA Mobili	Characteristic	70901.46	360000	Verified
Concio 3	234	I[793]	ST RARA Mobili	Characteristic	-60544.17	355000	22352.35	204959.35	71864.31	355000	ST RARA Mobili	Characteristic	2871.42	19200	ST RARA Mobili	Characteristic	65792.39	360000	Verified
Concio 3	234	J[794]	ST RARA Mobili	Characteristic	-101357.45	355000	24830.16	204959.35	110104.24	355000	ST RARA Mobili	Characteristic	3674.54	19200	ST RARA Mobili	Characteristic	43661.43	360000	Verified
Concio 2	235	I[794]	ST RARA Mobili	Characteristic	-105209.73	355000	33106.88	204959.35	119821.89	355000	ST RARA Mobili	Characteristic	3695.86	19200	ST RARA Mobili	Characteristic	52526.98	360000	Verified
Concio 2	235	J[795]	ST RARA Mobili	Characteristic	-146238.67	355000	12303.00	204959.35	147783.09	355000	ST RARA Mobili	Characteristic	4795.95	19200	ST RARA Mobili	Characteristic	34771.56	360000	Verified
Concio 2	236	I[795]	ST RARA Mobili	Characteristic	-143657.59	355000	6198.04	204959.35	144058.15	355000	ST RARA Mobili	Characteristic	4896.02	19200	ST RARA Mobili	Characteristic	-26920.53	360000	Verified
Concio 2	236	J[796]	ST RARA Mobili	Characteristic	-162959.72	355000	11453.28	204959.35	164162.73	355000	ST RARA Mobili	Characteristic	5418.64	19200	ST RARA Mobili	Characteristic	-29807.15	360000	Verified
Concio 2	237	I[796]	ST RARA Mobili	Characteristic	-163463.41	355000	17195.09	204959.35	166154.45	355000	ST RARA Mobili	Characteristic	5354.38	19200	ST RARA Mobili	Characteristic	-29385.95	360000	Verified
Concio 2	237	J[797]	ST RARA Mobili	Characteristic	-155014.06	355000	32578.67	204959.35	164965.05	355000	ST RARA Mobili	Characteristic	4996.79	19200	ST RARA Mobili	Characteristic	-27350.33	360000	Verified
Concio 1	238	I[797]	ST RARA Mobili	Characteristic	-191308.76	355000	32232.07	204959.35	199288.13	355000	ST RARA Mobili	Characteristic	5399.58	19200	ST RARA Mobili	Characteristic	-29072.91	360000	Verified
Concio 1	238	J[798]	ST RARA Mobili	Characteristic	-144692.35	355000	52595.88	204959.35	170982.03	355000	ST RARA Mobili	Characteristic	4693.28	19200	ST RARA Mobili	Characteristic	-25783.34	360000	Verified
Concio 1	239	I[798]	ST RARA Mobili	Characteristic	-154371.57	355000	43298.22	204959.35	171623.97	355000	ST RARA Mobili	Characteristic	4646.26	19200	ST RARA Mobili	Characteristic	-29233.41	360000	Verified
Concio 1	239	J[799]	ST RARA Mobili	Characteristic	39956.09	355000	68485.74	204959.35	125169.40	355000	ST RARA Mobili	Characteristic	616.56	19200	ST RARA Mobili	Characteristic	111214.42	360000	Verified

Concio 1	240	I[799]	ST RARA Mobili	Characteristic	12700.09	355000	25533.03	204959.35	46011.94	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	1529.144	360000	Verified
Concio 1	240	J[800]	ST RARA Vento	Characteristic	0.00	355000	0.00	204959.35	0.00	355000	ST RARA Vento	Characteristic	0.00	19200	ST RARA Vento	Characteristic	0.00	360000	Verified
Concio 1	301	I[801]	ST RARA Frenamento	Characteristic	0.00	355000	0.00	204959.35	0.00	355000	ST RARA Frenamento	Characteristic	0.00	19200	ST RARA Frenamento	Characteristic	0.00	360000	Verified
Concio 1	301	J[802]	ST RARA Mobili	Characteristic	1270.100	355000	25533.04	204959.35	46012.21	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	15292.59	360000	Verified
Concio 1	302	I[802]	ST RARA Mobili	Characteristic	3664.166	355000	68457.50	204959.35	124104.39	355000	ST RARA Mobili	Characteristic	395.41	19200	ST RARA Mobili	Characteristic	111203.10	360000	Verified
Concio 1	302	J[803]	ST RARA Mobili	Characteristic	-154430.77	355000	19012.52	204959.35	157902.79	355000	ST RARA Mobili	Characteristic	44.19.88	19200	ST RARA Mobili	Characteristic	-23750.66	360000	Verified
Concio 1	303	I[803]	ST RARA Mobili	Characteristic	-144900.07	355000	30015.21	204959.35	153944.05	355000	ST RARA Mobili	Characteristic	4794.20	19200	ST RARA Mobili	Characteristic	-26219.66	360000	Verified
Concio 1	303	J[804]	ST RARA Mobili	Characteristic	-19.1458.17	355000	9650.22	204959.35	192186.39	355000	ST RARA Mobili	Characteristic	5344.95	19200	ST RARA Mobili	Characteristic	-28744.78	360000	Verified
Concio 2	304	I[804]	ST RARA Mobili	Characteristic	-155159.91	355000	9753.99	204959.35	156076.96	355000	ST RARA Mobili	Characteristic	4942.60	19200	ST RARA Mobili	Characteristic	-27025.04	360000	Verified
Concio 2	304	J[805]	ST RARA Mobili	Characteristic	163669.58	355000	5670.481	204959.35	163964.01	355000	ST RARA Mobili	Characteristic	5229.10	19200	ST RARA Mobili	Characteristic	-28635.91	360000	Verified
Concio 2	305	I[805]	ST RARA Mobili	Characteristic	163035.14	355000	11126.44	204959.35	164170.18	355000	ST RARA Mobili	Characteristic	5447.40	19200	ST RARA Mobili	Characteristic	-29977.59	360000	Verified
Concio 2	305	J[806]	ST RARA Mobili	Characteristic	-143816.48	355000	28777.30	204959.35	152209.00	355000	ST RARA Mobili	Characteristic	4993.91	19200	ST RARA Mobili	Characteristic	-37665.19	360000	Verified
Concio 2	306	I[806]	ST RARA Mobili	Characteristic	-146423.90	355000	35558.21	204959.35	158849.35	355000	ST RARA Mobili	Characteristic	4888.17	19200	ST RARA Mobili	Characteristic	-28252.83	360000	Verified
Concio 2	306	J[807]	ST RARA Mobili	Characteristic	-105272.54	355000	55974.27	204959.35	143114.16	355000	ST RARA Mobili	Characteristic	3737.92	19200	ST RARA Mobili	Characteristic	-5759.123	360000	Verified
Concio 3	307	I[807]	ST RARA Mobili	Characteristic	-10.1419.39	355000	4.1980.70	204959.35	124791.95	355000	ST RARA Mobili	Characteristic	3716.55	19200	ST RARA Mobili	Characteristic	47124.17	360000	Verified
Concio 3	307	J[808]	ST RARA Mobili	Characteristic	-60632.02	355000	39501.20	204959.35	9.1418.13	355000	ST RARA Mobili	Characteristic	2936.01	19200	ST RARA Mobili	Characteristic	60944.40	360000	Verified
Concio 3	308	I[808]	ST RARA Mobili	Characteristic	-68032.90	355000	46604.06	204959.35	105566.51	355000	ST RARA Mobili	Characteristic	2818.24	19200	ST RARA Mobili	Characteristic	69927.27	360000	Verified
Concio 3	308	J[809]	ST RARA Mobili	Characteristic	-168924.81	355000	48203.86	204959.35	18843.149	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	143609.01	360000	Verified
Concio 3	309	I[809]	ST RARA Mobili	Characteristic	-166087.98	355000	46056.39	204959.35	184251.97	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	238564.33	360000	Verified
Concio 3	309	J[810]	ST RARA Mobili	Characteristic	-185760.23	355000	47959.61	204959.35	203487.68	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	205438.69	360000	Verified
Concio 4 H=var	310	I[810]	ST RARA Mobili	Characteristic	149428.65	355000	48772.06	204959.35	171653.91	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	113086.73	360000	Verified
Concio 4 H=var	310	J[811]	ST RARA Mobili	Characteristic	150496.71	355000	38052.57	204959.35	164296.24	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	85118.20	360000	Verified
Concio 4 H=var	311	I[811]	ST RARA Mobili	Characteristic	148893.24	355000	37936.06	204959.35	162747.14	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	75550.56	360000	Verified
Concio 4 H=var	311	J[812]	ST RARA Mobili	Characteristic	154672.24	355000	32916.29	204959.35	164845.22	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	88130.25	360000	Verified
Concio 4 H=20	312	I[812]	ST RARA Mobili	Characteristic	153371.13	355000	32847.27	204959.35	163583.42	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	92053.06	360000	Verified
Concio 4 H=20	312	J[813]	ST RARA Mobili	Characteristic	163137.69	355000	37747.58	204959.35	175751.38	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	104298.63	360000	Verified
Concio 4 H=20	313	I[813]	ST RARA Mobili	Characteristic	163882.22	355000	39464.73	204959.35	177566.25	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	100111.34	360000	Verified
Concio 4 H=20	313	J[814]	ST RARA Mobili	Characteristic	1526.18.11	355000	37595.24	204959.35	165929.18	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	90688.15	360000	Verified
Concio 4 H=var	314	I[814]	ST RARA Mobili	Characteristic	154066.46	355000	37225.95	204959.35	167014.33	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	87891.58	360000	Verified
Concio 4 H=var	314	J[815]	ST RARA Mobili	Characteristic	154087.08	355000	38027.78	204959.35	167574.36	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	78756.21	360000	Verified
Concio 4 H=var	315	I[815]	ST RARA Mobili	Characteristic	155695.36	355000	36322.87	204959.35	167925.88	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	87353.72	360000	Verified
Concio 4 H=var	315	J[816]	ST RARA Mobili	Characteristic	165463.38	355000	46103.82	204959.35	183724.84	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	123687.13	360000	Verified
Concio 5	316	I[816]	ST RARA Mobili	Characteristic	-207040.03	355000	45735.81	204959.35	221677.39	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	212431.14	360000	Verified
Concio 5	316	J[817]	ST RARA Mobili	Characteristic	-188885.09	355000	43827.39	204959.35	203568.41	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	246317.81	360000	Verified
Concio 5	317	I[817]	ST RARA Mobili	Characteristic	19290.166	355000	44589.81	204959.35	207787.89	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	161825.58	360000	Verified
Concio 5	317	J[818]	ST RARA Termico	Characteristic	59160.69	355000	21884.09	204959.35	70261.85	355000	ST RARA Mobili	Characteristic	1769.11	19200	ST RARA Mobili	Characteristic	10.1102.14	360000	Verified
Concio 5	318	I[818]	ST RARA Termico	Characteristic	60976.29	355000	21894.96	204959.35	71807.21	355000	ST RARA Mobili	Characteristic	1844.03	19200	ST RARA Mobili	Characteristic	92407.54	360000	Verified
Concio 5	318	J[819]	ST RARA Mobili	Characteristic	-66864.16	355000	17902.79	204959.35	73704.45	355000	ST RARA Mobili	Characteristic	2508.28	19200	ST RARA Mobili	Characteristic	82359.67	360000	Verified
Concio 6	319	I[819]	ST RARA Mobili	Characteristic	-71103.20	355000	29837.99	204959.35	87900.98	355000	ST RARA Mobili	Characteristic	2530.73	19200	ST RARA Mobili	Characteristic	101284.71	360000	Verified
Concio 6	319	J[820]	ST RARA Mobili	Characteristic	-98887.70	355000	5214.02	204959.35	99299.22	355000	ST RARA Mobili	Characteristic	3337.22	19200	ST RARA Mobili	Characteristic	88479.51	360000	Verified
Concio 6	320	I[820]	ST RARA Mobili	Characteristic	-9648.132	355000	1916.61	204959.35	96538.41	355000	ST RARA Mobili	Characteristic	3383.66	19200	ST RARA Mobili	Characteristic	91035.56	360000	Verified
Concio 6	320	J[821]	ST RARA Mobili	Characteristic	-106449.20	355000	2652.36	204959.35	106548.29	355000	ST RARA Mobili	Characteristic	3492.22	19200	ST RARA Mobili	Characteristic	83958.33	360000	Verified
Concio 6	321	I[821]	ST RARA Mobili	Characteristic	-106449.20	355000	2652.36	204959.35	106548.29	355000	ST RARA Mobili	Characteristic	3492.22	19200	ST RARA Mobili	Characteristic	83958.33	360000	Verified
Concio 6	321	J[822]	ST RARA Mobili	Characteristic	-96490.46	355000	24958.16	204959.35	10.573.144	355000	ST RARA Mobili	Characteristic	3384.18	19200	ST RARA Mobili	Characteristic	91021.78	360000	Verified
Concio 6	322	I[822]	ST RARA Mobili	Characteristic	-98880.20	355000	32516.96	204959.35	113795.22	355000	ST RARA Mobili	Characteristic	3336.82	19200	ST RARA Mobili	Characteristic	88494.90	360000	Verified
Concio 6	322	J[823]	ST RARA Mobili	Characteristic	-71092.29	355000	57140.48	204959.35	121857.36	355000	ST RARA Mobili	Characteristic	2530.17	19200	ST RARA Mobili	Characteristic	101282.77	360000	Verified
Concio 5	323	I[823]	ST RARA Mobili	Characteristic	-66854.16	355000	34284.29	204959.35	89418.76	355000	ST RARA Mobili	Characteristic	2507.72	19200	ST RARA Mobili	Characteristic	82357.93	360000	Verified
Concio 5	323	J[824]	ST RARA Termico	Characteristic	60974.33	355000	21517.92	204959.35	71462.80	355000	ST RARA Mobili	Characteristic	1845.41	19200	ST RARA Mobili	Characteristic	92409.51	360000	Verified
Concio 5	324	I[824]	ST RARA Termico	Characteristic	59161.14	355000	20140.74	204959.35	68680.33	355000	ST RARA Mobili	Characteristic	1771.03	19200	ST RARA Mobili	Characteristic	10.1110.37	360000	Verified
Concio 5	324	J[825]	ST RARA Mobili	Characteristic	-19216.41	355000	43460.52	204959.35	207082.57	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	161864.61	360000	Verified
Concio 5	325	I[825]	ST RARA Mobili	Characteristic	-188898.96	355000	41162.35	204959.35	201905.51	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	258062.52	360000	Verified
Concio 5	325	J[826]	ST RARA Mobili	Characteristic	-207052.48	355000	43070.87	204959.35	220081.87	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	223796.10	360000	Verified
Concio 4 H=var	326	I[826]	ST RARA Mobili	Characteristic	165471.79	355000	43872.18	204959.35	182085.74	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	123904.70	360000	Verified
Concio 4 H=var	326	J[827]	ST RARA Mobili	Characteristic	155698.67	355000	34876.99	204959.35	167006.86	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	88098.27	360000	Verified
Concio 4 H=var	327	I[827]	ST RARA Mobili	Characteristic	154094.75	355000	34690.97	204959.35	165395.23	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	78747.55	360000	Verified
Concio 4 H=var	327	J[828]	ST RARA Mobili	Characteristic	154072.41	355000	34756.61	204959.35	16541.5.76	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	87879.16	360000	Verified
Concio 4 H=20	328	I[828]	ST RARA Mobili	Characteristic	152624.23	355000	34772.34	204959.35	164077.73	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	91759.05	360000	Verified
Concio 4 H=20	328	J[829]	ST RARA Mobili	Characteristic	163887.61	355000	36640.28	204959.35	175746.06	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	103435.17	360000	Verified
Concio 4 H=20	329	I[829]	ST RARA Mobili	Characteristic	163133.87	355000	40937.71	204959.35	177877.34	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	99807.91	360000	Verified
Concio 4 H=20	329	J[830]	ST RARA Mobili	Characteristic	153374.00	355000	36034.28	204959.35	165586.81	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	89839.49	360000	Verified
Concio 4 H=var	330	I[830]	ST RARA Mobili	Characteristic	154675.15	355000	35770.21	204959.35	166622.11	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	86925.38	360000	Verified
Concio 4 H=var	330	J[831]	ST RARA Mobili	Characteristic	148894.09	355000	41794.91	204959.35	165559.33	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	75567.76	360000	Verified
Concio 4 H=var	331	I[831]	ST RARA Mobili	Characteristic	150496.10	355000	40024.58	204959.35	165695.44	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	84457.64	360000	Verified
Concio 4 H=var	331	J[832]	ST RARA Mobili	Characteristic	149422.15	355000	51815.66	204959.35	174303.09	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	112730.23	360000	Verified
Concio 3	332	I[832]	ST RARA Mobili	Characteristic	-165751.16	355000	51389.64	204959.35	205976.16	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	192445.31	360000	Verified
Concio 3	332	J[833]	ST RARA Mobili	Characteristic	-166075.71	355000	49486.39	204959.35	186889.94	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	225175.63	360000	Verified
Concio 3	333	I[833]	ST RARA Mobili	Characteristic	-16891.158	355000	50111.74	204959.35	189907.04	355000	ST RARA Mobili	Characteristic	0.00	19200	ST RARA Mobili	Characteristic	143575.45	360000	Verified
Concio 3	333	J[834]	ST RARA Mobili	Characteristic	-68040.14	355000	28578.68	204959.35	84140.86	355000	ST RARA Mobili	Characteristic	2818.39	19200	ST RARA Mobili	Characteristic	69921.34	360000	Verified
Concio 3	334	I[834]	ST RARA Mobili	Characteristic	-60616.96	355000	22325.83	204959.35	71900.92	355000	ST RARA Mobili	Characteristic	2934.77	19200	ST RARA Mobili	Characteristic	60939.76	360000	Verified
Concio 3	334	J[835]	ST RARA Mobili	Characteristic	-10143.180	355000	24803.64	204959.35	110154.76	355000	ST RARA Mobili	Characteristic	3717.25	19200	ST RARA Mobili	Characteristic	47125.42	360000	Verified
Concio 2	335	I[835]	ST RARA Mobili	Characteristic	-105285.35	355000	33071.52	204959.35	119859.01	355000	ST RARA Mobili	Characteristic	3738.62	19200	ST RARA Mobili	Characteristic	57592.18	360000	Verified
Concio 2	335	J[836]	ST RARA Mobili	Characteristic	-14616.31	355000	12267.63	204959.35	147950.05	355000	ST RARA Mobili	Characteristic	4889.46	19200	ST RARA Mobili	Characteristic	28241.07	360000	Verified
Concio 2	336	I[836]	ST RARA Mobili	Characteristic	-14381.2.15	355000	6193.991	204959.35	144211.76	355000	ST RARA Mobili	Characteristic	4993.56	19200	ST RARA Mobili	Characteristic	37668.77	360000	Verified
Concio 2	336	J[837]	ST RARA Mobili	Characteristic	-163042.52	355000	11457.33	204959.35	164245.78	355000	ST RARA Mobili	Characteristic	5448.13	19200	ST RARA Mobili	Characteristic	-29981.76	360000	Verified
Concio 2	337	I[837]	ST RARA Mobili	Characteristic	163653.12	355000	1722.129	204959.35	166349.22	355000	ST RARA Mobili	Characteristic	5227.87	19200	ST RARA Mobili	Characteristic	-28629.10	360000	Verified
Concio 2	337	J[838]	ST RARA Mobili	Characteristic	-15515.5.76	355000	32604.88	204959.35	165113.73	355000	ST RARA Mobili	Characteristic	4942.30	19200	ST RARA Mobili	Characteristic	-27023.37	360000	Verified
Concio 1	338	I[838]	ST RARA Mobili	Characteristic	191466.89	355000	32258.00	204959.35	199452.52	355000	ST RARA Mobili	Characteristic	5345.34	19200	ST RARA Mobili	Characteristic	-28746.81	360000	Verified
Concio 1	338	J[839]	ST RARA Mobili	Characteristic	-144904.34	355000	5262.180	204959.35	171185.37	355000	ST RARA Mobili	Characteristic	4835.58	19200	ST RARA Mobili	Characteristic	-26631.07	360000	Verified
Concio 1	339	I[839]	ST RARA Mobili	Characteristic	154428.45	355000	43342.72	204959.35	171708.83	355000	ST RARA Mobili	Characteristic	4419.65	19200	ST RARA Mobili	Characteristic	-23749.38	360000	Verified
Concio 1	339	J[840]	ST RARA Mobili	Characteristic	36642.92	355000	71506.12	204959.35	129159.13	355000	ST RARA Mobili	Characteristic	395.14	19200	ST RARA Mobili	Characteristic	111203.50	360000	Verified



8.5 VERIFICHE A FATICA

Si effettuano le verifiche allo stato limite di fatica per vita illimitata dei profilati metallici e delle saldature anima/piattabanda.
L'impalcato si considera caricato secondo il modello di carico a fatica 2, applicato sulla corsia lenta; il veicolo più gravoso è risultato essere il 3°: semirimorchio a 5 assi per un peso complessivo di 630 kN (ved. 3.4.1).
Si assume che le strutture siano sensibili alla rottura per fatica e che essa produca conseguenze significative; il coefficiente parziale di sicurezza per le verifiche è quindi pari a: $\gamma_{Mf} = 1.35$.
Le caratteristiche resistenti (elastiche) tengono conto del contributo del calcestruzzo della soletta se compressa, se tesa tengono conto solamente dell'armatura.
La verifica viene eseguita per ogni tipologia di trave (concio) per:

a) profilato metallico: tensioni normali: $\Delta\sigma_C = 112\ \text{N/mm}^2$
b) profilato metallico: tensioni tangenziali: $\Delta\tau_C = 100\ \text{N/mm}^2$
c) saldature: tensioni tangenziali: $\Delta\tau_C = 80\ \text{N/mm}^2$

Seguono le verifiche eseguite per ogni tipologia di sezione all'interno della quale si sono individuate le condizioni:

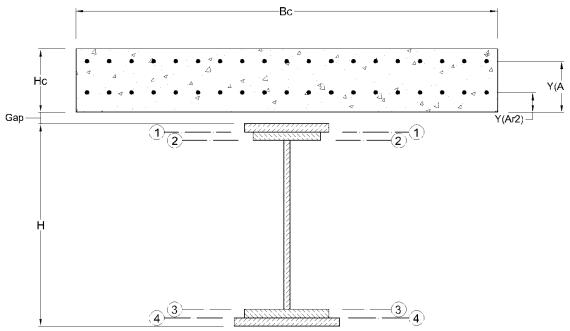
1) ΔM massimo e ΔT associato (per verifica a)
2) ΔT massimo e ΔM associato (per verifiche b, c)

VERIFICA ALLO STATO LIMITE DI FATICA (VERIFICA PER VITA ILLIMITATA): **CONCI C1**

Legenda

As	Area profilo metallico	
Yg_inf(s)	Baricentro profilo metallico	
H	Altezza profilo metallico	
Yg_inf	Baricentro della sezione composta	
Jc	Momento d'inerzia della sezione composta	
Sc_max	Momento statico massimo della sezione del profilo	
Sp	Spessore anima in corrispondenza della sezione con momento statico massimo Sc_max	
b	Larghezza dei piatti (piattabande, anime, ecc.)	
t	Spessore dei piatti (piattabande, anime, ecc.)	
A	Sezione resistente dei piatti (piattabande, anime, ecc.)	
Z	Distanza baricentro dei piatti(piattabande, anime, ecc.) dal baricentro della sezione composta	
S_i	Momento statico della sezione i_esima di attacco dei piatti in esame(piattabande, anime, ecc.)	
Δτ e Δσ	Delta di tensione tangenziale e normale degli elementi da verificare	
C.ANG	Saldatura a cordone d'angolo	
a	Larghezza della gola del cordone d'angolo (somma)	
P.PEN	Saldatura a piena penetrazione (spessore resistente= spessore anima)	
$\gamma_{Mf,s}$	1.35	(coeff. di sicurezza a fatica)
Es/Ec	6.30	(coeff. di omogeneizzazione acciaio/cls.)
Bc	320 cm	(base efficace soletta in cls.)
Hc	24 cm	(altezza soletta in cls.)
Gap	6 cm	(distanza tra profilo metallico e soletta)
Ar1	32.16 cm^2	(area di armatura soletta)
Y(Ar1)	20 cm	(distanza dal lembo inferiore della soletta dell'armatura Ar1)
Ar2	32.16 cm^2	(area di armatura soletta)
Y(Ar2)	2 cm	(distanza dal lembo inferiore della soletta dell'armatura Ar2)
Ar_compr?	SI	(considerare o no le armature della soletta se in compressione)

SCHEMA SEZIONE COMPOSTA



Caratteristiche geometriche

STATO CLS	As cm^2	Sp cm	Yg_inf(s) cm	Js cm^4	H cm	Yg_inf cm	Jc cm^4	Wsup cm^3	Winf cm^3	Sc_max cm^3	Jc/Sc_max m	DESCRIZIONE
Compr.	471.0	1.5	46.91	875818	100.0	98.88	2678605	-2396436	27089	24421.6	1.097	CLS in compressione
Teso	471.0	1.5	46.91	875818	100.0	55.33	1159041	-25948	20947	11743.6	0.987	CLS in trazione

Caratteristiche con sezione avente il CLS totalmente o parzialmente in compressione

POSIZ.	b cm	t cm	A cm^2	Z cm	S_i cm^3	Jc/S_i m	TIPO SALDAT.	a mm	DESCRIZIONE	
sez.max.	94.0	1.5	141.0	48.88					ANIMA	
sez 1	0.0	0.0	0.0	-1.12	0.0		C.ANG.	0.0	PIATTO RINFORZO SUP.	
sez 2	50.0	3.0	150.0	0.38	24421.2	1.097	C.ANG.	14.1	ANIMA-PIATTABANDA SUP.	(2 SALD.10x10 mm)
sez 3	60.0	3.0	180.0	97.38	17528.8	1.528	C.ANG.	14.1	ANIMA-PIATTABANDA INF.	(2 SALD.10x10 mm)
sez 4	0.0	0.0	0.0	98.88	0.0		C.ANG.	0.0	PIATTO RINFORZO INF.	

Caratteristiche con sezione avente il CLS totalmente in trazione

POSIZ.	b cm	t cm	A cm^2	Z cm	S_i cm^3	Jc/S_i m	TIPO SALDAT.	a mm	DESCRIZIONE
sez.max.	94.0	1.5	141.0	5.33					ANIMA
sez 1	0.0	0.0	0.0	-44.67	0.0		C.ANG.	0.0	PIATTO RINFORZO SUP.
sez 2	50.0	3.0	150.0	-43.17	10441.4	1.110	C.ANG.	14.1	ANIMA-PIATTABANDA SUP.
sez 3	60.0	3.0	180.0	53.83	9689.7	1.196	C.ANG.	14.1	ANIMA-PIATTABANDA INF.
sez 4	0.0	0.0	0.0	55.33	0.0		C.ANG.	0.0	PIATTO RINFORZO INF.

Sollecitazioni flettenti e taglianti associate (con segno)

TIPO DI COMBINAZIONE	M(max) kNm	M(min) kNm	V(max) kN	V(min) kN	Elemento n°
DM(max) - DT(ass)	2810.8	1763.5	-56.5	-58.6	203
DM(ass) - DT(max)	-131.7	-28.7	768.5	392.0	239

VERIFICA (tensioni normali) DEL PROFILATO METALLICO

POSIZ.	σ inf(+) N/mm^2	σ inf(-) N/mm^2	Δσ N/mm^2	Δσc N/mm^2	ΔσD/γMf,s N/mm^2	Δσ < ΔσD/γMf,s	
sez. max	103.8	65.1	38.66	112.0	61.14	VERIFICATO	<--Tab. C.4.2.XIV (3) Δσc=112 ;Tab. C.4.2.XV (2) Δσc=112

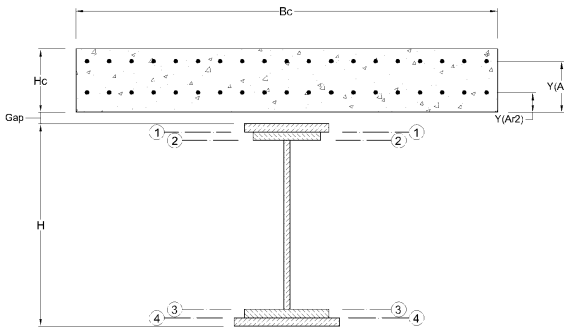
VERIFICA (tensioni tangenziali) DEL PROFILATO E DEI COLLEGAMENTI SALDATI

POSIZ.	τ(+) N/mm^2	τ(−) N/mm^2	Δτ N/mm^2	Δτc N/mm^2	ΔτD/γMf,s N/mm^2	Δτ< ΔτD/γMf,s	
sez. max	51.91	26.48	25.43	100.0	33.85	VERIFICATO	<--Tab. C.4.2.XIIIb (6) Δτc=100
sez 1	0.00	0.00	0.00	80.0	27.08	VERIFICATO	<--Tab. C.4.2.XVIIb (8) Δτc=80
sez 2	48.96	24.97	23.98	80.0	27.08	VERIFICATO	<--Tab. C.4.2.XVIIb (8) Δτc=80
sez 3	45.43	23.17	22.26	80.0	27.08	VERIFICATO	<--Tab. C.4.2.XVIIb (8) Δτc=80
sez 4	0.00	0.00	0.00	80.0	27.08	VERIFICATO	<--Tab. C.4.2.XVIIb (8) Δτc=80

VERIFICA ALLO STATO LIMITE DI FATICA (VERIFICA PER VITA ILLIMITATA): **CONCI C2**

Legenda		
As		Area profilo metallico
Yg_inf(s)		Baricentro profilo metallico
H		Altezza profilo metallico
Yg_inf		Baricentro della sezione composta
Jc		Momento d'inerzia della sezione composta
Sc_max		Momento statico massimo della sezione del profilo
Sp		Spessore anima in corrispondenza della sezione con momento statico massimo Sc_max
b		Larghezza dei piatti (piattabande, anime, ecc.)
t		Spessore dei piatti (piattabande, anime, ecc.)
A		Sezione resistente dei piatti (piattabande, anime, ecc.)
Z		Distanza baricentro dei piatti(piattabande, anime, ecc.) dal baricentro della sezione composta
S_i		Momento statico della sezione i_esima di attacco dei piatti in esame(piattabande, anime, ecc.)
Δτ e Δσ		Delta di tensione tangenziale e normale degli elementi da verificare
C.ANG		Saldatura a cordone d'angolo
a		Larghezza della gola del cordone d'angolo (somma)
P.PEN		Saldatura a piena penetrazione (spessore resistente= spessore anima)
$\gamma_{Mf,s}$	1.35	(coeff. di sicurezza a fatica)
Es/Ec	6.30	(coeff. di omogeneizzazione acciaio/cls.)
Bc	320 cm	(base efficace soletta in cls.)
Hc	24 cm	(altezza soletta in cls.)
Gap	6 cm	(distanza tra profilo metallico e soletta)
Ar1	32.16 cm^2	(area di armatura soletta)
Y(Ar1)	20 cm	(distanza dal lembo inferiore della soletta dell'armatura Ar1)
Ar2	32.16 cm^2	(area di armatura soletta)
Y(Ar2)	2 cm	(distanza dal lembo inferiore della soletta dell'armatura Ar2)
Ar_compr?	SI	(considerare o no le armature della soletta se in compressione)

SCHEMA SEZIONE COMPOSTA



Caratteristiche geometriche

STATO CLS	As cm^2	Sp cm	Yg_inf(s) cm	Js cm^4	H cm	Yg_inf cm	Jc cm^4	Wsup cm^3	Winf cm^3	Sc_max cm^3	Jc/Sc_max m	DESCRIZIONE
Compr.	529.5	1.5	42.11	973886	100.0	95.80	3193890	-761155	33338	28833.9	1.108	CLS in compressione
Teso	529.5	1.5	42.11	973886	100.0	50.22	1300762	-26131	25900	13175.6	0.987	CLS in trazione

Caratteristiche con sezione avente il CLS totalmente o parzialmente in compressione

POSIZ.	b cm	t cm	A cm^2	Z cm	S_i cm^3	Jc/S_i m	TIPO SALDAT.	a mm	DESCRIZIONE	
sez.max.	93.0	1.5	139.5	45.30					ANIMA	
sez 1	0.0	0.0	0.0	-4.20	0.0		C.ANG.	0.0	PIATTO RINFORZO SUP.	
sez 2	50.0	3.0	150.0	-2.70	28832.8	1.108	C.ANG.	14.1	ANIMA-PIATTABANDA SUP.	(2 SALD.10x10 mm)
sez 3	60.0	4.0	240.0	93.80	22512.9	1.419	C.ANG.	14.1	ANIMA-PIATTABANDA INF.	(2 SALD.10x10 mm)
sez 4	0.0	0.0	0.0	95.80	0.0		C.ANG.	0.0	PIATTO RINFORZO INF.	

Caratteristiche con sezione avente il CLS totalmente in trazione

POSIZ.	b cm	t cm	A cm^2	Z cm	S_i cm^3	Jc/S_i m	TIPO SALDAT.	a mm	DESCRIZIONE
sez.max.	93.0	1.5	139.5	-0.28					ANIMA
sez 1	0.0	0.0	0.0	-49.78	0.0		C.ANG.	0.0	PIATTO RINFORZO SUP.
sez 2	50.0	3.0	150.0	-48.28	11534.4	1.128	C.ANG.	14.1	ANIMA-PIATTABANDA SUP.
sez 3	60.0	4.0	240.0	48.22	11573.2	1.124	C.ANG.	14.1	ANIMA-PIATTABANDA INF.
sez 4	0.0	0.0	0.0	50.22	0.0		C.ANG.	0.0	PIATTO RINFORZO INF.

Sollecitazioni flettenti e taglianti associate (con segno)

TIPO DI COMBINAZIONE	M(max) kNm	M(min) kNm	V(max) kN	V(min) kN	Elemento n°
DM(max) - DT(ass)	1536.5	289.7	478.1	365.4	206
DM(ass) - DT(max)	2283.9	2496.7	-120.0	-427.9	236

VERIFICA (tensioni normali) DEL PROFILATO METALLICO

POSIZ.	σ inf(+) N/mm^2	σ inf(-) N/mm^2	Δσ N/mm^2	Δσc N/mm^2	ΔσD/γMf,s N/mm^2	Δσ < ΔσD/γMf,s	
sez. max	46.1	8.7	37.40	112.0	61.14	VERIFICATO	<--Tab. C.4.2.XIV (3) Δσc=112 ;Tab. C.4.2.XV (2) Δσc=112

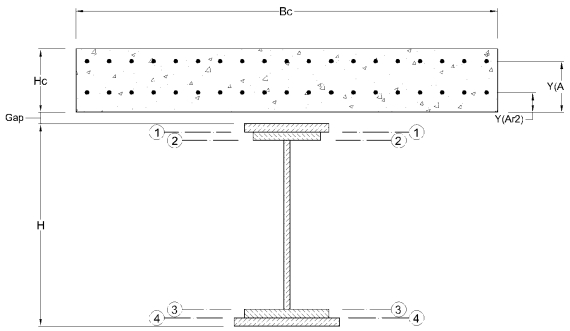
VERIFICA (tensioni tangenziali) DEL PROFILATO E DEI COLLEGAMENTI SALDATI

POSIZ.	τ(+) N/mm^2	τ(−) N/mm^2	Δτ N/mm^2	Δτc N/mm^2	ΔτD/γMf,s N/mm^2	Δτ< ΔτD/γMf,s	
sez. max	-7.22	-25.76	18.53	100.0	33.85	VERIFICATO	<--Tab. C.4.2.XIIIb (6) Δτc=100
sez 1	0.00	0.00	0.00	80.0	27.08	VERIFICATO	<--Tab. C.4.2.XVIIb (8) Δτc=80
sez 2	-7.66	-27.32	19.66	80.0	27.08	VERIFICATO	<--Tab. C.4.2.XVIIb (8) Δτc=80
sez 3	-5.98	-21.33	15.35	80.0	27.08	VERIFICATO	<--Tab. C.4.2.XVIIb (8) Δτc=80
sez 4	0.00	0.00	0.00	80.0	27.08	VERIFICATO	<--Tab. C.4.2.XVIIb (8) Δτc=80

VERIFICA ALLO STATO LIMITE DI FATICA (VERIFICA PER VITA ILLIMITATA): **CONCI C3**

Legenda		
As		Area profilo metallico
Yg_inf(s)		Baricentro profilo metallico
H		Altezza profilo metallico
Yg_inf		Baricentro della sezione composta
Jc		Momento d'inerzia della sezione composta
Sc_max		Momento statico massimo della sezione del profilo
Sp		Spessore anima in corrispondenza della sezione con momento statico massimo Sc_max
b		Larghezza dei piatti (piattabande, anime, ecc.)
t		Spessore dei piatti (piattabande, anime, ecc.)
A		Sezione resistente dei piatti (piattabande, anime, ecc.)
Z		Distanza baricentro dei piatti(piattabande, anime, ecc.) dal baricentro della sezione composta
S_i		Momento statico della sezione i_esima di attacco dei piatti in esame(piattabande, anime, ecc.)
Δτ e Δσ		Delta di tensione tangenziale e normale degli elementi da verificare
C.ANG		Saldatura a cordone d'angolo
a		Larghezza della gola del cordone d'angolo (somma)
P.PEN		Saldatura a piena penetrazione (spessore resistente= spessore anima)
$\gamma_{Mf,s}$	1.35	(coeff. di sicurezza a fatica)
Es/Ec	6.30	(coeff. di omogeneizzazione acciaio/cls.)
Bc	320 cm	(base efficace soletta in cls.)
Hc	24 cm	(altezza soletta in cls.)
Gap	6 cm	(distanza tra profilo metallico e soletta)
Ar1	32.16 cm^2	(area di armatura soletta)
Y(Ar1)	20 cm	(distanza dal lembo inferiore della soletta dell'armatura Ar1)
Ar2	32.16 cm^2	(area di armatura soletta)
Y(Ar2)	2 cm	(distanza dal lembo inferiore della soletta dell'armatura Ar2)
Ar_compr?	SI	(considerare o no le armature della soletta se in compressione)

SCHEMA SEZIONE COMPOSTA



Caratteristiche geometriche

STATO CLS	As cm^2	Sp cm	Yg_inf(s) cm	Js cm^4	H cm	Yg_inf cm	Jc cm^4	Wsup cm^3	Winf cm^3	Sc_max cm^3	Jc/Sc_max m	DESCRIZIONE
Compr.	576.0	2.0	42.79	1010400	100.0	94.67	3320287	-623177	35071	30462.7	1.090	CLS in compressione
Teso	576.0	2.0	42.79	1010400	100.0	50.24	1334247	-26816	26555	13717.2	0.973	CLS in trazione

Caratteristiche con sezione avente il CLS totalmente o parzialmente in compressione

POSIZ.	b cm	t cm	A cm^2	Z cm	S_i cm^3	Jc/S_i m	TIPO SALDAT.	a mm	DESCRIZIONE	
sez.max.	93.0	2.0	186.0	44.17					ANIMA	
sez 1	0.0	0.0	0.0	-5.33	0.0		C.ANG.	0.0	PIATTO RINFORZO SUP.	
sez 2	50.0	3.0	150.0	-3.83	30457.3	1.090	C.ANG.	14.1	ANIMA-PIATTABANDA SUP.	(2 SALD.10x10 mm)
sez 3	60.0	4.0	240.0	92.67	22241.3	1.493	C.ANG.	14.1	ANIMA-PIATTABANDA INF.	(2 SALD.10x10 mm)
sez 4	0.0	0.0	0.0	94.67	0.0		C.ANG.	0.0	PIATTO RINFORZO INF.	

Caratteristiche con sezione avente il CLS totalmente in trazione

POSIZ.	b cm	t cm	A cm^2	Z cm	S_i cm^3	Jc/S_i m	TIPO SALDAT.	a mm	DESCRIZIONE
sez.max.	93.0	2.0	186.0	-0.26					ANIMA
sez 1	0.0	0.0	0.0	-49.76	0.0		C.ANG.	0.0	PIATTO RINFORZO SUP.
sez 2	50.0	3.0	150.0	-48.26	11531.1	1.157	C.ANG.	14.1	ANIMA-PIATTABANDA SUP.
sez 3	60.0	4.0	240.0	48.24	11578.7	1.152	C.ANG.	14.1	ANIMA-PIATTABANDA INF.
sez 4	0.0	0.0	0.0	50.24	0.0		C.ANG.	0.0	PIATTO RINFORZO INF.

Sollecitazioni flettenti e taglianti associate (con segno)

TIPO DI COMBINAZIONE	M(max) kNm	M(min) kNm	V(max) kN	V(min) kN	Elemento n°
DM(max) - DT(ass)	1535.5	288.3	478.1	365.4	207
DM(ass) - DT(max)	-2550.6	-2398.7	-613.0	-956.4	233

VERIFICA (tensioni normali) DEL PROFILATO METALLICO

POSIZ.	σ inf(+) N/mm^2	σ inf(-) N/mm^2	Δσ N/mm^2	Δσc N/mm^2	ΔσD/γMf,s N/mm^2	Δσ < ΔσD/γMf,s
sez. max	43.8	8.2	35.56	112.0	61.14	VERIFICATO

<--Tab. C.4.2.XIV (3) Δσc=112 ;Tab. C.4.2.XV (2) Δσc=112

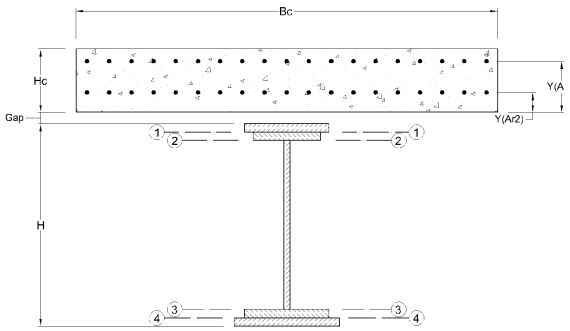
VERIFICA (tensioni tangenziali) DEL PROFILATO E DEI COLLEGAMENTI SALDATI

POSIZ.	τ(+) N/mm^2	τ(−) N/mm^2	Δτ N/mm^2	Δτc N/mm^2	ΔτD/γMf,s N/mm^2	Δτ< ΔτD/γMf,s	
sez. max	-31.51	-49.16	17.65	100.0	33.85	VERIFICATO	<--Tab. C.4.2.XIIIb (6) Δτc=100
sez 1	0.00	0.00	0.00	80.0	27.08	VERIFICATO	<--Tab. C.4.2.XVIIb (8) Δτc=80
sez 2	-37.46	-58.44	20.98	80.0	27.08	VERIFICATO	<--Tab. C.4.2.XVIIb (8) Δτc=80
sez 3	-37.61	-58.69	21.07	80.0	27.08	VERIFICATO	<--Tab. C.4.2.XVIIb (8) Δτc=80
sez 4	0.00	0.00	0.00	80.0	27.08	VERIFICATO	<--Tab. C.4.2.XVIIb (8) Δτc=80

VERIFICA ALLO STATO LIMITE DI FATICA (VERIFICA PER VITA ILLIMITATA): **CONCI C4**

Legenda		
As		Area profilo metallico
Yg_inf(s)		Baricentro profilo metallico
H		Altezza profilo metallico
Yg_inf		Baricentro della sezione composta
Jc		Momento d'inerzia della sezione composta
Sc_max		Momento statico massimo della sezione del profilo
Sp		Spessore anima in corrispondenza della sezione con momento statico massimo Sc_max
b		Larghezza dei piatti (piattabande, anime, ecc.)
t		Spessore dei piatti (piattabande, anime, ecc.)
A		Sezione resistente dei piatti (piattabande, anime, ecc.)
Z		Distanza baricentro dei piatti(piattabande, anime, ecc.) dal baricentro della sezione composta
S_i		Momento statico della sezione i_esima di attacco dei piatti in esame(piattabande, anime, ecc.)
Δτ e Δσ		Delta di tensione tangenziale e normale degli elementi da verificare
C.ANG		Saldatura a cordone d'angolo
a		Larghezza della gola del cordone d'angolo (somma)
P.PEN		Saldatura a piena penetrazione (spessore resistente= spessore anima)
$\gamma_{Mf,s}$	1.35	(coeff. di sicurezza a fatica)
Es/Ec	6.30	(coeff. di omogeneizzazione acciaio/cls.)
Bc	320 cm	(base efficace soletta in cls.)
Hc	24 cm	(altezza soletta in cls.)
Gap	6 cm	(distanza tra profilo metallico e soletta)
Ar1	100.48 cm^2	(area di armatura soletta)
Y(Ar1)	20 cm	(distanza dal lembo inferiore della soletta dell'armatura Ar1)
Ar2	100.48 cm^2	(area di armatura soletta)
Y(Ar2)	2 cm	(distanza dal lembo inferiore della soletta dell'armatura Ar2)
Ar_compr?	SI	(considerare o no le armature della soletta se in compressione)

SCHEMA SEZIONE COMPOSTA



Caratteristiche geometriche

STATO CLS	As cm^2	Sp cm	Yg_inf(s) cm	Js cm^4	H cm	Yg_inf cm	Jc cm^4	Wsup cm^3	Winf cm^3	Sc_max cm^3	Jc/Sc_max m	DESCRIZIONE
Compr.	904.0	2.0	95.66	6157420	200.0	170.33	14481460	-488151	85018	74800.6	1.936	CLS in compressione
Teso	904.0	2.0	95.66	6157420	200.0	117.73	8594389	-104463	73002	45338.0	1.896	CLS in trazione

Caratteristiche con sezione avente il CLS totalmente o parzialmente in compressione

POSIZ.	b cm	t cm	A cm^2	Z cm	S_i cm^3	Jc/S_i m	TIPO SALDAT.	a mm	DESCRIZIONE	
sez.max.	192.0	2.0	384.0	70.33					ANIMA	
sez 1	0.0	0.0	0.0	-29.67	0.0		C.ANG.	0.0	PIATTO RINFORZO SUP.	
sez 2	60.0	4.0	240.0	-27.67	74141.8	1.953	C.ANG.	14.1	ANIMA-PIATTABANDA SUP.	(2 SALD.10x10 mm)
sez 3	70.0	4.0	280.0	168.33	47133.5	3.072	C.ANG.	14.1	ANIMA-PIATTABANDA INF.	(2 SALD.10x10 mm)
sez 4	0.0	0.0	0.0	170.33	0.0		C.ANG.	0.0	PIATTO RINFORZO INF.	

Caratteristiche con sezione avente il CLS totalmente in trazione

POSIZ.	b cm	t cm	A cm^2	Z cm	S_i cm^3	Jc/S_i m	TIPO SALDAT.	a mm	DESCRIZIONE
sez.max.	192.0	2.0	384.0	17.73					ANIMA
sez 1	0.0	0.0	0.0	-82.27	0.0		C.ANG.	0.0	PIATTO RINFORZO SUP.
sez 2	60.0	4.0	240.0	-80.27	39211.5	2.192	C.ANG.	14.1	ANIMA-PIATTABANDA SUP.
sez 3	70.0	4.0	280.0	115.73	32403.9	2.652	C.ANG.	14.1	ANIMA-PIATTABANDA INF.
sez 4	0.0	0.0	0.0	117.73	0.0		C.ANG.	0.0	PIATTO RINFORZO INF.

Sollecitazioni flettenti e taglianti associate (con segno)

TIPO DI COMBINAZIONE	M(max) kNm	M(min) kNm	V(max) kN	V(min) kN	Elemento n°
DM(max) - DT(ass)	-7553.4	-8609.2	-846.4	-1105.7	213
DM(ass) - DT(max)	-8177.8	-7533.9	1242.7	844.1	228

VERIFICA (tensioni normali) DEL PROFILATO METALLICO

POSIZ.	σ inf(+) N/mm^2	σ inf(-) N/mm^2	Δσ N/mm^2	Δσc N/mm^2	ΔσD/γMf,s N/mm^2	Δσ < ΔσD/γMf,s	
sez. max	-103.5	-117.9	14.46	112.0	61.14	VERIFICATO	<--Tab. C.4.2.XIV (3) Δσc=112 ;Tab. C.4.2.XV (2) Δσc=112

VERIFICA (tensioni tangenziali) DEL PROFILATO E DEI COLLEGAMENTI SALDATI

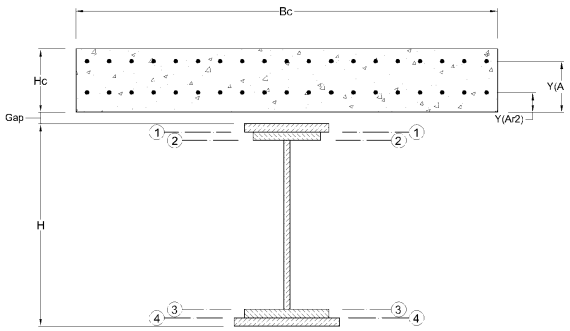
POSIZ.	τ(+) N/mm^2	τ(−) N/mm^2	Δτ N/mm^2	Δτc N/mm^2	ΔτD/γMf,s N/mm^2	Δτ< ΔτD/γMf,s	
sez. max	32.78	22.27	10.51	100.0	33.85	VERIFICATO	<--Tab. C.4.2.XIIIb (6) Δτc=100
sez 1	0.00	0.00	0.00	80.0	27.08	VERIFICATO	<--Tab. C.4.2.XVIIb (8) Δτc=80
sez 2	40.09	27.23	12.86	80.0	27.08	VERIFICATO	<--Tab. C.4.2.XVIIb (8) Δτc=80
sez 3	33.13	22.51	10.63	80.0	27.08	VERIFICATO	<--Tab. C.4.2.XVIIb (8) Δτc=80
sez 4	0.00	0.00	0.00	80.0	27.08	VERIFICATO	<--Tab. C.4.2.XVIIb (8) Δτc=80

VERIFICA ALLO STATO LIMITE DI FATICA (VERIFICA PER VITA ILLIMITATA): **CONCI C5**

Legenda

As	Area profilo metallico	
Yg_inf(s)	Baricentro profilo metallico	
H	Altezza profilo metallico	
Yg_inf	Baricentro della sezione composta	
Jc	Momento d'inerzia della sezione composta	
Sc_max	Momento statico massimo della sezione del profilo	
Sp	Spessore anima in corrispondenza della sezione con momento statico massimo Sc_max	
b	Larghezza dei piatti (piattabande, anime, ecc.)	
t	Spessore dei piatti (piattabande, anime, ecc.)	
A	Sezione resistente dei piatti (piattabande, anime, ecc.)	
Z	Distanza baricentro dei piatti(piattabande, anime, ecc.) dal baricentro della sezione composta	
S_i	Momento statico della sezione i_esima di attacco dei piatti in esame(piattabande, anime, ecc.)	
Δτ e Δσ	Delta di tensione tangenziale e normale degli elementi da verificare	
C.ANG	Saldatura a cordone d'angolo	
a	Larghezza della gola del cordone d'angolo (somma)	
P.PEN	Saldatura a piena penetrazione (spessore resistente= spessore anima)	
$\gamma_{Mf,s}$	1.35	(coeff. di sicurezza a fatica)
Es/Ec	6.30	(coeff. di omogeneizzazione acciaio/cls.)
Bc	320 cm	(base efficace soletta in cls.)
Hc	24 cm	(altezza soletta in cls.)
Gap	6 cm	(distanza tra profilo metallico e soletta)
Ar1	32.16 cm^2	(area di armatura soletta)
Y(Ar1)	20 cm	(distanza dal lembo inferiore della soletta dell'armatura Ar1)
Ar2	32.16 cm^2	(area di armatura soletta)
Y(Ar2)	2 cm	(distanza dal lembo inferiore della soletta dell'armatura Ar2)
Ar_compr?	SI	(considerare o no le armature della soletta se in compressione)

SCHEMA SEZIONE COMPOSTA



Caratteristiche geometriche

STATO CLS	As cm^2	Sp cm	Yg_inf(s) cm	Js cm^4	H cm	Yg_inf cm	Jc cm^4	Wsup cm^3	Winf cm^3	Sc_max cm^3	Jc/Sc_max m	DESCRIZIONE
Compr.	576.0	2.0	42.79	1010407	100.0	94.67	3320294	-623178	35072	30462.7	1.090	CLS in compressione
Teso	576.0	2.0	42.79	1010407	100.0	50.24	1334254	-26816	26555	13717.2	0.973	CLS in trazione

Caratteristiche con sezione avente il CLS totalmente o parzialmente in compressione

POSIZ.	b cm	t cm	A cm^2	Z cm	S_i cm^3	Jc/S_i m	TIPO SALDAT.	a mm	DESCRIZIONE	
sez.max.	93.0	2.0	186.0	44.17					ANIMA	
sez 1	0.0	0.0	0.0	-5.33	0.0		C.ANG.	0.0	PIATTO RINFORZO SUP.	
sez 2	50.0	3.0	150.0	-3.83	30457.3	1.090	C.ANG.	14.1	ANIMA-PIATTABANDA SUP.	(2 SALD.10x10 mm)
sez 3	60.0	4.0	240.0	92.67	22241.3	1.493	C.ANG.	14.1	ANIMA-PIATTABANDA INF.	(2 SALD.10x10 mm)
sez 4	0.0	0.0	0.0	94.67	0.0		C.ANG.	0.0	PIATTO RINFORZO INF	

Caratteristiche con sezione avente il CLS totalmente in trazione

POSIZ.	b cm	t cm	A cm^2	Z cm	S_i cm^3	Jc/S_i m	TIPO SALDAT.	a mm	DESCRIZIONE
sez.max.	93.0	2.0	186.0	-0.26					ANIMA
sez 1	0.0	0.0	0.0	-49.76	0.0		C.ANG.	0.0	PIATTO RINFORZO SUP.
sez 2	50.0	3.0	150.0	-48.26	11531.1	1.157	C.ANG.	14.1	ANIMA-PIATTABANDA SUP.
sez 3	60.0	4.0	240.0	48.24	11578.7	1.152	C.ANG.	14.1	ANIMA-PIATTABANDA INF.
sez 4	0.0	0.0	0.0	50.24	0.0		C.ANG.	0.0	PIATTO RINFORZO INF

Sollecitazioni flettenti e taglianti associate (con segno)

TIPO DI COMBINAZIONE	M(max) kNm	M(min) kNm	V(max) kN	V(min) kN	Elemento n°
DM(max) - DT(ass)	504.4	-659.1	361.4	254.6	223
DM(ass) - DT(max)	-3081.5	-2972.1	-526.3	-872.1	217

VERIFICA (tensioni normali) DEL PROFILATO METALLICO

POSIZ.	σ_inf(+) N/mm^2	σ_inf(-) N/mm^2	Δσ N/mm^2	Δσc N/mm^2	ΔσD/γMf,s N/mm^2	Δσ < ΔσD/γMf,s	
sez. max	14.4	-24.8	39.20	112.0	61.14	VERIFICATO	<--Tab. C.4.2.XIV (3) Δσc=112 ;Tab. C.4.2.XV (2) Δσc=112

VERIFICA (tensioni tangenziali) DEL PROFILATO E DEI COLLEGAMENTI SALDATI

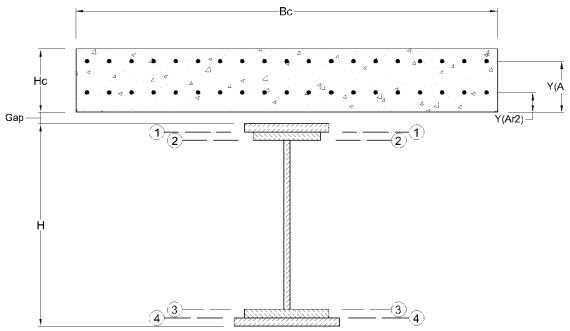
POSIZ.	τ(+) N/mm^2	τ(−) N/mm^2	Δτ N/mm^2	Δτc N/mm^2	ΔτD/γMf,s N/mm^2	Δτ< ΔτD/γMf,s	
sez. max	-27.05	-44.83	17.78	100.0	33.85	VERIFICATO	<--Tab. C.4.2.XIIIb (6) Δτc=100
sez 1	0.00	0.00	0.00	80.0	27.08	VERIFICATO	<--Tab. C.4.2.XVIIb (8) Δτc=80
sez 2	-32.16	-53.30	21.14	80.0	27.08	VERIFICATO	<--Tab. C.4.2.XVIIb (8) Δτc=80
sez 3	-32.29	-53.52	21.22	80.0	27.08	VERIFICATO	<--Tab. C.4.2.XVIIb (8) Δτc=80
sez 4	0.00	0.00	0.00	80.0	27.08	VERIFICATO	<--Tab. C.4.2.XVIIb (8) Δτc=80

VERIFICA ALLO STATO LIMITE DI FATICA (VERIFICA PER VITA ILLIMITATA): **CONCI C6**

Legenda

As	Area profilo metallico	
Yg_inf(s)	Baricentro profilo metallico	
H	Altezza profilo metallico	
Yg_inf	Baricentro della sezione composta	
Jc	Momento d'inerzia della sezione composta	
Sc_max	Momento statico massimo della sezione del profilo	
Sp	Spessore anima in corrispondenza della sezione con momento statico massimo Sc_max	
b	Larghezza dei piatti (piattabande, anime, ecc.)	
t	Spessore dei piatti (piattabande, anime, ecc.)	
A	Sezione resistente dei piatti (piattabande, anime, ecc.)	
Z	Distanza baricentro dei piatti(piattabande, anime, ecc.) dal baricentro della sezione composta	
S_i	Momento statico della sezione i_esima di attacco dei piatti in esame(piattabande, anime, ecc.)	
Δτ e Δσ	Delta di tensione tangenziale e normale degli elementi da verificare	
C.ANG	Saldatura a cordone d'angolo	
a	Larghezza della gola del cordone d'angolo (somma)	
P.PEN	Saldatura a piena penetrazione (spessore resistente= spessore anima)	
$\gamma_{Mf,s}$	1.35	(coeff. di sicurezza a fatica)
Es/Ec	6.30	(coeff. di omogeneizzazione acciaio/cls.)
Bc	320 cm	(base efficace soletta in cls.)
Hc	24 cm	(altezza soletta in cls.)
Gap	6 cm	(distanza tra profilo metallico e soletta)
Ar1	32.16 cm^2	(area di armatura soletta)
Y(Ar1)	20 cm	(distanza dal lembo inferiore della soletta dell'armatura Ar1)
Ar2	32.16 cm^2	(area di armatura soletta)
Y(Ar2)	2 cm	(distanza dal lembo inferiore della soletta dell'armatura Ar2)
Ar_compr?	SI	(considerare o no le armature della soletta se in compressione)

SCHEMA SEZIONE COMPOSTA



Caratteristiche geometriche

STATO CLS	As cm^2	Sp cm	Yg_inf(s) cm	Js cm^4	H cm	Yg_inf cm	Jc cm^4	Wsup cm^3	Winf cm^3	Sc_max cm^3	Jc/Sc_max m	DESCRIZIONE
Compr.	501.6	1.2	41.65	951707	100.0	96.51	3115259	-893577	32278	27818.6	1.120	CLS in compressione
Teso	501.6	1.2	41.65	951707	100.0	50.21	1280596	-25722	25503	12852.8	0.996	CLS in trazione

Caratteristiche con sezione avente il CLS totalmente o parzialmente in compressione

POSIZ.	b cm	t cm	A cm^2	Z cm	S_i cm^3	Jc/S_i m	TIPO SALDAT.	a mm	DESCRIZIONE	
sez.max.	93.0	1.2	111.6	46.01					ANIMA	
sez 1	0.0	0.0	0.0	-3.49	0.0		C.ANG.	0.0	PIATTO RINFORZO SUP.	
sez 2	50.0	3.0	150.0	-1.99	27818.4	1.120	C.ANG.	14.1	ANIMA-PIATTABANDA SUP.	(2 SALD.10x10 mm)
sez 3	60.0	4.0	240.0	94.51	22683.3	1.373	C.ANG.	14.1	ANIMA-PIATTABANDA INF.	(2 SALD.10x10 mm)
sez 4	0.0	0.0	0.0	96.51	0.0		C.ANG.	0.0	PIATTO RINFORZO INF	

Caratteristiche con sezione avente il CLS totalmente in trazione

POSIZ.	b cm	t cm	A cm^2	Z cm	S_i cm^3	Jc/S_i m	TIPO SALDAT.	a mm	DESCRIZIONE
sez.max.	93.0	1.2	111.6	-0.29					ANIMA
sez 1	0.0	0.0	0.0	-49.79	0.0		C.ANG.	0.0	PIATTO RINFORZO SUP.
sez 2	50.0	3.0	150.0	-48.29	11539.4	1.110	C.ANG.	14.1	ANIMA-PIATTABANDA SUP.
sez 3	60.0	4.0	240.0	48.21	11571.3	1.107	C.ANG.	14.1	ANIMA-PIATTABANDA INF.
sez 4	0.0	0.0	0.0	50.21	0.0		C.ANG.	0.0	PIATTO RINFORZO INF

Sollecitazioni flettenti e taglianti associate (con segno)

TIPO DI COMBINAZIONE	M(max) kNm	M(min) kNm	V(max) kN	V(min) kN	Elemento n°
DM(max) - DT(ass)	507.0	-655.8	361.4	254.6	222
DM(ass) - DT(max)	907.3	1134.1	-14.1	-329.3	220

VERIFICA (tensioni normali) DEL PROFILATO METALLICO

POSIZ.	σ_inf(+) N/mm^2	σ_inf(-) N/mm^2	Δσ N/mm^2	Δσc N/mm^2	ΔσD/γMf,s N/mm^2	Δσ < ΔσD/γMf,s
sez. max	15.7	-25.7	41.42	112.0	61.14	VERIFICATO

<--Tab. C.4.2.XIV (3) Δσc=112 ;Tab. C.4.2.XV (2) Δσc=112

VERIFICA (tensioni tangenziali) DEL PROFILATO E DEI COLLEGAMENTI SALDATI

POSIZ.	τ(+) N/mm^2	τ(−) N/mm^2	Δτ N/mm^2	Δτc N/mm^2	ΔτD/γMf,s N/mm^2	Δτ< ΔτD/γMf,s	
sez. max	-1.05	-24.51	23.46	100.0	33.85	VERIFICATO	<--Tab. C.4.2.XIIIb (6) Δτc=100
sez 1	0.00	0.00	0.00	80.0	27.08	VERIFICATO	<--Tab. C.4.2.XVIIb (8) Δτc=80
sez 2	-0.89	-20.80	19.91	80.0	27.08	VERIFICATO	<--Tab. C.4.2.XVIIb (8) Δτc=80
sez 3	-0.72	-16.96	16.23	80.0	27.08	VERIFICATO	<--Tab. C.4.2.XVIIb (8) Δτc=80
sez 4	0.00	0.00	0.00	80.0	27.08	VERIFICATO	<--Tab. C.4.2.XVIIb (8) Δτc=80

9 VERIFICHE DEI CONNETTORI "NELSON"

Dati connettori:

numero per fila:	3 (C2, C6); 4 (C1, C3, C4, C5)
interasse file:	0.20 m
diametro:	22 mm (7/8")
altezza:	175 mm
resistenza a rottura:	450 N/mm^2

9.1 STATO LIMITE ULTIMO – RESISTENZA AL TAGLIO LONGITUDINALE

Si effettuano le verifiche allo stato limite ultimo per taglio longitudinale dei connettori trave-soletta.
I coefficienti parziali per SLU assunti sono i seguenti:

$\gamma_V = 1.25$: connettori: resistenza allo SLU

Seguono i tabulati di calcolo per ogni asta considerata, per le combinazione di carichi più gravose.
Dati tabulati:

- Elem property: nome delle caratteristiche geometriche dell'elemento
- Elem: numero dell'elemento
- Position: nodo iniziale (I) o finale (J) dell'elemento
- Lcom: combinazione di carico più gravosa
- Type: sollecitazione (massima o minima)
- V_L,Ed: sforzo di taglio longitudinale agente sulla larghezza della regione inelastica
- v_L,Ed: sforzo di taglio longitudinale di calcolo per unità di lunghezza (m) all'interfaccia trave-soletta
- P_Rd: resistenza al taglio del singolo connettore "Nelson"
- v_L,Rd: resistenza al taglio longitudinale per trave e per unità di lunghezza

$$v\_Ed = \frac{v\_L,Ed}{2 \times t_c}$$ (t_c = spessore della soletta)

Condizione di verifica: Verification Ratio: $\frac{v\_L,Ed}{v\_L,Rd} \le 1$

Elem property	Elem number	Position	Lcom	Type	V_L,Ed (kN)	v_L,Ed (kN/m)	P_Rd (kN)	v_L,Rd (kN/m)	Verif. Ratio
Concio 1	101	I[719]	ST SLV Vert	FX-MAX	1.81	1.64	111.48	2229.56	0.001
Concio 1	101	J[720]	ST SLU Mobili	MZ-MAX	18.91	17.14	111.48	2229.56	0.008
Concio 1	102	I[720]	ST SLU Mobili	FZ-MIN	-666.59	604.27	111.48	2229.56	0.271
Concio 1	102	J[721]	ST SLU Mobili	FZ-MIN	-548.39	497.12	111.48	2229.56	0.223
Concio 1	103	I[721]	ST SLU Mobili	FZ-MIN	-367.19	332.86	111.48	2229.56	0.149
Concio 1	103	J[722]	ST SLU Mobili	FZ-MIN	-296.27	268.57	111.48	2229.56	0.120
Concio 2	104	I[722]	ST SLU Mobili	FZ-MIN	-296.27	262.49	111.48	1672.17	0.157
Concio 2	104	J[723]	ST SLU Mobili	FZ-MIN	-248.99	220.60	111.48	1672.17	0.132
Concio 2	105	I[723]	ST SLU Mobili	FZ-MAX	164.46	145.71	111.48	1672.17	0.087
Concio 2	105	J[724]	ST SLU Mobili	FZ-MAX	275.03	243.67	111.48	1672.17	0.146
Concio 2	106	I[724]	ST SLU Mobili	FZ-MAX	439.74	389.60	111.48	1672.17	0.233
Concio 2	106	J[725]	ST SLU Mobili	FZ-MAX	510.66	452.43	111.48	1672.17	0.271
Concio 3	107	I[725]	ST SLU Mobili	FZ-MAX	510.66	457.60	111.48	2229.56	0.205
Concio 3	107	J[726]	ST SLU Mobili	FZ-MAX	557.94	499.96	111.48	2229.56	0.224
Concio 3	108	I[726]	ST SLU Mobili	FZ-MAX	714.62	640.36	111.48	2229.56	0.287
Concio 3	108	J[727]	ST SLU Mobili	FZ-MAX	832.82	746.28	111.48	2229.56	0.335
Concio 3	109	I[727]	ST SLU Mobili	FZ-MAX	939.63	841.99	111.48	2229.56	0.378
Concio 3	109	J[728]	ST SLU Mobili	FZ-MAX	951.45	852.58	111.48	2229.56	0.382
Concio 4 H=var	110	I[728]	ST SLU Mobili	FZ-MAX	957.18	837.37	111.48	2229.56	0.376
Concio 4 H=var	110	J[729]	ST SLU Mobili	FZ-MAX	1021.05	615.85	111.48	2229.56	0.276
Concio 4 H=var	111	I[729]	ST SLU Mobili	FZ-MAX	1103.38	665.51	111.48	2229.56	0.298

Concio 4 H=var	111	J[730]	ST SLU Mobili	FZ-MAX	1167.22	535.50	111.48	2229.56	0.240
Concio 4 H=200	112	I[730]	ST SLU Mobili	FZ-MAX	1164.15	534.09	111.48	2229.56	0.240
Concio 4 H=200	112	J[731]	ST SLU Mobili	FZ-MAX	1176.91	539.95	111.48	2229.56	0.242
Concio 4 H=200	113	I[731]	ST SLU Mobili	FZ-MIN	-1093.20	501.54	111.48	2229.56	0.225
Concio 4 H=200	113	J[732]	ST SLU Mobili	FZ-MIN	-1080.44	495.68	111.48	2229.56	0.222
Concio 4 H=var	114	I[732]	ST SLU Mobili	FZ-MIN	-1085.49	498.00	111.48	2229.56	0.223
Concio 4 H=var	114	J[733]	ST SLU Mobili	FZ-MIN	-1021.64	616.21	111.48	2229.56	0.276
Concio 4 H=var	115	I[733]	ST SLU Mobili	FZ-MIN	-937.04	565.18	111.48	2229.56	0.253
Concio 4 H=var	115	J[734]	ST SLU Mobili	FZ-MIN	-873.17	763.88	111.48	2229.56	0.343
Concio 5	116	I[734]	ST SLU Mobili	FZ-MIN	-864.75	774.88	111.48	2229.56	0.348
Concio 5	116	J[735]	ST SLU Mobili	FZ-MIN	-852.93	764.29	111.48	2229.56	0.343
Concio 5	117	I[735]	ST SLU Mobili	FZ-MIN	-745.96	668.44	111.48	2229.56	0.300
Concio 5	117	J[736]	ST SLU Mobili	FZ-MIN	-623.03	558.29	111.48	2229.56	0.250
Concio 5	118	I[736]	ST SLU Mobili	FZ-MIN	-466.74	418.24	111.48	2229.56	0.188
Concio 5	118	J[737]	ST SLU Mobili	FZ-MIN	-412.37	369.52	111.48	2229.56	0.166
Concio 6	119	I[737]	ST SLU Mobili	FZ-MIN	-412.37	362.45	111.48	1672.17	0.217
Concio 6	119	J[738]	ST SLU Mobili	FZ-MIN	-343.81	302.20	111.48	1672.17	0.181
Concio 6	120	I[738]	ST SLU Mobili	FZ-MIN	-180.06	158.26	111.48	1672.17	0.095
Concio 6	120	J[739]	ST SLU Mobili	FZ-MIN	-118.59	104.24	111.48	1672.17	0.062
Concio 6	121	I[739]	ST SLU Mobili	FZ-MIN	-118.59	104.24	111.48	1672.17	0.062
Concio 6	121	J[740]	ST SLU Mobili	FZ-MAX	180.04	158.25	111.48	1672.17	0.095
Concio 6	122	I[740]	ST SLU Mobili	FZ-MAX	343.85	302.23	111.48	1672.17	0.181
Concio 6	122	J[741]	ST SLU Mobili	FZ-MAX	412.41	362.49	111.48	1672.17	0.217
Concio 5	123	I[741]	ST SLU Mobili	FZ-MAX	412.41	369.55	111.48	2229.56	0.166
Concio 5	123	J[742]	ST SLU Mobili	FZ-MAX	466.78	418.27	111.48	2229.56	0.188
Concio 5	124	I[742]	ST SLU Mobili	FZ-MAX	623.11	558.36	111.48	2229.56	0.250
Concio 5	124	J[743]	ST SLU Mobili	FZ-MAX	746.04	668.51	111.48	2229.56	0.300
Concio 5	125	I[743]	ST SLU Mobili	FZ-MAX	852.93	764.29	111.48	2229.56	0.343
Concio 5	125	J[744]	ST SLU Mobili	FZ-MAX	864.75	774.88	111.48	2229.56	0.348
Concio 4 H=var	126	I[744]	ST SLU Mobili	FZ-MAX	873.18	763.89	111.48	2229.56	0.343
Concio 4 H=var	126	J[745]	ST SLU Mobili	FZ-MAX	937.05	565.19	111.48	2229.56	0.253
Concio 4 H=var	127	I[745]	ST SLU Mobili	FZ-MAX	1021.40	616.07	111.48	2229.56	0.276
Concio 4 H=var	127	J[746]	ST SLU Mobili	FZ-MAX	1085.25	497.89	111.48	2229.56	0.223
Concio 4 H=200	128	I[746]	ST SLU Mobili	FZ-MAX	1080.19	495.57	111.48	2229.56	0.222
Concio 4 H=200	128	J[747]	ST SLU Mobili	FZ-MAX	1092.95	501.43	111.48	2229.56	0.225
Concio 4 H=200	129	I[747]	ST SLU Mobili	FZ-MIN	-1177.21	540.08	111.48	2229.56	0.242
Concio 4 H=200	129	J[748]	ST SLU Mobili	FZ-MIN	-1164.44	534.22	111.48	2229.56	0.240
Concio 4 H=var	130	I[748]	ST SLU Mobili	FZ-MIN	-1167.50	535.63	111.48	2229.56	0.240
Concio 4 H=var	130	J[749]	ST SLU Mobili	FZ-MIN	-1103.66	665.68	111.48	2229.56	0.299
Concio 4 H=var	131	I[749]	ST SLU Mobili	FZ-MIN	-1021.07	615.87	111.48	2229.56	0.276
Concio 4 H=var	131	J[750]	ST SLU Mobili	FZ-MIN	-957.21	837.39	111.48	2229.56	0.376
Concio 3	132	I[750]	ST SLU Mobili	FZ-MIN	-951.49	852.61	111.48	2229.56	0.382
Concio 3	132	J[751]	ST SLU Mobili	FZ-MIN	-939.67	842.02	111.48	2229.56	0.378
Concio 3	133	I[751]	ST SLU Mobili	FZ-MIN	-832.78	746.24	111.48	2229.56	0.335
Concio 3	133	J[752]	ST SLU Mobili	FZ-MIN	-714.58	640.32	111.48	2229.56	0.287
Concio 3	134	I[752]	ST SLU Mobili	FZ-MIN	-557.93	499.95	111.48	2229.56	0.224
Concio 3	134	J[753]	ST SLU Mobili	FZ-MIN	-510.65	457.58	111.48	2229.56	0.205
Concio 2	135	I[753]	ST SLU Mobili	FZ-MIN	-510.65	452.42	111.48	1672.17	0.271
Concio 2	135	J[754]	ST SLU Mobili	FZ-MIN	-439.73	389.59	111.48	1672.17	0.233
Concio 2	136	I[754]	ST SLU Mobili	FZ-MIN	-275.02	243.66	111.48	1672.17	0.146
Concio 2	136	J[755]	ST SLU Mobili	FZ-MIN	-164.43	145.68	111.48	1672.17	0.087
Concio 2	137	I[755]	ST SLU Mobili	FZ-MAX	248.99	220.60	111.48	1672.17	0.132
Concio 2	137	J[756]	ST SLU Mobili	FZ-MAX	296.27	262.49	111.48	1672.17	0.157
Concio 1	138	I[756]	ST SLU Mobili	FZ-MAX	296.27	268.57	111.48	2229.56	0.120
Concio 1	138	J[757]	ST SLU Mobili	FZ-MAX	367.19	332.86	111.48	2229.56	0.149
Concio 1	139	I[757]	ST SLU Mobili	FZ-MAX	548.40	497.13	111.48	2229.56	0.223
Concio 1	139	J[758]	ST SLU Mobili	FZ-MAX	666.60	604.28	111.48	2229.56	0.271
Concio 1	140	I[758]	ST SLU Mobili	FZ-MIN	-18.91	17.14	111.48	2229.56	0.008
Concio 1	140	J[759]	ST SLV Vert	FX-MAX	1.81	1.64	111.48	2229.56	0.001

Concio 1	201	I[760]	ST SLV Vert	FX-MAX	1.91	1.74	111.48	2229.56	0.001
Concio 1	201	J[761]	ST SLU Mobili	FZ-MAX	450.51	410.01	111.48	2229.56	0.184
Concio 1	202	I[761]	ST SLU Mobili	FZ-MIN	-1250.44	1138.02	111.48	2229.56	0.510
Concio 1	202	J[762]	ST SLU Mobili	FZ-MIN	-588.73	535.80	111.48	2229.56	0.240
Concio 1	203	I[762]	ST SLU Mobili	FZ-MIN	-866.47	788.57	111.48	2229.56	0.354
Concio 1	203	J[763]	ST SLU Mobili	FZ-MIN	-515.39	469.05	111.48	2229.56	0.210
Concio 2	204	I[763]	ST SLU Mobili	FZ-MIN	-515.39	458.57	111.48	1672.17	0.274
Concio 2	204	J[764]	ST SLU Mobili	FZ-MAX	604.09	537.49	111.48	1672.17	0.321
Concio 2	205	I[764]	ST SLU Mobili	FZ-MIN	-635.85	565.75	111.48	1672.17	0.338
Concio 2	205	J[765]	ST SLU Mobili	FZ-MAX	817.23	727.13	111.48	1672.17	0.435
Concio 2	206	I[765]	ST SLU Mobili	FZ-MAX	494.50	439.99	111.48	1672.17	0.263
Concio 2	206	J[766]	ST SLU Mobili	FZ-MAX	820.76	730.27	111.48	1672.17	0.437
Concio 3	207	I[766]	ST SLU Mobili	FZ-MAX	820.76	739.00	111.48	2229.56	0.331
Concio 3	207	J[767]	ST SLU Mobili	FZ-MAX	1047.46	943.12	111.48	2229.56	0.423
Concio 3	208	I[767]	ST SLU Mobili	FZ-MAX	771.66	694.79	111.48	2229.56	0.312
Concio 3	208	J[768]	ST SLU Mobili	FZ-MAX	1329.46	1197.02	111.48	2229.56	0.537
Concio 3	209	I[768]	ST SLU Mobili	FZ-MAX	1121.19	1009.50	111.48	2229.56	0.453
Concio 3	209	J[769]	ST SLU Mobili	FZ-MAX	1173.52	1056.62	111.48	2229.56	0.474
Concio 4 H=var	210	I[769]	ST SLU Mobili	FZ-MAX	1165.17	1026.93	111.48	2229.56	0.461
Concio 4 H=var	210	J[770]	ST SLU Mobili	FZ-MAX	1479.69	901.67	111.48	2229.56	0.404
Concio 4 H=var	211	I[770]	ST SLU Mobili	FZ-MAX	1361.72	829.79	111.48	2229.56	0.372
Concio 4 H=var	211	J[771]	ST SLU Mobili	FZ-MAX	1682.58	781.42	111.48	2229.56	0.350
Concio 4 H=200	212	I[771]	ST SLU Mobili	FZ-MAX	1681.05	780.71	111.48	2229.56	0.350
Concio 4 H=200	212	J[772]	ST SLU Mobili	FZ-MAX	1742.45	809.22	111.48	2229.56	0.363
Concio 4 H=200	213	I[772]	ST SLU Mobili	FZ-MIN	-1656.42	769.27	111.48	2229.56	0.345
Concio 4 H=200	213	J[773]	ST SLU Mobili	FZ-MIN	-1595.07	740.78	111.48	2229.56	0.332
Concio 4 H=var	214	I[773]	ST SLU Mobili	FZ-MIN	-1596.34	741.37	111.48	2229.56	0.333
Concio 4 H=var	214	J[774]	ST SLU Mobili	FZ-MIN	-1275.50	777.25	111.48	2229.56	0.349
Concio 4 H=var	215	I[774]	ST SLU Mobili	FZ-MIN	-1395.43	850.33	111.48	2229.56	0.381
Concio 4 H=var	215	J[775]	ST SLU Mobili	FZ-MIN	-1081.84	953.49	111.48	2229.56	0.428
Concio 5	216	I[775]	ST SLU Mobili	FZ-MIN	-1090.53	981.89	111.48	2229.56	0.440
Concio 5	216	J[776]	ST SLU Mobili	FZ-MIN	-1038.36	934.92	111.48	2229.56	0.419
Concio 5	217	I[776]	ST SLU Mobili	FZ-MIN	-1253.34	1128.49	111.48	2229.56	0.506
Concio 5	217	J[777]	ST SLU Mobili	FZ-MIN	-675.97	608.63	111.48	2229.56	0.273
Concio 5	218	I[777]	ST SLU Mobili	FZ-MIN	-963.39	867.42	111.48	2229.56	0.389
Concio 5	218	J[778]	ST SLU Mobili	FZ-MIN	-703.40	633.33	111.48	2229.56	0.284
Concio 6	219	I[778]	ST SLU Mobili	FZ-MIN	-703.40	620.69	111.48	1672.17	0.371
Concio 6	219	J[779]	ST SLU Mobili	FZ-MAX	511.85	451.67	111.48	1672.17	0.270
Concio 6	220	I[779]	ST SLU Mobili	FZ-MIN	-727.50	641.96	111.48	1672.17	0.384
Concio 6	220	J[780]	ST SLU Mobili	FZ-MIN	-431.71	380.95	111.48	1672.17	0.228
Concio 6	221	I[780]	ST SLU Mobili	FZ-MIN	-431.71	380.95	111.48	1672.17	0.228
Concio 6	221	J[781]	ST SLU Mobili	FZ-MAX	727.32	641.80	111.48	1672.17	0.384
Concio 6	222	I[781]	ST SLU Mobili	FZ-MIN	-512.05	451.84	111.48	1672.17	0.270
Concio 6	222	J[782]	ST SLU Mobili	FZ-MAX	703.21	620.53	111.48	1672.17	0.371
Concio 5	223	I[782]	ST SLU Mobili	FZ-MAX	703.21	633.16	111.48	2229.56	0.284
Concio 5	223	J[783]	ST SLU Mobili	FZ-MAX	963.23	867.28	111.48	2229.56	0.389
Concio 5	224	I[783]	ST SLU Mobili	FZ-MAX	675.85	608.52	111.48	2229.56	0.273
Concio 5	224	J[784]	ST SLU Mobili	FZ-MAX	1253.10	1128.27	111.48	2229.56	0.506
Concio 5	225	I[784]	ST SLU Mobili	FZ-MAX	1038.12	934.70	111.48	2229.56	0.419
Concio 5	225	J[785]	ST SLU Mobili	FZ-MAX	1090.28	981.67	111.48	2229.56	0.440
Concio 4 H=var	226	I[785]	ST SLU Mobili	FZ-MAX	1081.61	953.28	111.48	2229.56	0.428
Concio 4 H=var	226	J[786]	ST SLU Mobili	FZ-MAX	1395.25	850.22	111.48	2229.56	0.381
Concio 4 H=var	227	I[786]	ST SLU Mobili	FZ-MAX	1275.20	777.07	111.48	2229.56	0.349
Concio 4 H=var	227	J[787]	ST SLU Mobili	FZ-MAX	1596.03	741.22	111.48	2229.56	0.332
Concio 4 H=200	228	I[787]	ST SLU Mobili	FZ-MAX	1594.74	740.63	111.48	2229.56	0.332
Concio 4 H=200	228	J[788]	ST SLU Mobili	FZ-MAX	1656.09	769.12	111.48	2229.56	0.345
Concio 4 H=200	229	I[788]	ST SLU Mobili	FZ-MIN	-1742.77	809.37	111.48	2229.56	0.363
Concio 4 H=200	229	J[789]	ST SLU Mobili	FZ-MIN	-1681.38	780.86	111.48	2229.56	0.350
Concio 4 H=var	230	I[789]	ST SLU Mobili	FZ-MIN	-1682.90	781.56	111.48	2229.56	0.351

Concio 4 H=var	230	J[790]	ST SLU Mobili	FZ-MIN	-1362.02	829.97	111.48	2229.56	0.372
Concio 4 H=var	231	I[790]	ST SLU Mobili	FZ-MIN	-1479.88	901.79	111.48	2229.56	0.404
Concio 4 H=var	231	J[791]	ST SLU Mobili	FZ-MIN	-1165.42	1027.15	111.48	2229.56	0.461
Concio 3	232	I[791]	ST SLU Mobili	FZ-MIN	-1173.78	1056.85	111.48	2229.56	0.474
Concio 3	232	J[792]	ST SLU Mobili	FZ-MIN	-1121.44	1009.73	111.48	2229.56	0.453
Concio 3	233	I[792]	ST SLU Mobili	FZ-MIN	-1329.70	1197.24	111.48	2229.56	0.537
Concio 3	233	J[793]	ST SLU Mobili	FZ-MIN	-771.79	694.91	111.48	2229.56	0.312
Concio 3	234	I[793]	ST SLU Mobili	FZ-MIN	-1047.65	943.29	111.48	2229.56	0.423
Concio 3	234	J[794]	ST SLU Mobili	FZ-MIN	-820.99	739.20	111.48	2229.56	0.332
Concio 2	235	I[794]	ST SLU Mobili	FZ-MIN	-820.99	730.48	111.48	1672.17	0.437
Concio 2	235	J[795]	ST SLU Mobili	FZ-MIN	-494.74	440.19	111.48	1672.17	0.263
Concio 2	236	I[795]	ST SLU Mobili	FZ-MIN	-817.52	727.39	111.48	1672.17	0.435
Concio 2	236	J[796]	ST SLU Mobili	FZ-MAX	635.56	565.49	111.48	1672.17	0.338
Concio 2	237	I[796]	ST SLU Mobili	FZ-MIN	-604.32	537.70	111.48	1672.17	0.322
Concio 2	237	J[797]	ST SLU Mobili	FZ-MAX	515.15	458.36	111.48	1672.17	0.274
Concio 1	238	I[797]	ST SLU Mobili	FZ-MAX	515.15	468.84	111.48	2229.56	0.210
Concio 1	238	J[798]	ST SLU Mobili	FZ-MAX	866.20	788.32	111.48	2229.56	0.354
Concio 1	239	I[798]	ST SLU Mobili	MY-MAX	588.51	535.60	111.48	2229.56	0.240
Concio 1	239	J[799]	ST SLU Mobili	FZ-MAX	1250.06	1137.67	111.48	2229.56	0.510
Concio 1	240	I[799]	ST SLU Mobili	FZ-MIN	-450.51	410.01	111.48	2229.56	0.184
Concio 1	240	J[800]	ST SLV Vert	FX-MAX	1.91	1.74	111.48	2229.56	0.001
Concio 1	301	I[801]	ST SLV Vert	FX-MAX	1.91	1.74	111.48	2229.56	0.001
Concio 1	301	J[802]	ST SLU Mobili	FZ-MAX	450.51	410.01	111.48	2229.56	0.184
Concio 1	302	I[802]	ST SLU Mobili	FZ-MIN	-1251.38	1138.88	111.48	2229.56	0.511
Concio 1	302	J[803]	ST SLU Mobili	FZ-MIN	-589.67	536.65	111.48	2229.56	0.241
Concio 1	303	I[803]	ST SLU Mobili	FZ-MIN	-867.02	789.07	111.48	2229.56	0.354
Concio 1	303	J[804]	ST SLU Mobili	FZ-MIN	-515.94	469.55	111.48	2229.56	0.211
Concio 2	304	I[804]	ST SLU Mobili	FZ-MIN	-515.94	459.06	111.48	1672.17	0.275
Concio 2	304	J[805]	ST SLU Mobili	FZ-MAX	604.61	537.95	111.48	1672.17	0.322
Concio 2	305	I[805]	ST SLU Mobili	FZ-MIN	-635.94	565.83	111.48	1672.17	0.338
Concio 2	305	J[806]	ST SLU Mobili	FZ-MAX	817.32	727.22	111.48	1672.17	0.435
Concio 2	306	I[806]	ST SLU Mobili	FZ-MAX	495.26	440.66	111.48	1672.17	0.264
Concio 2	306	J[807]	ST SLU Mobili	FZ-MAX	821.51	730.95	111.48	1672.17	0.437
Concio 3	307	I[807]	ST SLU Mobili	FZ-MAX	821.51	739.68	111.48	2229.56	0.332
Concio 3	307	J[808]	ST SLU Mobili	FZ-MAX	1048.22	943.80	111.48	2229.56	0.423
Concio 3	308	I[808]	ST SLU Mobili	FZ-MAX	772.83	695.85	111.48	2229.56	0.312
Concio 3	308	J[809]	ST SLU Mobili	FZ-MAX	1330.63	1198.08	111.48	2229.56	0.537
Concio 3	309	I[809]	ST SLU Mobili	FZ-MAX	1122.58	1010.76	111.48	2229.56	0.453
Concio 3	309	J[810]	ST SLU Mobili	FZ-MAX	1174.91	1057.87	111.48	2229.56	0.474
Concio 4 H=var	310	I[810]	ST SLU Mobili	FZ-MAX	1167.52	1029.00	111.48	2229.56	0.462
Concio 4 H=var	310	J[811]	ST SLU Mobili	FZ-MAX	1482.04	903.11	111.48	2229.56	0.405
Concio 4 H=var	311	I[811]	ST SLU Mobili	FZ-MAX	1364.66	831.58	111.48	2229.56	0.373
Concio 4 H=var	311	J[812]	ST SLU Mobili	FZ-MAX	1685.52	782.78	111.48	2229.56	0.351
Concio 4 H=200	312	I[812]	ST SLU Mobili	FZ-MAX	1682.93	781.58	111.48	2229.56	0.351
Concio 4 H=200	312	J[813]	ST SLU Mobili	FZ-MAX	1744.33	810.09	111.48	2229.56	0.363
Concio 4 H=200	313	I[813]	ST SLU Mobili	FZ-MIN	-1658.28	770.13	111.48	2229.56	0.345
Concio 4 H=200	313	J[814]	ST SLU Mobili	FZ-MIN	-1596.94	741.64	111.48	2229.56	0.333
Concio 4 H=var	314	I[814]	ST SLU Mobili	FZ-MIN	-1599.32	742.75	111.48	2229.56	0.333
Concio 4 H=var	314	J[815]	ST SLU Mobili	FZ-MIN	-1278.48	779.06	111.48	2229.56	0.349
Concio 4 H=var	315	I[815]	ST SLU Mobili	FZ-MIN	-1397.92	851.85	111.48	2229.56	0.382
Concio 4 H=var	315	J[816]	ST SLU Mobili	FZ-MIN	-1084.34	955.69	111.48	2229.56	0.429
Concio 5	316	I[816]	ST SLU Mobili	FZ-MIN	-1091.92	983.15	111.48	2229.56	0.441
Concio 5	316	J[817]	ST SLU Mobili	FZ-MIN	-1039.75	936.17	111.48	2229.56	0.420
Concio 5	317	I[817]	ST SLU Mobili	FZ-MIN	-1254.54	1129.57	111.48	2229.56	0.507
Concio 5	317	J[818]	ST SLU Mobili	FZ-MIN	-677.17	609.71	111.48	2229.56	0.273
Concio 5	318	I[818]	ST SLU Mobili	FZ-MIN	-964.06	868.02	111.48	2229.56	0.389
Concio 5	318	J[819]	ST SLU Mobili	FZ-MIN	-704.06	633.93	111.48	2229.56	0.284
Concio 6	319	I[819]	ST SLU Mobili	FZ-MIN	-704.06	621.28	111.48	1672.17	0.372
Concio 6	319	J[820]	ST SLU Mobili	FZ-MAX	512.52	452.25	111.48	1672.17	0.270

Concio 6	320	I[820]	ST SLU Mobili	FZ-MIN	-727.50	641.96	111.48	1672.17	0.384
Concio 6	320	J[821]	ST SLU Mobili	FZ-MIN	-431.71	380.95	111.48	1672.17	0.228
Concio 6	321	I[821]	ST SLU Mobili	FZ-MIN	-431.71	380.95	111.48	1672.17	0.228
Concio 6	321	J[822]	ST SLU Mobili	FZ-MAX	727.32	641.80	111.48	1672.17	0.384
Concio 6	322	I[822]	ST SLU Mobili	FZ-MIN	-512.73	452.44	111.48	1672.17	0.271
Concio 6	322	J[823]	ST SLU Mobili	FZ-MAX	703.89	621.13	111.48	1672.17	0.371
Concio 5	323	I[823]	ST SLU Mobili	FZ-MAX	703.89	633.77	111.48	2229.56	0.284
Concio 5	323	J[824]	ST SLU Mobili	FZ-MAX	963.91	867.89	111.48	2229.56	0.389
Concio 5	324	I[824]	ST SLU Mobili	FZ-MAX	677.03	609.58	111.48	2229.56	0.273
Concio 5	324	J[825]	ST SLU Mobili	FZ-MAX	1254.28	1129.33	111.48	2229.56	0.507
Concio 5	325	I[825]	ST SLU Mobili	FZ-MAX	1039.49	935.94	111.48	2229.56	0.420
Concio 5	325	J[826]	ST SLU Mobili	FZ-MAX	1091.66	982.91	111.48	2229.56	0.441
Concio 4 H=var	326	I[826]	ST SLU Mobili	FZ-MAX	1084.08	955.46	111.48	2229.56	0.429
Concio 4 H=var	326	J[827]	ST SLU Mobili	FZ-MAX	1397.72	851.72	111.48	2229.56	0.382
Concio 4 H=var	327	I[827]	ST SLU Mobili	FZ-MAX	1278.26	778.93	111.48	2229.56	0.349
Concio 4 H=var	327	J[828]	ST SLU Mobili	FZ-MAX	1599.08	742.64	111.48	2229.56	0.333
Concio 4 H=200	328	I[828]	ST SLU Mobili	FZ-MAX	1596.70	741.53	111.48	2229.56	0.333
Concio 4 H=200	328	J[829]	ST SLU Mobili	FZ-MAX	1658.04	770.02	111.48	2229.56	0.345
Concio 4 H=200	329	I[829]	ST SLU Mobili	FZ-MIN	-1744.59	810.21	111.48	2229.56	0.363
Concio 4 H=200	329	J[830]	ST SLU Mobili	FZ-MIN	-1683.20	781.70	111.48	2229.56	0.351
Concio 4 H=var	330	I[830]	ST SLU Mobili	FZ-MIN	-1685.78	782.90	111.48	2229.56	0.351
Concio 4 H=var	330	J[831]	ST SLU Mobili	FZ-MIN	-1364.90	831.72	111.48	2229.56	0.373
Concio 4 H=var	331	I[831]	ST SLU Mobili	FZ-MIN	-1482.27	903.25	111.48	2229.56	0.405
Concio 4 H=var	331	J[832]	ST SLU Mobili	FZ-MIN	-1167.81	1029.25	111.48	2229.56	0.462
Concio 3	332	I[832]	ST SLU Mobili	FZ-MIN	-1175.20	1058.13	111.48	2229.56	0.475
Concio 3	332	J[833]	ST SLU Mobili	FZ-MIN	-1122.86	1011.01	111.48	2229.56	0.453
Concio 3	333	I[833]	ST SLU Mobili	FZ-MIN	-1330.90	1198.32	111.48	2229.56	0.537
Concio 3	333	J[834]	ST SLU Mobili	FZ-MIN	-772.99	695.99	111.48	2229.56	0.312
Concio 3	334	I[834]	ST SLU Mobili	FZ-MIN	-1048.39	943.96	111.48	2229.56	0.423
Concio 3	334	J[835]	ST SLU Mobili	FZ-MIN	-821.73	739.87	111.48	2229.56	0.332
Concio 2	335	I[835]	ST SLU Mobili	FZ-MIN	-821.73	731.13	111.48	1672.17	0.437
Concio 2	335	J[836]	ST SLU Mobili	FZ-MIN	-495.48	440.85	111.48	1672.17	0.264
Concio 2	336	I[836]	ST SLU Mobili	FZ-MIN	-817.60	727.47	111.48	1672.17	0.435
Concio 2	336	J[837]	ST SLU Mobili	FZ-MAX	635.65	565.57	111.48	1672.17	0.338
Concio 2	337	I[837]	ST SLU Mobili	FZ-MIN	-604.87	538.19	111.48	1672.17	0.322
Concio 2	337	J[838]	ST SLU Mobili	FZ-MAX	515.70	458.85	111.48	1672.17	0.274
Concio 1	338	I[838]	ST SLU Mobili	FZ-MAX	515.70	469.34	111.48	2229.56	0.211
Concio 1	338	J[839]	ST SLU Mobili	FZ-MAX	866.74	788.82	111.48	2229.56	0.354
Concio 1	339	I[839]	ST SLU Mobili	MY-MAX	589.45	536.46	111.48	2229.56	0.241
Concio 1	339	J[840]	ST SLU Mobili	FZ-MAX	1251.00	1138.53	111.48	2229.56	0.511
Concio 1	340	I[840]	ST SLU Mobili	FZ-MIN	-450.51	410.01	111.48	2229.56	0.184
Concio 1	340	J[841]	ST SLV Vert	FX-MAX	1.91	1.74	111.48	2229.56	0.001
Concio 1	401	I[842]	ST SLV Vert	FX-MAX	1.81	1.64	111.48	2229.56	0.001
Concio 1	401	J[843]	ST SLU Mobili	MZ-MIN	18.91	17.14	111.48	2229.56	0.008
Concio 1	402	I[843]	ST SLU Mobili	FZ-MIN	-664.30	602.20	111.48	2229.56	0.270
Concio 1	402	J[844]	ST SLU Mobili	FZ-MIN	-546.10	495.05	111.48	2229.56	0.222
Concio 1	403	I[844]	ST SLU Mobili	FZ-MIN	-366.77	332.48	111.48	2229.56	0.149
Concio 1	403	J[845]	ST SLU Mobili	FZ-MIN	-295.85	268.20	111.48	2229.56	0.120
Concio 2	404	I[845]	ST SLU Mobili	FZ-MIN	-295.85	262.12	111.48	1672.17	0.157
Concio 2	404	J[846]	ST SLU Mobili	FZ-MIN	-248.57	220.23	111.48	1672.17	0.132
Concio 2	405	I[846]	ST SLU Mobili	FZ-MAX	164.12	145.40	111.48	1672.17	0.087
Concio 2	405	J[847]	ST SLU Mobili	FZ-MAX	274.69	243.37	111.48	1672.17	0.146
Concio 2	406	I[847]	ST SLU Mobili	FZ-MAX	438.85	388.81	111.48	1672.17	0.233
Concio 2	406	J[848]	ST SLU Mobili	FZ-MAX	509.77	451.64	111.48	1672.17	0.270
Concio 3	407	I[848]	ST SLU Mobili	FZ-MAX	509.77	456.80	111.48	2229.56	0.205
Concio 3	407	J[849]	ST SLU Mobili	FZ-MAX	557.05	499.17	111.48	2229.56	0.224
Concio 3	408	I[849]	ST SLU Mobili	FZ-MAX	711.83	637.86	111.48	2229.56	0.286
Concio 3	408	J[850]	ST SLU Mobili	FZ-MAX	830.03	743.78	111.48	2229.56	0.334
Concio 3	409	I[850]	ST SLU Mobili	FZ-MAX	936.16	838.88	111.48	2229.56	0.376

Concio 3	409	J[851]	ST SLU Mobili	FZ-MAX	947.98	849.47	111.48	2229.56	0.381
Concio 4 H=var	410	I[851]	ST SLU Mobili	FZ-MAX	954.28	834.83	111.48	2229.56	0.374
Concio 4 H=var	410	J[852]	ST SLU Mobili	FZ-MAX	1018.15	614.10	111.48	2229.56	0.275
Concio 4 H=var	411	I[852]	ST SLU Mobili	FZ-MAX	1100.21	663.60	111.48	2229.56	0.298
Concio 4 H=var	411	J[853]	ST SLU Mobili	FZ-MAX	1164.05	534.04	111.48	2229.56	0.240
Concio 4 H=200	412	I[853]	ST SLU Mobili	FZ-MAX	1160.55	532.44	111.48	2229.56	0.239
Concio 4 H=200	412	J[854]	ST SLU Mobili	FZ-MAX	1173.32	538.30	111.48	2229.56	0.241
Concio 4 H=200	413	I[854]	ST SLU Mobili	FZ-MIN	-1089.52	499.85	111.48	2229.56	0.224
Concio 4 H=200	413	J[855]	ST SLU Mobili	FZ-MIN	-1076.75	493.99	111.48	2229.56	0.222
Concio 4 H=var	414	I[855]	ST SLU Mobili	FZ-MIN	-1082.25	496.51	111.48	2229.56	0.223
Concio 4 H=var	414	J[856]	ST SLU Mobili	FZ-MIN	-1018.40	614.26	111.48	2229.56	0.276
Concio 4 H=var	415	I[856]	ST SLU Mobili	FZ-MIN	-934.23	563.49	111.48	2229.56	0.253
Concio 4 H=var	415	J[857]	ST SLU Mobili	FZ-MIN	-870.36	761.42	111.48	2229.56	0.342
Concio 5	416	I[857]	ST SLU Mobili	FZ-MIN	-861.33	771.82	111.48	2229.56	0.346
Concio 5	416	J[858]	ST SLU Mobili	FZ-MIN	-849.51	761.23	111.48	2229.56	0.341
Concio 5	417	I[858]	ST SLU Mobili	FZ-MIN	-743.31	666.07	111.48	2229.56	0.299
Concio 5	417	J[859]	ST SLU Mobili	FZ-MIN	-620.38	555.91	111.48	2229.56	0.249
Concio 5	418	I[859]	ST SLU Mobili	FZ-MIN	-466.07	417.64	111.48	2229.56	0.187
Concio 5	418	J[860]	ST SLU Mobili	FZ-MIN	-411.70	368.92	111.48	2229.56	0.165
Concio 6	419	I[860]	ST SLU Mobili	FZ-MIN	-411.70	361.87	111.48	1672.17	0.216
Concio 6	419	J[861]	ST SLU Mobili	FZ-MIN	-343.14	301.61	111.48	1672.17	0.180
Concio 6	420	I[861]	ST SLU Mobili	FZ-MIN	-180.05	158.26	111.48	1672.17	0.095
Concio 6	420	J[862]	ST SLU Mobili	FZ-MIN	-118.59	104.24	111.48	1672.17	0.062
Concio 6	421	I[862]	ST SLU Mobili	FZ-MIN	-118.59	104.24	111.48	1672.17	0.062
Concio 6	421	J[863]	ST SLU Mobili	FZ-MAX	180.04	158.25	111.48	1672.17	0.095
Concio 6	422	I[863]	ST SLU Mobili	FZ-MAX	343.17	301.63	111.48	1672.17	0.180
Concio 6	422	J[864]	ST SLU Mobili	FZ-MAX	411.73	361.89	111.48	1672.17	0.216
Concio 5	423	I[864]	ST SLU Mobili	FZ-MAX	411.73	368.94	111.48	2229.56	0.165
Concio 5	423	J[865]	ST SLU Mobili	FZ-MAX	466.10	417.66	111.48	2229.56	0.187
Concio 5	424	I[865]	ST SLU Mobili	FZ-MAX	620.42	555.94	111.48	2229.56	0.249
Concio 5	424	J[866]	ST SLU Mobili	FZ-MAX	743.34	666.10	111.48	2229.56	0.299
Concio 5	425	I[866]	ST SLU Mobili	FZ-MAX	849.50	761.23	111.48	2229.56	0.341
Concio 5	425	J[867]	ST SLU Mobili	FZ-MAX	861.32	771.82	111.48	2229.56	0.346
Concio 4 H=var	426	I[867]	ST SLU Mobili	FZ-MAX	870.34	761.40	111.48	2229.56	0.342
Concio 4 H=var	426	J[868]	ST SLU Mobili	FZ-MAX	934.21	563.47	111.48	2229.56	0.253
Concio 4 H=var	427	I[868]	ST SLU Mobili	FZ-MAX	1018.30	614.19	111.48	2229.56	0.275
Concio 4 H=var	427	J[869]	ST SLU Mobili	FZ-MAX	1082.14	496.47	111.48	2229.56	0.223
Concio 4 H=200	428	I[869]	ST SLU Mobili	FZ-MAX	1076.65	493.95	111.48	2229.56	0.222
Concio 4 H=200	428	J[870]	ST SLU Mobili	FZ-MAX	1089.42	499.81	111.48	2229.56	0.224
Concio 4 H=200	429	I[870]	ST SLU Mobili	FZ-MIN	-1173.46	538.36	111.48	2229.56	0.241
Concio 4 H=200	429	J[871]	ST SLU Mobili	FZ-MIN	-1160.69	532.50	111.48	2229.56	0.239
Concio 4 H=var	430	I[871]	ST SLU Mobili	FZ-MIN	-1164.19	534.11	111.48	2229.56	0.240
Concio 4 H=var	430	J[872]	ST SLU Mobili	FZ-MIN	-1100.35	663.69	111.48	2229.56	0.298
Concio 4 H=var	431	I[872]	ST SLU Mobili	FZ-MIN	-1018.21	614.14	111.48	2229.56	0.275
Concio 4 H=var	431	J[873]	ST SLU Mobili	FZ-MIN	-954.34	834.89	111.48	2229.56	0.374
Concio 3	432	I[873]	ST SLU Mobili	FZ-MIN	-948.03	849.51	111.48	2229.56	0.381
Concio 3	432	J[874]	ST SLU Mobili	FZ-MIN	-936.21	838.92	111.48	2229.56	0.376
Concio 3	433	I[874]	ST SLU Mobili	FZ-MIN	-830.04	743.79	111.48	2229.56	0.334
Concio 3	433	J[875]	ST SLU Mobili	FZ-MIN	-711.84	637.87	111.48	2229.56	0.286
Concio 3	434	I[875]	ST SLU Mobili	FZ-MIN	-557.06	499.17	111.48	2229.56	0.224
Concio 3	434	J[876]	ST SLU Mobili	FZ-MIN	-509.78	456.80	111.48	2229.56	0.205
Concio 2	435	I[876]	ST SLU Mobili	FZ-MIN	-509.78	451.65	111.48	1672.17	0.270
Concio 2	435	J[877]	ST SLU Mobili	FZ-MIN	-438.86	388.81	111.48	1672.17	0.233
Concio 2	436	I[877]	ST SLU Mobili	FZ-MIN	-274.68	243.36	111.48	1672.17	0.146
Concio 2	436	J[878]	ST SLU Mobili	FZ-MIN	-164.09	145.38	111.48	1672.17	0.087
Concio 2	437	I[878]	ST SLU Mobili	FZ-MAX	248.57	220.23	111.48	1672.17	0.132
Concio 2	437	J[879]	ST SLU Mobili	FZ-MAX	295.85	262.12	111.48	1672.17	0.157
Concio 1	438	I[879]	ST SLU Mobili	FZ-MAX	295.85	268.19	111.48	2229.56	0.120
Concio 1	438	J[880]	ST SLU Mobili	FZ-MAX	366.77	332.48	111.48	2229.56	0.149

Concio 1	439	I[880]	ST SLU Mobili	FZ-MAX	546.12	495.06	111.48	2229.56	0.222
Concio 1	439	J[881]	ST SLU Mobili	FZ-MAX	664.32	602.21	111.48	2229.56	0.270
Concio 1	440	I[881]	ST SLU Mobili	FZ-MIN	-18.91	17.14	111.48	2229.56	0.008
Concio 1	440	J[882]	ST SLV Vert	FX-MAX	1.81	1.64	111.48	2229.56	0.001

9.2 STATO LIMITE DI ESERCIZIO – RESISTENZA AL TAGLIO LONGITUDINALE

Si effettuano le verifiche allo stato limite di esercizio per taglio longitudinale dei connettori trave-soletta.
I coefficienti parziali per SLE assunti sono i seguenti:

$k_s = 0.60$ connettori: resistenza allo SLE

Seguono i tabulati di calcolo per ogni asta considerata, per le combinazione di carichi più gravose.
Dati tabulati:

Elem property: nome delle caratteristiche geometriche dell'elemento
Elem: numero dell'elemento
Position: nodo iniziale (I) o finale (J) dell'elemento
Lcom: combinazione di carico più gravosa
Type: tipo combinazione (caratteristica, frequente, quasi permanente)
V_c,Ed: sforzo di taglio longitudinale agente sulla larghezza della regione inelastica
v_L,Ed: sforzo di taglio longitudinale di calcolo per unità di lunghezza (m) all'interfaccia trave-soletta
P_Rd,ser: resistenza al taglio (SLE) del singolo connettore "Nelson"
v_L,Rd: resistenza al taglio longitudinale per trave e per unità di lunghezza

Condizione di verifica: Verification Ratio: $\frac{v\_L,Ed}{v\_L,Rd} \le 1$

Elem property	Elem number	Position	Lcom	Type	V_c,Ed (kN)	v_L,Ed (kN/m)	P_Rd_ser (kN)	v_L,Rd (kN/m)	Verif. Ratio
Concio 1	101	I[719]	ST RARA Mobili	Characteristic	0.00	0.00	66.89	1337.73	0.000
Concio 1	101	J[720]	ST RARA Mobili	Characteristic	12.85	11.65	66.89	1337.73	0.009
Concio 1	102	I[720]	ST RARA Mobili	Characteristic	-475.23	430.80	66.89	1337.73	0.322
Concio 1	102	J[721]	ST RARA Mobili	Characteristic	-394.93	358.01	66.89	1337.73	0.268
Concio 1	103	I[721]	ST RARA Mobili	Characteristic	-259.37	235.12	66.89	1337.73	0.176
Concio 1	103	J[722]	ST RARA Mobili	Characteristic	-211.19	191.45	66.89	1337.73	0.143
Concio 2	104	I[722]	ST RARA Mobili	Characteristic	-211.19	187.11	66.89	1003.30	0.186
Concio 2	104	J[723]	ST RARA Mobili	Characteristic	-179.07	158.65	66.89	1003.30	0.158
Concio 2	105	I[723]	ST RARA Mobili	Characteristic	129.83	115.02	66.89	1003.30	0.115
Concio 2	105	J[724]	ST RARA Mobili	Characteristic	204.48	181.16	66.89	1003.30	0.181
Concio 2	106	I[724]	ST RARA Mobili	Characteristic	327.41	290.08	66.89	1003.30	0.289
Concio 2	106	J[725]	ST RARA Mobili	Characteristic	375.59	332.77	66.89	1003.30	0.332
Concio 3	107	I[725]	ST RARA Mobili	Characteristic	375.59	336.56	66.89	1337.73	0.252
Concio 3	107	J[726]	ST RARA Mobili	Characteristic	407.71	365.35	66.89	1337.73	0.273
Concio 3	108	I[726]	ST RARA Mobili	Characteristic	524.57	470.06	66.89	1337.73	0.351
Concio 3	108	J[727]	ST RARA Mobili	Characteristic	604.87	542.02	66.89	1337.73	0.405
Concio 3	109	I[727]	ST RARA Mobili	Characteristic	685.57	614.33	66.89	1337.73	0.459
Concio 3	109	J[728]	ST RARA Mobili	Characteristic	693.60	621.52	66.89	1337.73	0.465
Concio 4 H=var	110	I[728]	ST RARA Mobili	Characteristic	697.56	610.25	66.89	1337.73	0.456
Concio 4 H=var	110	J[729]	ST RARA Mobili	Characteristic	741.24	447.08	66.89	1337.73	0.334
Concio 4 H=var	111	I[729]	ST RARA Mobili	Characteristic	804.77	485.40	66.89	1337.73	0.363
Concio 4 H=var	111	J[730]	ST RARA Mobili	Characteristic	848.43	389.24	66.89	1337.73	0.291
Concio 4 H=200	112	I[730]	ST RARA Mobili	Characteristic	846.42	388.32	66.89	1337.73	0.290
Concio 4 H=200	112	J[731]	ST RARA Mobili	Characteristic	855.15	392.33	66.89	1337.73	0.293
Concio 4 H=200	113	I[731]	ST RARA Mobili	Characteristic	-788.12	361.57	66.89	1337.73	0.270
Concio 4 H=200	113	J[732]	ST RARA Mobili	Characteristic	-779.39	357.57	66.89	1337.73	0.267

Concio 4 H=var	114	I[732]	ST RARA Mobili	Characteristic	-783.04	359.25	66.89	1337.73	0.269
Concio 4 H=var	114	J[733]	ST RARA Mobili	Characteristic	-739.38	445.97	66.89	1337.73	0.333
Concio 4 H=var	115	I[733]	ST RARA Mobili	Characteristic	-674.03	406.55	66.89	1337.73	0.304
Concio 4 H=var	115	J[734]	ST RARA Mobili	Characteristic	-630.36	551.45	66.89	1337.73	0.412
Concio 5	116	I[734]	ST RARA Mobili	Characteristic	-624.22	559.36	66.89	1337.73	0.418
Concio 5	116	J[735]	ST RARA Mobili	Characteristic	-616.19	552.16	66.89	1337.73	0.413
Concio 5	117	I[735]	ST RARA Mobili	Characteristic	-535.29	479.67	66.89	1337.73	0.359
Concio 5	117	J[736]	ST RARA Mobili	Characteristic	-451.78	404.83	66.89	1337.73	0.303
Concio 5	118	I[736]	ST RARA Mobili	Characteristic	-335.25	300.42	66.89	1337.73	0.225
Concio 5	118	J[737]	ST RARA Mobili	Characteristic	-298.32	267.32	66.89	1337.73	0.200
Concio 6	119	I[737]	ST RARA Mobili	Characteristic	-298.32	262.21	66.89	1003.30	0.261
Concio 6	119	J[738]	ST RARA Mobili	Characteristic	-251.74	221.27	66.89	1003.30	0.221
Concio 6	120	I[738]	ST RARA Mobili	Characteristic	-129.60	113.91	66.89	1003.30	0.114
Concio 6	120	J[739]	ST RARA Mobili	Characteristic	-87.84	77.21	66.89	1003.30	0.077
Concio 6	121	I[739]	ST RARA Mobili	Characteristic	-87.84	77.21	66.89	1003.30	0.077
Concio 6	121	J[740]	ST RARA Mobili	Characteristic	129.59	113.90	66.89	1003.30	0.114
Concio 6	122	I[740]	ST RARA Mobili	Characteristic	251.77	221.29	66.89	1003.30	0.221
Concio 6	122	J[741]	ST RARA Mobili	Characteristic	298.34	262.23	66.89	1003.30	0.261
Concio 5	123	I[741]	ST RARA Mobili	Characteristic	298.34	267.34	66.89	1337.73	0.200
Concio 5	123	J[742]	ST RARA Mobili	Characteristic	335.28	300.44	66.89	1337.73	0.225
Concio 5	124	I[742]	ST RARA Mobili	Characteristic	451.84	404.88	66.89	1337.73	0.303
Concio 5	124	J[743]	ST RARA Mobili	Characteristic	535.35	479.72	66.89	1337.73	0.359
Concio 5	125	I[743]	ST RARA Mobili	Characteristic	616.19	552.16	66.89	1337.73	0.413
Concio 5	125	J[744]	ST RARA Mobili	Characteristic	624.22	559.36	66.89	1337.73	0.418
Concio 4 H=var	126	I[744]	ST RARA Mobili	Characteristic	630.36	551.46	66.89	1337.73	0.412
Concio 4 H=var	126	J[745]	ST RARA Mobili	Characteristic	674.04	406.55	66.89	1337.73	0.304
Concio 4 H=var	127	I[745]	ST RARA Mobili	Characteristic	739.22	445.87	66.89	1337.73	0.333
Concio 4 H=var	127	J[746]	ST RARA Mobili	Characteristic	782.88	359.17	66.89	1337.73	0.268
Concio 4 H=200	128	I[746]	ST RARA Mobili	Characteristic	779.22	357.49	66.89	1337.73	0.267
Concio 4 H=200	128	J[747]	ST RARA Mobili	Characteristic	787.95	361.50	66.89	1337.73	0.270
Concio 4 H=200	129	I[747]	ST RARA Mobili	Characteristic	-855.35	392.42	66.89	1337.73	0.293
Concio 4 H=200	129	J[748]	ST RARA Mobili	Characteristic	-846.62	388.41	66.89	1337.73	0.290
Concio 4 H=var	130	I[748]	ST RARA Mobili	Characteristic	-848.62	389.33	66.89	1337.73	0.291
Concio 4 H=var	130	J[749]	ST RARA Mobili	Characteristic	-804.96	485.52	66.89	1337.73	0.363
Concio 4 H=var	131	I[749]	ST RARA Mobili	Characteristic	-741.26	447.10	66.89	1337.73	0.334
Concio 4 H=var	131	J[750]	ST RARA Mobili	Characteristic	-697.58	610.27	66.89	1337.73	0.456
Concio 3	132	I[750]	ST RARA Mobili	Characteristic	-693.62	621.54	66.89	1337.73	0.465
Concio 3	132	J[751]	ST RARA Mobili	Characteristic	-685.59	614.35	66.89	1337.73	0.459
Concio 3	133	I[751]	ST RARA Mobili	Characteristic	-604.84	541.99	66.89	1337.73	0.405
Concio 3	133	J[752]	ST RARA Mobili	Characteristic	-524.54	470.04	66.89	1337.73	0.351
Concio 3	134	I[752]	ST RARA Mobili	Characteristic	-407.71	365.34	66.89	1337.73	0.273
Concio 3	134	J[753]	ST RARA Mobili	Characteristic	-375.59	336.56	66.89	1337.73	0.252
Concio 2	135	I[753]	ST RARA Mobili	Characteristic	-375.59	332.76	66.89	1003.30	0.332
Concio 2	135	J[754]	ST RARA Mobili	Characteristic	-327.41	290.07	66.89	1003.30	0.289
Concio 2	136	I[754]	ST RARA Mobili	Characteristic	-204.47	181.16	66.89	1003.30	0.181
Concio 2	136	J[755]	ST RARA Mobili	Characteristic	-129.81	115.01	66.89	1003.30	0.115
Concio 2	137	I[755]	ST RARA Mobili	Characteristic	179.07	158.65	66.89	1003.30	0.158
Concio 2	137	J[756]	ST RARA Mobili	Characteristic	211.19	187.11	66.89	1003.30	0.186
Concio 1	138	I[756]	ST RARA Mobili	Characteristic	211.19	191.44	66.89	1337.73	0.143
Concio 1	138	J[757]	ST RARA Mobili	Characteristic	259.37	235.12	66.89	1337.73	0.176
Concio 1	139	I[757]	ST RARA Mobili	Characteristic	394.94	358.01	66.89	1337.73	0.268
Concio 1	139	J[758]	ST RARA Mobili	Characteristic	475.24	430.81	66.89	1337.73	0.322
Concio 1	140	I[758]	ST RARA Mobili	Characteristic	-12.85	11.65	66.89	1337.73	0.009
Concio 1	140	J[759]	ST RARA Mobili	Characteristic	0.00	0.00	66.89	1337.73	0.000
Concio 1	201	I[760]	ST RARA Mobili	Characteristic	0.00	0.00	66.89	1337.73	0.000
Concio 1	201	J[761]	ST RARA Mobili	Characteristic	333.00	303.06	66.89	1337.73	0.227
Concio 1	202	I[761]	ST RARA Mobili	Characteristic	-911.98	829.99	66.89	1337.73	0.620
Concio 1	202	J[762]	ST RARA Mobili	Characteristic	-426.27	387.95	66.89	1337.73	0.290
Concio 1	203	I[762]	ST RARA Mobili	Characteristic	-631.53	574.75	66.89	1337.73	0.430

Concio 1	203	J[763]	ST RARA Mobili	Characteristic	-374.14	340.50	66.89	1337.73	0.255
Concio 2	204	I[763]	ST RARA Mobili	Characteristic	-374.14	332.89	66.89	1003.30	0.332
Concio 2	204	J[764]	ST RARA Mobili	Characteristic	455.17	404.99	66.89	1003.30	0.404
Concio 2	205	I[764]	ST RARA Mobili	Characteristic	-466.06	414.68	66.89	1003.30	0.413
Concio 2	205	J[765]	ST RARA Mobili	Characteristic	607.50	540.53	66.89	1003.30	0.539
Concio 2	206	I[765]	ST RARA Mobili	Characteristic	367.67	327.13	66.89	1003.30	0.326
Concio 2	206	J[766]	ST RARA Mobili	Characteristic	606.67	539.79	66.89	1003.30	0.538
Concio 3	207	I[766]	ST RARA Mobili	Characteristic	606.67	546.23	66.89	1337.73	0.408
Concio 3	207	J[767]	ST RARA Mobili	Characteristic	772.82	695.83	66.89	1337.73	0.520
Concio 3	208	I[767]	ST RARA Mobili	Characteristic	568.87	512.20	66.89	1337.73	0.383
Concio 3	208	J[768]	ST RARA Mobili	Characteristic	977.60	880.22	66.89	1337.73	0.658
Concio 3	209	I[768]	ST RARA Mobili	Characteristic	824.18	742.08	66.89	1337.73	0.555
Concio 3	209	J[769]	ST RARA Mobili	Characteristic	862.50	776.58	66.89	1337.73	0.581
Concio 4 H=var	210	I[769]	ST RARA Mobili	Characteristic	855.75	754.22	66.89	1337.73	0.564
Concio 4 H=var	210	J[770]	ST RARA Mobili	Characteristic	1086.50	662.07	66.89	1337.73	0.495
Concio 4 H=var	211	I[770]	ST RARA Mobili	Characteristic	1001.82	610.48	66.89	1337.73	0.456
Concio 4 H=var	211	J[771]	ST RARA Mobili	Characteristic	1237.27	574.61	66.89	1337.73	0.430
Concio 4 H=200	212	I[771]	ST RARA Mobili	Characteristic	1237.18	574.57	66.89	1337.73	0.430
Concio 4 H=200	212	J[772]	ST RARA Mobili	Characteristic	1282.21	595.48	66.89	1337.73	0.445
Concio 4 H=200	213	I[772]	ST RARA Mobili	Characteristic	-1213.54	563.59	66.89	1337.73	0.421
Concio 4 H=200	213	J[773]	ST RARA Mobili	Characteristic	-1168.54	542.69	66.89	1337.73	0.406
Concio 4 H=var	214	I[773]	ST RARA Mobili	Characteristic	-1168.48	542.66	66.89	1337.73	0.406
Concio 4 H=var	214	J[774]	ST RARA Mobili	Characteristic	-933.04	568.56	66.89	1337.73	0.425
Concio 4 H=var	215	I[774]	ST RARA Mobili	Characteristic	-1019.25	621.10	66.89	1337.73	0.464
Concio 4 H=var	215	J[775]	ST RARA Mobili	Characteristic	-789.19	695.56	66.89	1337.73	0.520
Concio 5	216	I[775]	ST RARA Mobili	Characteristic	-796.18	716.86	66.89	1337.73	0.536
Concio 5	216	J[776]	ST RARA Mobili	Characteristic	-757.97	682.47	66.89	1337.73	0.510
Concio 5	217	I[776]	ST RARA Mobili	Characteristic	-916.51	825.21	66.89	1337.73	0.617
Concio 5	217	J[777]	ST RARA Mobili	Characteristic	-493.45	444.29	66.89	1337.73	0.332
Concio 5	218	I[777]	ST RARA Mobili	Characteristic	-705.96	635.64	66.89	1337.73	0.475
Concio 5	218	J[778]	ST RARA Mobili	Characteristic	-515.42	464.08	66.89	1337.73	0.347
Concio 6	219	I[778]	ST RARA Mobili	Characteristic	-515.42	454.82	66.89	1003.30	0.453
Concio 6	219	J[779]	ST RARA Mobili	Characteristic	382.48	337.51	66.89	1003.30	0.336
Concio 6	220	I[779]	ST RARA Mobili	Characteristic	-536.58	473.48	66.89	1003.30	0.472
Concio 6	220	J[780]	ST RARA Mobili	Characteristic	-319.78	282.18	66.89	1003.30	0.281
Concio 6	221	I[780]	ST RARA Mobili	Characteristic	-319.78	282.18	66.89	1003.30	0.281
Concio 6	221	J[781]	ST RARA Mobili	Characteristic	536.44	473.37	66.89	1003.30	0.472
Concio 6	222	I[781]	ST RARA Mobili	Characteristic	-382.63	337.64	66.89	1003.30	0.337
Concio 6	222	J[782]	ST RARA Mobili	Characteristic	515.28	454.69	66.89	1003.30	0.453
Concio 5	223	I[782]	ST RARA Mobili	Characteristic	515.28	463.95	66.89	1337.73	0.347
Concio 5	223	J[783]	ST RARA Mobili	Characteristic	705.84	635.53	66.89	1337.73	0.475
Concio 5	224	I[783]	ST RARA Mobili	Characteristic	493.36	444.21	66.89	1337.73	0.332
Concio 5	224	J[784]	ST RARA Mobili	Characteristic	916.33	825.05	66.89	1337.73	0.617
Concio 5	225	I[784]	ST RARA Mobili	Characteristic	757.80	682.31	66.89	1337.73	0.510
Concio 5	225	J[785]	ST RARA Mobili	Characteristic	796.00	716.70	66.89	1337.73	0.536
Concio 4 H=var	226	I[785]	ST RARA Mobili	Characteristic	789.02	695.40	66.89	1337.73	0.520
Concio 4 H=var	226	J[786]	ST RARA Mobili	Characteristic	1019.12	621.02	66.89	1337.73	0.464
Concio 4 H=var	227	I[786]	ST RARA Mobili	Characteristic	932.83	568.44	66.89	1337.73	0.425
Concio 4 H=var	227	J[787]	ST RARA Mobili	Characteristic	1168.25	542.56	66.89	1337.73	0.406
Concio 4 H=200	228	I[787]	ST RARA Mobili	Characteristic	1168.31	542.58	66.89	1337.73	0.406
Concio 4 H=200	228	J[788]	ST RARA Mobili	Characteristic	1213.31	563.48	66.89	1337.73	0.421
Concio 4 H=200	229	I[788]	ST RARA Mobili	Characteristic	-1282.45	595.59	66.89	1337.73	0.445
Concio 4 H=200	229	J[789]	ST RARA Mobili	Characteristic	-1237.42	574.68	66.89	1337.73	0.430
Concio 4 H=var	230	I[789]	ST RARA Mobili	Characteristic	-1237.50	574.71	66.89	1337.73	0.430
Concio 4 H=var	230	J[790]	ST RARA Mobili	Characteristic	-1002.03	610.61	66.89	1337.73	0.456
Concio 4 H=var	231	I[790]	ST RARA Mobili	Characteristic	-1086.64	662.16	66.89	1337.73	0.495
Concio 4 H=var	231	J[791]	ST RARA Mobili	Characteristic	-855.93	754.38	66.89	1337.73	0.564
Concio 3	232	I[791]	ST RARA Mobili	Characteristic	-862.69	776.75	66.89	1337.73	0.581
Concio 3	232	J[792]	ST RARA Mobili	Characteristic	-824.37	742.25	66.89	1337.73	0.555

Concio 3	233	I[792]	ST RARA Mobili	Characteristic	-977.79	880.38	66.89	1337.73	0.658
Concio 3	233	J[793]	ST RARA Mobili	Characteristic	-568.96	512.29	66.89	1337.73	0.383
Concio 3	234	I[793]	ST RARA Mobili	Characteristic	-772.96	695.96	66.89	1337.73	0.520
Concio 3	234	J[794]	ST RARA Mobili	Characteristic	-606.84	546.39	66.89	1337.73	0.408
Concio 2	235	I[794]	ST RARA Mobili	Characteristic	-606.84	539.94	66.89	1003.30	0.538
Concio 2	235	J[795]	ST RARA Mobili	Characteristic	-367.84	327.29	66.89	1003.30	0.326
Concio 2	236	I[795]	ST RARA Mobili	Characteristic	-607.72	540.72	66.89	1003.30	0.539
Concio 2	236	J[796]	ST RARA Mobili	Characteristic	465.85	414.49	66.89	1003.30	0.413
Concio 2	237	I[796]	ST RARA Mobili	Characteristic	-455.35	405.15	66.89	1003.30	0.404
Concio 2	237	J[797]	ST RARA Mobili	Characteristic	373.96	332.73	66.89	1003.30	0.332
Concio 1	238	I[797]	ST RARA Mobili	Characteristic	373.96	340.34	66.89	1337.73	0.254
Concio 1	238	J[798]	ST RARA Mobili	Characteristic	631.33	574.57	66.89	1337.73	0.430
Concio 1	239	I[798]	ST RARA Mobili	Characteristic	426.11	387.80	66.89	1337.73	0.290
Concio 1	239	J[799]	ST RARA Mobili	Characteristic	911.70	829.73	66.89	1337.73	0.620
Concio 1	240	I[799]	ST RARA Mobili	Characteristic	-333.00	303.06	66.89	1337.73	0.227
Concio 1	240	J[800]	ST RARA Mobili	Characteristic	0.00	0.00	66.89	1337.73	0.000
Concio 1	301	I[801]	ST RARA Mobili	Characteristic	0.00	0.00	66.89	1337.73	0.000
Concio 1	301	J[802]	ST RARA Mobili	Characteristic	333.00	303.06	66.89	1337.73	0.227
Concio 1	302	I[802]	ST RARA Mobili	Characteristic	-912.61	830.56	66.89	1337.73	0.621
Concio 1	302	J[803]	ST RARA Mobili	Characteristic	-426.90	388.52	66.89	1337.73	0.290
Concio 1	303	I[803]	ST RARA Mobili	Characteristic	-631.90	575.09	66.89	1337.73	0.430
Concio 1	303	J[804]	ST RARA Mobili	Characteristic	-374.50	340.83	66.89	1337.73	0.255
Concio 2	304	I[804]	ST RARA Mobili	Characteristic	-374.50	333.22	66.89	1003.30	0.332
Concio 2	304	J[805]	ST RARA Mobili	Characteristic	455.52	405.30	66.89	1003.30	0.404
Concio 2	305	I[805]	ST RARA Mobili	Characteristic	-466.12	414.73	66.89	1003.30	0.413
Concio 2	305	J[806]	ST RARA Mobili	Characteristic	607.57	540.59	66.89	1003.30	0.539
Concio 2	306	I[806]	ST RARA Mobili	Characteristic	368.17	327.58	66.89	1003.30	0.327
Concio 2	306	J[807]	ST RARA Mobili	Characteristic	607.17	540.23	66.89	1003.30	0.538
Concio 3	307	I[807]	ST RARA Mobili	Characteristic	607.17	546.69	66.89	1337.73	0.409
Concio 3	307	J[808]	ST RARA Mobili	Characteristic	773.32	696.29	66.89	1337.73	0.520
Concio 3	308	I[808]	ST RARA Mobili	Characteristic	569.65	512.90	66.89	1337.73	0.383
Concio 3	308	J[809]	ST RARA Mobili	Characteristic	978.38	880.92	66.89	1337.73	0.659
Concio 3	309	I[809]	ST RARA Mobili	Characteristic	825.11	742.92	66.89	1337.73	0.555
Concio 3	309	J[810]	ST RARA Mobili	Characteristic	863.43	777.42	66.89	1337.73	0.581
Concio 4 H=var	310	I[810]	ST RARA Mobili	Characteristic	857.31	755.60	66.89	1337.73	0.565
Concio 4 H=var	310	J[811]	ST RARA Mobili	Characteristic	1088.06	663.03	66.89	1337.73	0.496
Concio 4 H=var	311	I[811]	ST RARA Mobili	Characteristic	1003.78	611.67	66.89	1337.73	0.457
Concio 4 H=var	311	J[812]	ST RARA Mobili	Characteristic	1239.23	575.52	66.89	1337.73	0.430
Concio 4 H=200	312	I[812]	ST RARA Mobili	Characteristic	1238.43	575.15	66.89	1337.73	0.430
Concio 4 H=200	312	J[813]	ST RARA Mobili	Characteristic	1283.47	596.06	66.89	1337.73	0.446
Concio 4 H=200	313	I[813]	ST RARA Mobili	Characteristic	-1214.78	564.16	66.89	1337.73	0.422
Concio 4 H=200	313	J[814]	ST RARA Mobili	Characteristic	-1169.79	543.27	66.89	1337.73	0.406
Concio 4 H=var	314	I[814]	ST RARA Mobili	Characteristic	-1170.47	543.58	66.89	1337.73	0.406
Concio 4 H=var	314	J[815]	ST RARA Mobili	Characteristic	-935.03	569.78	66.89	1337.73	0.426
Concio 4 H=var	315	I[815]	ST RARA Mobili	Characteristic	-1020.91	622.11	66.89	1337.73	0.465
Concio 4 H=var	315	J[816]	ST RARA Mobili	Characteristic	-790.86	697.03	66.89	1337.73	0.521
Concio 5	316	I[816]	ST RARA Mobili	Characteristic	-797.10	717.70	66.89	1337.73	0.537
Concio 5	316	J[817]	ST RARA Mobili	Characteristic	-758.90	683.30	66.89	1337.73	0.511
Concio 5	317	I[817]	ST RARA Mobili	Characteristic	-917.31	825.93	66.89	1337.73	0.617
Concio 5	317	J[818]	ST RARA Mobili	Characteristic	-494.25	445.01	66.89	1337.73	0.333
Concio 5	318	I[818]	ST RARA Mobili	Characteristic	-706.41	636.04	66.89	1337.73	0.475
Concio 5	318	J[819]	ST RARA Mobili	Characteristic	-515.86	464.48	66.89	1337.73	0.347
Concio 6	319	I[819]	ST RARA Mobili	Characteristic	-515.86	455.21	66.89	1003.30	0.454
Concio 6	319	J[820]	ST RARA Mobili	Characteristic	382.93	337.90	66.89	1003.30	0.337
Concio 6	320	I[820]	ST RARA Mobili	Characteristic	-536.58	473.49	66.89	1003.30	0.472
Concio 6	320	J[821]	ST RARA Mobili	Characteristic	-319.79	282.18	66.89	1003.30	0.281
Concio 6	321	I[821]	ST RARA Mobili	Characteristic	-319.79	282.18	66.89	1003.30	0.281
Concio 6	321	J[822]	ST RARA Mobili	Characteristic	536.44	473.37	66.89	1003.30	0.472
Concio 6	322	I[822]	ST RARA Mobili	Characteristic	-383.09	338.04	66.89	1003.30	0.337

Concio 6	322	J[823]	ST RARA Mobili	Characteristic	515.74	455.10	66.89	1003.30	0.454
Concio 5	323	I[823]	ST RARA Mobili	Characteristic	515.74	464.36	66.89	1337.73	0.347
Concio 5	323	J[824]	ST RARA Mobili	Characteristic	706.30	635.94	66.89	1337.73	0.475
Concio 5	324	I[824]	ST RARA Mobili	Characteristic	494.14	444.92	66.89	1337.73	0.333
Concio 5	324	J[825]	ST RARA Mobili	Characteristic	917.12	825.76	66.89	1337.73	0.617
Concio 5	325	I[825]	ST RARA Mobili	Characteristic	758.71	683.13	66.89	1337.73	0.511
Concio 5	325	J[826]	ST RARA Mobili	Characteristic	796.91	717.53	66.89	1337.73	0.536
Concio 4 H=var	326	I[826]	ST RARA Mobili	Characteristic	790.66	696.85	66.89	1337.73	0.521
Concio 4 H=var	326	J[827]	ST RARA Mobili	Characteristic	1020.77	622.02	66.89	1337.73	0.465
Concio 4 H=var	327	I[827]	ST RARA Mobili	Characteristic	934.87	569.68	66.89	1337.73	0.426
Concio 4 H=var	327	J[828]	ST RARA Mobili	Characteristic	1170.29	543.50	66.89	1337.73	0.406
Concio 4 H=200	328	I[828]	ST RARA Mobili	Characteristic	1169.61	543.19	66.89	1337.73	0.406
Concio 4 H=200	328	J[829]	ST RARA Mobili	Characteristic	1214.61	564.08	66.89	1337.73	0.422
Concio 4 H=200	329	I[829]	ST RARA Mobili	Characteristic	-1283.65	596.15	66.89	1337.73	0.446
Concio 4 H=200	329	J[830]	ST RARA Mobili	Characteristic	-1238.62	575.24	66.89	1337.73	0.430
Concio 4 H=var	330	I[830]	ST RARA Mobili	Characteristic	-1239.42	575.60	66.89	1337.73	0.430
Concio 4 H=var	330	J[831]	ST RARA Mobili	Characteristic	-1003.95	611.78	66.89	1337.73	0.457
Concio 4 H=var	331	I[831]	ST RARA Mobili	Characteristic	-1088.23	663.13	66.89	1337.73	0.496
Concio 4 H=var	331	J[832]	ST RARA Mobili	Characteristic	-857.52	755.78	66.89	1337.73	0.565
Concio 3	332	I[832]	ST RARA Mobili	Characteristic	-863.64	777.61	66.89	1337.73	0.581
Concio 3	332	J[833]	ST RARA Mobili	Characteristic	-825.32	743.10	66.89	1337.73	0.555
Concio 3	333	I[833]	ST RARA Mobili	Characteristic	-978.59	881.11	66.89	1337.73	0.659
Concio 3	333	J[834]	ST RARA Mobili	Characteristic	-569.77	513.01	66.89	1337.73	0.383
Concio 3	334	I[834]	ST RARA Mobili	Characteristic	-773.45	696.41	66.89	1337.73	0.521
Concio 3	334	J[835]	ST RARA Mobili	Characteristic	-607.33	546.83	66.89	1337.73	0.409
Concio 2	335	I[835]	ST RARA Mobili	Characteristic	-607.33	540.38	66.89	1003.30	0.539
Concio 2	335	J[836]	ST RARA Mobili	Characteristic	-368.33	327.72	66.89	1003.30	0.327
Concio 2	336	I[836]	ST RARA Mobili	Characteristic	-607.77	540.77	66.89	1003.30	0.539
Concio 2	336	J[837]	ST RARA Mobili	Characteristic	465.90	414.54	66.89	1003.30	0.413
Concio 2	337	I[837]	ST RARA Mobili	Characteristic	-455.71	405.47	66.89	1003.30	0.404
Concio 2	337	J[838]	ST RARA Mobili	Characteristic	374.33	333.06	66.89	1003.30	0.332
Concio 1	338	I[838]	ST RARA Mobili	Characteristic	374.33	340.68	66.89	1337.73	0.255
Concio 1	338	J[839]	ST RARA Mobili	Characteristic	631.69	574.90	66.89	1337.73	0.430
Concio 1	339	I[839]	ST RARA Mobili	Characteristic	426.74	388.37	66.89	1337.73	0.290
Concio 1	339	J[840]	ST RARA Mobili	Characteristic	912.33	830.31	66.89	1337.73	0.621
Concio 1	340	I[840]	ST RARA Mobili	Characteristic	-333.00	303.06	66.89	1337.73	0.227
Concio 1	340	J[841]	ST RARA Mobili	Characteristic	0.00	0.00	66.89	1337.73	0.000
Concio 1	401	I[842]	ST RARA Mobili	Characteristic	0.00	0.00	66.89	1337.73	0.000
Concio 1	401	J[843]	ST RARA Mobili	Characteristic	12.85	11.65	66.89	1337.73	0.009
Concio 1	402	I[843]	ST RARA Mobili	Characteristic	-473.71	429.42	66.89	1337.73	0.321
Concio 1	402	J[844]	ST RARA Mobili	Characteristic	-393.41	356.63	66.89	1337.73	0.267
Concio 1	403	I[844]	ST RARA Mobili	Characteristic	-259.09	234.87	66.89	1337.73	0.176
Concio 1	403	J[845]	ST RARA Mobili	Characteristic	-210.91	191.20	66.89	1337.73	0.143
Concio 2	404	I[845]	ST RARA Mobili	Characteristic	-210.91	186.86	66.89	1003.30	0.186
Concio 2	404	J[846]	ST RARA Mobili	Characteristic	-178.79	158.41	66.89	1003.30	0.158
Concio 2	405	I[846]	ST RARA Mobili	Characteristic	129.60	114.82	66.89	1003.30	0.114
Concio 2	405	J[847]	ST RARA Mobili	Characteristic	204.25	180.96	66.89	1003.30	0.180
Concio 2	406	I[847]	ST RARA Mobili	Characteristic	326.82	289.55	66.89	1003.30	0.289
Concio 2	406	J[848]	ST RARA Mobili	Characteristic	375.00	332.24	66.89	1003.30	0.331
Concio 3	407	I[848]	ST RARA Mobili	Characteristic	375.00	336.03	66.89	1337.73	0.251
Concio 3	407	J[849]	ST RARA Mobili	Characteristic	407.12	364.81	66.89	1337.73	0.273
Concio 3	408	I[849]	ST RARA Mobili	Characteristic	522.71	468.40	66.89	1337.73	0.350
Concio 3	408	J[850]	ST RARA Mobili	Characteristic	603.01	540.35	66.89	1337.73	0.404
Concio 3	409	I[850]	ST RARA Mobili	Characteristic	683.25	612.25	66.89	1337.73	0.458
Concio 3	409	J[851]	ST RARA Mobili	Characteristic	691.28	619.45	66.89	1337.73	0.463
Concio 4 H=var	410	I[851]	ST RARA Mobili	Characteristic	695.63	608.56	66.89	1337.73	0.455
Concio 4 H=var	410	J[852]	ST RARA Mobili	Characteristic	739.30	445.92	66.89	1337.73	0.333
Concio 4 H=var	411	I[852]	ST RARA Mobili	Characteristic	802.65	484.13	66.89	1337.73	0.362
Concio 4 H=var	411	J[853]	ST RARA Mobili	Characteristic	846.31	388.27	66.89	1337.73	0.290

Concio 4 H=200	412	I[853]	ST RARA Mobili	Characteristic	844.02	387.22	66.89	1337.73	0.289
Concio 4 H=200	412	J[854]	ST RARA Mobili	Characteristic	852.75	391.23	66.89	1337.73	0.292
Concio 4 H=200	413	I[854]	ST RARA Mobili	Characteristic	-785.66	360.45	66.89	1337.73	0.269
Concio 4 H=200	413	J[855]	ST RARA Mobili	Characteristic	-776.93	356.44	66.89	1337.73	0.266
Concio 4 H=var	414	I[855]	ST RARA Mobili	Characteristic	-780.88	358.25	66.89	1337.73	0.268
Concio 4 H=var	414	J[856]	ST RARA Mobili	Characteristic	-737.22	444.66	66.89	1337.73	0.332
Concio 4 H=var	415	I[856]	ST RARA Mobili	Characteristic	-672.16	405.42	66.89	1337.73	0.303
Concio 4 H=var	415	J[857]	ST RARA Mobili	Characteristic	-628.48	549.81	66.89	1337.73	0.411
Concio 5	416	I[857]	ST RARA Mobili	Characteristic	-621.95	557.32	66.89	1337.73	0.417
Concio 5	416	J[858]	ST RARA Mobili	Characteristic	-613.92	550.12	66.89	1337.73	0.411
Concio 5	417	I[858]	ST RARA Mobili	Characteristic	-533.53	478.09	66.89	1337.73	0.357
Concio 5	417	J[859]	ST RARA Mobili	Characteristic	-450.02	403.25	66.89	1337.73	0.301
Concio 5	418	I[859]	ST RARA Mobili	Characteristic	-334.81	300.02	66.89	1337.73	0.224
Concio 5	418	J[860]	ST RARA Mobili	Characteristic	-297.87	266.92	66.89	1337.73	0.200
Concio 6	419	I[860]	ST RARA Mobili	Characteristic	-297.87	261.82	66.89	1003.30	0.261
Concio 6	419	J[861]	ST RARA Mobili	Characteristic	-251.30	220.88	66.89	1003.30	0.220
Concio 6	420	I[861]	ST RARA Mobili	Characteristic	-129.60	113.91	66.89	1003.30	0.114
Concio 6	420	J[862]	ST RARA Mobili	Characteristic	-87.84	77.21	66.89	1003.30	0.077
Concio 6	421	I[862]	ST RARA Mobili	Characteristic	-87.84	77.21	66.89	1003.30	0.077
Concio 6	421	J[863]	ST RARA Mobili	Characteristic	129.59	113.90	66.89	1003.30	0.114
Concio 6	422	I[863]	ST RARA Mobili	Characteristic	251.31	220.89	66.89	1003.30	0.220
Concio 6	422	J[864]	ST RARA Mobili	Characteristic	297.89	261.83	66.89	1003.30	0.261
Concio 5	423	I[864]	ST RARA Mobili	Characteristic	297.89	266.93	66.89	1337.73	0.200
Concio 5	423	J[865]	ST RARA Mobili	Characteristic	334.82	300.03	66.89	1337.73	0.224
Concio 5	424	I[865]	ST RARA Mobili	Characteristic	450.04	403.27	66.89	1337.73	0.301
Concio 5	424	J[866]	ST RARA Mobili	Characteristic	533.55	478.11	66.89	1337.73	0.357
Concio 5	425	I[866]	ST RARA Mobili	Characteristic	613.91	550.12	66.89	1337.73	0.411
Concio 5	425	J[867]	ST RARA Mobili	Characteristic	621.94	557.31	66.89	1337.73	0.417
Concio 4 H=var	426	I[867]	ST RARA Mobili	Characteristic	628.47	549.80	66.89	1337.73	0.411
Concio 4 H=var	426	J[868]	ST RARA Mobili	Characteristic	672.14	405.41	66.89	1337.73	0.303
Concio 4 H=var	427	I[868]	ST RARA Mobili	Characteristic	737.15	444.62	66.89	1337.73	0.332
Concio 4 H=var	427	J[869]	ST RARA Mobili	Characteristic	780.81	358.22	66.89	1337.73	0.268
Concio 4 H=200	428	I[869]	ST RARA Mobili	Characteristic	776.87	356.41	66.89	1337.73	0.266
Concio 4 H=200	428	J[870]	ST RARA Mobili	Characteristic	785.60	360.42	66.89	1337.73	0.269
Concio 4 H=200	429	I[870]	ST RARA Mobili	Characteristic	-852.85	391.27	66.89	1337.73	0.292
Concio 4 H=200	429	J[871]	ST RARA Mobili	Characteristic	-844.12	387.27	66.89	1337.73	0.289
Concio 4 H=var	430	I[871]	ST RARA Mobili	Characteristic	-846.41	388.32	66.89	1337.73	0.290
Concio 4 H=var	430	J[872]	ST RARA Mobili	Characteristic	-802.75	484.19	66.89	1337.73	0.362
Concio 4 H=var	431	I[872]	ST RARA Mobili	Characteristic	-739.35	445.94	66.89	1337.73	0.333
Concio 4 H=var	431	J[873]	ST RARA Mobili	Characteristic	-695.67	608.59	66.89	1337.73	0.455
Concio 3	432	I[873]	ST RARA Mobili	Characteristic	-691.31	619.48	66.89	1337.73	0.463
Concio 3	432	J[874]	ST RARA Mobili	Characteristic	-683.28	612.28	66.89	1337.73	0.458
Concio 3	433	I[874]	ST RARA Mobili	Characteristic	-603.02	540.36	66.89	1337.73	0.404
Concio 3	433	J[875]	ST RARA Mobili	Characteristic	-522.72	468.40	66.89	1337.73	0.350
Concio 3	434	I[875]	ST RARA Mobili	Characteristic	-407.12	364.82	66.89	1337.73	0.273
Concio 3	434	J[876]	ST RARA Mobili	Characteristic	-375.00	336.03	66.89	1337.73	0.251
Concio 2	435	I[876]	ST RARA Mobili	Characteristic	-375.00	332.24	66.89	1003.30	0.331
Concio 2	435	J[877]	ST RARA Mobili	Characteristic	-326.82	289.56	66.89	1003.30	0.289
Concio 2	436	I[877]	ST RARA Mobili	Characteristic	-204.24	180.95	66.89	1003.30	0.180
Concio 2	436	J[878]	ST RARA Mobili	Characteristic	-129.58	114.81	66.89	1003.30	0.114
Concio 2	437	I[878]	ST RARA Mobili	Characteristic	178.79	158.40	66.89	1003.30	0.158
Concio 2	437	J[879]	ST RARA Mobili	Characteristic	210.91	186.86	66.89	1003.30	0.186
Concio 1	438	I[879]	ST RARA Mobili	Characteristic	210.91	191.19	66.89	1337.73	0.143
Concio 1	438	J[880]	ST RARA Mobili	Characteristic	259.09	234.87	66.89	1337.73	0.176
Concio 1	439	I[880]	ST RARA Mobili	Characteristic	393.42	356.64	66.89	1337.73	0.267
Concio 1	439	J[881]	ST RARA Mobili	Characteristic	473.72	429.43	66.89	1337.73	0.321
Concio 1	440	I[881]	ST RARA Mobili	Characteristic	-12.85	11.65	66.89	1337.73	0.009
Concio 1	440	J[882]	ST RARA Mobili	Characteristic	0.00	0.00	66.89	1337.73	0.000

9.3 STATO LIMITE ULTIMO DI FATICA – RESISTENZA AL TAGLIO LONGITUDINALE

Si effettuano le verifiche allo stato limite ultimo per fatica a "danneggiamento accettabile" dei connettori trave-soletta.
L'impalcato si considera caricato secondo il modello di carico a fatica 3, applicato sulla corsia lenta (ved. 3.4.2).
Il coefficiente parziale di sicurezza per le verifiche dei connettori è pari a:

$\gamma_{Mf,s} = 1$ EN 1994-1-1:2005; § 6.8.2

I coefficienti di equivalenza assumono i seguenti valori:

$\lambda_{v1} = 1.55$: EN 1994-2:2005, § 6.8.6.2(4)

$$\lambda_{v2} = \frac{Q_{M1}}{Q_0}\left(\frac{N_{obs}}{N_0}\right)^{1/8} = 1.10$$ EN 1993-2, § 9.5.2

Q_{M1} = 440 kN: massa complessiva a pieno carico autotreno o autoarticolato a 5 assi
Q_0 = 480 kN
N_{obs} = 2 x 10^6 : flusso annuo di veicoli pesanti sulla corsia lenta per strade ed autostrade caratterizzate da intenso traffico pesante.
N_0 = 2 x 10^6

$$\lambda_{v3} = \left(\frac{t_{ld}}{100}\right)^{1/8} = 0.871$$

t_{ld} = 50 anni: vita di progetto del ponte

λ_{v4} = 1: fattore per traffico pesante sulle altre corsie

$$\lambda_v = \lambda_{v1} \cdot \lambda_{v2} \cdot \lambda_{v3} \cdot \lambda_{v4} = 1.484$$

Seguono i tabulati di calcolo per ogni asta considerata, per le combinazioni di carichi più gravose.
Dati tabulati:

Elem property: nome delle caratteristiche geometriche dell'elemento
Elem: numero dell'elemento
Position: nodo iniziale (I) o finale (J) dell'elemento
Lcom: combinazione di carico più gravosa
Type: sollecitazione (massima o minima)
lamda_v: coefficienti di danno equivalente
Delta_Tau: ampiezza delle tensioni tangenziali per il carico da fatica
Delta_Tau_E,2 = Lamda_v x Delta_Tau: ampiezza costante delle tensioni tangenziali relative a 2x10^6 cicli di carico all'anno
Delta_Tau_c: tensione tangenziale limite (resistenza a fatica connettori a piolo)

Verification Ratio = $\gamma_{Mf,s}\frac{\text{Delta\_Tau\_E\_2}}{\text{Delta\_Tau\_c}}$ verificato se ≤ 1

Elem property	Elem number	Position	Lcom	Type	Lamda_v	Delta_Tau (kN/m^2)	Delta_Tau_E_2 (kN/m^2)	Delta_Tau_c (kN/m^2)	Verif. Ratio
Concio 1	101	I[719]	ST FATICA DANN.ACC.	FX-MAX	1.484	0.000	0.000	90000.000	0.000
Concio 1	101	J[720]	ST FATICA DANN.ACC.	FX-MAX	1.484	1223.433	1815.927	90000.000	0.020
Concio 1	102	I[720]	ST FATICA DANN.ACC.	FZ-MIN	1.484	23641.749	35091.181	90000.000	0.390
Concio 1	102	J[721]	ST FATICA DANN.ACC.	FZ-MIN	1.484	15995.296	23741.637	90000.000	0.264
Concio 1	103	I[721]	ST FATICA DANN.ACC.	MZ-MIN	1.484	12003.246	17816.283	90000.000	0.198
Concio 1	103	J[722]	ST FATICA DANN.ACC.	FZ-MIN	1.484	7352.018	10912.517	90000.000	0.121
Concio 2	104	I[722]	ST FATICA DANN.ACC.	FZ-MIN	1.484	9580.593	14220.366	90000.000	0.158
Concio 2	104	J[723]	ST FATICA DANN.ACC.	MY-MIN	1.484	9014.593	13380.259	90000.000	0.149

Concio 2	105	I[723]	ST FATICA DANN.ACC.	MY-MIN	1.484	7593.876	11271.504	90000.000	0.125
Concio 2	105	J[724]	ST FATICA DANN.ACC.	MZ-MIN	1.484	17840.275	26480.119	90000.000	0.294
Concio 2	106	I[724]	ST FATICA DANN.ACC.	FX-MIN	1.484	21887.336	32487.125	90000.000	0.361
Concio 2	106	J[725]	ST FATICA DANN.ACC.	FX-MIN	1.484	27865.903	41361.045	90000.000	0.460
Concio 3	107	I[725]	ST FATICA DANN.ACC.	FX-MIN	1.484	21137.950	31374.821	90000.000	0.349
Concio 3	107	J[726]	ST FATICA DANN.ACC.	MZ-MIN	1.484	24728.088	36703.622	90000.000	0.408
Concio 3	108	I[726]	ST FATICA DANN.ACC.	FZ-MAX	1.484	25527.312	37889.901	90000.000	0.421
Concio 3	108	J[727]	ST FATICA DANN.ACC.	MZ-MIN	1.484	34471.590	51165.792	90000.000	0.569
Concio 3	109	I[727]	ST FATICA DANN.ACC.	FZ-MAX	1.484	32929.565	48876.982	90000.000	0.543
Concio 3	109	J[728]	ST FATICA DANN.ACC.	FZ-MAX	1.484	33685.415	49998.882	90000.000	0.556
Concio 4 H=var	110	I[728]	ST FATICA DANN.ACC.	MX-MIN	1.484	33235.370	49330.884	90000.000	0.548
Concio 4 H=var	110	J[729]	ST FATICA DANN.ACC.	MZ-MIN	1.484	27576.661	40931.727	90000.000	0.455
Concio 4 H=var	111	I[729]	ST FATICA DANN.ACC.	FZ-MAX	1.484	25414.012	37721.731	90000.000	0.419
Concio 4 H=var	111	J[730]	ST FATICA DANN.ACC.	FZ-MAX	1.484	21474.381	31874.181	90000.000	0.354
Concio 4 H=200	112	I[730]	ST FATICA DANN.ACC.	FZ-MAX	1.484	21298.190	31612.663	90000.000	0.351
Concio 4 H=200	112	J[731]	ST FATICA DANN.ACC.	MZ-MIN	1.484	23300.617	34584.843	90000.000	0.384
Concio 4 H=200	113	I[731]	ST FATICA DANN.ACC.	FY-MIN	1.484	20283.947	30107.234	90000.000	0.335
Concio 4 H=200	113	J[732]	ST FATICA DANN.ACC.	FY-MIN	1.484	19855.420	29471.176	90000.000	0.328
Concio 4 H=var	114	I[732]	ST FATICA DANN.ACC.	FY-MIN	1.484	20151.650	29910.867	90000.000	0.332
Concio 4 H=var	114	J[733]	ST FATICA DANN.ACC.	FY-MIN	1.484	23675.021	35140.566	90000.000	0.391
Concio 4 H=var	115	I[733]	ST FATICA DANN.ACC.	MZ-MIN	1.484	23691.723	35165.357	90000.000	0.391
Concio 4 H=var	115	J[734]	ST FATICA DANN.ACC.	FZ-MIN	1.484	30203.731	44831.057	90000.000	0.498
Concio 5	116	I[734]	ST FATICA DANN.ACC.	FZ-MIN	1.484	30346.803	45043.417	90000.000	0.501
Concio 5	116	J[735]	ST FATICA DANN.ACC.	FZ-MIN	1.484	29590.953	43921.517	90000.000	0.488
Concio 5	117	I[735]	ST FATICA DANN.ACC.	MZ-MIN	1.484	29414.074	43658.979	90000.000	0.485
Concio 5	117	J[736]	ST FATICA DANN.ACC.	FZ-MIN	1.484	21524.068	31947.931	90000.000	0.355
Concio 5	118	I[736]	ST FATICA DANN.ACC.	MZ-MIN	1.484	19177.843	28465.456	90000.000	0.316
Concio 5	118	J[737]	ST FATICA DANN.ACC.	FZ-MIN	1.484	15667.666	23255.339	90000.000	0.258
Concio 6	119	I[737]	ST FATICA DANN.ACC.	FZ-MIN	1.484	20490.975	30414.523	90000.000	0.338
Concio 6	119	J[738]	ST FATICA DANN.ACC.	FZ-MIN	1.484	14757.447	21904.312	90000.000	0.243
Concio 6	120	I[738]	ST FATICA DANN.ACC.	FZ-MIN	1.484	11195.995	16618.089	90000.000	0.185
Concio 6	120	J[739]	ST FATICA DANN.ACC.	MZ-MIN	1.484	6067.430	9005.817	90000.000	0.100
Concio 6	121	I[739]	ST FATICA DANN.ACC.	MZ-MIN	1.484	6067.430	9005.817	90000.000	0.100
Concio 6	121	J[740]	ST FATICA DANN.ACC.	MZ-MIN	1.484	10975.725	16291.144	90000.000	0.181
Concio 6	122	I[740]	ST FATICA DANN.ACC.	FX-MIN	1.484	12911.094	19163.791	90000.000	0.213
Concio 6	122	J[741]	ST FATICA DANN.ACC.	MZ-MIN	1.484	19530.055	28988.240	90000.000	0.322
Concio 5	123	I[741]	ST FATICA DANN.ACC.	MZ-MIN	1.484	14932.933	22164.784	90000.000	0.246
Concio 5	123	J[742]	ST FATICA DANN.ACC.	MZ-MIN	1.484	18902.183	28056.297	90000.000	0.312
Concio 5	124	I[742]	ST FATICA DANN.ACC.	FZ-MAX	1.484	18994.303	28193.029	90000.000	0.313
Concio 5	124	J[743]	ST FATICA DANN.ACC.	MZ-MIN	1.484	28746.784	42668.528	90000.000	0.474
Concio 5	125	I[743]	ST FATICA DANN.ACC.	FZ-MAX	1.484	26564.080	39428.765	90000.000	0.438
Concio 5	125	J[744]	ST FATICA DANN.ACC.	FZ-MAX	1.484	27319.930	40550.664	90000.000	0.451
Concio 4 H=var	126	I[744]	ST FATICA DANN.ACC.	FZ-MAX	1.484	27172.980	40332.548	90000.000	0.448
Concio 4 H=var	126	J[745]	ST FATICA DANN.ACC.	MZ-MIN	1.484	23394.279	34723.864	90000.000	0.386
Concio 4 H=var	127	I[745]	ST FATICA DANN.ACC.	FZ-MAX	1.484	21335.961	31668.726	90000.000	0.352
Concio 4 H=var	127	J[746]	ST FATICA DANN.ACC.	MZ-MIN	1.484	19978.841	29654.369	90000.000	0.330
Concio 4 H=200	128	I[746]	ST FATICA DANN.ACC.	MZ-MIN	1.484	19721.266	29272.052	90000.000	0.325
Concio 4 H=200	128	J[747]	ST FATICA DANN.ACC.	MZ-MIN	1.484	20145.974	29902.442	90000.000	0.332
Concio 4 H=200	129	I[747]	ST FATICA DANN.ACC.	FY-MIN	1.484	23444.180	34797.931	90000.000	0.387
Concio 4 H=200	129	J[748]	ST FATICA DANN.ACC.	FY-MIN	1.484	23015.652	34161.873	90000.000	0.380
Concio 4 H=var	130	I[748]	ST FATICA DANN.ACC.	FY-MIN	1.484	23256.677	34519.623	90000.000	0.384
Concio 4 H=var	130	J[749]	ST FATICA DANN.ACC.	FY-MIN	1.484	27757.192	41199.687	90000.000	0.458
Concio 4 H=var	131	I[749]	ST FATICA DANN.ACC.	MZ-MIN	1.484	27850.458	41338.120	90000.000	0.459
Concio 4 H=var	131	J[750]	ST FATICA DANN.ACC.	FZ-MIN	1.484	36217.330	53756.975	90000.000	0.597
Concio 3	132	I[750]	ST FATICA DANN.ACC.	FZ-MIN	1.484	36635.430	54377.555	90000.000	0.604
Concio 3	132	J[751]	ST FATICA DANN.ACC.	FZ-MIN	1.484	35879.580	53255.655	90000.000	0.592
Concio 3	133	I[751]	ST FATICA DANN.ACC.	FZ-MIN	1.484	35555.504	52774.633	90000.000	0.586
Concio 3	133	J[752]	ST FATICA DANN.ACC.	FZ-MIN	1.484	27997.004	41555.636	90000.000	0.462
Concio 3	134	I[752]	ST FATICA DANN.ACC.	MZ-MIN	1.484	25226.646	37443.625	90000.000	0.416

Concio 3	134	J[753]	ST FATICA DANN.ACC.	FZ-MIN	1.484	22148.097	32874.170	90000.000	0.365
Concio 2	135	I[753]	ST FATICA DANN.ACC.	FZ-MIN	1.484	29197.567	43337.619	90000.000	0.482
Concio 2	135	J[754]	ST FATICA DANN.ACC.	FZ-MIN	1.484	23219.000	34463.699	90000.000	0.383
Concio 2	136	I[754]	ST FATICA DANN.ACC.	MZ-MIN	1.484	18310.420	27177.950	90000.000	0.302
Concio 2	136	J[755]	ST FATICA DANN.ACC.	FZ-MIN	1.484	8320.009	12349.296	90000.000	0.137
Concio 2	137	I[755]	ST FATICA DANN.ACC.	FZ-MIN	1.484	9003.574	13363.903	90000.000	0.149
Concio 2	137	J[756]	ST FATICA DANN.ACC.	FX-MIN	1.484	8296.340	12314.164	90000.000	0.137
Concio 1	138	I[756]	ST FATICA DANN.ACC.	FX-MIN	1.484	6366.500	9449.724	90000.000	0.105
Concio 1	138	J[757]	ST FATICA DANN.ACC.	MZ-MIN	1.484	11646.365	17286.568	90000.000	0.192
Concio 1	139	I[757]	ST FATICA DANN.ACC.	FX-MIN	1.484	15023.899	22299.804	90000.000	0.248
Concio 1	139	J[758]	ST FATICA DANN.ACC.	FX-MIN	1.484	22670.353	33649.349	90000.000	0.374
Concio 1	140	I[758]	ST FATICA DANN.ACC.	FX-MAX	1.484	1223.433	1815.927	90000.000	0.020
Concio 1	140	J[759]	ST FATICA DANN.ACC.	FX-MAX	1.484	0.000	0.000	90000.000	0.000
Concio 1	201	I[760]	ST FATICA DANN.ACC.	FX-MAX	1.484	0.000	0.000	90000.000	0.000
Concio 1	201	J[761]	ST FATICA DANN.ACC.	FZ-MAX	1.484	14859.676	22056.049	90000.000	0.245
Concio 1	202	I[761]	ST FATICA DANN.ACC.	FZ-MIN	1.484	39351.234	58408.593	90000.000	0.649
Concio 1	202	J[762]	ST FATICA DANN.ACC.	FY-MIN	1.484	13151.053	19519.959	90000.000	0.217
Concio 1	203	I[762]	ST FATICA DANN.ACC.	MZ-MIN	1.484	29166.089	43290.896	90000.000	0.481
Concio 1	203	J[763]	ST FATICA DANN.ACC.	FZ-MAX	1.484	13831.137	20529.400	90000.000	0.228
Concio 2	204	I[763]	ST FATICA DANN.ACC.	FZ-MAX	1.484	18029.294	26760.678	90000.000	0.297
Concio 2	204	J[764]	ST FATICA DANN.ACC.	FZ-MAX	1.484	29756.920	44167.860	90000.000	0.491
Concio 2	205	I[764]	ST FATICA DANN.ACC.	MZ-MIN	1.484	32109.085	47659.152	90000.000	0.530
Concio 2	205	J[765]	ST FATICA DANN.ACC.	MX-MIN	1.484	44071.828	65415.317	90000.000	0.727
Concio 2	206	I[765]	ST FATICA DANN.ACC.	MX-MIN	1.484	29566.993	43885.954	90000.000	0.488
Concio 2	206	J[766]	ST FATICA DANN.ACC.	MX-MIN	1.484	44842.848	66559.733	90000.000	0.740
Concio 3	207	I[766]	ST FATICA DANN.ACC.	MX-MIN	1.484	34033.931	50516.180	90000.000	0.561
Concio 3	207	J[767]	ST FATICA DANN.ACC.	MX-MIN	1.484	43060.062	63913.564	90000.000	0.710
Concio 3	208	I[767]	ST FATICA DANN.ACC.	FZ-MAX	1.484	31070.569	46117.695	90000.000	0.512
Concio 3	208	J[768]	ST FATICA DANN.ACC.	MX-MIN	1.484	53983.086	80126.486	90000.000	0.890
Concio 3	209	I[768]	ST FATICA DANN.ACC.	FZ-MAX	1.484	42459.160	63021.652	90000.000	0.700
Concio 3	209	J[769]	ST FATICA DANN.ACC.	FZ-MAX	1.484	44251.903	65682.599	90000.000	0.730
Concio 4 H=var	210	I[769]	ST FATICA DANN.ACC.	FZ-MAX	1.484	43485.303	64544.745	90000.000	0.717
Concio 4 H=var	210	J[770]	ST FATICA DANN.ACC.	MX-MIN	1.484	40243.200	59732.528	90000.000	0.664
Concio 4 H=var	211	I[770]	ST FATICA DANN.ACC.	FZ-MAX	1.484	34414.929	51081.691	90000.000	0.568
Concio 4 H=var	211	J[771]	ST FATICA DANN.ACC.	MX-MIN	1.484	34290.415	50896.876	90000.000	0.566
Concio 4 H=200	212	I[771]	ST FATICA DANN.ACC.	MX-MIN	1.484	34236.301	50816.554	90000.000	0.565
Concio 4 H=200	212	J[772]	ST FATICA DANN.ACC.	MX-MIN	1.484	35586.137	52820.102	90000.000	0.587
Concio 4 H=200	213	I[772]	ST FATICA DANN.ACC.	FZ-MIN	1.484	29551.278	43862.628	90000.000	0.487
Concio 4 H=200	213	J[773]	ST FATICA DANN.ACC.	FZ-MIN	1.484	28031.106	41606.254	90000.000	0.462
Concio 4 H=var	214	I[773]	ST FATICA DANN.ACC.	FZ-MIN	1.484	28338.722	42062.845	90000.000	0.467
Concio 4 H=var	214	J[774]	ST FATICA DANN.ACC.	FX-MIN	1.484	28304.198	42011.602	90000.000	0.467
Concio 4 H=var	215	I[774]	ST FATICA DANN.ACC.	FZ-MIN	1.484	32293.951	47933.547	90000.000	0.533
Concio 4 H=var	215	J[775]	ST FATICA DANN.ACC.	FX-MIN	1.484	38491.944	57133.159	90000.000	0.635
Concio 5	216	I[775]	ST FATICA DANN.ACC.	FX-MIN	1.484	39459.321	58569.024	90000.000	0.651
Concio 5	216	J[776]	ST FATICA DANN.ACC.	FX-MIN	1.484	38994.097	57878.498	90000.000	0.643
Concio 5	217	I[776]	ST FATICA DANN.ACC.	FZ-MIN	1.484	42394.931	62926.318	90000.000	0.699
Concio 5	217	J[777]	ST FATICA DANN.ACC.	FX-MIN	1.484	27283.070	40495.952	90000.000	0.450
Concio 5	218	I[777]	ST FATICA DANN.ACC.	FZ-MIN	1.484	31015.714	46036.275	90000.000	0.512
Concio 5	218	J[778]	ST FATICA DANN.ACC.	FZ-MIN	1.484	19279.167	28615.850	90000.000	0.318
Concio 6	219	I[778]	ST FATICA DANN.ACC.	FZ-MIN	1.484	25192.660	37393.181	90000.000	0.416
Concio 6	219	J[779]	ST FATICA DANN.ACC.	FZ-MAX	1.484	21850.673	32432.707	90000.000	0.360
Concio 6	220	I[779]	ST FATICA DANN.ACC.	MZ-MIN	1.484	35592.979	52830.257	90000.000	0.587
Concio 6	220	J[780]	ST FATICA DANN.ACC.	MX-MIN	1.484	21441.033	31824.683	90000.000	0.354
Concio 6	221	I[780]	ST FATICA DANN.ACC.	MX-MIN	1.484	21441.033	31824.683	90000.000	0.354
Concio 6	221	J[781]	ST FATICA DANN.ACC.	MX-MIN	1.484	36235.117	53783.375	90000.000	0.598
Concio 6	222	I[781]	ST FATICA DANN.ACC.	MX-MIN	1.484	20619.012	30604.567	90000.000	0.340
Concio 6	222	J[782]	ST FATICA DANN.ACC.	MX-MIN	1.484	35349.994	52469.596	90000.000	0.583
Concio 5	223	I[782]	ST FATICA DANN.ACC.	MX-MIN	1.484	27052.261	40153.366	90000.000	0.446
Concio 5	223	J[783]	ST FATICA DANN.ACC.	MX-MIN	1.484	37206.148	55224.665	90000.000	0.614

Concio 5	224	I[783]	ST FATICA DANN.ACC.	FZ-MAX	1.484	24857.011	36894.981	90000.000	0.410
Concio 5	224	J[784]	ST FATICA DANN.ACC.	MX-MIN	1.484	48378.155	71807.150	90000.000	0.798
Concio 5	225	I[784]	ST FATICA DANN.ACC.	FZ-MAX	1.484	36464.198	54123.398	90000.000	0.601
Concio 5	225	J[785]	ST FATICA DANN.ACC.	FZ-MAX	1.484	38248.603	56771.969	90000.000	0.631
Concio 4 H=var	226	I[785]	ST FATICA DANN.ACC.	FZ-MAX	1.484	37668.760	55911.315	90000.000	0.621
Concio 4 H=var	226	J[786]	ST FATICA DANN.ACC.	MX-MIN	1.484	36214.890	53753.352	90000.000	0.597
Concio 4 H=var	227	I[786]	ST FATICA DANN.ACC.	FZ-MAX	1.484	30265.626	44922.926	90000.000	0.499
Concio 4 H=var	227	J[787]	ST FATICA DANN.ACC.	MX-MIN	1.484	31125.665	46199.474	90000.000	0.513
Concio 4 H=200	228	I[787]	ST FATICA DANN.ACC.	MX-MIN	1.484	31047.039	46082.769	90000.000	0.512
Concio 4 H=200	228	J[788]	ST FATICA DANN.ACC.	MX-MIN	1.484	32394.926	48083.423	90000.000	0.534
Concio 4 H=200	229	I[788]	ST FATICA DANN.ACC.	FZ-MIN	1.484	32751.709	48612.992	90000.000	0.540
Concio 4 H=200	229	J[789]	ST FATICA DANN.ACC.	FZ-MIN	1.484	31229.194	46353.140	90000.000	0.515
Concio 4 H=var	230	I[789]	ST FATICA DANN.ACC.	FZ-MIN	1.484	31507.263	46765.875	90000.000	0.520
Concio 4 H=var	230	J[790]	ST FATICA DANN.ACC.	FX-MIN	1.484	32524.497	48275.744	90000.000	0.536
Concio 4 H=var	231	I[790]	ST FATICA DANN.ACC.	FZ-MIN	1.484	36336.027	53933.154	90000.000	0.599
Concio 4 H=var	231	J[791]	ST FATICA DANN.ACC.	FX-MIN	1.484	44315.277	65776.665	90000.000	0.731
Concio 3	232	I[791]	ST FATICA DANN.ACC.	FX-MIN	1.484	45588.671	67666.750	90000.000	0.752
Concio 3	232	J[792]	ST FATICA DANN.ACC.	FX-MIN	1.484	45123.447	66976.224	90000.000	0.744
Concio 3	233	I[792]	ST FATICA DANN.ACC.	FZ-MIN	1.484	48002.208	71249.135	90000.000	0.792
Concio 3	233	J[793]	ST FATICA DANN.ACC.	FX-MIN	1.484	33333.445	49476.455	90000.000	0.550
Concio 3	234	I[793]	ST FATICA DANN.ACC.	MZ-MIN	1.484	40304.523	59823.549	90000.000	0.665
Concio 3	234	J[794]	ST FATICA DANN.ACC.	FZ-MIN	1.484	26567.552	39433.917	90000.000	0.438
Concio 2	235	I[794]	ST FATICA DANN.ACC.	FZ-MIN	1.484	35005.203	51957.828	90000.000	0.577
Concio 2	235	J[795]	ST FATICA DANN.ACC.	FY-MIN	1.484	26254.230	38968.857	90000.000	0.433
Concio 2	236	I[795]	ST FATICA DANN.ACC.	MZ-MIN	1.484	51450.478	76367.363	90000.000	0.849
Concio 2	236	J[796]	ST FATICA DANN.ACC.	MX-MIN	1.484	27024.038	40111.475	90000.000	0.446
Concio 2	237	I[796]	ST FATICA DANN.ACC.	FZ-MIN	1.484	23401.280	34734.256	90000.000	0.386
Concio 2	237	J[797]	ST FATICA DANN.ACC.	MX-MIN	1.484	21467.170	31863.477	90000.000	0.354
Concio 1	238	I[797]	ST FATICA DANN.ACC.	MX-MIN	1.484	16468.496	24444.002	90000.000	0.272
Concio 1	238	J[798]	ST FATICA DANN.ACC.	MX-MIN	1.484	29948.881	44452.786	90000.000	0.494
Concio 1	239	I[798]	ST FATICA DANN.ACC.	FZ-MAX	1.484	16723.785	24822.925	90000.000	0.276
Concio 1	239	J[799]	ST FATICA DANN.ACC.	MX-MIN	1.484	43067.667	63924.851	90000.000	0.710
Concio 1	240	I[799]	ST FATICA DANN.ACC.	FZ-MIN	1.484	14859.676	22056.049	90000.000	0.245
Concio 1	240	J[800]	ST FATICA DANN.ACC.	FX-MAX	1.484	0.000	0.000	90000.000	0.000
Concio 1	301	I[801]	ST FATICA DANN.ACC.	FX-MAX	1.484	0.000	0.000	90000.000	0.000
Concio 1	301	J[802]	ST FATICA DANN.ACC.	FZ-MAX	1.484	14859.676	22056.049	90000.000	0.245
Concio 1	302	I[802]	ST FATICA DANN.ACC.	FZ-MIN	1.484	39351.234	58408.593	90000.000	0.649
Concio 1	302	J[803]	ST FATICA DANN.ACC.	MX-MIN	1.484	14199.759	21076.541	90000.000	0.234
Concio 1	303	I[803]	ST FATICA DANN.ACC.	FZ-MIN	1.484	23923.935	35510.026	90000.000	0.395
Concio 1	303	J[804]	ST FATICA DANN.ACC.	FZ-MAX	1.484	13831.137	20529.400	90000.000	0.228
Concio 2	304	I[804]	ST FATICA DANN.ACC.	FZ-MAX	1.484	18029.294	26760.678	90000.000	0.297
Concio 2	304	J[805]	ST FATICA DANN.ACC.	FZ-MAX	1.484	29756.918	44167.857	90000.000	0.491
Concio 2	305	I[805]	ST FATICA DANN.ACC.	MZ-MAX	1.484	20551.386	30504.191	90000.000	0.339
Concio 2	305	J[806]	ST FATICA DANN.ACC.	FZ-MAX	1.484	41624.076	61782.146	90000.000	0.687
Concio 2	306	I[806]	ST FATICA DANN.ACC.	FZ-MAX	1.484	28213.919	41877.602	90000.000	0.465
Concio 2	306	J[807]	ST FATICA DANN.ACC.	FZ-MAX	1.484	42447.454	63004.277	90000.000	0.700
Concio 3	307	I[807]	ST FATICA DANN.ACC.	FZ-MAX	1.484	32215.923	47817.731	90000.000	0.531
Concio 3	307	J[808]	ST FATICA DANN.ACC.	FZ-MAX	1.484	40419.622	59994.389	90000.000	0.667
Concio 3	308	I[808]	ST FATICA DANN.ACC.	FZ-MAX	1.484	31070.570	46117.696	90000.000	0.512
Concio 3	308	J[809]	ST FATICA DANN.ACC.	FZ-MAX	1.484	50452.246	74885.699	90000.000	0.832
Concio 3	309	I[809]	ST FATICA DANN.ACC.	FZ-MAX	1.484	42459.160	63021.652	90000.000	0.700
Concio 3	309	J[810]	ST FATICA DANN.ACC.	FZ-MAX	1.484	44251.903	65682.599	90000.000	0.730
Concio 4 H=var	310	I[810]	ST FATICA DANN.ACC.	FZ-MAX	1.484	43485.303	64544.745	90000.000	0.717
Concio 4 H=var	310	J[811]	ST FATICA DANN.ACC.	FZ-MAX	1.484	37757.164	56042.532	90000.000	0.623
Concio 4 H=var	311	I[811]	ST FATICA DANN.ACC.	FZ-MAX	1.484	34414.929	51081.691	90000.000	0.568
Concio 4 H=var	311	J[812]	ST FATICA DANN.ACC.	FZ-MAX	1.484	32212.283	47812.329	90000.000	0.531
Concio 4 H=200	312	I[812]	ST FATICA DANN.ACC.	FZ-MAX	1.484	32020.766	47528.062	90000.000	0.528
Concio 4 H=200	312	J[813]	ST FATICA DANN.ACC.	FZ-MAX	1.484	33238.429	49335.425	90000.000	0.548
Concio 4 H=200	313	I[813]	ST FATICA DANN.ACC.	FZ-MIN	1.484	29551.278	43862.628	90000.000	0.487

Concio 4 H=200	313	J[814]	ST FATICA DANN.ACC.	FZ-MIN	1.484	28031.106	41606.254	90000.000	0.462
Concio 4 H=var	314	I[814]	ST FATICA DANN.ACC.	FZ-MIN	1.484	28338.720	42062.843	90000.000	0.467
Concio 4 H=var	314	J[815]	ST FATICA DANN.ACC.	FX-MIN	1.484	28304.198	42011.602	90000.000	0.467
Concio 4 H=var	315	I[815]	ST FATICA DANN.ACC.	FZ-MIN	1.484	32293.950	47933.545	90000.000	0.533
Concio 4 H=var	315	J[816]	ST FATICA DANN.ACC.	FX-MIN	1.484	38491.946	57133.161	90000.000	0.635
Concio 5	316	I[816]	ST FATICA DANN.ACC.	FX-MIN	1.484	39459.321	58569.024	90000.000	0.651
Concio 5	316	J[817]	ST FATICA DANN.ACC.	FX-MIN	1.484	38994.097	57878.498	90000.000	0.643
Concio 5	317	I[817]	ST FATICA DANN.ACC.	FZ-MIN	1.484	42394.931	62926.318	90000.000	0.699
Concio 5	317	J[818]	ST FATICA DANN.ACC.	FX-MIN	1.484	27283.070	40495.952	90000.000	0.450
Concio 5	318	I[818]	ST FATICA DANN.ACC.	FZ-MIN	1.484	31015.714	46036.275	90000.000	0.512
Concio 5	318	J[819]	ST FATICA DANN.ACC.	FZ-MIN	1.484	19279.166	28615.849	90000.000	0.318
Concio 6	319	I[819]	ST FATICA DANN.ACC.	FZ-MIN	1.484	25192.659	37393.179	90000.000	0.416
Concio 6	319	J[820]	ST FATICA DANN.ACC.	MX-MIN	1.484	25100.263	37256.037	90000.000	0.414
Concio 6	320	I[820]	ST FATICA DANN.ACC.	FZ-MIN	1.484	28095.279	41701.505	90000.000	0.463
Concio 6	320	J[821]	ST FATICA DANN.ACC.	FZ-MAX	1.484	19918.222	29564.392	90000.000	0.329
Concio 6	321	I[821]	ST FATICA DANN.ACC.	FZ-MAX	1.484	19918.222	29564.392	90000.000	0.329
Concio 6	321	J[822]	ST FATICA DANN.ACC.	FZ-MAX	1.484	33506.623	49733.502	90000.000	0.553
Concio 6	322	I[822]	ST FATICA DANN.ACC.	FZ-MAX	1.484	19804.561	29395.686	90000.000	0.327
Concio 6	322	J[823]	ST FATICA DANN.ACC.	FZ-MAX	1.484	32937.617	48888.933	90000.000	0.543
Concio 5	323	I[823]	ST FATICA DANN.ACC.	FZ-MAX	1.484	25206.144	37413.195	90000.000	0.416
Concio 5	323	J[824]	ST FATICA DANN.ACC.	FZ-MAX	1.484	34485.362	51186.234	90000.000	0.569
Concio 5	324	I[824]	ST FATICA DANN.ACC.	FZ-MAX	1.484	24857.011	36894.981	90000.000	0.410
Concio 5	324	J[825]	ST FATICA DANN.ACC.	FZ-MAX	1.484	44790.403	66481.889	90000.000	0.739
Concio 5	325	I[825]	ST FATICA DANN.ACC.	FZ-MAX	1.484	36464.198	54123.398	90000.000	0.601
Concio 5	325	J[826]	ST FATICA DANN.ACC.	FZ-MAX	1.484	38248.603	56771.969	90000.000	0.631
Concio 4 H=var	326	I[826]	ST FATICA DANN.ACC.	FZ-MAX	1.484	37668.756	55911.309	90000.000	0.621
Concio 4 H=var	326	J[827]	ST FATICA DANN.ACC.	FZ-MAX	1.484	33714.518	50042.078	90000.000	0.556
Concio 4 H=var	327	I[827]	ST FATICA DANN.ACC.	FZ-MAX	1.484	30265.626	44922.926	90000.000	0.499
Concio 4 H=var	327	J[828]	ST FATICA DANN.ACC.	FZ-MAX	1.484	29043.602	43109.091	90000.000	0.479
Concio 4 H=200	328	I[828]	ST FATICA DANN.ACC.	FZ-MAX	1.484	28822.240	42780.525	90000.000	0.475
Concio 4 H=200	328	J[829]	ST FATICA DANN.ACC.	FZ-MAX	1.484	30038.013	44585.084	90000.000	0.495
Concio 4 H=200	329	I[829]	ST FATICA DANN.ACC.	FZ-MIN	1.484	32751.711	48612.995	90000.000	0.540
Concio 4 H=200	329	J[830]	ST FATICA DANN.ACC.	FZ-MIN	1.484	31229.194	46353.140	90000.000	0.515
Concio 4 H=var	330	I[830]	ST FATICA DANN.ACC.	FZ-MIN	1.484	31507.263	46765.875	90000.000	0.520
Concio 4 H=var	330	J[831]	ST FATICA DANN.ACC.	FX-MIN	1.484	32524.497	48275.744	90000.000	0.536
Concio 4 H=var	331	I[831]	ST FATICA DANN.ACC.	FZ-MIN	1.484	36336.027	53933.154	90000.000	0.599
Concio 4 H=var	331	J[832]	ST FATICA DANN.ACC.	FX-MIN	1.484	44315.277	65776.665	90000.000	0.731
Concio 3	332	I[832]	ST FATICA DANN.ACC.	FX-MIN	1.484	45588.670	67666.748	90000.000	0.752
Concio 3	332	J[833]	ST FATICA DANN.ACC.	FX-MIN	1.484	45123.446	66976.221	90000.000	0.744
Concio 3	333	I[833]	ST FATICA DANN.ACC.	FZ-MIN	1.484	48002.208	71249.135	90000.000	0.792
Concio 3	333	J[834]	ST FATICA DANN.ACC.	FX-MIN	1.484	33333.443	49476.453	90000.000	0.550
Concio 3	334	I[834]	ST FATICA DANN.ACC.	FZ-MIN	1.484	36910.673	54786.095	90000.000	0.609
Concio 3	334	J[835]	ST FATICA DANN.ACC.	FZ-MIN	1.484	26567.552	39433.917	90000.000	0.438
Concio 2	335	I[835]	ST FATICA DANN.ACC.	FZ-MIN	1.484	35005.203	51957.828	90000.000	0.577
Concio 2	335	J[836]	ST FATICA DANN.ACC.	FY-MAX	1.484	22268.587	33053.012	90000.000	0.367
Concio 2	336	I[836]	ST FATICA DANN.ACC.	MZ-MAX	1.484	39288.762	58315.865	90000.000	0.648
Concio 2	336	J[837]	ST FATICA DANN.ACC.	FZ-MAX	1.484	24430.989	36262.641	90000.000	0.403
Concio 2	337	I[837]	ST FATICA DANN.ACC.	FZ-MIN	1.484	23401.280	34734.256	90000.000	0.386
Concio 2	337	J[838]	ST FATICA DANN.ACC.	FZ-MAX	1.484	19470.440	28899.755	90000.000	0.321
Concio 1	338	I[838]	ST FATICA DANN.ACC.	FZ-MAX	1.484	14936.709	22170.388	90000.000	0.246
Concio 1	338	J[839]	ST FATICA DANN.ACC.	FZ-MAX	1.484	27363.958	40616.014	90000.000	0.451
Concio 1	339	I[839]	ST FATICA DANN.ACC.	FZ-MAX	1.484	16723.785	24822.925	90000.000	0.276
Concio 1	339	J[840]	ST FATICA DANN.ACC.	FZ-MAX	1.484	39727.601	58967.230	90000.000	0.655
Concio 1	340	I[840]	ST FATICA DANN.ACC.	FZ-MIN	1.484	14859.676	22056.049	90000.000	0.245
Concio 1	340	J[841]	ST FATICA DANN.ACC.	FX-MAX	1.484	0.000	0.000	90000.000	0.000
Concio 1	401	I[842]	ST FATICA DANN.ACC.	FX-MAX	1.484	0.000	0.000	90000.000	0.000
Concio 1	401	J[843]	ST FATICA DANN.ACC.	FX-MAX	1.484	1223.433	1815.927	90000.000	0.020
Concio 1	402	I[843]	ST FATICA DANN.ACC.	FZ-MIN	1.484	23641.749	35091.181	90000.000	0.390
Concio 1	402	J[844]	ST FATICA DANN.ACC.	FZ-MIN	1.484	15995.296	23741.637	90000.000	0.264

Concio 1	403	I[844]	ST FATICA DANN.ACC.	FZ-MIN	1.484	11939.890	17722.244	90000.000	0.197
Concio 1	403	J[845]	ST FATICA DANN.ACC.	FZ-MIN	1.484	7352.018	10912.517	90000.000	0.121
Concio 2	404	I[845]	ST FATICA DANN.ACC.	FZ-MIN	1.484	9580.593	14220.366	90000.000	0.158
Concio 2	404	J[846]	ST FATICA DANN.ACC.	MY-MIN	1.484	9014.593	13380.259	90000.000	0.149
Concio 2	405	I[846]	ST FATICA DANN.ACC.	FY-MIN	1.484	7990.619	11860.385	90000.000	0.132
Concio 2	405	J[847]	ST FATICA DANN.ACC.	FY-MIN	1.484	17954.898	26650.252	90000.000	0.296
Concio 2	406	I[847]	ST FATICA DANN.ACC.	MZ-MIN	1.484	22980.185	34109.229	90000.000	0.379
Concio 2	406	J[848]	ST FATICA DANN.ACC.	FY-MIN	1.484	28916.701	42920.733	90000.000	0.477
Concio 3	407	I[848]	ST FATICA DANN.ACC.	FY-MIN	1.484	21935.043	32557.937	90000.000	0.362
Concio 3	407	J[849]	ST FATICA DANN.ACC.	FY-MIN	1.484	24958.443	37045.536	90000.000	0.412
Concio 3	408	I[849]	ST FATICA DANN.ACC.	FY-MIN	1.484	27853.819	41343.108	90000.000	0.459
Concio 3	408	J[850]	ST FATICA DANN.ACC.	FY-MIN	1.484	35412.319	52562.105	90000.000	0.584
Concio 3	409	I[850]	ST FATICA DANN.ACC.	FY-MIN	1.484	35231.017	52293.000	90000.000	0.581
Concio 3	409	J[851]	ST FATICA DANN.ACC.	FY-MIN	1.484	35986.867	53414.900	90000.000	0.594
Concio 4 H=var	410	I[851]	ST FATICA DANN.ACC.	FY-MIN	1.484	35411.251	52560.520	90000.000	0.584
Concio 4 H=var	410	J[852]	ST FATICA DANN.ACC.	FY-MIN	1.484	27233.884	40422.946	90000.000	0.449
Concio 4 H=var	411	I[852]	ST FATICA DANN.ACC.	FY-MIN	1.484	27424.030	40705.178	90000.000	0.452
Concio 4 H=var	411	J[853]	ST FATICA DANN.ACC.	FY-MIN	1.484	23003.263	34143.484	90000.000	0.379
Concio 4 H=200	412	I[853]	ST FATICA DANN.ACC.	FY-MIN	1.484	22805.826	33850.430	90000.000	0.376
Concio 4 H=200	412	J[854]	ST FATICA DANN.ACC.	FY-MIN	1.484	23234.353	34486.488	90000.000	0.383
Concio 4 H=200	413	I[854]	ST FATICA DANN.ACC.	FZ-MIN	1.484	20261.879	30074.479	90000.000	0.334
Concio 4 H=200	413	J[855]	ST FATICA DANN.ACC.	FZ-MIN	1.484	19833.352	29438.421	90000.000	0.327
Concio 4 H=var	414	I[855]	ST FATICA DANN.ACC.	FZ-MIN	1.484	20130.288	29879.159	90000.000	0.332
Concio 4 H=var	414	J[856]	ST FATICA DANN.ACC.	MZ-MIN	1.484	23654.026	35109.403	90000.000	0.390
Concio 4 H=var	415	I[856]	ST FATICA DANN.ACC.	FZ-MIN	1.484	23643.509	35093.793	90000.000	0.390
Concio 4 H=var	415	J[857]	ST FATICA DANN.ACC.	FZ-MIN	1.484	30203.731	44831.057	90000.000	0.498
Concio 5	416	I[857]	ST FATICA DANN.ACC.	FZ-MIN	1.484	30346.803	45043.417	90000.000	0.501
Concio 5	416	J[858]	ST FATICA DANN.ACC.	FZ-MIN	1.484	29590.953	43921.517	90000.000	0.488
Concio 5	417	I[858]	ST FATICA DANN.ACC.	FZ-MIN	1.484	29384.910	43615.690	90000.000	0.485
Concio 5	417	J[859]	ST FATICA DANN.ACC.	FZ-MIN	1.484	21524.070	31947.934	90000.000	0.355
Concio 5	418	I[859]	ST FATICA DANN.ACC.	FZ-MIN	1.484	19144.576	28416.077	90000.000	0.316
Concio 5	418	J[860]	ST FATICA DANN.ACC.	FZ-MIN	1.484	15667.666	23255.339	90000.000	0.258
Concio 6	419	I[860]	ST FATICA DANN.ACC.	FZ-MIN	1.484	20490.975	30414.523	90000.000	0.338
Concio 6	419	J[861]	ST FATICA DANN.ACC.	FZ-MIN	1.484	14757.447	21904.312	90000.000	0.243
Concio 6	420	I[861]	ST FATICA DANN.ACC.	FZ-MIN	1.484	11195.995	16618.089	90000.000	0.185
Concio 6	420	J[862]	ST FATICA DANN.ACC.	FZ-MIN	1.484	6055.590	8988.244	90000.000	0.100
Concio 6	421	I[862]	ST FATICA DANN.ACC.	FZ-MIN	1.484	6055.590	8988.244	90000.000	0.100
Concio 6	421	J[863]	ST FATICA DANN.ACC.	FY-MIN	1.484	10950.415	16253.577	90000.000	0.181
Concio 6	422	I[863]	ST FATICA DANN.ACC.	FY-MIN	1.484	14555.477	21604.531	90000.000	0.240
Concio 6	422	J[864]	ST FATICA DANN.ACC.	FY-MIN	1.484	20289.006	30114.742	90000.000	0.335
Concio 5	423	I[864]	ST FATICA DANN.ACC.	FY-MIN	1.484	15513.237	23026.122	90000.000	0.256
Concio 5	423	J[865]	ST FATICA DANN.ACC.	FY-MIN	1.484	18990.147	28186.861	90000.000	0.313
Concio 5	424	I[865]	ST FATICA DANN.ACC.	FY-MIN	1.484	21367.663	31715.781	90000.000	0.352
Concio 5	424	J[866]	ST FATICA DANN.ACC.	FY-MIN	1.484	29228.503	43383.537	90000.000	0.482
Concio 5	425	I[866]	ST FATICA DANN.ACC.	FY-MIN	1.484	28845.648	42815.270	90000.000	0.476
Concio 5	425	J[867]	ST FATICA DANN.ACC.	FY-MIN	1.484	29601.498	43937.169	90000.000	0.488
Concio 4 H=var	426	I[867]	ST FATICA DANN.ACC.	FY-MIN	1.484	29372.726	43597.606	90000.000	0.484
Concio 4 H=var	426	J[868]	ST FATICA DANN.ACC.	FY-MIN	1.484	23070.564	34243.378	90000.000	0.381
Concio 4 H=var	427	I[868]	ST FATICA DANN.ACC.	FY-MIN	1.484	23348.691	34656.198	90000.000	0.385
Concio 4 H=var	427	J[869]	ST FATICA DANN.ACC.	FY-MIN	1.484	19903.434	29542.442	90000.000	0.328
Concio 4 H=200	428	I[869]	ST FATICA DANN.ACC.	FY-MIN	1.484	19655.131	29173.890	90000.000	0.324
Concio 4 H=200	428	J[870]	ST FATICA DANN.ACC.	FY-MIN	1.484	20083.659	29809.948	90000.000	0.331
Concio 4 H=200	429	I[870]	ST FATICA DANN.ACC.	FZ-MIN	1.484	23393.002	34721.968	90000.000	0.386
Concio 4 H=200	429	J[871]	ST FATICA DANN.ACC.	FZ-MIN	1.484	22964.475	34085.910	90000.000	0.379
Concio 4 H=var	430	I[871]	ST FATICA DANN.ACC.	FZ-MIN	1.484	23217.425	34461.363	90000.000	0.383
Concio 4 H=var	430	J[872]	ST FATICA DANN.ACC.	MZ-MIN	1.484	27737.970	41171.155	90000.000	0.458
Concio 4 H=var	431	I[872]	ST FATICA DANN.ACC.	FZ-MIN	1.484	27789.645	41247.856	90000.000	0.458
Concio 4 H=var	431	J[873]	ST FATICA DANN.ACC.	FZ-MIN	1.484	36217.332	53756.977	90000.000	0.597
Concio 3	432	I[873]	ST FATICA DANN.ACC.	FZ-MIN	1.484	36635.430	54377.555	90000.000	0.604

Concio 3	432	J[874]	ST FATICA DANN.ACC.	FZ-MIN	1.484	35879.580	53255.655	90000.000	0.592
Concio 3	433	I[874]	ST FATICA DANN.ACC.	FZ-MIN	1.484	35555.504	52774.633	90000.000	0.586
Concio 3	433	J[875]	ST FATICA DANN.ACC.	FZ-MIN	1.484	27997.004	41555.636	90000.000	0.462
Concio 3	434	I[875]	ST FATICA DANN.ACC.	FZ-MIN	1.484	25171.497	37361.769	90000.000	0.415
Concio 3	434	J[876]	ST FATICA DANN.ACC.	FZ-MIN	1.484	22148.097	32874.170	90000.000	0.365
Concio 2	435	I[876]	ST FATICA DANN.ACC.	FZ-MIN	1.484	29197.567	43337.619	90000.000	0.482
Concio 2	435	J[877]	ST FATICA DANN.ACC.	FZ-MIN	1.484	23219.000	34463.699	90000.000	0.383
Concio 2	436	I[877]	ST FATICA DANN.ACC.	FZ-MIN	1.484	18284.288	27139.163	90000.000	0.302
Concio 2	436	J[878]	ST FATICA DANN.ACC.	FZ-MIN	1.484	8320.009	12349.296	90000.000	0.137
Concio 2	437	I[878]	ST FATICA DANN.ACC.	FZ-MIN	1.484	9003.574	13363.903	90000.000	0.149
Concio 2	437	J[879]	ST FATICA DANN.ACC.	FY-MIN	1.484	9345.564	13871.515	90000.000	0.154
Concio 1	438	I[879]	ST FATICA DANN.ACC.	FY-MIN	1.484	7171.660	10644.814	90000.000	0.118
Concio 1	438	J[880]	ST FATICA DANN.ACC.	FY-MIN	1.484	11759.532	17454.541	90000.000	0.194
Concio 1	439	I[880]	ST FATICA DANN.ACC.	FY-MIN	1.484	15742.800	23366.860	90000.000	0.260
Concio 1	439	J[881]	ST FATICA DANN.ACC.	FY-MIN	1.484	23389.254	34716.405	90000.000	0.386
Concio 1	440	I[881]	ST FATICA DANN.ACC.	FX-MAX	1.484	1223.433	1815.927	90000.000	0.020
Concio 1	440	J[882]	ST FATICA DANN.ACC.	FX-MAX	1.484	0.000	0.000	90000.000	0.000

10 VERIFICHE DI RESISTENZA DEI PROFILATI IN ACCIAIO ALLO S.L.U.

Si effettuano le verifiche di resistenza dei diaframmi e dei controventi allo stato limite ultimo; seguono gli schemi grafici e i tabulati di calcolo degli elementi maggiormente sollecitati.

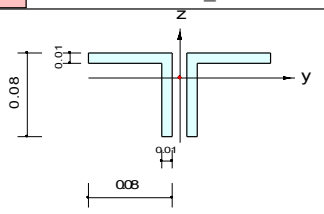
10.1 DIAFRAMMI SU SPALLE E INTERMEDI – TRASVERSI INFERIORI

MIDAS/Civil **Steel Checking Result**

	Company		**Project Title**	Viadotto Agrò
	Author	Renato Vaira	**File Name**	D:\...\Cavalc Coste V_1.mcb

1. Design Information

Design Code : Eurocode3-2:05
Unit System : kN, m
Member No : 1110
Material : S355W (No:1)
(Fy = 355000, Es = 210000000)
Section Name : HINF_CORR 2L80x10d15 (No:18)
(Built-up Section).
Member Length : 1.60000



2. Member Forces

Axial Force	Fxx = 542.434 (LCB: 19+, POS:I)
Bending Moments	My = 1.22630, Mz = 1.00226
End Moments	Myi = 1.22630, Myj = 1.67445 (for Lb)
	Myi = 1.22630, Myj = 1.67445 (for Ly)
	Mzi = 1.00226, Mzj = 0.25446 (for Lz)
Shear Forces	Fyy = 0.78557 (LCB: 19+, POS:I)
	Fzz = -3.0613 (LCB: 19-, POS:J)

Depth	0.08000	Web Thick	0.01000
Flg Width	0.08000	Flg Thick	0.01000
BTB Spacing	0.01500		
Area	0.00300	Asz	0.00133
Qyb	0.00159	Qzb	0.00320
Iyy	0.00000	Izz	0.00000
Ybar	0.08750	Zbar	0.05633
Wely	0.00003	Welz	0.00005
ry	0.02436	rz	0.03955

3. Design Parameters

Unbraced Lengths	Ly = 1.60000, Lz = 1.60000, Lb = 1.60000
Effective Length Factors	Ky = 0.65, Kz = 1.30
Equivalent Uniform Moment Factors	Cmy = 1.00, Cmz = 1.00, CmLT = 1.00

4. Checking Results

Axial Resistance

N_Ed/Nt_Rd = 542.43/1014.29 = 0.535 < 1.000 ..... O.K

Bending Resistance

M_Edy/M_Rdy = 1.2263/19.2503 = 0.064 < 1.000 ..... O.K
M_Edz/M_Rdz = 1.0023/31.6119 = 0.032 < 1.000 ..... O.K

Combined Resistance

RNRd = MAX[M_Edy/Mny_Rd, M_Edz/Mnz_Rd]
Rmax1 = (M_Edy/Mny_Rd)^Alpha + (M_Edz/Mnz_Rd)^Beta
Rcom = N_Ed/(A*fy/Gamma_M0), Rbend = M_Edy/My_Rd + M_Edz/Mz_Rd
Rmax = MAX[RNRd, Rmax1, (Rcom+Rbend)] = 0.630 < 1.000 ..... O.K

Shear Resistance

V_Edy/Vy_Rd = 0.003 < 1.000 ..... O.K
V_Edz/Vz_Rd = 0.010 < 1.000 ..... O.K

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    +============================================================+
    |  MIDAS(Modeling, Integrated Design & Analysis Software)    |
    |  MIDAS/Civil - Design & checking system for windows        |
    +============================================================+
    |  Steel Member Applicable Code Checking                     |
    |  Based On  AASHTO-LRFD12, AASHTO-LRFD02, AASHTO-LFD96,     |
    |          AASHTO-ASD96, AISC-LRFD2K, AISC-LRFD93,           |
    |          AISC-ASD89, Eurocode3-2:05, BS5950-90,            |
    |          IS:800-2007, IS:800-1984                          |
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    +============================================================+


   *. DEFINITION OF LOAD COMBINATIONS WITH SCALING UP FACTORS.
--------------------------------------------------------------------------------
    LCB  C    Loadcase Name(Factor) + Loadcase Name(Factor) + Loadcase Name(Factor)
--------------------------------------------------------------------------------
    19+  1       Dead Load( 1.350) +Erection Load 1( 1.500) +Creep Secondary( 1.200)
           +Shrinkage Secondary( 1.200) +Vento Strutture INV( 0.900) +Vento Mobili INV( 0.900)
           +Termico unif. INV( 0.720) +Termico diff. INV( 0.720) +Mobili SLU INV( 1.350)
    19-  1       Dead Load( 1.350) +Erection Load 1( 1.500) +Creep Secondary( 1.200)
           +Shrinkage Secondary( 1.200) +Vento Strutture INV( 0.900) +Vento Mobili INV( 0.900)
           +Termico unif. INV( 0.720) +Termico diff. INV( 0.720) +Mobili SLU INV( 1.350)
    20+  1       Dead Load( 1.350) +Erection Load 1( 1.500) +Creep Secondary( 1.200)
           +Shrinkage Secondary( 1.200) +Vento Strutture INV( 1.500) +Vento Mobili INV( 1.500)
           +Termico unif. INV( 0.720) +Termico diff. INV( 0.720) +Mobili SLE INV( 1.350)
    20-  1       Dead Load( 1.350) +Erection Load 1( 1.500) +Creep Secondary( 1.200)
           +Shrinkage Secondary( 1.200) +Vento Strutture INV( 1.500) +Vento Mobili INV( 1.500)
           +Termico unif. INV( 0.720) +Termico diff. INV( 0.720) +Mobili SLE INV( 1.350)
    21+  1       Dead Load( 1.350) +Erection Load 1( 1.500) +Creep Secondary( 1.200)
           +Shrinkage Secondary( 1.200) +Frenamento INV( 1.350) +Termico unif. INV( 0.720)
           +Termico diff. INV( 0.720) +Mobili SLE INV( 1.350)
    21-  1       Dead Load( 1.350) +Erection Load 1( 1.500) +Creep Secondary( 1.200)
           +Shrinkage Secondary( 1.200) +Frenamento INV( 1.350) +Termico unif. INV( 0.720)
           +Termico diff. INV( 0.720) +Mobili SLE INV( 1.350)
    22+  1       Dead Load( 1.350) +Erection Load 1( 1.500) +Creep Secondary( 1.200)
           +Shrinkage Secondary( 1.200) +Vento Strutture INV( 0.900) +Vento Mobili INV( 0.900)
           +Termico unif. INV( 1.200) +Termico diff. INV( 1.200) +Mobili SLE INV( 1.350)
    22-  1       Dead Load( 1.350) +Erection Load 1( 1.500) +Creep Secondary( 1.200)
           +Shrinkage Secondary( 1.200) +Vento Strutture INV( 0.900) +Vento Mobili INV( 0.900)
           +Termico unif. INV( 1.200) +Termico diff. INV( 1.200) +Mobili SLE INV( 1.350)
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23+ 1 Summation(1.000) +Termico unif. INV(0.500) +Termico diff. INV(0.500)
+ SLV Long INV(1.000) + SLV Trasv INV(0.300) + SLV Vert INV(0.300)
23- 1 Summation(1.000) +Termico unif. INV(0.500) +Termico diff. INV(0.500)
+ SLV Long INV(1.000) + SLV Trasv INV(0.300) + SLV Vert INV(0.300)
24+ 1 Summation(1.000) +Termico unif. INV(0.500) +Termico diff. INV(0.500)
+ SLV Long INV(0.300) + SLV Trasv INV(1.000) + SLV Vert INV(0.300)
24- 1 Summation(1.000) +Termico unif. INV(0.500) +Termico diff. INV(0.500)
+ SLV Long INV(0.300) + SLV Trasv INV(1.000) + SLV Vert INV(0.300)
25+ 1 Summation(1.000) +Termico unif. INV(0.500) +Termico diff. INV(0.500)
+ SLV Long INV(0.300) + SLV Trasv INV(0.300) + SLV Vert INV(1.000)
25- 1 Summation(1.000) +Termico unif. INV(0.500) +Termico diff. INV(0.500)
+ SLV Long INV(0.300) + SLV Trasv INV(0.300) + SLV Vert INV(1.000)
28+ 2 Summation(1.000) +Vento Strutture INV(0.600) +Vento Mobili INV(0.600)
+Termico unif. INV(0.600) +Termico diff. INV(0.600) +Mobili SLU INV(1.000)
28- 2 Summation(1.000) +Vento Strutture INV(0.600) +Vento Mobili INV(0.600)
+Termico unif. INV(0.600) +Termico diff. INV(0.600) +Mobili SLU INV(1.000)
29+ 2 Summation(1.000) +Vento Strutture INV(1.000) +Vento Mobili INV(1.000)
+Termico unif. INV(0.600) +Termico diff. INV(0.600) +Mobili SLE INV(1.000)
29- 2 Summation(1.000) +Vento Strutture INV(1.000) +Vento Mobili INV(1.000)
+Termico unif. INV(0.600) +Termico diff. INV(0.600) +Mobili SLE INV(1.000)
30+ 2 Summation(1.000) +Frenamento INV(1.000) +Termico unif. INV(0.600)
+Termico diff. INV(0.600) +Mobili SLE INV(1.000)
30- 2 Summation(1.000) +Frenamento INV(1.000) +Termico unif. INV(0.600)
+Termico diff. INV(0.600) +Mobili SLE INV(1.000)
31+ 2 Summation(1.000) +Vento Strutture INV(0.600) +Vento Mobili INV(0.600)
+Termico unif. INV(1.000) +Termico diff. INV(1.000) +Mobili SLE INV(1.000)
31- 2 Summation(1.000) +Vento Strutture INV(0.600) +Vento Mobili INV(0.600)
+Termico unif. INV(1.000) +Termico diff. INV(1.000) +Mobili SLE INV(1.000)
32+ 2 Summation(1.000) +Termico unif. INV(0.500) +Termico diff. INV(0.500)
+Mobili SLE INV(1.000)
32- 2 Summation(1.000) +Termico unif. INV(0.500) +Termico diff. INV(0.500)
+Mobili SLE INV(1.000)
33+ 2 Summation(1.000) +Vento Strutture INV(0.200) +Vento Mobili INV(0.200)
+Termico unif. INV(0.500) +Termico diff. INV(0.500)
33- 2 Summation(1.000) +Vento Strutture INV(0.200) +Vento Mobili INV(0.200)
+Termico unif. INV(0.500) +Termico diff. INV(0.500)
34+ 2 Summation(1.000) +Termico unif. INV(0.600) +Termico diff. INV(0.600)
34- 2 Summation(1.000) +Termico unif. INV(0.600) +Termico diff. INV(0.600)
35+ 2 Summation(1.000) +Termico unif. INV(0.500) +Termico diff. INV(0.500)
35- 2 Summation(1.000) +Termico unif. INV(0.500) +Termico diff. INV(0.500)

MIDAS/Civil - Steel Code Checking[Eurocode3-2:05] Version 8.3.5
==========

*. PROJECT : Viadotto Agrò
*. MEMBER NO = 1110, ELEMENT TYPE = Beam
*. LOADCOMB NO = 19+, MATERIAL NO = 1, SECTION NO = 18
*. UNIT SYSTEM : kN, m

*. SECTION PROPERTIES : Designation = HINF_CORR 2L80x10d15
Shape = 2L - Section. (Built-up)
Depth = 0.080, Flg Width = 0.080, BTB Spacing = 0.015
Web Thick = 0.010, Flg Thick = 0.010

Area = 3.00000e-003, Avy = 1.60000e-003, Avz = 1.60000e-003
Ybar = 8.75000e-002, Zbar = 5.63333e-002, Qyb = 1.58672e-003, Qzb = 3.20000e-003
Wely = 3.15917e-005, Welz = 5.36429e-005, Wply = 5.69375e-005, Wplz = 9.35000e-005
Iyy = 1.77967e-006, Izz = 4.69375e-006, Iyz = 0.00000e+000
iy = 2.43562e-002, iz = 3.95548e-002
J = 1.00000e-007, Cwp = 4.24931e-011

*. DESIGN PARAMETERS FOR STRENGTH EVALUATION :
Ly = 1.60000e+000, Lz = 1.60000e+000, Lu = 1.60000e+000
Ky = 6.50000e-001, Kz = 1.30000e+000

*. MATERIAL PROPERTIES :
Fy = 3.55000e+005, Es = 2.10000e+008, MATERIAL NAME = S355W

*. FORCES AND MOMENTS AT (I) POINT :
Axial Force Fxx = 5.42434e+002
Shear Forces Fyy = 7.85567e-001, Fzz = 1.62825e+000
Bending Moments My = 1.22630e+000, Mz = 1.00226e+000
End Moments Myi = 1.22630e+000, Myj = 1.67445e+000 (for Lb)
Myi = 1.22630e+000, Myj = 1.67445e+000 (for Ly)
Mzi = 1.00226e+000, Mzj = 2.54462e-001 (for Lz)

*. Sign conventions for stress and axial force.
- Stress : Compression positive.
- Axial force: Tension positive.

==========
[[[*]]] CLASSIFY LEFT FLANGE OF SECTION (BTR).
==========

( ). Determine classification of tension flanges(double angle).
-. Not Checking the Section Classification.

( ). Determine classification of tension flanges(double angle).
-. Not Checking the Section Classification.

==========
[[[*]]] CLASSIFY WEB OF SECTION (HTR).
==========

MIDAS/Civil - Steel Code Checking[Eurocode3-2:05] Version 8.3.5
==========

( ). Determine classification of tension elements(Double angle).
-. Not Checking the Section Classification.

==========
[[[*]]] APPLIED FACTORS.
==========

( ). Calculate equivalent uniform moment factors (Cmy,Cmz,CmLT).
[Eurocode3:05 Annex A. Table A.1, A.2]
-. Cmy,0 = 0.841
-. Cmz,0 = 0.759
-. Cmy (Default or User Defined Value) = 1.000
-. Cmz (Default or User Defined Value) = 1.000
-. CmLT (Default or User Defined Value) = 1.000

( ). Partial Factors (Gamma_Mi).
[Eurocode3:05 6.1]
-. Gamma_M0 = 1.05
-. Gamma_M1 = 1.10
-. Gamma_M2 = 1.25

==========
[[[*]]] CHECK AXIAL RESISTANCE.
==========

( ). Check slenderness ratio of axial tension member (l/i).
[Eurocode3:05 6.3.1]
-. l/i = 65.7 < 300.0 ---> O.K.

( ). Calculate parameters for combined resistance.
-. Lambda1 = Pi * SQRT(Es/fy) = 76.409
-. Lambda_bz = (KLz/iz) / Lambda1 = 0.529

( ). Calculate axial tensile resistance (Nt_Rd).
[Eurocode3:05 6.2.3]
-. Nt_Rd = fy * Area / Gamma_M0 = 1014.29 kN.

( ). Check ratio of axial resistance (N_Ed/Nt_Rd).
N_Ed 542.43
-. ----- = ---------- = 0.535 < 1.000 ---> O.K.
Nt_Rd 1014.29

==========
[[[*]]] CHECK SHEAR RESISTANCE.
==========

( ). Calculate shear area.
[Eurocode3:05 6.2.6, EN1993-1-5:04 5.1 NOTE 2]
-. Avy = 2*B*tf = 0.0016 m^2.
-. Avz = 2*h*tw = 0.0016 m^2.

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==========

( ). Calculate plastic shear resistance in local-y direction (Vpl_Rdy).
[Eurocode3:05 6.1, 6.2.6]
-. Vpl_Rdy = [Avy*fy/SQRT(3)] / Gamma_M0 = 312.32 kN.

( ). Check ratio of shear resistance (V_Edy/Vpl_Rdy).
(LCB = 19+, POS = I)
-. Applied shear force : V_Edy = 0.79 kN.
V_Edy 0.79
-. ------- = ---------- = 0.003 < 1.000 ---> O.K.
Vpl_Rdy 312.32

( ). Calculate plastic shear resistance in local-z direction (Vpl_Rdz).
[Eurocode3:05 6.1, 6.2.6]
-. Vpl_Rdz = [Avz*fy/SQRT(3)] / Gamma_M0 = 312.32 kN.

( ). Shear Buckling Check.
[Eurocode3:05 6.2.6]
-. HTR < 72*e/Eta ---> No need to check!

( ). Check ratio of shear resistance (V_Edz/Vpl_Rdz).
(LCB = 19-, POS = J)
-. Applied shear force : V_Edz = 3.06 kN.
V_Edz 3.06
-. ------- = ---------- = 0.010 < 1.000 ---> O.K.
Vpl_Rdz 312.32

==========
[[[*]]] CHECK BENDING MOMENT RESISTANCE ABOUT MAJOR AXIS.
==========

( ). Calculate plastic resistance moment about major axis.
[Eurocode3:05 6.1, 6.2.5]
-. Wply = 5.6938e-005 m^3.
-. Mc_Rdy = Wply * fy / Gamma_M0 = 19.25 kN-m.

( ). Check ratio of moment resistance (M_Edy/Mc_Rdy).
M_Edy 1.23
-. ------ = ---------- = 0.064 < 1.000 ---> O.K.
Mc_Rdy 19.25

==========
[[[*]]] CHECK BENDING MOMENT RESISTANCE ABOUT MINOR AXIS.
==========

( ). Calculate plastic resistance moment about minor axis.
[Eurocode3:05 6.1, 6.2.5]
-. Wplz = 9.3500e-005 m^3.
-. Mc_Rdz = Wplz * fy / Gamma_M0 = 31.61 kN-m.

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==========

( ). Check ratio of moment resistance (M_Edz/Mc_Rdz).

$$\frac{M\_Edz}{Mc\_Rdz} = \frac{1.00}{31.61} = 0.032 < 1.000 \text{ ---> O.K.}$$

==========
[[[*]]] CHECK INTERACTION OF COMBINED RESISTANCE.
==========

( ). Calculate Major reduced design resistance of bending and shear.
[Eurocode3:05 6.2.8 (6.30)]
-. In case of V_Edz / Vpl_Rdz < 0.5
-. My_Rd = Mc_Rdy = 19.25 kN-m.

( ). Calculate Minor reduced design resistance of bending and shear.
[Eurocode3:05 6.2.8 (6.30)]
-. In case of V_Edy / Vpl_Rdy < 0.5
-. Mz_Rd = Mc_Rdz = 31.61 kN-m.

( ). Check general interaction ratio.
[Eurocode3:05 6.2.1 (6.2)] - Class1 or Class2

$$Rmax1 = \frac{N\_Ed}{N\_Rd} + \frac{M\_Edy}{My\_Rd} + \frac{M\_Edz}{Mz\_Rd}$$

$$= 0.630 < 1.000 \text{ ---> O.K.}$$

( ). Check interaction ratio of bending and axial force member.
[Eurocode3:05 6.2.9 (6.31 ~ 6.41)] - Class1 or Class2
-. n = N_Ed / Npl_Rd = 0.535
-. a = MIN[(Area-2b*tf)/Area, 0.5] = 0.500
-. Alpha = 2.000
-. Beta = MAX[5*n, 1.0] = 2.674
-. Mny_Rd = MIN[Mply_Rd*(1-n)/(1-0.5*a), Mply_Rd] = 11.94 kN-m.
-. Rmaxy = M_Edy / Mny_Rd = 0.103 < 1.000 ---> O.K.

-. In case of n > a
-. Mnz_Rd = Mplz_Rd * [1 - ((n-a)/(1-a))^2] = 31.46 kN-m.
-. Rmaxz = M_Edz / Mnz_Rd = 0.032 < 1.000 ---> O.K.

$$Rmax2 = \left[\frac{|M\_Edy|^{(Alpha)}}{|Mny\_Rd|} + \frac{|M\_Edz|^{(Beta)}}{|Mnz\_Rd|}\right]$$

$$= 0.011 < 1.000 \text{ ---> O.K.}$$

-. Rmax = MAX[Rmax1, Rmax2] = 0.630 < 1.000 ---> O.K.

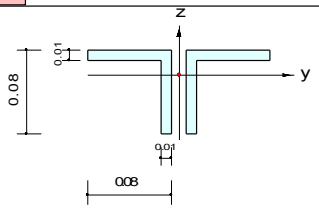
10.2 DIAFRAMMI SU SPALLE E INTERMEDI – TRASVERSI SUPERIORI

MIDAS/Civil **Steel Checking Result**

Company		**Project Title**	Viadotto Agrò
Author	Renato Vaira	**File Name**	D:\...\Cavalc Coste V_1.mcb

1. Design Information

Design Code : Eurocode3-2:05
Unit System : kN, m
Member No : 1439
Material : S355W (No:1)
(Fy = 355000, Es = 210000000)
Section Name : HSUP_CORR 2L80x10d15 (No:17)
(Built-up Section).
Member Length : 3.20000



Depth	0.08000	Web Thick	0.01000
Flg Width	0.08000	Flg Thick	0.01000
BTB Spacing	0.01500		
Area	0.00300	Asz	0.00133
Qyb	0.00159	Qzb	0.00320
Iyy	0.00000	Izz	0.00000
Ybar	0.08750	Zbar	0.05633
Wely	0.00003	Welz	0.00005
ry	0.02436	rz	0.03955

2. Member Forces

Axial Force Fxx = -208.47 (LCB: 22-, POS:I)
Bending Moments My = -0.6696, Mz = -0.0626
End Moments Myi = -0.6696, Myj = -0.6646 (for Lb)
Myi = -0.6696, Myj = -0.6646 (for Ly)
Mzi = -0.0626, Mzj = -0.0626 (for Lz)
Shear Forces Fyy = 0.05561 (LCB: 19+, POS:I)
Fzz = 0.93623 (LCB: 19+, POS:J)

3. Design Parameters

Unbraced Lengths Ly = 3.20000, Lz = 3.20000, Lb = 3.20000
Effective Length Factors Ky = 0.65, Kz = 0.65
Equivalent Uniform Moment Factors Cmy = 1.00, Cmz = 1.00, CmLT = 1.00

4. Checking Results

Axial Resistance
N_Ed/MIN[Nc_Rd, Nb_Rd] = 208.466/508.054 = 0.410 < 1.000 ..... O.K
Bending Resistance
M_Edy/M_Rdy = 0.6696/19.2503 = 0.035 < 1.000 ..... O.K
M_Edz/M_Rdz = 0.0626/31.6119 = 0.002 < 1.000 ..... O.K
Combined Resistance
RNRd = MAX[M_Edy/Mny_Rd, M_Edz/Mnz_Rd]
Rmax1 = (M_Edy/Mny_Rd)^Alpha + (M_Edz/Mnz_Rd)^Beta
Rcom = N_Ed/(A*fy/Gamma_M0), Rbend = M_Edy/My_Rd + M_Edz/Mz_Rd
Rc_LT1 = N_Ed/(Xiy*A*fy/Gamma_M1)
Rb_LT1 = (kyy*M_Edy)/(Xi_LT*Wply*fy/Gamma_M1) + (kyz*Msdz)/(Wplz*fy/Gamma_M1)
Rc_LT2 = N_Ed/(Xiz*A*fy/Gamma_M1)
Rb_LT2 = (Kzy*M_Edy)/(Xi_LT*Wply*fy/Gamma_M1) + (Kzz*Msdz)/(Wplz*fy/Gamma_M1)
Rmax = MAX[RNRd, Rmax1, (Rcom+Rbend), MAX(Rc_LT1+Rb_LT1, Rc_LT2+Rb_LT2)] = 0.469 < 1.000 .. O.K
Shear Resistance
V_Edy/Vy_Rd = 0.000 < 1.000 ..... O.K
V_Edz/Vz_Rd = 0.003 < 1.000 ..... O.K

Modeling, Integrated Design & Analysis Software
http://www.MidasUser.com
MIDAS/Civil V 8.3.5
Print Date/Time : 11/13/2017 11:44

MIDAS/Civil - Steel Code Checking[Eurocode3-2:05] Version 8.3.5
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+==+
| MIDAS(Modeling, Integrated Design & Analysis Software) |
| MIDAS/Civil - Design & checking system for windows |
+==+
| Steel Member Applicable Code Checking |
| Based On AASHTO-LRFD12, AASHTO-LRFD02, AASHTO-LFD96, |
| AASHTO-ASD96, AISC-LRFD2K, AISC-LRFD93, |
| AISC-ASD89, Eurocode3-2:05, BS5950-90, |
| IS:800-2007, IS:800-1984 |
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| (c)SINCE 1989 |
+==+
| MIDAS Information Technology Co.,Ltd. (MIDAS IT) |
| MIDAS IT Design Development Team |
+==+
| HomePage : www.MidasUser.com |
+==+
| MIDAS/Civil Version 8.3.5 |
+==+

*. DEFINITION OF LOAD COMBINATIONS WITH SCALING UP FACTORS.

LCB C Loadcase Name(Factor) + Loadcase Name(Factor) + Loadcase Name(Factor)

19+ 1 Dead Load(1.350) +Erection Load 1(1.500) +Creep Secondary(1.200)
+Shrinkage Secondary(1.200) +Vento Strutture INV(0.900) +Vento Mobili INV(0.900)
+Termico unif. INV(0.720) +Termico diff. INV(0.720) +Mobili SLU INV(1.350)
19- 1 Dead Load(1.350) +Erection Load 1(1.500) +Creep Secondary(1.200)
+Shrinkage Secondary(1.200) +Vento Strutture INV(0.900) +Vento Mobili INV(0.900)
+Termico unif. INV(0.720) +Termico diff. INV(0.720) +Mobili SLU INV(1.350)
20+ 1 Dead Load(1.350) +Erection Load 1(1.500) +Creep Secondary(1.200)
+Shrinkage Secondary(1.200) +Vento Strutture INV(1.500) +Vento Mobili INV(1.500)
+Termico unif. INV(0.720) +Termico diff. INV(0.720) +Mobili SLE INV(1.350)
20- 1 Dead Load(1.350) +Erection Load 1(1.500) +Creep Secondary(1.200)
+Shrinkage Secondary(1.200) +Vento Strutture INV(1.500) +Vento Mobili INV(1.500)
+Termico unif. INV(0.720) +Termico diff. INV(0.720) +Mobili SLE INV(1.350)
21+ 1 Dead Load(1.350) +Erection Load 1(1.500) +Creep Secondary(1.200)
+Shrinkage Secondary(1.200) +Frenamento INV(1.350) +Termico unif. INV(0.720)
+Termico diff. INV(0.720) +Mobili SLE INV(1.350)
21- 1 Dead Load(1.350) +Erection Load 1(1.500) +Creep Secondary(1.200)
+Shrinkage Secondary(1.200) +Frenamento INV(1.350) +Termico unif. INV(0.720)
+Termico diff. INV(0.720) +Mobili SLE INV(1.350)
22+ 1 Dead Load(1.350) +Erection Load 1(1.500) +Creep Secondary(1.200)
+Shrinkage Secondary(1.200) +Vento Strutture INV(0.900) +Vento Mobili INV(0.900)
+Termico unif. INV(1.200) +Termico diff. INV(1.200) +Mobili SLE INV(1.350)
22- 1 Dead Load(1.350) +Erection Load 1(1.500) +Creep Secondary(1.200)
+Shrinkage Secondary(1.200) +Vento Strutture INV(0.900) +Vento Mobili INV(0.900)
+Termico unif. INV(1.200) +Termico diff. INV(1.200) +Mobili SLE INV(1.350)

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23+ 1 Summation(1.000) +Termico unif. INV(0.500) +Termico diff. INV(0.500)
+ SLV Long INV(1.000) + SLV Trasv INV(0.300) + SLV Vert INV(0.300)
23- 1 Summation(1.000) +Termico unif. INV(0.500) +Termico diff. INV(0.500)
+ SLV Long INV(1.000) + SLV Trasv INV(0.300) + SLV Vert INV(0.300)
24+ 1 Summation(1.000) +Termico unif. INV(0.500) +Termico diff. INV(0.500)
+ SLV Long INV(0.300) + SLV Trasv INV(1.000) + SLV Vert INV(0.300)
24- 1 Summation(1.000) +Termico unif. INV(0.500) +Termico diff. INV(0.500)
+ SLV Long INV(0.300) + SLV Trasv INV(1.000) + SLV Vert INV(0.300)
25+ 1 Summation(1.000) +Termico unif. INV(0.500) +Termico diff. INV(0.500)
+ SLV Long INV(0.300) + SLV Trasv INV(0.300) + SLV Vert INV(1.000)
25- 1 Summation(1.000) +Termico unif. INV(0.500) +Termico diff. INV(0.500)
+ SLV Long INV(0.300) + SLV Trasv INV(0.300) + SLV Vert INV(1.000)
28+ 2 Summation(1.000) +Vento Strutture INV(0.600) +Vento Mobili INV(0.600)
+Termico unif. INV(0.600) +Termico diff. INV(0.600) +Mobili SLU INV(1.000)
28- 2 Summation(1.000) +Vento Strutture INV(0.600) +Vento Mobili INV(0.600)
+Termico unif. INV(0.600) +Termico diff. INV(0.600) +Mobili SLU INV(1.000)
29+ 2 Summation(1.000) +Vento Strutture INV(1.000) +Vento Mobili INV(1.000)
+Termico unif. INV(0.600) +Termico diff. INV(0.600) +Mobili SLE INV(1.000)
29- 2 Summation(1.000) +Vento Strutture INV(1.000) +Vento Mobili INV(1.000)
+Termico unif. INV(0.600) +Termico diff. INV(0.600) +Mobili SLE INV(1.000)
30+ 2 Summation(1.000) +Frenamento INV(1.000) +Termico unif. INV(0.600)
+Termico diff. INV(0.600) +Mobili SLE INV(1.000)
30- 2 Summation(1.000) +Frenamento INV(1.000) +Termico unif. INV(0.600)
+Termico diff. INV(0.600) +Mobili SLE INV(1.000)
31+ 2 Summation(1.000) +Vento Strutture INV(0.600) +Vento Mobili INV(0.600)
+Termico unif. INV(1.000) +Termico diff. INV(1.000) +Mobili SLE INV(1.000)
31- 2 Summation(1.000) +Vento Strutture INV(0.600) +Vento Mobili INV(0.600)
+Termico unif. INV(1.000) +Termico diff. INV(1.000) +Mobili SLE INV(1.000)
32+ 2 Summation(1.000) +Termico unif. INV(0.500) +Termico diff. INV(0.500)
+Mobili SLE INV(1.000)
32- 2 Summation(1.000) +Termico unif. INV(0.500) +Termico diff. INV(0.500)
+Mobili SLE INV(1.000)
33+ 2 Summation(1.000) +Vento Strutture INV(0.200) +Vento Mobili INV(0.200)
+Termico unif. INV(0.500) +Termico diff. INV(0.500)
33- 2 Summation(1.000) +Vento Strutture INV(0.200) +Vento Mobili INV(0.200)
+Termico unif. INV(0.500) +Termico diff. INV(0.500)
34+ 2 Summation(1.000) +Termico unif. INV(0.600) +Termico diff. INV(0.600)
34- 2 Summation(1.000) +Termico unif. INV(0.600) +Termico diff. INV(0.600)
35+ 2 Summation(1.000) +Termico unif. INV(0.500) +Termico diff. INV(0.500)
35- 2 Summation(1.000) +Termico unif. INV(0.500) +Termico diff. INV(0.500)

MIDAS/Civil - Steel Code Checking[Eurocode3-2:05] Version 8.3.5
==========

*. PROJECT : Viadotto Agrò
*. MEMBER NO = 1439, ELEMENT TYPE = Beam
*. LOADCOMB NO = 22-, MATERIAL NO = 1, SECTION NO = 17
*. UNIT SYSTEM : kN, m

*. SECTION PROPERTIES : Designation = HSUP_CORR 2L80x10d15
Shape = 2L - Section. (Built-up)
Depth = 0.080, Flg Width = 0.080, BTB Spacing = 0.015
Web Thick = 0.010, Flg Thick = 0.010

Area = 3.00000e-003, Avy = 1.60000e-003, Avz = 1.60000e-003
Ybar = 8.75000e-002, Zbar = 5.63333e-002, Qyb = 1.58672e-003, Qzb = 3.20000e-003
Wely = 3.15917e-005, Welz = 5.36429e-005, Wply = 5.69375e-005, Wplz = 9.35000e-005
Iyy = 1.77967e-006, Izz = 4.69375e-006, Iyz = 0.00000e+000
iy = 2.43562e-002, iz = 3.95548e-002
J = 1.00000e-007, Cwp = 4.24931e-011

*. DESIGN PARAMETERS FOR STRENGTH EVALUATION :
Ly = 3.20000e+000, Lz = 3.20000e+000, Lu = 3.20000e+000
Ky = 6.50000e-001, Kz = 6.50000e-001

*. MATERIAL PROPERTIES :
Fy = 3.55000e+005, Es = 2.10000e+008, MATERIAL NAME = S355W

*. FORCES AND MOMENTS AT (I) POINT :
Axial Force Fxx =-2.08466e+002
Shear Forces Fyy =-3.81125e-002, Fzz =-8.14832e-001
Bending Moments My =-6.69568e-001, Mz =-6.26441e-002
End Moments Myi =-6.69568e-001, Myj =-6.64598e-001 (for Lb)
Myi =-6.69568e-001, Myj =-6.64598e-001 (for Ly)
Mzi =-6.26441e-002, Mzj =-6.26241e-002 (for Lz)

*. Sign conventions for stress and axial force.
- Stress : Compression positive.
- Axial force: Tension positive.

==========
[[[*]]] CLASSIFY LEFT FLANGE OF SECTION (BTR).
==========

( ). Determine classification of compression flanges(Double angle).
[Eurocode3:05 Table 5.2 (Sheet 3 of 3), EN 1993-1-5]
-. e = SQRT(235/fy) = 0.81
-. b/t = BTR = 7.00
-. sigma1 = 61752.308 KPa.
-. sigma2 = 60684.605 KPa.
-. BTR < 9*e (Class 1 : Plastic).

MIDAS/Civil - Steel Code Checking[Eurocode3-2:05] Version 8.3.5
==========

==========
[[[*]]] CLASSIFY RIGHT FLANGE OF SECTION (BTR).
==========

( ). Determine classification of compression flanges(Double angle).
[Eurocode3:05 Table 5.2 (Sheet 3 of 3), EN 1993-1-5]
-. e = SQRT(235/fy) = 0.81
-. b/t = BTR = 7.00
-. sigma1 = 60484.411 KPa.
-. sigma2 = 59416.708 KPa.
-. BTR < 9*e (Class 1 : Plastic).

==========
[[[*]]] CLASSIFY WEB OF SECTION (HTR).
==========

( ). Determine classification of compression element(Double angles).
[Eurocode3:05 Table 5.2 (Sheet 3 of 3), EN 1993-1-5]
-. e = SQRT(235/fy) = 0.81
-. d/t = HTR = 8.00
-. sigma1 = 90916.658 KPa.
-. sigma2 = 64580.392 KPa.
-. HTR < 10*e (Class 2 : Compact).

==========
[[[*]]] APPLIED FACTORS.
==========

( ). Calculate equivalent uniform moment factors (Cmy,Cmz,CmLT).
[Eurocode3:05 Annex A. Table A.1, A.2]
-. Cmy,0 = 0.755
-. Cmz,0 = 0.907
-. Cmy (Default or User Defined Value) = 1.000
-. Cmz (Default or User Defined Value) = 1.000
-. CmLT (Default or User Defined Value) = 1.000

( ). Partial Factors (Gamma_Mi).
[Eurocode3:05 6.1]
-. Gamma_M0 = 1.05
-. Gamma_M1 = 1.10
-. Gamma_M2 = 1.25

==========
[[[*]]] CHECK AXIAL RESISTANCE.
==========

( ). Check slenderness ratio of axial compression member (Kl/i).
[Eurocode3:05 6.3.1]
-. Kl/i = 85.4 < 200.0 ---> O.K.

MIDAS/Civil - Steel Code Checking[Eurocode3-2:05] Version 8.3.5
==========

( ). Calculate axial compressive resistance (Nc_Rd).
[Eurocode3:05 6.1, 6.2.4]
-. Nc_Rd = fy * Area / Gamma_M0 = 1014.29 kN.

( ). Check ratio of axial resistance (N_Ed/Nc_Rd).
N_Ed 208.47
-. ----- = ---------- = 0.206 < 1.000 ---> O.K.
Nc_Rd 1014.29

( ). Calculate buckling resistance of compression member (Nb_Rdy, Nb_Rdz).
[Eurocode3:05 6.3.1.1, 6.3.1.2]
-. Beta_A = Aeff / Area = 1.000
-. Lambda1 = Pi * SQRT(Es/fy) = 76.409
-. Lambda_by = {(KLy/iy)/Lambda1} * SQRT(Beta_A) = 1.118
-. Ncry = Pi^2*Es*Ryy / KLy^2 = 852.57 kN.
-. Lambda_by > 0.2 and N_Ed/Ncry > 0.04 --> Need to check.
-. Alphay = 0.340
-. Phiy = 0.5 * [1 + Alphay*(Lambda_by-0.2) + Lambda_by^2] = 1.281
-. Xiy = MIN [1 / [Phiy + SQRT(Phiy^2 - Lambda_by^2)], 1.0] = 0.525
-. Nb_Rdy = Xiy*Beta_A*Area*fy / Gamma_M1 = 508.05 kN.

-. Lambda_bz = {(KLz/iz)/Lambda1} * SQRT(Beta_A) = 0.688
-. Ncrz = Pi^2*Es*Rzz / KLz^2 = 2248.60 kN.
-. Lambda_bz > 0.2 and N_Ed/Ncrz > 0.04 --> Need to check.
-. Alphaz = 0.340
-. Phiz = 0.5 * [1 + Alphaz*(Lambda_bz-0.2) + Lambda_bz^2] = 0.820
-. Xiz = MIN [1 / [Phiz + SQRT(Phiz^2 - Lambda_bz^2)], 1.0] = 0.790
-. Nb_Rdz = Xiz*Beta_A*Area*fy / Gamma_M1 = 765.18 kN.

( ). Check ratio of buckling resistance (N_Ed/Nb_Rd).
-. Nb_Rd = MIN[Nb_Rdy, Nb_Rdz] = 508.05 kN.
N_Ed 208.47
-. ----- = ---------- = 0.410 < 1.000 ---> O.K.
Nb_Rd 508.05

==========
[[[*]]] CHECK SHEAR RESISTANCE.
==========

( ). Calculate shear area.
[Eurocode3:05 6.2.6, EN1993-1-5:04 5.1 NOTE 2]
-. Avy = 2*B*tf = 0.0016 m^2.
-. Avz = 2*h*tw = 0.0016 m^2.

( ). Calculate plastic shear resistance in local-y direction (Vpl_Rdy).
[Eurocode3:05 6.1, 6.2.6]
-. Vpl_Rdy = [Avy*fy/SQRT(3)] / Gamma_M0 = 312.32 kN.

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==========

( ). Check ratio of shear resistance (V_Edy/Vpl_Rdy).
(LCB = 19+, POS = J)
-. Applied shear force : V_Edy = 0.06 kN.
V_Edy 0.06
-. ------- = ---------- =1.781e-004 < 1.000 ---> O.K.
Vpl_Rdy 312.32

( ). Calculate plastic shear resistance in local-z direction (Vpl_Rdz).
[Eurocode3:05 6.1, 6.2.6]
-. Vpl_Rdz = [Avz*fy/SQRT(3)] / Gamma_M0 = 312.32 kN.

( ). Shear Buckling Check.
[Eurocode3:05 6.2.6]
-. HTR < 72*e/Eta ---> No need to check!

( ). Check ratio of shear resistance (V_Edz/Vpl_Rdz).
(LCB = 19+, POS = J)
-. Applied shear force : V_Edz = 0.94 kN.
V_Edz 0.94
-. ------- = ---------- = 0.003 < 1.000 ---> O.K.
Vpl_Rdz 312.32

==========
[[[*]]] CHECK BENDING MOMENT RESISTANCE ABOUT MAJOR AXIS.
==========

( ). Calculate plastic resistance moment about major axis.
[Eurocode3:05 6.1, 6.2.5]
-. Wply = 5.6938e-005 m^3.
-. Mc_Rdy = Wply * fy / Gamma_M0 = 19.25 kN-m.

( ). Check ratio of moment resistance (M_Edy/Mc_Rdy).
M_Edy 0.67
-. ------ = ---------- = 0.035 < 1.000 ---> O.K.
Mc_Rdy 19.25

==========
[[[*]]] CHECK BENDING MOMENT RESISTANCE ABOUT MINOR AXIS.
==========

( ). Calculate plastic resistance moment about minor axis.
[Eurocode3:05 6.1, 6.2.5]
-. Wplz = 9.3500e-005 m^3.
-. Mc_Rdz = Wplz * fy / Gamma_M0 = 31.61 kN-m.

( ). Check ratio of moment resistance (M_Edz/Mc_Rdz).
M_Edz 0.06
-. ------ = ---------- = 0.002 < 1.000 ---> O.K.
Mc_Rdz 31.61

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==========

==========
[[[*]]] CHECK INTERACTION OF COMBINED RESISTANCE.
==========

( ). Calculate Major reduced design resistance of bending and shear.
[Eurocode3:05 6.2.8 (6.30)]
-. In case of V_Edz / Vpl_Rdz < 0.5
-. My_Rd = Mc_Rdy = 19.25 kN-m.

( ). Calculate Minor reduced design resistance of bending and shear.
[Eurocode3:05 6.2.8 (6.30)]
-. In case of V_Edy / Vpl_Rdy < 0.5
-. Mz_Rd = Mc_Rdz = 31.61 kN-m.

( ). Check general interaction ratio.
[Eurocode3:05 6.2.1 (6.2)] - Class1 or Class2

$$\text{Rmax1} = \frac{N_{Ed}}{N_{Rd}} + \frac{M_{Edy}}{My_{Rd}} + \frac{M_{Edz}}{Mz_{Rd}} = 0.242 < 1.000 \text{ ---> O.K.}$$

( ). Check interaction ratio of bending and axial force member.
[Eurocode3:05 6.2.9 (6.31 ~ 6.41)] - Class1 or Class2
-. n = N_Ed / Npl_Rd = 0.206
-. a = MIN[(Area-2b*tf)/Area, 0.5] = 0.500
-. Alpha = 2.000
-. Beta = MAX[5*n, 1.0] = 1.028
-. Mny_Rd = MIN[Mply_Rd*(1-n)/(1-0.5*a), Mply_Rd] = 19.25 kN-m.
-. Rmaxy = M_Edy / Mny_Rd = 0.035 < 1.000 ---> O.K.

-. In case of n < a
-. Mnz_Rd = Mplz_Rd = 31.61 kN-m.
-. Rmaxz = M_Edz / Mnz_Rd = 0.002 < 1.000 ---> O.K.

$$\text{Rmax2} = \left[\frac{M_{Edy}}{Mny_{Rd}}\right]^{(\text{Alpha})} + \left[\frac{M_{Edz}}{Mnz_{Rd}}\right]^{(\text{Beta})} = 0.003 < 1.000 \text{ ---> O.K.}$$

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==========

( ). Check interaction ratio of bending and axial compression member.
[Eurocode3:05 6.3.1, 6.2.9.3 (6.61, 6.62), Annex A]
-. N_Ed = -208.47 kN.
-. M_Edy = -0.67 kN-m.
-. M_Edz = -0.06 kN-m.
-. kyy = 1.216
-. kyz = 0.598
-. kzy = 0.804
-. kzz = 1.212
-. Xiy = 0.525
-. Xiz = 0.790
-. XiLT = 0.772
-. N_Rk = A*fy = 1065.00 kN.
-. My_Rk = Wply*fy = 20.21 kN-m.
-. Mz_Rk = Wplz*fy = 33.19 kN-m.
-. N_Ed*eNy = 0.0 (Not Slender)
-. N_Ed*eNZ = 0.0 (Not Slender)

$$\text{-. Rmax\_LT1} = \frac{N_{Ed}}{Xiy*N_{Rk}/Gamma_{M1}} + kyy * \frac{M_{Edy} + N_{Ed}*eNy}{XiLT*My_{Rk}/Gamma_{M1}} + kyz * \frac{M_{Edz} + N_{Ed}*eNz}{Mz_{Rk}/Gamma_{M1}}$$

= 0.469 < 1.000 ---> O.K.

$$\text{-. Rmax\_LT2} = \frac{N_{Ed}}{Xiz*N_{Rk}/Gamma_{M1}} + kzy * \frac{M_{Edy} + N_{Ed}*eNy}{XiLT*My_{Rk}/Gamma_{M1}} + kzz * \frac{M_{Edz} + N_{Ed}*eNz}{Mz_{Rk}/Gamma_{M1}}$$

= 0.313 < 1.000 ---> O.K.

-. Rmax = MAX[MAX(Rmax1, Rmax2), MAX(Rmax_LT1, Rmax_LT2)] = 0.469 < 1.000 ---> O.K.

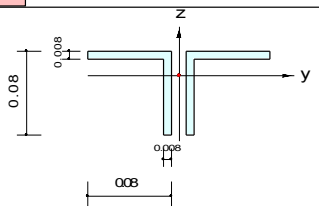
10.3 DIAFRAMMI SU SPALLE E INTERMEDI – DIAGONALI

MIDAS/Civil **Steel Checking Result**

Company		**Project Title**	Viadotto Agrò
Author	Renato Vaira	**File Name**	D:\...\Cavalc Coste V_1.mcb

1. Design Information

Design Code : Eurocode3-2:05
Unit System : kN, m
Member No : 1422
Material : S355W (No:1)
(Fy = 355000, Es = 210000000)
Section Name : DIAG_CORR 2L80x8d15 (No:64)
(Built-up Section).
Member Length : 1.70880



2. Member Forces

Axial Force Fxx = -149.23 (LCB: 19-, POS:I)
Bending Moments My = -2.0028, Mz = -0.4744
End Moments Myi = -2.0028, Myj = -0.7243 (for Lb)
Myi = -2.0028, Myj = -0.7243 (for Ly)
Mzi = -0.4744, Mzj = -0.2855 (for Lz)
Shear Forces Fyy = -0.1107 (LCB: 19-, POS:I)
Fzz = -2.0966 (LCB: 19-, POS:J)

Depth	0.08000	Web Thick	0.00800
Flg Width	0.08000	Flg Thick	0.00800
BTB Spacing	0.01500		
Area	0.00243	Asz	0.00107
Qyb	0.00163	Qzb	0.00320
Iyy	0.00000	Izz	0.00000
Ybar	0.08750	Zbar	0.05705
Wely	0.00003	Welz	0.00004
ry	0.02462	rz	0.03916

3. Design Parameters

Unbraced Lengths Ly = 1.70880, Lz = 1.70880, Lb = 1.70880
Effective Length Factors Ky = 0.65, Kz = 1.30
Equivalent Uniform Moment Factors Cmy = 1.00, Cmz = 1.00, CmLT = 1.00

4. Checking Results

Axial Resistance
N_Ed/MIN[Nc_Rd, Nb_Rd] = 149.229/595.881 = 0.250 < 1.000 ..... O.K
Bending Resistance
M_Edy/M_Rdy = 2.00283/8.34129 = 0.240 < 1.000 ..... O.K
M_Edz/M_Rdz = 0.4744/11.6551 = 0.041 < 1.000 ..... O.K
Combined Resistance
Rcom = N_Ed/(Aeff*fy/Gamma_M0), Rbend = (M_Edy+N_Ed*eNy)/My_Rd + (M_Edz+N_Ed*eNz)/Mz_Rd
Rc_LT1 = N_Ed/(Xiy*Aeff*fy/Gamma_M1)
Rb_LT1 = kyy*(M_Edy+N_Ed*eNy)/(Xi_LT*Weffy*fy/Gamma_M1) + kyz*(M_Edz+N_Ed*eNz)/(Weffz*fy/Gamma_M1)
Rc_LT2 = N_Ed/(Xiz*Aeff*fy/Gamma_M1)
Rb_LT2 = kzy*(M_Edzy+N_Ed*eNy)/(Xi_LT*Weffy*fy/Gamma_M1) + kzz*(M_Edz+N_Ed*eNz)/(Weffz*fy/Gamma_M1)
Rmax = MAX[Rcom+Rbend, MAX(Rc_LT1+Rb_LT1, Rc_LT2+Rb_LT2)] = 0.563 < 1.000 .... O.K
Shear Resistance
V_Edy/Vy_Rd = 0.000 < 1.000 ..... O.K
V_Edz/Vz_Rd = 0.008 < 1.000 ..... O.K

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http://www.MidasUser.com
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Print Date/Time : 11/13/2017 11:44

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    +============================================================+
    |  MIDAS(Modeling, Integrated Design & Analysis Software)    |
    |  MIDAS/Civil - Design & checking system for windows        |
    +============================================================+
    |  Steel Member Applicable Code Checking                     |
    |  Based On  AASHTO-LRFD12, AASHTO-LRFD02, AASHTO-LFD96,     |
    |          AASHTO-ASD96, AISC-LRFD2K, AISC-LRFD93,           |
    |          AISC-ASD89, Eurocode3-2:05, BS5950-90,            |
    |          IS:800-2007, IS:800-1984                          |
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    +============================================================+


   *. DEFINITION OF LOAD COMBINATIONS WITH SCALING UP FACTORS.
---------------------------------------------------------------------------------------
    LCB  C    Loadcase Name(Factor) + Loadcase Name(Factor) + Loadcase Name(Factor)
---------------------------------------------------------------------------------------
    19+  1       Dead Load( 1.350) +Erection Load 1( 1.500) +Creep Secondary( 1.200)
           +Shrinkage Secondary( 1.200) +Vento Strutture INV( 0.900) +Vento Mobili INV( 0.900)
           +Termico unif. INV( 0.720) +Termico diff. INV( 0.720) +Mobili SLU INV( 1.350)
    19-  1       Dead Load( 1.350) +Erection Load 1( 1.500) +Creep Secondary( 1.200)
           +Shrinkage Secondary( 1.200) +Vento Strutture INV( 0.900) +Vento Mobili INV( 0.900)
           +Termico unif. INV( 0.720) +Termico diff. INV( 0.720) +Mobili SLU INV( 1.350)
    20+  1       Dead Load( 1.350) +Erection Load 1( 1.500) +Creep Secondary( 1.200)
           +Shrinkage Secondary( 1.200) +Vento Strutture INV( 1.500) +Vento Mobili INV( 1.500)
           +Termico unif. INV( 0.720) +Termico diff. INV( 0.720) +Mobili SLE INV( 1.350)
    20-  1       Dead Load( 1.350) +Erection Load 1( 1.500) +Creep Secondary( 1.200)
           +Shrinkage Secondary( 1.200) +Vento Strutture INV( 1.500) +Vento Mobili INV( 1.500)
           +Termico unif. INV( 0.720) +Termico diff. INV( 0.720) +Mobili SLE INV( 1.350)
    21+  1       Dead Load( 1.350) +Erection Load 1( 1.500) +Creep Secondary( 1.200)
           +Shrinkage Secondary( 1.200) +Frenamento INV( 1.350) +Termico unif. INV( 0.720)
           +Termico diff. INV( 0.720) +Mobili SLE INV( 1.350)
    21-  1       Dead Load( 1.350) +Erection Load 1( 1.500) +Creep Secondary( 1.200)
           +Shrinkage Secondary( 1.200) +Frenamento INV( 1.350) +Termico unif. INV( 0.720)
           +Termico diff. INV( 0.720) +Mobili SLE INV( 1.350)
    22+  1       Dead Load( 1.350) +Erection Load 1( 1.500) +Creep Secondary( 1.200)
           +Shrinkage Secondary( 1.200) +Vento Strutture INV( 0.900) +Vento Mobili INV( 0.900)
           +Termico unif. INV( 1.200) +Termico diff. INV( 1.200) +Mobili SLE INV( 1.350)
    22-  1       Dead Load( 1.350) +Erection Load 1( 1.500) +Creep Secondary( 1.200)
           +Shrinkage Secondary( 1.200) +Vento Strutture INV( 0.900) +Vento Mobili INV( 0.900)
           +Termico unif. INV( 1.200) +Termico diff. INV( 1.200) +Mobili SLE INV( 1.350)
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==========

23+ 1 Summation(1.000) +Termico unif. INV(0.500) +Termico diff. INV(0.500)
+ SLV Long INV(1.000) + SLV Trasv INV(0.300) + SLV Vert INV(0.300)
23- 1 Summation(1.000) +Termico unif. INV(0.500) +Termico diff. INV(0.500)
+ SLV Long INV(1.000) + SLV Trasv INV(0.300) + SLV Vert INV(0.300)
24+ 1 Summation(1.000) +Termico unif. INV(0.500) +Termico diff. INV(0.500)
+ SLV Long INV(0.300) + SLV Trasv INV(1.000) + SLV Vert INV(0.300)
24- 1 Summation(1.000) +Termico unif. INV(0.500) +Termico diff. INV(0.500)
+ SLV Long INV(0.300) + SLV Trasv INV(1.000) + SLV Vert INV(0.300)
25+ 1 Summation(1.000) +Termico unif. INV(0.500) +Termico diff. INV(0.500)
+ SLV Long INV(0.300) + SLV Trasv INV(0.300) + SLV Vert INV(1.000)
25- 1 Summation(1.000) +Termico unif. INV(0.500) +Termico diff. INV(0.500)
+ SLV Long INV(0.300) + SLV Trasv INV(0.300) + SLV Vert INV(1.000)
28+ 2 Summation(1.000) +Vento Strutture INV(0.600) +Vento Mobili INV(0.600)
+Termico unif. INV(0.600) +Termico diff. INV(0.600) +Mobili SLU INV(1.000)
28- 2 Summation(1.000) +Vento Strutture INV(0.600) +Vento Mobili INV(0.600)
+Termico unif. INV(0.600) +Termico diff. INV(0.600) +Mobili SLU INV(1.000)
29+ 2 Summation(1.000) +Vento Strutture INV(1.000) +Vento Mobili INV(1.000)
+Termico unif. INV(0.600) +Termico diff. INV(0.600) +Mobili SLE INV(1.000)
29- 2 Summation(1.000) +Vento Strutture INV(1.000) +Vento Mobili INV(1.000)
+Termico unif. INV(0.600) +Termico diff. INV(0.600) +Mobili SLE INV(1.000)
30+ 2 Summation(1.000) +Frenamento INV(1.000) +Termico unif. INV(0.600)
+Termico diff. INV(0.600) +Mobili SLE INV(1.000)
30- 2 Summation(1.000) +Frenamento INV(1.000) +Termico unif. INV(0.600)
+Termico diff. INV(0.600) +Mobili SLE INV(1.000)
31+ 2 Summation(1.000) +Vento Strutture INV(0.600) +Vento Mobili INV(0.600)
+Termico unif. INV(1.000) +Termico diff. INV(1.000) +Mobili SLE INV(1.000)
31- 2 Summation(1.000) +Vento Strutture INV(0.600) +Vento Mobili INV(0.600)
+Termico unif. INV(1.000) +Termico diff. INV(1.000) +Mobili SLE INV(1.000)
32+ 2 Summation(1.000) +Termico unif. INV(0.500) +Termico diff. INV(0.500)
+Mobili SLE INV(1.000)
32- 2 Summation(1.000) +Termico unif. INV(0.500) +Termico diff. INV(0.500)
+Mobili SLE INV(1.000)
33+ 2 Summation(1.000) +Vento Strutture INV(0.200) +Vento Mobili INV(0.200)
+Termico unif. INV(0.500) +Termico diff. INV(0.500)
33- 2 Summation(1.000) +Vento Strutture INV(0.200) +Vento Mobili INV(0.200)
+Termico unif. INV(0.500) +Termico diff. INV(0.500)
34+ 2 Summation(1.000) +Termico unif. INV(0.600) +Termico diff. INV(0.600)
34- 2 Summation(1.000) +Termico unif. INV(0.600) +Termico diff. INV(0.600)
35+ 2 Summation(1.000) +Termico unif. INV(0.500) +Termico diff. INV(0.500)
35- 2 Summation(1.000) +Termico unif. INV(0.500) +Termico diff. INV(0.500)

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*. PROJECT : Viadotto Agrò
*. MEMBER NO = 1422, ELEMENT TYPE = Beam
*. LOADCOMB NO = 19-, MATERIAL NO = 1, SECTION NO = 64
*. UNIT SYSTEM : kN, m

*. SECTION PROPERTIES : Designation = DIAG_CORR 2L80x8d15
Shape = 2L - Section. (Built-up)
Depth = 0.080, Flg Width = 0.080, BTB Spacing = 0.015
Web Thick = 0.008, Flg Thick = 0.008

Area = 2.43200e-003, Avy = 1.28000e-003, Avz = 1.28000e-003
Ybar = 8.75000e-002, Zbar = 5.70526e-002, Qyb = 1.62750e-003, Qzb = 3.20000e-003
Wely = 2.58462e-005, Welz = 4.26190e-005, Wply = 4.65664e-005, Wplz = 7.40480e-005
Iyy = 1.47460e-006, Izz = 3.72916e-006, Iyz = 0.00000e+000
iy = 2.46238e-002, iz = 3.91583e-002
J = 5.18827e-008, Cwp = 2.31033e-011

*. DESIGN PARAMETERS FOR STRENGTH EVALUATION :
Ly = 1.70880e+000, Lz = 1.70880e+000, Lu = 1.70880e+000
Ky = 6.50000e-001, Kz = 1.30000e+000

*. MATERIAL PROPERTIES :
Fy = 3.55000e+005, Es = 2.10000e+008, MATERIAL NAME = S355W

*. FORCES AND MOMENTS AT (I) POINT :
Axial Force Fxx =-1.49229e+002
Shear Forces Fyy =-1.10743e-001, Fzz =-1.63158e+000
Bending Moments My =-2.00283e+000, Mz =-4.74407e-001
End Moments Myi =-2.00283e+000, Myj =-7.24258e-001 (for Lb)
Myi =-2.00283e+000, Myj =-7.24258e-001 (for Ly)
Mzi =-4.74407e-001, Mzj =-2.85479e-001 (for Lz)

*. Sign conventions for stress and axial force.
- Stress : Compression positive.
- Axial force: Tension positive.

==========
[[[*]]] CLASSIFY LEFT FLANGE OF SECTION (BTR).
==========

( ). Determine classification of compression flanges(Double angle).
[Eurocode3:05 Table 5.2 (Sheet 3 of 3), EN 1993-1-5]
-. e = SQRT(235/fy) = 0.81
-. b/t = BTR = 9.00
-. sigma1 = 41324.319 KPa.
-. sigma2 = 31147.091 KPa.
-. BTR_L = (H+B) / (2*tf) = 10.00
-. BTR > 15*e or BTR_L > 11.5*e (Class 4 : Slender).

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==========

==========
[[[*]]] CLASSIFY RIGHT FLANGE OF SECTION (BTR).
==========

( ). Determine classification of compression flanges(Double angle).
[Eurocode3:05 Table 5.2 (Sheet 3 of 3), EN 1993-1-5]
-. e = SQRT(235/fy) = 0.81
-. b/t = BTR = 9.00
-. sigma1 = 29238.861 KPa.
-. sigma2 = 19061.633 KPa.
-. BTR_L = (H+B) / (2*tf) = 10.00
-. BTR > 15*e or BTR_L > 11.5*e (Class 4 : Slender).

==========
[[[*]]] CLASSIFY WEB OF SECTION (HTR).
==========

( ). Determine classification of compression element(Double angles).
[Eurocode3:05 Table 5.2 (Sheet 3 of 3), EN 1993-1-5]
-. e = SQRT(235/fy) = 0.81
-. d/t = HTR = 10.00
-. sigma1 = 140822.580 KPa.
-. sigma2 = 43030.591 KPa.
-. HTR_L = (h+B) / (2*tw) = 10.00
-. HTR > 15*e or HTR_L > 11.5*e (Class 4 : Slender).

==========
[[[*]]] CALCULATE EFFECTIVE AREA.
==========

( ). Calculate buckling factor of outstand compression element.
[Eurocode3 Part 1-5 4.4, Table 4.2]
-. In case of Psi = 1.0
-. k_sigma = 0.4300

( ). Calculate effective cross-section properties of left flange flange of Class 4 (Outstand element).
[Eurocode3 Part 1-5 4.4, Table 4.1, 4.2]
-. RatT = 9.0000
-. Lambda_p = RatT / [28.4*Eps*SQRT(k_sigma)] = 0.5940
-. Rho = 1.0
-. sigma_max = MAX(sigma1, sigma2) = 61360.598 KPa.
-. sigma_min = MIN(sigma1, sigma2) = 61360.598 KPa.
-. r = 0.000 m.
-. bc = 0.080 m.
-. beff = Rho*bc + r = 0.080 m.
-. Aeff = beff * tf = 6.400e-004 m^2.
-. yeff = beff/2 = 0.040 m.

( ). Calculate buckling factor of outstand compression element.
[Eurocode3 Part 1-5 4.4, Table 4.2]

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==========

-. In case of Psi = 1.0
-. k_sigma = 0.4300

( ). Calculate effective cross-section properties of right flange flange of Class 4 (Outstand element).
[Eurocode3 Part 1-5 4.4, Table 4.1, 4.2]
-. RatT = 9.0000
-. Lambda_p = RatT / [28.4*Eps*SQRT(k_sigma)] = 0.5940
-. Rho = 1.0
-. sigma_max = MAX(sigma1, sigma2) = 61360.598 KPa.
-. sigma_min = MIN(sigma1, sigma2) = 61360.598 KPa.
-. r = 0.000 m.
-. bc = 0.080 m.
-. beff = Rho*bc + r = 0.080 m.
-. Aeff = beff * tf = 6.400e-004 m^2.
-. yeff = beff/2 = 0.040 m.

( ). Calculate buckling factor of outstand compression element.
[Eurocode3 Part 1-5 4.4, Table 4.2]
-. In case of Psi = 1.0
-. k_sigma = 0.4300

( ). Calculate effective cross-section properties of left web of Class 4 (Internal element).
[Eurocode3 Part 1-5 4.4, Table 4.1, 4.2]
-. RatT = 10.0000
-. Lambda_p = RatT / [28.4*Eps*SQRT(k_sigma)] = 0.6600
-. Rho = 1.0
-. sigma_max = MAX(sigma1, sigma2) = 61360.598 KPa.
-. sigma_min = MIN(sigma1, sigma2) = 61360.598 KPa.
-. r = 0.000 m.
-. Ar = 0.000 m^2.
-. dc = 0.072 m.
-. deff1 = 2*(Rho*dc) / [5 - sigma_min/sigma_max] + r = 0.036 m.
-. Aeff1 = deff1 * tw + 2*Ar = 2.880e-004 m^2.
-. zeff1 = deff1/2 + tf = 0.018 m.
-. deff2 = (Rho*dc) - deff1 + r = 0.036 m.
-. Aeff2 = deff2 * tw + 2*Ar = 2.880e-004 m^2.
-. zeff2 = (h+2*r) - deff2/2 + tf = 0.054 m.

( ). Calculate buckling factor of outstand compression element.
[Eurocode3 Part 1-5 4.4, Table 4.2]
-. In case of Psi = 1.0
-. k_sigma = 0.4300

( ). Calculate effective cross-section properties of right web of Class 4 (Internal element).
[Eurocode3 Part 1-5 4.4, Table 4.1, 4.2]
-. RatT = 10.0000
-. Lambda_p = RatT / [28.4*Eps*SQRT(k_sigma)] = 0.6600
-. Rho = 1.0

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==========

-. sigma_max = MAX(sigma1, sigma2) = 61360.598 KPa.
-. sigma_min = MIN(sigma1, sigma2) = 61360.598 KPa.
-. r = 0.000 m.
-. Ar = 0.000 m^2.
-. dc = 0.072 m.
-. deff1 = 2*(Rho*dc) / [5 - sigma_min/sigma_max] + r = 0.036 m.
-. Aeff1 = deff1 * tw + 2*Ar = 2.880e-004 m^2.
-. zeff1 = deff1/2 + tf = 0.018 m.
-. deff2 = (Rho*dc) - deff1 + r = 0.036 m.
-. Aeff2 = deff2 * tw + 2*Ar = 2.880e-004 m^2.
-. zeff2 = (h+2*r) - deff2/2 + tf = 0.054 m.

==========
[[[*]]] CALCULATE EFFECTIVE SECTION MODULUS ABOUT MAJOR AXIS.
==========

( ). Calculate effective cross-section properties of left flange flange of Class 4 (Outstand element).
[Eurocode3 Part 1-5 4.4, Table 4.1, 4.2]
-. Rho = 1.0 (Only tensile stresses).
-. sigma_max = MAX(sigma1, sigma2) = -31167.622 KPa.
-. sigma_min = MIN(sigma1, sigma2) = -31167.622 KPa.
-. r = 0.000 m.
-. bc = 0.080 m.
-. beff = Rho*bc + r = 0.080 m.
-. Aeff = beff * tf = 6.400e-004 m^2.
-. yeff = beff/2 = 0.040 m.

( ). Calculate effective cross-section properties of right flange flange of Class 4 (Outstand element).
[Eurocode3 Part 1-5 4.4, Table 4.1, 4.2]
-. Rho = 1.0 (Only tensile stresses).
-. sigma_max = MAX(sigma1, sigma2) = -31167.622 KPa.
-. sigma_min = MIN(sigma1, sigma2) = -31167.622 KPa.
-. r = 0.000 m.
-. bc = 0.080 m.
-. beff = Rho*bc + r = 0.080 m.
-. Aeff = beff * tf = 6.400e-004 m^2.
-. yeff = beff/2 = 0.040 m.

( ). Calculate buckling factor of outstand compression element.
[Eurocode3 Part 1-5 4.4, Table 4.2]
-. k_sigma = 0.57 - 0.21*Psi + 0.07*Psi^2 = 0.6298

( ). Calculate effective cross-section properties of left web of Class 4 (Internal element).
[Eurocode3 Part 1-5 4.4, Table 4.1, 4.2]
-. RatT = 10.0000
-. Lambda_p = RatT / [28.4*Eps*SQRT(k_sigma)] = 0.5453
-. Rho = 1.0

MIDAS/Civil - Steel Code Checking[Eurocode3-2:05] Version 8.3.5
==========

-. sigma_max = MAX(sigma1, sigma2) = 77490.143 KPa.
-. sigma_min = MIN(sigma1, sigma2) = -20301.846 KPa.
-. r = 0.000 m.
-. Ar = 0.000 m^2.
-. dc = (h*sigma_max) / (sigma_max-sigma_min) = 0.057 m.
-. deff1 = 0.4*Rho*dc + r = 0.023 m.
-. Aeff1 = deff1 * tw + 2*Ar = 1.826e-004 m^2.
-. zeff1 = deff1/2 + tf = 0.011 m.
-. deff2 = 0.6*Rho*dc + (h-dc) + r = 0.049 m.
-. Aeff2 = deff2 * tw + 2*Ar = 3.934e-004 m^2.
-. zeff2 = (h+2*r) - deff2/2 + tf = 0.047 m.

( ). Calculate buckling factor of outstand compression element.
[Eurocode3 Part 1-5 4.4, Table 4.2]
-. k_sigma = 0.57 - 0.21*Psi + 0.07*Psi^2 = 0.6298

( ). Calculate effective cross-section properties of right web of Class 4 (Internal element).
[Eurocode3 Part 1-5 4.4, Table 4.1, 4.2]
-. RatT = 10.0000
-. Lambda_p = RatT / [28.4*Eps*SQRT(k_sigma)] = 0.5453
-. Rho = 1.0
-. sigma_max = MAX(sigma1, sigma2) = 77490.143 KPa.
-. sigma_min = MIN(sigma1, sigma2) = -20301.846 KPa.
-. r = 0.000 m.
-. Ar = 0.000 m^2.
-. dc = (h*sigma_max) / (sigma_max-sigma_min) = 0.057 m.
-. deff1 = 0.4*Rho*dc + r = 0.023 m.
-. Aeff1 = deff1 * tw + 2*Ar = 1.826e-004 m^2.
-. zeff1 = deff1/2 + tf = 0.011 m.
-. deff2 = 0.6*Rho*dc + (h-dc) + r = 0.049 m.
-. Aeff2 = deff2 * tw + 2*Ar = 3.934e-004 m^2.
-. zeff2 = (h+2*r) - deff2/2 + tf = 0.047 m.

==========
[[[*]]] CALCULATE EFFECTIVE SECTION MODULUS ABOUT MINOR AXIS.
==========

( ). Calculate buckling factor of outstand compression element.
[Eurocode3 Part 1-5 4.4, Table 4.2]
-. k_sigma = 0.57 - 0.21*Psi + 0.07*Psi^2 = 0.5525

( ). Calculate effective cross-section properties of left flange flange of Class 4 (Outstand element).
[Eurocode3 Part 1-5 4.4, Table 4.1, 4.2]
-. RatT = 9.0000
-. Lambda_p = RatT / [28.4*Eps*SQRT(k_sigma)] = 0.5240
-. Rho = 1.0

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==========

-. sigma_max = MAX(sigma1, sigma2) = 11131.343 KPa.
-. sigma_min = MIN(sigma1, sigma2) = 954.115 KPa.
-. r = 0.000 m.
-. bc = 0.080 m.
-. beff = Rho*bc + r = 0.080 m.
-. Aeff = beff * tf = 6.400e-004 m^2.
-. yeff = beff/2 = 0.040 m.

( ). Calculate effective cross-section properties of right flange flange of Class 4 (Outstand element).
[Eurocode3 Part 1-5 4.4, Table 4.1, 4.2]
-. Rho = 1.0 (Only tensile stresses).
-. sigma_max = MAX(sigma1, sigma2) = -954.115 KPa.
-. sigma_min = MIN(sigma1, sigma2) = -11131.343 KPa.
-. r = 0.000 m.
-. bc = 0.080 m.
-. beff = Rho*bc + r = 0.080 m.
-. Aeff = beff * tf = 6.400e-004 m^2.
-. yeff = beff/2 = 0.040 m.

( ). Calculate buckling factor of outstand compression element.
[Eurocode3 Part 1-5 4.4, Table 4.2]
-. In case of Psi = 1.0
-. k_sigma = 0.4300

( ). Calculate effective cross-section properties of left web of Class 4 (Internal element).
[Eurocode3 Part 1-5 4.4, Table 4.1, 4.2]
-. RatT = 10.0000
-. Lambda_p = RatT / [28.4*Eps*SQRT(k_sigma)] = 0.6600
-. Rho = 1.0
-. sigma_max = MAX(sigma1, sigma2) = 1971.838 KPa.
-. sigma_min = MIN(sigma1, sigma2) = 1971.838 KPa.
-. r = 0.000 m.
-. Ar = 0.000 m^2.
-. dc = 0.072 m.
-. deff1 = 2*(Rho*dc) / [5 - sigma_min/sigma_max] + r = 0.036 m.
-. Aeff1 = deff1 * tw + 2*Ar = 2.880e-004 m^2.
-. zeff1 = deff1/2 + tf = 0.018 m.
-. deff2 = (Rho*dc) - deff1 + r = 0.036 m.
-. Aeff2 = deff2 * tw + 2*Ar = 2.880e-004 m^2.
-. zeff2 = (h+2*r) - deff2/2 + tf = 0.054 m.

( ). Calculate effective cross-section properties of right web of Class 4 (Internal element).
[Eurocode3 Part 1-5 4.4, Table 4.1, 4.2]
-. Rho = 1.0 (Only tensile stresses).
-. sigma_max = MAX(sigma1, sigma2) = -1971.838 KPa.
-. sigma_min = MIN(sigma1, sigma2) = -1971.838 KPa.
-. r = 0.000 m.
-. Ar = 0.000 m^2.
-. dc = 0.072 m.
-. deff = dc + r = 0.072 m.
-. Aeff = deff * tw + 4*Ar = 5.760e-004 m^2.
-. zeff = (h+2*r) - deff/2 = 0.036 m.

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==========

==========
[[[*]]] EFFECTIVE SECTION PPOPERTIES.
==========

( ). Calculated effective cross-section properties of Class4 cross-section.
-. Aeff = 0.0024 m^2. (for calculating axial resistance)
-. Aeffy = 0.0024 m^2.
-. Weffy = 2.5846e-005 m^3.
-. Aeffz = 0.0024 m^2.
-. Weffz = 3.6115e-005 m^3.
-. eNy =1.4211e-017 m.
-. eNz = 0.0000 m.

==========
[[[*]]] APPLIED FACTORS.
==========

( ). Calculate equivalent uniform moment factors (Cmy,Cmz,CmLT).
[Eurocode3:05 Annex A. Table A.1, A.2]
-. Cmy,0 = 0.940
-. Cmz,0 = 0.926
-. Cmy (Default or User Defined Value) = 1.000
-. Cmz (Default or User Defined Value) = 1.000
-. CmLT (Default or User Defined Value) = 1.000

( ). Partial Factors (Gamma_Mi).
[Eurocode3:05 6.1]
-. Gamma_M0 = 1.05
-. Gamma_M1 = 1.10
-. Gamma_M2 = 1.25

==========
[[[*]]] CHECK AXIAL RESISTANCE.
==========

( ). Check slenderness ratio of axial compression member (Kl/i).
[Eurocode3:05 6.3.1]
-. Kl/i = 56.7 < 200.0 ---> O.K.

( ). Calculate axial compressive resistance (Nc_Rd).
[Eurocode3:05 6.1, 6.2.4]
-. Nc_Rd = fy * Aeff / Gamma_M0 = 822.25 kN.

( ). Check ratio of axial resistance (N_Ed/Nc_Rd).
N_Ed 149.23
-. ----- = ---------- = 0.181 < 1.000 ---> O.K.
Nc_Rd 822.25

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==========

( ). Calculate buckling resistance of compression member (Nb_Rdy, Nb_Rdz).
[Eurocode3:05 6.3.1.1, 6.3.1.2]
-. Beta_A = Aeff / Area = 1.000
-. Lambda1 = Pi * SQRT(Es/fy) = 76.409
-. Lambda_by = {(KLy/iy)/Lambda1} * SQRT(Beta_A) = 0.590
-. Ncry = Pi^2*Es*Ryy / KLy^2 = 2477.32 kN.
-. Lambda_by > 0.2 and N_Ed/Ncry > 0.04 --> Need to check.
-. Alphay = 0.340
-. Phiy = 0.5 * [1 + Alphay*(Lambda_by-0.2) + Lambda_by^2] = 0.741
-. Xiy = MIN [1 / [Phiy + SQRT(Phiy^2 - Lambda_by^2)], 1.0] = 0.842
-. Nb_Rdy = Xiy*Beta_A*Area*fy / Gamma_M1 = 660.77 kN.

-. Lambda_bz = {(KLz/iz)/Lambda1} * SQRT(Beta_A) = 0.742
-. Ncrz = Pi^2*Es*Rzz / KLz^2 = 1566.25 kN.
-. Lambda_bz > 0.2 and N_Ed/Ncrz > 0.04 --> Need to check.
-. Alphaz = 0.340
-. Phiz = 0.5 * [1 + Alphaz*(Lambda_bz-0.2) + Lambda_bz^2] = 0.868
-. Xiz = MIN [1 / [Phiz + SQRT(Phiz^2 - Lambda_bz^2)], 1.0] = 0.759
-. Nb_Rdz = Xiz*Beta_A*Area*fy / Gamma_M1 = 595.88 kN.

( ). Check ratio of buckling resistance (N_Ed/Nb_Rd).
-. Nb_Rd = MIN[Nb_Rdy, Nb_Rdz] = 595.88 kN.
-. N_Ed / Nb_Rd = 149.23 / 595.88 = 0.250 < 1.000 ---> O.K.

==========
[[[*]]] CHECK SHEAR RESISTANCE.
==========

( ). Calculate shear area.
[Eurocode3:05 6.2.6, EN1993-1-5:04 5.1 NOTE 2]
-. Avy = 2*B*tf = 0.0013 m^2.
-. Avz = 2*h*tw = 0.0013 m^2.

( ). Calculate plastic shear resistance in local-y direction (Vpl_Rdy).
[Eurocode3:05 6.1, 6.2.6]
-. Vpl_Rdy = [Avy*fy/SQRT(3)] / Gamma_M0 = 249.86 kN.

( ). Check ratio of shear resistance (V_Edy/Vpl_Rdy).
(LCB = 19-, POS = I)
-. Applied shear force : V_Edy = 0.11 kN.
-. V_Edy / Vpl_Rdy = 0.11 / 249.86 =4.432e-004 < 1.000 ---> O.K.

( ). Calculate plastic shear resistance in local-z direction (Vpl_Rdz).
[Eurocode3:05 6.1, 6.2.6]
-. Vpl_Rdz = [Avz*fy/SQRT(3)] / Gamma_M0 = 249.86 kN.

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==========

( ). Shear Buckling Check.
[Eurocode3:05 6.2.6]
-. HTR < 72*e/Eta ---> No need to check!

( ). Check ratio of shear resistance (V_Edz/Vpl_Rdz).
(LCB = 19-, POS = J)
-. Applied shear force : V_Edz = 2.10 kN.
V_Edz 2.10
-. ------- = ---------- = 0.008 < 1.000 ---> O.K.
Vpl_Rdz 249.86

==========
[[[*]]] CHECK BENDING MOMENT RESISTANCE ABOUT MAJOR AXIS.
==========

( ). Calculate local buckling resistance moment about major axis.
[Eurocode3:05 6.1, 6.2.5]
-. Weffy = 2.5846e-005 m^3.
-. Mc_Rdy = Weffy * fy / Gamma_M1 = 8.34 kN-m.

( ). Check ratio of moment resistance (M_Edy/Mc_Rdy).
M_Edy 2.00
-. ------ = ---------- = 0.240 < 1.000 ---> O.K.
Mc_Rdy 8.34

==========
[[[*]]] CHECK BENDING MOMENT RESISTANCE ABOUT MINOR AXIS.
==========

( ). Calculate local buckling resistance moment about minor axis.
[Eurocode3:05 6.1, 6.2.5]
-. Weffz = 3.6115e-005 m^3.
-. Mc_Rdz = Weffz * fy / Gamma_M1 = 11.66 kN-m.

( ). Check ratio of moment resistance (M_Edz/Mc_Rdz).
M_Edz 0.47
-. ------ = ---------- = 0.041 < 1.000 ---> O.K.
Mc_Rdz 11.66

==========
[[[*]]] CHECK INTERACTION OF COMBINED RESISTANCE.
==========

( ). Calculate Major reduced design resistance of bending and shear.
[Eurocode3:05 6.2.8 (6.30)]
-. In case of V_Edz / Vpl_Rdz < 0.5
-. My_Rd = Mc_Rdy = 8.34 kN-m.

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==========

( ). Calculate Minor reduced design resistance of bending and shear.
[Eurocode3:05 6.2.8 (6.30)]
-. In case of V_Edy / Vpl_Rdy < 0.5
-. Mz_Rd = Mc_Rdz = 11.66 kN-m.

( ). Check interaction ratio of bending and axial force.
[Eurocode3:05 6.2.9.3 (6.44)] - Class4

$$\text{Rmax1} = \frac{N_{Ed}}{Aeff*fy/Gamma\_M0} + \frac{M_{Edy} + N_{Ed}*eNz}{My_{Rd}} + \frac{M_{Edz} + N_{Ed}*eNy}{Mz_{Rd}}$$

= 0.462 < 1.000 ---> O.K.

( ). Check interaction ratio of bending and axial compression member.
[Eurocode3:05 6.3.1, 6.2.9.3 (6.61, 6.62), Annex A]
-. N_Ed = -149.23 kN.
-. M_Edy = -2.00 kN-m.
-. M_Edz = -0.47 kN-m.
-. kyy = 1.053
-. kyz = 1.094
-. kzy = 1.038
-. kzz = 1.078
-. Xiy = 0.842
-. Xiz = 0.759
-. XiLT = 0.927
-. Aeff = 0.0024 m^2.
-. Weffy = 2.5846e-005 m^3.
-. Weffz = 3.6115e-005 m^3.
-. eNy =1.4211e-017 m.
-. eNz = 0.0000 m.
-. N_Rk = Aeff*fy = 863.36 kN.
-. My_Rk = Weffy*fy = 9.18 kN-m.
-. Mz_Rk = Weffz*fy = 12.82 kN-m.
-. N_Ed*eNy = 2.12e-015 kN-m.
-. N_Ed*eNZ = 0.00 kN-m.

$$\text{Rmax\_LT1} = \frac{N_{Ed}}{Xiy*N\_Rk/Gamma\_M1} + kyy * \frac{M_{Edy} + N_{Ed}*eNy}{XiLT*My\_Rk/Gamma\_M1} + kyz * \frac{M_{Edz} + N_{Ed}*eNz}{Mz\_Rk/Gamma\_M1}$$

= 0.543 < 1.000 ---> O.K.

$$\text{Rmax\_LT2} = \frac{N_{Ed}}{Xiz*N\_Rk/Gamma\_M1} + kzy * \frac{M_{Edy} + N_{Ed}*eNy}{XiLT*My\_Rk/Gamma\_M1} + kzz * \frac{M_{Edz} + N_{Ed}*eNz}{Mz\_Rk/Gamma\_M1}$$

= 0.563 < 1.000 ---> O.K.

-. Rmax = MAX[Rmax1, MAX(Rmax_LT1, Rmax_LT2)] = 0.563 < 1.000 ---> O.K.

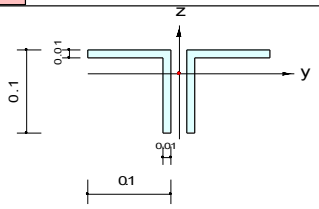
10.4 DIAFRAMMI SU PILE – TRASVERSI INFERIORI

MIDAS/Civil **Steel Checking Result**

Company		**Project Title**	Viadotto Agrò
Author	Renato Vaira	**File Name**	D:\...\Cavalc Coste V_1.mcb

1. Design Information

Design Code : Eurocode3-2:05
Unit System : kN, m
Member No : 2001
Material : S355W (No:1)
(Fy = 355000, Es = 210000000)
Section Name : HINF_PILE 2L100x10d20 (No:65)
(Built-up Section).
Member Length : 3.20000



2. Member Forces

Axial Force Fxx = 363.171 (LCB: 19+, POS:J)
Bending Moments My = 1.50851, Mz = 1.01624
End Moments Myi = 0.87476, Myj = 1.50851 (for Lb)
Myi = 0.87476, Myj = 1.50851 (for Ly)
Mzi = 0.94496, Mzj = 1.01624 (for Lz)
Shear Forces Fyy = -0.6312 (LCB: 19-, POS:I)
Fzz = -1.5601 (LCB: 19-, POS:J)

Depth	0.10000	Web Thick	0.01000
Flg Width	0.10000	Flg Thick	0.01000
BTB Spacing	0.02000		
Area	0.00380	Asz	0.00167
Qyb	0.00254	Qzb	0.00500
Iyy	0.00000	Izz	0.00001
Ybar	0.11000	Zbar	0.07132
Wely	0.00005	Welz	0.00008
ry	0.03078	rz	0.04944

3. Design Parameters

Unbraced Lengths Ly = 3.20000, Lz = 3.20000, Lb = 3.20000
Effective Length Factors Ky = 0.65, Kz = 0.65
Equivalent Uniform Moment Factors Cmy = 1.00, Cmz = 1.00, CmLT = 1.00

4. Checking Results

Axial Resistance
N_Ed/Nt_Rd = 363.17/1284.76 = 0.283 < 1.000 ..... O.K
Bending Resistance
M_Edy/M_Rdy = 1.5085/30.7498 = 0.049 < 1.000 ..... O.K
M_Edz/M_Rdz = 1.0162/49.7000 = 0.020 < 1.000 ..... O.K
Combined Resistance
RNRd = MAX[M_Edy/Mny_Rd, M_Edz/Mnz_Rd]
Rmax1 = (M_Edy/Mny_Rd)^Alpha + (M_Edz/Mnz_Rd)^Beta
Rcom = N_Ed/(A*fy/Gamma_M0), Rbend = M_Edy/My_Rd + M_Edz/Mz_Rd
Rmax = MAX[RNRd, Rmax1, (Rcom+Rbend)] = 0.352 < 1.000 ..... O.K
Shear Resistance
V_Edy/Vy_Rd = 0.002 < 1.000 ..... O.K
V_Edz/Vz_Rd = 0.004 < 1.000 ..... O.K

Modeling, Integrated Design & Analysis Software
http://www.MidasUser.com
MIDAS/Civil V 8.3.5
Print Date/Time : 11/13/2017 11:44

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 MIDAS/Civil - Steel Code Checking[ Eurocode3-2:05 ]                Version 8.3.5
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    +============================================================+
    |  MIDAS(Modeling, Integrated Design & Analysis Software)    |
    |  MIDAS/Civil - Design & checking system for windows        |
    +============================================================+
    |  Steel Member Applicable Code Checking                     |
    |  Based On  AASHTO-LRFD12, AASHTO-LRFD02, AASHTO-LFD96,     |
    |          AASHTO-ASD96, AISC-LRFD2K, AISC-LRFD93,           |
    |          AISC-ASD89, Eurocode3-2:05, BS5950-90,            |
    |          IS:800-2007, IS:800-1984                          |
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   *. DEFINITION OF LOAD COMBINATIONS WITH SCALING UP FACTORS.
---------------------------------------------------------------------------------------
    LCB  C    Loadcase Name(Factor) + Loadcase Name(Factor) + Loadcase Name(Factor)
---------------------------------------------------------------------------------------
    19+  1       Dead Load( 1.350) +Erection Load 1( 1.500) +Creep Secondary( 1.200)
           +Shrinkage Secondary( 1.200) +Vento Strutture INV( 0.900) +Vento Mobili INV( 0.900)
           +Termico unif. INV( 0.720) +Termico diff. INV( 0.720) +Mobili SLU INV( 1.350)
    19-  1       Dead Load( 1.350) +Erection Load 1( 1.500) +Creep Secondary( 1.200)
           +Shrinkage Secondary( 1.200) +Vento Strutture INV( 0.900) +Vento Mobili INV( 0.900)
           +Termico unif. INV( 0.720) +Termico diff. INV( 0.720) +Mobili SLU INV( 1.350)
    20+  1       Dead Load( 1.350) +Erection Load 1( 1.500) +Creep Secondary( 1.200)
           +Shrinkage Secondary( 1.200) +Vento Strutture INV( 1.500) +Vento Mobili INV( 1.500)
           +Termico unif. INV( 0.720) +Termico diff. INV( 0.720) +Mobili SLE INV( 1.350)
    20-  1       Dead Load( 1.350) +Erection Load 1( 1.500) +Creep Secondary( 1.200)
           +Shrinkage Secondary( 1.200) +Vento Strutture INV( 1.500) +Vento Mobili INV( 1.500)
           +Termico unif. INV( 0.720) +Termico diff. INV( 0.720) +Mobili SLE INV( 1.350)
    21+  1       Dead Load( 1.350) +Erection Load 1( 1.500) +Creep Secondary( 1.200)
           +Shrinkage Secondary( 1.200) +Frenamento INV( 1.350) +Termico unif. INV( 0.720)
           +Termico diff. INV( 0.720) +Mobili SLE INV( 1.350)
    21-  1       Dead Load( 1.350) +Erection Load 1( 1.500) +Creep Secondary( 1.200)
           +Shrinkage Secondary( 1.200) +Frenamento INV( 1.350) +Termico unif. INV( 0.720)
           +Termico diff. INV( 0.720) +Mobili SLE INV( 1.350)
    22+  1       Dead Load( 1.350) +Erection Load 1( 1.500) +Creep Secondary( 1.200)
           +Shrinkage Secondary( 1.200) +Vento Strutture INV( 0.900) +Vento Mobili INV( 0.900)
           +Termico unif. INV( 1.200) +Termico diff. INV( 1.200) +Mobili SLE INV( 1.350)
    22-  1       Dead Load( 1.350) +Erection Load 1( 1.500) +Creep Secondary( 1.200)
           +Shrinkage Secondary( 1.200) +Vento Strutture INV( 0.900) +Vento Mobili INV( 0.900)
           +Termico unif. INV( 1.200) +Termico diff. INV( 1.200) +Mobili SLE INV( 1.350)
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23+ 1 Summation(1.000) +Termico unif. INV(0.500) +Termico diff. INV(0.500)
+ SLV Long INV(1.000) + SLV Trasv INV(0.300) + SLV Vert INV(0.300)
23- 1 Summation(1.000) +Termico unif. INV(0.500) +Termico diff. INV(0.500)
+ SLV Long INV(1.000) + SLV Trasv INV(0.300) + SLV Vert INV(0.300)
24+ 1 Summation(1.000) +Termico unif. INV(0.500) +Termico diff. INV(0.500)
+ SLV Long INV(0.300) + SLV Trasv INV(1.000) + SLV Vert INV(0.300)
24- 1 Summation(1.000) +Termico unif. INV(0.500) +Termico diff. INV(0.500)
+ SLV Long INV(0.300) + SLV Trasv INV(1.000) + SLV Vert INV(0.300)
25+ 1 Summation(1.000) +Termico unif. INV(0.500) +Termico diff. INV(0.500)
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25- 1 Summation(1.000) +Termico unif. INV(0.500) +Termico diff. INV(0.500)
+ SLV Long INV(0.300) + SLV Trasv INV(0.300) + SLV Vert INV(1.000)
28+ 2 Summation(1.000) +Vento Strutture INV(0.600) +Vento Mobili INV(0.600)
+Termico unif. INV(0.600) +Termico diff. INV(0.600) +Mobili SLU INV(1.000)
28- 2 Summation(1.000) +Vento Strutture INV(0.600) +Vento Mobili INV(0.600)
+Termico unif. INV(0.600) +Termico diff. INV(0.600) +Mobili SLU INV(1.000)
29+ 2 Summation(1.000) +Vento Strutture INV(1.000) +Vento Mobili INV(1.000)
+Termico unif. INV(0.600) +Termico diff. INV(0.600) +Mobili SLE INV(1.000)
29- 2 Summation(1.000) +Vento Strutture INV(1.000) +Vento Mobili INV(1.000)
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30+ 2 Summation(1.000) +Frenamento INV(1.000) +Termico unif. INV(0.600)
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30- 2 Summation(1.000) +Frenamento INV(1.000) +Termico unif. INV(0.600)
+Termico diff. INV(0.600) +Mobili SLE INV(1.000)
31+ 2 Summation(1.000) +Vento Strutture INV(0.600) +Vento Mobili INV(0.600)
+Termico unif. INV(1.000) +Termico diff. INV(1.000) +Mobili SLE INV(1.000)
31- 2 Summation(1.000) +Vento Strutture INV(0.600) +Vento Mobili INV(0.600)
+Termico unif. INV(1.000) +Termico diff. INV(1.000) +Mobili SLE INV(1.000)
32+ 2 Summation(1.000) +Termico unif. INV(0.500) +Termico diff. INV(0.500)
+Mobili SLE INV(1.000)
32- 2 Summation(1.000) +Termico unif. INV(0.500) +Termico diff. INV(0.500)
+Mobili SLE INV(1.000)
33+ 2 Summation(1.000) +Vento Strutture INV(0.200) +Vento Mobili INV(0.200)
+Termico unif. INV(0.500) +Termico diff. INV(0.500)
33- 2 Summation(1.000) +Vento Strutture INV(0.200) +Vento Mobili INV(0.200)
+Termico unif. INV(0.500) +Termico diff. INV(0.500)
34+ 2 Summation(1.000) +Termico unif. INV(0.600) +Termico diff. INV(0.600)
34- 2 Summation(1.000) +Termico unif. INV(0.600) +Termico diff. INV(0.600)
35+ 2 Summation(1.000) +Termico unif. INV(0.500) +Termico diff. INV(0.500)
35- 2 Summation(1.000) +Termico unif. INV(0.500) +Termico diff. INV(0.500)

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==========

*. PROJECT : Viadotto Agrò
*. MEMBER NO = 2001, ELEMENT TYPE = Beam
*. LOADCOMB NO = 19+, MATERIAL NO = 1, SECTION NO = 65
*. UNIT SYSTEM : kN, m

*. SECTION PROPERTIES : Designation = HINF_PILE 2L100x10d20
Shape = 2L - Section. (Built-up)
Depth = 0.100, Flg Width = 0.100, BTB Spacing = 0.020
Web Thick = 0.010, Flg Thick = 0.010

Area = 3.80000e-003, Avy = 2.00000e-003, Avz = 2.00000e-003
Ybar = 1.10000e-001, Zbar = 7.13158e-002, Qyb = 2.54297e-003, Qzb = 5.00000e-003
Wely = 5.04809e-005, Welz = 8.44242e-005, Wply = 9.09500e-005, Wplz = 1.47000e-004
Iyy = 3.60009e-006, Izz = 9.28667e-006, Iyz = 0.00000e+000
iy = 3.07797e-002, iz = 4.94354e-002
J = 1.26667e-007, Cwp = 8.81319e-011

*. DESIGN PARAMETERS FOR STRENGTH EVALUATION :
Ly = 3.20000e+000, Lz = 3.20000e+000, Lu = 3.20000e+000
Ky = 6.50000e-001, Kz = 6.50000e-001

*. MATERIAL PROPERTIES :
Fy = 3.55000e+005, Es = 2.10000e+008, MATERIAL NAME = S355W

*. FORCES AND MOMENTS AT (J) POINT :
Axial Force Fxx = 3.63171e+002
Shear Forces Fyy = 5.96221e-001, Fzz =-3.79864e-001
Bending Moments My = 1.50851e+000, Mz = 1.01624e+000
End Moments Myi = 8.74756e-001, Myj = 1.50851e+000 (for Lb)
Myi = 8.74756e-001, Myj = 1.50851e+000 (for Ly)
Mzi = 9.44956e-001, Mzj = 1.01624e+000 (for Lz)

*. Sign conventions for stress and axial force.
- Stress : Compression positive.
- Axial force: Tension positive.

==========
[[[*]]] CLASSIFY LEFT FLANGE OF SECTION (BTR).
==========

( ). Determine classification of tension flanges(double angle).
-. Not Checking the Section Classification.

( ). Determine classification of tension flanges(double angle).
-. Not Checking the Section Classification.

==========
[[[*]]] CLASSIFY WEB OF SECTION (HTR).
==========

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==========

( ). Determine classification of tension elements(Double angle).
-. Not Checking the Section Classification.

==========
[[[*]]] APPLIED FACTORS.
==========

( ). Calculate equivalent uniform moment factors (Cmy,Cmz,CmLT).
[Eurocode3:05 Annex A. Table A.1, A.2]
-. Cmy,0 = 0.789
-. Cmz,0 = 0.918
-. Cmy (Default or User Defined Value) = 1.000
-. Cmz (Default or User Defined Value) = 1.000
-. CmLT (Default or User Defined Value) = 1.000

( ). Partial Factors (Gamma_Mi).
[Eurocode3:05 6.1]
-. Gamma_M0 = 1.05
-. Gamma_M1 = 1.10
-. Gamma_M2 = 1.25

==========
[[[*]]] CHECK AXIAL RESISTANCE.
==========

( ). Check slenderness ratio of axial tension member (l/i).
[Eurocode3:05 6.3.1]
-. l/i = 104.0 < 300.0 ---> O.K.

( ). Calculate parameters for combined resistance.
-. Lambda1 = Pi * SQRT(Es/fy) = 76.409
-. Lambda_bz = (KLz/iz) / Lambda1 = 0.847

( ). Calculate axial tensile resistance (Nt_Rd).
[Eurocode3:05 6.2.3]
-. Nt_Rd = fy * Area / Gamma_M0 = 1284.76 kN.

( ). Check ratio of axial resistance (N_Ed/Nt_Rd).
N_Ed 363.17
-. ----- = ---------- = 0.283 < 1.000 ---> O.K.
Nt_Rd 1284.76

==========
[[[*]]] CHECK SHEAR RESISTANCE.
==========

( ). Calculate shear area.
[Eurocode3:05 6.2.6, EN1993-1-5:04 5.1 NOTE 2]
-. Avy = 2*B*tf = 0.0020 m^2.
-. Avz = 2*h*tw = 0.0020 m^2.

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==========

( ). Calculate plastic shear resistance in local-y direction (Vpl_Rdy).
[Eurocode3:05 6.1, 6.2.6]
-. Vpl_Rdy = [Avy*fy/SQRT(3)] / Gamma_M0 = 390.40 kN.

( ). Check ratio of shear resistance (V_Edy/Vpl_Rdy).
(LCB = 19-, POS = J)
-. Applied shear force : V_Edy = 0.63 kN.
V_Edy 0.63
-. ------- = ---------- = 0.002 < 1.000 ---> O.K.
Vpl_Rdy 390.40

( ). Calculate plastic shear resistance in local-z direction (Vpl_Rdz).
[Eurocode3:05 6.1, 6.2.6]
-. Vpl_Rdz = [Avz*fy/SQRT(3)] / Gamma_M0 = 390.40 kN.

( ). Shear Buckling Check.
[Eurocode3:05 6.2.6]
-. HTR < 72*e/Eta ---> No need to check!

( ). Check ratio of shear resistance (V_Edz/Vpl_Rdz).
(LCB = 19-, POS = J)
-. Applied shear force : V_Edz = 1.56 kN.
V_Edz 1.56
-. ------- = ---------- = 0.004 < 1.000 ---> O.K.
Vpl_Rdz 390.40

==========
[[[*]]] CHECK BENDING MOMENT RESISTANCE ABOUT MAJOR AXIS.
==========

( ). Calculate plastic resistance moment about major axis.
[Eurocode3:05 6.1, 6.2.5]
-. Wply = 9.0950e-005 m^3.
-. Mc_Rdy = Wply * fy / Gamma_M0 = 30.75 kN-m.

( ). Check ratio of moment resistance (M_Edy/Mc_Rdy).
M_Edy 1.51
-. ------ = ---------- = 0.049 < 1.000 ---> O.K.
Mc_Rdy 30.75

==========
[[[*]]] CHECK BENDING MOMENT RESISTANCE ABOUT MINOR AXIS.
==========

( ). Calculate plastic resistance moment about minor axis.
[Eurocode3:05 6.1, 6.2.5]
-. Wplz = 0.0001 m^3.
-. Mc_Rdz = Wplz * fy / Gamma_M0 = 49.70 kN-m.

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==========

( ). Check ratio of moment resistance (M_Edz/Mc_Rdz).

$$\frac{M\_Edz}{Mc\_Rdz} = \frac{1.02}{49.70} = 0.020 < 1.000 \text{ ---> O.K.}$$

==========
[[[*]]] CHECK INTERACTION OF COMBINED RESISTANCE.
==========

( ). Calculate Major reduced design resistance of bending and shear.
[Eurocode3:05 6.2.8 (6.30)]
-. In case of V_Edz / Vpl_Rdz < 0.5
-. My_Rd = Mc_Rdy = 30.75 kN-m.

( ). Calculate Minor reduced design resistance of bending and shear.
[Eurocode3:05 6.2.8 (6.30)]
-. In case of V_Edy / Vpl_Rdy < 0.5
-. Mz_Rd = Mc_Rdz = 49.70 kN-m.

( ). Check general interaction ratio.
[Eurocode3:05 6.2.1 (6.2)] - Class1 or Class2

$$Rmax1 = \frac{N\_Ed}{N\_Rd} + \frac{M\_Edy}{My\_Rd} + \frac{M\_Edz}{Mz\_Rd}$$

$$= 0.352 < 1.000 \text{ ---> O.K.}$$

( ). Check interaction ratio of bending and axial force member.
[Eurocode3:05 6.2.9 (6.31 ~ 6.41)] - Class1 or Class2
-. n = N_Ed / Npl_Rd = 0.283
-. a = MIN[(Area-2b*tf)/Area, 0.5] = 0.500
-. Alpha = 2.000
-. Beta = MAX[5*n, 1.0] = 1.413
-. Mny_Rd = MIN[Mply_Rd*(1-n)/(1-0.5*a), Mply_Rd] = 29.41 kN-m.
-. Rmaxy = M_Edy / Mny_Rd = 0.051 < 1.000 ---> O.K.

-. In case of n < a
-. Mnz_Rd = Mplz_Rd = 49.70 kN-m.
-. Rmaxz = M_Edz / Mnz_Rd = 0.020 < 1.000 ---> O.K.

$$Rmax2 = \left[\frac{|M\_Edy|}{|Mny\_Rd|}^{(Alpha)} + \frac{|M\_Edz|}{|Mnz\_Rd|}^{(Beta)}\right]$$

$$= 0.007 < 1.000 \text{ ---> O.K.}$$

-. Rmax = MAX[Rmax1, Rmax2] = 0.352 < 1.000 ---> O.K.

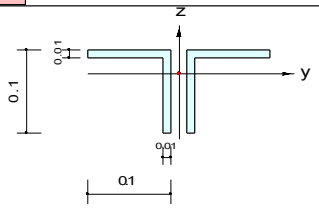
10.5 DIAFRAMMI SU PILE – TRASVERSI SUPERIORI

MIDAS/Civil **Steel Checking Result**

Company		**Project Title**	Viadotto Agrò
Author	Renato Vaira	**File Name**	D:\...\Cavalc Coste V_1.mcb

1. Design Information

Design Code : Eurocode3-2:05
Unit System : kN, m
Member No : 2045
Material : S355W (No:1)
(Fy = 355000, Es = 210000000)
Section Name : HSUP_PILE 2L100x10d20 (No:19)
(Built-up Section).
Member Length : 3.20000



2. Member Forces

Axial Force Fxx = -135.95 (LCB: 22-, POS:J)
Bending Moments My = -1.3638, Mz = -0.1462
End Moments Myi = -0.8778, Myj = -1.3638 (for Lb)
Myi = -0.8778, Myj = -1.3638 (for Ly)
Mzi = -0.0734, Mzj = -0.1462 (for Lz)
Shear Forces Fyy = 0.10930 (LCB: 19+, POS:I)
Fzz = 1.56013 (LCB: 19+, POS:J)

Depth	0.10000	Web Thick	0.01000
Flg Width	0.10000	Flg Thick	0.01000
BTB Spacing	0.02000		
Area	0.00380	Asz	0.00167
Qyb	0.00254	Qzb	0.00500
Iyy	0.00000	Izz	0.00001
Ybar	0.11000	Zbar	0.07132
Wely	0.00005	Welz	0.00008
ry	0.03078	rz	0.04944

3. Design Parameters

Unbraced Lengths Ly = 3.20000, Lz = 3.20000, Lb = 3.20000
Effective Length Factors Ky = 0.65, Kz = 0.65
Equivalent Uniform Moment Factors Cmy = 1.00, Cmz = 1.00, CmLT = 1.00

4. Checking Results

Axial Resistance
N_Ed/MIN[Nc_Rd, Nb_Rd] = 135.953/823.126 = 0.165 < 1.000 ..... O.K
Bending Resistance
M_Edy/M_Rdy = 1.3638/16.2916 = 0.084 < 1.000 ..... O.K
M_Edz/M_Rdz = 0.1462/22.8706 = 0.006 < 1.000 ..... O.K
Combined Resistance
Rcom = N_Ed/(Aeff*fy/Gamma_M0), Rbend = (M_Edy+N_Ed*eNy)/My_Rd + (M_Edz+N_Ed*eNz)/Mz_Rd
Rc_LT1 = N_Ed/(Xiy*Aeff*fy/Gamma_M1)
Rb_LT1 = kyy*(M_Edy+N_Ed*eNy)/(Xi_LT*Weffy*fy/Gamma_M1) + kyz*(M_Edz+N_Ed*eNz)/(Weffz*fy/Gamma_M1)
Rc_LT2 = N_Ed/(Xiz*Aeff*fy/Gamma_M1)
Rb_LT2 = kzy*(M_Edzy+N_Ed*eNy)/(Xi_LT*Weffy*fy/Gamma_M1) + kzz*(M_Edz+N_Ed*eNz)/(Weffz*fy/Gamma_M1)
Rmax = MAX[Rcom+Rbend, MAX(Rc_LT1+Rb_LT1, Rc_LT2+Rb_LT2)] = 0.274 < 1.000 .... O.K
Shear Resistance
V_Edy/Vy_Rd = 0.000 < 1.000 ..... O.K
V_Edz/Vz_Rd = 0.004 < 1.000 ..... O.K

Modeling, Integrated Design & Analysis Software
http://www.MidasUser.com
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Print Date/Time : 11/13/2017 11:44

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    +============================================================+
    |  MIDAS(Modeling, Integrated Design & Analysis Software)    |
    |  MIDAS/Civil - Design & checking system for windows        |
    +============================================================+
    |  Steel Member Applicable Code Checking                     |
    |  Based On  AASHTO-LRFD12, AASHTO-LRFD02, AASHTO-LFD96,     |
    |          AASHTO-ASD96, AISC-LRFD2K, AISC-LRFD93,           |
    |          AISC-ASD89, Eurocode3-2:05, BS5950-90,            |
    |          IS:800-2007, IS:800-1984                          |
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    +============================================================+
    |  MIDAS Information Technology Co.,Ltd.       (MIDAS IT)  |
    |  MIDAS IT Design Development Team                          |
    +============================================================+
    |          HomePage : www.MidasUser.com                      |
    +============================================================+
    |  MIDAS/Civil  Version 8.3.5                                |
    +============================================================+


   *. DEFINITION OF LOAD COMBINATIONS WITH SCALING UP FACTORS.
-------------------------------------------------------------------------------
    LCB  C    Loadcase Name(Factor) + Loadcase Name(Factor) + Loadcase Name(Factor)
-------------------------------------------------------------------------------
    19+  1       Dead Load( 1.350) +Erection Load 1( 1.500) +Creep Secondary( 1.200)
           +Shrinkage Secondary( 1.200) +Vento Strutture INV( 0.900) +Vento Mobili INV( 0.900)
           +Termico unif. INV( 0.720) +Termico diff. INV( 0.720) +Mobili SLU INV( 1.350)
    19-  1       Dead Load( 1.350) +Erection Load 1( 1.500) +Creep Secondary( 1.200)
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           +Termico unif. INV( 1.200) +Termico diff. INV( 1.200) +Mobili SLE INV( 1.350)
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23+ 1 Summation(1.000) +Termico unif. INV(0.500) +Termico diff. INV(0.500)
+ SLV Long INV(1.000) + SLV Trasv INV(0.300) + SLV Vert INV(0.300)
23- 1 Summation(1.000) +Termico unif. INV(0.500) +Termico diff. INV(0.500)
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24+ 1 Summation(1.000) +Termico unif. INV(0.500) +Termico diff. INV(0.500)
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28+ 2 Summation(1.000) +Vento Strutture INV(0.600) +Vento Mobili INV(0.600)
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29+ 2 Summation(1.000) +Vento Strutture INV(1.000) +Vento Mobili INV(1.000)
+Termico unif. INV(0.600) +Termico diff. INV(0.600) +Mobili SLE INV(1.000)
29- 2 Summation(1.000) +Vento Strutture INV(1.000) +Vento Mobili INV(1.000)
+Termico unif. INV(0.600) +Termico diff. INV(0.600) +Mobili SLE INV(1.000)
30+ 2 Summation(1.000) +Frenamento INV(1.000) +Termico unif. INV(0.600)
+Termico diff. INV(0.600) +Mobili SLE INV(1.000)
30- 2 Summation(1.000) +Frenamento INV(1.000) +Termico unif. INV(0.600)
+Termico diff. INV(0.600) +Mobili SLE INV(1.000)
31+ 2 Summation(1.000) +Vento Strutture INV(0.600) +Vento Mobili INV(0.600)
+Termico unif. INV(1.000) +Termico diff. INV(1.000) +Mobili SLE INV(1.000)
31- 2 Summation(1.000) +Vento Strutture INV(0.600) +Vento Mobili INV(0.600)
+Termico unif. INV(1.000) +Termico diff. INV(1.000) +Mobili SLE INV(1.000)
32+ 2 Summation(1.000) +Termico unif. INV(0.500) +Termico diff. INV(0.500)
+Mobili SLE INV(1.000)
32- 2 Summation(1.000) +Termico unif. INV(0.500) +Termico diff. INV(0.500)
+Mobili SLE INV(1.000)
33+ 2 Summation(1.000) +Vento Strutture INV(0.200) +Vento Mobili INV(0.200)
+Termico unif. INV(0.500) +Termico diff. INV(0.500)
33- 2 Summation(1.000) +Vento Strutture INV(0.200) +Vento Mobili INV(0.200)
+Termico unif. INV(0.500) +Termico diff. INV(0.500)
34+ 2 Summation(1.000) +Termico unif. INV(0.600) +Termico diff. INV(0.600)
34- 2 Summation(1.000) +Termico unif. INV(0.600) +Termico diff. INV(0.600)
35+ 2 Summation(1.000) +Termico unif. INV(0.500) +Termico diff. INV(0.500)
35- 2 Summation(1.000) +Termico unif. INV(0.500) +Termico diff. INV(0.500)

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*. PROJECT : Viadotto Agrò
*. MEMBER NO = 2045, ELEMENT TYPE = Beam
*. LOADCOMB NO = 22-, MATERIAL NO = 1, SECTION NO = 19
*. UNIT SYSTEM : kN, m

*. SECTION PROPERTIES : Designation = HSUP_PILE 2L100x10d20
Shape = 2L - Section. (Built-up)
Depth = 0.100, Flg Width = 0.100, BTB Spacing = 0.020
Web Thick = 0.010, Flg Thick = 0.010

Area = 3.80000e-003, Avy = 2.00000e-003, Avz = 2.00000e-003
Ybar = 1.10000e-001, Zbar = 7.13158e-002, Qyb = 2.54297e-003, Qzb = 5.00000e-003
Wely = 5.04809e-005, Welz = 8.44242e-005, Wply = 9.09500e-005, Wplz = 1.47000e-004
Iyy = 3.60009e-006, Izz = 9.28667e-006, Iyz = 0.00000e+000
iy = 3.07797e-002, iz = 4.94354e-002
J = 1.26667e-007, Cwp = 8.81319e-011

*. DESIGN PARAMETERS FOR STRENGTH EVALUATION :
Ly = 3.20000e+000, Lz = 3.20000e+000, Lu = 3.20000e+000
Ky = 6.50000e-001, Kz = 6.50000e-001

*. MATERIAL PROPERTIES :
Fy = 3.55000e+005, Es = 2.10000e+008, MATERIAL NAME = S355W

*. FORCES AND MOMENTS AT (J) POINT :
Axial Force Fxx =-1.35953e+002
Shear Forces Fyy =-4.81978e-002, Fzz = 4.13173e-001
Bending Moments My =-1.36383e+000, Mz =-1.46225e-001
End Moments Myi =-8.77770e-001, Myj =-1.36383e+000 (for Lb)
Myi =-8.77770e-001, Myj =-1.36383e+000 (for Ly)
Mzi =-7.33964e-002, Mzj =-1.46225e-001 (for Lz)

*. Sign conventions for stress and axial force.
- Stress : Compression positive.
- Axial force: Tension positive.

==========
[[[*]]] CLASSIFY LEFT FLANGE OF SECTION (BTR).
==========

( ). Determine classification of compression flanges(Double angle).
[Eurocode3:05 Table 5.2 (Sheet 3 of 3), EN 1993-1-5]
-. e = SQRT(235/fy) = 0.81
-. b/t = BTR = 9.00
-. sigma1 = 26642.724 KPa.
-. sigma2 = 25068.152 KPa.
-. BTR_L = (H+B) / (2*tf) = 10.00
-. BTR > 15*e or BTR_L > 11.5*e (Class 4 : Slender).

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==========

==========
[[[*]]] CLASSIFY RIGHT FLANGE OF SECTION (BTR).
==========

( ). Determine classification of compression flanges(Double angle).
[Eurocode3:05 Table 5.2 (Sheet 3 of 3), EN 1993-1-5]
-. e = SQRT(235/fy) = 0.81
-. b/t = BTR = 9.00
-. sigma1 = 24753.237 KPa.
-. sigma2 = 23178.665 KPa.
-. BTR_L = (H+B) / (2*tf) = 10.00
-. BTR > 15*e or BTR_L > 11.5*e (Class 4 : Slender).

==========
[[[*]]] CLASSIFY WEB OF SECTION (HTR).
==========

( ). Determine classification of compression element(Double angles).
[Eurocode3:05 Table 5.2 (Sheet 3 of 3), EN 1993-1-5]
-. e = SQRT(235/fy) = 0.81
-. d/t = HTR = 10.00
-. sigma1 = 63108.783 KPa.
-. sigma2 = 29013.926 KPa.
-. HTR_L = (h+B) / (2*tw) = 10.00
-. HTR > 15*e or HTR_L > 11.5*e (Class 4 : Slender).

==========
[[[*]]] CALCULATE EFFECTIVE AREA.
==========

( ). Calculate buckling factor of outstand compression element.
[Eurocode3 Part 1-5 4.4, Table 4.2]
-. In case of Psi = 1.0
-. k_sigma = 0.4300

( ). Calculate effective cross-section properties of left flange flange of Class 4 (Outstand element).
[Eurocode3 Part 1-5 4.4, Table 4.1, 4.2]
-. RatT = 9.0000
-. Lambda_p = RatT / [28.4*Eps*SQRT(k_sigma)] = 0.5940
-. Rho = 1.0
-. sigma_max = MAX(sigma1, sigma2) = 35777.184 KPa.
-. sigma_min = MIN(sigma1, sigma2) = 35777.184 KPa.
-. r = 0.000 m.
-. bc = 0.100 m.
-. beff = Rho*bc + r = 0.100 m.
-. Aeff = beff * tf = 0.001 m^2.
-. yeff = beff/2 = 0.050 m.

( ). Calculate buckling factor of outstand compression element.
[Eurocode3 Part 1-5 4.4, Table 4.2]

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==========

-. In case of Psi = 1.0
-. k_sigma = 0.4300

( ). Calculate effective cross-section properties of right flange flange of Class 4 (Outstand element).
[Eurocode3 Part 1-5 4.4, Table 4.1, 4.2]
-. RatT = 9.0000
-. Lambda_p = RatT / [28.4*Eps*SQRT(k_sigma)] = 0.5940
-. Rho = 1.0
-. sigma_max = MAX(sigma1, sigma2) = 35777.184 KPa.
-. sigma_min = MIN(sigma1, sigma2) = 35777.184 KPa.
-. r = 0.000 m.
-. bc = 0.100 m.
-. beff = Rho*bc + r = 0.100 m.
-. Aeff = beff * tf = 0.001 m^2.
-. yeff = beff/2 = 0.050 m.

( ). Calculate buckling factor of outstand compression element.
[Eurocode3 Part 1-5 4.4, Table 4.2]
-. In case of Psi = 1.0
-. k_sigma = 0.4300

( ). Calculate effective cross-section properties of left web of Class 4 (Internal element).
[Eurocode3 Part 1-5 4.4, Table 4.1, 4.2]
-. RatT = 10.0000
-. Lambda_p = RatT / [28.4*Eps*SQRT(k_sigma)] = 0.6600
-. Rho = 1.0
-. sigma_max = MAX(sigma1, sigma2) = 35777.184 KPa.
-. sigma_min = MIN(sigma1, sigma2) = 35777.184 KPa.
-. r = 0.000 m.
-. Ar = 0.000 m^2.
-. dc = 0.090 m.
-. deff1 = 2*(Rho*dc) / [5 - sigma_min/sigma_max] + r = 0.045 m.
-. Aeff1 = deff1 * tw + 2*Ar = 4.500e-004 m^2.
-. zeff1 = deff1/2 + tf = 0.022 m.
-. deff2 = (Rho*dc) - deff1 + r = 0.045 m.
-. Aeff2 = deff2 * tw + 2*Ar = 4.500e-004 m^2.
-. zeff2 = (h+2*r) - deff2/2 + tf = 0.068 m.

( ). Calculate buckling factor of outstand compression element.
[Eurocode3 Part 1-5 4.4, Table 4.2]
-. In case of Psi = 1.0
-. k_sigma = 0.4300

( ). Calculate effective cross-section properties of right web of Class 4 (Internal element).
[Eurocode3 Part 1-5 4.4, Table 4.1, 4.2]
-. RatT = 10.0000
-. Lambda_p = RatT / [28.4*Eps*SQRT(k_sigma)] = 0.6600
-. Rho = 1.0

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-. sigma_max = MAX(sigma1, sigma2) = 35777.184 KPa.
-. sigma_min = MIN(sigma1, sigma2) = 35777.184 KPa.
-. r = 0.000 m.
-. Ar = 0.000 m^2.
-. dc = 0.090 m.
-. deff1 = 2*(Rho*dc) / [5 - sigma_min/sigma_max] + r = 0.045 m.
-. Aeff1 = deff1 * tw + 2*Ar = 4.500e-004 m^2.
-. zeff1 = deff1/2 + tf = 0.022 m.
-. deff2 = (Rho*dc) - deff1 + r = 0.045 m.
-. Aeff2 = deff2 * tw + 2*Ar = 4.500e-004 m^2.
-. zeff2 = (h+2*r) - deff2/2 + tf = 0.068 m.

==========
[[[*]]] CALCULATE EFFECTIVE SECTION MODULUS ABOUT MAJOR AXIS.
==========

( ). Calculate effective cross-section properties of left flange flange of Class 4 (Outstand element).
[Eurocode3 Part 1-5 4.4, Table 4.1, 4.2]
-. Rho = 1.0 (Only tensile stresses).
-. sigma_max = MAX(sigma1, sigma2) = -10866.489 KPa.
-. sigma_min = MIN(sigma1, sigma2) = -10866.489 KPa.
-. r = 0.000 m.
-. bc = 0.100 m.
-. beff = Rho*bc + r = 0.100 m.
-. Aeff = beff * tf = 0.001 m^2.
-. yeff = beff/2 = 0.050 m.

( ). Calculate effective cross-section properties of right flange flange of Class 4 (Outstand element).
[Eurocode3 Part 1-5 4.4, Table 4.1, 4.2]
-. Rho = 1.0 (Only tensile stresses).
-. sigma_max = MAX(sigma1, sigma2) = -10866.489 KPa.
-. sigma_min = MIN(sigma1, sigma2) = -10866.489 KPa.
-. r = 0.000 m.
-. bc = 0.100 m.
-. beff = Rho*bc + r = 0.100 m.
-. Aeff = beff * tf = 0.001 m^2.
-. yeff = beff/2 = 0.050 m.

( ). Calculate buckling factor of outstand compression element.
[Eurocode3 Part 1-5 4.4, Table 4.2]
-. k_sigma = 0.57 - 0.21*Psi + 0.07*Psi^2 = 0.6298

( ). Calculate effective cross-section properties of left web of Class 4 (Internal element).
[Eurocode3 Part 1-5 4.4, Table 4.1, 4.2]
-. RatT = 10.0000
-. Lambda_p = RatT / [28.4*Eps*SQRT(k_sigma)] = 0.5453
-. Rho = 1.0

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==========

-. sigma_max = MAX(sigma1, sigma2) = 27016.685 KPa.
-. sigma_min = MIN(sigma1, sigma2) = -7078.172 KPa.
-. r = 0.000 m.
-. Ar = 0.000 m^2.
-. dc = (h*sigma_max) / (sigma_max-sigma_min) = 0.071 m.
-. deff1 = 0.4*Rho*dc + r = 0.029 m.
-. Aeff1 = deff1 * tw + 2*Ar = 2.853e-004 m^2.
-. zeff1 = deff1/2 + tf = 0.014 m.
-. deff2 = 0.6*Rho*dc + (h-dc) + r = 0.061 m.
-. Aeff2 = deff2 * tw + 2*Ar = 6.147e-004 m^2.
-. zeff2 = (h+2*r) - deff2/2 + tf = 0.059 m.

( ). Calculate buckling factor of outstand compression element.
[Eurocode3 Part 1-5 4.4, Table 4.2]
-. k_sigma = 0.57 - 0.21*Psi + 0.07*Psi^2 = 0.6298

( ). Calculate effective cross-section properties of right web of Class 4 (Internal element).
[Eurocode3 Part 1-5 4.4, Table 4.1, 4.2]
-. RatT = 10.0000
-. Lambda_p = RatT / [28.4*Eps*SQRT(k_sigma)] = 0.5453
-. Rho = 1.0
-. sigma_max = MAX(sigma1, sigma2) = 27016.685 KPa.
-. sigma_min = MIN(sigma1, sigma2) = -7078.172 KPa.
-. r = 0.000 m.
-. Ar = 0.000 m^2.
-. dc = (h*sigma_max) / (sigma_max-sigma_min) = 0.071 m.
-. deff1 = 0.4*Rho*dc + r = 0.029 m.
-. Aeff1 = deff1 * tw + 2*Ar = 2.853e-004 m^2.
-. zeff1 = deff1/2 + tf = 0.014 m.
-. deff2 = 0.6*Rho*dc + (h-dc) + r = 0.061 m.
-. Aeff2 = deff2 * tw + 2*Ar = 6.147e-004 m^2.
-. zeff2 = (h+2*r) - deff2/2 + tf = 0.059 m.

==========
[[[*]]] CALCULATE EFFECTIVE SECTION MODULUS ABOUT MINOR AXIS.
==========

( ). Calculate buckling factor of outstand compression element.
[Eurocode3 Part 1-5 4.4, Table 4.2]
-. k_sigma = 0.57 - 0.21*Psi + 0.07*Psi^2 = 0.5515

( ). Calculate effective cross-section properties of left flange flange of Class 4 (Outstand element).
[Eurocode3 Part 1-5 4.4, Table 4.1, 4.2]
-. RatT = 9.0000
-. Lambda_p = RatT / [28.4*Eps*SQRT(k_sigma)] = 0.5245
-. Rho = 1.0

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==========

-. sigma_max = MAX(sigma1, sigma2) = 1732.029 KPa.
-. sigma_min = MIN(sigma1, sigma2) = 157.457 KPa.
-. r = 0.000 m.
-. bc = 0.100 m.
-. beff = Rho*bc + r = 0.100 m.
-. Aeff = beff * tf = 0.001 m^2.
-. yeff = beff/2 = 0.050 m.

( ). Calculate effective cross-section properties of right flange flange of Class 4 (Outstand element).
[Eurocode3 Part 1-5 4.4, Table 4.1, 4.2]
-. Rho = 1.0 (Only tensile stresses).
-. sigma_max = MAX(sigma1, sigma2) = -157.457 KPa.
-. sigma_min = MIN(sigma1, sigma2) = -1732.029 KPa.
-. r = 0.000 m.
-. bc = 0.100 m.
-. beff = Rho*bc + r = 0.100 m.
-. Aeff = beff * tf = 0.001 m^2.
-. yeff = beff/2 = 0.050 m.

( ). Calculate buckling factor of outstand compression element.
[Eurocode3 Part 1-5 4.4, Table 4.2]
-. In case of Psi = 1.0
-. k_sigma = 0.4300

( ). Calculate effective cross-section properties of left web of Class 4 (Internal element).
[Eurocode3 Part 1-5 4.4, Table 4.1, 4.2]
-. RatT = 10.0000
-. Lambda_p = RatT / [28.4*Eps*SQRT(k_sigma)] = 0.6600
-. Rho = 1.0
-. sigma_max = MAX(sigma1, sigma2) = 314.914 KPa.
-. sigma_min = MIN(sigma1, sigma2) = 314.914 KPa.
-. r = 0.000 m.
-. Ar = 0.000 m^2.
-. dc = 0.090 m.
-. deff1 = 2*(Rho*dc) / [5 - sigma_min/sigma_max] + r = 0.045 m.
-. Aeff1 = deff1 * tw + 2*Ar = 4.500e-004 m^2.
-. zeff1 = deff1/2 + tf = 0.022 m.
-. deff2 = (Rho*dc) - deff1 + r = 0.045 m.
-. Aeff2 = deff2 * tw + 2*Ar = 4.500e-004 m^2.
-. zeff2 = (h+2*r) - deff2/2 + tf = 0.068 m.

( ). Calculate effective cross-section properties of right web of Class 4 (Internal element).
[Eurocode3 Part 1-5 4.4, Table 4.1, 4.2]
-. Rho = 1.0 (Only tensile stresses).
-. sigma_max = MAX(sigma1, sigma2) = -314.914 KPa.
-. sigma_min = MIN(sigma1, sigma2) = -314.914 KPa.
-. r = 0.000 m.
-. Ar = 0.000 m^2.
-. dc = 0.090 m.
-. deff = dc + r = 0.090 m.
-. Aeff = deff * tw + 4*Ar = 9.000e-004 m^2.
-. zeff = (h+2*r) - deff/2 = 0.045 m.

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==========

==========
[[[*]]] EFFECTIVE SECTION PPOPERTIES.
==========

( ). Calculated effective cross-section properties of Class4 cross-section.
-. Aeff = 0.0038 m^2. (for calculating axial resistance)
-. Aeffy = 0.0038 m^2.
-. Weffy = 5.0481e-005 m^3.
-. Aeffz = 0.0038 m^2.
-. Weffz = 7.0867e-005 m^3.
-. eNy = 0.0000 m.
-. eNz = 0.0000 m.

==========
[[[*]]] APPLIED FACTORS.
==========

( ). Calculate equivalent uniform moment factors (Cmy,Cmz,CmLT).
[Eurocode3:05 Annex A. Table A.1, A.2]
-. Cmy,0 = 0.921
-. Cmz,0 = 0.969
-. Cmy (Default or User Defined Value) = 1.000
-. Cmz (Default or User Defined Value) = 1.000
-. CmLT (Default or User Defined Value) = 1.000

( ). Partial Factors (Gamma_Mi).
[Eurocode3:05 6.1]
-. Gamma_M0 = 1.05
-. Gamma_M1 = 1.10
-. Gamma_M2 = 1.25

==========
[[[*]]] CHECK AXIAL RESISTANCE.
==========

( ). Check slenderness ratio of axial compression member (Kl/i).
[Eurocode3:05 6.3.1]
-. Kl/i = 67.6 < 200.0 ---> O.K.

( ). Calculate axial compressive resistance (Nc_Rd).
[Eurocode3:05 6.1, 6.2.4]
-. Nc_Rd = fy * Aeff / Gamma_M0 = 1284.76 kN.

( ). Check ratio of axial resistance (N_Ed/Nc_Rd).
N_Ed 135.95
-. ----- = ---------- = 0.106 < 1.000 ---> O.K.
Nc_Rd 1284.76

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==========

( ). Calculate buckling resistance of compression member (Nb_Rdy, Nb_Rdz).
[Eurocode3:05 6.3.1.1, 6.3.1.2]
-. Beta_A = Aeff / Area = 1.000
-. Lambda1 = Pi * SQRT(Es/fy) = 76.409
-. Lambda_by = {(KLy/iy)/Lambda1} * SQRT(Beta_A) = 0.884
-. Ncry = Pi^2*Es*Ryy / KLy^2 = 1724.67 kN.
-. Lambda_by > 0.2 and N_Ed/Ncry > 0.04 --> Need to check.
-. Alphay = 0.340
-. Phiy = 0.5 * [1 + Alphay*(Lambda_by-0.2) + Lambda_by^2] = 1.007
-. Xiy = MIN [1 / [Phiy + SQRT(Phiy^2 - Lambda_by^2)], 1.0] = 0.671
-. Nb_Rdy = Xiy*Beta_A*Area*fy / Gamma_M1 = 823.13 kN.

-. Lambda_bz = {(KLz/iz)/Lambda1} * SQRT(Beta_A) = 0.551
-. Ncrz = Pi^2*Es*Rzz / KLz^2 = 4448.90 kN.
-. Lambda_bz < 0.2 or N_Ed/Ncrz < 0.04 --> No need to check.

( ). Check ratio of buckling resistance (N_Ed/Nb_Rd).
-. Nb_Rd = MIN[Nb_Rdy, Nb_Rdz] = 823.13 kN.
N_Ed 135.95
-. ----- = ---------- = 0.165 < 1.000 ---> O.K.
Nb_Rd 823.13

==========
[[[*]]] CHECK SHEAR RESISTANCE.
==========

( ). Calculate shear area.
[Eurocode3:05 6.2.6, EN1993-1-5:04 5.1 NOTE 2]
-. Avy = 2*B*tf = 0.0020 m^2.
-. Avz = 2*h*tw = 0.0020 m^2.

( ). Calculate plastic shear resistance in local-y direction (Vpl_Rdy).
[Eurocode3:05 6.1, 6.2.6]
-. Vpl_Rdy = [Avy*fy/SQRT(3)] / Gamma_M0 = 390.40 kN.

( ). Check ratio of shear resistance (V_Edy/Vpl_Rdy).
(LCB = 19+, POS = J)
-. Applied shear force : V_Edy = 0.11 kN.
V_Edy 0.11
-. ------- = ---------- =2.800e-004 < 1.000 ---> O.K.
Vpl_Rdy 390.40

( ). Calculate plastic shear resistance in local-z direction (Vpl_Rdz).
[Eurocode3:05 6.1, 6.2.6]
-. Vpl_Rdz = [Avz*fy/SQRT(3)] / Gamma_M0 = 390.40 kN.

( ). Shear Buckling Check.
[Eurocode3:05 6.2.6]
-. HTR < 72*e/Eta ---> No need to check!

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==========

( ). Check ratio of shear resistance (V_Edz/Vpl_Rdz).
(LCB = 19+, POS = J)
-. Applied shear force : V_Edz = 1.56 kN.
V_Edz 1.56
-. ------- = ---------- = 0.004 < 1.000 ---> O.K.
Vpl_Rdz 390.40

==========
[[[*]]] CHECK BENDING MOMENT RESISTANCE ABOUT MAJOR AXIS.
==========

( ). Calculate local buckling resistance moment about major axis.
[Eurocode3:05 6.1, 6.2.5]
-. Weffy = 5.0481e-005 m^3.
-. Mc_Rdy = Weffy * fy / Gamma_M1 = 16.29 kN-m.

( ). Check ratio of moment resistance (M_Edy/Mc_Rdy).
M_Edy 1.36
-. ------ = ---------- = 0.084 < 1.000 ---> O.K.
Mc_Rdy 16.29

==========
[[[*]]] CHECK BENDING MOMENT RESISTANCE ABOUT MINOR AXIS.
==========

( ). Calculate local buckling resistance moment about minor axis.
[Eurocode3:05 6.1, 6.2.5]
-. Weffz = 7.0867e-005 m^3.
-. Mc_Rdz = Weffz * fy / Gamma_M1 = 22.87 kN-m.

( ). Check ratio of moment resistance (M_Edz/Mc_Rdz).
M_Edz 0.15
-. ------ = ---------- = 0.006 < 1.000 ---> O.K.
Mc_Rdz 22.87

==========
[[[*]]] CHECK INTERACTION OF COMBINED RESISTANCE.
==========

( ). Calculate Major reduced design resistance of bending and shear.
[Eurocode3:05 6.2.8 (6.30)]
-. In case of V_Edz / Vpl_Rdz < 0.5
-. My_Rd = Mc_Rdy = 16.29 kN-m.

( ). Calculate Minor reduced design resistance of bending and shear.
[Eurocode3:05 6.2.8 (6.30)]
-. In case of V_Edy / Vpl_Rdy < 0.5
-. Mz_Rd = Mc_Rdz = 22.87 kN-m.

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==========

( ). Check interaction ratio of bending and axial force.
[Eurocode3:05 6.2.9.3 (6.44)] - Class4

$$\text{Rmax1} = \frac{N_{Ed}}{Aeff*fy/Gamma\_M0} + \frac{M_{Edy} + N_{Ed}*eNz}{My_{Rd}} + \frac{M_{Edz} + N_{Ed}*eNy}{Mz_{Rd}}$$

= 0.196 < 1.000 ---> O.K.

( ). Check interaction ratio of bending and axial compression member.
[Eurocode3:05 6.3.1, 6.2.9.3 (6.61, 6.62), Annex A]
-. N_Ed = -135.95 kN.
-. M_Edy = -1.36 kN-m.
-. M_Edz = -0.15 kN-m.
-. kyy = 1.056
-. kyz = 1.003
-. kzy = 1.081
-. kzz = 1.027
-. Xiy = 0.671
-. Xiz = 0.861
-. XiLT = 0.863
-. Aeff = 0.0038 m^2.
-. Weffy = 5.0481e-005 m^3.
-. Weffz = 7.0867e-005 m^3.
-. eNy = 0.0000 m.
-. eNz = 0.0000 m.
-. N_Rk = Aeff*fy = 1349.00 kN.
-. My_Rk = Weffy*fy = 17.92 kN-m.
-. Mz_Rk = Weffz*fy = 25.16 kN-m.
-. N_Ed*eNy = 0.00 kN-m.
-. N_Ed*eNZ = 0.00 kN-m.

$$\text{Rmax\_LT1} = \frac{N_{Ed}}{Xiy*N\_Rk/Gamma\_M1} + kyy * \frac{M_{Edy} + N_{Ed}*eNy}{XiLT*My\_Rk/Gamma\_M1} + kyz * \frac{M_{Edz} + N_{Ed}*eNz}{Mz\_Rk/Gamma\_M1}$$

= 0.274 < 1.000 ---> O.K.

$$\text{Rmax\_LT2} = \frac{N_{Ed}}{Xiz*N\_Rk/Gamma\_M1} + kzy * \frac{M_{Edy} + N_{Ed}*eNy}{XiLT*My\_Rk/Gamma\_M1} + kzz * \frac{M_{Edz} + N_{Ed}*eNz}{Mz\_Rk/Gamma\_M1}$$

= 0.240 < 1.000 ---> O.K.

-. Rmax = MAX[Rmax1, MAX(Rmax_LT1, Rmax_LT2)] = 0.274 < 1.000 ---> O.K.

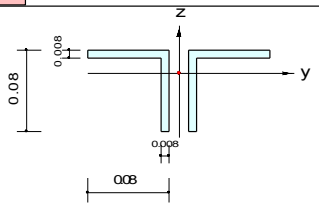
10.6 DIAFRAMMI SU PILE – DIAGONALI

MIDAS/Civil **Steel Checking Result**

Company		**Project Title**	Viadotto Agrò
Author	Renato Vaira	**File Name**	D:\...\Cavalc Coste V_1.mcb

1. Design Information

Design Code : Eurocode3-2:05
Unit System : kN, m
Member No : 2034
Material : S355W (No:1)
(Fy = 355000, Es = 210000000)
Section Name : DIAG_PILE 2L80x8d20 (No:20)
(Built-up Section).
Member Length : 1.78220



Depth	0.08000	Web Thick	0.00800
Flg Width	0.08000	Flg Thick	0.00800
BTB Spacing	0.02000		
Area	0.00243	Asz	0.00107
Qyb	0.00163	Qzb	0.00320
Iyy	0.00000	Izz	0.00000
Ybar	0.09000	Zbar	0.05705
Wely	0.00003	Welz	0.00005
ry	0.02462	rz	0.04113

2. Member Forces

Axial Force Fxx = 267.493 (LCB: 19+, POS:J)
Bending Moments My = 0.50268, Mz = 0.11710
End Moments Myi = 0.07638, Myj = 0.50268 (for Lb)
Myi = 0.07638, Myj = 0.50268 (for Ly)
Mzi = 0.18668, Mzj = 0.11710 (for Lz)
Shear Forces Fyy = -0.0630 (LCB: 19-, POS:I)
Fzz = -0.5865 (LCB: 19-, POS:J)

3. Design Parameters

Unbraced Lengths Ly = 1.78220, Lz = 1.78220, Lb = 1.78220
Effective Length Factors Ky = 0.65, Kz = 1.30
Equivalent Uniform Moment Factors Cmy = 1.00, Cmz = 1.00, CmLT = 1.00

4. Checking Results

Axial Resistance
N_Ed/Nt_Rd = 267.493/822.248 = 0.325 < 1.000 ..... O.K
Bending Resistance
M_Edy/M_Rdy = 0.5027/15.7439 = 0.032 < 1.000 ..... O.K
M_Edz/M_Rdz = 0.1171/27.0909 = 0.004 < 1.000 ..... O.K
Combined Resistance
RNRd = MAX[M_Edy/Mny_Rd, M_Edz/Mnz_Rd]
Rmax1 = (M_Edy/Mny_Rd)^Alpha + (M_Edz/Mnz_Rd)^Beta
Rcom = N_Ed/(A*fy/Gamma_M0), Rbend = M_Edy/My_Rd + M_Edz/Mz_Rd
Rmax = MAX[RNRd, Rmax1, (Rcom+Rbend)] = 0.362 < 1.000 ..... O.K
Shear Resistance
V_Edy/Vy_Rd = 0.000 < 1.000 ..... O.K
V_Edz/Vz_Rd = 0.002 < 1.000 ..... O.K

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| Based On AASHTO-LRFD12, AASHTO-LRFD02, AASHTO-LFD96, |
| AASHTO-ASD96, AISC-LRFD2K, AISC-LRFD93, |
| AISC-ASD89, Eurocode3-2:05, BS5950-90, |
| IS:800-2007, IS:800-1984 |
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+==+

*. DEFINITION OF LOAD COMBINATIONS WITH SCALING UP FACTORS.

LCB C Loadcase Name(Factor) + Loadcase Name(Factor) + Loadcase Name(Factor)

19+ 1 Dead Load(1.350) +Erection Load 1(1.500) +Creep Secondary(1.200)
+Shrinkage Secondary(1.200) +Vento Strutture INV(0.900) +Vento Mobili INV(0.900)
+Termico unif. INV(0.720) +Termico diff. INV(0.720) +Mobili SLU INV(1.350)
19- 1 Dead Load(1.350) +Erection Load 1(1.500) +Creep Secondary(1.200)
+Shrinkage Secondary(1.200) +Vento Strutture INV(0.900) +Vento Mobili INV(0.900)
+Termico unif. INV(0.720) +Termico diff. INV(0.720) +Mobili SLU INV(1.350)
20+ 1 Dead Load(1.350) +Erection Load 1(1.500) +Creep Secondary(1.200)
+Shrinkage Secondary(1.200) +Vento Strutture INV(1.500) +Vento Mobili INV(1.500)
+Termico unif. INV(0.720) +Termico diff. INV(0.720) +Mobili SLE INV(1.350)
20- 1 Dead Load(1.350) +Erection Load 1(1.500) +Creep Secondary(1.200)
+Shrinkage Secondary(1.200) +Vento Strutture INV(1.500) +Vento Mobili INV(1.500)
+Termico unif. INV(0.720) +Termico diff. INV(0.720) +Mobili SLE INV(1.350)
21+ 1 Dead Load(1.350) +Erection Load 1(1.500) +Creep Secondary(1.200)
+Shrinkage Secondary(1.200) +Frenamento INV(1.350) +Termico unif. INV(0.720)
+Termico diff. INV(0.720) +Mobili SLE INV(1.350)
21- 1 Dead Load(1.350) +Erection Load 1(1.500) +Creep Secondary(1.200)
+Shrinkage Secondary(1.200) +Frenamento INV(1.350) +Termico unif. INV(0.720)
+Termico diff. INV(0.720) +Mobili SLE INV(1.350)
22+ 1 Dead Load(1.350) +Erection Load 1(1.500) +Creep Secondary(1.200)
+Shrinkage Secondary(1.200) +Vento Strutture INV(0.900) +Vento Mobili INV(0.900)
+Termico unif. INV(1.200) +Termico diff. INV(1.200) +Mobili SLE INV(1.350)
22- 1 Dead Load(1.350) +Erection Load 1(1.500) +Creep Secondary(1.200)
+Shrinkage Secondary(1.200) +Vento Strutture INV(0.900) +Vento Mobili INV(0.900)
+Termico unif. INV(1.200) +Termico diff. INV(1.200) +Mobili SLE INV(1.350)

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23+ 1 Summation(1.000) +Termico unif. INV(0.500) +Termico diff. INV(0.500)
+ SLV Long INV(1.000) + SLV Trasv INV(0.300) + SLV Vert INV(0.300)
23- 1 Summation(1.000) +Termico unif. INV(0.500) +Termico diff. INV(0.500)
+ SLV Long INV(1.000) + SLV Trasv INV(0.300) + SLV Vert INV(0.300)
24+ 1 Summation(1.000) +Termico unif. INV(0.500) +Termico diff. INV(0.500)
+ SLV Long INV(0.300) + SLV Trasv INV(1.000) + SLV Vert INV(0.300)
24- 1 Summation(1.000) +Termico unif. INV(0.500) +Termico diff. INV(0.500)
+ SLV Long INV(0.300) + SLV Trasv INV(1.000) + SLV Vert INV(0.300)
25+ 1 Summation(1.000) +Termico unif. INV(0.500) +Termico diff. INV(0.500)
+ SLV Long INV(0.300) + SLV Trasv INV(0.300) + SLV Vert INV(1.000)
25- 1 Summation(1.000) +Termico unif. INV(0.500) +Termico diff. INV(0.500)
+ SLV Long INV(0.300) + SLV Trasv INV(0.300) + SLV Vert INV(1.000)
28+ 2 Summation(1.000) +Vento Strutture INV(0.600) +Vento Mobili INV(0.600)
+Termico unif. INV(0.600) +Termico diff. INV(0.600) +Mobili SLU INV(1.000)
28- 2 Summation(1.000) +Vento Strutture INV(0.600) +Vento Mobili INV(0.600)
+Termico unif. INV(0.600) +Termico diff. INV(0.600) +Mobili SLU INV(1.000)
29+ 2 Summation(1.000) +Vento Strutture INV(1.000) +Vento Mobili INV(1.000)
+Termico unif. INV(0.600) +Termico diff. INV(0.600) +Mobili SLE INV(1.000)
29- 2 Summation(1.000) +Vento Strutture INV(1.000) +Vento Mobili INV(1.000)
+Termico unif. INV(0.600) +Termico diff. INV(0.600) +Mobili SLE INV(1.000)
30+ 2 Summation(1.000) +Frenamento INV(1.000) +Termico unif. INV(0.600)
+Termico diff. INV(0.600) +Mobili SLE INV(1.000)
30- 2 Summation(1.000) +Frenamento INV(1.000) +Termico unif. INV(0.600)
+Termico diff. INV(0.600) +Mobili SLE INV(1.000)
31+ 2 Summation(1.000) +Vento Strutture INV(0.600) +Vento Mobili INV(0.600)
+Termico unif. INV(1.000) +Termico diff. INV(1.000) +Mobili SLE INV(1.000)
31- 2 Summation(1.000) +Vento Strutture INV(0.600) +Vento Mobili INV(0.600)
+Termico unif. INV(1.000) +Termico diff. INV(1.000) +Mobili SLE INV(1.000)
32+ 2 Summation(1.000) +Termico unif. INV(0.500) +Termico diff. INV(0.500)
+Mobili SLE INV(1.000)
32- 2 Summation(1.000) +Termico unif. INV(0.500) +Termico diff. INV(0.500)
+Mobili SLE INV(1.000)
33+ 2 Summation(1.000) +Vento Strutture INV(0.200) +Vento Mobili INV(0.200)
+Termico unif. INV(0.500) +Termico diff. INV(0.500)
33- 2 Summation(1.000) +Vento Strutture INV(0.200) +Vento Mobili INV(0.200)
+Termico unif. INV(0.500) +Termico diff. INV(0.500)
34+ 2 Summation(1.000) +Termico unif. INV(0.600) +Termico diff. INV(0.600)
34- 2 Summation(1.000) +Termico unif. INV(0.600) +Termico diff. INV(0.600)
35+ 2 Summation(1.000) +Termico unif. INV(0.500) +Termico diff. INV(0.500)
35- 2 Summation(1.000) +Termico unif. INV(0.500) +Termico diff. INV(0.500)

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*. PROJECT : Viadotto Agrò
*. MEMBER NO = 2034, ELEMENT TYPE = Beam
*. LOADCOMB NO = 19+, MATERIAL NO = 1, SECTION NO = 20
*. UNIT SYSTEM : kN, m

*. SECTION PROPERTIES : Designation = DIAG_PILE 2L80x8d20
Shape = 2L - Section. (Built-up)
Depth = 0.080, Flg Width = 0.080, BTB Spacing = 0.020
Web Thick = 0.008, Flg Thick = 0.008

Area = 2.43200e-003, Avy = 1.28000e-003, Avz = 1.28000e-003
Ybar = 9.00000e-002, Zbar = 5.70526e-002, Qyb = 1.62750e-003, Qzb = 3.20000e-003
Wely = 2.58462e-005, Welz = 4.57178e-005, Wply = 4.65664e-005, Wplz = 8.01280e-005
Iyy = 1.47460e-006, Izz = 4.11460e-006, Iyz = 0.00000e+000
iy = 2.46238e-002, iz = 4.11322e-002
J = 5.18827e-008, Cwp = 2.31033e-011

*. DESIGN PARAMETERS FOR STRENGTH EVALUATION :
Ly = 1.78220e+000, Lz = 1.78220e+000, Lu = 1.78220e+000
Ky = 6.50000e-001, Kz = 1.30000e+000

*. MATERIAL PROPERTIES :
Fy = 3.55000e+005, Es = 2.10000e+008, MATERIAL NAME = S355W

*. FORCES AND MOMENTS AT (J) POINT :
Axial Force Fxx = 2.67493e+002
Shear Forces Fyy = 3.90550e-002, Fzz =-1.90850e-001
Bending Moments My = 5.02682e-001, Mz = 1.17105e-001
End Moments Myi = 7.63805e-002, Myj = 5.02682e-001 (for Lb)
Myi = 7.63805e-002, Myj = 5.02682e-001 (for Ly)
Mzi = 1.86676e-001, Mzj = 1.17105e-001 (for Lz)

*. Sign conventions for stress and axial force.
- Stress : Compression positive.
- Axial force: Tension positive.

==========
[[[*]]] CLASSIFY LEFT FLANGE OF SECTION (BTR).
==========

( ). Determine classification of tension flanges(double angle).
-. Not Checking the Section Classification.

( ). Determine classification of tension flanges(double angle).
-. Not Checking the Section Classification.

==========
[[[*]]] CLASSIFY WEB OF SECTION (HTR).
==========

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==========

( ). Determine classification of tension elements(Double angle).
-. Not Checking the Section Classification.

==========
[[[*]]] APPLIED FACTORS.
==========

( ). Calculate equivalent uniform moment factors (Cmy,Cmz,CmLT).
[Eurocode3:05 Annex A. Table A.1, A.2]
-. Cmy,0 = 0.883
-. Cmz,0 = 0.940
-. Cmy (Default or User Defined Value) = 1.000
-. Cmz (Default or User Defined Value) = 1.000
-. CmLT (Default or User Defined Value) = 1.000

( ). Partial Factors (Gamma_Mi).
[Eurocode3:05 6.1]
-. Gamma_M0 = 1.05
-. Gamma_M1 = 1.10
-. Gamma_M2 = 1.25

==========
[[[*]]] CHECK AXIAL RESISTANCE.
==========

( ). Check slenderness ratio of axial tension member (l/i).
[Eurocode3:05 6.3.1]
-. l/i = 72.4 < 300.0 ---> O.K.

( ). Calculate parameters for combined resistance.
-. Lambda1 = Pi * SQRT(Es/fy) = 76.409
-. Lambda_bz = (KLz/iz) / Lambda1 = 0.567

( ). Calculate axial tensile resistance (Nt_Rd).
[Eurocode3:05 6.2.3]
-. Nt_Rd = fy * Area / Gamma_M0 = 822.25 kN.

( ). Check ratio of axial resistance (N_Ed/Nt_Rd).
N_Ed 267.49
-. ----- = ---------- = 0.325 < 1.000 ---> O.K.
Nt_Rd 822.25

==========
[[[*]]] CHECK SHEAR RESISTANCE.
==========

( ). Calculate shear area.
[Eurocode3:05 6.2.6, EN1993-1-5:04 5.1 NOTE 2]
-. Avy = 2*B*tf = 0.0013 m^2.
-. Avz = 2*h*tw = 0.0013 m^2.

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==========

( ). Calculate plastic shear resistance in local-y direction (Vpl_Rdy).
[Eurocode3:05 6.1, 6.2.6]
-. Vpl_Rdy = [Avy*fy/SQRT(3)] / Gamma_M0 = 249.86 kN.

( ). Check ratio of shear resistance (V_Edy/Vpl_Rdy).
(LCB = 19-, POS = J)
-. Applied shear force : V_Edy = 0.06 kN.
V_Edy 0.06
-. ------- = ---------- =2.520e-004 < 1.000 ---> O.K.
Vpl_Rdy 249.86

( ). Calculate plastic shear resistance in local-z direction (Vpl_Rdz).
[Eurocode3:05 6.1, 6.2.6]
-. Vpl_Rdz = [Avz*fy/SQRT(3)] / Gamma_M0 = 249.86 kN.

( ). Shear Buckling Check.
[Eurocode3:05 6.2.6]
-. HTR < 72*e/Eta ---> No need to check!

( ). Check ratio of shear resistance (V_Edz/Vpl_Rdz).
(LCB = 19-, POS = J)
-. Applied shear force : V_Edz = 0.59 kN.
V_Edz 0.59
-. ------- = ---------- = 0.002 < 1.000 ---> O.K.
Vpl_Rdz 249.86

==========
[[[*]]] CHECK BENDING MOMENT RESISTANCE ABOUT MAJOR AXIS.
==========

( ). Calculate plastic resistance moment about major axis.
[Eurocode3:05 6.1, 6.2.5]
-. Wply = 4.6566e-005 m^3.
-. Mc_Rdy = Wply * fy / Gamma_M0 = 15.74 kN-m.

( ). Check ratio of moment resistance (M_Edy/Mc_Rdy).
M_Edy 0.50
-. ------ = ---------- = 0.032 < 1.000 ---> O.K.
Mc_Rdy 15.74

==========
[[[*]]] CHECK BENDING MOMENT RESISTANCE ABOUT MINOR AXIS.
==========

( ). Calculate plastic resistance moment about minor axis.
[Eurocode3:05 6.1, 6.2.5]
-. Wplz = 8.0128e-005 m^3.
-. Mc_Rdz = Wplz * fy / Gamma_M0 = 27.09 kN-m.

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==========

( ). Check ratio of moment resistance (M_Edz/Mc_Rdz).

$$\frac{M\_Edz}{Mc\_Rdz} = \frac{0.12}{27.09} = 0.004 < 1.000 \text{ ---> O.K.}$$

==========
[[[*]]] CHECK INTERACTION OF COMBINED RESISTANCE.
==========

( ). Calculate Major reduced design resistance of bending and shear.
[Eurocode3:05 6.2.8 (6.30)]
-. In case of V_Edz / Vpl_Rdz < 0.5
-. My_Rd = Mc_Rdy = 15.74 kN-m.

( ). Calculate Minor reduced design resistance of bending and shear.
[Eurocode3:05 6.2.8 (6.30)]
-. In case of V_Edy / Vpl_Rdy < 0.5
-. Mz_Rd = Mc_Rdz = 27.09 kN-m.

( ). Check general interaction ratio.
[Eurocode3:05 6.2.1 (6.2)] - Class1 or Class2

$$Rmax1 = \frac{N\_Ed}{N\_Rd} + \frac{M\_Edy}{My\_Rd} + \frac{M\_Edz}{Mz\_Rd} = 0.362 < 1.000 \text{ ---> O.K.}$$

( ). Check interaction ratio of bending and axial force member.
[Eurocode3:05 6.2.9 (6.31 ~ 6.41)] - Class1 or Class2
-. n = N_Ed / Npl_Rd = 0.325
-. a = MIN[(Area-2b*tf)/Area, 0.5] = 0.500
-. Alpha = 2.000
-. Beta = MAX[5*n, 1.0] = 1.627
-. Mny_Rd = MIN[Mply_Rd*(1-n)/(1-0.5*a), Mply_Rd] = 14.16 kN-m.
-. Rmaxy = M_Edy / Mny_Rd = 0.035 < 1.000 ---> O.K.

-. In case of n < a
-. Mnz_Rd = Mplz_Rd = 27.09 kN-m.
-. Rmaxz = M_Edz / Mnz_Rd = 0.004 < 1.000 ---> O.K.

$$Rmax2 = \left[\frac{|M\_Edy|}{|Mny\_Rd|}^{(Alpha)} + \frac{|M\_Edz|}{|Mnz\_Rd|}^{(Beta)}\right] = 0.001 < 1.000 \text{ ---> O.K.}$$

-. Rmax = MAX[Rmax1, Rmax2] = 0.362 < 1.000 ---> O.K.

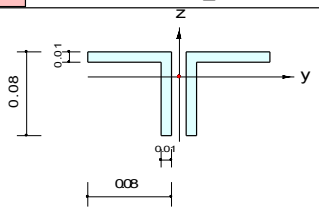
10.7 CONTROVENTI

MIDAS/Civil **Steel Checking Result**

Company		**Project Title**	Viadotto Agrò
Author	Renato Vaira	**File Name**	D:\...\Cavalc Coste V_1.mcb

1. Design Information

Design Code : Eurocode3-2:05
Unit System : kN, m
Member No : 3148
Material : S355W (No:1)
(Fy = 355000, Es = 210000000)
Section Name : CONTROV 2L80x10d15 (No:15)
(Built-up Section).
Member Length : 3.05287



2. Member Forces

Axial Force Fxx = -255.94 (LCB: 19-, POS:J)
Bending Moments My = -0.2859, Mz = -2.5854
End Moments Myi = -0.0070, Myj = -0.2859 (for Lb)
Myi = -0.0070, Myj = -0.2859 (for Ly)
Mzi = -0.0494, Mzj = -2.5854 (for Lz)
Shear Forces Fyy = 1.57644 (LCB: 19+, POS:J)
Fzz = 0.19112 (LCB: 19+, POS:J)

Depth	0.08000	Web Thick	0.01000
Flg Width	0.08000	Flg Thick	0.01000
BTB Spacing	0.01500		
Area	0.00300	Asz	0.00133
Qyb	0.00159	Qzb	0.00320
Iyy	0.00000	Izz	0.00000
Ybar	0.08750	Zbar	0.05633
Wely	0.00003	Welz	0.00005
ry	0.02436	rz	0.03955

3. Design Parameters

Unbraced Lengths Ly = 3.05287, Lz = 3.05287, Lb = 3.05287
Effective Length Factors Ky = 0.65, Kz = 1.30
Equivalent Uniform Moment Factors Cmy = 1.00, Cmz = 1.00, CmLT = 1.00

4. Checking Results

Axial Resistance
N_Ed/MIN[Nc_Rd, Nb_Rd] = 255.941/407.225 = 0.628 < 1.000 ..... O.K
Bending Resistance
M_Edy/M_Rdy = 0.2859/19.2503 = 0.015 < 1.000 ..... O.K
M_Edz/M_Rdz = 2.5854/31.6119 = 0.082 < 1.000 ..... O.K
Combined Resistance
RNRd = MAX[M_Edy/Mny_Rd, M_Edz/Mnz_Rd]
Rmax1 = (M_Edy/Mny_Rd)^Alpha + (M_Edz/Mnz_Rd)^Beta
Rcom = N_Ed/(A*fy/Gamma_M0), Rbend = M_Edy/My_Rd + M_Edz/Mz_Rd
Rc_LT1 = N_Ed/(Xiy*A*fy/Gamma_M1)
Rb_LT1 = (kyy*M_Edy)/(Xi_LT*Wply*fy/Gamma_M1) + (kyz*Msdz)/(Wplz*fy/Gamma_M1)
Rc_LT2 = N_Ed/(Xiz*A*fy/Gamma_M1)
Rb_LT2 = (Kzy*M_Edy)/(Xi_LT*Wply*fy/Gamma_M1) + (Kzz*Msdz)/(Wplz*fy/Gamma_M1)
Rmax = MAX[RNRd, Rmax1, (Rcom+Rbend), MAX(Rc_LT1+Rb_LT1, Rc_LT2+Rb_LT2)] = 0.767 < 1.000 .. O.K
Shear Resistance
V_Edy/Vy_Rd = 0.005 < 1.000 ..... O.K
V_Edz/Vz_Rd = 0.001 < 1.000 ..... O.K

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    +============================================================+
    |  Steel Member Applicable Code Checking                     |
    |  Based On  AASHTO-LRFD12, AASHTO-LRFD02, AASHTO-LFD96,     |
    |          AASHTO-ASD96, AISC-LRFD2K, AISC-LRFD93,           |
    |          AISC-ASD89, Eurocode3-2:05, BS5950-90,            |
    |          IS:800-2007, IS:800-1984                          |
    |                                        |
    |                                        |
    |                                        |
    |                                        |
    |                                        |
    |                               (c)SINCE 1989  |
    +============================================================+
    |  MIDAS Information Technology Co.,Ltd.       (MIDAS IT)  |
    |  MIDAS IT Design Development Team                          |
    +============================================================+
    |          HomePage : www.MidasUser.com                      |
    +============================================================+
    |  MIDAS/Civil  Version 8.3.5                                |
    +============================================================+


   *. DEFINITION OF LOAD COMBINATIONS WITH SCALING UP FACTORS.
---------------------------------------------------------------------------------------
    LCB  C    Loadcase Name(Factor) + Loadcase Name(Factor) + Loadcase Name(Factor)
---------------------------------------------------------------------------------------
    19+  1       Dead Load( 1.350) +Erection Load 1( 1.500) +Creep Secondary( 1.200)
           +Shrinkage Secondary( 1.200) +Vento Strutture INV( 0.900) +Vento Mobili INV( 0.900)
           +Termico unif. INV( 0.720) +Termico diff. INV( 0.720) +Mobili SLU INV( 1.350)
    19-  1       Dead Load( 1.350) +Erection Load 1( 1.500) +Creep Secondary( 1.200)
           +Shrinkage Secondary( 1.200) +Vento Strutture INV( 0.900) +Vento Mobili INV( 0.900)
           +Termico unif. INV( 0.720) +Termico diff. INV( 0.720) +Mobili SLU INV( 1.350)
    20+  1       Dead Load( 1.350) +Erection Load 1( 1.500) +Creep Secondary( 1.200)
           +Shrinkage Secondary( 1.200) +Vento Strutture INV( 1.500) +Vento Mobili INV( 1.500)
           +Termico unif. INV( 0.720) +Termico diff. INV( 0.720) +Mobili SLE INV( 1.350)
    20-  1       Dead Load( 1.350) +Erection Load 1( 1.500) +Creep Secondary( 1.200)
           +Shrinkage Secondary( 1.200) +Vento Strutture INV( 1.500) +Vento Mobili INV( 1.500)
           +Termico unif. INV( 0.720) +Termico diff. INV( 0.720) +Mobili SLE INV( 1.350)
    21+  1       Dead Load( 1.350) +Erection Load 1( 1.500) +Creep Secondary( 1.200)
           +Shrinkage Secondary( 1.200) +Frenamento INV( 1.350) +Termico unif. INV( 0.720)
           +Termico diff. INV( 0.720) +Mobili SLE INV( 1.350)
    21-  1       Dead Load( 1.350) +Erection Load 1( 1.500) +Creep Secondary( 1.200)
           +Shrinkage Secondary( 1.200) +Frenamento INV( 1.350) +Termico unif. INV( 0.720)
           +Termico diff. INV( 0.720) +Mobili SLE INV( 1.350)
    22+  1       Dead Load( 1.350) +Erection Load 1( 1.500) +Creep Secondary( 1.200)
           +Shrinkage Secondary( 1.200) +Vento Strutture INV( 0.900) +Vento Mobili INV( 0.900)
           +Termico unif. INV( 1.200) +Termico diff. INV( 1.200) +Mobili SLE INV( 1.350)
    22-  1       Dead Load( 1.350) +Erection Load 1( 1.500) +Creep Secondary( 1.200)
           +Shrinkage Secondary( 1.200) +Vento Strutture INV( 0.900) +Vento Mobili INV( 0.900)
           +Termico unif. INV( 1.200) +Termico diff. INV( 1.200) +Mobili SLE INV( 1.350)
```

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==========

23+ 1 Summation(1.000) +Termico unif. INV(0.500) +Termico diff. INV(0.500)
+ SLV Long INV(1.000) + SLV Trasv INV(0.300) + SLV Vert INV(0.300)
23- 1 Summation(1.000) +Termico unif. INV(0.500) +Termico diff. INV(0.500)
+ SLV Long INV(1.000) + SLV Trasv INV(0.300) + SLV Vert INV(0.300)
24+ 1 Summation(1.000) +Termico unif. INV(0.500) +Termico diff. INV(0.500)
+ SLV Long INV(0.300) + SLV Trasv INV(1.000) + SLV Vert INV(0.300)
24- 1 Summation(1.000) +Termico unif. INV(0.500) +Termico diff. INV(0.500)
+ SLV Long INV(0.300) + SLV Trasv INV(1.000) + SLV Vert INV(0.300)
25+ 1 Summation(1.000) +Termico unif. INV(0.500) +Termico diff. INV(0.500)
+ SLV Long INV(0.300) + SLV Trasv INV(0.300) + SLV Vert INV(1.000)
25- 1 Summation(1.000) +Termico unif. INV(0.500) +Termico diff. INV(0.500)
+ SLV Long INV(0.300) + SLV Trasv INV(0.300) + SLV Vert INV(1.000)
28+ 2 Summation(1.000) +Vento Strutture INV(0.600) +Vento Mobili INV(0.600)
+Termico unif. INV(0.600) +Termico diff. INV(0.600) +Mobili SLU INV(1.000)
28- 2 Summation(1.000) +Vento Strutture INV(0.600) +Vento Mobili INV(0.600)
+Termico unif. INV(0.600) +Termico diff. INV(0.600) +Mobili SLU INV(1.000)
29+ 2 Summation(1.000) +Vento Strutture INV(1.000) +Vento Mobili INV(1.000)
+Termico unif. INV(0.600) +Termico diff. INV(0.600) +Mobili SLE INV(1.000)
29- 2 Summation(1.000) +Vento Strutture INV(1.000) +Vento Mobili INV(1.000)
+Termico unif. INV(0.600) +Termico diff. INV(0.600) +Mobili SLE INV(1.000)
30+ 2 Summation(1.000) +Frenamento INV(1.000) +Termico unif. INV(0.600)
+Termico diff. INV(0.600) +Mobili SLE INV(1.000)
30- 2 Summation(1.000) +Frenamento INV(1.000) +Termico unif. INV(0.600)
+Termico diff. INV(0.600) +Mobili SLE INV(1.000)
31+ 2 Summation(1.000) +Vento Strutture INV(0.600) +Vento Mobili INV(0.600)
+Termico unif. INV(1.000) +Termico diff. INV(1.000) +Mobili SLE INV(1.000)
31- 2 Summation(1.000) +Vento Strutture INV(0.600) +Vento Mobili INV(0.600)
+Termico unif. INV(1.000) +Termico diff. INV(1.000) +Mobili SLE INV(1.000)
32+ 2 Summation(1.000) +Termico unif. INV(0.500) +Termico diff. INV(0.500)
+Mobili SLE INV(1.000)
32- 2 Summation(1.000) +Termico unif. INV(0.500) +Termico diff. INV(0.500)
+Mobili SLE INV(1.000)
33+ 2 Summation(1.000) +Vento Strutture INV(0.200) +Vento Mobili INV(0.200)
+Termico unif. INV(0.500) +Termico diff. INV(0.500)
33- 2 Summation(1.000) +Vento Strutture INV(0.200) +Vento Mobili INV(0.200)
+Termico unif. INV(0.500) +Termico diff. INV(0.500)
34+ 2 Summation(1.000) +Termico unif. INV(0.600) +Termico diff. INV(0.600)
34- 2 Summation(1.000) +Termico unif. INV(0.600) +Termico diff. INV(0.600)
35+ 2 Summation(1.000) +Termico unif. INV(0.500) +Termico diff. INV(0.500)
35- 2 Summation(1.000) +Termico unif. INV(0.500) +Termico diff. INV(0.500)

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==========

*. PROJECT : Viadotto Agrò
*. MEMBER NO = 3148, ELEMENT TYPE = Beam
*. LOADCOMB NO = 19-, MATERIAL NO = 1, SECTION NO = 15
*. UNIT SYSTEM : kN, m

*. SECTION PROPERTIES : Designation = CONTROV 2L80x10d15
Shape = 2L - Section. (Built-up)
Depth = 0.080, Flg Width = 0.080, BTB Spacing = 0.015
Web Thick = 0.010, Flg Thick = 0.010

Area = 3.00000e-003, Avy = 1.60000e-003, Avz = 1.60000e-003
Ybar = 8.75000e-002, Zbar = 5.63333e-002, Qyb = 1.58672e-003, Qzb = 3.20000e-003
Wely = 3.15917e-005, Welz = 5.36429e-005, Wply = 5.69375e-005, Wplz = 9.35000e-005
Iyy = 1.77967e-006, Izz = 4.69375e-006, Iyz = 0.00000e+000
iy = 2.43562e-002, iz = 3.95548e-002
J = 1.00000e-007, Cwp = 4.24931e-011

*. DESIGN PARAMETERS FOR STRENGTH EVALUATION :
Ly = 3.05287e+000, Lz = 3.05287e+000, Lu = 3.05287e+000
Ky = 6.50000e-001, Kz = 1.30000e+000

*. MATERIAL PROPERTIES :
Fy = 3.55000e+005, Es = 2.10000e+008, MATERIAL NAME = S355W

*. FORCES AND MOMENTS AT (J) POINT :
Axial Force Fxx =-2.55941e+002
Shear Forces Fyy = 1.12537e+000, Fzz =-9.49347e-003
Bending Moments My =-2.85899e-001, Mz =-2.58537e+000
End Moments Myi =-7.00124e-003, Myj =-2.85899e-001 (for Lb)
Myi =-7.00124e-003, Myj =-2.85899e-001 (for Ly)
Mzi =-4.93978e-002, Mzj =-2.58537e+000 (for Lz)

*. Sign conventions for stress and axial force.
- Stress : Compression positive.
- Axial force: Tension positive.

==========
[[[*]]] CLASSIFY LEFT FLANGE OF SECTION (BTR).
==========

( ). Determine classification of compression flanges(Double angle).
[Eurocode3:05 Table 5.2 (Sheet 3 of 3), EN 1993-1-5]
-. e = SQRT(235/fy) = 0.81
-. b/t = BTR = 7.00
-. sigma1 = 129707.724 KPa.
-. sigma2 = 85642.750 KPa.
-. BTR < 9*e (Class 1 : Plastic).

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==========

==========
[[[*]]] CLASSIFY RIGHT FLANGE OF SECTION (BTR).
==========

( ). Determine classification of compression flanges(Double angle).
[Eurocode3:05 Table 5.2 (Sheet 3 of 3), EN 1993-1-5]
-. e = SQRT(235/fy) = 0.81
-. b/t = BTR = 7.00
-. sigma1 = 77380.568 KPa.
-. sigma2 = 33315.594 KPa.
-. BTR < 9*e (Class 1 : Plastic).

==========
[[[*]]] CLASSIFY WEB OF SECTION (HTR).
==========

( ). Determine classification of compression element(Double angles).
[Eurocode3:05 Table 5.2 (Sheet 3 of 3), EN 1993-1-5]
-. e = SQRT(235/fy) = 0.81
-. d/t = HTR = 8.00
-. sigma1 = 104002.678 KPa.
-. sigma2 = 92757.348 KPa.
-. HTR < 10*e (Class 2 : Compact).

==========
[[[*]]] APPLIED FACTORS.
==========

( ). Calculate equivalent uniform moment factors (Cmy,Cmz,CmLT).
[Eurocode3:05 Annex A. Table A.1, A.2]
-. Cmy,0 = 0.727
-. Cmz,0 = 0.586
-. Cmy (Default or User Defined Value) = 1.000
-. Cmz (Default or User Defined Value) = 1.000
-. CmLT (Default or User Defined Value) = 1.000

( ). Partial Factors (Gamma_Mi).
[Eurocode3:05 6.1]
-. Gamma_M0 = 1.05
-. Gamma_M1 = 1.10
-. Gamma_M2 = 1.25

==========
[[[*]]] CHECK AXIAL RESISTANCE.
==========

( ). Check slenderness ratio of axial compression member (Kl/i).
[Eurocode3:05 6.3.1]
-. Kl/i = 100.3 < 200.0 ---> O.K.

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==========

( ). Calculate axial compressive resistance (Nc_Rd).
[Eurocode3:05 6.1, 6.2.4]
-. Nc_Rd = fy * Area / Gamma_M0 = 1014.29 kN.

( ). Check ratio of axial resistance (N_Ed/Nc_Rd).
N_Ed 255.94
-. ----- = ---------- = 0.252 < 1.000 ---> O.K.
Nc_Rd 1014.29

( ). Calculate buckling resistance of compression member (Nb_Rdy, Nb_Rdz).
[Eurocode3:05 6.3.1.1, 6.3.1.2]
-. Beta_A = Aeff / Area = 1.000
-. Lambda1 = Pi * SQRT(Es/fy) = 76.409
-. Lambda_by = {(KLy/iy)/Lambda1} * SQRT(Beta_A) = 1.066
-. Ncry = Pi^2*Es*Ryy / KLy^2 = 936.73 kN.
-. Lambda_by > 0.2 and N_Ed/Ncry > 0.04 --> Need to check.
-. Alphay = 0.340
-. Phiy = 0.5 * [1 + Alphay*(Lambda_by-0.2) + Lambda_by^2] = 1.216
-. Xiy = MIN [1 / [Phiy + SQRT(Phiy^2 - Lambda_by^2)], 1.0] = 0.556
-. Nb_Rdy = Xiy*Beta_A*Area*fy / Gamma_M1 = 537.95 kN.

-. Lambda_bz = {(KLz/iz)/Lambda1} * SQRT(Beta_A) = 1.313
-. Ncrz = Pi^2*Es*Rzz / KLz^2 = 617.64 kN.
-. Lambda_bz > 0.2 and N_Ed/Ncrz > 0.04 --> Need to check.
-. Alphaz = 0.340
-. Phiz = 0.5 * [1 + Alphaz*(Lambda_bz-0.2) + Lambda_bz^2] = 1.551
-. Xiz = MIN [1 / [Phiz + SQRT(Phiz^2 - Lambda_bz^2)], 1.0] = 0.421
-. Nb_Rdz = Xiz*Beta_A*Area*fy / Gamma_M1 = 407.23 kN.

( ). Check ratio of buckling resistance (N_Ed/Nb_Rd).
-. Nb_Rd = MIN[Nb_Rdy, Nb_Rdz] = 407.23 kN.
N_Ed 255.94
-. ----- = ---------- = 0.628 < 1.000 ---> O.K.
Nb_Rd 407.23

==========
[[[*]]] CHECK SHEAR RESISTANCE.
==========

( ). Calculate shear area.
[Eurocode3:05 6.2.6, EN1993-1-5:04 5.1 NOTE 2]
-. Avy = 2*B*tf = 0.0016 m^2.
-. Avz = 2*h*tw = 0.0016 m^2.

( ). Calculate plastic shear resistance in local-y direction (Vpl_Rdy).
[Eurocode3:05 6.1, 6.2.6]
-. Vpl_Rdy = [Avy*fy/SQRT(3)] / Gamma_M0 = 312.32 kN.

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==========

( ). Check ratio of shear resistance (V_Edy/Vpl_Rdy).
(LCB = 19+, POS = J)
-. Applied shear force : V_Edy = 1.58 kN.
V_Edy 1.58
-. ------- = ---------- = 0.005 < 1.000 ---> O.K.
Vpl_Rdy 312.32

( ). Calculate plastic shear resistance in local-z direction (Vpl_Rdz).
[Eurocode3:05 6.1, 6.2.6]
-. Vpl_Rdz = [Avz*fy/SQRT(3)] / Gamma_M0 = 312.32 kN.

( ). Shear Buckling Check.
[Eurocode3:05 6.2.6]
-. HTR < 72*e/Eta ---> No need to check!

( ). Check ratio of shear resistance (V_Edz/Vpl_Rdz).
(LCB = 19+, POS = J)
-. Applied shear force : V_Edz = 0.19 kN.
V_Edz 0.19
-. ------- = ---------- =6.120e-004 < 1.000 ---> O.K.
Vpl_Rdz 312.32

==========
[[[*]]] CHECK BENDING MOMENT RESISTANCE ABOUT MAJOR AXIS.
==========

( ). Calculate plastic resistance moment about major axis.
[Eurocode3:05 6.1, 6.2.5]
-. Wply = 5.6938e-005 m^3.
-. Mc_Rdy = Wply * fy / Gamma_M0 = 19.25 kN-m.

( ). Check ratio of moment resistance (M_Edy/Mc_Rdy).
M_Edy 0.29
-. ------ = ---------- = 0.015 < 1.000 ---> O.K.
Mc_Rdy 19.25

==========
[[[*]]] CHECK BENDING MOMENT RESISTANCE ABOUT MINOR AXIS.
==========

( ). Calculate plastic resistance moment about minor axis.
[Eurocode3:05 6.1, 6.2.5]
-. Wplz = 9.3500e-005 m^3.
-. Mc_Rdz = Wplz * fy / Gamma_M0 = 31.61 kN-m.

( ). Check ratio of moment resistance (M_Edz/Mc_Rdz).
M_Edz 2.59
-. ------ = ---------- = 0.082 < 1.000 ---> O.K.
Mc_Rdz 31.61

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==========

==========
[[[*]]] CHECK INTERACTION OF COMBINED RESISTANCE.
==========

( ). Calculate Major reduced design resistance of bending and shear.
[Eurocode3:05 6.2.8 (6.30)]
-. In case of V_Edz / Vpl_Rdz < 0.5
-. My_Rd = Mc_Rdy = 19.25 kN-m.

( ). Calculate Minor reduced design resistance of bending and shear.
[Eurocode3:05 6.2.8 (6.30)]
-. In case of V_Edy / Vpl_Rdy < 0.5
-. Mz_Rd = Mc_Rdz = 31.61 kN-m.

( ). Check general interaction ratio.
[Eurocode3:05 6.2.1 (6.2)] - Class1 or Class2

$$\text{Rmax1} = \frac{N_{Ed}}{N_{Rd}} + \frac{M_{Edy}}{My_{Rd}} + \frac{M_{Edz}}{Mz_{Rd}}$$

$$= 0.349 < 1.000 \text{ ---> O.K.}$$

( ). Check interaction ratio of bending and axial force member.
[Eurocode3:05 6.2.9 (6.31 ~ 6.41)] - Class1 or Class2
-. n = N_Ed / Npl_Rd = 0.252
-. a = MIN[(Area-2b*tf)/Area, 0.5] = 0.500
-. Alpha = 2.000
-. Beta = MAX[5*n, 1.0] = 1.262
-. Mny_Rd = MIN[Mply_Rd*(1-n)/(1-0.5*a), Mply_Rd] = 19.19 kN-m.
-. Rmaxy = M_Edy / Mny_Rd = 0.015 < 1.000 ---> O.K.

-. In case of n < a
-. Mnz_Rd = Mplz_Rd = 31.61 kN-m.
-. Rmaxz = M_Edz / Mnz_Rd = 0.082 < 1.000 ---> O.K.

$$\text{Rmax2} = \left[\frac{M_{Edy}}{Mny_{Rd}}\right]^{(\text{Alpha})} + \left[\frac{M_{Edz}}{Mnz_{Rd}}\right]^{(\text{Beta})}$$

$$= 0.043 < 1.000 \text{ ---> O.K.}$$

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---------------------------------------------------------------------------------------
 MIDAS/Civil - Steel Code Checking[ Eurocode3-2:05 ]                Version 8.3.5
=======================================================================================


   ( ). Check interaction ratio of bending and axial compression member.
      [ Eurocode3:05  6.3.1, 6.2.9.3 (6.61, 6.62), Annex A ]
      -. N_Ed    =      -255.94 kN.
      -. M_Edy   =        -0.29 kN-m.
      -. M_Edz   =        -2.59 kN-m.
      -. kyy     =   1.410
      -. kyz     =   1.043
      -. kzy     =   0.694
      -. kzz     =   1.453
      -. Xiy     =   0.556
      -. Xiz     =   0.421
      -. XiLT    =   0.780
      -. N_Rk    = A*fy   =      1065.00 kN.
      -. My_Rk   = Wply*fy =        20.21 kN-m.
      -. Mz_Rk   = Wplz*fy =        33.19 kN-m.
      -. N_Ed*eNy = 0.0 (Not Slender)
      -. N_Ed*eNZ = 0.0 (Not Slender)
                    N_Ed             M_Edy + N_Ed*eNy         M_Edz + N_Ed*eNz
      -. Rmax_LT1 = ----------------- + kyy * ------------------- + kyz * ----------------
                 Xiy*N_Rk/Gamma_M1       XiLT*My_Rk/Gamma_M1        Mz_Rk/Gamma_M1
                = 0.593  <  1.000  ---> O.K.
                    N_Ed             M_Edy + N_Ed*eNy         M_Edz + N_Ed*eNz
      -. Rmax_LT2 = ----------------- + kzy * ------------------- + kzz * ----------------
                 Xiz*N_Rk/Gamma_M1       XiLT*My_Rk/Gamma_M1        Mz_Rk/Gamma_M1
                = 0.767  <  1.000  ---> O.K.

      -. Rmax   = MAX[ MAX(Rmax1, Rmax2), MAX(Rmax_LT1, Rmax_LT2) ] =  0.767  <  1.000  ---> O.K.
```

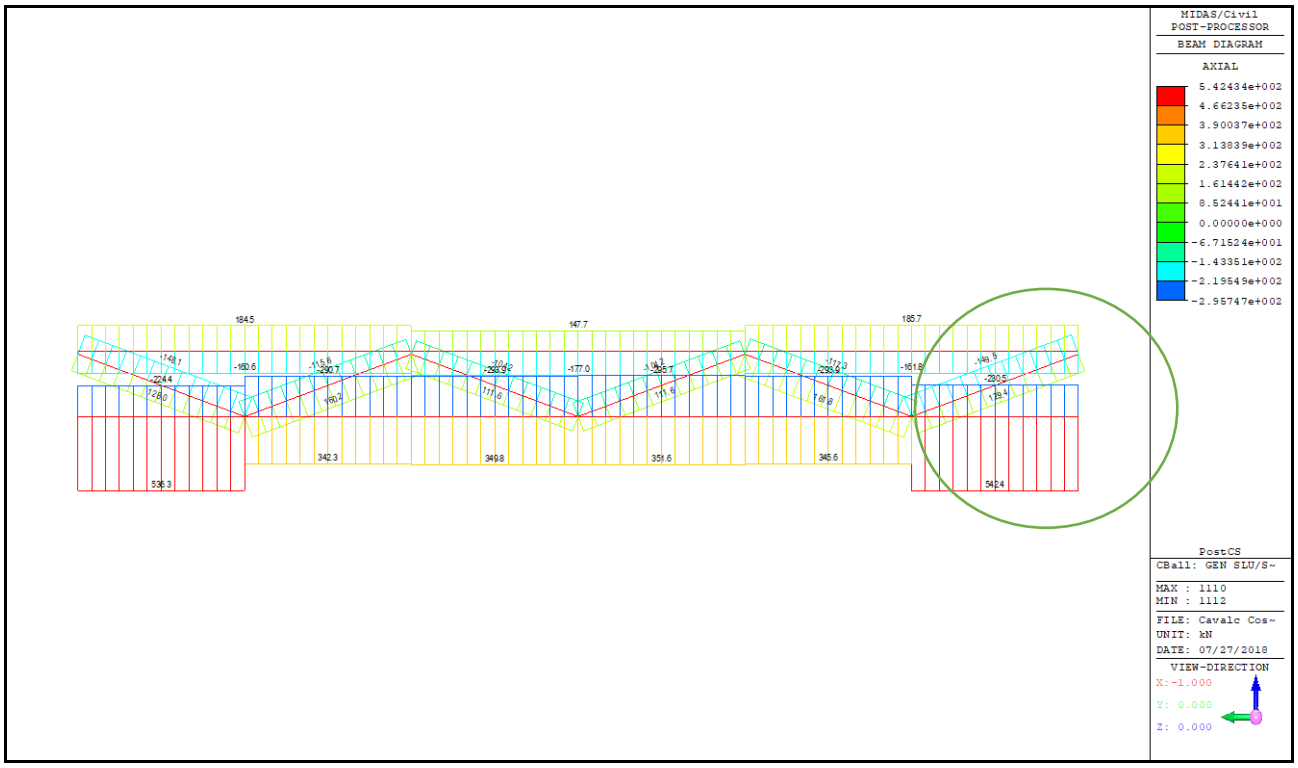
11 VERIFICA DEI COLLEGAMENTI SALDATI

11.1 TRAVI PRINCIPALI - GIUNTI TRA I CONCI

I vari conci sono uniti con saldature di testa a piena penetrazione; supponendo che il materiale di saldatura abbia caratteristiche resistenti maggiori delle travi si omettono ulteriori verifiche.

11.2 TRAVI PRINCIPALI - SALDATURE PIASTRE DIAFRAMMI - VERIFICA SLU

I piatti su cui sono imbullonati i profilati dei diaframmi sono saldati alle travi con doppi cordoni di 8 mm di lato; si verifica il piatto collegato al diaframma più sollecitato.
Le sollecitazioni massime a cui sono sottoposte le saldature sono ricercate, a favore della sicurezza, nella combinazione inviluppo di tutte le SLU statiche e SLV sismiche, componendo le azioni assiali di trazione dei traversi inferiori, superiori e diagonali.



COMBINAZIONE INVILUPPO SLU/SLV - MASSIMI SFORZI ASSIALI DIAFRAMMA INTERMEDIO (SPALLA SX)

Componendo le azioni e trascurando la componente verticale dei diagonali (di compressione), rispetto alla base della piastra si ha:

Fx = 185.7 + 129.4 x cos 22.1 + 542.4 = 848.0 kN

Mz = -185.7 x 0.86 -119.9 x 0.81 -542.4 x 0.16 = -343.61 kNm

I cordoni di saldatura hanno lato 2 x 8 = 16 mm (altezza totale di gola 11.3 mm) e lunghezza, dedotte le lunette di scarico:

- alle ali della trave: 240 - 30 =210 mm
- all' anima della trave: 930 - 2 x 30 = 870 mm

La tensione ideale di resistenza vale: $\sigma_{w,Rd} = f_{tk} / (\beta_w \gamma_{M2}) = 510 / (0.9 \times 1.25) = 453.33$ N/mm^2

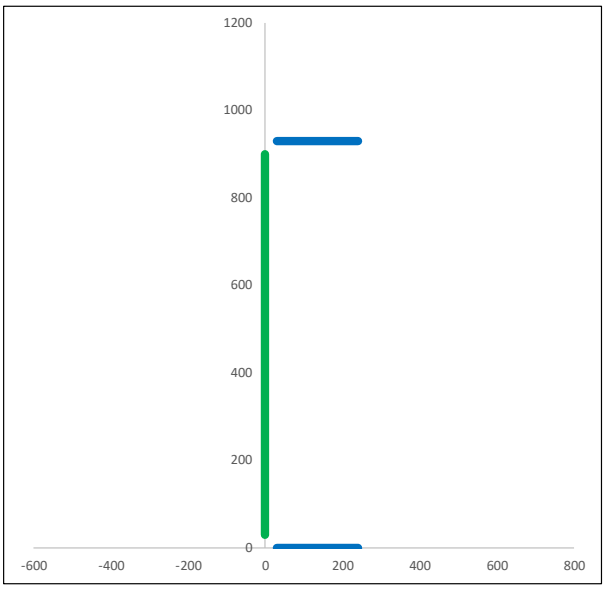
Verifica: la tensione ideale risulta nei 3 cordoni:

- inferiore: $\sigma_{w,Ed} = 138.25$ N/mm^2 ($\sigma_{w,Rd} <$ verificato)
- superiore: $\sigma_{w,Ed} = 63.03$ N/mm^2 ($\sigma_{w,Rd} <$ verificato)
- anima: $\sigma_{w,Ed} = 100.70$ N/mm^2 ($\sigma_{w,Rd} <$ verificato)

Segue tabulato foglio di calcolo.

VERIFICA DI RESISTENZA SALDATURE A CORDONE D'ANGOLO
NTC 2008, § 4.2.8.2.4, FORMULA (4.2.75)

Coefficiente di sicurezza saldature	γ_{M2}	1.25	
Spessore nominale massimo:	t	15	mm
Classe Acciaio:		S355 W	
Tensione di snervamento:	f_{yk}	355	N/mm^2
Tensione di rottura:	f_{tk}	510	N/mm^2
Coefficiente:	β_w	0.9	
Resistenza (tensione ideale):	$\sigma_{w,Rd} = f_{tk}/(\beta \cdot \gamma_{M2})$	453.33	N/mm^2
Sollecitazione (tensione ideale):	$\sigma_{w,Ed} = [\ \sigma_{\perp}^2 + 3\ (\ \tau_{\perp}^2 + \tau_{\parallel}^2\ )\ ]^{0,5}$		



Punto di applicazione sollecitazioni (vuoto=baricentro)	X=	0	mm
	Y=	0	mm

Sollecitazioni: (terna destrorsa)

FX =	848000	N
FY =	0	N
FZ =	0	N
MX =	0	N mm
MY =	0	N mm
MZ =	-343610000	N mm

Cordoni paralleli asse X

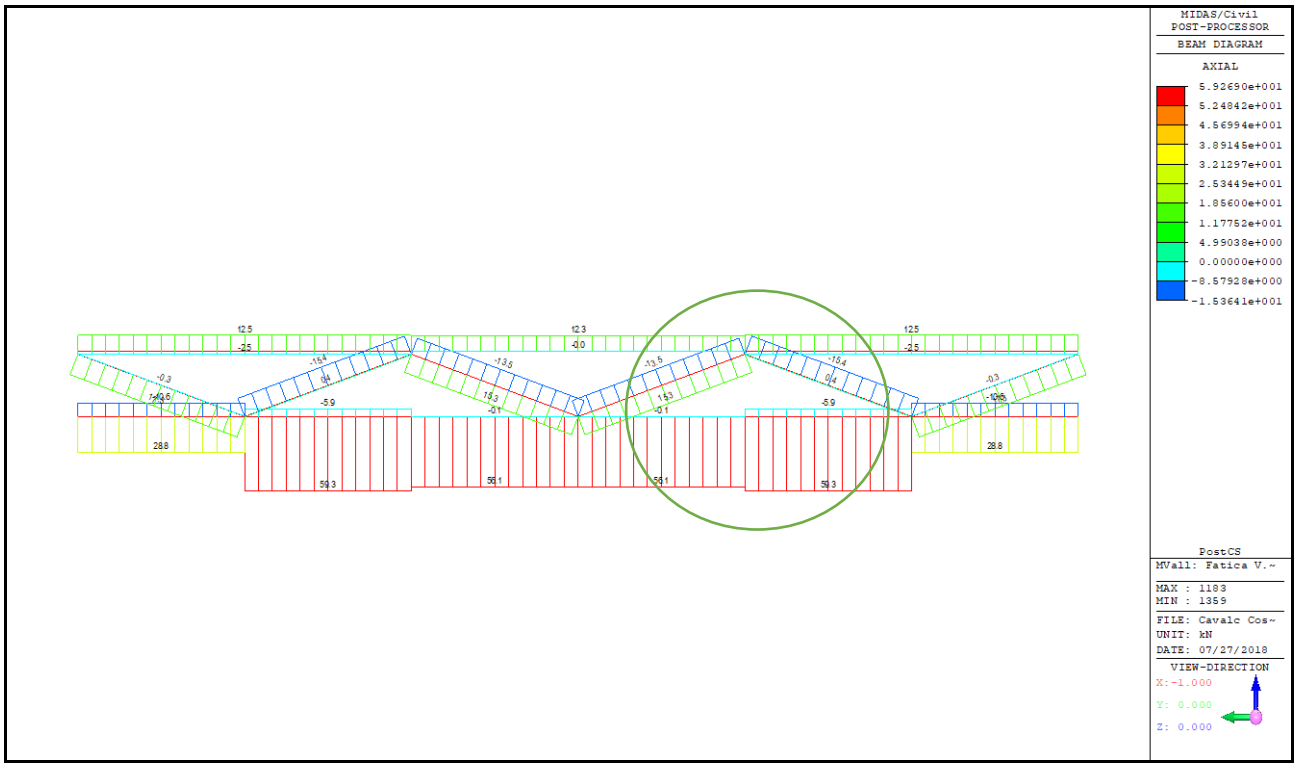
N°	Y	Xini	Xfin	bx	ax	$\sigma_{w,Ed}$	Verifica: $\sigma_{w,Ed} / \sigma_{w,Rd} \leq 1$
1	0	30	240	16	11.31	138.251	0.305
2	930	30	240	16	11.31	63.025	0.139
3					0.00		
4					0.00		
5					0.00		
6					0.00		
7					0.00		
8					0.00		
9					0.00		
10					0.00		

Cordoni paralleli asse Y

N°	X	Yini	Yfin	by	ay	$\sigma_{w,Ed}$	Verifica: $\sigma_{w,Ed} / \sigma_{w,Rd} \leq 1$
1	0	30	900	16	11.31	100.701	0.222
2					0.00		
3					0.00		
4					0.00		
5					0.00		
6					0.00		
7					0.00		
8					0.00		
9					0.00		
10					0.00		

11.3 TRAVI PRINCIPALI - SALDATURE PIASTRE DIAFRAMMI - VERIFICA A FATICA

Le sollecitazioni massime a cui sono sottoposte le saldature sono ricercate nella condizione di carico mobile "Fatica V.ILL.", componendo le azioni assiali di trazione dei traversi inferiori, superiori e diagonali.



CONDIZIONE DI CARICO FATICA V.ILL. - MASSIMI SFORZI ASSIALI DIAFRAMMA INTERMEDIO

Componendo le azioni e trascurando la componente verticale dei diagonali (di compressione), rispetto alla base della piastra si ha:

Fx = 12.5 + 0.4 x cos 22.1 + 59.3 = 72.17 kN

Mz = -12.5 x 0.86 -0.37 x 0.81 -59.3 x 0.16 = -20.538 kNm

I cordoni di saldatura hanno lato 2 x 8 = 16 mm (altezza di gola 11.3 mm) e lunghezza, dedotte le lunette di scarico:

- alle ali della trave: 240 - 30 =210 mm
- all' anima della trave: 930 - 2 x 30 = 870 mm

Caratteristiche di resistenza:

- classe del dettaglio: $\Delta\sigma_c$ = 80 N/mm^2 (Tabella C.4.2.XVI, part. 7)
- limite di fatica ad ampiezza costante: $\Delta\sigma_D$ = 0.737 x 80 = 58.96 N/mm^2
- coefficiente di sicurezza a fatica: $\gamma_{Mf,s}$ = 1.35

La tensione ideale di resistenza per lo stato limite di fatica vale: $\sigma_{w,Rd} = \Delta\sigma_D / \gamma_{Mf,s}$ = 43.67 N/mm^2

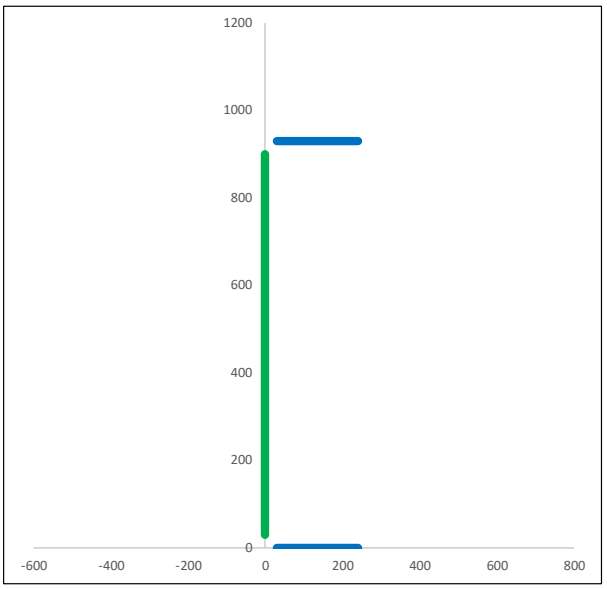
Verifica: la tensione ideale risulta nei 3 cordoni:

- inferiore: $\sigma_{w,Ed}$ = 18.22 N/mm^2 ($\sigma_{w,Rd}$ < verificato)
- superiore: $\sigma_{w,Ed}$ = 1.09 N/mm^2 ($\sigma_{w,Rd}$ < verificato)
- anima: $\sigma_{w,Ed}$ = 8.61 N/mm^2 ($\sigma_{w,Rd}$ < verificato)

Segue tabulato foglio di calcolo.

VERIFICA DI RESISTENZA SALDATURE A CORDONE D'ANGOLO
NTC 2008, § 4.2.8.2.4, FORMULA (4.2.75)

Coefficiente di sicurezza saldature	γ_{M2}	1.25	
Spessore nominale massimo:	t	15	mm
Classe Acciaio:		S355 W	
Tensione di snervamento:	f_{yk}	355	N/mm^2
Tensione di rottura:	f_{tk}	510	N/mm^2
Coefficiente:	β_w	0.9	
Resistenza (tensione ideale):	$\sigma_{w,Rd} = f_{tk}/(\beta \cdot \gamma_{M2})$	453.33	N/mm^2
Sollecitazione (tensione ideale):	$\sigma_{w,Ed} = [\ \sigma_{\perp}^2 + 3\ (\ \tau_{\perp}^2 + \tau_{\parallel}^2\ )\ ]^{0,5}$		
Punto di applicazione sollecitazioni (vuoto=baricentro)	X=	0 mm	
	Y=	0 mm	
Sollecitazioni: (terna destrorsa)	FX =	72170 N	
	FY =	0 N	
	FZ =	0 N	
	MX =	0 N mm	
	MY =	0 N mm	
	MZ =	-20538000 N mm	



Cordoni paralleli asse X

N°	Y	Xini	Xfin	bx	ax	$\sigma_{w,Ed}$	Verifica: $\sigma_{w,Ed}$ / $\sigma_{w,Rd}$ ≤ 1
1	0	30	240	16	11.31	18.223	0.040
2	930	30	240	16	11.31	1.093	0.002
3					0.00		
4					0.00		
5					0.00		
6					0.00		
7					0.00		
8					0.00		
9					0.00		
10					0.00		

Cordoni paralleli asse Y

N°	X	Yini	Yfin	by	ay	$\sigma_{w,Ed}$	Verifica: $\sigma_{w,Ed}$ / $\sigma_{w,Rd}$ ≤ 1
1	0	30	900	16	11.31	8.613	0.019
2					0.00		
3					0.00		
4					0.00		
5					0.00		
6					0.00		
7					0.00		
8					0.00		
9					0.00		
10					0.00		

12 VERIFICA DEI COLLEGAMENTI BULLONATI

Si verificano a taglio e rifollamento le unioni bullonate dei trasversi e dei controventi.
Si utilizzano bulloni di classe 10.9; si suppone che il piano di taglio interessi la parte filettata del bullone e si considera quindi l'area resistente efficace.
Seguono i dati generali, comuni a tutti i collegamenti.

Qualità acciaio:

Tipo	Classe	Spessore t ≤ 40 mm		Spessore 40 mm < t ≤ 80 mm	
		f_{yk} [N/mm^2]	f_{tk} [N/mm^2]	f_{yk} [N/mm^2]	f_{tk} [N/mm^2]
Profilati	S355 W	355	510	335	490
Lamiere	S355 W	355	510	335	490

Coefficienti parziali di sicurezza per la verifica delle unioni (NTC 2008; Tab. 4.2.XII):

Resistenza dei bulloni e delle sezioni tese, indebolite dai fori: $\gamma_{M2} = 1.25$
Resistenza allo scorrimento allo SLU: $\gamma_{M3} = 1.25$
Resistenza allo scorrimento allo SLE: $\gamma_{M3} = 1.10$
Precarico bulloni ad alta resistenza (classe 8.8 o 10.9): $\gamma_{M7} = 1.10$

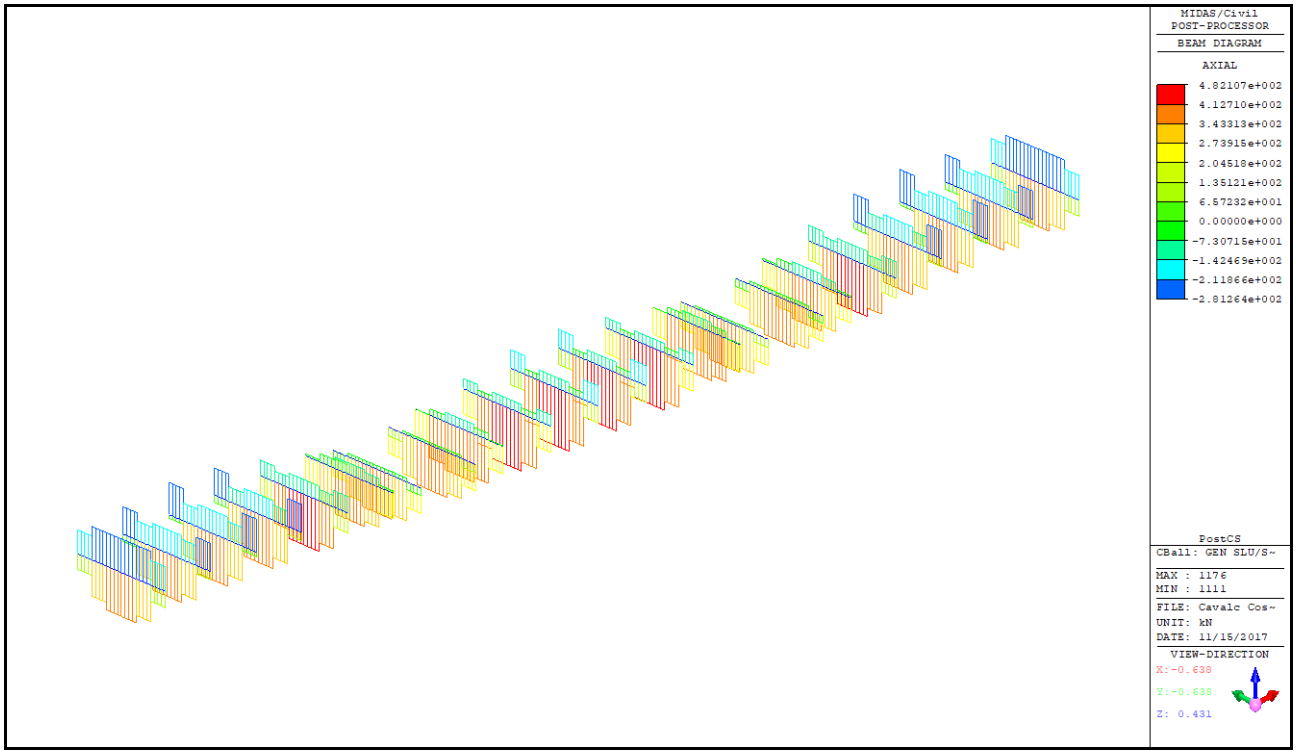
Dati meccanici e geometrici dei bulloni classe 10.9.

Resistenza di snervamento: $f_{yb} = 900$ N/mm^2
Resistenza di rottura: $f_{tb} = 1000$ N/mm^2
Coefficiente di attrito: $\mu = 0.30$
Tipo di serraggio: Controllato

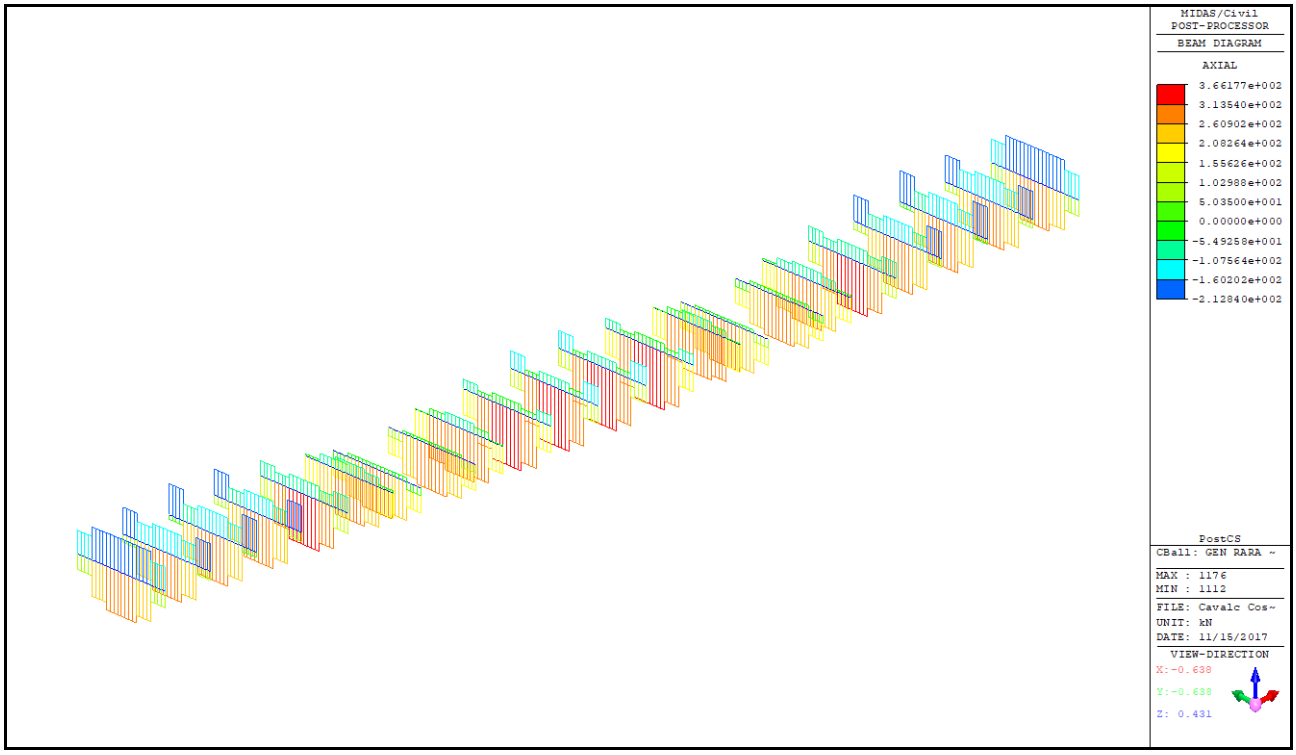
Tutti i nodi bullonati sono verificati a rifollamento e ad attrito allo SLE; si ammette (ipotesi di progetto) che possano non essere verificati ad attrito allo SLU; corrispondono quindi alla Categoria B o C (EN 1993-1-8; § 3.4).

Diametro nominale	**d [mm]**	**M16**	**M20**	**M24**	**M27**
Diametro fori (normali)	d_0 [mm]	17	21	25.5	28.5
Area nominale	A [mm^2]	201	314	452	573
Area resistente (gambo filettato)	A_{res} [mm^2]	157	245	353	459
Resistenza a taglio SLU	$F_{v,Rd}$ [kN]	62.7	97.9	141	183.8
Forza di precarico	$F_{p,Cd}$ [kN]	109.7	171.3	246.7	321.6
Resistenza a scorrimento SLU	$F_{s,Rd}$ [kN]	26.3	41.1	59.2	77.2
Resistenza a scorrimento SLE	$F_{s,Rd,es}$ [kN]	29.9	46.7	67.3	87.7

12.1 DIAFRAMMI SU SPALLE E INTERMEDI - TRASVERSI INFERIORI



TRASVERSI INFERIORI CORRENTI – SFORZO ASSIALE – INVILUPPO SLU/SLV

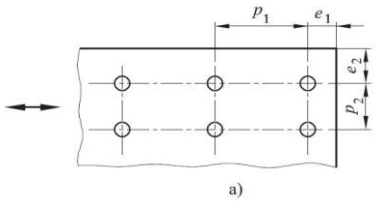


TRASVERSI INFERIORI CORRENTI – SFORZO ASSIALE – INVILUPPO SLE

VERIFICA CONNESSIONE BULLONATA A TAGLIO: TRASVERSI IN CAMPATA - CORRENTI INFERIORI (2 L 80x10)

Coefficienti di sicurezza per la verifica delle unioni (NTC 2008; Tab. 4.2.XII):

Resistenza dei bulloni e delle sezioni tese (indebolite dai fori)	γ_{M2} =	1.25
Resistenza a scorrimento allo SLU	γ_{M3} =	1.25
Resistenza a scorrimento allo SLE	γ_{M3} =	1.10
Precarico dei bulloni ad alta resistenza (classe 8.8 o 10.9)	γ_{M7} =	1.10



Dati geometrici bulloni:

Diametro nominale:		d =	27 mm
Tipo fori: accoppiamento	normale	d_0 =	28.5 mm
Area nominale gambo non filettato:		A =	573 mm^2
Area resistente gambo filettato:		A_{res} =	459 mm^2
Classe bulloni:	10.9	f_{yb} =	900.00 N/mm^2
		f_{tb} =	1000.00 N/mm^2

Resistenza a taglio: il piano di taglio interessa la parte: filettata
resistenza allo SLU (per piano di taglio): $F_{v,Rd}$ = 183.76 kN

Resistenza a scorrimento: coefficiente di attrito: μ = 0.30 (tutte le superfici)
(solo classi 8.8 o 10.9) tipo di serraggio: controllato
forza di precarico: $F_{p,Cd}$ = 321.58 kN
resistenza allo SLU (per piano di scorrimento): $F_{s,Rd}$ = 77.18 kN
resistenza allo SLE (per piano di scorrimento): $F_{s,Rd,es}$ = 87.70 kN

Dati profili e lamiere:

		Spessore nominale dell'elemento $t \le 40$ mm fyk [N/mm^2]	$t \le 40$ mm ftk [N/mm^2]	$40 < t \le 80$ mm fyk [N/mm^2]	$40 < t \le 80$ mm ftk [N/mm^2]	
Qualità acciaio profilati:	S 355 W	355	510	335	490	UNI EN 10025-5: acciai per impieghi strutturali con resistenza migliorata alla corrosione atmosferica
Qualità acciaio lamiere / coprigiunti:	S 355 W	355	510	335	490	UNI EN 10025-5: acciai per impieghi strutturali con resistenza migliorata alla corrosione atmosferica

Dati geometrici bulloni:

			Limiti massimi e minimi Min.	Max.	
Numero file di bulloni:		1			
Numero bulloni:		3			
Numero superfici di taglio:		2			
Interassi:	p_1 =	70 mm	62.7	175 mm	Entro limiti: Verificato
(per fila singola porre: $p_2 = 0$)	p_2 =	0 mm	0	0 mm	Entro limiti: Verificato

Dati geometrici profilati:

			Limiti massimi e minimi Min.	Max.	
Numero profilati:		2			
Spessore flangia bullonata:		15 mm			
Area sezione singolo profilato:		1510 mm^2			
Distanze bulloni dal bordo:	e_1 =	50 mm	34.2	125 mm	Entro limiti: Verificato
	e_2 =	40 mm	34.2	125 mm	Entro limiti: Verificato

Dati geometrici lamiere / coprigiunti:

			Limiti massimi e minimi Min.	Max.	
Numero lamiere.		1			
Spessore:		15 mm			
Distanze bulloni dal bordo:	e_1 =	50 mm	34.2	125 mm	Entro limiti: Verificato
	e_2 =	40 mm	34.2	125 mm	Entro limiti: Verificato

Sollecitazioni di progetto (trazione > 0):

S.L.U.	N_{Ed} =	482.10 kN	
S.L.E.	$N_{Ed\,es}$ =	366.20 kN	

S.L.U. Verifica di resistenza a taglio bullone, singola superficie:	$F_{v,Ed}$ =	80.35 kN	Verifica:	$\frac{F_{v,Ed}}{F_{v,Rd}} = \frac{80.35}{183.76}$ =	0.437	≤1: Verificato
S.L.U. Verifica di resistenza a scorrimento bullone, singola superficie:	$F_{v,Ed}$ =	80.35 kN	Verifica:	$\frac{F_{v,Ed}}{F_{s,Rd}} = \frac{80.35}{77.18}$ =	1.041	>1: NON Verificato!
S.L.E. Verifica di resistenza a scorrimento bullone, singola superficie:	$F_{v,Ed\,es}$ =	61.03 kN	Verifica:	$\frac{F_{v,Ed\,es}}{F_{s,Rd\,es}} = \frac{61.03}{87.70}$ =	0.696	≤1: Verificato

S.L.U. Verifica al rifollamento profilato:

	$F_{b,Ed}$ =	80.35 kN				
coefficienti:	k1 =	2.230				
	α_b =	0.569				
Resistenza al rifollamento:	$F_{b,Rd}$ =	209.5 kN	Verifica:	$\frac{F_{b,Ed}}{F_{b,Rd}} = \frac{80.35}{209.55}$ =	0.383	≤1: Verificato

S.L.U. Verifica al rifollamento lamiere:

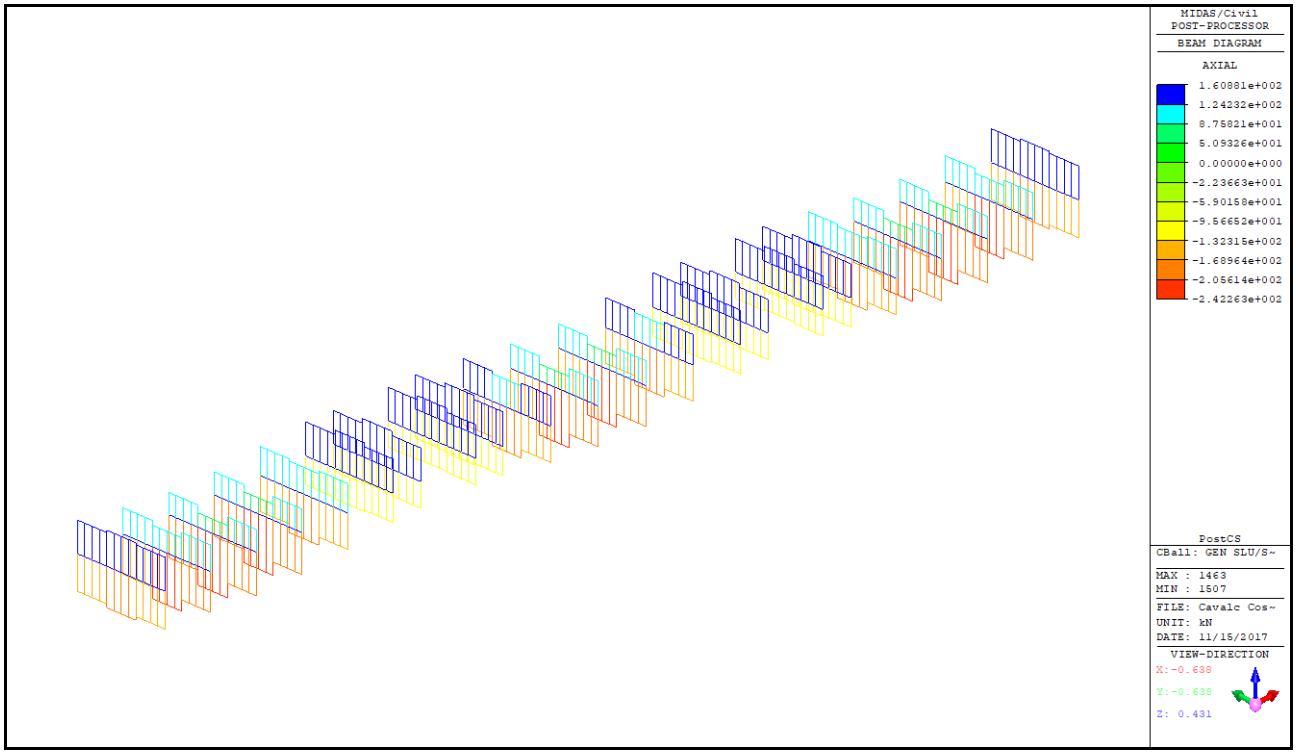
	$F_{b,Ed}$ =	160.70 kN				
coefficienti:	k1 =	2.230				
	α_b =	0.569				
Resistenza al rifollamento:	$F_{b,Rd}$ =	209.5 kN	Verifica:	$\frac{F_{b,Ed}}{F_{b,Rd}} = \frac{160.70}{209.55}$ =	0.767	≤1: Verificato

S.L.U. Verifica a trazione del profilato indebolito dai fori:

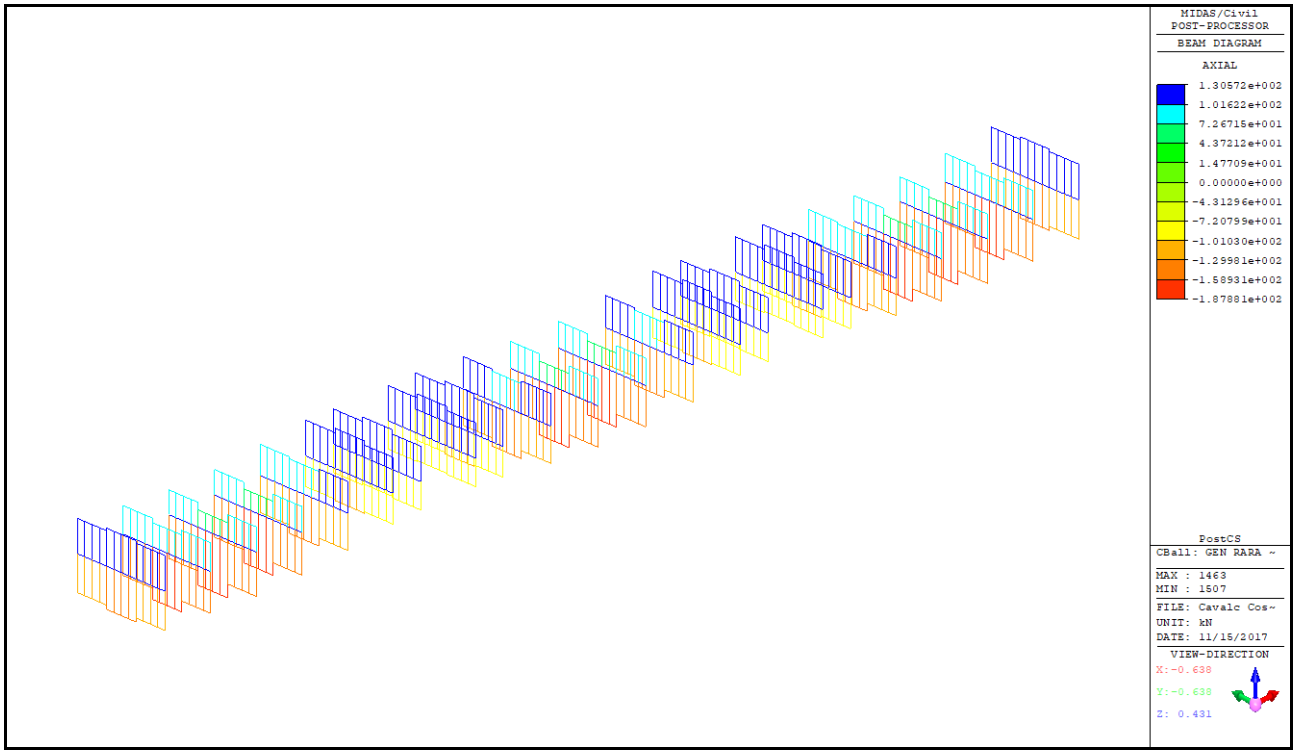
Area netta:	A_{net} =	2165 mm^2				
Resistenza della sezione netta:	$N_{u,Rd}$ =	794.99 kN	Verifica:	$\frac{N_{Ed}}{N_{u,Rd}} = \frac{482.10}{794.99}$ =	0.606	≤1: Verificato

Categoria (verificata) di connessione bullonata a taglio (EN1993-1-8:2005 § 3.4): **Categoria B: connessioni ad attrito allo S.L.E.**

12.2 DIAFRAMMI SU SPALLE E INTERMEDI - TRASVERSI SUPERIORI



TRASVERSI SUPERIORI CORRENTI – SFORZO ASSIALE – INVILUPPO SLU

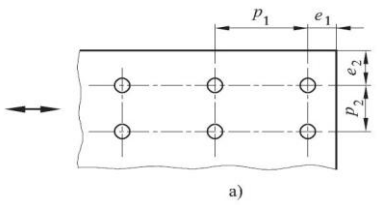


TRASVERSI SUPERIORI CORRENTI – SFORZO ASSIALE – INVILUPPO SLE

VERIFICA CONNESSIONE BULLONATA A TAGLIO: TRASVERSI IN CAMPATA - CORRENTI SUPERIORI (2 L 80x10)

Coefficienti di sicurezza per la verifica delle unioni (NTC 2008; Tab. 4.2.XII):

Resistenza dei bulloni e delle sezioni tese (indebolite dai fori)	γ_{M2} =	1.25
Resistenza a scorrimento allo SLU	γ_{M3} =	1.25
Resistenza a scorrimento allo SLE	γ_{M3} =	1.10
Precarico dei bulloni ad alta resistenza (classe 8.8 o 10.9)	γ_{M7} =	1.10



Dati geometrici bulloni:	Diametro nominale:		d =	20 mm
	Tipo fori: accoppiamento	normale	d_0 =	21.0 mm
	Area nominale gambo non filettato:		A =	314 mm^2
	Area resistente gambo filettato:		A_{res} =	245 mm^2
	Classe bulloni:	10.9	f_{yb} =	900.00 N/mm^2
			f_{tb} =	1000.00 N/mm^2
Resistenza a taglio:	il piano di taglio interessa la parte:			filettata
	resistenza allo SLU (per piano di taglio):		$F_{v,Rd}$ =	97.92 kN
Resistenza a scorrimento:	coefficiente di attrito:		μ =	0.30 (tutte le superfici)
(solo classi 8.8 o 10.9)	tipo di serraggio:			controllato
	forza di precarico:		$F_{p,Cd}$ =	171.36 kN
	resistenza allo SLU (per piano di scorrimento):		$F_{s,Rd}$ =	41.13 kN
	resistenza allo SLE (per piano di scorrimento):		$F_{s,Rd,es}$ =	46.73 kN

Dati profili e lamiere:

		Spessore nominale dell'elemento t ≤ 40 mm		40 mm < t ≤ 80 mm	
		fyk [N/mm^2]	ftk [N/mm^2]	fyk [N/mm^2]	ftk [N/mm^2]
Qualità acciaio profilati:	S 355 W	355	510	335	490
Qualità acciaio lamiere / coprigiunti:	S 355 W	355	510	335	490

UNI EN 10025-5: acciai per impieghi strutturali con resistenza migliorata alla corrosione atmosferica

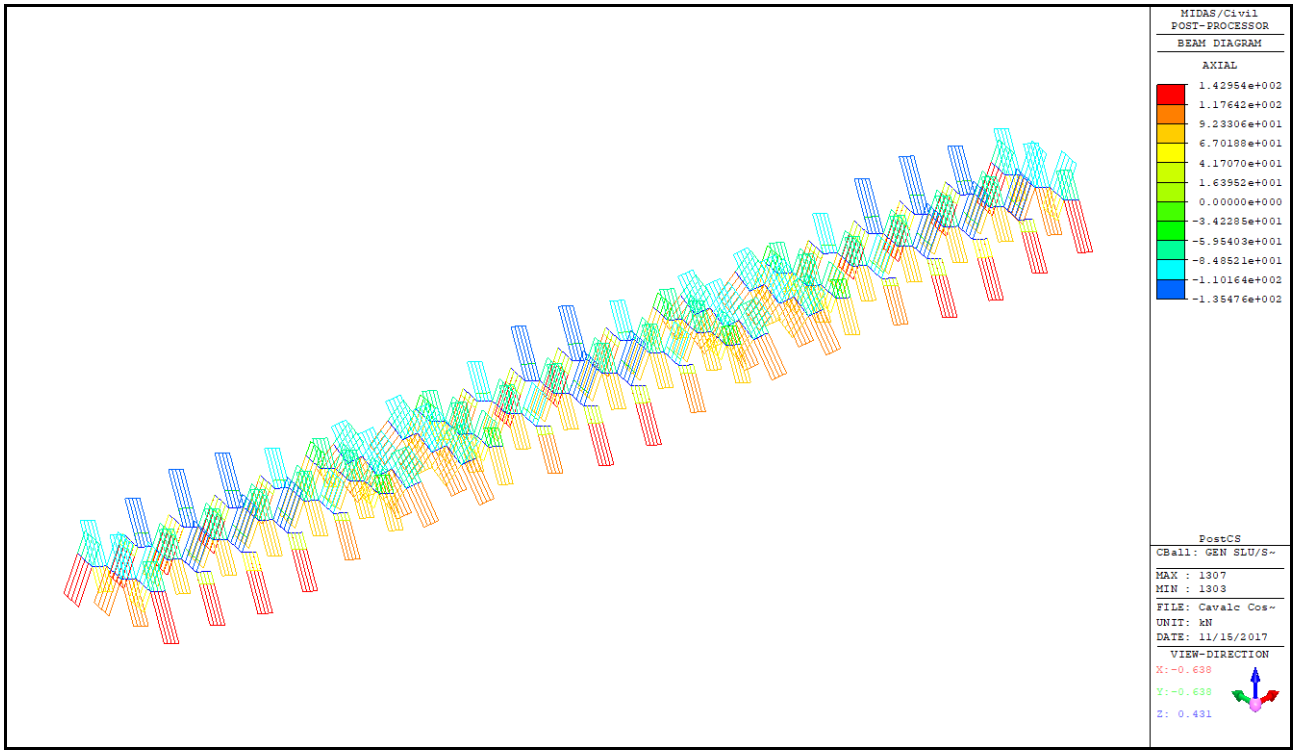
UNI EN 10025-5: acciai per impieghi strutturali con resistenza migliorata alla corrosione atmosferica

				Limiti massimi e minimi Min.	Max.	
Dati geometrici bulloni:	Numero file di bulloni:		1			
	Numero bulloni:		3			
	Numero superfici di taglio:		2			
	Interassi:	p_1 =	60 mm	46.2	140 mm	Entro limiti: Verificato
	(per fila singola porre: p_2 = 0)	p_2 =	0 mm	0	0 mm	Entro limiti: Verificato
Dati geometrici profilati:	Numero profilati:		2			
	Spessore flangia bullonata:		10 mm	Limiti massimi e minimi		
	Area sezione singolo profilato:		1510 mm^2	Min.	Max.	
	Distanze bulloni dal bordo:	e_1 =	40 mm	25.2	125 mm	Entro limiti: Verificato
		e_2 =	40 mm	25.2	125 mm	Entro limiti: Verificato
Dati geometrici lamiere / coprigiunti:	Numero lamiere.		1			
	Spessore:		15 mm	Limiti massimi e minimi		
	Distanze bulloni dal bordo:	e_1 =	40 mm	Min.	Max.	
		e_2 =	40 mm	25.2	125 mm	Entro limiti: Verificato
				25.2	125 mm	Entro limiti: Verificato

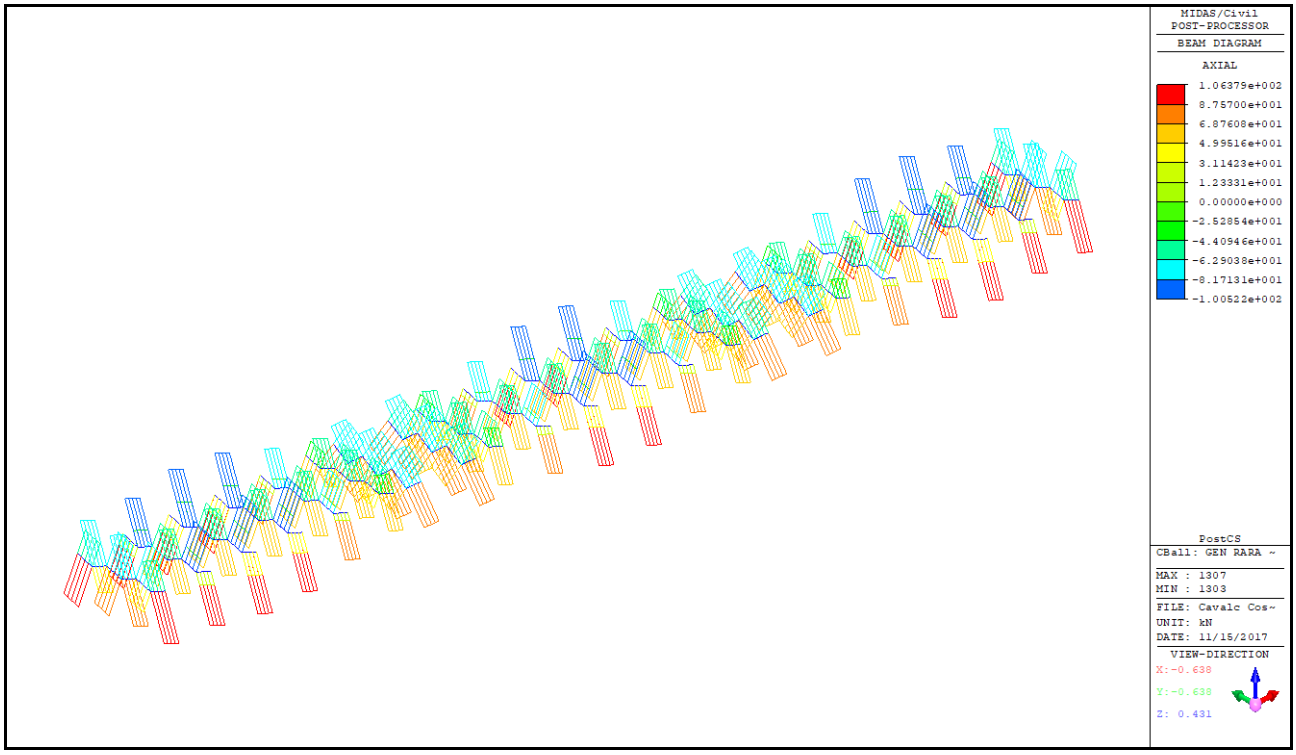
Sollecitazioni di progetto (trazione > 0):	S.L.U.	N_{Ed} =	-242.30 kN			
	S.L.E.	$N_{Ed\ es}$ =	-187.90 kN			
S.L.U. Verifica di resistenza a taglio bullone, singola superficie:		$F_{v,Ed}$ =	40.38 kN	Verifica:	$F_{v,Ed}$ / $F_{v,Rd}$ = 40.38 / 97.92 =	0.412 ≤1: Verificato
S.L.U. Verifica di resistenza a scorrimento bullone, singola superficie:		$F_{v,Ed}$ =	40.38 kN	Verifica:	$F_{v,Ed}$ / $F_{s,Rd}$ = 40.38 / 41.13 =	0.982 ≤1: Verificato
S.L.E. Verifica di resistenza a scorrimento bullone, singola superficie:		$F_{v,Ed\ es}$ =	31.32 kN	Verifica:	$F_{v,Ed\ es}$ / $F_{s,Rd\ es}$ = 31.32 / 46.73 =	0.670 ≤1: Verificato
S.L.U. Verifica al rifollamento profilato:		$F_{b,Ed}$ =	40.38 kN			
	coefficienti:	k1 =	2.500			
		α_b =	0.635			
	Resistenza al rifollamento:	$F_{b,Rd}$ =	129.5 kN	Verifica:	$F_{b,Ed}$ / $F_{b,Rd}$ = 40.38 / 129.52 =	0.312 ≤1: Verificato
S.L.U. Verifica al rifollamento lamiere:		$F_{b,Ed}$ =	80.77 kN			
	coefficienti:	k1 =	2.500			
		α_b =	0.635			
	Resistenza al rifollamento:	$F_{b,Rd}$ =	194.3 kN	Verifica:	$F_{b,Ed}$ / $F_{b,Rd}$ = 80.77 / 194.29 =	0.416 ≤1: Verificato
S.L.U. Verifica a trazione del profilato indebolito dai fori:	Area netta:	A_{net} =	2600 mm^2			
	Resistenza della sezione netta:	$N_{u,Rd}$ =	954.72 kN	Verifica:	N_{Ed} / $N_{u,Rd}$ = 0.00 / 954.72 =	0.000 N.A.

Categoria (verificata) di connessione bullonata a taglio (EN1993-1-8:2005 § 3.4): **Categoria C: connessioni ad attrito allo S.L.U.**

12.3 DIAFRAMMI SU SPALLE E INTERMEDI - DIAGONALI



DIAGONALI CORRENTI – SFORZO ASSIALE – INVILUPPO SLU

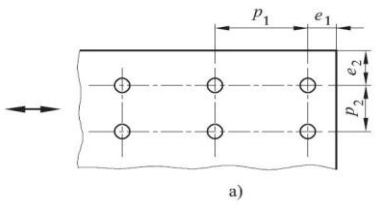


DIAGONALI CORRENTI – SFORZO ASSIALE – INVILUPPO SLE

VERIFICA CONNESSIONE BULLONATA A TAGLIO: TRASVERSI IN CAMPATA - DIAGONALI (2 L 80x8)

Coefficienti di sicurezza per la verifica delle unioni (NTC 2008; Tab. 4.2.XII):

Resistenza dei bulloni e delle sezioni tese (indebolite dai fori)	γ_{M2} =	1.25
Resistenza a scorrimento allo SLU	γ_{M3} =	1.25
Resistenza a scorrimento allo SLE	γ_{M3} =	1.10
Precarico dei bulloni ad alta resistenza (classe 8.8 o 10.9)	γ_{M7} =	1.10



Dati geometrici bulloni:	Diametro nominale:		d =	20 mm
	Tipo fori: accoppiamento	normale	d_0 =	21.0 mm
	Area nominale gambo non filettato:		A =	314 mm^2
	Area resistente gambo filettato:		A_{res} =	245 mm^2
	Classe bulloni:	10.9	f_{yb} =	900.00 N/mm^2
			f_{tb} =	1000.00 N/mm^2
Resistenza a taglio:	il piano di taglio interessa la parte:			filettata
	resistenza allo SLU (per piano di taglio):		$F_{v,Rd}$ =	97.92 kN
Resistenza a scorrimento:	coefficiente di attrito:		μ =	0.30 (tutte le superfici)
(solo classi 8.8 o 10.9)	tipo di serraggio:			controllato
	forza di precarico:		$F_{p,Cd}$ =	171.36 kN
	resistenza allo SLU (per piano di scorrimento):		$F_{s,Rd}$ =	41.13 kN
	resistenza allo SLE (per piano di scorrimento):		$F_{s,Rd,es}$ =	46.73 kN

Dati profili e lamiere:

		Spessore nominale dell'elemento t ≤ 40 mm fyk [N/mm^2]	ftk [N/mm^2]	40 mm < t ≤ 80 mm fyk [N/mm^2]	ftk [N/mm^2]	
Qualità acciaio profilati:	S 355 W	355	510	335	490	UNI EN 10025-5: acciai per impieghi strutturali con resistenza migliorata alla corrosione atmosferica
Qualità acciaio lamiere / coprigiunti:	S 355 W	355	510	335	490	UNI EN 10025-5: acciai per impieghi strutturali con resistenza migliorata alla corrosione atmosferica

					Limiti massimi e minimi Min.	Max.	
Dati geometrici bulloni:	Numero file di bulloni:		1				
	Numero bulloni:		2				
	Numero superfici di taglio:		2				
	Interassi:	p_1 =	60	mm	46.2	112 mm	Entro limiti: Verificato
	(per fila singola porre: p_2 = 0)	p_2 =	0	mm	0	0 mm	Entro limiti: Verificato

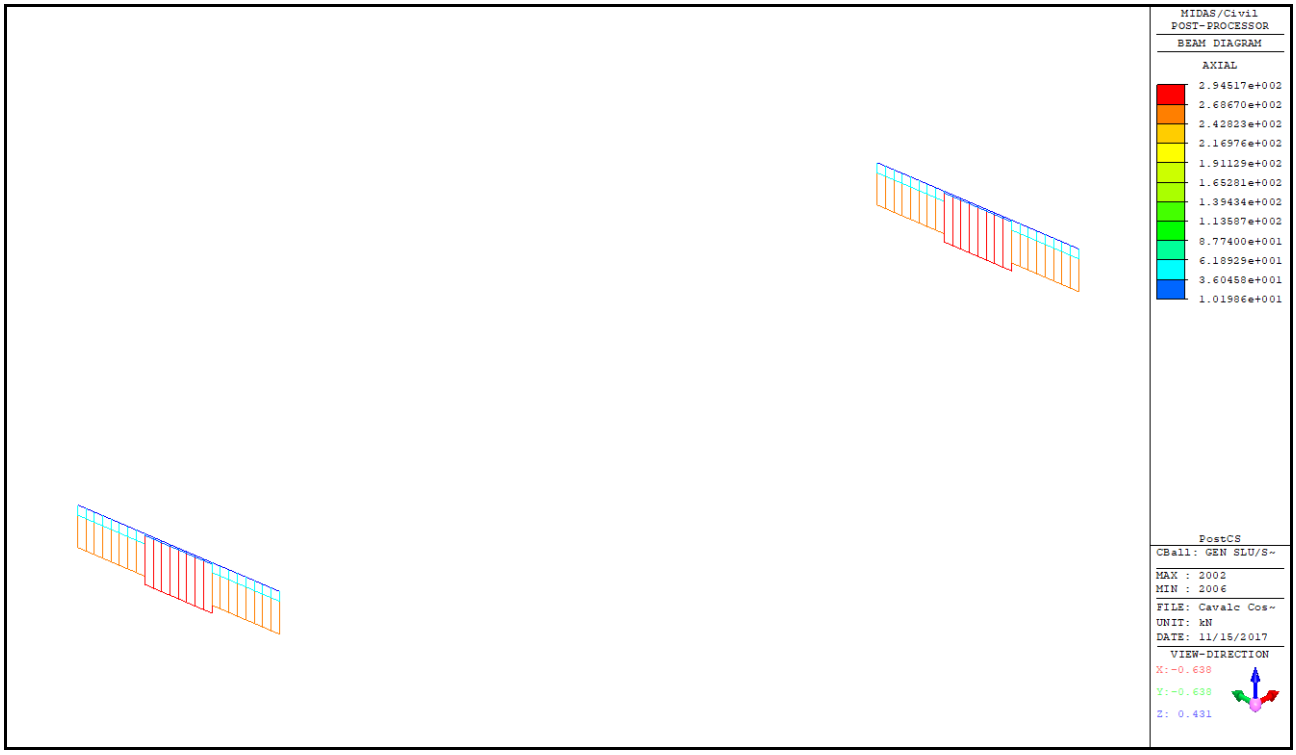
					Limiti massimi e minimi Min.	Max.	
Dati geometrici profilati:	Numero profilati:		2				
	Spessore flangia bullonata:		8	mm			
	Area sezione singolo profilato:		1230	mm^2			
	Distanze bulloni dal bordo:	e_1 =	40	mm	25.2	125 mm	Entro limiti: Verificato
		e_2 =	40	mm	25.2	125 mm	Entro limiti: Verificato

					Limiti massimi e minimi Min.	Max.	
Dati geometrici lamiere / coprigiunti:	Numero lamiere.		1				
	Spessore:		15	mm			
	Distanze bulloni dal bordo:	e_1 =	40	mm	25.2	125 mm	Entro limiti: Verificato
		e_2 =	40	mm	25.2	125 mm	Entro limiti: Verificato

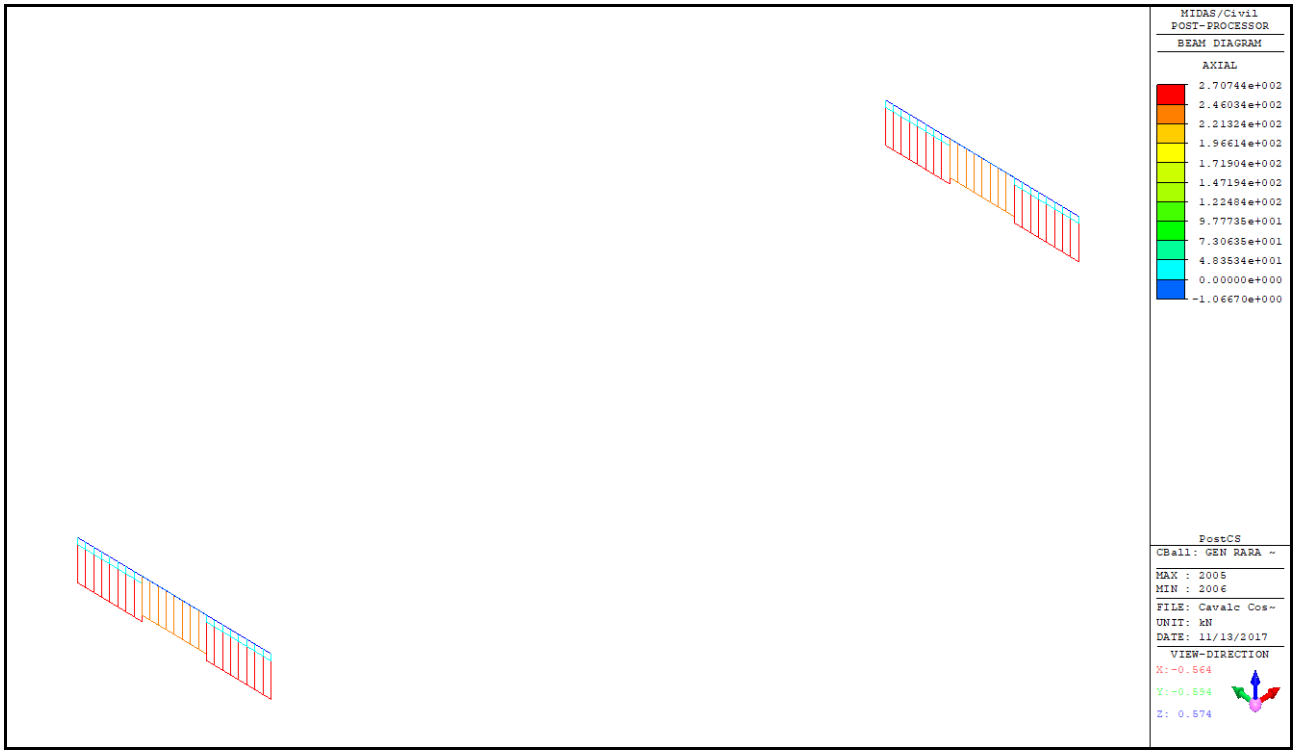
Sollecitazioni di progetto (trazione > 0):	S.L.U.	N_{Ed} =	143.00	kN			
	S.L.E.	$N_{Ed\,es}$ =	106.40	kN			
S.L.U. Verifica di resistenza a taglio bullone, singola superficie:		$F_{v,Ed}$ =	35.75	kN	Verifica:	$\frac{F_{v,Ed}}{F_{v,Rd}} = \frac{35.75}{97.92}$	0.365 ≤1: Verificato
S.L.U. Verifica di resistenza a scorrimento bullone, singola superficie:		$F_{v,Ed}$ =	35.75	kN	Verifica:	$\frac{F_{v,Ed}}{F_{s,Rd}} = \frac{35.75}{41.13}$	0.869 ≤1: Verificato
S.L.E. Verifica di resistenza a scorrimento bullone, singola superficie:		$F_{v,Ed\,es}$ =	26.60	kN	Verifica:	$\frac{F_{v,Ed\,es}}{F_{s,Rd\,es}} = \frac{26.60}{46.73}$	0.569 ≤1: Verificato
S.L.U. Verifica al rifollamento profilato:		$F_{b,Ed}$ =	35.75	kN			
	coefficienti:	k1 =	2.500				
		α_b =	0.635				
	Resistenza al rifollamento:	$F_{b,Rd}$ =	103.6	kN	Verifica:	$\frac{F_{b,Ed}}{F_{b,Rd}} = \frac{35.75}{103.62}$	0.345 ≤1: Verificato
S.L.U. Verifica al rifollamento lamiere:		$F_{b,Ed}$ =	71.50	kN			
	coefficienti:	k1 =	2.500				
		α_b =	0.635				
	Resistenza al rifollamento:	$F_{b,Rd}$ =	194.3	kN	Verifica:	$\frac{F_{b,Ed}}{F_{b,Rd}} = \frac{71.50}{194.29}$	0.368 ≤1: Verificato
S.L.U. Verifica a trazione del profilato indebolito dai fori:	Area netta:	A_{net} =	2124	mm^2			
	Resistenza della sezione netta:	$N_{u,Rd}$ =	779.93	kN	Verifica:	$\frac{N_{Ed}}{N_{u,Rd}} = \frac{143.00}{779.93}$	0.183 ≤1: Verificato

Categoria (verificata) di connessione bullonata a taglio (EN1993-1-8:2005 § 3.4): **Categoria C: connessioni ad attrito allo S.L.U.**

12.4 DIAFRAMMI SU PILE – TRASVERSI INFERIORI



TRASVERSI INFERIORI PILE – SFORZO ASSIALE – INVILUPPO SLU

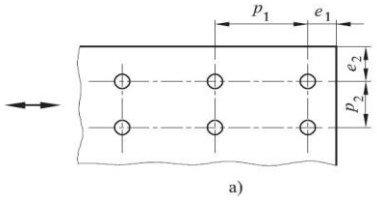


TRASVERSI INFERIORI PILE – SFORZO ASSIALE – INVILUPPO SLE

VERIFICA CONNESSIONE BULLONATA A TAGLIO: **TRASVERSI SU PILA - CORRENTI INFERIORI (2 L 100x10)**

Coefficienti di sicurezza per la verifica delle unioni (NTC 2008; Tab. 4.2.XII):

Resistenza dei bulloni e delle sezioni tese (indebolite dai fori)	γ_{M2} =	1.25
Resistenza a scorrimento allo SLU	γ_{M3} =	1.25
Resistenza a scorrimento allo SLE	γ_{M3} =	1.10
Precarico dei bulloni ad alta resistenza (classe 8.8 o 10.9)	γ_{M7} =	1.10



Dati geometrici bulloni:	Diametro nominale:		d =	24 mm
	Tipo fori: accoppiamento	normale	d_0 =	25.5 mm
	Area nominale gambo non filettato:		A =	452 mm^2
	Area resistente gambo filettato:		A_{res} =	353 mm^2
	Classe bulloni:	10.9	f_{yb} =	900.00 N/mm^2
			f_{tb} =	1000.00 N/mm^2
Resistenza a taglio:	il piano di taglio interessa la parte:			filettata
	resistenza allo SLU (per piano di taglio):		$F_{v,Rd}$ =	141.00 kN
Resistenza a scorrimento:	coefficiente di attrito:		μ =	0.30 (tutte le superfici)
(solo classi 8.8 o 10.9)	tipo di serraggio:			controllato
	forza di precarico:		$F_{p,Cd}$ =	246.75 kN
	resistenza allo SLU (per piano di scorrimento):		$F_{s,Rd}$ =	59.22 kN
	resistenza allo SLE (per piano di scorrimento):		$F_{s,Rd,es}$ =	67.30 kN

Dati profili e lamiere:

		Spessore nominale dell'elemento t ≤ 40 mm		40 mm < t ≤ 80 mm		
		fyk [N/mm^2]	ftk [N/mm^2]	fyk [N/mm^2]	ftk [N/mm^2]	
Qualità acciaio profilati:	S 355 W	355	510	335	490	UNI EN 10025-5: acciai per impieghi strutturali con resistenza migliorata alla corrosione atmosferica
Qualità acciaio lamiere / coprigiunti:	S 355 W	355	510	335	490	UNI EN 10025-5: acciai per impieghi strutturali con resistenza migliorata alla corrosione atmosferica

					Limiti massimi e minimi Min.	Max.	
Dati geometrici bulloni:	Numero file di bulloni:		1				
	Numero bulloni:		3				
	Numero superfici di taglio:		2				
	Interassi:	p_1 =	60	mm	56.1	140 mm	Entro limiti: Verificato
	(per fila singola porre: p_2 = 0)	p_2 =	0	mm	0	0 mm	Entro limiti: Verificato

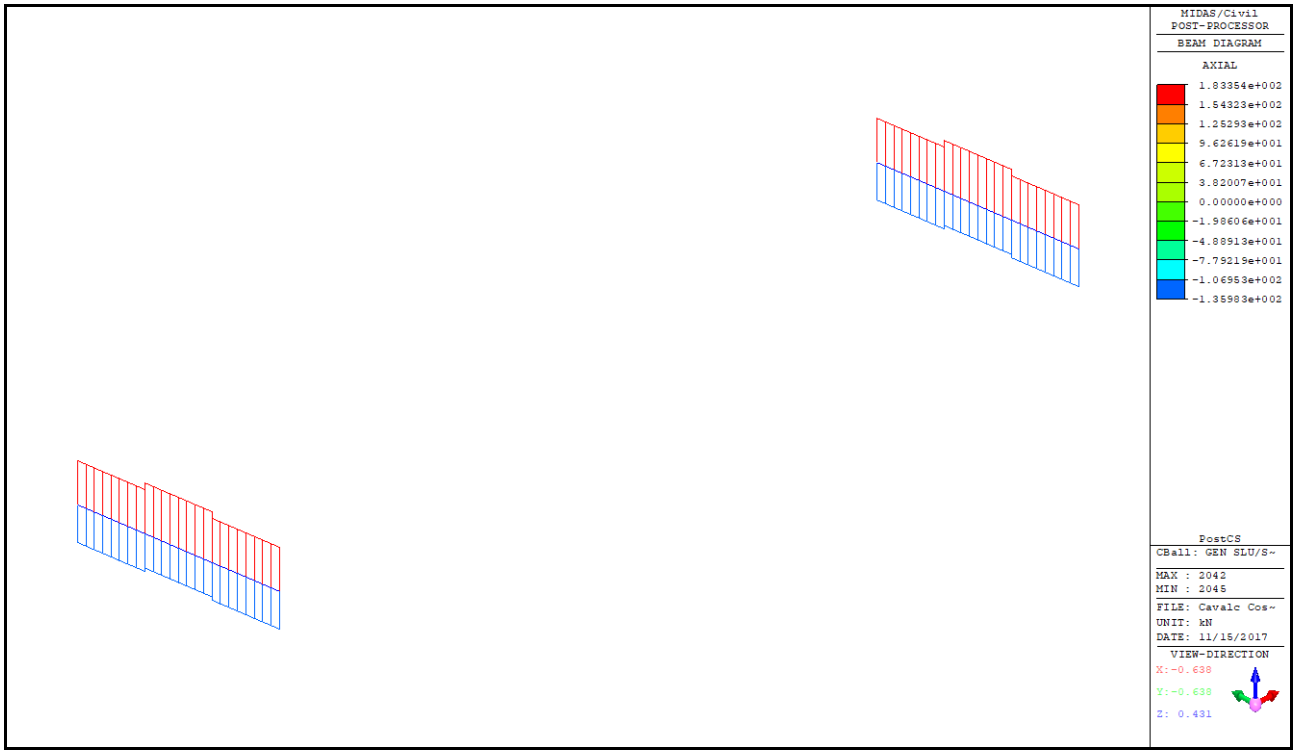
					Limiti massimi e minimi Min.	Max.	
Dati geometrici profilati:	Numero profilati:		2				
	Spessore flangia bullonata:		10	mm			
	Area sezione singolo profilato:		1920	mm^2			
	Distanze bulloni dal bordo:	e_1 =	40	mm	30.6	125 mm	Entro limiti: Verificato
		e_2 =	50	mm	30.6	125 mm	Entro limiti: Verificato

					Limiti massimi e minimi Min.	Max.	
Dati geometrici lamiere / coprigiunti:	Numero lamiere.		1				
	Spessore:		20	mm			
	Distanze bulloni dal bordo:	e_1 =	40	mm	30.6	160 mm	Entro limiti: Verificato
		e_2 =	50	mm	30.6	160 mm	Entro limiti: Verificato

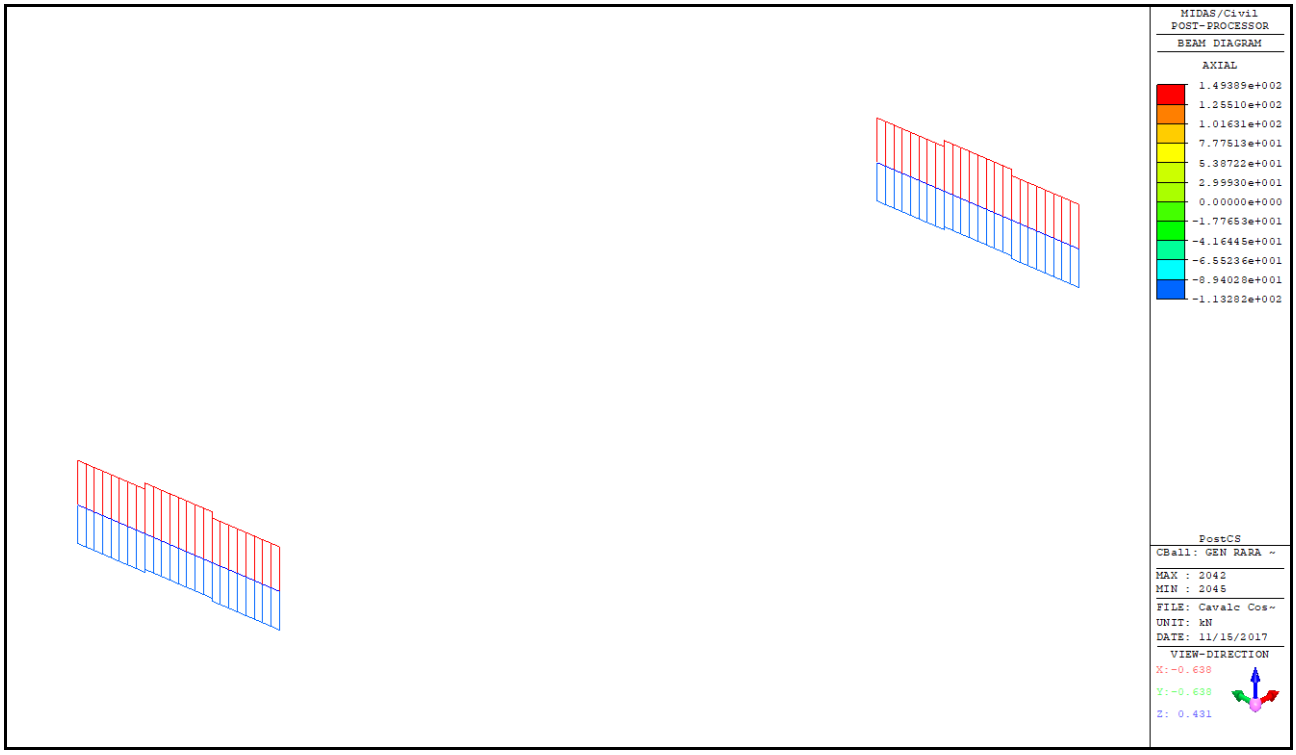
Sollecitazioni di progetto (trazione > 0):	S.L.U.	N_{Ed} =	294.50	kN			
	S.L.E.	$N_{Ed\,es}$ =	222.10	kN			
S.L.U. Verifica di resistenza a taglio bullone, singola superficie:		$F_{v,Ed}$ =	49.08	kN	Verifica: $\frac{F_{v,Ed}}{F_{v,Rd}}$ = $\frac{49.08}{141.00}$ =	0.348	≤1: Verificato
S.L.U. Verifica di resistenza a scorrimento bullone, singola superficie:		$F_{v,Ed}$ =	49.08	kN	Verifica: $\frac{F_{v,Ed}}{F_{s,Rd}}$ = $\frac{49.08}{59.22}$ =	0.829	≤1: Verificato
S.L.E. Verifica di resistenza a scorrimento bullone, singola superficie:		$F_{v,Ed\,es}$ =	37.02	kN	Verifica: $\frac{F_{v,Ed\,es}}{F_{s,Rd\,es}}$ = $\frac{37.02}{67.30}$ =	0.550	≤1: Verificato
S.L.U. Verifica al rifollamento profilato:		$F_{b,Ed}$ =	49.08	kN			
	coefficienti:	k1 =	2.500				
		α_b =	0.523				
	Resistenza al rifollamento:	$F_{b,Rd}$ =	128.00	kN	Verifica: $\frac{F_{b,Ed}}{F_{b,Rd}}$ = $\frac{49.08}{128.00}$ =	0.383	≤1: Verificato
S.L.U. Verifica al rifollamento lamiere:		$F_{b,Ed}$ =	98.17	kN			
	coefficienti:	k1 =	2.500				
		α_b =	0.523				
	Resistenza al rifollamento:	$F_{b,Rd}$ =	256.00	kN	Verifica: $\frac{F_{b,Ed}}{F_{b,Rd}}$ = $\frac{98.17}{256.00}$ =	0.383	≤1: Verificato
S.L.U. Verifica a trazione del profilato indebolito dai fori:	Area netta:	A_{net} =	3330	mm^2			
	Resistenza della sezione netta:	$N_{u,Rd}$ =	1222.78	kN	Verifica: $\frac{N_{Ed}}{N_{u,Rd}}$ = $\frac{294.50}{1222.78}$ =	0.241	≤1: Verificato

Categoria (verificata) di connessione bullonata a taglio (EN1993-1-8:2005 § 3.4): **Categoria C: connessioni ad attrito allo S.L.U.**

12.5 DIAFRAMMI SU PILE – TRASVERSI SUPERIORI



TRASVERSI SUPERIORI PILE – SFORZO ASSIALE – INVILUPPO SLU

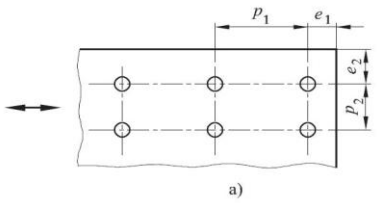


TRASVERSI SUPERIORI PILE – SFORZO ASSIALE – INVILUPPO SLE

VERIFICA CONNESSIONE BULLONATA A TAGLIO: **TRASVERSI SU PILA - CORRENTI SUPERIORI (2 L 100x10)**

Coefficienti di sicurezza per la verifica delle unioni (NTC 2008; Tab. 4.2.XII):

Resistenza dei bulloni e delle sezioni tese (indebolite dai fori)	γ_{M2} =	1.25
Resistenza a scorrimento allo SLU	γ_{M3} =	1.25
Resistenza a scorrimento allo SLE	γ_{M3} =	1.10
Precarico dei bulloni ad alta resistenza (classe 8.8 o 10.9)	γ_{M7} =	1.10



Dati geometrici bulloni:

Diametro nominale:		d =	20 mm
Tipo fori: accoppiamento	di precisione	d_0 =	20.3 mm
Area nominale gambo non filettato:		A =	314 mm^2
Area resistente gambo filettato:		A_{res} =	245 mm^2
Classe bulloni:	10.9	f_{yb} =	900.00 N/mm^2
		f_{tb} =	1000.00 N/mm^2

Resistenza a taglio: il piano di taglio interessa la parte: filettata
resistenza allo SLU (per piano di taglio): $F_{v,Rd}$ = 97.92 kN

Resistenza a scorrimento: coefficiente di attrito: μ = 0.30 (tutte le superfici)
(solo classi 8.8 o 10.9) tipo di serraggio: controllato
forza di precarico: $F_{p,Cd}$ = 171.36 kN
resistenza allo SLU (per piano di scorrimento): $F_{s,Rd}$ = 41.13 kN
resistenza allo SLE (per piano di scorrimento): $F_{s,Rd,es}$ = 46.73 kN

Dati profili e lamiere:

		Spessore nominale dell'elemento $t \le 40$ mm		$40 < t \le 80$ mm		
		fyk [N/mm^2]	ftk [N/mm^2]	fyk [N/mm^2]	ftk [N/mm^2]	
Qualità acciaio profilati:	S 355 W	355	510	335	490	UNI EN 10025-5: acciai per impieghi strutturali con resistenza migliorata alla corrosione atmosferica
Qualità acciaio lamiere / coprigiunti:	S 355 W	355	510	335	490	UNI EN 10025-5: acciai per impieghi strutturali con resistenza migliorata alla corrosione atmosferica

Dati geometrici bulloni:

				Limiti massimi e minimi Min.	Max.	
Numero file di bulloni:		1				
Numero bulloni:		3				
Numero superfici di taglio:		2				
Interassi:	p_1 =	60	mm	44.66	140 mm	Entro limiti: Verificato
(per fila singola porre: $p_2 = 0$)	p_2 =	0	mm	0	0 mm	Entro limiti: Verificato

Dati geometrici profilati:

				Limiti massimi e minimi Min.	Max.	
Numero profilati:		2				
Spessore flangia bullonata:		10	mm			
Area sezione singolo profilato:		1920	mm^2			
Distanze bulloni dal bordo:	e_1 =	40	mm	24.36	125 mm	Entro limiti: Verificato
	e_2 =	50	mm	24.36	125 mm	Entro limiti: Verificato

Dati geometrici lamiere / coprigiunti:

				Limiti massimi e minimi Min.	Max.	
Numero lamiere.		1				
Spessore:		20	mm			
Distanze bulloni dal bordo:	e_1 =	40	mm	24.36	160 mm	Entro limiti: Verificato
	e_2 =	50	mm	24.36	160 mm	Entro limiti: Verificato

Sollecitazioni di progetto (trazione > 0):

S.L.U.	N_{Ed} =	183.30	kN
S.L.E.	$N_{Ed\,es}$ =	149.40	kN

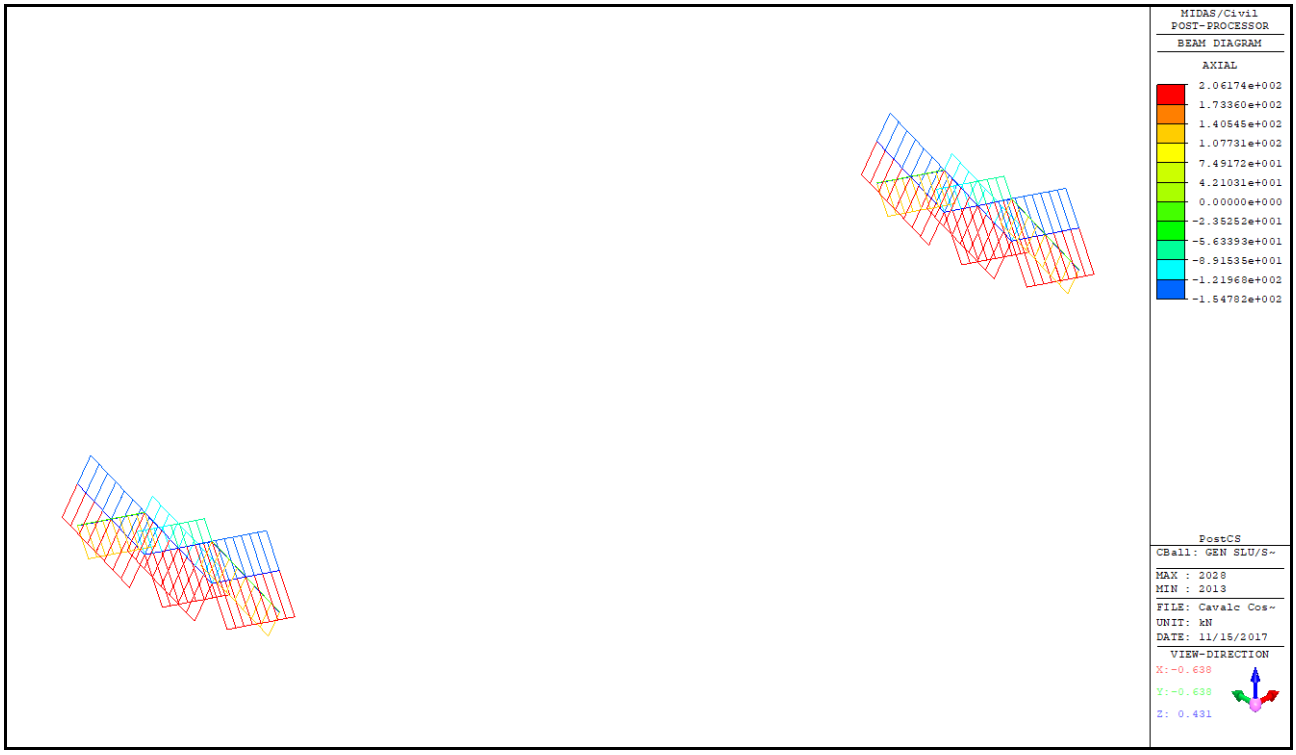
S.L.U. Verifica di resistenza a taglio bullone, singola superficie:	$F_{v,Ed}$ =	30.55	kN	Verifica:	$F_{v,Ed}$ / $F_{v,Rd}$ =	30.55 / 97.92 =	0.312	≤1: Verificato
S.L.U. Verifica di resistenza a scorrimento bullone, singola superficie:	$F_{v,Ed}$ =	30.55	kN	Verifica:	$F_{v,Ed}$ / $F_{s,Rd}$ =	30.55 / 41.13 =	0.743	≤1: Verificato
S.L.E. Verifica di resistenza a scorrimento bullone, singola superficie:	$F_{v,Ed\,es}$ =	24.90	kN	Verifica:	$F_{v,Ed\,es}$ / $F_{s,Rd\,es}$ =	24.90 / 46.73 =	0.533	≤1: Verificato

S.L.U. Verifica al rifollamento profilato:	$F_{b,Ed}$ =	30.55	kN					
coefficienti:	k1 =	2.500						
	α_b =	0.657						
Resistenza al rifollamento:	$F_{b,Rd}$ =	134.0	kN	Verifica:	$F_{b,Ed}$ / $F_{b,Rd}$ =	30.55 / 133.99 =	0.228	≤1: Verificato
S.L.U. Verifica al rifollamento lamiere:	$F_{b,Ed}$ =	61.10	kN					
coefficienti:	k1 =	2.500						
	α_b =	0.657						
Resistenza al rifollamento:	$F_{b,Rd}$ =	268.0	kN	Verifica:	$F_{b,Ed}$ / $F_{b,Rd}$ =	61.10 / 267.98 =	0.228	≤1: Verificato

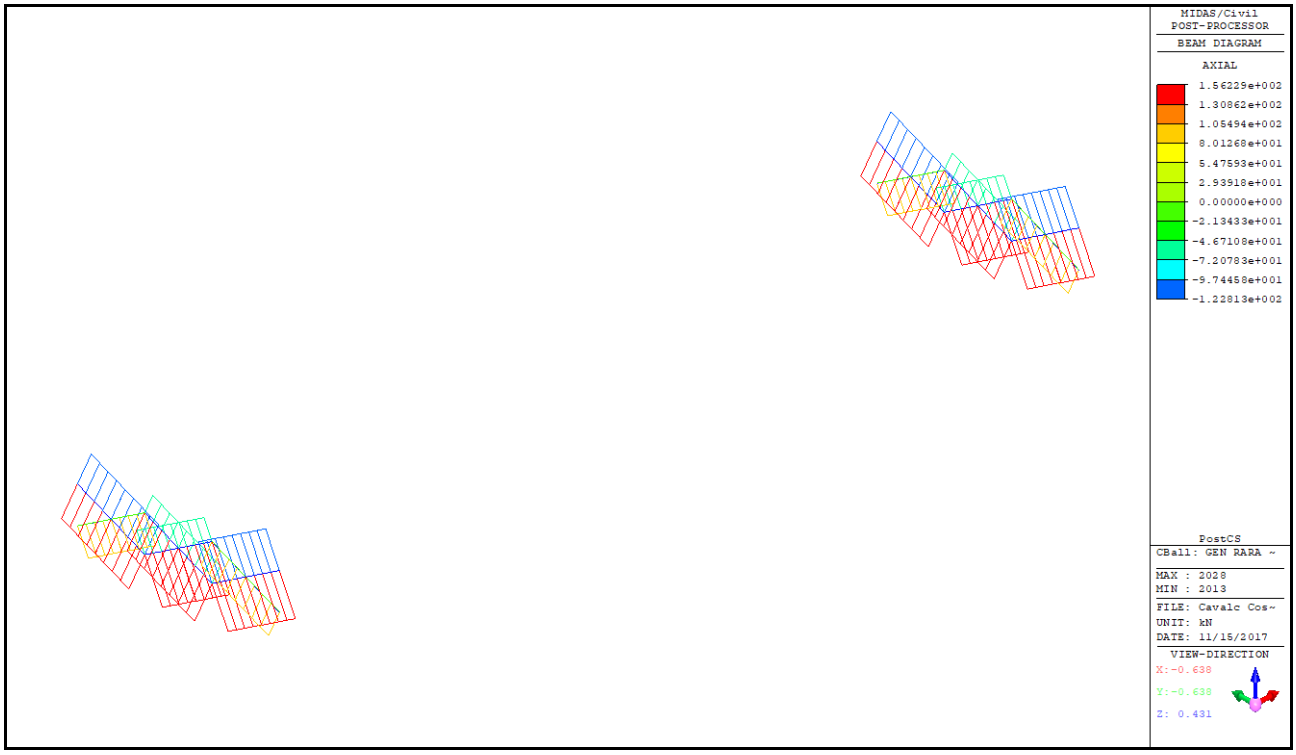
S.L.U. Verifica a trazione del profilato indebolito dai fori: Area netta:	A_{net} =	3434	mm^2					
Resistenza della sezione netta:	$N_{u,Rd}$ =	1260.96	kN	Verifica:	N_{Ed} / $N_{u,Rd}$ =	183.30 / 1260.96 =	0.145	≤1: Verificato

Categoria (verificata) di connessione bullonata a taglio (EN1993-1-8:2005 § 3.4): **Categoria C: connessioni ad attrito allo S.L.U.**

12.6 DIAFRAMMI SU PILE – DIAGONALI



DIAGONALI TRASVERSI SU PILE – SFORZO ASSIALE – INVILUPPO SLU

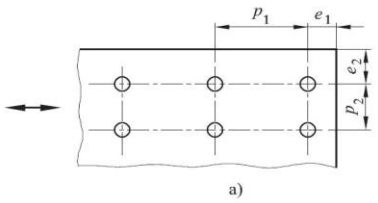


DIAGONALI TRASVERSI SU PILE – SFORZO ASSIALE – INVILUPPO SLE

VERIFICA CONNESSIONE BULLONATA A TAGLIO: **TRASVERSI SU PILA - DIAGONALI (2 L 80x8)**

Coefficienti di sicurezza per la verifica delle unioni (NTC 2008; Tab. 4.2.XII):

Resistenza dei bulloni e delle sezioni tese (indebolite dai fori)	γ_{M2} =	1.25
Resistenza a scorrimento allo SLU	γ_{M3} =	1.25
Resistenza a scorrimento allo SLE	γ_{M3} =	1.10
Precarico dei bulloni ad alta resistenza (classe 8.8 o 10.9)	γ_{M7} =	1.10



Dati geometrici bulloni:

Diametro nominale:		d =	24 mm
Tipo fori: accoppiamento	normale	d_0 =	25.5 mm
Area nominale gambo non filettato:		A =	452 mm^2
Area resistente gambo filettato:		A_{res} =	353 mm^2
Classe bulloni:	10.9	f_{yb} =	900.00 N/mm^2
		f_{tb} =	1000.00 N/mm^2

Resistenza a taglio: il piano di taglio interessa la parte: filettata
resistenza allo SLU (per piano di taglio): $F_{v,Rd}$ = 141.00 kN

Resistenza a scorrimento: coefficiente di attrito: μ = 0.30 (tutte le superfici)
(solo classi 8.8 o 10.9) tipo di serraggio: controllato
forza di precarico: $F_{p,Cd}$ = 246.75 kN
resistenza allo SLU (per piano di scorrimento): $F_{s,Rd}$ = 59.22 kN
resistenza allo SLE (per piano di scorrimento): $F_{s,Rd,es}$ = 67.30 kN

Dati profili e lamiere:

		Spessore nominale dell'elemento $t \le 40$ mm		$40 < t \le 80$ mm		
		fyk [N/mm^2]	ftk [N/mm^2]	fyk [N/mm^2]	ftk [N/mm^2]	
Qualità acciaio profilati:	S 355 W	355	510	335	490	UNI EN 10025-5: acciai per impieghi strutturali con resistenza migliorata alla corrosione atmosferica
Qualità acciaio lamiere / coprigiunti:	S 355 W	355	510	335	490	UNI EN 10025-5: acciai per impieghi strutturali con resistenza migliorata alla corrosione atmosferica

Dati geometrici bulloni:

				Limiti massimi e minimi Min.	Max.	
Numero file di bulloni:		1				
Numero bulloni:		2				
Numero superfici di taglio:		2				
Interassi:	p_1 =	60	mm	56.1	112 mm	Entro limiti: Verificato
(per fila singola porre: $p_2 = 0$)	p_2 =	0	mm	0	0 mm	Entro limiti: Verificato

Dati geometrici profilati:

				Limiti massimi e minimi Min.	Max.	
Numero profilati:		2				
Spessore flangia bullonata:		8	mm			
Area sezione singolo profilato:		1230	mm^2			
Distanze bulloni dal bordo:	e_1 =	40	mm	30.6	125 mm	Entro limiti: Verificato
	e_2 =	40	mm	30.6	125 mm	Entro limiti: Verificato

Dati geometrici lamiere / coprigiunti:

				Limiti massimi e minimi Min.	Max.	
Numero lamiere.		1				
Spessore:		20	mm			
Distanze bulloni dal bordo:	e_1 =	40	mm	30.6	160 mm	Entro limiti: Verificato
	e_2 =	40	mm	30.6	160 mm	Entro limiti: Verificato

Sollecitazioni di progetto (trazione > 0):

S.L.U.	N_{Ed} =	206.20	kN
S.L.E.	$N_{Ed\,es}$ =	156.20	kN

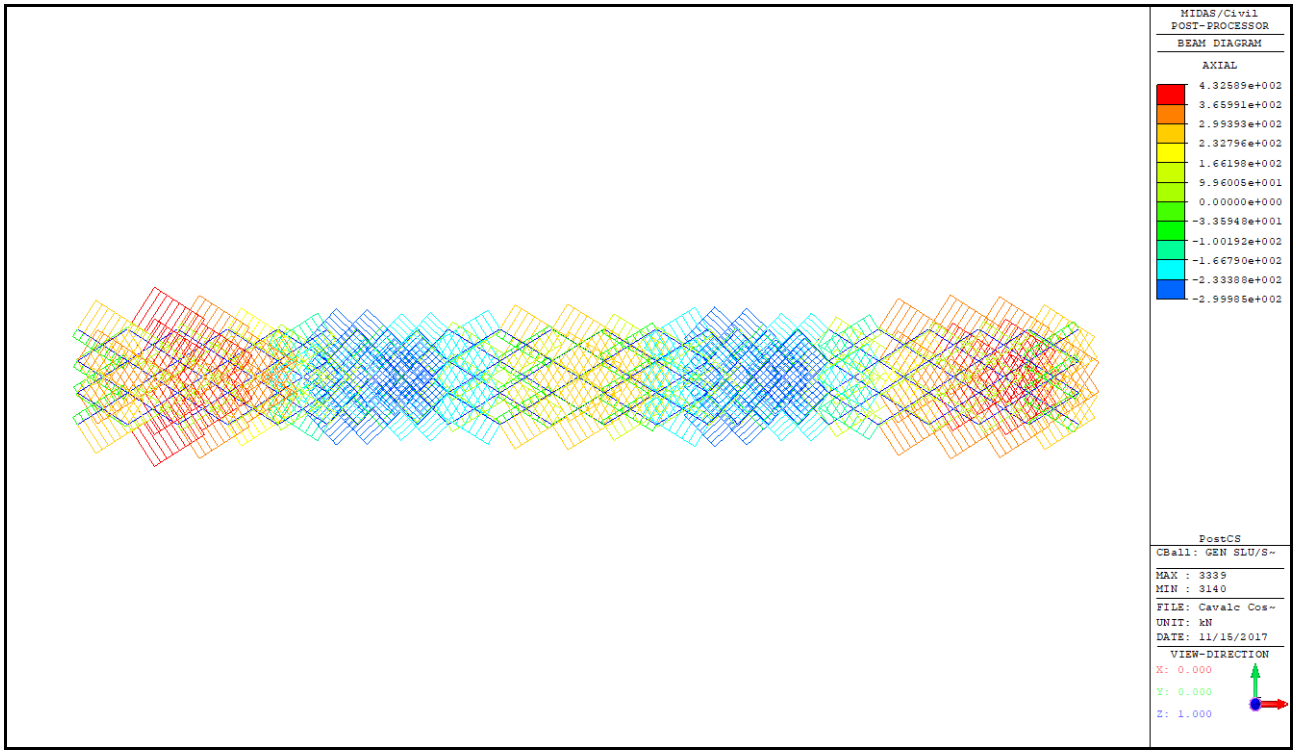
S.L.U. Verifica di resistenza a taglio bullone, singola superficie:	$F_{v,Ed}$ =	51.55	kN	Verifica:	$F_{v,Ed}$ / $F_{v,Rd}$ = 51.55 / 141.00 =	0.366	≤1: Verificato
S.L.U. Verifica di resistenza a scorrimento bullone, singola superficie:	$F_{v,Ed}$ =	51.55	kN	Verifica:	$F_{v,Ed}$ / $F_{s,Rd}$ = 51.55 / 59.22 =	0.870	≤1: Verificato
S.L.E. Verifica di resistenza a scorrimento bullone, singola superficie:	$F_{v,Ed\,es}$ =	39.05	kN	Verifica:	$F_{v,Ed\,es}$ / $F_{s,Rd\,es}$ = 39.05 / 67.30 =	0.580	≤1: Verificato

S.L.U. Verifica al rifollamento profilato:	$F_{b,Ed}$ =	51.55	kN				
coefficienti:	k1 =	2.500					
	α_b =	0.523					
Resistenza al rifollamento:	$F_{b,Rd}$ =	102.4	kN	Verifica:	$F_{b,Ed}$ / $F_{b,Rd}$ = 51.55 / 102.40 =	0.503	≤1: Verificato
S.L.U. Verifica al rifollamento lamiere:	$F_{b,Ed}$ =	103.10	kN				
coefficienti:	k1 =	2.500					
	α_b =	0.523					
Resistenza al rifollamento:	$F_{b,Rd}$ =	256.0	kN	Verifica:	$F_{b,Ed}$ / $F_{b,Rd}$ = 103.10 / 256.00 =	0.403	≤1: Verificato

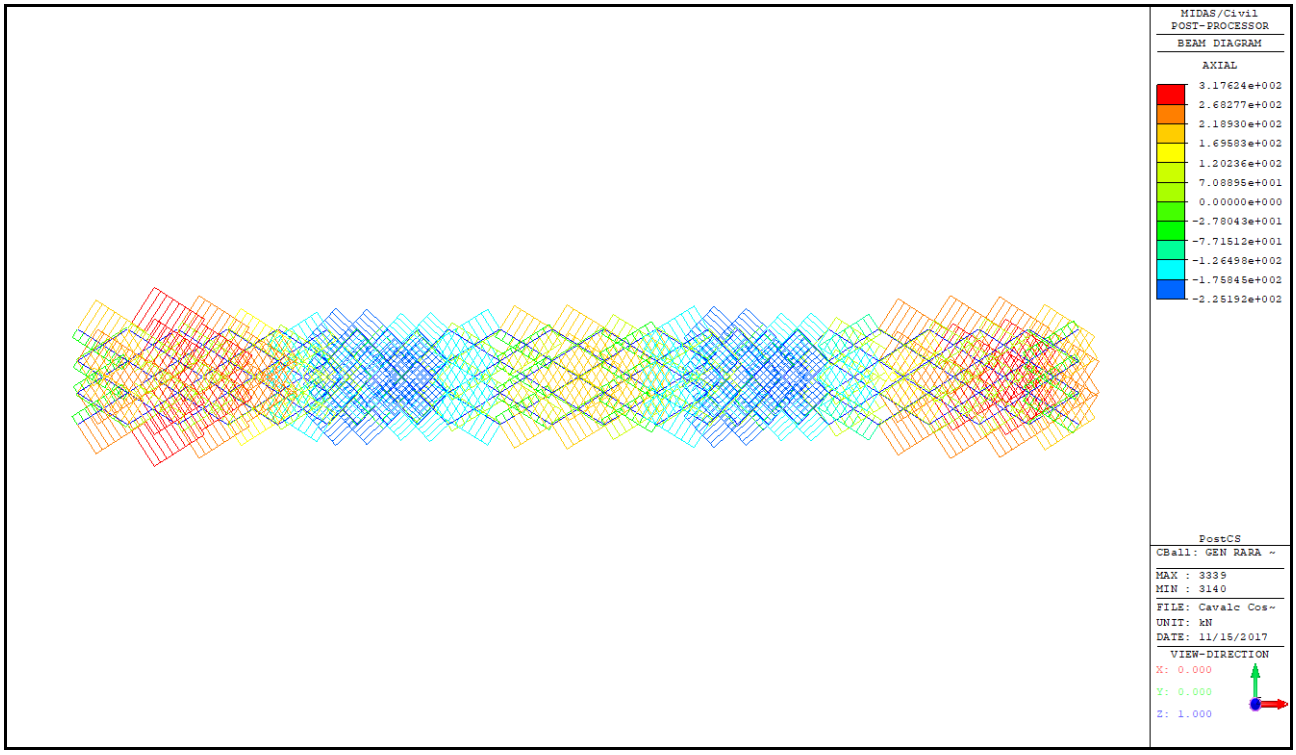
S.L.U. Verifica a trazione del profilato indebolito dai fori: Area netta:	A_{net} =	2052	mm^2				
Resistenza della sezione netta:	$N_{u,Rd}$ =	753.49	kN	Verifica:	N_{Ed} / $N_{u,Rd}$ = 206.20 / 753.49 =	0.274	≤1: Verificato

Categoria (verificata) di connessione bullonata a taglio (EN1993-1-8:2005 § 3.4): **Categoria C: connessioni ad attrito allo S.L.U.**

12.7 CONTROVENTI



CONTROVENTI – SFORZO ASSIALE – INVILUPPO SLU

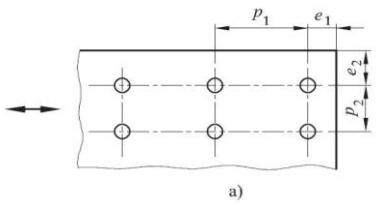


CONTROVENTI – SFORZO ASSIALE – INVILUPPO SLE

VERIFICA CONNESSIONE BULLONATA A TAGLIO: CONTROVENTI (2 L 80x10)

Coefficienti di sicurezza per la verifica delle unioni (NTC 2008; Tab. 4.2.XII):

Resistenza dei bulloni e delle sezioni tese (indebolite dai fori)	γ_{M2} =	1.25
Resistenza a scorrimento allo SLU	γ_{M3} =	1.25
Resistenza a scorrimento allo SLE	γ_{M3} =	1.10
Precarico dei bulloni ad alta resistenza (classe 8.8 o 10.9)	γ_{M7} =	1.10



Dati geometrici bulloni:

Diametro nominale:		d =	27 mm
Tipo fori: accoppiamento	normale	d_0 =	28.5 mm
Area nominale gambo non filettato:		A =	573 mm^2
Area resistente gambo filettato:		A_{res} =	459 mm^2
Classe bulloni:	10.9	f_{yb} =	900.00 N/mm^2
		f_{tb} =	1000.00 N/mm^2

Resistenza a taglio: il piano di taglio interessa la parte: filettata

resistenza allo SLU (per piano di taglio): $F_{v,Rd}$ = 183.76 kN

Resistenza a scorrimento: coefficiente di attrito: μ = 0.30 (tutte le superfici)

(solo classi 8.8 o 10.9) tipo di serraggio: controllato

forza di precarico: $F_{p,Cd}$ = 321.58 kN

resistenza allo SLU (per piano di scorrimento): $F_{s,Rd}$ = 77.18 kN

resistenza allo SLE (per piano di scorrimento): $F_{s,Rd,es}$ = 87.70 kN

Dati profili e lamiere:

		Spessore nominale dell'elemento $t \le 40$ mm		$40 < t \le 80$ mm	
		fyk [N/mm^2]	ftk [N/mm^2]	fyk [N/mm^2]	ftk [N/mm^2]
Qualità acciaio profilati:	S 355 W	355	510	335	490
Qualità acciaio lamiere / coprigiunti:	S 355 W	355	510	335	490

UNI EN 10025-5: acciai per impieghi strutturali con resistenza migliorata alla corrosione atmosferica

UNI EN 10025-5: acciai per impieghi strutturali con resistenza migliorata alla corrosione atmosferica

Dati geometrici bulloni:

			Limiti massimi e minimi Min.	Max.	
Numero file di bulloni:		1			
Numero bulloni:		3			
Numero superfici di taglio:		2			
Interassi:	p_1 =	70 mm	62.7	140 mm	Entro limiti: Verificato
(per fila singola porre: $p_2 = 0$)	p_2 =	0 mm	0	0 mm	Entro limiti: Verificato

Dati geometrici profilati:

			Limiti massimi e minimi Min.	Max.	
Numero profilati:		2			
Spessore flangia bullonata:		10 mm			
Area sezione singolo profilato:		1510 mm^2			
Distanze bulloni dal bordo:	e_1 =	40 mm	34.2	125 mm	Entro limiti: Verificato
	e_2 =	40 mm	34.2	125 mm	Entro limiti: Verificato

Dati geometrici lamiere / coprigiunti:

			Limiti massimi e minimi Min.	Max.	
Numero lamiere.		1			
Spessore:		15 mm			
Distanze bulloni dal bordo:	e_1 =	40 mm	34.2	125 mm	Entro limiti: Verificato
	e_2 =	40 mm	34.2	125 mm	Entro limiti: Verificato

Sollecitazioni di progetto (trazione > 0):

S.L.U.	N_{Ed} =	432.60	kN
S.L.E.	$N_{Ed\,es}$ =	317.60	kN

S.L.U. Verifica di resistenza a taglio bullone, singola superficie: $F_{v,Ed}$ = 72.10 kN — Verifica: $\frac{F_{v,Ed}}{F_{v,Rd}} = \frac{72.10}{183.76}$ = 0.392 ≤1: Verificato

S.L.U. Verifica di resistenza a scorrimento bullone, singola superficie: $F_{v,Ed}$ = 72.10 kN — Verifica: $\frac{F_{v,Ed}}{F_{s,Rd}} = \frac{72.10}{77.18}$ = 0.934 ≤1: Verificato

S.L.E. Verifica di resistenza a scorrimento bullone, singola superficie: $F_{v,Ed\,es}$ = 52.93 kN — Verifica: $\frac{F_{v,Ed\,es}}{F_{s,Rd\,es}} = \frac{52.93}{87.70}$ = 0.604 ≤1: Verificato

S.L.U. Verifica al rifollamento profilato: $F_{b,Ed}$ = 72.10 kN

coefficienti: k1 = 2.230; α_b = 0.468

Resistenza al rifollamento: $F_{b,Rd}$ = 114.9 kN — Verifica: $\frac{F_{b,Ed}}{F_{b,Rd}} = \frac{72.10}{114.92}$ = 0.627 ≤1: Verificato

S.L.U. Verifica al rifollamento lamiere: $F_{b,Ed}$ = 144.20 kN

coefficienti: k1 = 2.230; α_b = 0.468

Resistenza al rifollamento: $F_{b,Rd}$ = 172.4 kN — Verifica: $\frac{F_{b,Ed}}{F_{b,Rd}} = \frac{144.20}{172.38}$ = 0.837 ≤1: Verificato

S.L.U. Verifica a trazione del profilato indebolito dai fori: Area netta: A_{net} = 2450 mm^2

Resistenza della sezione netta: $N_{u,Rd}$ = 899.64 kN — Verifica: $\frac{N_{Ed}}{N_{u,Rd}} = \frac{432.60}{899.64}$ = 0.481 ≤1: Verificato

Categoria (verificata) di connessione bullonata a taglio (EN1993-1-8:2005 § 3.4): **Categoria C: connessioni ad attrito allo S.L.U.**

13 VERIFICA DEGLI ISOLATORI SISMICI

Si effettuano le verifiche allo stato limite ultimo degli isolatori elastomerici effettuate secondo EN 1337-3 per le fasi statiche e secondo OPCM 3274 (allegato 10.A) per le fasi sismiche.

CAVALCAVIA STRADA VICINALE DELLE COSTE

VERIFICA APPOGGI ELASTOMERICI ARMATI

		SPALLE			PILE	
Dati di progetto:						
Deformazione massima sismica di progetto SLC (d/h ≤ 2)	Dsp=	152.0	mm	Dsp=	156.0	mm
Deformazione massima statica di progetto SLU/SLD (d/h ≤ 1)	Dp=	76.0	mm	Dp=	78.0	mm
Risultati da modello di calcolo						
Carico verticale massimo statico SLU	V(max)=	-1811.9	kN	V(max)=	-4463.7	kN
Carico verticale minmo statico SLU	V(min)=	-453.7	kN	V(min)=	-1785.6	kN
Carico orizzontale massimo statico SLU	H(max)=	54.0	kN	H(max)=	116.8	kN
Rotazione massima statica SLU	R (max)=	2.092E-02	rad	R (max)=	4.837E-03	rad
Carico verticale massimo sismico SLC	Vs(max)=	-551.4	kN	Vs(max)=	-2143.6	kN
Carico verticale minimo sismico SLC	Vs(min)=	-360.7	kN	Vs(min)=	-1280.9	kN
Carico orizzontale massimo sismico SLC	Hs(max)=	102.0	kN	Hs(max)=	218.2	kN
Rotazione massima sismica SLC	Rs (max)=	1.271E-02	rad	Rs (max)=	2.363E-03	rad
Carico verticale massimo statico SLE (caratt.)	Ve(max)=	-1415.5	kN	V(max)=	-3412.6	kN
Carico verticale minmo statico SLE (caratt.)	Ve(min)=	-364.9	kN	V(min)=	-1426.3	kN
Carico orizzontale massimo statico SLE (caratt.)	He(max)=	40.5	kN	H(max)=	80.6	kN
Rotazione massima statica SLE (caratt.)	Re(max)=	1.472E-02	rad	R (max)=	4.065E-03	rad

Caratteristiche di progetto isolatore		**SPALLE**			**PILE**	
Tensione caratteristica di snervamento lamiere (≥ 235 N/mmq)	fyk=	275	N/mmq	fyk=	275	N/mmq
Modulo di elasticità volumetrica elastomero	Eb=	2000	N/mmq	Eb=	2000	N/mmq
Modulo di elasticità tangenziale dinamico elastomero (γ = D/te = 1)	Gdin=	1.4	N/mmq	Gdin=	1.4	N/mmq
Spostamento massimo di progetto tra le due facce dell'isolatore allo SLC	de=	152	mm	de=	156	mm
Diametro elastomero	Dg=	300	mm	Dg=	450	mm
Numero di strati di elastomero	ng=	19		ng=	13	
Spessore singolo strato di elastomero (5 mm< tg < 25 mm)	tg=	4	mm	tg=	6	mm
Spessore singola lamiera di acciaio interna (≥ 2 mm)	ts=	2	mm	ts=	3	mm
Spessore lamiera di acciaio esterna (≥ 20 mm)	tse=	20	mm	tse=	20	mm
Lato piastra di ancoraggio	Z=	350	mm	Z=	500	mm
Spessore piastra di ancoraggio	ta=	25	mm	ta=	25	mm
Ricoprimento laterale lamiere di acciaio (> 4 mm)	rs=	10	mm	rs=	10	mm
Diametro lamiere di acciaio interne (Dg-D' > 2x4 = 8 mm)	D'=	280	mm	D'=	430	mm
Spessore totale elastomero	te=	76	mm	te=	78	mm
Spessore complessivo isolatore (escluse piastre ancoraggio)	h=	152	mm	h=	154	mm
Spessore complessivo isolatore (incluse piastre ancoraggio)	H=	202	mm	H=	204	mm
Tensione di trazione massima (min(1;2*Gdin)	Sigma_t=	-1.00	N/mmq	Sigma_t=	-1.00	N/mmq
Fattore di forma primario	S1=	17.50		S1=	17.92	
	Fi(de)=	2.0790	rad	Fi(de)=	2.4336	rad
Modulo di compressibilità assiale	Ec=	947.51	N/mmq	Ec=	963.83	N/mmq
Rigidezza orizzontale equivalente (γ = D/te = 1)	**Ke=**	**1302**	**N/mm**	**Ke=**	**2855**	**N/mm**
Rigidezza verticale	**Kv=**	**767676**	**N/mm**	**Kv=**	**1794462**	**N/mm**

Verifiche statiche secondo EN 1337-3:2005							
Carico verticale massimo statico SLU	V(max)=	1811900	N	V(max)=	4463730	N	
Carico orizzontale massimo statico SLU	H(max)=	53960	N	H(max)=	116762	N	
Carico orizzontale statico a γ = D/te = 1:	H(γ=1)=	98960	N	H(γ=1)=	222660	N	
Spostamento statico totale	D=	36.56	mm	D=	35.72	mm	
Rotazione massima statica SLU	R (max)=	2.092E-02	rad	R (max)=	4.837E-03	rad	
	Fi(de)=	2.8973	rad	Fi(de)=	2.9827	rad	
Area ridotta efficace dell'isolatore	Ar=	52046	mmq	Ar=	130559	mmq	
1. Deformazione di taglio massima							
dovuta alla compressione:	Gamma_c=	2.1314		Gamma_c=	2.0446		
dovuta allo spostamento statico tot (< 1)	Gamma_s=	0.4810		Gamma_s=	0.4579		
dovuta alle rotazioni	Gamma_alfa=	2.3231		Gamma_alfa=	0.7849		
totale: (< 7)	Gamma_t=	4.9355		Gamma_t=	3.2874		
2. Spessore minimo lamiere di acciaio (≥ 2 mm)	ts(min)=	2.00	mm	ts(min)=	2.00	mm	
3. Rotazione limite:							
spostamento verticale massimo:	Dz=	2.161	mm	Dz=	2.266	mm	
spostamento dovuto alla rotazione massima	D_alfa=	1.953	mm	D_alfa=	0.693	mm	
Verifica: (Dz - D_alfa) >0	Dz - D_alfa=	0.208	mm	Dz - D_alfa=	1.572	mm	
4. Verifica di instabilità: Pmax < Plim							
pressione limite	Plim=	60.175	N/mmq	Plim=	92.187	N/mmq	
pressione massima: (< Plim)	Pmax=	34.814	N/mmq	Pmax=	34.189	N/mmq	
Pressione sulle sottostrutture							
Diametro efficace di ripartizione a 60° (< Z)	De=	350	mm	De=	500	mm	
Pressione massima SLU/SLC	P'max=	18.833	N/mmq	P'max=	22.734	N/mmq	
Pressione minima SLU/SLC	P'min=	3.749	N/mmq	P'min=	6.524	N/mmq	
Verifiche sismiche secondo OPCM 3274 e s.m. (Allegato 10.A)							
Sforzo normale massimo sull'isolatore allo SLC	V=	551420	N	V=	2143590	N	
Carico orizzontale massimo sismico SLC	Hs(max)=	102036	N	Hs(max)=	218159	N	
Carico orizzontale sismico a γ = D/te = 1:	H(γ=1)=	98960	N	H(γ=1)=	222660	N	
Spostamento sismico totale	Ds=	78.36	mm (< Dsp)	Ds=	76.20	mm (< Dsp)	
Rotazione massima sismica SLC	Rs (max)=	1.271E-02	rad	Rs (max)=	2.363E-03	rad	
	Fi(de)=	2.61305	rad	Fi(de)=	2.80128	rad	
Area ridotta efficace dell'isolatore	Ar=	41332	mmq	Ar=	114060	mmq	
Deformazioni di taglio dell'elastomero:							
dovuta alla compressione:	Gamma_c=	0.8168		Gamma_c=	1.1239		
dovuta allo spostamento sismico totale	Gamma_s=	1.0311		Gamma_s=	0.9769		
dovuta alle rotazioni	Gamma_alfa=	1.4111		Gamma_alfa=	0.3834		
Deformazione di taglio totale di progetto dell'elastomero:	Gamma_t=	3.2590		Gamma_t=	2.4842		
Carico assiale critico	Vcr=	3997237	N	Vcr=	16505870	N	
1. Tensione degli inserti in acciaio							
Tensione massimal amiere (<235 N/mmq)	Sigma_s=	69.374	N/mmq	Sigma_s=	97.726	N/mmq	
2. Deformazioni di taglio massime	Gamma_s=	1.0311		Gamma_s=	0.9769		
(< 7)	Gamma_t=	3.2590		Gamma_t=	2.4842		
3. Instabilità dell'isolatore (Vcr/2.5)	Vmax=	1598895	N	Vmax=	6602348	N	

Seguono i tabulati contenenti le reazioni massime e minime per ogni appoggio.

REAZIONI APPOGGI (ISOLATORI SISMICI ELASTOMERICI)

STATI LIMITE ULTIMI - STATICI

Tipo isolatore	Struttura Appoggio	No.	Load	Node	Axial (kN)	Shear-y (kN)	Shear-z (kN)	Shear-tot (kN)	Kh eq. (kN/mm)	Deform. (mm)	Rotazione (rad)
1	Spalla 1	185	GEN SLU Mobili(max)	77	-473.83	32.02	5.36	32.47	1.302	24.93	2.09E-02
1	Spalla 1	185	GEN SLU Vento(max)	77	-471.35	49.54	5.31	49.82	1.302	38.26	1.92E-02
1	Spalla 1	185	GEN SLU Frenamento(max)	77	-507.79	1.88	38.76	38.81	1.302	29.80	1.91E-02
1	Spalla 1	185	GEN SLU Termico(max)	77	-453.66	30.78	10.98	32.68	1.302	25.10	1.94E-02
1	Spalla 1	185	GEN SLU Mobili(min)	77	-1299.17	-32.68	-22.58	39.72	1.302	30.51	1.52E-02
1	Spalla 1	185	GEN SLU Vento(min)	77	-1081.84	-50.26	-19.47	53.90	1.302	41.39	1.51E-02
1	Spalla 1	185	GEN SLU Frenamento(min)	77	-1045.40	-2.60	-52.92	52.98	1.302	40.69	1.51E-02
1	Spalla 1	185	GEN SLU Termico(min)	77	-1099.53	-31.50	-25.14	40.30	1.302	30.95	1.48E-02
1	Spalla 1	186	GEN SLU Mobili(max)	79	-558.21	32.74	4.62	33.06	1.302	25.39	2.08E-02
1	Spalla 1	186	GEN SLU Vento(max)	79	-551.88	50.12	4.97	50.37	1.302	38.68	1.92E-02
1	Spalla 1	186	GEN SLU Frenamento(max)	79	-556.07	2.30	38.68	38.75	1.302	29.76	1.91E-02
1	Spalla 1	186	GEN SLU Termico(max)	79	-518.05	31.04	10.86	32.88	1.302	25.26	1.94E-02

1	Spalla 1	186	GEN SLU Mobili(min)	79	-1811.90	-32.29	-21.54	38.82	1.302	29.81	1.58E-02
1	Spalla 1	186	GEN SLU Vento(min)	79	-1436.09	-49.81	-18.72	53.21	1.302	40.87	1.55E-02
1	Spalla 1	186	GEN SLU Frenamento(min)	79	-1431.90	-1.99	-52.44	52.48	1.302	40.30	1.56E-02
1	Spalla 1	186	GEN SLU Termico(min)	79	-1469.92	-30.73	-24.61	39.37	1.302	30.24	1.53E-02
1	Spalla 1	187	GEN SLU Mobili(max)	81	-559.07	32.29	4.62	32.62	1.302	25.05	2.08E-02
1	Spalla 1	187	GEN SLU Vento(max)	81	-553.30	49.83	4.97	50.08	1.302	38.46	1.92E-02
1	Spalla 1	187	GEN SLU Frenamento(max)	81	-556.07	1.99	38.68	38.73	1.302	29.74	1.92E-02
1	Spalla 1	187	GEN SLU Termico(max)	81	-518.91	30.74	10.86	32.60	1.302	25.04	1.94E-02
1	Spalla 1	187	GEN SLU Mobili(min)	81	-1811.05	-32.75	-21.55	39.20	1.302	30.11	1.58E-02
1	Spalla 1	187	GEN SLU Vento(min)	81	-1434.67	-50.13	-18.73	53.51	1.302	41.10	1.55E-02
1	Spalla 1	187	GEN SLU Frenamento(min)	81	-1431.90	-2.30	-52.44	52.49	1.302	40.31	1.55E-02
1	Spalla 1	187	GEN SLU Termico(min)	81	-1469.06	-31.05	-24.62	39.63	1.302	30.43	1.53E-02
1	Spalla 1	188	GEN SLU Mobili(max)	83	-479.70	32.73	5.33	33.16	1.302	25.47	2.09E-02
1	Spalla 1	188	GEN SLU Vento(max)	83	-481.14	50.34	5.27	50.62	1.302	38.87	1.92E-02
1	Spalla 1	188	GEN SLU Frenamento(max)	83	-507.79	2.60	38.76	38.85	1.302	29.83	1.91E-02
1	Spalla 1	188	GEN SLU Termico(max)	83	-459.53	31.55	10.96	33.40	1.302	25.65	1.94E-02
1	Spalla 1	188	GEN SLU Mobili(min)	83	-1293.29	-32.07	-22.56	39.21	1.302	30.11	1.52E-02
1	Spalla 1	188	GEN SLU Vento(min)	83	-1072.05	-49.62	-19.43	53.29	1.302	40.92	1.51E-02
1	Spalla 1	188	GEN SLU Frenamento(min)	83	-1045.40	-1.88	-52.92	52.95	1.302	40.67	1.51E-02
1	Spalla 1	188	GEN SLU Termico(min)	83	-1093.66	-30.83	-25.11	39.76	1.302	30.54	1.49E-02
1	Spalla 2	190	GEN SLU Mobili(max)	78	-473.90	32.02	22.58	39.18	1.302	30.09	1.52E-02
1	Spalla 2	190	GEN SLU Vento(max)	78	-471.38	49.54	19.47	53.23	1.302	40.88	1.51E-02
1	Spalla 2	190	GEN SLU Frenamento(max)	78	-507.84	1.88	52.92	52.95	1.302	40.67	1.51E-02
1	Spalla 2	190	GEN SLU Termico(max)	78	-453.70	30.78	25.14	39.74	1.302	30.52	1.49E-02
1	Spalla 2	190	GEN SLU Mobili(min)	78	-1299.15	-32.68	-5.36	33.12	1.302	25.43	2.09E-02
1	Spalla 2	190	GEN SLU Vento(min)	78	-1081.86	-50.26	-5.31	50.54	1.302	38.81	1.92E-02
1	Spalla 2	190	GEN SLU Frenamento(min)	78	-1045.39	-2.60	-38.76	38.85	1.302	29.83	1.91E-02
1	Spalla 2	190	GEN SLU Termico(min)	78	-1099.54	-31.50	-10.98	33.36	1.302	25.62	1.94E-02
1	Spalla 2	191	GEN SLU Mobili(max)	80	-558.21	32.74	21.54	39.19	1.302	30.10	1.58E-02
1	Spalla 2	191	GEN SLU Vento(max)	80	-551.93	50.12	18.73	53.51	1.302	41.09	1.55E-02
1	Spalla 2	191	GEN SLU Frenamento(max)	80	-556.11	2.30	52.44	52.49	1.302	40.31	1.55E-02
1	Spalla 2	191	GEN SLU Termico(max)	80	-518.10	31.04	24.62	39.62	1.302	30.43	1.53E-02
1	Spalla 2	191	GEN SLU Mobili(min)	80	-1811.61	-32.29	-4.62	32.62	1.302	25.05	2.08E-02
1	Spalla 2	191	GEN SLU Vento(min)	80	-1435.92	-49.81	-4.97	50.06	1.302	38.44	1.92E-02
1	Spalla 2	191	GEN SLU Frenamento(min)	80	-1431.74	-1.99	-38.68	38.73	1.302	29.74	1.92E-02
1	Spalla 2	191	GEN SLU Termico(min)	80	-1469.75	-30.73	-10.86	32.59	1.302	25.03	1.94E-02
1	Spalla 2	192	GEN SLU Mobili(max)	82	-559.06	32.29	21.55	38.82	1.302	29.81	1.58E-02
1	Spalla 2	192	GEN SLU Vento(max)	82	-553.35	49.82	18.73	53.22	1.302	40.88	1.55E-02
1	Spalla 2	192	GEN SLU Frenamento(max)	82	-556.11	1.99	52.44	52.48	1.302	40.30	1.56E-02
1	Spalla 2	192	GEN SLU Termico(max)	82	-518.95	30.74	24.62	39.38	1.302	30.25	1.53E-02
1	Spalla 2	192	GEN SLU Mobili(min)	82	-1810.76	-32.74	-4.62	33.06	1.302	25.39	2.08E-02
1	Spalla 2	192	GEN SLU Vento(min)	82	-1434.50	-50.13	-4.97	50.38	1.302	38.69	1.92E-02
1	Spalla 2	192	GEN SLU Frenamento(min)	82	-1431.74	-2.30	-38.68	38.75	1.302	29.76	1.91E-02
1	Spalla 2	192	GEN SLU Termico(min)	82	-1468.90	-31.05	-10.86	32.89	1.302	25.26	1.94E-02
1	Spalla 2	193	GEN SLU Mobili(max)	84	-479.77	32.73	22.56	39.75	1.302	30.53	1.52E-02
1	Spalla 2	193	GEN SLU Vento(max)	84	-481.16	50.34	19.43	53.96	1.302	41.44	1.51E-02
1	Spalla 2	193	GEN SLU Frenamento(max)	84	-507.84	2.60	52.92	52.98	1.302	40.69	1.51E-02
1	Spalla 2	193	GEN SLU Termico(max)	84	-459.57	31.55	25.12	40.33	1.302	30.97	1.49E-02
1	Spalla 2	193	GEN SLU Mobili(min)	84	-1293.28	-32.07	-5.34	32.51	1.302	24.97	2.09E-02
1	Spalla 2	193	GEN SLU Vento(min)	84	-1072.07	-49.62	-5.27	49.90	1.302	38.32	1.92E-02
1	Spalla 2	193	GEN SLU Frenamento(min)	84	-1045.39	-1.88	-38.76	38.81	1.302	29.80	1.91E-02
1	Spalla 2	193	GEN SLU Termico(min)	84	-1093.67	-30.83	-10.96	32.72	1.302	25.13	1.94E-02
2	Pila 1	195	GEN SLU Mobili(max)	21	-1837.85	72.35	29.88	78.28	2.855	27.42	8.69E-04
2	Pila 1	195	GEN SLU Vento(max)	21	-1860.77	113.18	28.50	116.71	2.855	40.89	1.29E-03
2	Pila 1	195	GEN SLU Frenamento(max)	21	-1982.79	6.22	101.40	101.59	2.855	35.59	1.27E-03
2	Pila 1	195	GEN SLU Termico(max)	21	-1785.60	71.62	33.35	79.00	2.855	27.68	1.24E-03
2	Pila 1	195	GEN SLU Mobili(min)	21	-3643.35	-66.93	-4.21	67.06	2.855	23.49	4.84E-03
2	Pila 1	195	GEN SLU Vento(min)	21	-3144.38	-108.32	-1.03	108.32	2.855	37.95	4.35E-03
2	Pila 1	195	GEN SLU Frenamento(min)	21	-3022.36	-1.36	-73.93	73.94	2.855	25.90	4.32E-03
2	Pila 1	195	GEN SLU Termico(min)	21	-3219.55	-66.76	-5.87	67.02	2.855	23.48	4.45E-03
2	Pila 1	196	GEN SLU Mobili(max)	23	-2408.35	68.89	28.94	74.72	2.855	26.18	1.09E-03
2	Pila 1	196	GEN SLU Vento(max)	23	-2402.06	110.19	27.59	113.59	2.855	39.79	1.42E-03
2	Pila 1	196	GEN SLU Frenamento(max)	23	-2416.77	3.04	100.70	100.75	2.855	35.29	1.39E-03
2	Pila 1	196	GEN SLU Termico(max)	23	-2283.95	67.68	32.51	75.08	2.855	26.30	1.35E-03
2	Pila 1	196	GEN SLU Mobili(min)	23	-4460.62	-67.25	-2.65	67.30	2.855	23.58	4.57E-03
2	Pila 1	196	GEN SLU Vento(min)	23	-3741.51	-108.71	0.12	108.71	2.855	38.08	4.11E-03
2	Pila 1	196	GEN SLU Frenamento(min)	23	-3726.80	-1.57	-72.99	73.01	2.855	25.57	4.11E-03
2	Pila 1	196	GEN SLU Termico(min)	23	-3859.62	-66.20	-4.80	66.37	2.855	23.25	4.19E-03
2	Pila 1	197	GEN SLU Mobili(max)	885	-2405.24	67.26	28.94	73.22	2.855	25.65	1.24E-03
2	Pila 1	197	GEN SLU Vento(max)	885	-2396.87	108.74	27.59	112.19	2.855	39.30	1.51E-03
2	Pila 1	197	GEN SLU Frenamento(max)	885	-2416.77	1.57	100.70	100.71	2.855	35.28	1.45E-03
2	Pila 1	197	GEN SLU Termico(max)	885	-2280.84	66.21	32.51	73.76	2.855	25.84	1.44E-03
2	Pila 1	197	GEN SLU Mobili(min)	885	-4463.73	-68.90	-2.65	68.95	2.855	24.15	4.53E-03
2	Pila 1	197	GEN SLU Vento(min)	885	-3746.70	-110.21	0.12	110.21	2.855	38.61	4.08E-03
2	Pila 1	197	GEN SLU Frenamento(min)	885	-3726.80	-3.04	-72.99	73.05	2.855	25.59	4.09E-03
2	Pila 1	197	GEN SLU Termico(min)	885	-3862.73	-67.69	-4.80	67.86	2.855	23.77	4.16E-03
2	Pila 1	198	GEN SLU Mobili(max)	27	-1845.68	66.96	29.88	73.32	2.855	25.69	1.43E-03

2	Pila 1	198	GEN SLU Vento(max)	27	-1873.82	108.37	28.50	112.05	2.855	39.25	1.65E-03
2	Pila 1	198	GEN SLU Frenamento(max)	27	-1982.79	1.36	101.40	101.41	2.855	35.52	1.56E-03
2	Pila 1	198	GEN SLU Termico(max)	27	-1793.43	66.79	33.35	74.65	2.855	26.15	1.69E-03
2	Pila 1	198	GEN SLU Mobili(min)	27	-3635.52	-72.38	-4.21	72.50	2.855	25.40	4.70E-03
2	Pila 1	198	GEN SLU Vento(min)	27	-3131.33	-113.23	-1.03	113.23	2.855	39.67	4.22E-03
2	Pila 1	198	GEN SLU Frenamento(min)	27	-3022.36	-6.22	-73.93	74.19	2.855	25.99	4.23E-03
2	Pila 1	198	GEN SLU Termico(min)	27	-3211.72	-71.65	-5.87	71.89	2.855	25.18	4.30E-03
2	Pila 2	200	GEN SLU Mobili(max)	22	-1837.83	72.35	4.21	72.47	2.855	25.39	4.70E-03
2	Pila 2	200	GEN SLU Vento(max)	22	-1860.74	113.18	1.02	113.18	2.855	39.65	4.22E-03
2	Pila 2	200	GEN SLU Frenamento(max)	22	-1982.84	6.22	73.93	74.19	2.855	25.99	4.23E-03
2	Pila 2	200	GEN SLU Termico(max)	22	-1785.58	71.62	5.87	71.86	2.855	25.17	4.30E-03
2	Pila 2	200	GEN SLU Mobili(min)	22	-3643.38	-66.93	-29.88	73.30	2.855	25.68	1.44E-03
2	Pila 2	200	GEN SLU Vento(min)	22	-3144.43	-108.32	-28.50	112.01	2.855	39.24	1.65E-03
2	Pila 2	200	GEN SLU Frenamento(min)	22	-3022.33	-1.36	-101.41	101.42	2.855	35.53	1.56E-03
2	Pila 2	200	GEN SLU Termico(min)	22	-3219.58	-66.76	-33.35	74.63	2.855	26.14	1.69E-03
2	Pila 2	201	GEN SLU Mobili(max)	24	-2408.36	68.89	2.65	68.94	2.855	24.15	4.54E-03
2	Pila 2	201	GEN SLU Vento(max)	24	-2402.07	110.19	-0.12	110.19	2.855	38.60	4.08E-03
2	Pila 2	201	GEN SLU Frenamento(max)	24	-2416.75	3.04	72.99	73.05	2.855	25.59	4.09E-03
2	Pila 2	201	GEN SLU Termico(max)	24	-2283.96	67.68	4.80	67.85	2.855	23.77	4.16E-03
2	Pila 2	201	GEN SLU Mobili(min)	24	-4460.60	-67.25	-28.94	73.21	2.855	25.65	1.24E-03
2	Pila 2	201	GEN SLU Vento(min)	24	-3741.48	-108.71	-27.59	112.16	2.855	39.29	1.51E-03
2	Pila 2	201	GEN SLU Frenamento(min)	24	-3726.80	-1.57	-100.70	100.71	2.855	35.28	1.45E-03
2	Pila 2	201	GEN SLU Termico(min)	24	-3859.59	-66.20	-32.51	73.75	2.855	25.84	1.45E-03
2	Pila 2	202	GEN SLU Mobili(max)	886	-2405.24	67.26	2.65	67.31	2.855	23.58	4.57E-03
2	Pila 2	202	GEN SLU Vento(max)	886	-2396.86	108.74	-0.12	108.74	2.855	38.09	4.11E-03
2	Pila 2	202	GEN SLU Frenamento(max)	886	-2416.75	1.57	72.99	73.01	2.855	25.57	4.11E-03
2	Pila 2	202	GEN SLU Termico(max)	886	-2280.84	66.21	4.80	66.38	2.855	23.25	4.19E-03
2	Pila 2	202	GEN SLU Mobili(min)	886	-4463.73	-68.90	-28.94	74.73	2.855	26.18	1.09E-03
2	Pila 2	202	GEN SLU Vento(min)	886	-3746.70	-110.21	-27.59	113.61	2.855	39.80	1.42E-03
2	Pila 2	202	GEN SLU Frenamento(min)	886	-3726.80	-3.04	-100.70	100.75	2.855	35.29	1.39E-03
2	Pila 2	202	GEN SLU Termico(min)	886	-3862.72	-67.69	-32.51	75.09	2.855	26.31	1.35E-03
2	Pila 2	203	GEN SLU Mobili(max)	28	-1845.66	66.96	4.21	67.09	2.855	23.50	4.84E-03
2	Pila 2	203	GEN SLU Vento(max)	28	-1873.78	108.37	1.02	108.37	2.855	37.96	4.34E-03
2	Pila 2	203	GEN SLU Frenamento(max)	28	-1982.84	1.36	73.93	73.94	2.855	25.90	4.32E-03
2	Pila 2	203	GEN SLU Termico(max)	28	-1793.41	66.79	5.87	67.05	2.855	23.49	4.45E-03
2	Pila 2	203	GEN SLU Mobili(min)	28	-3635.56	-72.38	-29.88	78.31	2.855	27.43	8.67E-04
2	Pila 2	203	GEN SLU Vento(min)	28	-3131.38	-113.23	-28.50	116.76	2.855	40.90	1.29E-03
2	Pila 2	203	GEN SLU Frenamento(min)	28	-3022.33	-6.22	-101.41	101.60	2.855	35.59	1.27E-03
2	Pila 2	203	GEN SLU Termico(min)	28	-3211.75	-71.65	-33.35	79.03	2.855	27.69	1.24E-03

		Axial (kN)	Shear-y (kN)	Shear-z (kN)	Shear-tot (kN)	Kh eq. (kN/mm)	Deform. (mm)	Rotazione (rad)
SFORZI MASSIMI:	**Spalle**	**-453.66**	**50.34**	**52.92**	**53.96**	**1.302**	**41.44**	**2.09E-02**
	Pile	**-1785.58**	**113.18**	**101.40**	**116.76**	**2.855**	**40.90**	**4.84E-03**
SFORZI MINIMI:	**Spalle**	**-1811.90**	**-50.26**	**-52.92**				
	Pile	**-4463.73**	**-113.23**	**-101.41**				

STATI LIMITE ULTIMI - SISMICI (SLC)

Tipo isolatore	Struttura Appoggio	No.	Load	Node	Axial (kN)	Shear-y (kN)	Shear-z (kN)	Shear-tot (kN)	Kh eq. (kN/mm)	Deform. (mm)	Rotazione (rad)
1	Spalla 1	185	GEN SLC Long(max)	77	-386.72	25.99	91.73	95.34	1.302	73.22	1.24E-02
1	Spalla 1	185	GEN SLC Trasv(max)	77	-360.73	86.54	29.99	91.59	1.302	70.34	1.24E-02
1	Spalla 1	185	GEN SLC Vert(max)	77	-368.06	25.99	30.03	39.71	1.302	30.50	1.25E-02
1	Spalla 1	185	GEN SLC Long(min)	77	-525.43	-26.59	-98.51	102.04	1.302	78.36	1.16E-02
1	Spalla 1	185	GEN SLC Trasv(min)	77	-551.42	-87.15	-36.77	94.59	1.302	72.64	1.16E-02
1	Spalla 1	185	GEN SLC Vert(min)	77	-544.09	-26.60	-36.82	45.42	1.302	34.88	1.14E-02
1	Spalla 1	186	GEN SLC Long(max)	79	-381.04	25.97	91.77	95.37	1.302	73.25	1.25E-02
1	Spalla 1	186	GEN SLC Trasv(max)	79	-387.23	86.63	29.78	91.61	1.302	70.35	1.25E-02
1	Spalla 1	186	GEN SLC Vert(max)	79	-364.94	25.97	30.06	39.72	1.302	30.51	1.27E-02
1	Spalla 1	186	GEN SLC Long(min)	79	-503.25	-26.14	-98.50	101.91	1.302	78.27	1.18E-02
1	Spalla 1	186	GEN SLC Trasv(min)	79	-497.05	-86.80	-36.51	94.17	1.302	72.32	1.18E-02
1	Spalla 1	186	GEN SLC Vert(min)	79	-519.35	-26.14	-36.79	45.13	1.302	34.66	1.17E-02
1	Spalla 1	187	GEN SLC Long(max)	81	-381.04	26.14	91.77	95.42	1.302	73.28	1.25E-02
1	Spalla 1	187	GEN SLC Trasv(max)	81	-387.23	86.80	29.78	91.77	1.302	70.48	1.25E-02
1	Spalla 1	187	GEN SLC Vert(max)	81	-364.94	26.14	30.06	39.84	1.302	30.59	1.27E-02
1	Spalla 1	187	GEN SLC Long(min)	81	-503.25	-25.97	-98.50	101.87	1.302	78.23	1.18E-02
1	Spalla 1	187	GEN SLC Trasv(min)	81	-497.05	-86.63	-36.51	94.01	1.302	72.20	1.18E-02
1	Spalla 1	187	GEN SLC Vert(min)	81	-519.34	-25.97	-36.79	45.03	1.302	34.58	1.17E-02
1	Spalla 1	188	GEN SLC Long(max)	83	-386.73	26.59	91.73	95.51	1.302	73.35	1.24E-02
1	Spalla 1	188	GEN SLC Trasv(max)	83	-360.74	87.15	29.99	92.17	1.302	70.78	1.24E-02
1	Spalla 1	188	GEN SLC Vert(max)	83	-368.07	26.60	30.03	40.12	1.302	30.81	1.25E-02
1	Spalla 1	188	GEN SLC Long(min)	83	-525.43	-25.99	-98.51	101.88	1.302	78.24	1.16E-02

1	Spalla 1	188	GEN SLC Trasv(min)	83	-551.42	-86.54	-36.77	94.03	1.302	72.21	1.16E-02
1	Spalla 1	188	GEN SLC Vert(min)	83	-544.08	-25.99	-36.82	45.07	1.302	34.61	1.14E-02
1	Spalla 2	190	GEN SLC Long(max)	78	-386.73	25.99	98.51	101.88	1.302	78.24	1.16E-02
1	Spalla 2	190	GEN SLC Trasv(max)	78	-360.74	86.54	36.77	94.03	1.302	72.21	1.16E-02
1	Spalla 2	190	GEN SLC Vert(max)	78	-368.07	25.99	36.82	45.07	1.302	34.61	1.14E-02
1	Spalla 2	190	GEN SLC Long(min)	78	-525.43	-26.59	-91.73	95.51	1.302	73.35	1.24E-02
1	Spalla 2	190	GEN SLC Trasv(min)	78	-551.42	-87.15	-29.99	92.17	1.302	70.78	1.24E-02
1	Spalla 2	190	GEN SLC Vert(min)	78	-544.08	-26.60	-30.03	40.12	1.302	30.81	1.25E-02
1	Spalla 2	191	GEN SLC Long(max)	80	-381.04	25.97	98.50	101.87	1.302	78.23	1.18E-02
1	Spalla 2	191	GEN SLC Trasv(max)	80	-387.23	86.63	36.51	94.01	1.302	72.20	1.18E-02
1	Spalla 2	191	GEN SLC Vert(max)	80	-364.94	25.97	36.79	45.03	1.302	34.58	1.17E-02
1	Spalla 2	191	GEN SLC Long(min)	80	-503.25	-26.14	-91.77	95.42	1.302	73.28	1.25E-02
1	Spalla 2	191	GEN SLC Trasv(min)	80	-497.05	-86.80	-29.78	91.77	1.302	70.48	1.25E-02
1	Spalla 2	191	GEN SLC Vert(min)	80	-519.34	-26.14	-30.06	39.84	1.302	30.59	1.27E-02
1	Spalla 2	192	GEN SLC Long(max)	82	-381.04	26.14	98.50	101.91	1.302	78.27	1.18E-02
1	Spalla 2	192	GEN SLC Trasv(max)	82	-387.23	86.80	36.51	94.17	1.302	72.32	1.18E-02
1	Spalla 2	192	GEN SLC Vert(max)	82	-364.94	26.14	36.79	45.13	1.302	34.66	1.17E-02
1	Spalla 2	192	GEN SLC Long(min)	82	-503.25	-25.97	-91.77	95.37	1.302	73.25	1.25E-02
1	Spalla 2	192	GEN SLC Trasv(min)	82	-497.05	-86.63	-29.78	91.61	1.302	70.35	1.25E-02
1	Spalla 2	192	GEN SLC Vert(min)	82	-519.35	-25.97	-30.06	39.72	1.302	30.51	1.27E-02
1	Spalla 2	193	GEN SLC Long(max)	84	-386.72	26.59	98.51	102.04	1.302	78.36	1.16E-02
1	Spalla 2	193	GEN SLC Trasv(max)	84	-360.73	87.15	36.77	94.59	1.302	72.64	1.16E-02
1	Spalla 2	193	GEN SLC Vert(max)	84	-368.06	26.60	36.82	45.42	1.302	34.88	1.14E-02
1	Spalla 2	193	GEN SLC Long(min)	84	-525.43	-25.99	-91.73	95.34	1.302	73.22	1.24E-02
1	Spalla 2	193	GEN SLC Trasv(min)	84	-551.42	-86.54	-29.99	91.59	1.302	70.34	1.24E-02
1	Spalla 2	193	GEN SLC Vert(min)	84	-544.09	-25.99	-30.03	39.71	1.302	30.50	1.25E-02
2	Pila 1	195	GEN SLC Long(max)	21	-1404.85	60.99	209.46	218.16	2.855	76.42	1.93E-03
2	Pila 1	195	GEN SLC Trasv(max)	21	-1280.92	196.50	75.49	210.50	2.855	73.74	1.98E-03
2	Pila 1	195	GEN SLC Vert(max)	21	-1339.52	61.03	75.30	96.93	2.855	33.95	1.98E-03
2	Pila 1	195	GEN SLC Long(min)	21	-1838.87	-57.78	-185.28	194.08	2.855	67.99	2.36E-03
2	Pila 1	195	GEN SLC Trasv(min)	21	-1962.80	-193.30	-51.31	199.99	2.855	70.06	2.36E-03
2	Pila 1	195	GEN SLC Vert(min)	21	-1904.20	-57.83	-51.12	77.19	2.855	27.04	2.31E-03
2	Pila 1	196	GEN SLC Long(max)	23	-1721.99	59.04	209.31	217.48	2.855	76.18	1.91E-03
2	Pila 1	196	GEN SLC Trasv(max)	23	-1711.16	194.78	75.06	208.74	2.855	73.12	1.98E-03
2	Pila 1	196	GEN SLC Vert(max)	23	-1648.71	59.05	75.13	95.56	2.855	33.48	1.96E-03
2	Pila 1	196	GEN SLC Long(min)	23	-2070.31	-58.05	-185.23	194.11	2.855	68.00	2.28E-03
2	Pila 1	196	GEN SLC Trasv(min)	23	-2081.14	-193.79	-50.99	200.39	2.855	70.20	2.23E-03
2	Pila 1	196	GEN SLC Vert(min)	23	-2143.59	-58.06	-51.06	77.32	2.855	27.09	2.22E-03
2	Pila 1	197	GEN SLC Long(max)	885	-1721.99	58.05	209.31	217.21	2.855	76.09	1.92E-03
2	Pila 1	197	GEN SLC Trasv(max)	885	-1711.16	193.79	75.06	207.82	2.855	72.80	1.99E-03
2	Pila 1	197	GEN SLC Vert(max)	885	-1648.71	58.06	75.13	94.95	2.855	33.26	1.97E-03
2	Pila 1	197	GEN SLC Long(min)	885	-2070.31	-59.04	-185.23	194.41	2.855	68.10	2.27E-03
2	Pila 1	197	GEN SLC Trasv(min)	885	-2081.14	-194.78	-50.99	201.34	2.855	70.53	2.22E-03
2	Pila 1	197	GEN SLC Vert(min)	885	-2143.58	-59.05	-51.06	78.06	2.855	27.35	2.22E-03
2	Pila 1	198	GEN SLC Long(max)	27	-1404.86	57.78	209.46	217.28	2.855	76.12	2.00E-03
2	Pila 1	198	GEN SLC Trasv(max)	27	-1280.93	193.30	75.49	207.52	2.855	72.70	2.10E-03
2	Pila 1	198	GEN SLC Vert(max)	27	-1339.53	57.83	75.30	94.94	2.855	33.26	2.06E-03
2	Pila 1	198	GEN SLC Long(min)	27	-1838.86	-60.99	-185.28	195.06	2.855	68.33	2.30E-03
2	Pila 1	198	GEN SLC Trasv(min)	27	-1962.80	-196.50	-51.31	203.09	2.855	71.14	2.26E-03
2	Pila 1	198	GEN SLC Vert(min)	27	-1904.19	-61.03	-51.12	79.61	2.855	27.89	2.25E-03
2	Pila 2	200	GEN SLC Long(max)	22	-1404.86	60.99	185.28	195.06	2.855	68.33	2.30E-03
2	Pila 2	200	GEN SLC Trasv(max)	22	-1280.92	196.50	51.31	203.09	2.855	71.14	2.26E-03
2	Pila 2	200	GEN SLC Vert(max)	22	-1339.52	61.03	51.12	79.61	2.855	27.89	2.25E-03
2	Pila 2	200	GEN SLC Long(min)	22	-1838.86	-57.78	-209.46	217.28	2.855	76.12	2.00E-03
2	Pila 2	200	GEN SLC Trasv(min)	22	-1962.80	-193.30	-75.49	207.52	2.855	72.70	2.10E-03
2	Pila 2	200	GEN SLC Vert(min)	22	-1904.20	-57.83	-75.30	94.94	2.855	33.26	2.06E-03
2	Pila 2	201	GEN SLC Long(max)	24	-1721.99	59.04	185.23	194.41	2.855	68.10	2.27E-03
2	Pila 2	201	GEN SLC Trasv(max)	24	-1711.15	194.78	50.99	201.34	2.855	70.53	2.22E-03
2	Pila 2	201	GEN SLC Vert(max)	24	-1648.71	59.05	51.06	78.06	2.855	27.35	2.22E-03
2	Pila 2	201	GEN SLC Long(min)	24	-2070.31	-58.05	-209.31	217.21	2.855	76.09	1.92E-03
2	Pila 2	201	GEN SLC Trasv(min)	24	-2081.14	-193.79	-75.06	207.82	2.855	72.80	1.99E-03
2	Pila 2	201	GEN SLC Vert(min)	24	-2143.59	-58.06	-75.13	94.95	2.855	33.26	1.97E-03
2	Pila 2	202	GEN SLC Long(max)	886	-1721.99	58.05	185.23	194.11	2.855	68.00	2.28E-03
2	Pila 2	202	GEN SLC Trasv(max)	886	-1711.16	193.79	50.99	200.39	2.855	70.20	2.23E-03
2	Pila 2	202	GEN SLC Vert(max)	886	-1648.72	58.06	51.06	77.32	2.855	27.09	2.22E-03
2	Pila 2	202	GEN SLC Long(min)	886	-2070.31	-59.04	-209.31	217.48	2.855	76.18	1.91E-03
2	Pila 2	202	GEN SLC Trasv(min)	886	-2081.13	-194.78	-75.06	208.74	2.855	73.12	1.98E-03
2	Pila 2	202	GEN SLC Vert(min)	886	-2143.58	-59.05	-75.13	95.56	2.855	33.48	1.96E-03
2	Pila 2	203	GEN SLC Long(max)	28	-1404.85	57.78	185.28	194.08	2.855	67.99	2.36E-03
2	Pila 2	203	GEN SLC Trasv(max)	28	-1280.93	193.30	51.31	199.99	2.855	70.06	2.36E-03
2	Pila 2	203	GEN SLC Vert(max)	28	-1339.53	57.83	51.12	77.19	2.855	27.04	2.31E-03
2	Pila 2	203	GEN SLC Long(min)	28	-1838.87	-60.99	-209.46	218.16	2.855	76.42	1.93E-03
2	Pila 2	203	GEN SLC Trasv(min)	28	-1962.79	-196.50	-75.49	210.50	2.855	73.74	1.98E-03
2	Pila 2	203	GEN SLC Vert(min)	28	-1904.20	-61.03	-75.30	96.93	2.855	33.95	1.98E-03

					Axial (kN)	**Shear-y (kN)**	**Shear-z (kN)**	**Shear-tot (kN)**	**Kh eq. (kN/mm)**	**Deform. (mm)**	**Rotazione (rad)**

SFORZI MASSIMI:	**Spalle**	**-360.73**	**87.15**	**98.51**	**102.04**	**1.302**	**78.36**	**1.27E-02**
	Pile	**-1280.92**	**196.50**	**209.46**	**218.16**	**2.855**	**76.42**	**2.36E-03**
SFORZI MINIMI:	**Spalle**	**-551.42**	**-87.15**	**-98.51**				
	Pile	**-2143.59**	**-196.50**	**-209.46**				

STATI LIMITE ULTIMI - SISMICI (SLV)

Tipo isolatore	Struttura Appoggio	No.	Load	Node	Axial (kN)	Shear-y (kN)	Shear-z (kN)	Shear-tot (kN)	Kh eq. (kN/mm)	Deform. (mm)	Rotazione (rad)
1	Spalla 1	185	GEN SLV Long(max)	77	-395.15	20.23	71.99	74.78	1.302	57.43	1.23E-02
1	Spalla 1	185	GEN SLV Trasv(max)	77	-374.92	67.37	23.92	71.49	1.302	54.90	1.24E-02
1	Spalla 1	185	GEN SLV Vert(max)	77	-382.56	20.24	23.93	31.34	1.302	24.07	1.24E-02
1	Spalla 1	185	GEN SLV Long(min)	77	-517.00	-20.84	-78.77	81.48	1.302	62.58	1.16E-02
1	Spalla 1	185	GEN SLV Trasv(min)	77	-537.23	-67.98	-30.71	74.59	1.302	57.29	1.16E-02
1	Spalla 1	185	GEN SLV Vert(min)	77	-529.60	-20.84	-30.71	37.11	1.302	28.50	1.15E-02
1	Spalla 1	186	GEN SLV Long(max)	79	-386.78	20.21	72.06	74.84	1.302	57.48	1.25E-02
1	Spalla 1	186	GEN SLV Trasv(max)	79	-391.61	67.43	23.79	71.50	1.302	54.91	1.25E-02
1	Spalla 1	186	GEN SLV Vert(max)	79	-376.09	20.21	23.98	31.36	1.302	24.08	1.26E-02
1	Spalla 1	186	GEN SLV Long(min)	79	-497.50	-20.38	-78.79	81.38	1.302	62.50	1.19E-02
1	Spalla 1	186	GEN SLV Trasv(min)	79	-492.67	-67.60	-30.52	74.17	1.302	56.96	1.19E-02
1	Spalla 1	186	GEN SLV Vert(min)	79	-508.20	-20.38	-30.71	36.86	1.302	28.31	1.17E-02
1	Spalla 1	187	GEN SLV Long(max)	81	-386.78	20.38	72.06	74.89	1.302	57.51	1.25E-02
1	Spalla 1	187	GEN SLV Trasv(max)	81	-391.61	67.60	23.79	71.66	1.302	55.04	1.25E-02
1	Spalla 1	187	GEN SLV Vert(max)	81	-376.09	20.38	23.98	31.47	1.302	24.17	1.26E-02
1	Spalla 1	187	GEN SLV Long(min)	81	-497.50	-20.21	-78.79	81.34	1.302	62.47	1.19E-02
1	Spalla 1	187	GEN SLV Trasv(min)	81	-492.67	-67.43	-30.52	74.02	1.302	56.84	1.19E-02
1	Spalla 1	187	GEN SLV Vert(min)	81	-508.19	-20.21	-30.71	36.76	1.302	28.23	1.17E-02
1	Spalla 1	188	GEN SLV Long(max)	83	-395.15	20.84	71.99	74.95	1.302	57.56	1.23E-02
1	Spalla 1	188	GEN SLV Trasv(max)	83	-374.92	67.98	23.92	72.07	1.302	55.35	1.23E-02
1	Spalla 1	188	GEN SLV Vert(max)	83	-382.57	20.84	23.93	31.73	1.302	24.37	1.24E-02
1	Spalla 1	188	GEN SLV Long(min)	83	-517.00	-20.23	-78.77	81.33	1.302	62.46	1.16E-02
1	Spalla 1	188	GEN SLV Trasv(min)	83	-537.23	-67.37	-30.71	74.04	1.302	56.86	1.16E-02
1	Spalla 1	188	GEN SLV Vert(min)	83	-529.59	-20.24	-30.71	36.78	1.302	28.25	1.15E-02
1	Spalla 2	190	GEN SLV Long(max)	78	-395.15	20.23	78.77	81.33	1.302	62.46	1.16E-02
1	Spalla 2	190	GEN SLV Trasv(max)	78	-374.92	67.37	30.71	74.04	1.302	56.86	1.16E-02
1	Spalla 2	190	GEN SLV Vert(max)	78	-382.56	20.24	30.71	36.78	1.302	28.25	1.15E-02
1	Spalla 2	190	GEN SLV Long(min)	78	-517.00	-20.84	-71.99	74.95	1.302	57.56	1.23E-02
1	Spalla 2	190	GEN SLV Trasv(min)	78	-537.23	-67.98	-23.92	72.07	1.302	55.35	1.23E-02
1	Spalla 2	190	GEN SLV Vert(min)	78	-529.59	-20.84	-23.93	31.73	1.302	24.37	1.24E-02
1	Spalla 2	191	GEN SLV Long(max)	80	-386.78	20.21	78.79	81.34	1.302	62.47	1.19E-02
1	Spalla 2	191	GEN SLV Trasv(max)	80	-391.61	67.43	30.52	74.02	1.302	56.84	1.19E-02
1	Spalla 2	191	GEN SLV Vert(max)	80	-376.09	20.21	30.71	36.76	1.302	28.23	1.17E-02
1	Spalla 2	191	GEN SLV Long(min)	80	-497.50	-20.38	-72.06	74.89	1.302	57.51	1.25E-02
1	Spalla 2	191	GEN SLV Trasv(min)	80	-492.67	-67.60	-23.79	71.66	1.302	55.04	1.25E-02
1	Spalla 2	191	GEN SLV Vert(min)	80	-508.20	-20.38	-23.98	31.47	1.302	24.17	1.26E-02
1	Spalla 2	192	GEN SLV Long(max)	82	-386.78	20.38	78.79	81.38	1.302	62.50	1.19E-02
1	Spalla 2	192	GEN SLV Trasv(max)	82	-391.61	67.60	30.52	74.17	1.302	56.96	1.19E-02
1	Spalla 2	192	GEN SLV Vert(max)	82	-376.09	20.38	30.71	36.86	1.302	28.31	1.17E-02
1	Spalla 2	192	GEN SLV Long(min)	82	-497.50	-20.21	-72.06	74.84	1.302	57.48	1.25E-02
1	Spalla 2	192	GEN SLV Trasv(min)	82	-492.67	-67.43	-23.79	71.50	1.302	54.91	1.25E-02
1	Spalla 2	192	GEN SLV Vert(min)	82	-508.20	-20.21	-23.98	31.36	1.302	24.08	1.26E-02
1	Spalla 2	193	GEN SLV Long(max)	84	-395.15	20.84	78.77	81.48	1.302	62.58	1.16E-02
1	Spalla 2	193	GEN SLV Trasv(max)	84	-374.92	67.98	30.71	74.59	1.302	57.29	1.16E-02
1	Spalla 2	193	GEN SLV Vert(max)	84	-382.56	20.84	30.71	37.11	1.302	28.50	1.15E-02
1	Spalla 2	193	GEN SLV Long(min)	84	-517.00	-20.23	-71.99	74.78	1.302	57.43	1.23E-02
1	Spalla 2	193	GEN SLV Trasv(min)	84	-537.23	-67.37	-23.92	71.49	1.302	54.90	1.24E-02
1	Spalla 2	193	GEN SLV Vert(min)	84	-529.60	-20.24	-23.93	31.34	1.302	24.07	1.24E-02
2	Pila 1	195	GEN SLV Long(max)	21	-1426.45	48.11	166.88	173.68	2.855	60.84	1.95E-03
2	Pila 1	195	GEN SLV Trasv(max)	21	-1329.98	153.61	62.59	165.87	2.855	58.11	1.99E-03
2	Pila 1	195	GEN SLV Vert(max)	21	-1380.80	48.14	62.42	78.83	2.855	27.61	1.99E-03
2	Pila 1	195	GEN SLV Long(min)	21	-1817.27	-44.91	-142.70	149.60	2.855	52.41	2.34E-03
2	Pila 1	195	GEN SLV Trasv(min)	21	-1913.74	-150.41	-38.41	155.24	2.855	54.38	2.33E-03
2	Pila 1	195	GEN SLV Vert(min)	21	-1862.92	-44.94	-38.24	59.01	2.855	20.67	2.30E-03
2	Pila 1	196	GEN SLV Long(max)	23	-1734.35	46.15	166.75	173.02	2.855	60.61	1.93E-03
2	Pila 1	196	GEN SLV Trasv(max)	23	-1725.93	151.82	62.24	164.08	2.855	57.48	1.98E-03
2	Pila 1	196	GEN SLV Vert(max)	23	-1683.19	46.16	62.28	77.52	2.855	27.16	1.97E-03
2	Pila 1	196	GEN SLV Long(min)	23	-2057.95	-45.16	-142.67	149.65	2.855	52.42	2.25E-03
2	Pila 1	196	GEN SLV Trasv(min)	23	-2066.37	-150.83	-38.17	155.58	2.855	54.50	2.22E-03
2	Pila 1	196	GEN SLV Vert(min)	23	-2109.11	-45.17	-38.21	59.16	2.855	20.73	2.21E-03
2	Pila 1	197	GEN SLV Long(max)	885	-1734.35	45.16	166.75	172.76	2.855	60.52	1.94E-03
2	Pila 1	197	GEN SLV Trasv(max)	885	-1725.93	150.83	62.24	163.17	2.855	57.16	2.00E-03
2	Pila 1	197	GEN SLV Vert(max)	885	-1683.19	45.17	62.28	76.94	2.855	26.95	1.98E-03
2	Pila 1	197	GEN SLV Long(min)	885	-2057.95	-46.15	-142.67	149.95	2.855	52.53	2.25E-03
2	Pila 1	197	GEN SLV Trasv(min)	885	-2066.37	-151.82	-38.17	156.54	2.855	54.84	2.20E-03
2	Pila 1	197	GEN SLV Vert(min)	885	-2109.11	-46.16	-38.21	59.92	2.855	20.99	2.20E-03
2	Pila 1	198	GEN SLV Long(max)	27	-1426.45	44.91	166.88	172.82	2.855	60.54	2.02E-03

2	Pila 1	198	GEN SLV Trasv(max)	27	-1329.98	150.41	62.59	162.91	2.855	57.07	2.10E-03
2	Pila 1	198	GEN SLV Vert(max)	27	-1380.80	44.94	62.42	76.91	2.855	26.94	2.06E-03
2	Pila 1	198	GEN SLV Long(min)	27	-1817.27	-48.11	-142.70	150.59	2.855	52.75	2.28E-03
2	Pila 1	198	GEN SLV Trasv(min)	27	-1913.74	-153.61	-38.41	158.34	2.855	55.47	2.24E-03
2	Pila 1	198	GEN SLV Vert(min)	27	-1862.92	-48.14	-38.24	61.48	2.855	21.54	2.23E-03
2	Pila 2	200	GEN SLV Long(max)	22	-1426.45	48.11	142.70	150.59	2.855	52.75	2.28E-03
2	Pila 2	200	GEN SLV Trasv(max)	22	-1329.98	153.61	38.41	158.34	2.855	55.47	2.24E-03
2	Pila 2	200	GEN SLV Vert(max)	22	-1380.80	48.14	38.24	61.48	2.855	21.54	2.23E-03
2	Pila 2	200	GEN SLV Long(min)	22	-1817.27	-44.91	-166.88	172.82	2.855	60.54	2.02E-03
2	Pila 2	200	GEN SLV Trasv(min)	22	-1913.74	-150.41	-62.59	162.91	2.855	57.07	2.10E-03
2	Pila 2	200	GEN SLV Vert(min)	22	-1862.92	-44.94	-62.42	76.91	2.855	26.94	2.06E-03
2	Pila 2	201	GEN SLV Long(max)	24	-1734.35	46.15	142.67	149.95	2.855	52.53	2.25E-03
2	Pila 2	201	GEN SLV Trasv(max)	24	-1725.93	151.82	38.17	156.54	2.855	54.84	2.20E-03
2	Pila 2	201	GEN SLV Vert(max)	24	-1683.19	46.16	38.21	59.92	2.855	20.99	2.20E-03
2	Pila 2	201	GEN SLV Long(min)	24	-2057.95	-45.16	-166.75	172.76	2.855	60.52	1.94E-03
2	Pila 2	201	GEN SLV Trasv(min)	24	-2066.37	-150.83	-62.24	163.17	2.855	57.16	2.00E-03
2	Pila 2	201	GEN SLV Vert(min)	24	-2109.11	-45.17	-62.28	76.94	2.855	26.95	1.98E-03
2	Pila 2	202	GEN SLV Long(max)	886	-1734.35	45.16	142.67	149.65	2.855	52.42	2.25E-03
2	Pila 2	202	GEN SLV Trasv(max)	886	-1725.93	150.83	38.17	155.58	2.855	54.50	2.22E-03
2	Pila 2	202	GEN SLV Vert(max)	886	-1683.19	45.17	38.21	59.16	2.855	20.73	2.21E-03
2	Pila 2	202	GEN SLV Long(min)	886	-2057.95	-46.15	-166.75	173.02	2.855	60.61	1.93E-03
2	Pila 2	202	GEN SLV Trasv(min)	886	-2066.36	-151.82	-62.24	164.08	2.855	57.48	1.98E-03
2	Pila 2	202	GEN SLV Vert(min)	886	-2109.11	-46.16	-62.28	77.52	2.855	27.16	1.97E-03
2	Pila 2	203	GEN SLV Long(max)	28	-1426.45	44.91	142.70	149.60	2.855	52.41	2.34E-03
2	Pila 2	203	GEN SLV Trasv(max)	28	-1329.98	150.41	38.41	155.24	2.855	54.38	2.33E-03
2	Pila 2	203	GEN SLV Vert(max)	28	-1380.80	44.94	38.24	59.01	2.855	20.67	2.30E-03
2	Pila 2	203	GEN SLV Long(min)	28	-1817.27	-48.11	-166.88	173.68	2.855	60.84	1.95E-03
2	Pila 2	203	GEN SLV Trasv(min)	28	-1913.74	-153.61	-62.59	165.87	2.855	58.11	1.99E-03
2	Pila 2	203	GEN SLV Vert(min)	28	-1862.92	-48.14	-62.42	78.83	2.855	27.61	1.99E-03

		Axial (kN)	Shear-y (kN)	Shear-z (kN)	Shear-tot (kN)	Kh eq. (kN/mm)	Deform. (mm)	Rotazione (rad)
SFORZI MASSIMI:	**Spalle**	**-374.92**	**67.98**	**78.79**	**81.48**	**1.302**	**62.58**	**1.26E-02**
	Pile	**-1329.98**	**153.61**	**166.88**	**173.68**	**2.855**	**60.84**	**2.34E-03**
SFORZI MINIMI:	**Spalle**	**-537.23**	**-67.98**	**-78.79**				
	Pile	**-2109.11**	**-153.61**	**-166.88**				

STATI LIMITE DI ESERCIZIO - COMBINAZIONI CARATTERISTICHE (RARE)

Tipo isolatore	Struttura Appoggio	No.	Load	Node	Axial (kN)	Shear-y (kN)	Shear-z (kN)	Shear-tot (kN)	Kh eq. (kN/mm)	Deform. (mm)	Rotazione (rad)
1	Spalla 1	185	GEN RARA Mobili(max)	77	-326.22	21.66	5.47	22.34	1.302	17.16	1.57E-02
1	Spalla 1	185	GEN RARA Vento(max)	77	-325.56	33.22	5.42	33.66	1.302	25.85	1.45E-02
1	Spalla 1	185	GEN RARA Frenam(max)	77	-349.61	1.45	30.23	30.26	1.302	23.24	1.44E-02
1	Spalla 1	185	GEN RARA Termico(max)	77	-308.17	20.77	10.17	23.13	1.302	17.76	1.46E-02
1	Spalla 1	185	GEN RARA Mobili(min)	77	-943.38	-22.12	-16.81	27.78	1.302	21.34	1.14E-02
1	Spalla 1	185	GEN RARA Vento(min)	77	-781.22	-33.73	-14.49	36.71	1.302	28.19	1.13E-02
1	Spalla 1	185	GEN RARA Frenam(min)	77	-757.17	-1.95	-39.30	39.35	1.302	30.22	1.14E-02
1	Spalla 1	185	GEN RARA Termico(min)	77	-798.61	-21.27	-19.24	28.68	1.302	22.03	1.12E-02
1	Spalla 1	186	GEN RARA Mobili(max)	79	-392.40	22.14	4.94	22.68	1.302	17.42	1.56E-02
1	Spalla 1	186	GEN RARA Vento(max)	79	-387.96	33.60	5.19	34.00	1.302	26.11	1.44E-02
1	Spalla 1	186	GEN RARA Frenam(max)	79	-390.45	1.71	30.17	30.22	1.302	23.21	1.44E-02
1	Spalla 1	186	GEN RARA Termico(max)	79	-359.21	20.89	10.11	23.21	1.302	17.82	1.46E-02
1	Spalla 1	186	GEN RARA Mobili(min)	79	-1330.65	-21.79	-16.08	27.08	1.302	20.80	1.19E-02
1	Spalla 1	186	GEN RARA Vento(min)	79	-1052.02	-33.36	-13.99	36.17	1.302	27.78	1.17E-02
1	Spalla 1	186	GEN RARA Frenam(min)	79	-1049.53	-1.48	-38.97	39.00	1.302	29.95	1.17E-02
1	Spalla 1	186	GEN RARA Termico(min)	79	-1080.76	-20.65	-18.91	28.00	1.302	21.50	1.15E-02
1	Spalla 1	187	GEN RARA Mobili(max)	81	-392.97	21.80	4.94	22.35	1.302	17.17	1.56E-02
1	Spalla 1	187	GEN RARA Vento(max)	81	-388.91	33.37	5.19	33.77	1.302	25.94	1.45E-02
1	Spalla 1	187	GEN RARA Frenam(max)	81	-390.45	1.48	30.17	30.21	1.302	23.20	1.44E-02
1	Spalla 1	187	GEN RARA Termico(max)	81	-359.79	20.65	10.11	22.99	1.302	17.66	1.46E-02
1	Spalla 1	187	GEN RARA Mobili(min)	81	-1330.07	-22.14	-16.08	27.36	1.302	21.01	1.18E-02
1	Spalla 1	187	GEN RARA Vento(min)	81	-1051.07	-33.60	-13.99	36.40	1.302	27.95	1.17E-02
1	Spalla 1	187	GEN RARA Frenam(min)	81	-1049.53	-1.71	-38.97	39.01	1.302	29.96	1.17E-02
1	Spalla 1	187	GEN RARA Termico(min)	81	-1080.19	-20.89	-18.91	28.18	1.302	21.64	1.15E-02
1	Spalla 1	188	GEN RARA Mobili(max)	83	-330.13	22.15	5.46	22.81	1.302	17.52	1.57E-02
1	Spalla 1	188	GEN RARA Vento(max)	83	-332.09	33.78	5.40	34.21	1.302	26.27	1.44E-02
1	Spalla 1	188	GEN RARA Frenam(max)	83	-349.61	1.95	30.23	30.29	1.302	23.26	1.44E-02
1	Spalla 1	188	GEN RARA Termico(max)	83	-312.08	21.30	10.16	23.60	1.302	18.12	1.46E-02
1	Spalla 1	188	GEN RARA Mobili(min)	83	-939.47	-21.69	-16.79	27.43	1.302	21.07	1.14E-02
1	Spalla 1	188	GEN RARA Vento(min)	83	-774.69	-33.28	-14.47	36.29	1.302	27.87	1.13E-02
1	Spalla 1	188	GEN RARA Frenam(min)	83	-757.17	-1.45	-39.30	39.33	1.302	30.20	1.14E-02
1	Spalla 1	188	GEN RARA Termico(min)	83	-794.70	-20.80	-19.22	28.32	1.302	21.75	1.12E-02
1	Spalla 2	190	GEN RARA Mobili(max)	78	-326.28	21.66	16.81	27.42	1.302	21.06	1.14E-02
1	Spalla 2	190	GEN RARA Vento(max)	78	-325.59	33.22	14.49	36.24	1.302	27.83	1.13E-02

1	Spalla 2	190	GEN RARA Frenam(max)	78	-349.65	1.45	39.30	39.33	1.302	30.20	1.14E-02
1	Spalla 2	190	GEN RARA Termico(max)	78	-308.20	20.77	19.24	28.31	1.302	21.74	1.12E-02
1	Spalla 2	190	GEN RARA Mobili(min)	78	-943.37	-22.11	-5.47	22.78	1.302	17.49	1.57E-02
1	Spalla 2	190	GEN RARA Vento(min)	78	-781.23	-33.73	-5.42	34.16	1.302	26.24	1.44E-02
1	Spalla 2	190	GEN RARA Frenam(min)	78	-757.17	-1.95	-30.23	30.29	1.302	23.26	1.44E-02
1	Spalla 2	190	GEN RARA Termico(min)	78	-798.62	-21.27	-10.17	23.58	1.302	18.11	1.46E-02
1	Spalla 2	191	GEN RARA Mobili(max)	80	-392.41	22.14	16.08	27.36	1.302	21.01	1.18E-02
1	Spalla 2	191	GEN RARA Vento(max)	80	-388.00	33.59	13.99	36.39	1.302	27.94	1.17E-02
1	Spalla 2	191	GEN RARA Frenam(max)	80	-390.48	1.71	38.97	39.01	1.302	29.96	1.17E-02
1	Spalla 2	191	GEN RARA Termico(max)	80	-359.25	20.88	18.91	28.17	1.302	21.63	1.15E-02
1	Spalla 2	191	GEN RARA Mobili(min)	80	-1330.43	-21.79	-4.94	22.34	1.302	17.16	1.56E-02
1	Spalla 2	191	GEN RARA Vento(min)	80	-1051.89	-33.36	-5.19	33.76	1.302	25.93	1.44E-02
1	Spalla 2	191	GEN RARA Frenam(min)	80	-1049.41	-1.48	-30.17	30.21	1.302	23.20	1.44E-02
1	Spalla 2	191	GEN RARA Termico(min)	80	-1080.63	-20.65	-10.11	22.99	1.302	17.66	1.46E-02
1	Spalla 2	192	GEN RARA Mobili(max)	82	-392.97	21.80	16.08	27.09	1.302	20.80	1.19E-02
1	Spalla 2	192	GEN RARA Vento(max)	82	-388.94	33.37	13.99	36.18	1.302	27.79	1.17E-02
1	Spalla 2	192	GEN RARA Frenam(max)	82	-390.48	1.48	38.97	39.00	1.302	29.95	1.17E-02
1	Spalla 2	192	GEN RARA Termico(max)	82	-359.82	20.65	18.91	28.00	1.302	21.50	1.15E-02
1	Spalla 2	192	GEN RARA Mobili(min)	82	-1329.86	-22.14	-4.94	22.68	1.302	17.42	1.56E-02
1	Spalla 2	192	GEN RARA Vento(min)	82	-1050.95	-33.60	-5.19	34.00	1.302	26.11	1.44E-02
1	Spalla 2	192	GEN RARA Frenam(min)	82	-1049.41	-1.71	-30.17	30.22	1.302	23.21	1.44E-02
1	Spalla 2	192	GEN RARA Termico(min)	82	-1080.07	-20.89	-10.11	23.21	1.302	17.82	1.46E-02
1	Spalla 2	193	GEN RARA Mobili(max)	84	-330.19	22.15	16.79	27.79	1.302	21.35	1.14E-02
1	Spalla 2	193	GEN RARA Vento(max)	84	-332.11	33.78	14.47	36.75	1.302	28.22	1.13E-02
1	Spalla 2	193	GEN RARA Frenam(max)	84	-349.65	1.95	39.30	39.35	1.302	30.22	1.14E-02
1	Spalla 2	193	GEN RARA Termico(max)	84	-312.11	21.30	19.23	28.70	1.302	22.04	1.12E-02
1	Spalla 2	193	GEN RARA Mobili(min)	84	-939.45	-21.69	-5.46	22.37	1.302	17.18	1.57E-02
1	Spalla 2	193	GEN RARA Vento(min)	84	-774.71	-33.28	-5.40	33.72	1.302	25.89	1.44E-02
1	Spalla 2	193	GEN RARA Frenam(min)	84	-757.17	-1.45	-30.23	30.26	1.302	23.24	1.44E-02
1	Spalla 2	193	GEN RARA Termico(min)	84	-794.70	-20.80	-10.16	23.15	1.302	17.78	1.46E-02
2	Pila 1	195	GEN RARA Mobili(max)	21	-1301.84	49.04	23.80	54.51	2.855	19.10	7.04E-04
2	Pila 1	195	GEN RARA Vento(max)	21	-1322.46	76.11	22.77	79.44	2.855	27.83	1.02E-03
2	Pila 1	195	GEN RARA Frenam(max)	21	-1403.75	4.81	76.80	76.95	2.855	26.96	1.00E-03
2	Pila 1	195	GEN RARA Termico(max)	21	-1251.63	48.61	26.83	55.52	2.855	19.45	9.81E-04
2	Pila 1	195	GEN RARA Mobili(min)	21	-2662.85	-44.97	-2.80	45.06	2.855	15.78	3.67E-03
2	Pila 1	195	GEN RARA Vento(min)	21	-2289.61	-72.46	-0.44	72.46	2.855	25.38	3.30E-03
2	Pila 1	195	GEN RARA Frenam(min)	21	-2208.32	-1.15	-54.46	54.47	2.855	19.08	3.29E-03
2	Pila 1	195	GEN RARA Termico(min)	21	-2360.44	-44.96	-4.49	45.18	2.855	15.83	3.39E-03
2	Pila 1	196	GEN RARA Mobili(max)	23	-1734.35	46.33	23.11	51.77	2.855	18.14	8.64E-04
2	Pila 1	196	GEN RARA Vento(max)	23	-1730.16	73.75	22.11	76.99	2.855	26.97	1.11E-03
2	Pila 1	196	GEN RARA Frenam(max)	23	-1739.89	2.32	76.27	76.31	2.855	26.73	1.09E-03
2	Pila 1	196	GEN RARA Termico(max)	23	-1630.69	45.46	26.22	52.48	2.855	18.38	1.05E-03
2	Pila 1	196	GEN RARA Mobili(min)	23	-3287.71	-45.09	-1.66	45.12	2.855	15.81	3.47E-03
2	Pila 1	196	GEN RARA Vento(min)	23	-2754.57	-72.63	0.40	72.63	2.855	25.44	3.13E-03
2	Pila 1	196	GEN RARA Frenam(min)	23	-2744.84	-1.20	-53.77	53.78	2.855	18.84	3.13E-03
2	Pila 1	196	GEN RARA Termico(min)	23	-2854.04	-44.34	-3.71	44.49	2.855	15.59	3.19E-03
2	Pila 1	197	GEN RARA Mobili(max)	885	-1732.28	45.10	23.11	50.68	2.855	17.75	9.70E-04
2	Pila 1	197	GEN RARA Vento(max)	885	-1726.70	72.64	22.11	75.93	2.855	26.60	1.17E-03
2	Pila 1	197	GEN RARA Frenam(max)	885	-1739.89	1.20	76.27	76.28	2.855	26.72	1.14E-03
2	Pila 1	197	GEN RARA Termico(max)	885	-1628.61	44.35	26.22	51.52	2.855	18.05	1.12E-03
2	Pila 1	197	GEN RARA Mobili(min)	885	-3289.78	-46.34	-1.66	46.37	2.855	16.24	3.44E-03
2	Pila 1	197	GEN RARA Vento(min)	885	-2758.03	-73.76	0.40	73.76	2.855	25.84	3.10E-03
2	Pila 1	197	GEN RARA Frenam(min)	885	-2744.84	-2.32	-53.77	53.82	2.855	18.85	3.11E-03
2	Pila 1	197	GEN RARA Termico(min)	885	-2856.11	-45.47	-3.71	45.62	2.855	15.98	3.17E-03
2	Pila 1	198	GEN RARA Mobili(max)	27	-1307.06	44.99	23.80	50.90	2.855	17.83	1.12E-03
2	Pila 1	198	GEN RARA Vento(max)	27	-1331.15	72.49	22.77	75.98	2.855	26.62	1.28E-03
2	Pila 1	198	GEN RARA Frenam(max)	27	-1403.75	1.15	76.80	76.81	2.855	26.91	1.22E-03
2	Pila 1	198	GEN RARA Termico(max)	27	-1256.85	44.98	26.83	52.37	2.855	18.35	1.32E-03
2	Pila 1	198	GEN RARA Mobili(min)	27	-2657.64	-49.06	-2.80	49.14	2.855	17.21	3.56E-03
2	Pila 1	198	GEN RARA Vento(min)	27	-2280.92	-76.15	-0.43	76.15	2.855	26.68	3.21E-03
2	Pila 1	198	GEN RARA Frenam(min)	27	-2208.32	-4.81	-54.46	54.67	2.855	19.15	3.21E-03
2	Pila 1	198	GEN RARA Termico(min)	27	-2355.22	-48.63	-4.49	48.84	2.855	17.11	3.28E-03
2	Pila 2	200	GEN RARA Mobili(max)	22	-1301.83	49.04	2.80	49.12	2.855	17.21	3.56E-03
2	Pila 2	200	GEN RARA Vento(max)	22	-1322.44	76.11	0.43	76.11	2.855	26.66	3.21E-03
2	Pila 2	200	GEN RARA Frenam(max)	22	-1403.79	4.81	54.46	54.67	2.855	19.15	3.21E-03
2	Pila 2	200	GEN RARA Termico(max)	22	-1251.62	48.61	4.49	48.82	2.855	17.10	3.28E-03
2	Pila 2	200	GEN RARA Mobili(min)	22	-2662.88	-44.97	-23.80	50.88	2.855	17.82	1.12E-03
2	Pila 2	200	GEN RARA Vento(min)	22	-2289.64	-72.45	-22.77	75.94	2.855	26.60	1.29E-03
2	Pila 2	200	GEN RARA Frenam(min)	22	-2208.29	-1.15	-76.80	76.81	2.855	26.91	1.22E-03
2	Pila 2	200	GEN RARA Termico(min)	22	-2360.46	-44.96	-26.83	52.36	2.855	18.34	1.32E-03
2	Pila 2	201	GEN RARA Mobili(max)	24	-1734.36	46.33	1.66	46.36	2.855	16.24	3.44E-03
2	Pila 2	201	GEN RARA Vento(max)	24	-1730.17	73.75	-0.40	73.75	2.855	25.84	3.10E-03
2	Pila 2	201	GEN RARA Frenam(max)	24	-1739.88	2.32	53.77	53.82	2.855	18.85	3.11E-03
2	Pila 2	201	GEN RARA Termico(max)	24	-1630.69	45.46	3.71	45.61	2.855	15.98	3.17E-03
2	Pila 2	201	GEN RARA Mobili(min)	24	-3287.69	-45.09	-23.11	50.67	2.855	17.75	9.71E-04
2	Pila 2	201	GEN RARA Vento(min)	24	-2754.55	-72.63	-22.11	75.92	2.855	26.60	1.17E-03
2	Pila 2	201	GEN RARA Frenam(min)	24	-2744.84	-1.20	-76.27	76.28	2.855	26.72	1.14E-03

2	Pila 2	201	GEN RARA Termico(min)	24	-2854.02	-44.34	-26.22	51.51	2.855	18.05	1.12E-03
2	Pila 2	202	GEN RARA Mobili(max)	886	-1732.28	45.10	1.66	45.13	2.855	15.81	3.47E-03
2	Pila 2	202	GEN RARA Vento(max)	886	-1726.69	72.64	-0.40	72.64	2.855	25.45	3.13E-03
2	Pila 2	202	GEN RARA Frenam(max)	886	-1739.88	1.20	53.77	53.78	2.855	18.84	3.13E-03
2	Pila 2	202	GEN RARA Termico(max)	886	-1628.61	44.35	3.71	44.50	2.855	15.59	3.19E-03
2	Pila 2	202	GEN RARA Mobili(min)	886	-3289.78	-46.34	-23.11	51.78	2.855	18.14	8.63E-04
2	Pila 2	202	GEN RARA Vento(min)	886	-2758.02	-73.76	-22.11	77.00	2.855	26.97	1.11E-03
2	Pila 2	202	GEN RARA Frenam(min)	886	-2744.84	-2.32	-76.27	76.31	2.855	26.73	1.08E-03
2	Pila 2	202	GEN RARA Termico(min)	886	-2856.11	-45.47	-26.22	52.49	2.855	18.39	1.05E-03
2	Pila 2	203	GEN RARA Mobili(max)	28	-1307.05	44.99	2.80	45.08	2.855	15.79	3.67E-03
2	Pila 2	203	GEN RARA Vento(max)	28	-1331.13	72.49	0.43	72.49	2.855	25.39	3.30E-03
2	Pila 2	203	GEN RARA Frenam(max)	28	-1403.79	1.15	54.46	54.47	2.855	19.08	3.29E-03
2	Pila 2	203	GEN RARA Termico(max)	28	-1256.84	44.98	4.49	45.20	2.855	15.84	3.39E-03
2	Pila 2	203	GEN RARA Mobili(min)	28	-2657.66	-49.06	-23.80	54.53	2.855	19.10	7.03E-04
2	Pila 2	203	GEN RARA Vento(min)	28	-2280.95	-76.15	-22.77	79.48	2.855	27.84	1.02E-03
2	Pila 2	203	GEN RARA Frenam(min)	28	-2208.29	-4.81	-76.80	76.95	2.855	26.96	1.00E-03
2	Pila 2	203	GEN RARA Termico(min)	28	-2355.24	-48.63	-26.83	55.54	2.855	19.46	9.80E-04

		Axial (kN)	Shear-y (kN)	Shear-z (kN)	Shear-tot (kN)	Kh eq. (kN/mm)	Deform. (mm)	Rotazione (rad)
SFORZI MASSIMI:	**Spalle**	**-308.17**	**33.78**	**39.30**	**39.35**	**1.302**	**30.22**	**1.32E-02**
	Pile	**-1251.62**	**76.11**	**76.80**	**79.48**	**2.855**	**27.84**	**3.67E-03**
SFORZI MINIMI:	**Spalle**	**-1330.65**	**-33.73**	**-39.30**				
	Pile	**-3289.78**	**-76.15**	**-76.80**				

STATI LIMITE DI ESERCIZIO - COMBINAZIONI FREQUENTI

Tipo isolatore	Struttura Appoggio	No.	Load	Node	Axial (kN)	Shear-y (kN)	Shear-z (kN)	Shear-tot (kN)	Kh eq. (kN/mm)	Deform. (mm)	Rotazione (rad)
1	Spalla 1	185	GEN FREQ Mobili(max)	77	-359.09	1.38	3.97	4.20	1.302	3.23	1.43E-02
1	Spalla 1	185	GEN FREQ Vento(max)	77	-415.76	6.37	2.72	6.93	1.302	5.32	1.22E-02
1	Spalla 1	185	GEN FREQ Termico(max)	77	-414.07	0.08	3.88	3.88	1.302	2.98	1.23E-02
1	Spalla 1	185	GEN FREQ Mobili(min)	77	-747.69	-1.88	-13.03	13.16	1.302	10.11	1.14E-02
1	Spalla 1	185	GEN FREQ Vento(min)	77	-496.39	-6.98	-9.50	11.79	1.302	9.05	1.17E-02
1	Spalla 1	185	GEN FREQ Termico(min)	77	-498.09	-0.69	-10.66	10.68	1.302	8.20	1.17E-02
1	Spalla 1	186	GEN FREQ Mobili(max)	79	-401.22	1.70	3.88	4.24	1.302	3.25	1.44E-02
1	Spalla 1	186	GEN FREQ Vento(max)	79	-402.35	6.34	2.83	6.94	1.302	5.33	1.24E-02
1	Spalla 1	186	GEN FREQ Termico(max)	79	-395.72	-0.02	4.05	4.05	1.302	3.11	1.25E-02
1	Spalla 1	186	GEN FREQ Mobili(min)	79	-1038.76	-1.47	-12.68	12.76	1.302	9.80	1.18E-02
1	Spalla 1	186	GEN FREQ Vento(min)	79	-481.93	-6.51	-9.56	11.57	1.302	8.88	1.19E-02
1	Spalla 1	186	GEN FREQ Termico(min)	79	-488.57	-0.15	-10.78	10.78	1.302	8.28	1.19E-02
1	Spalla 1	187	GEN FREQ Mobili(max)	81	-401.22	1.47	3.88	4.15	1.302	3.19	1.44E-02
1	Spalla 1	187	GEN FREQ Vento(max)	81	-402.54	6.52	2.83	7.11	1.302	5.46	1.24E-02
1	Spalla 1	187	GEN FREQ Termico(max)	81	-395.72	0.15	4.05	4.05	1.302	3.11	1.25E-02
1	Spalla 1	187	GEN FREQ Mobili(min)	81	-1038.76	-1.70	-12.68	12.79	1.302	9.83	1.17E-02
1	Spalla 1	187	GEN FREQ Vento(min)	81	-481.74	-6.35	-9.56	11.48	1.302	8.81	1.19E-02
1	Spalla 1	187	GEN FREQ Termico(min)	81	-488.57	0.02	-10.78	10.78	1.302	8.28	1.19E-02
1	Spalla 1	188	GEN FREQ Mobili(max)	83	-359.09	1.88	3.97	4.39	1.302	3.37	1.43E-02
1	Spalla 1	188	GEN FREQ Vento(max)	83	-417.07	6.99	2.71	7.50	1.302	5.76	1.22E-02
1	Spalla 1	188	GEN FREQ Termico(max)	83	-414.07	0.69	3.88	3.94	1.302	3.03	1.23E-02
1	Spalla 1	188	GEN FREQ Mobili(min)	83	-747.69	-1.38	-13.03	13.10	1.302	10.06	1.14E-02
1	Spalla 1	188	GEN FREQ Vento(min)	83	-495.09	-6.38	-9.49	11.44	1.302	8.78	1.17E-02
1	Spalla 1	188	GEN FREQ Termico(min)	83	-498.09	-0.08	-10.66	10.66	1.302	8.19	1.17E-02
1	Spalla 2	190	GEN FREQ Mobili(max)	78	-359.14	1.38	13.03	13.10	1.302	10.06	1.14E-02
1	Spalla 2	190	GEN FREQ Vento(max)	78	-415.76	6.37	9.50	11.44	1.302	8.78	1.17E-02
1	Spalla 2	190	GEN FREQ Termico(max)	78	-414.07	0.08	10.66	10.66	1.302	8.19	1.17E-02
1	Spalla 2	190	GEN FREQ Mobili(min)	78	-747.68	-1.88	-3.97	4.39	1.302	3.37	1.43E-02
1	Spalla 2	190	GEN FREQ Vento(min)	78	-496.40	-6.98	-2.72	7.49	1.302	5.75	1.22E-02
1	Spalla 2	190	GEN FREQ Termico(min)	78	-498.09	-0.69	-3.88	3.94	1.302	3.03	1.23E-02
1	Spalla 2	191	GEN FREQ Mobili(max)	80	-401.25	1.70	12.68	12.79	1.302	9.83	1.17E-02
1	Spalla 2	191	GEN FREQ Vento(max)	80	-402.35	6.34	9.56	11.47	1.302	8.81	1.19E-02
1	Spalla 2	191	GEN FREQ Termico(max)	80	-395.72	-0.02	10.78	10.78	1.302	8.28	1.19E-02
1	Spalla 2	191	GEN FREQ Mobili(min)	80	-1038.64	-1.47	-3.88	4.15	1.302	3.19	1.44E-02
1	Spalla 2	191	GEN FREQ Vento(min)	80	-481.93	-6.51	-2.83	7.10	1.302	5.45	1.24E-02
1	Spalla 2	191	GEN FREQ Termico(min)	80	-488.57	-0.15	-4.05	4.05	1.302	3.11	1.25E-02
1	Spalla 2	192	GEN FREQ Mobili(max)	82	-401.25	1.47	12.68	12.76	1.302	9.80	1.18E-02
1	Spalla 2	192	GEN FREQ Vento(max)	82	-402.54	6.52	9.56	11.57	1.302	8.89	1.19E-02
1	Spalla 2	192	GEN FREQ Termico(max)	82	-395.72	0.15	10.78	10.78	1.302	8.28	1.19E-02
1	Spalla 2	192	GEN FREQ Mobili(min)	82	-1038.64	-1.70	-3.88	4.24	1.302	3.25	1.44E-02
1	Spalla 2	192	GEN FREQ Vento(min)	82	-481.74	-6.35	-2.83	6.95	1.302	5.34	1.24E-02
1	Spalla 2	192	GEN FREQ Termico(min)	82	-488.57	0.02	-4.05	4.05	1.302	3.11	1.25E-02
1	Spalla 2	193	GEN FREQ Mobili(max)	84	-359.14	1.88	13.03	13.16	1.302	10.11	1.14E-02
1	Spalla 2	193	GEN FREQ Vento(max)	84	-417.06	6.99	9.49	11.79	1.302	9.05	1.17E-02

1	Spalla 2	193	GEN FREQ Termico(max)	84	-414.07	0.69	10.66	10.68	1.302	8.20	1.17E-02
1	Spalla 2	193	GEN FREQ Mobili(min)	84	-747.68	-1.38	-3.97	4.20	1.302	3.23	1.43E-02
1	Spalla 2	193	GEN FREQ Vento(min)	84	-495.09	-6.38	-2.71	6.93	1.302	5.32	1.22E-02
1	Spalla 2	193	GEN FREQ Termico(min)	84	-498.09	-0.08	-3.88	3.88	1.302	2.98	1.23E-02
2	Pila 1	195	GEN FREQ Mobili(max)	21	-1430.15	4.55	21.54	22.02	2.855	7.71	1.03E-03
2	Pila 1	195	GEN FREQ Vento(max)	21	-1476.07	17.14	17.30	24.35	2.855	8.53	2.03E-03
2	Pila 1	195	GEN FREQ Termico(max)	21	-1466.54	3.13	18.30	18.57	2.855	6.50	2.02E-03
2	Pila 1	195	GEN FREQ Mobili(min)	21	-2181.92	-0.89	0.80	1.20	2.855	0.42	3.25E-03
2	Pila 1	195	GEN FREQ Vento(min)	21	-1767.65	-13.94	6.88	15.55	2.855	5.45	2.25E-03
2	Pila 1	195	GEN FREQ Termico(min)	21	-1777.18	0.07	5.89	5.89	2.855	2.06	2.27E-03
2	Pila 1	196	GEN FREQ Mobili(max)	23	-1766.57	2.24	21.01	21.13	2.855	7.40	1.11E-03
2	Pila 1	196	GEN FREQ Vento(max)	23	-1764.47	15.14	17.22	22.93	2.855	8.03	2.01E-03
2	Pila 1	196	GEN FREQ Termico(max)	23	-1740.65	0.92	18.24	18.26	2.855	6.40	1.99E-03
2	Pila 1	196	GEN FREQ Mobili(min)	23	-2718.16	-1.12	1.49	1.86	2.855	0.65	3.10E-03
2	Pila 1	196	GEN FREQ Vento(min)	23	-2027.83	-14.15	6.86	15.73	2.855	5.51	2.17E-03
2	Pila 1	196	GEN FREQ Termico(min)	23	-2051.65	0.07	5.84	5.84	2.855	2.05	2.19E-03
2	Pila 1	197	GEN FREQ Mobili(max)	885	-1766.57	1.12	21.01	21.04	2.855	7.37	1.16E-03
2	Pila 1	197	GEN FREQ Vento(max)	885	-1763.78	14.15	17.22	22.29	2.855	7.81	2.01E-03
2	Pila 1	197	GEN FREQ Termico(max)	885	-1740.65	-0.07	18.24	18.24	2.855	6.39	2.00E-03
2	Pila 1	197	GEN FREQ Mobili(min)	885	-2718.16	-2.24	1.49	2.69	2.855	0.94	3.08E-03
2	Pila 1	197	GEN FREQ Vento(min)	885	-2028.52	-15.14	6.86	16.62	2.855	5.82	2.17E-03
2	Pila 1	197	GEN FREQ Termico(min)	885	-2051.65	-0.92	5.84	5.91	2.855	2.07	2.18E-03
2	Pila 1	198	GEN FREQ Mobili(max)	27	-1430.15	0.89	21.54	21.56	2.855	7.55	1.22E-03
2	Pila 1	198	GEN FREQ Vento(max)	27	-1477.81	13.95	17.30	22.22	2.855	7.79	2.09E-03
2	Pila 1	198	GEN FREQ Termico(max)	27	-1466.54	-0.07	18.30	18.30	2.855	6.41	2.08E-03
2	Pila 1	198	GEN FREQ Mobili(min)	27	-2181.92	-4.55	0.80	4.62	2.855	1.62	3.18E-03
2	Pila 1	198	GEN FREQ Vento(min)	27	-1765.91	-17.15	6.88	18.48	2.855	6.47	2.19E-03
2	Pila 1	198	GEN FREQ Termico(min)	27	-1777.18	-3.13	5.89	6.67	2.855	2.34	2.21E-03
2	Pila 2	200	GEN FREQ Mobili(max)	22	-1430.16	4.55	-0.80	4.62	2.855	1.62	3.18E-03
2	Pila 2	200	GEN FREQ Vento(max)	22	-1476.06	17.14	-6.88	18.47	2.855	6.47	2.19E-03
2	Pila 2	200	GEN FREQ Termico(max)	22	-1466.54	3.13	-5.89	6.67	2.855	2.34	2.21E-03
2	Pila 2	200	GEN FREQ Mobili(min)	22	-2181.92	-0.89	-21.54	21.56	2.855	7.55	1.22E-03
2	Pila 2	200	GEN FREQ Vento(min)	22	-1767.66	-13.94	-17.30	22.22	2.855	7.78	2.09E-03
2	Pila 2	200	GEN FREQ Termico(min)	22	-1777.18	0.07	-18.30	18.30	2.855	6.41	2.08E-03
2	Pila 2	201	GEN FREQ Mobili(max)	24	-1766.57	2.24	-1.49	2.69	2.855	0.94	3.08E-03
2	Pila 2	201	GEN FREQ Vento(max)	24	-1764.47	15.14	-6.86	16.62	2.855	5.82	2.17E-03
2	Pila 2	201	GEN FREQ Termico(max)	24	-1740.65	0.92	-5.84	5.91	2.855	2.07	2.18E-03
2	Pila 2	201	GEN FREQ Mobili(min)	24	-2718.15	-1.12	-21.01	21.04	2.855	7.37	1.16E-03
2	Pila 2	201	GEN FREQ Vento(min)	24	-2027.83	-14.15	-17.22	22.29	2.855	7.81	2.01E-03
2	Pila 2	201	GEN FREQ Termico(min)	24	-2051.65	0.07	-18.24	18.24	2.855	6.39	2.00E-03
2	Pila 2	202	GEN FREQ Mobili(max)	886	-1766.57	1.12	-1.49	1.86	2.855	0.65	3.10E-03
2	Pila 2	202	GEN FREQ Vento(max)	886	-1763.77	14.15	-6.86	15.73	2.855	5.51	2.17E-03
2	Pila 2	202	GEN FREQ Termico(max)	886	-1740.65	-0.07	-5.84	5.84	2.855	2.05	2.19E-03
2	Pila 2	202	GEN FREQ Mobili(min)	886	-2718.15	-2.24	-21.01	21.13	2.855	7.40	1.11E-03
2	Pila 2	202	GEN FREQ Vento(min)	886	-2028.52	-15.14	-17.22	22.93	2.855	8.03	2.01E-03
2	Pila 2	202	GEN FREQ Termico(min)	886	-2051.65	-0.92	-18.24	18.26	2.855	6.40	1.99E-03
2	Pila 2	203	GEN FREQ Mobili(max)	28	-1430.16	0.89	-0.80	1.20	2.855	0.42	3.25E-03
2	Pila 2	203	GEN FREQ Vento(max)	28	-1477.80	13.95	-6.88	15.55	2.855	5.45	2.25E-03
2	Pila 2	203	GEN FREQ Termico(max)	28	-1466.54	-0.07	-5.89	5.89	2.855	2.06	2.27E-03
2	Pila 2	203	GEN FREQ Mobili(min)	28	-2181.92	-4.55	-21.54	22.02	2.855	7.71	1.03E-03
2	Pila 2	203	GEN FREQ Vento(min)	28	-1765.92	-17.15	-17.30	24.36	2.855	8.53	2.03E-03
2	Pila 2	203	GEN FREQ Termico(min)	28	-1777.18	-3.13	-18.30	18.57	2.855	6.50	2.02E-03

		Axial (kN)	Shear-y (kN)	Shear-z (kN)	Shear-tot (kN)	Kh eq. (kN/mm)	Deform. (mm)	Rotazione (rad)
SFORZI MASSIMI:	**Spalle**	**-359.09**	**6.99**	**13.03**	**13.16**	**1.302**	**10.11**	**1.44E-02**
	Pile	**-1430.15**	**17.14**	**21.54**	**24.36**	**2.855**	**8.53**	**3.25E-03**
SFORZI MINIMI:	**Spalle**	**-1038.76**	**-6.98**	**-13.03**				
	Pile	**-2718.16**	**-17.15**	**-21.54**				

STATI LIMITE DI ESERCIZIO - COMBINAZIONI QUASI PERMANENTI

Tipo isolatore	Struttura Appoggio	No.	Load	Node	Axial (kN)	Shear-y (kN)	Shear-z (kN)	Shear-tot (kN)	Kh eq. (kN/mm)	Deform. (mm)	Rotazione (rad)
1	Spalla 1	185	GEN Q.P.(max)	77	-421.07	0.02	2.67	2.67	1.302	2.05	1.22E-02
1	Spalla 1	185	GEN Q.P.(min)	77	-491.09	-0.62	-9.45	9.47	1.302	7.27	1.17E-02
1	Spalla 1	186	GEN Q.P.(max)	79	-403.45	-0.03	2.81	2.81	1.302	2.16	1.24E-02
1	Spalla 1	186	GEN Q.P.(min)	79	-480.83	-0.14	-9.54	9.54	1.302	7.33	1.19E-02
1	Spalla 1	187	GEN Q.P.(max)	81	-403.45	0.14	2.81	2.81	1.302	2.16	1.24E-02
1	Spalla 1	187	GEN Q.P.(min)	81	-480.83	0.03	-9.54	9.54	1.302	7.33	1.19E-02
1	Spalla 1	188	GEN Q.P.(max)	83	-421.07	0.62	2.67	2.74	1.302	2.11	1.22E-02
1	Spalla 1	188	GEN Q.P.(min)	83	-491.09	-0.02	-9.45	9.45	1.302	7.26	1.17E-02

1	Spalla 2	190	GEN Q.P.(max)	78	-421.07	0.02	9.45	9.45	1.302	7.26	1.17E-02
1	Spalla 2	190	GEN Q.P.(min)	78	-491.09	-0.62	-2.67	2.74	1.302	2.11	1.22E-02
1	Spalla 2	191	GEN Q.P.(max)	80	-403.45	-0.03	9.54	9.54	1.302	7.33	1.19E-02
1	Spalla 2	191	GEN Q.P.(min)	80	-480.83	-0.14	-2.81	2.81	1.302	2.16	1.24E-02
1	Spalla 2	192	GEN Q.P.(max)	82	-403.45	0.14	9.54	9.54	1.302	7.33	1.19E-02
1	Spalla 2	192	GEN Q.P.(min)	82	-480.83	0.03	-2.81	2.81	1.302	2.16	1.24E-02
1	Spalla 2	193	GEN Q.P.(max)	84	-421.07	0.62	9.45	9.47	1.302	7.27	1.17E-02
1	Spalla 2	193	GEN Q.P.(min)	84	-491.09	-0.02	-2.67	2.67	1.302	2.05	1.22E-02
2	Pila 1	195	GEN Q.P.(max)	21	-1492.43	2.88	17.26	17.50	2.855	6.13	2.04E-03
2	Pila 1	195	GEN Q.P.(min)	21	-1751.29	0.32	6.92	6.93	2.855	2.43	2.24E-03
2	Pila 1	196	GEN Q.P.(max)	23	-1766.57	0.85	17.20	17.22	2.855	6.03	2.01E-03
2	Pila 1	196	GEN Q.P.(min)	23	-2025.73	0.14	6.87	6.87	2.855	2.41	2.17E-03
2	Pila 1	197	GEN Q.P.(max)	885	-1766.57	-0.14	17.20	17.20	2.855	6.03	2.01E-03
2	Pila 1	197	GEN Q.P.(min)	885	-2025.73	-0.85	6.87	6.92	2.855	2.42	2.17E-03
2	Pila 1	198	GEN Q.P.(max)	27	-1492.43	-0.32	17.26	17.26	2.855	6.05	2.09E-03
2	Pila 1	198	GEN Q.P.(min)	27	-1751.29	-2.88	6.92	7.50	2.855	2.63	2.19E-03
2	Pila 2	200	GEN Q.P.(max)	22	-1492.43	2.88	-6.92	7.50	2.855	2.63	2.19E-03
2	Pila 2	200	GEN Q.P.(min)	22	-1751.29	0.32	-17.26	17.26	2.855	6.05	2.09E-03
2	Pila 2	201	GEN Q.P.(max)	24	-1766.57	0.85	-6.87	6.92	2.855	2.42	2.17E-03
2	Pila 2	201	GEN Q.P.(min)	24	-2025.73	0.14	-17.20	17.20	2.855	6.03	2.01E-03
2	Pila 2	202	GEN Q.P.(max)	886	-1766.57	-0.14	-6.87	6.87	2.855	2.41	2.17E-03
2	Pila 2	202	GEN Q.P.(min)	886	-2025.73	-0.85	-17.20	17.22	2.855	6.03	2.01E-03
2	Pila 2	203	GEN Q.P.(max)	28	-1492.43	-0.32	-6.92	6.93	2.855	2.43	2.24E-03
2	Pila 2	203	GEN Q.P.(min)	28	-1751.29	-2.88	-17.26	17.50	2.855	6.13	2.04E-03

		Axial (kN)	Shear-y (kN)	Shear-z (kN)	Shear-tot (kN)	Kh eq. (kN/mm)	Deform. (mm)	Rotazione (rad)
SFORZI MASSIMI:	**Spalle**	**-403.45**	**0.62**	**9.54**	**9.54**	**1.302**	**7.33**	**1.24E-02**
	Pile	**-1492.43**	**2.88**	**17.26**	**17.50**	**2.855**	**6.13**	**2.24E-03**
SFORZI MINIMI:	**Spalle**	**-491.09**	**-0.62**	**-9.54**				
	Pile	**-2025.73**	**-2.88**	**-17.26**				

STATI LIMITE DI ESERCIZIO - SISMICI (SLD)

Tipo isolatore	Struttura Appoggio	No.	Load	Node	Axial (kN)	Shear-y (kN)	Shear-z (kN)	Shear-tot (kN)	Kh eq. (kN/mm)	Deform. (mm)	Rotazione (rad)
1	Spalla 1	185	GEN SLD Long(max)	77	-411.14	8.37	31.31	32.41	1.302	24.89	1.23E-02
1	Spalla 1	185	GEN SLD Trasv(max)	77	-402.79	27.86	11.44	30.12	1.302	23.13	1.23E-02
1	Spalla 1	185	GEN SLD Vert(max)	77	-407.82	8.37	11.41	14.15	1.302	10.87	1.23E-02
1	Spalla 1	185	GEN SLD Long(min)	77	-501.01	-8.98	-38.09	39.13	1.302	30.05	1.17E-02
1	Spalla 1	185	GEN SLD Trasv(min)	77	-509.37	-28.47	-18.22	33.80	1.302	25.96	1.17E-02
1	Spalla 1	185	GEN SLD Vert(min)	77	-504.33	-8.98	-18.19	20.29	1.302	15.58	1.17E-02
1	Spalla 1	186	GEN SLD Long(max)	79	-397.32	8.34	31.43	32.52	1.302	24.97	1.25E-02
1	Spalla 1	186	GEN SLD Trasv(max)	79	-399.31	27.86	11.47	30.13	1.302	23.14	1.25E-02
1	Spalla 1	186	GEN SLD Vert(max)	79	-394.68	8.34	11.52	14.22	1.302	10.92	1.25E-02
1	Spalla 1	186	GEN SLD Long(min)	79	-486.97	-8.51	-38.16	39.10	1.302	30.03	1.19E-02
1	Spalla 1	186	GEN SLD Trasv(min)	79	-484.97	-28.03	-18.20	33.42	1.302	25.67	1.19E-02
1	Spalla 1	186	GEN SLD Vert(min)	79	-489.60	-8.51	-18.25	20.14	1.302	15.46	1.19E-02
1	Spalla 1	187	GEN SLD Long(max)	81	-397.32	8.51	31.43	32.56	1.302	25.01	1.25E-02
1	Spalla 1	187	GEN SLD Trasv(max)	81	-399.31	28.03	11.47	30.29	1.302	23.26	1.25E-02
1	Spalla 1	187	GEN SLD Vert(max)	81	-394.68	8.51	11.52	14.32	1.302	11.00	1.25E-02
1	Spalla 1	187	GEN SLD Long(min)	81	-486.97	-8.34	-38.16	39.06	1.302	30.00	1.19E-02
1	Spalla 1	187	GEN SLD Trasv(min)	81	-484.97	-27.86	-18.20	33.28	1.302	25.56	1.19E-02
1	Spalla 1	187	GEN SLD Vert(min)	81	-489.60	-8.34	-18.25	20.07	1.302	15.41	1.19E-02
1	Spalla 1	188	GEN SLD Long(max)	83	-411.14	8.98	31.31	32.57	1.302	25.02	1.23E-02
1	Spalla 1	188	GEN SLD Trasv(max)	83	-402.79	28.47	11.44	30.68	1.302	23.56	1.23E-02
1	Spalla 1	188	GEN SLD Vert(max)	83	-407.83	8.98	11.41	14.52	1.302	11.15	1.23E-02
1	Spalla 1	188	GEN SLD Long(min)	83	-501.01	-8.37	-38.09	39.00	1.302	29.95	1.17E-02
1	Spalla 1	188	GEN SLD Trasv(min)	83	-509.37	-27.86	-18.22	33.29	1.302	25.57	1.17E-02
1	Spalla 1	188	GEN SLD Vert(min)	83	-504.33	-8.37	-18.19	20.02	1.302	15.38	1.17E-02
1	Spalla 2	190	GEN SLD Long(max)	78	-411.14	8.37	38.09	39.00	1.302	29.95	1.17E-02
1	Spalla 2	190	GEN SLD Trasv(max)	78	-402.79	27.86	18.22	33.29	1.302	25.57	1.17E-02
1	Spalla 2	190	GEN SLD Vert(max)	78	-407.83	8.37	18.19	20.02	1.302	15.38	1.17E-02
1	Spalla 2	190	GEN SLD Long(min)	78	-501.01	-8.98	-31.31	32.57	1.302	25.02	1.23E-02
1	Spalla 2	190	GEN SLD Trasv(min)	78	-509.37	-28.47	-11.44	30.68	1.302	23.56	1.23E-02
1	Spalla 2	190	GEN SLD Vert(min)	78	-504.33	-8.98	-11.41	14.52	1.302	11.15	1.23E-02
1	Spalla 2	191	GEN SLD Long(max)	80	-397.32	8.34	38.16	39.06	1.302	30.00	1.19E-02
1	Spalla 2	191	GEN SLD Trasv(max)	80	-399.31	27.86	18.20	33.28	1.302	25.56	1.19E-02
1	Spalla 2	191	GEN SLD Vert(max)	80	-394.68	8.34	18.25	20.07	1.302	15.41	1.19E-02
1	Spalla 2	191	GEN SLD Long(min)	80	-486.97	-8.51	-31.43	32.56	1.302	25.01	1.25E-02
1	Spalla 2	191	GEN SLD Trasv(min)	80	-484.97	-28.03	-11.47	30.29	1.302	23.26	1.25E-02

1	Spalla 2	191	GEN SLD Vert(min)	80	-489.60	-8.51	-11.52	14.32	1.302	11.00	1.25E-02
1	Spalla 2	192	GEN SLD Long(max)	82	-397.32	8.51	38.16	39.10	1.302	30.03	1.19E-02
1	Spalla 2	192	GEN SLD Trasv(max)	82	-399.31	28.03	18.20	33.42	1.302	25.67	1.19E-02
1	Spalla 2	192	GEN SLD Vert(max)	82	-394.68	8.51	18.25	20.14	1.302	15.46	1.19E-02
1	Spalla 2	192	GEN SLD Long(min)	82	-486.97	-8.34	-31.43	32.52	1.302	24.97	1.25E-02
1	Spalla 2	192	GEN SLD Trasv(min)	82	-484.97	-27.86	-11.47	30.13	1.302	23.14	1.25E-02
1	Spalla 2	192	GEN SLD Vert(min)	82	-489.60	-8.34	-11.52	14.22	1.302	10.92	1.25E-02
1	Spalla 2	193	GEN SLD Long(max)	84	-411.14	8.98	38.09	39.13	1.302	30.05	1.17E-02
1	Spalla 2	193	GEN SLD Trasv(max)	84	-402.79	28.47	18.22	33.80	1.302	25.96	1.17E-02
1	Spalla 2	193	GEN SLD Vert(max)	84	-407.82	8.98	18.19	20.29	1.302	15.58	1.17E-02
1	Spalla 2	193	GEN SLD Long(min)	84	-501.01	-8.37	-31.31	32.41	1.302	24.89	1.23E-02
1	Spalla 2	193	GEN SLD Trasv(min)	84	-509.37	-27.86	-11.44	30.12	1.302	23.13	1.23E-02
1	Spalla 2	193	GEN SLD Vert(min)	84	-504.33	-8.37	-11.41	14.15	1.302	10.87	1.23E-02
2	Pila 1	195	GEN SLD Long(max)	21	-1467.24	21.58	79.11	82.00	2.855	28.73	2.00E-03
2	Pila 1	195	GEN SLD Trasv(max)	21	-1427.39	65.19	36.00	74.47	2.855	26.09	2.01E-03
2	Pila 1	195	GEN SLD Vert(max)	21	-1453.47	21.59	35.91	41.90	2.855	14.68	2.02E-03
2	Pila 1	195	GEN SLD Long(min)	21	-1776.48	-18.38	-54.93	57.92	2.855	20.29	2.28E-03
2	Pila 1	195	GEN SLD Trasv(min)	21	-1816.33	-61.99	-11.81	63.10	2.855	22.11	2.28E-03
2	Pila 1	195	GEN SLD Vert(min)	21	-1790.25	-18.39	-11.73	21.81	2.855	7.64	2.26E-03
2	Pila 1	196	GEN SLD Long(max)	23	-1755.61	19.58	79.02	81.41	2.855	28.52	1.97E-03
2	Pila 1	196	GEN SLD Trasv(max)	23	-1752.17	63.26	35.82	72.70	2.855	25.47	2.00E-03
2	Pila 1	196	GEN SLD Vert(max)	23	-1740.22	19.58	35.82	40.82	2.855	14.30	2.00E-03
2	Pila 1	196	GEN SLD Long(min)	23	-2036.68	-18.59	-54.94	58.00	2.855	20.32	2.21E-03
2	Pila 1	196	GEN SLD Trasv(min)	23	-2040.13	-62.27	-11.74	63.37	2.855	22.20	2.19E-03
2	Pila 1	196	GEN SLD Vert(min)	23	-2052.07	-18.59	-11.74	21.99	2.855	7.70	2.19E-03
2	Pila 1	197	GEN SLD Long(max)	885	-1755.61	18.59	79.02	81.18	2.855	28.44	1.98E-03
2	Pila 1	197	GEN SLD Trasv(max)	885	-1752.17	62.27	35.82	71.84	2.855	25.17	2.00E-03
2	Pila 1	197	GEN SLD Vert(max)	885	-1740.22	18.59	35.82	40.36	2.855	14.14	2.00E-03
2	Pila 1	197	GEN SLD Long(min)	885	-2036.68	-19.58	-54.94	58.32	2.855	20.43	2.20E-03
2	Pila 1	197	GEN SLD Trasv(min)	885	-2040.13	-63.26	-11.74	64.34	2.855	22.54	2.18E-03
2	Pila 1	197	GEN SLD Vert(min)	885	-2052.07	-19.58	-11.74	22.83	2.855	8.00	2.18E-03
2	Pila 1	198	GEN SLD Long(max)	27	-1467.24	18.38	79.11	81.22	2.855	28.45	2.06E-03
2	Pila 1	198	GEN SLD Trasv(max)	27	-1427.39	61.99	36.00	71.69	2.855	25.11	2.09E-03
2	Pila 1	198	GEN SLD Vert(max)	27	-1453.47	18.39	35.91	40.35	2.855	14.13	2.08E-03
2	Pila 1	198	GEN SLD Long(min)	27	-1776.48	-21.58	-54.93	59.02	2.855	20.67	2.23E-03
2	Pila 1	198	GEN SLD Trasv(min)	27	-1816.33	-65.19	-11.81	66.25	2.855	23.21	2.21E-03
2	Pila 1	198	GEN SLD Vert(min)	27	-1790.25	-21.59	-11.73	24.57	2.855	8.61	2.21E-03
2	Pila 2	200	GEN SLD Long(max)	22	-1467.24	21.58	54.93	59.02	2.855	20.67	2.23E-03
2	Pila 2	200	GEN SLD Trasv(max)	22	-1427.39	65.19	11.81	66.25	2.855	23.21	2.21E-03
2	Pila 2	200	GEN SLD Vert(max)	22	-1453.47	21.59	11.73	24.57	2.855	8.61	2.21E-03
2	Pila 2	200	GEN SLD Long(min)	22	-1776.48	-18.38	-79.11	81.22	2.855	28.45	2.06E-03
2	Pila 2	200	GEN SLD Trasv(min)	22	-1816.33	-61.99	-36.00	71.69	2.855	25.11	2.09E-03
2	Pila 2	200	GEN SLD Vert(min)	22	-1790.25	-18.39	-35.91	40.35	2.855	14.13	2.08E-03
2	Pila 2	201	GEN SLD Long(max)	24	-1755.61	19.58	54.94	58.32	2.855	20.43	2.20E-03
2	Pila 2	201	GEN SLD Trasv(max)	24	-1752.17	63.26	11.74	64.34	2.855	22.54	2.18E-03
2	Pila 2	201	GEN SLD Vert(max)	24	-1740.22	19.58	11.74	22.83	2.855	8.00	2.18E-03
2	Pila 2	201	GEN SLD Long(min)	24	-2036.68	-18.59	-79.02	81.18	2.855	28.44	1.98E-03
2	Pila 2	201	GEN SLD Trasv(min)	24	-2040.13	-62.27	-35.82	71.84	2.855	25.17	2.00E-03
2	Pila 2	201	GEN SLD Vert(min)	24	-2052.07	-18.59	-35.82	40.36	2.855	14.14	2.00E-03
2	Pila 2	202	GEN SLD Long(max)	886	-1755.61	18.59	54.94	58.00	2.855	20.32	2.21E-03
2	Pila 2	202	GEN SLD Trasv(max)	886	-1752.17	62.27	11.74	63.37	2.855	22.20	2.19E-03
2	Pila 2	202	GEN SLD Vert(max)	886	-1740.23	18.59	11.74	21.99	2.855	7.70	2.19E-03
2	Pila 2	202	GEN SLD Long(min)	886	-2036.68	-19.58	-79.02	81.41	2.855	28.52	1.97E-03
2	Pila 2	202	GEN SLD Trasv(min)	886	-2040.13	-63.26	-35.82	72.70	2.855	25.47	2.00E-03
2	Pila 2	202	GEN SLD Vert(min)	886	-2052.07	-19.58	-35.82	40.82	2.855	14.30	2.00E-03
2	Pila 2	203	GEN SLD Long(max)	28	-1467.24	18.38	54.93	57.92	2.855	20.29	2.28E-03
2	Pila 2	203	GEN SLD Trasv(max)	28	-1427.39	61.99	11.81	63.10	2.855	22.11	2.28E-03
2	Pila 2	203	GEN SLD Vert(max)	28	-1453.47	18.39	11.73	21.81	2.855	7.64	2.26E-03
2	Pila 2	203	GEN SLD Long(min)	28	-1776.48	-21.58	-79.11	82.00	2.855	28.73	2.00E-03
2	Pila 2	203	GEN SLD Trasv(min)	28	-1816.33	-65.19	-36.00	74.47	2.855	26.09	2.01E-03
2	Pila 2	203	GEN SLD Vert(min)	28	-1790.25	-21.59	-35.91	41.90	2.855	14.68	2.02E-03

		Axial (kN)	Shear-y (kN)	Shear-z (kN)	Shear-tot (kN)	Kh eq. (kN/mm)	Deform. (mm)	Rotazione (rad)
SFORZI MASSIMI:	**Spalle**	**-394.68**	**28.47**	**38.16**	**39.13**	**1.302**	**30.05**	**1.25E-02**
	Pile	**-1427.39**	**65.19**	**79.11**	**82.00**	**2.855**	**28.73**	**2.28E-03**
SFORZI MINIMI:	**Spalle**	**-509.37**	**-28.47**	**-38.16**				
	Pile	**-2052.07**	**-65.19**	**-79.11**				

14 GIUNTI DI DILATAZIONE

I giunti di dilatazione si assumono soggetti alle condizioni di carico di progetto con l'eccezione delle dilatazioni termiche che si considerano raddoppiate (± 30°) per tener conto dell'incertezza sulla posizione del punto fisso.
Segue tabulato degli spostamenti dei nodi di estremità dell'impalcato per le condizioni di carico pertinenti.

Node	Load	DX (mm)	DY (mm)	DZ (mm)	RX ([rad])	RY ([rad])	RZ ([rad])
719	Vento strutture (Y+)	0.068389	17.576833	0.002204	-0.000048	-0.000015	0.000016
760	Vento strutture (Y+)	0.021520	17.573931	-0.004683	-0.000026	-0.000006	0.000015
801	Vento strutture (Y+)	-0.023173	17.574243	0.005461	-0.000027	0.000004	0.000015
842	Vento strutture (Y+)	-0.068734	17.579361	-0.001587	-0.000060	0.000018	0.000016
719	Vento mobili (Y+)	0.036570	6.996293	-0.013120	-0.000084	-0.000042	0.000008
760	Vento mobili (Y+)	0.015985	6.982558	-0.010969	-0.000022	-0.000005	0.000009
801	Vento mobili (Y+)	-0.008582	6.980313	0.006823	-0.000014	0.000013	0.000009
842	Vento mobili (Y+)	-0.036025	6.980703	0.009808	-0.000022	0.000024	0.000010
719	Frenamento (X+)	19.251852	-0.000177	0.010642	0.000002	0.000009	0.000000
760	Frenamento (X+)	19.251739	0.000012	0.010578	0.000000	0.000008	0.000000
801	Frenamento (X+)	19.251739	-0.000012	0.010578	0.000000	0.000008	0.000000
842	Frenamento (X+)	19.251852	0.000177	0.010642	-0.000002	0.000009	0.000000
719	Termico Unif. +15°	-9.150895	0.028749	0.011428	-0.000384	-0.000086	0.000000
760	Termico Unif. +15°	-9.118708	-0.000741	-0.005659	-0.000058	0.000094	-0.000001
801	Termico Unif. +15°	-9.118708	0.000741	-0.005659	0.000058	0.000094	0.000001
842	Termico Unif. +15°	-9.150895	-0.028749	0.011428	0.000384	-0.000086	0.000000
719	Termico diff. +5°/H	-0.123520	0.002038	-0.351782	-0.000021	-0.000443	0.000000
760	Termico diff. +5°/H	-0.121938	-0.000072	-0.347577	-0.000004	-0.000428	0.000000
801	Termico diff. +5°/H	-0.121938	0.000072	-0.347577	0.000004	-0.000428	0.000000
842	Termico diff. +5°/H	-0.123520	-0.002038	-0.351782	0.000021	-0.000443	0.000000
719	SLC Long (X+)(RS)	70.659806	-0.000727	0.032927	0.000007	0.000031	0.000000
760	SLC Long (X+)(RS)	70.659263	-0.000032	0.032527	0.000000	0.000028	0.000000
801	SLC Long (X+)(RS)	70.659263	0.000032	0.032527	0.000000	0.000028	0.000000
842	SLC Long (X+)(RS)	70.659806	0.000727	0.032927	-0.000007	0.000031	0.000000
719	SLC Trasv (Y+)(RS)	0.294864	69.192101	0.011048	-0.000211	-0.000078	0.000068
760	SLC Trasv (Y+)(RS)	0.096180	69.181443	-0.022178	-0.000114	-0.000024	0.000064
801	SLC Trasv (Y+)(RS)	-0.096180	69.181443	0.022178	-0.000114	0.000024	0.000064
842	SLC Trasv (Y+)(RS)	-0.294864	69.192101	-0.011048	-0.000211	0.000078	0.000068
719	SLC Vert (Z+)(RS)	0.098816	0.001751	-0.191825	-0.000012	-0.000289	0.000000
760	SLC Vert (Z+)(RS)	0.101032	0.000471	-0.186926	-0.000003	-0.000277	0.000000
801	SLC Vert (Z+)(RS)	0.101032	-0.000473	-0.186926	0.000003	-0.000277	0.000000
842	SLC Vert (Z+)(RS)	0.098816	-0.001751	-0.191825	0.000012	-0.000289	0.000000

Ai valori determinati in direzione longitudinale si sommano 50 mm assunti come massima deformazione ammissibile delle sottostrutture, già calcolata allo SLU.

Si prevedono giunti con le seguenti caratteristiche di deformazione massime:
- escursione longitudinale: $\Delta X = \pm 165$ mm
- escursione trasversale: $\Delta Y = \pm 165$ mm

1) Verifica deformazioni longitudinali statiche: considerando il frenamento come carico variabile dominante si ottiene la deformazione massima allo SLU dalla seguente somma:

	ΔX	γ_q	ψ_0	
- Frenamento:	19.3	x 1.35	x 1	= 26.1 mm
- Termico unif.±30°:	2 x 9.2	x 1.2	x 0.6	= 13.2 mm
- Deform. max sottostrutture:				= 50 mm
- Deformazione totale:				= 89.3 mm (< 165 mm: verificato)

2) Verifica deformazioni trasversali statiche: considerando il vento come carico variabile dominante si ottiene la deformazione massima allo SLU dalla seguente somma:

	ΔY	γ_q	ψ_0	
- Vento strutture:	17.6	x 1.5	x 1	= 26.4 mm
- Vento carichi mobili:	7.00	x 1.5	x 1	= 10.5 mm
- Deformazione totale:				= 36.9 mm (< 165 mm: verificato)

3) Verifica deformazioni longitudinali sismiche: si ottiene la deformazione massima allo SLC dalla seguente somma:

	ΔX	γ_q	ψ_0	
- SLC longitudinale:	70.7	x 1	x 1	= 70.7 mm
- Termico unif.±30°:	2 x 9.2	x 1	x 0.5	= 9.2 mm
- Deform. max sottostrutture:				= 50 mm
- Deformazione totale:				= 129.9 mm (< 165 mm: verificato)

3) Verifica deformazioni trasversali sismiche: si ottiene la deformazione massima allo SLC dalla seguente somma:

	ΔY	γ_q	ψ_0	
- SLC trasversale:	69.2	x 1	x 1	= 69.2 mm
- Deformazione totale:				= 69.2 mm (< 165 mm: verificato)

15 VERIFICHE TRASVERSALI DELLA SOLETTA STRADALE DI SCORRIMENTO

15.1 VERIFICA IN FASE COSTRUTTIVA

In fase costruttiva la sezione resistente è rappresentata dai tralicci inseriti nelle lastre prefabbricate, sollecitati dal peso della soletta e dal carico accidentale previsto da EN 1991-1-6, § 4.11.2.

15.1.1 FASE COSTRUTTIVA - SBALZO LATERALE

VERIFICA LASTRE IN C.A. TRALICCIATE PREFABBRICATE

LASTRE PREFABBRICATE CAVALCAVIA STRADA VIC. DELLE COSTE - CAMPATA A SBALZO: L= 135 cm

DATI GENERALI LASTRA PREFABBRICATA.

Schema vincolare in fase costruttiva:		A) Incastro - B) Estremo libero (a sbalzo)	
Luce di calcolo della lastra:	$L=$	135	cm
Larghezza di calcolo della lastra:	$B_C=$	240	cm
Altezza calcestruzzo lastra:	$H_C=$	6	cm
Altezza della soletta (getto in opera):	$H_S=$	24	cm
Peso specifico calcestruzzo:	$g_C=$	25	kN/m^3
Vincolo laterale armature offerto dalla lastra presente nella sezione di verifica:		NO	

DATI TRALICCI E ARMATURA AGGIUNTIVA LASTRA PREFABBRICATA.

Numero tralicci per lastra:	$N_{tr}=$	4	
Altezza nominale del traliccio:	$H_T=$	20.5	cm
Altezza utile del traliccio:	$H_U=$	18.8	cm
Larghezza traliccio:	$B_T=$	12.0	cm
Passo staffe:	$P_{ST}=$	20.0	cm
Ricoprimento tralicci e armature aggiuntive (dal bordo inferiore lastra):	$R_{IT}=$	4.0	cm
Modulo elastico acciaio	$E_S=$	210 000	N/mm^2
Coefficiente parziale di sicurezza dell'acciaio armature:	$\gamma_S=$	1.15	

DATI ARMATURA LASTRA PREFABBRICATA.

		Singolo traliccio			Arm. agg. lastra	
		Corr. Superiore	Corr.Inferiori	Staffe		
Tipo di acciaio		B450C	B450C	B450C	B450C	
Resistenza caratteristica acciaio	$f_{Yk}=$	450.00	450.00	450.00	450.00	N/mm^2
Resistenza di calcolo acciaio	$f_{Yd}=$	391.30	391.30	391.30	391.30	N/mm^2
Diametro:	$\Phi=$	16	12	10	0	mm
Numero di ferri per traliccio (Arm. agg. per lastra):	$N_F=$	1	2	2	0	
Area di armatura per lastra:	$A_F=$	8.042	9.048	6.283	0.000	cm^2
Inclinazione ferri in direzione longitudinale:	$\alpha=$	0.00	0.00	70.97	0.00	°
Inclinazione ferri in direzione trasversale:	$\gamma=$	0.00	0.00	80.93	0.00	°
Coefficiente di vincolo:	$\beta=$	1	1	1	1	
Lunghezza di calcolo per instabilità aste compresse	$L=$	20.00	20.00	20.14	40.00	cm
Lunghezza libera d'inflessione ($L_0=\beta*L$):	$L_0=$	20.00	20.00	20.14	40.00	cm

DATI DI CARICO NOTA: Per le azioni in fase di costruzione durante il getto di calcestruzzo ci si riferisce a: UNI EN 1991-1-6, § 4.11.2.

Coefficiente parziale dei carichi permanenti strutturali (peso lastra):	$\gamma_{g1}=$	1.35	
Coefficiente parziale dei carichi permanenti portati (getto in opera):	$\gamma_{g2}=$	1.5	
Coefficiente parziale dei carichi variabili (sovraccarichi):	$\gamma_q=$	1.5	

		Estensione del carico permanente (X1=X2 per carico concentrato):			Da X1 (cm)	A X2 (cm)
Peso strutturale lastra:		$G_1=$	1.50	kN/mq	0	135
Permanente portato 1:	getto in opera soletta:	$G_{2,1}=$	6.00	kN/mq	0	135
Permanente portato 2:	.	$G_{2,2}=$	0.00	kN/m	0	0
Permanente portato 3:	.	$G_{2,3}=$	0.00	kN/m	0	0
Sovraccarico all'interno dell'area di lavoro di 3 m x 3 m (L se minore):		$Q_1=$	0.75	kN/mq		
Sovraccarico all'esterno dell'area di lavoro di 3 m x 3 m (L se minore):		$Q_2=$	0.75	kN/mq		

SOLLECITAZIONI ALLO S.L.U. NOTA: Le sollecitazioni si intendono riferite alla larghezza della lastra.

Momento flettente di progetto:	$M_{Sd}=$	-26.57	KN.m
Sforzo di taglio di progetto:	$V_{Sd}=$	39.37	KN

VERIFICA ALLO S.L.U..

Sforzi assiali nei correnti ($N_{Sd}=M_{Sd}/H_U$)

Sforzi assiali nelle staffe ($N_{Sd}=V_{Sd}/(Sen(\alpha)*Sen(\gamma))$

		Corr. Superiore (Teso)	Corr.Inferiori (Compresso)	Staffe (Compresso)	Arm. Agg. (Compresso)	
Carico elastico critico ($N_{CR}=p^2*E_S*J/L_0\text{^}2$)	$N_{CR}=$	166.690	52.742	25.088	0.000	kN
Snellezza adimensionale ($\lambda=(A_f\ f_{YK}/N_{CR})^{0.5}$)	$\lambda=$	0.737	0.982	1.187	0.000	
Fattore di imperfezione (NTC 2008; tab. 4.2.VI)	$\alpha=$	0.490	0.490	0.490	0.490	
Coefficiente di stabilità delle aste compresse:	$\Phi=$	0.903	1.174	1.446	0.451	
Fattore di riduzione	$\chi=$	0.702	0.550	0.440	1.000	
Resistenza di calcolo a compressione (instabilità)	$N_{b,Rd}=$	-55.217	-24.352	-13.524	0.000	kN
Resistenza di calcolo a trazione e compressione	$N_{c,Rd}=$	±78.676	±44.255	±30.733	±0.000	kN
Considerare instabilità delle aste compresse (non incluse nel cls.)	SI/NO	NO	SI	SI	SI	
Resistenza di calcolo considerata (ferro singolo)	$N_{Rd}=$	78.676	-24.352	-13.524	0.000	kN
Sforzo assiale di calcolo (ferro singolo)	$N_{Sd}=$	35.335	-17.668	5.271	0.000	kN
Coefficiente di sfruttamento (N_{Sd}/N_{Rd} < 1: verificato)	$N_{Sd}/N_{Rd}=$	0.449	0.726	0.390	0.000	

15.1.2 FASE COSTRUTTIVA - CAMPATA TRA LE TRAVI

La lastra è semplicemente appoggiata agli estremi sulla luce di 280 cm.

VERIFICA LASTRE IN C.A. TRALICCIATE PREFABBRICATE

LASTRE PREFABBRICATE CAVALCAVIA STRADA VIC. DELLE COSTE - TRA TRAVI: L= 280 cm

DATI GENERALI LASTRA PREFABBRICATA.

Schema vincolare in fase costruttiva:		A) Appoggio - B) Appoggio	
Luce di calcolo della lastra:	$L=$	280	cm
Larghezza di calcolo della lastra:	$B_C=$	240	cm
Altezza calcestruzzo lastra:	$H_C=$	6	cm
Altezza della soletta (getto in opera):	$H_S=$	24	cm
Peso specifico calcestruzzo:	$g_C=$	25	kN/m^3
Vincolo laterale armature offerto dalla lastra presente nella sezione di verifica:		SI	

DATI TRALICCI E ARMATURA AGGIUNTIVA LASTRA PREFABBRICATA.

Numero tralicci per lastra:	$N_{tr}=$	4	
Altezza nominale del traliccio:	$H_T=$	20.5	cm
Altezza utile del traliccio:	$H_U=$	18.8	cm
Larghezza traliccio:	$B_T=$	12.0	cm
Passo staffe:	$P_{ST}=$	20.0	cm
Ricoprimento tralicci e armature aggiuntive (dal bordo inferiore lastra):	$R_{IT}=$	4.0	cm
Modulo elastico acciaio	$E_S=$	210 000	N/mm^2
Coefficiente parziale di sicurezza dell'acciaio armature:	$\gamma_S=$	1.15	

DATI ARMATURA LASTRA PREFABBRICATA.

		Singolo traliccio			Arm. agg. lastra	
		Corr. Superiore	Corr.Inferiori	Staffe		
Tipo di acciaio		B450C	B450C	B450C	B450C	
Resistenza caratteristica acciaio	$f_{Yk}=$	450.00	450.00	450.00	450.00	N/mm^2
Resistenza di calcolo acciaio	$f_{Yd}=$	391.30	391.30	391.30	391.30	N/mm^2
Diametro:	$\Phi=$	16	12	10	0	mm
Numero di ferri per traliccio (Arm. agg. per lastra):	$N_F=$	1	2	2	0	
Area di armatura per lastra:	$A_F=$	8.042	9.048	6.283	0.000	cm^2
Inclinazione ferri in direzione longitudinale:	$\alpha=$	0.00	0.00	70.97	0.00	°
Inclinazione ferri in direzione trasversale:	$\gamma=$	0.00	0.00	80.93	0.00	°
Coefficiente di vincolo:	$\beta=$	1	1	1	1	
Lunghezza di calcolo per instabilità aste compresse	$L=$	20.00	20.00	20.14	40.00	cm
Lunghezza libera d'inflessione ($L_0=\beta*L$):	$L_0=$	20.00	20.00	20.14	40.00	cm

DATI DI CARICO NOTA: Per le azioni in fase di costruzione durante il getto di calcestruzzo ci si riferisce a: UNI EN 1991-1-6, § 4.11.2.

Coefficiente parziale dei carichi permanenti strutturali (peso lastra):	$\gamma_{g1}=$	1.35
Coefficiente parziale dei carichi permanenti portati (getto in opera):	$\gamma_{g2}=$	1.5
Coefficiente parziale dei carichi variabili (sovraccarichi):	$\gamma_q=$	1.5

		Estensione del carico permanente (X1=X2 per carico concentrato):			Da X1 (cm)	A X2 (cm)
Peso strutturale lastra:		$G_1=$	1.50	kN/mq	0	280
Permanente portato 1:	getto in opera soletta:	$G_{2,1}=$	6.00	kN/mq	0	280
Permanente portato 2:	.	$G_{2,2}=$	0.00	kN/m	0	0
Permanente portato 3:	.	$G_{2,3}=$	0.00	kN/m	0	0
Sovraccarico all'interno dell'area di lavoro di 3 m x 3 m (L se minore):		$Q_1=$	0.75	kN/mq		
Sovraccarico all'esterno dell'area di lavoro di 3 m x 3 m (L se minore):		$Q_2=$	0.75	kN/mq		

SOLLECITAZIONI ALLO S.L.U. NOTA: Le sollecitazioni si intendono riferite alla larghezza della lastra.

Momento flettente di progetto:	$M_{Sd}=$	28.58	KN.m
Sforzo di taglio di progetto:	$V_{Sd}=$	40.82	KN

VERIFICA ALLO S.L.U..

Sforzi assiali nei correnti ($N_{Sd}=M_{Sd}/H_U$)

Sforzi assiali nelle staffe ($N_{Sd}=V_{Sd}/(Sen(\alpha)*Sen(\gamma))$

		Corr. Superiore (Compresso)	Corr.Inferiori (Teso)	Staffe (Compresso)	Arm. Agg. (Teso)	
Carico elastico critico ($N_{CR}=p^2*E_S*J/L_0\text{^}2$)	$N_{CR}=$	166.690	52.742	25.088	0.000	kN
Snellezza adimensionale ($\lambda=(A_f\ f_{Yk}/N_{CR})^{0.5}$)	$\lambda=$	0.737	0.982	1.187	0.000	
Fattore di imperfezione (NTC 2008; tab. 4.2.VI)	$\alpha=$	0.490	0.490	0.490	0.490	
Coefficiente di stabilità delle aste compresse:	$\Phi=$	0.903	1.174	1.446	0.451	
Fattore di riduzione	$\chi=$	0.702	0.550	0.440	1.000	
Resistenza di calcolo a compressione (instabilità)	$N_{b,Rd}=$	-55.217	-24.352	-13.524	0.000	kN
Resistenza di calcolo a trazione e compressione	$N_{c,Rd}=$	±78.676	±44.255	±30.733	±0.000	kN
Considerare instabilità delle aste compresse (non incluse nel cls.)	SI/NO	SI	NO	SI	NO	
Resistenza di calcolo considerata (ferro singolo)	$N_{Rd}=$	-55.217	44.255	-13.524	0.000	kN
Sforzo assiale di calcolo (ferro singolo)	$N_{Sd}=$	-38.001	19.001	5.466	0.000	kN
Coefficiente di sfruttamento ($N_{Sd}/N_{Rd}<1$: verificato)	$N_{Sd}/N_{Rd}=$	0.688	0.429	0.404	0.000	

15.2 VERIFICA IN ESERCIZIO - SBALZO LATERALE

La verifica viene svolta per lo sbalzo avente una luce L= 1.35 m dall'asse trave.

La determinazione delle sollecitazioni massime viene svolta con apposito foglio di calcolo considerando i carichi permanenti e tutte le possibili colonne di carico mobile, compatibilmente con lo sbalzo considerato.

Si considerano in alternativa:

- colonne di schemi di carico 1

- schema di carico 2

Inoltre si considera una combinazione eccezionale con i carichi di cui sopra (con coefficienti SLU unitari) e l'effetto di urto sul sicurvia

Le singole ruote dei carichi mobili vengono disposte in modo da ottenere o il momento flettente massimo o lo sforzo di taglio massimo alla sezione di incastro.

Verifica allo stato limite ultimo: si determina l'area di armatura minima necessaria (verifica a flessione) e l'area minima di armatura trasversale (verifica a taglio).

Verifica allo stato limite di esercizio: si effettua la verifica allo stato limite di fessurazione per via indiretta dimensionando l'armatura minima lavorante ad una definita tensione, funzione del diametro massimo delle barre e dell'apertura ammissibile delle fessure; nel presente caso si ha:

- condizioni ambientali: Molto aggressive

- apertura max fessure, combinazioni frequenti: w_1 = 0.2 mm

- apertura max fessure, combinazioni quasi permanenti: w_1 = 0.2 mm

- diametro massimo delle barre: Ø = 25 mm

Dalla tabella C4.1.II della Circ. 02/02/2009 n°617 si ottiene:

- Tensione di progetto nell'acciaio: σ_s = 160 N/mm^2

Verifica dello sbalzo trasversale: sezione corrente **L=** 1.350 **m**

Altezza della lastra prefabbricata					0.060	m
Altezza totale soletta all'incastro					0.300	m
Altezza totale soletta all'estremita' libera					0.300	m
Lunghezza di calcolo dello sbalzo					1.350	m
Larghezza del marciapiede					1.900	m
Altezza del marciapiede					0.150	m
Peso specifico calcestruzzo armato					25.000	kN/m^3
Altezza della massicciata					0.100	m
Peso della massicciata					2.500	kN/m^2
Peso del sicurvia					0.800	kN/m
Distanza asse sicurvia da incastro					0.000	m
Peso del parapetto					0.500	kN/m
Distanza asse parapetto da incastro					1.250	m
Peso della veletta					2.000	kN/m
Distanza asse veletta da incastro					1.400	m
Carico della folla (di combinazione)					6.000	kN/m
Distanza asse folla da incastro					0.550	m
Coefficiente dinamico					1.000	
Schema di carico 1:	Larghezza delle colonne di carico				3.000	m
	Interasse ruote in senso trasversale				2.000	m
	Interasse ruote in senso longitudinale				1.200	m
	Lati dell'impronta ruota: L=	0.400 m	T=		0.400	m
		1° colonna	2° colonna	3° colonna		
	Peso singola ruota	150.000	100.000	50.000	kN	
	Carico distribuito	9.000	2.500	2.500	kN/m^2	
Schema di carico 2:	Interasse ruote in senso trasversale			2.000	m	
	Interasse ruote in senso longitudinale			0.000	m	
	Lati dell'impronta ruota: L=	0.350 m	T=	0.600	m	
	Peso singola ruota			200.000	kN	
Angolo di ripartizione verticale dei carichi nello spessore				45.000	°	
Angolo di ripartizione orizzontale dei carichi (effetto piastra)				45.000	°	

Tabella dei carichi mobili

n° ruote =	numero ruote carico considerato
b=	braccio del carico in esame (risultante)
lrip =	larghezza di ripartizione del carico ruote
q=	carico distribuito sulla larghezza di ripartizione

			Massimo momento flettente			Massimo sforzo di taglio		
	n° carico	n° ruote	bm (m)	lrip (m)	qm (kN/m)	bt (m)	lrip (m)	qt (kN/m)
1° colonna	Schema 1 - distribuito		0.000	1.000	0.000	0.000	1.000	0.000
	Schema 1 - 1° fila	1	0.000	0.840	0.000	0.000	0.840	0.000
	Schema 1 - 1° fila	2	0.000	2.040	0.000	0.000	2.040	0.000
	Schema 1 - 2° fila	2	0.000	2.040	0.000	0.000	2.040	0.000
2° colonna	Schema 1 - distribuito		0.000	1.000	0.000	0.000	1.000	0.000
	Schema 1 - 1° fila	1	0.000	0.840	0.000	0.000	0.840	0.000
	Schema 1 - 1° fila	2	0.000	2.040	0.000	0.000	2.040	0.000
	Schema 1 - 2° fila	2	0.000	2.040	0.000	0.000	2.040	0.000
3° colonna	Schema 1 - distribuito		0.000	1.000	0.000	0.000	1.000	0.000
	Schema 1 - 1° fila	1	0.000	0.840	0.000	0.000	0.840	0.000
	Schema 1 - 1° fila	2	0.000	2.040	0.000	0.000	2.040	0.000
	Schema 1 - 2° fila	2	0.000	2.040	0.000	0.000	2.040	0.000
	Schema 2 - 1° fila	1	0.000	0.000	0.000	0.000	0.790	0.000
	Schema 2 - 2° fila	1	0.000	0.000	0.000	0.000	0.790	0.000

Effetto d'urto sul sicurvia (azione eccezionale)	100.000	kN
Altezza della forza d'urto da estradosso soletta	1.150	m
Larghezza di ripartizione urto	1.040	m

Sollecitazioni all'incastro; sezione corrente

Tipo di carico	Tagli (kN/m)	Momenti (kNm/m)	Sf.norm (kN/m)
Peso proprio (rettangolo)	10.125	-6.834	0.000
Peso proprio (triangolo)	0.000	0.000	0.000
Marciapiede	7.125	-2.850	0.000
Massicciata	-1.375	-0.378	0.000
Sicurvia	0.800	0.000	0.000
Parapetto	0.500	-0.625	0.000
Veletta	2.000	-2.800	0.000
Folla	6.000	-3.300	0.000
Schema 1 - distribuito	0.000	0.000	0.000
Schema 1 (tandem max)	0.000	0.000	0.000
Schema 2 (max)	0.000	0.000	0.000
Urto	0.000	-125.000	96.154

Coefficienti parziali (γ x ψ)	SLU	SLU ECC:	SLE (rare)	SLE (frequenti)	SLE (quasi perm.)
Carichi permanenti	1.350	1.000	1.000	1.000	1.000
Carichi mobili - Tandem	1.350	1.000	1.000	0.750	0.000
Carichi mobili - Distribuiti	1.350	1.000	1.000	0.400	0.000

Sollecitazioni complessive all'incastro; sezione corrente

Tipo di carico	Tagli (kN/m)	Momenti (kNm/m)	Sf.norm (kN/m)
SLU Totali perm.+ mobili	33.986	-22.663	0.000
SLU ECC. Totali perm.+ mobili + urto	19.175	-138.488	96.154
SLE (rare) Totali perm.+ mobili	25.175	-16.788	0.000
SLE (frequenti) Totali perm.+ mobili	21.575	-14.808	0.000
SLE (quasi perm.) Totali perm.+ mobili	19.175	-13.488	0.000

Dimensionamento armature minime allo SLU

Resistenza di calcolo calcestruzzo:	fcd=	18.13	N/mmq
Resistenza di calcolo armatura:	fsd=	391.30	N/mmq
Modulo di elasticità armatura:	Es=	210000	N/mmq
Ricoprimento armature:	Ry=	50	mm
Inclinazione delle staffe (45°<=α<=90°)	α=	90.00	°
Inclinazione di calcolo dei puntoni di calcestruzzo	θ =	21.80	°
Altezza utile della sezione di incastro	d=	25.00	cm
Altezza minima sezione reagente:	X=	3.78	cm
Area di armatura tesa minima:	As(sup)=	16.48	cmq/m
Area di armatura compressa minima:	As(inf)=	0.00	cmq/m
Verifica resistenza al taglio, solo cls.	Vrd,c=	129.06	kN
Coefficiente di sicurezza, solo cls.	Vrd,c/Vsd=	3.797	>1: Verificato
Area di armatura trasversale necessaria per taglio:	Ast=	N.D.	cmq/mq

Dimensionamento armature minime allo SLE

		SLE (frequenti)	SLE (quasi perm.)	
Valore limite di apertura fessure:	wd=	0.2	0.2	mm
Tensione di calcolo armatura:	Sa=	160	160	N/mmq
Tensione nel calcestruzzo	Sc=	2.59	2.46	N/mmq
Area di armatura tesa minima:	As(sup)=	3.96	3.60	cmq/m

15.3 VERIFICA IN ESERCIZIO - SOLETTA INTERNA TRA LE TRAVI

La soletta tra le travi si schematizza come trave semi-incastrata di luce 3.20 m per una larghezza di calcolo unitaria.

Verifica soletta tra le travi(o su travi a canaletta) **L =** 3.200 **m**

Altezza della lastra prefabbricata					0.060	m
Altezza della soletta					0.300	m
Luce di calcolo					3.200	m
Peso specifico calcestruzzo armato					25.000	kN/m^3
Altezza della massicciata					0.100	m
Peso della massicciata					2.500	kN/m^2
Coefficiente dinamico					1.000	
Schema di carico 1:	Larghezza delle colonne di carico				3.000	m
	Interasse ruote in senso trasversale				2.000	m
	Interasse ruote in senso longitudinale				1.200	m
	Lati dell'impronta ruota: L=	0.400 m	T=		0.400	m
		1° colonna	2° colonna		3° colonna	
	Peso singola ruota	150.000	100.000		50.000	kN
	Carico distribuito	9.000	2.500		2.500	kN/m^2
Schema di carico 2:	Interasse ruote in senso trasversale				2.000	m
	Interasse ruote in senso longitudinale				0.000	m
	Lati dell'impronta ruota: L=	0.350 m	T=		0.600	m
	Peso singola ruota				200.000	kN

Angolo di ripartizione verticale dei carichi nello spessore	45.000	°
Angolo di ripartizione orizzontale dei carichi (effetto piastra)	45.000	°
Efficienza minima dei vncoli di incastro (0=appoggio; 1=incastro perfetto)	0.750	

Tabella dei carichi mobili

n° ruote =	numero ruote carico considerato
xm =	distanza dall'incastro del carico in esame (disposizione di momento massimo)
xt =	distanza dall'incastro del carico in esame (disposizione di taglio massimo)
lrip =	larghezza di ripartizione del carico ruote
q=	carico distribuito sulla larghezza di ripartizione

			Massimo momento flettente			Massimo sforzo di taglio		
	n° carico	n° ruote	xm (m)	lrip (m)	qm (kN/m)	xt (m)	lrip (m)	qt (kN/m)
1° colonna	Schema 1 - distribuito		2.150	1.000	18.900	1.500	1.000	27.000
	Schema 1 - 1° fila	1	1.600	2.440	61.475	0.500	2.440	61.475
	Schema 1 - 1° fila	2	1.600	3.640	82.418	0.500	3.640	82.418
	Schema 1 - 2° fila	2	0.000	0.000	0.000	2.500	3.640	82.418
2° colonna	Schema 1 - distribuito		1.500	1.000	7.500	2.950	1.000	1.250
	Schema 1 - 1° fila	1	0.600	2.440	40.984	3.200	2.440	40.984
	Schema 1 - 1° fila	2	0.600	3.640	54.945	3.200	3.640	54.945
	Schema 1 - 2° fila	2	0.000	0.000	0.000	0.000	0.000	0.000
3° colonna	Schema 1 - distribuito		0.000	1.000	0.000	0.000	1.000	0.000
	Schema 1 - 1° fila	1	0.000	0.000	0.000	0.000	0.000	0.000
	Schema 1 - 1° fila	2	0.000	0.000	0.000	0.000	0.000	0.000
	Schema 1 - 2° fila	2	0.000	0.000	0.000	0.000	0.000	0.000
	Schema 2 - 1° fila	1	1.600	2.390	83.682	0.500	2.390	83.682
	Schema 2 - 2° fila	1	0.000	0.000	0.000	2.500	2.390	83.682

Sollecitazioni massime/minime

Tipo di carico	Taglio max (kN/m)	Momento max (kNm/m)	Momento min (kNm/m)
Peso soletta	12.000	4.800	-6.400
Massicciata	4.000	1.600	-2.133
Schema 1 - distribuito	15.615	6.204	-8.885
Schema 1 (max/min)	131.895	39.940	-52.522
Schema 2 (max/min)	88.176	31.846	-39.354

Coefficienti parziali (γ x ψ)	SLU	SLE (rare)	SLE (frequenti)	SLE (quasi perm.)
Carichi permanenti	1.350	1.000	1.000	1.000
Carichi mobili - Tandem	1.350	1.000	0.750	0.000
Carichi mobili - Distribuiti	1.350	1.000	0.400	0.000

Sollecitazioni complessive massime/minime

Tipo di carico	Taglio max (kN/m)	Momento max (kNm/m)	Momento min (kNm/m)
SLU Totali perm.+ mobili	220.739	70.935	-94.420
SLE (rare) Totali perm.+ mobili	163.510	52.545	-69.940
SLE (frequenti) Totali perm.+ mobili	121.167	38.837	-51.479
SLE (quasi perm.) Totali perm.+ mobili	16.000	6.400	-8.533

Dimensionamento armature minime allo SLU

Resistenza di calcolo calcestruzzo:	fcd=	19.83	N/mmq
Resistenza di calcolo armatura:	fsd=	391.30	N/mmq
Modulo di elasticità armatura:	Es=	210000.00	N/mmq
Ricoprimento armature:	Ry(sup)=	50	mm
	Ry(inf)=	80	mm
Inclinazione delle staffe (45°<=α<=90°)	α=	90.00	°
Inclinazione di calcolo dei puntoni di calcestruzzo	θ =	21.80	°

		Momento max	Momento min	
Altezza utile della sezione	d=	22.00	25.00	cm
Altezza sezione reagente:	X=	2.11	2.48	cm
Area di armatura superiore minima:	As(sup)=	0.00	10.05	cmq/m
Area di armatura inferiore minima:	As(inf)=	8.57	0.00	cmq/m
Verifica resistenza al taglio, solo cls.	Vrd,c=		137.20	kN
Coefficiente di sicurezza, solo cls.	Vrd,c/Vsd=		0.622	<1: NON Verificato
Area di armatura trasversale necessaria per ta	Ast=		10.03	cmq/mq

Dimensionamento armature minime allo SLE (frequenti)

		Momento max	Momento min	
Valore limite di apertura fessure:	wd=	0.2	0.2	mm
Tensione di calcolo armatura:	Sa=	160	160	N/mmq
Tensione nel calcestruzzo	Sc=	5.39	5.48	N/mmq
Area di armatura superiore minima:	As(sup)=	0.00	14.51	cmq/m
Area di armatura inferiore minima:	As(inf)=	12.42	0.00	cmq/m

15.4 VERIFICA CORDOLI

Si effettua la verifica della resistenza a taglio delle armature di collegamento tra la soletta e il cordolo sotto l'effetto dell'urto sul sicurvia; si ha:

- effetto di urto sul sicurvia: H = 100 kN
- larghezza di applicazione: b = 0.50 m
- area armature: 1 + 1 Ø 16 / 20: $A_1 = 2 \times 201 \times 50 / 20 = 1005$ mm^2
  1 Ø 12 / 20 / 40: $A_2 = 4 \times 113 \times 50 / 20 = 1130$ mm^2
  $A = 1005 + 283 = 2135$ mm^2
- resistenza tangenziale di calcolo: $t_d = \frac{450}{1.15\sqrt{3}} = 226$ N/mm^2
- resistenza di calcolo: R = 226 x 2.135 = 482.5 kN (Verificato: R > H)

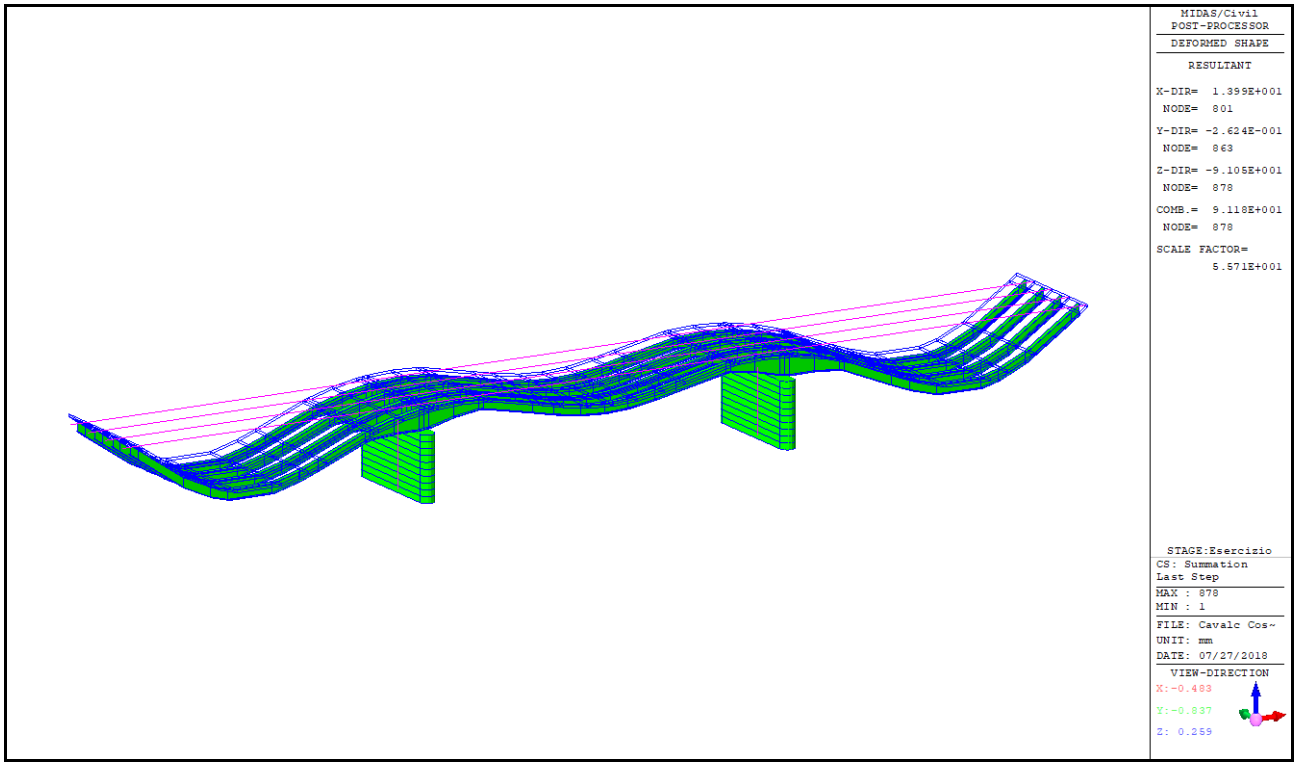
16 VERIFICHE DI DEFORMAZIONE TRAVI PRINCIPALI

16.1 DEFORMAZIONE CARICHI PERMANENTI

Si verifica che la deformata minima dovuta ai carichi permanenti sia minore di:

- campate laterali: $\Delta Z_{lim,L}$ = L / 300 = 31000/ 300 = 103.3 mm.
- campata centrale: $\Delta Z_{lim,C}$ = L / 300 = 38000/ 300 = 126.7 mm.

Segue diagramma delle deformazioni minime per la combinazione considerata.



DEFORMATA MINIMA CARICHI PERMANENTI

Il valore massimo (in modulo) della deformazione vale:

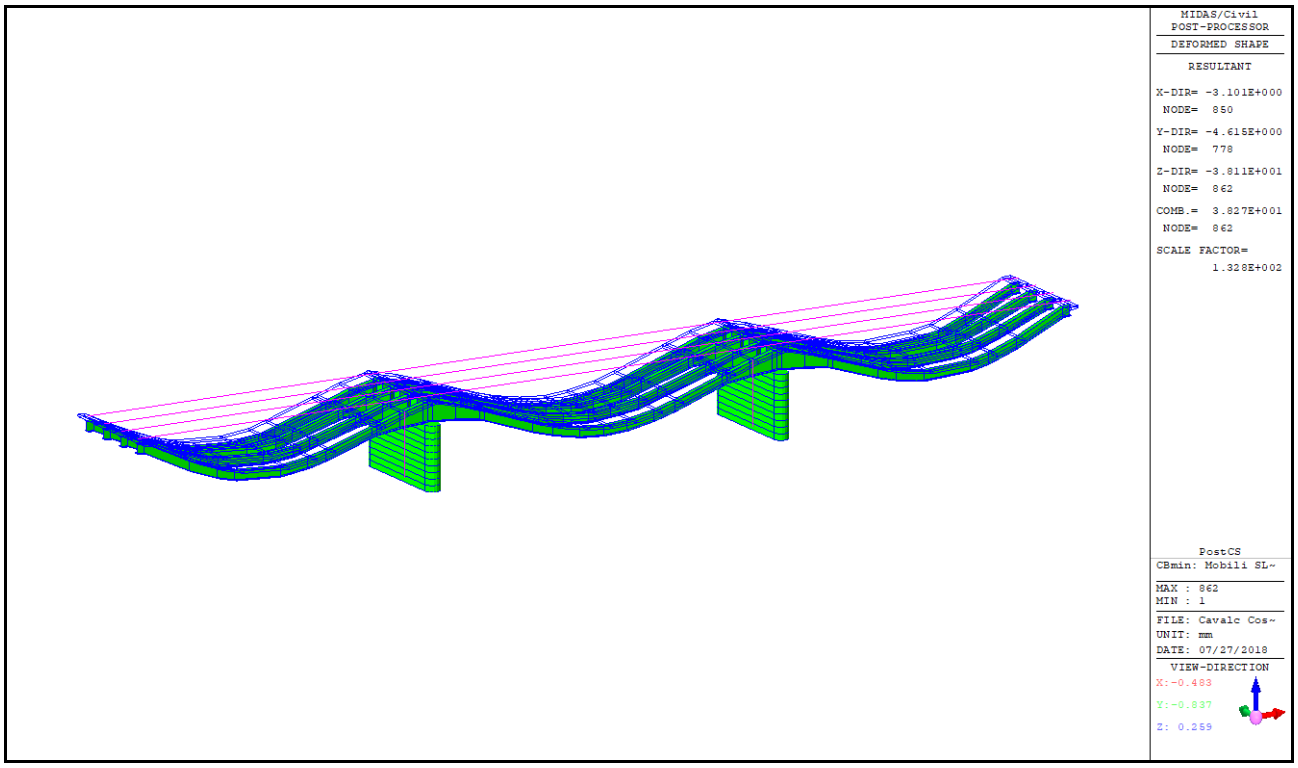
- campate laterali: ΔZ = 91.1 mm, minore del valore limite $\Delta Z_{lim,L}$ = 103.3 mm.
- campata centrale: ΔZ = 38.8 mm, minore del valore limite $\Delta Z_{lim,L}$ = 126.7 mm.

16.2 DEFORMAZIONE CARICHI VARIABILI

Si verifica che la deformata minima dei carichi variabili di progetto, nella combinazione caratteristica (rara) sia minore di:

- campate laterali: $\Delta Z_{lim,L}$ = L / 700 = 31000/ 700 = 44.3 mm.
- campata centrale: $\Delta Z_{lim,C}$ = L / 700 = 38000/ 700 = 54.3 mm.

Segue diagramma delle deformazioni minime per la combinazione considerata; si nota che il diagramma risulta dall'inviluppo di diverse condizioni di carico mobile, quindi i valori sono corretti ma la "forma" della deformata non è significativa.



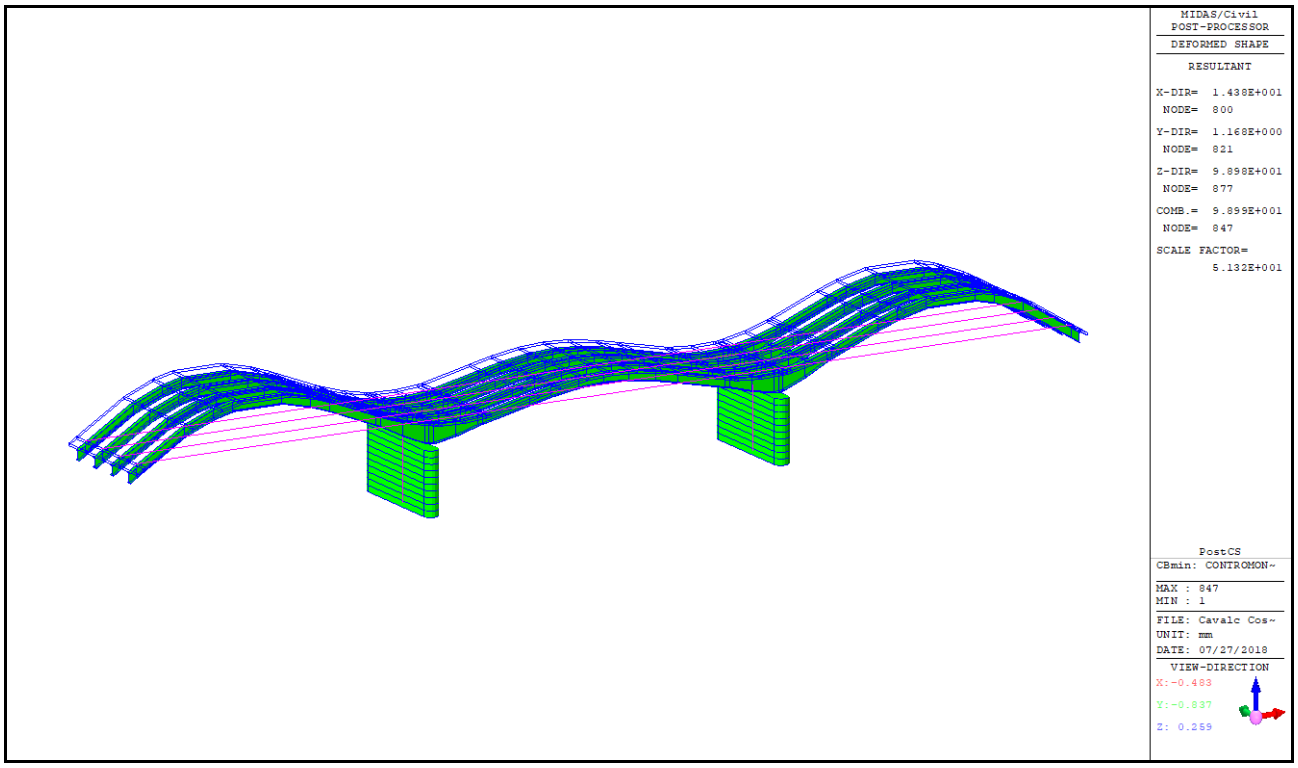
DEFORMATA MINIMA CARICHI MOBILI (INVILUPPO MINIMI)

Il valore massimo (in modulo) della deformazione vale:

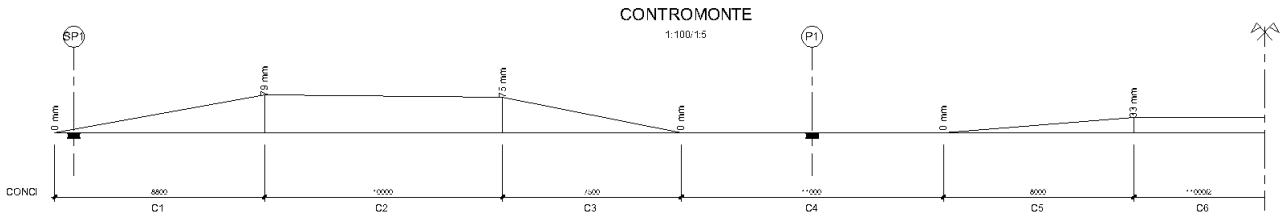
- campate laterali: $\Delta Z = 33.1$ mm, minore del valore limite $\Delta Z_{lim,L} = 44.3$ mm.
- campata centrale: $\Delta Z = 38.1$ mm, minore del valore limite $\Delta Z_{lim,L} = 54.3$ mm.

17 CONTROMONTE TRAVI

Le travature vengono realizzate con una controfreccia pari all'inverso delle deformazioni permanenti più il 25% dei carichi mobili, nella combinazione caratteristica; l'andamento dei singoli conci è rettilineo.
Nel diagramma a pagina seguente sono evidenziate le deformazioni da ottenere.



DEFORMATA - CONTROMONTE DI PROGETTO



CONTROMONTE EFFETTIVE (1/2 IMPALCATO)

18 VERIFICA DEI CONTENUTI DI CUI AL PAR. 10.2 DELLE N.T.C. 2008

- Tipo di analisi svolta

- Analisi strutturale condotta di tipo statico e dinamico lineare
- Metodo adottato per la risoluzione del problema strutturale: Metodo agli elementi finiti con software Midas/Civil 2015 v.1.2.
- Metodologie seguite per la verifica o per il progetto-verifica delle sezioni. Metodo semiprobabilistico agli Stati Limite
- Combinazioni di carico adottate: Le combinazioni di carico adottate sono riportate nel paragrafo 5 "Combinazioni di carico" e sono state scelte in modo da massimizzare tutte le sollecitazioni sulla struttura. L'impiego delle combinazioni adottate è esaustivo delle configurazioni studiate per la struttura in esame.

- Origine e Caratteristiche dei Codici di Calcolo

- Vedi paragrafo 2 "Modellazione strutturale".

- Affidabilità dei codici utilizzati

- Vedi paragrafo 2 "Modellazione strutturale".

- Validazione dei codici.

- Nel caso in cui si rendesse necessaria una validazione indipendente del calcolo strutturale, i calcoli potranno essere eseguiti nuovamente da soggetto diverso da quello originario mediante programmi di calcolo diversi da quelli usati originariamente e ciò al fine di eseguire un effettivo controllo incrociato sui risultati delle elaborazioni. Al fondo della presente relazione si riporta il tabulato di input del modello strutturale con tutte le informazioni sufficienti a rendere ripercorribili tutti i calcoli effettuati.

- Modalità di presentazione dei risultati.

- Il percorso che ha condotto ai risultati è stato: modellazione della struttura, analisi dei carichi e disposizione degli stessi sul modello; calcolo delle sollecitazioni; verifica degli elementi ritenuti significativi. La quantità di informazioni che ha accompagnato l'utilizzo del software in input e in output è cospicua. Per non appesantire eccessivamente la relazione di calcolo, si è operata la scelta di fornire soltanto una sintesi completa ed efficace dei risultati privilegiando schemi grafici ai tabulati. E' comunque disponibile su supporto informatico l'intero sviluppo dei tabulati di output con tutte le informazioni necessarie alla eventuale riproduzione del calcolo automatico.

- Informazioni generali sull'elaborazione.

- Al termine della elaborazione sono stati svolti estesi controlli per l'esame dei risultati e per una valutazione complessiva dell'elaborazione dal punto di vista del corretto comportamento del modello.

- Giudizio motivato di accettabilità dei risultati.

- I risultati della elaborazione sono stati analizzati criticamente mediante confronto con calcoli di massima eseguiti manualmente; tali controlli sommari hanno portato a confermare la validità dei risultati. I risultati delle elaborazioni sono quindi stati sottoposti a controlli che ne hanno comprovato l'attendibilità. In particolare si è svolto il controllo di equilibrio tra reazioni vincolari e carichi applicati.

19 ALLEGATO – DATI PROGRAMMA DI CALCOLO

A seguire l'allegato con i dati del programma di calcolo.

20 SOTTOSCRIZIONE DELL'ELABORATO DA PARTE DEL R.T.P.

STUDIO CORONA S.r.l.

_____

ECOPLAN S.r.l.

_____

I.T. S.r.l.

_____

E&G S.r.l.

_____

CONSORZIO UNING

_____

ARKE' INGEGNERIA S.r.l.

_____

SETAC S.r.l.

_____

ING. RENATO DEL PRETE

_____

DOTT. DANILO GALLO

_____

PROJECT TITLE : CASALPUSTERLENGO

	Company		Client	
	Author	Renato Vaira	File Name	Cavalc Coste V_2.mct

```
;----------------------------------------------------------------------------
;  MIDAS/Civil Text(MCT) File.
;  Date : 2017/11/15
;----------------------------------------------------------------------------

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   8.3.5

*UNIT    ; Unit System
   KN   , M, J, C

*PROJINFO    ; Project Information
   PROJECT=CASALPUSTERLENGO
   REVISION=2
   USER=Renato Vaira
   ADDRESS=Studio Corona
   TITLE=CAVALCAVIA STRADA VIC. DELLE COSTE

*STRUCTYPE    ; Structure Type
     0, 1, 1, NO, YES, 9.806, 0, NO, NO, NO

*REBAR-MATL-CODE    ; Rebar Material Code
 UNI(RC), B450C, UNI(RC), B450C

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PROJECT TITLE : CASALPUSTERLENGO

	Company		Client	
	Author	Renato Vaira	File Name	Cavalc Coste V_2.mct

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  404, BEAM  ,     5,      4,    845,    846,      0
  405, BEAM  ,     5,      4,    846,    847,      0
  406, BEAM  ,     5,      4,    847,    848,      0
  407, BEAM  ,     5,     14,    848,    849,      0
  408, BEAM  ,     5,     14,    849,    850,      0
  409, BEAM  ,     5,     14,    850,    851,      0
  410, BEAM  ,     5,      9,    851,    852,      0
  411, BEAM  ,     5,      9,    852,    853,      0
  412, BEAM  ,     5,     21,    853,    854,      0
  413, BEAM  ,     5,     21,    854,    855,      0
  414, BEAM  ,     5,     10,    855,    856,      0
  415, BEAM  ,     5,     10,    856,    857,      0
  416, BEAM  ,     5,     12,    857,    858,      0
  417, BEAM  ,     5,     12,    858,    859,      0
  418, BEAM  ,     5,     12,    859,    860,      0
  419, BEAM  ,     5,     13,    860,    861,      0
  420, BEAM  ,     5,     13,    861,    862,      0
  421, BEAM  ,     5,     13,    862,    863,      0
  422, BEAM  ,     5,     13,    863,    864,      0
  423, BEAM  ,     5,     12,    864,    865,      0
  424, BEAM  ,     5,     12,    865,    866,      0
  425, BEAM  ,     5,     12,    866,    867,      0
  426, BEAM  ,     5,      9,    867,    868,      0
  427, BEAM  ,     5,      9,    868,    869,      0
  428, BEAM  ,     5,     21,    869,    870,      0
  429, BEAM  ,     5,     21,    870,    871,      0
  430, BEAM  ,     5,     10,    871,    872,      0
  431, BEAM  ,     5,     10,    872,    873,      0
  432, BEAM  ,     5,     14,    873,    874,      0
  433, BEAM  ,     5,     14,    874,    875,      0
  434, BEAM  ,     5,     14,    875,    876,      0
  435, BEAM  ,     5,      4,    876,    877,      0
  436, BEAM  ,     5,      4,    877,    878,      0
  437, BEAM  ,     5,      4,    878,    879,      0
  438, BEAM  ,     5,      3,    879,    880,      0
  439, BEAM  ,     5,      3,    880,    881,      0
  440, BEAM  ,     5,      3,    881,    882,      0
 1014, BEAM  ,     1,     18,    107,    111,    180
 1015, BEAM  ,     1,     18,    111,    115,    180
 1016, BEAM  ,     1,     18,    115,    119,    180
 1017, BEAM  ,     1,     18,    119,    123,    180
 1018, BEAM  ,     1,     18,    123,    127,    180
 1019, BEAM  ,     1,     18,    127,    131,    180
 1022, BEAM  ,     1,     18,    108,    112,    180
 1023, BEAM  ,     1,     18,    112,    116,    180
 1024, BEAM  ,     1,     18,    116,    120,    180
 1025, BEAM  ,     1,     18,    120,    124,    180
 1026, BEAM  ,     1,     18,    124,    128,    180
 1027, BEAM  ,     1,     18,    128,    132,    180
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PROJECT TITLE : CASALPUSTERLENGO

	Company		Client	
	Author	Renato Vaira	File Name	Cavalc Coste V_2.mct

```
1030, BEAM  ,     1,     18,    109,    113,    180
1031, BEAM  ,     1,     18,    113,    117,    180
1032, BEAM  ,     1,     18,    117,    121,    180
1033, BEAM  ,     1,     18,    121,    125,    180
1034, BEAM  ,     1,     18,    125,    129,    180
1035, BEAM  ,     1,     18,    129,    133,    180
1038, BEAM  ,     1,     18,    110,    114,    180
1039, BEAM  ,     1,     18,    114,    118,    180
1040, BEAM  ,     1,     18,    118,    122,    180
1041, BEAM  ,     1,     18,    122,    126,    180
1042, BEAM  ,     1,     18,    126,    130,    180
1043, BEAM  ,     1,     18,    130,    134,    180
1110, BEAM  ,     1,     18,    327,    345,    180
1111, BEAM  ,     1,     18,    345,    363,    180
1112, BEAM  ,     1,     18,    363,    381,    180
1113, BEAM  ,     1,     18,    381,    399,    180
1114, BEAM  ,     1,     18,    399,    417,    180
1115, BEAM  ,     1,     18,    417,    435,    180
1118, BEAM  ,     1,     18,    328,    346,    180
1119, BEAM  ,     1,     18,    346,    364,    180
1120, BEAM  ,     1,     18,    364,    382,    180
1121, BEAM  ,     1,     18,    382,    400,    180
1122, BEAM  ,     1,     18,    400,    418,    180
1123, BEAM  ,     1,     18,    418,    436,    180
1126, BEAM  ,     1,     18,    329,    347,    180
1127, BEAM  ,     1,     18,    347,    365,    180
1128, BEAM  ,     1,     18,    365,    383,    180
1129, BEAM  ,     1,     18,    383,    401,    180
1130, BEAM  ,     1,     18,    401,    419,    180
1131, BEAM  ,     1,     18,    419,    437,    180
1134, BEAM  ,     1,     18,    330,    348,    180
1135, BEAM  ,     1,     18,    348,    366,    180
1136, BEAM  ,     1,     18,    366,    384,    180
1137, BEAM  ,     1,     18,    384,    402,    180
1138, BEAM  ,     1,     18,    402,    420,    180
1139, BEAM  ,     1,     18,    420,    438,    180
1142, BEAM  ,     1,     18,    331,    349,    180
1143, BEAM  ,     1,     18,    349,    367,    180
1144, BEAM  ,     1,     18,    367,    385,    180
1145, BEAM  ,     1,     18,    385,    403,    180
1146, BEAM  ,     1,     18,    403,    421,    180
1147, BEAM  ,     1,     18,    421,    439,    180
1150, BEAM  ,     1,     18,    332,    350,    180
1151, BEAM  ,     1,     18,    350,    368,    180
1152, BEAM  ,     1,     18,    368,    386,    180
1153, BEAM  ,     1,     18,    386,    404,    180
1154, BEAM  ,     1,     18,    404,    422,    180
1155, BEAM  ,     1,     18,    422,    440,    180
1158, BEAM  ,     1,     18,    333,    351,    180
1159, BEAM  ,     1,     18,    351,    369,    180
1160, BEAM  ,     1,     18,    369,    387,    180
1161, BEAM  ,     1,     18,    387,    405,    180
1162, BEAM  ,     1,     18,    405,    423,    180
1163, BEAM  ,     1,     18,    423,    441,    180
1166, BEAM  ,     1,     18,    334,    352,    180
1167, BEAM  ,     1,     18,    352,    370,    180
1168, BEAM  ,     1,     18,    370,    388,    180
1169, BEAM  ,     1,     18,    388,    406,    180
1170, BEAM  ,     1,     18,    406,    424,    180
1171, BEAM  ,     1,     18,    424,    442,    180
1174, BEAM  ,     1,     18,    335,    353,    180
1175, BEAM  ,     1,     18,    353,    371,    180
1176, BEAM  ,     1,     18,    371,    389,    180
1177, BEAM  ,     1,     18,    389,    407,    180
1178, BEAM  ,     1,     18,    407,    425,    180
1179, BEAM  ,     1,     18,    425,    443,    180
1182, BEAM  ,     1,     18,    336,    354,    180
1183, BEAM  ,     1,     18,    354,    372,    180
1184, BEAM  ,     1,     18,    372,    390,    180
1185, BEAM  ,     1,     18,    390,    408,    180
1186, BEAM  ,     1,     18,    408,    426,    180
1187, BEAM  ,     1,     18,    426,    444,    180
1190, BEAM  ,     1,     18,    337,    355,    180
1191, BEAM  ,     1,     18,    355,    373,    180
1192, BEAM  ,     1,     18,    373,    391,    180
1193, BEAM  ,     1,     18,    391,    409,    180
1194, BEAM  ,     1,     18,    409,    427,    180
1195, BEAM  ,     1,     18,    427,    445,    180
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1198, BEAM  ,     1,    18,    338,    356,    180
1199, BEAM  ,     1,    18,    356,    374,    180
1200, BEAM  ,     1,    18,    374,    392,    180
1201, BEAM  ,     1,    18,    392,    410,    180
1202, BEAM  ,     1,    18,    410,    428,    180
1203, BEAM  ,     1,    18,    428,    446,    180
1206, BEAM  ,     1,    18,    339,    357,    180
1207, BEAM  ,     1,    18,    357,    375,    180
1208, BEAM  ,     1,    18,    375,    393,    180
1209, BEAM  ,     1,    18,    393,    411,    180
1210, BEAM  ,     1,    18,    411,    429,    180
1211, BEAM  ,     1,    18,    429,    447,    180
1214, BEAM  ,     1,    18,    340,    358,    180
1215, BEAM  ,     1,    18,    358,    376,    180
1216, BEAM  ,     1,    18,    376,    394,    180
1217, BEAM  ,     1,    18,    394,    412,    180
1218, BEAM  ,     1,    18,    412,    430,    180
1219, BEAM  ,     1,    18,    430,    448,    180
1222, BEAM  ,     1,    18,    341,    359,    180
1223, BEAM  ,     1,    18,    359,    377,    180
1224, BEAM  ,     1,    18,    377,    395,    180
1225, BEAM  ,     1,    18,    395,    413,    180
1226, BEAM  ,     1,    18,    413,    431,    180
1227, BEAM  ,     1,    18,    431,    449,    180
1230, BEAM  ,     1,    18,    342,    360,    180
1231, BEAM  ,     1,    18,    360,    378,    180
1232, BEAM  ,     1,    18,    378,    396,    180
1233, BEAM  ,     1,    18,    396,    414,    180
1234, BEAM  ,     1,    18,    414,    432,    180
1235, BEAM  ,     1,    18,    432,    450,    180
1238, BEAM  ,     1,    18,    343,    361,    180
1239, BEAM  ,     1,    18,    361,    379,    180
1240, BEAM  ,     1,    18,    379,    397,    180
1241, BEAM  ,     1,    18,    397,    415,    180
1242, BEAM  ,     1,    18,    415,    433,    180
1243, BEAM  ,     1,    18,    433,    451,    180
1246, BEAM  ,     1,    18,    344,    362,    180
1247, BEAM  ,     1,    18,    362,    380,    180
1248, BEAM  ,     1,    18,    380,    398,    180
1249, BEAM  ,     1,    18,    398,    416,    180
1250, BEAM  ,     1,    18,    416,    434,    180
1251, BEAM  ,     1,    18,    434,    452,    180
1254, BEAM  ,     1,    64,    495,    111,    180
1255, BEAM  ,     1,    64,    111,    519,    180
1256, BEAM  ,     1,    64,    519,    119,    180
1257, BEAM  ,     1,    64,    119,    543,    180
1258, BEAM  ,     1,    64,    543,    127,    180
1259, BEAM  ,     1,    64,    127,    567,    180
1262, BEAM  ,     1,    64,    497,    112,    180
1263, BEAM  ,     1,    64,    112,    521,    180
1264, BEAM  ,     1,    64,    521,    120,    180
1265, BEAM  ,     1,    64,    120,    545,    180
1266, BEAM  ,     1,    64,    545,    128,    180
1267, BEAM  ,     1,    64,    128,    569,    180
1270, BEAM  ,     1,    64,    504,    113,    180
1271, BEAM  ,     1,    64,    113,    528,    180
1272, BEAM  ,     1,    64,    528,    121,    180
1273, BEAM  ,     1,    64,    121,    552,    180
1274, BEAM  ,     1,    64,    552,    129,    180
1275, BEAM  ,     1,    64,    129,    576,    180
1278, BEAM  ,     1,    64,    506,    114,    180
1279, BEAM  ,     1,    64,    114,    530,    180
1280, BEAM  ,     1,    64,    530,    122,    180
1281, BEAM  ,     1,    64,    122,    554,    180
1282, BEAM  ,     1,    64,    554,    130,    180
1283, BEAM  ,     1,    64,    130,    578,    180
1286, BEAM  ,     1,    64,    489,    345,    180
1287, BEAM  ,     1,    64,    345,    513,    180
1288, BEAM  ,     1,    64,    513,    381,    180
1289, BEAM  ,     1,    64,    381,    537,    180
1290, BEAM  ,     1,    64,    537,    417,    180
1291, BEAM  ,     1,    64,    417,    561,    180
1294, BEAM  ,     1,    64,    490,    346,    180
1295, BEAM  ,     1,    64,    346,    514,    180
1296, BEAM  ,     1,    64,    514,    382,    180
1297, BEAM  ,     1,    64,    382,    538,    180
1298, BEAM  ,     1,    64,    538,    418,    180
1299, BEAM  ,     1,    64,    418,    562,    180
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PROJECT TITLE : CASALPUSTERLENGO

	Company		Client	
	Author	Renato Vaira	File Name	Cavalc Coste V_2.mct

```
1302, BEAM  ,    1,    64,   491,   347,   180
1303, BEAM  ,    1,    64,   347,   515,   180
1304, BEAM  ,    1,    64,   515,   383,   180
1305, BEAM  ,    1,    64,   383,   539,   180
1306, BEAM  ,    1,    64,   539,   419,   180
1307, BEAM  ,    1,    64,   419,   563,   180
1310, BEAM  ,    1,    64,   492,   348,   180
1311, BEAM  ,    1,    64,   348,   516,   180
1312, BEAM  ,    1,    64,   516,   384,   180
1313, BEAM  ,    1,    64,   384,   540,   180
1314, BEAM  ,    1,    64,   540,   420,   180
1315, BEAM  ,    1,    64,   420,   564,   180
1318, BEAM  ,    1,    64,   493,   349,   180
1319, BEAM  ,    1,    64,   349,   517,   180
1320, BEAM  ,    1,    64,   517,   385,   180
1321, BEAM  ,    1,    64,   385,   541,   180
1322, BEAM  ,    1,    64,   541,   421,   180
1323, BEAM  ,    1,    64,   421,   565,   180
1326, BEAM  ,    1,    64,   494,   350,   180
1327, BEAM  ,    1,    64,   350,   518,   180
1328, BEAM  ,    1,    64,   518,   386,   180
1329, BEAM  ,    1,    64,   386,   542,   180
1330, BEAM  ,    1,    64,   542,   422,   180
1331, BEAM  ,    1,    64,   422,   566,   180
1334, BEAM  ,    1,    64,   498,   351,   180
1335, BEAM  ,    1,    64,   351,   522,   180
1336, BEAM  ,    1,    64,   522,   387,   180
1337, BEAM  ,    1,    64,   387,   546,   180
1338, BEAM  ,    1,    64,   546,   423,   180
1339, BEAM  ,    1,    64,   423,   570,   180
1342, BEAM  ,    1,    64,   499,   352,   180
1343, BEAM  ,    1,    64,   352,   523,   180
1344, BEAM  ,    1,    64,   523,   388,   180
1345, BEAM  ,    1,    64,   388,   547,   180
1346, BEAM  ,    1,    64,   547,   424,   180
1347, BEAM  ,    1,    64,   424,   571,   180
1350, BEAM  ,    1,    64,   500,   353,   180
1351, BEAM  ,    1,    64,   353,   524,   180
1352, BEAM  ,    1,    64,   524,   389,   180
1353, BEAM  ,    1,    64,   389,   548,   180
1354, BEAM  ,    1,    64,   548,   425,   180
1355, BEAM  ,    1,    64,   425,   572,   180
1358, BEAM  ,    1,    64,   501,   354,   180
1359, BEAM  ,    1,    64,   354,   525,   180
1360, BEAM  ,    1,    64,   525,   390,   180
1361, BEAM  ,    1,    64,   390,   549,   180
1362, BEAM  ,    1,    64,   549,   426,   180
1363, BEAM  ,    1,    64,   426,   573,   180
1366, BEAM  ,    1,    64,   502,   355,   180
1367, BEAM  ,    1,    64,   355,   526,   180
1368, BEAM  ,    1,    64,   526,   391,   180
1369, BEAM  ,    1,    64,   391,   550,   180
1370, BEAM  ,    1,    64,   550,   427,   180
1371, BEAM  ,    1,    64,   427,   574,   180
1374, BEAM  ,    1,    64,   503,   356,   180
1375, BEAM  ,    1,    64,   356,   527,   180
1376, BEAM  ,    1,    64,   527,   392,   180
1377, BEAM  ,    1,    64,   392,   551,   180
1378, BEAM  ,    1,    64,   551,   428,   180
1379, BEAM  ,    1,    64,   428,   575,   180
1382, BEAM  ,    1,    64,   507,   357,   180
1383, BEAM  ,    1,    64,   357,   531,   180
1384, BEAM  ,    1,    64,   531,   393,   180
1385, BEAM  ,    1,    64,   393,   555,   180
1386, BEAM  ,    1,    64,   555,   429,   180
1387, BEAM  ,    1,    64,   429,   579,   180
1390, BEAM  ,    1,    64,   508,   358,   180
1391, BEAM  ,    1,    64,   358,   532,   180
1392, BEAM  ,    1,    64,   532,   394,   180
1393, BEAM  ,    1,    64,   394,   556,   180
1394, BEAM  ,    1,    64,   556,   430,   180
1395, BEAM  ,    1,    64,   430,   580,   180
1398, BEAM  ,    1,    64,   509,   359,   180
1399, BEAM  ,    1,    64,   359,   533,   180
1400, BEAM  ,    1,    64,   533,   395,   180
1401, BEAM  ,    1,    64,   395,   557,   180
1402, BEAM  ,    1,    64,   557,   431,   180
1403, BEAM  ,    1,    64,   431,   581,   180
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PROJECT TITLE : CASALPUSTERLENGO

	Company		Client	
	Author	Renato Vaira	File Name	Cavalc Coste V_2.mct

```
1406, BEAM  ,    1,    64,   510,   360,   180
1407, BEAM  ,    1,    64,   360,   534,   180
1408, BEAM  ,    1,    64,   534,   396,   180
1409, BEAM  ,    1,    64,   396,   558,   180
1410, BEAM  ,    1,    64,   558,   432,   180
1411, BEAM  ,    1,    64,   432,   582,   180
1414, BEAM  ,    1,    64,   511,   361,   180
1415, BEAM  ,    1,    64,   361,   535,   180
1416, BEAM  ,    1,    64,   535,   397,   180
1417, BEAM  ,    1,    64,   397,   559,   180
1418, BEAM  ,    1,    64,   559,   433,   180
1419, BEAM  ,    1,    64,   433,   583,   180
1422, BEAM  ,    1,    64,   512,   362,   180
1423, BEAM  ,    1,    64,   362,   536,   180
1424, BEAM  ,    1,    64,   536,   398,   180
1425, BEAM  ,    1,    64,   398,   560,   180
1426, BEAM  ,    1,    64,   560,   434,   180
1427, BEAM  ,    1,    64,   434,   584,   180
1430, BEAM  ,    1,    17,   609,   631,     0
1431, BEAM  ,    1,    17,   631,   653,     0
1432, BEAM  ,    1,    17,   653,   675,     0
1434, BEAM  ,    1,    17,   610,   632,     0
1435, BEAM  ,    1,    17,   632,   654,     0
1436, BEAM  ,    1,    17,   654,   676,     0
1438, BEAM  ,    1,    17,   611,   633,     0
1439, BEAM  ,    1,    17,   633,   655,     0
1440, BEAM  ,    1,    17,   655,   677,     0
1442, BEAM  ,    1,    17,   612,   634,     0
1443, BEAM  ,    1,    17,   634,   656,     0
1444, BEAM  ,    1,    17,   656,   678,     0
1446, BEAM  ,    1,    17,   613,   635,     0
1447, BEAM  ,    1,    17,   635,   657,     0
1448, BEAM  ,    1,    17,   657,   679,     0
1450, BEAM  ,    1,    17,   614,   636,     0
1451, BEAM  ,    1,    17,   636,   658,     0
1452, BEAM  ,    1,    17,   658,   680,     0
1454, BEAM  ,    1,    17,   615,   637,     0
1455, BEAM  ,    1,    17,   637,   659,     0
1456, BEAM  ,    1,    17,   659,   681,     0
1458, BEAM  ,    1,    17,   616,   638,     0
1459, BEAM  ,    1,    17,   638,   660,     0
1460, BEAM  ,    1,    17,   660,   682,     0
1462, BEAM  ,    1,    17,   617,   639,     0
1463, BEAM  ,    1,    17,   639,   661,     0
1464, BEAM  ,    1,    17,   661,   683,     0
1466, BEAM  ,    1,    17,   618,   640,     0
1467, BEAM  ,    1,    17,   640,   662,     0
1468, BEAM  ,    1,    17,   662,   684,     0
1470, BEAM  ,    1,    17,   619,   641,     0
1471, BEAM  ,    1,    17,   641,   663,     0
1472, BEAM  ,    1,    17,   663,   685,     0
1474, BEAM  ,    1,    17,   620,   642,     0
1475, BEAM  ,    1,    17,   642,   664,     0
1476, BEAM  ,    1,    17,   664,   686,     0
1478, BEAM  ,    1,    17,   621,   643,     0
1479, BEAM  ,    1,    17,   643,   665,     0
1480, BEAM  ,    1,    17,   665,   687,     0
1482, BEAM  ,    1,    17,   622,   644,     0
1483, BEAM  ,    1,    17,   644,   666,     0
1484, BEAM  ,    1,    17,   666,   688,     0
1486, BEAM  ,    1,    17,   623,   645,     0
1487, BEAM  ,    1,    17,   645,   667,     0
1488, BEAM  ,    1,    17,   667,   689,     0
1490, BEAM  ,    1,    17,   624,   646,     0
1491, BEAM  ,    1,    17,   646,   668,     0
1492, BEAM  ,    1,    17,   668,   690,     0
1494, BEAM  ,    1,    17,   625,   647,     0
1495, BEAM  ,    1,    17,   647,   669,     0
1496, BEAM  ,    1,    17,   669,   691,     0
1498, BEAM  ,    1,    17,   626,   648,     0
1499, BEAM  ,    1,    17,   648,   670,     0
1500, BEAM  ,    1,    17,   670,   692,     0
1502, BEAM  ,    1,    17,   627,   649,     0
1503, BEAM  ,    1,    17,   649,   671,     0
1504, BEAM  ,    1,    17,   671,   693,     0
1506, BEAM  ,    1,    17,   628,   650,     0
1507, BEAM  ,    1,    17,   650,   672,     0
1508, BEAM  ,    1,    17,   672,   694,     0
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PROJECT TITLE : CASALPUSTERLENGO

	Company		Client	
	Author	Renato Vaira	File Name	Cavalc Coste V_2.mct

```
1510, BEAM  ,     1,     17,    629,    651,      0
1511, BEAM  ,     1,     17,    651,    673,      0
1512, BEAM  ,     1,     17,    673,    695,      0
1514, BEAM  ,     1,     17,    630,    652,      0
1515, BEAM  ,     1,     17,    652,    674,      0
1516, BEAM  ,     1,     17,    674,    696,      0
2001, BEAM  ,     1,     65,     51,     53,    180
2002, BEAM  ,     1,     65,     53,     55,    180
2003, BEAM  ,     1,     65,     55,     57,    180
2005, BEAM  ,     1,     65,     52,     54,    180
2006, BEAM  ,     1,     65,     54,     56,    180
2007, BEAM  ,     1,     65,     56,     58,    180
2009, BEAM  ,     1,     20,     51,    169,    180
2010, BEAM  ,     1,     20,    169,     53,    180
2011, BEAM  ,     1,     20,     53,    171,    180
2012, BEAM  ,     1,     20,    171,     55,    180
2013, BEAM  ,     1,     20,     55,    173,    180
2014, BEAM  ,     1,     20,    173,     57,    180
2017, BEAM  ,     1,     20,     52,    170,    180
2018, BEAM  ,     1,     20,    170,     54,    180
2019, BEAM  ,     1,     20,     54,    172,    180
2020, BEAM  ,     1,     20,    172,     56,    180
2021, BEAM  ,     1,     20,     56,    174,    180
2022, BEAM  ,     1,     20,    174,     58,    180
2025, BEAM  ,     1,     20,    496,    169,    180
2026, BEAM  ,     1,     20,    169,    520,    180
2027, BEAM  ,     1,     20,    520,    171,    180
2028, BEAM  ,     1,     20,    171,    544,    180
2029, BEAM  ,     1,     20,    544,    173,    180
2030, BEAM  ,     1,     20,    173,    568,    180
2033, BEAM  ,     1,     20,    505,    170,    180
2034, BEAM  ,     1,     20,    170,    529,    180
2035, BEAM  ,     1,     20,    529,    172,    180
2036, BEAM  ,     1,     20,    172,    553,    180
2037, BEAM  ,     1,     20,    553,    174,    180
2038, BEAM  ,     1,     20,    174,    577,    180
2041, BEAM  ,     1,     19,    496,    520,      0
2042, BEAM  ,     1,     19,    520,    544,      0
2043, BEAM  ,     1,     19,    544,    568,      0
2045, BEAM  ,     1,     19,    505,    529,      0
2046, BEAM  ,     1,     19,    529,    553,      0
2047, BEAM  ,     1,     19,    553,    577,      0
3001, BEAM  ,     1,     15,    177,    195,     90
3002, BEAM  ,     1,     15,    195,    210,     90
3003, BEAM  ,     1,     15,    210,    228,     90
3004, BEAM  ,     1,     15,    228,    243,     90
3005, BEAM  ,     1,     15,    243,    261,     90
3006, BEAM  ,     1,     15,    261,    276,     90
3009, BEAM  ,     1,     15,    178,    195,     90
3010, BEAM  ,     1,     15,    195,    211,     90
3011, BEAM  ,     1,     15,    211,    228,     90
3012, BEAM  ,     1,     15,    228,    244,     90
3013, BEAM  ,     1,     15,    244,    261,     90
3014, BEAM  ,     1,     15,    261,    277,     90
3017, BEAM  ,     1,     15,    178,    196,     90
3018, BEAM  ,     1,     15,    196,    211,     90
3019, BEAM  ,     1,     15,    211,    229,     90
3020, BEAM  ,     1,     15,    229,    244,     90
3021, BEAM  ,     1,     15,    244,    262,     90
3022, BEAM  ,     1,     15,    262,    277,     90
3025, BEAM  ,     1,     15,    179,    196,     90
3026, BEAM  ,     1,     15,    196,    212,     90
3027, BEAM  ,     1,     15,    212,    229,     90
3028, BEAM  ,     1,     15,    229,    245,     90
3029, BEAM  ,     1,     15,    245,    262,     90
3030, BEAM  ,     1,     15,    262,    278,     90
3033, BEAM  ,     1,     15,    179,    197,     90
3034, BEAM  ,     1,     15,    197,    212,     90
3035, BEAM  ,     1,     15,    212,    230,     90
3036, BEAM  ,     1,     15,    230,    245,     90
3037, BEAM  ,     1,     15,    245,    263,     90
3038, BEAM  ,     1,     15,    263,    278,     90
3041, BEAM  ,     1,     15,    180,    197,     90
3042, BEAM  ,     1,     15,    197,    213,     90
3043, BEAM  ,     1,     15,    213,    230,     90
3044, BEAM  ,     1,     15,    230,    246,     90
3045, BEAM  ,     1,     15,    246,    263,     90
3046, BEAM  ,     1,     15,    263,    279,     90
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3049, BEAM  ,     1,     15,    180,    198,     90
3050, BEAM  ,     1,     15,    198,    213,     90
3051, BEAM  ,     1,     15,    213,    231,     90
3052, BEAM  ,     1,     15,    231,    246,     90
3053, BEAM  ,     1,     15,    246,    264,     90
3054, BEAM  ,     1,     15,    264,    279,     90
3057, BEAM  ,     1,     15,    181,    198,     90
3058, BEAM  ,     1,     15,    198,    214,     90
3059, BEAM  ,     1,     15,    214,    231,     90
3060, BEAM  ,     1,     15,    231,    247,     90
3061, BEAM  ,     1,     15,    247,    264,     90
3062, BEAM  ,     1,     15,    264,    280,     90
3065, BEAM  ,     1,     15,    181,    199,     90
3066, BEAM  ,     1,     15,    199,    214,     90
3067, BEAM  ,     1,     15,    214,    232,     90
3068, BEAM  ,     1,     15,    232,    247,     90
3069, BEAM  ,     1,     15,    247,    265,     90
3070, BEAM  ,     1,     15,    265,    280,     90
3073, BEAM  ,     1,     15,    182,    199,     90
3074, BEAM  ,     1,     15,    199,    215,     90
3075, BEAM  ,     1,     15,    215,    232,     90
3076, BEAM  ,     1,     15,    232,    248,     90
3077, BEAM  ,     1,     15,    248,    265,     90
3078, BEAM  ,     1,     15,    265,    281,     90
3081, BEAM  ,     1,     15,    182,    143,     90
3082, BEAM  ,     1,     15,    143,    215,     90
3083, BEAM  ,     1,     15,    215,    147,     90
3084, BEAM  ,     1,     15,    147,    248,     90
3085, BEAM  ,     1,     15,    248,    151,     90
3086, BEAM  ,     1,     15,    151,    281,     90
3089, BEAM  ,     1,     15,     87,    143,     90
3090, BEAM  ,     1,     15,    143,     91,     90
3091, BEAM  ,     1,     15,     91,    147,     90
3092, BEAM  ,     1,     15,    147,     95,     90
3093, BEAM  ,     1,     15,     95,    151,     90
3094, BEAM  ,     1,     15,    151,     99,     90
3097, BEAM  ,     1,     15,     87,     61,     90
3098, BEAM  ,     1,     15,     61,     91,     90
3099, BEAM  ,     1,     15,     91,     65,     90
3100, BEAM  ,     1,     15,     65,     95,     90
3101, BEAM  ,     1,     15,     95,     69,     90
3102, BEAM  ,     1,     15,     69,     99,     90
3105, BEAM  ,     1,     15,     41,     61,     90
3106, BEAM  ,     1,     15,     61,     43,     90
3107, BEAM  ,     1,     15,     43,     65,     90
3108, BEAM  ,     1,     15,     65,     45,     90
3109, BEAM  ,     1,     15,     45,     69,     90
3110, BEAM  ,     1,     15,     69,     47,     90
3113, BEAM  ,     1,     15,     41,     62,     90
3114, BEAM  ,     1,     15,     62,     43,     90
3115, BEAM  ,     1,     15,     43,     66,     90
3116, BEAM  ,     1,     15,     66,     45,     90
3117, BEAM  ,     1,     15,     45,     70,     90
3118, BEAM  ,     1,     15,     70,     47,     90
3121, BEAM  ,     1,     15,     88,     62,     90
3122, BEAM  ,     1,     15,     62,     92,     90
3123, BEAM  ,     1,     15,     92,     66,     90
3124, BEAM  ,     1,     15,     66,     96,     90
3125, BEAM  ,     1,     15,     96,     70,     90
3126, BEAM  ,     1,     15,     70,    100,     90
3129, BEAM  ,     1,     15,     88,    144,     90
3130, BEAM  ,     1,     15,    144,     92,     90
3131, BEAM  ,     1,     15,     92,    148,     90
3132, BEAM  ,     1,     15,    148,     96,     90
3133, BEAM  ,     1,     15,     96,    152,     90
3134, BEAM  ,     1,     15,    152,    100,     90
3137, BEAM  ,     1,     15,    183,    144,     90
3138, BEAM  ,     1,     15,    144,    216,     90
3139, BEAM  ,     1,     15,    216,    148,     90
3140, BEAM  ,     1,     15,    148,    249,     90
3141, BEAM  ,     1,     15,    249,    152,     90
3142, BEAM  ,     1,     15,    152,    282,     90
3145, BEAM  ,     1,     15,    183,    200,     90
3146, BEAM  ,     1,     15,    200,    216,     90
3147, BEAM  ,     1,     15,    216,    233,     90
3148, BEAM  ,     1,     15,    233,    249,     90
3149, BEAM  ,     1,     15,    249,    266,     90
3150, BEAM  ,     1,     15,    266,    282,     90
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PROJECT TITLE : CASALPUSTERLENGO

	Company		Client	
	Author	Renato Vaira	File Name	Cavalc Coste V_2.mct

```
3153, BEAM  ,    1,    15,   184,   200,    90
3154, BEAM  ,    1,    15,   200,   217,    90
3155, BEAM  ,    1,    15,   217,   233,    90
3156, BEAM  ,    1,    15,   233,   250,    90
3157, BEAM  ,    1,    15,   250,   266,    90
3158, BEAM  ,    1,    15,   266,   283,    90
3161, BEAM  ,    1,    15,   184,   201,    90
3162, BEAM  ,    1,    15,   201,   217,    90
3163, BEAM  ,    1,    15,   217,   234,    90
3164, BEAM  ,    1,    15,   234,   250,    90
3165, BEAM  ,    1,    15,   250,   267,    90
3166, BEAM  ,    1,    15,   267,   283,    90
3169, BEAM  ,    1,    15,   185,   201,    90
3170, BEAM  ,    1,    15,   201,   218,    90
3171, BEAM  ,    1,    15,   218,   234,    90
3172, BEAM  ,    1,    15,   234,   251,    90
3173, BEAM  ,    1,    15,   251,   267,    90
3174, BEAM  ,    1,    15,   267,   284,    90
3177, BEAM  ,    1,    15,   185,   202,    90
3178, BEAM  ,    1,    15,   202,   218,    90
3179, BEAM  ,    1,    15,   218,   235,    90
3180, BEAM  ,    1,    15,   235,   251,    90
3181, BEAM  ,    1,    15,   251,   268,    90
3182, BEAM  ,    1,    15,   268,   284,    90
3185, BEAM  ,    1,    15,   186,   202,    90
3186, BEAM  ,    1,    15,   202,   219,    90
3187, BEAM  ,    1,    15,   219,   235,    90
3188, BEAM  ,    1,    15,   235,   252,    90
3189, BEAM  ,    1,    15,   252,   268,    90
3190, BEAM  ,    1,    15,   268,   285,    90
3193, BEAM  ,    1,    15,   186,   203,    90
3194, BEAM  ,    1,    15,   203,   219,    90
3195, BEAM  ,    1,    15,   219,   236,    90
3196, BEAM  ,    1,    15,   236,   252,    90
3197, BEAM  ,    1,    15,   252,   269,    90
3198, BEAM  ,    1,    15,   269,   285,    90
3201, BEAM  ,    1,    15,   187,   203,    90
3202, BEAM  ,    1,    15,   203,   220,    90
3203, BEAM  ,    1,    15,   220,   236,    90
3204, BEAM  ,    1,    15,   236,   253,    90
3205, BEAM  ,    1,    15,   253,   269,    90
3206, BEAM  ,    1,    15,   269,   286,    90
3209, BEAM  ,    1,    15,   187,   204,    90
3210, BEAM  ,    1,    15,   204,   220,    90
3211, BEAM  ,    1,    15,   220,   237,    90
3212, BEAM  ,    1,    15,   237,   253,    90
3213, BEAM  ,    1,    15,   253,   270,    90
3214, BEAM  ,    1,    15,   270,   286,    90
3217, BEAM  ,    1,    15,   188,   204,    90
3218, BEAM  ,    1,    15,   204,   221,    90
3219, BEAM  ,    1,    15,   221,   237,    90
3220, BEAM  ,    1,    15,   237,   254,    90
3221, BEAM  ,    1,    15,   254,   270,    90
3222, BEAM  ,    1,    15,   270,   287,    90
3225, BEAM  ,    1,    15,   188,   145,    90
3226, BEAM  ,    1,    15,   145,   221,    90
3227, BEAM  ,    1,    15,   221,   149,    90
3228, BEAM  ,    1,    15,   149,   254,    90
3229, BEAM  ,    1,    15,   254,   153,    90
3230, BEAM  ,    1,    15,   153,   287,    90
3233, BEAM  ,    1,    15,    89,   145,    90
3234, BEAM  ,    1,    15,   145,    93,    90
3235, BEAM  ,    1,    15,    93,   149,    90
3236, BEAM  ,    1,    15,   149,    97,    90
3237, BEAM  ,    1,    15,    97,   153,    90
3238, BEAM  ,    1,    15,   153,   101,    90
3241, BEAM  ,    1,    15,    89,    63,    90
3242, BEAM  ,    1,    15,    63,    93,    90
3243, BEAM  ,    1,    15,    93,    67,    90
3244, BEAM  ,    1,    15,    67,    97,    90
3245, BEAM  ,    1,    15,    97,    71,    90
3246, BEAM  ,    1,    15,    71,   101,    90
3249, BEAM  ,    1,    15,    42,    63,    90
3250, BEAM  ,    1,    15,    63,    44,    90
3251, BEAM  ,    1,    15,    44,    67,    90
3252, BEAM  ,    1,    15,    67,    46,    90
3253, BEAM  ,    1,    15,    46,    71,    90
3254, BEAM  ,    1,    15,    71,    48,    90
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PROJECT TITLE : CASALPUSTERLENGO

	Company		Client	
	Author	Renato Vaira	File Name	Cavalc Coste V_2.mct

```
3257, BEAM  ,     1,     15,     42,     64,     90
3258, BEAM  ,     1,     15,     64,     44,     90
3259, BEAM  ,     1,     15,     44,     68,     90
3260, BEAM  ,     1,     15,     68,     46,     90
3261, BEAM  ,     1,     15,     46,     72,     90
3262, BEAM  ,     1,     15,     72,     48,     90
3265, BEAM  ,     1,     15,     90,     64,     90
3266, BEAM  ,     1,     15,     64,     94,     90
3267, BEAM  ,     1,     15,     94,     68,     90
3268, BEAM  ,     1,     15,     68,     98,     90
3269, BEAM  ,     1,     15,     98,     72,     90
3270, BEAM  ,     1,     15,     72,    102,     90
3273, BEAM  ,     1,     15,     90,    146,     90
3274, BEAM  ,     1,     15,    146,     94,     90
3275, BEAM  ,     1,     15,     94,    150,     90
3276, BEAM  ,     1,     15,    150,     98,     90
3277, BEAM  ,     1,     15,     98,    154,     90
3278, BEAM  ,     1,     15,    154,    102,     90
3281, BEAM  ,     1,     15,    189,    146,     90
3282, BEAM  ,     1,     15,    146,    222,     90
3283, BEAM  ,     1,     15,    222,    150,     90
3284, BEAM  ,     1,     15,    150,    255,     90
3285, BEAM  ,     1,     15,    255,    154,     90
3286, BEAM  ,     1,     15,    154,    288,     90
3289, BEAM  ,     1,     15,    189,    205,     90
3290, BEAM  ,     1,     15,    205,    222,     90
3291, BEAM  ,     1,     15,    222,    238,     90
3292, BEAM  ,     1,     15,    238,    255,     90
3293, BEAM  ,     1,     15,    255,    271,     90
3294, BEAM  ,     1,     15,    271,    288,     90
3297, BEAM  ,     1,     15,    190,    205,     90
3298, BEAM  ,     1,     15,    205,    223,     90
3299, BEAM  ,     1,     15,    223,    238,     90
3300, BEAM  ,     1,     15,    238,    256,     90
3301, BEAM  ,     1,     15,    256,    271,     90
3302, BEAM  ,     1,     15,    271,    289,     90
3305, BEAM  ,     1,     15,    190,    206,     90
3306, BEAM  ,     1,     15,    206,    223,     90
3307, BEAM  ,     1,     15,    223,    239,     90
3308, BEAM  ,     1,     15,    239,    256,     90
3309, BEAM  ,     1,     15,    256,    272,     90
3310, BEAM  ,     1,     15,    272,    289,     90
3313, BEAM  ,     1,     15,    191,    206,     90
3314, BEAM  ,     1,     15,    206,    224,     90
3315, BEAM  ,     1,     15,    224,    239,     90
3316, BEAM  ,     1,     15,    239,    257,     90
3317, BEAM  ,     1,     15,    257,    272,     90
3318, BEAM  ,     1,     15,    272,    290,     90
3321, BEAM  ,     1,     15,    191,    207,     90
3322, BEAM  ,     1,     15,    207,    224,     90
3323, BEAM  ,     1,     15,    224,    240,     90
3324, BEAM  ,     1,     15,    240,    257,     90
3325, BEAM  ,     1,     15,    257,    273,     90
3326, BEAM  ,     1,     15,    273,    290,     90
3329, BEAM  ,     1,     15,    192,    207,     90
3330, BEAM  ,     1,     15,    207,    225,     90
3331, BEAM  ,     1,     15,    225,    240,     90
3332, BEAM  ,     1,     15,    240,    258,     90
3333, BEAM  ,     1,     15,    258,    273,     90
3334, BEAM  ,     1,     15,    273,    291,     90
3337, BEAM  ,     1,     15,    192,    208,     90
3338, BEAM  ,     1,     15,    208,    225,     90
3339, BEAM  ,     1,     15,    225,    241,     90
3340, BEAM  ,     1,     15,    241,    258,     90
3341, BEAM  ,     1,     15,    258,    274,     90
3342, BEAM  ,     1,     15,    274,    291,     90
3345, BEAM  ,     1,     15,    193,    208,     90
3346, BEAM  ,     1,     15,    208,    226,     90
3347, BEAM  ,     1,     15,    226,    241,     90
3348, BEAM  ,     1,     15,    241,    259,     90
3349, BEAM  ,     1,     15,    259,    274,     90
3350, BEAM  ,     1,     15,    274,    292,     90
3353, BEAM  ,     1,     15,    193,    209,     90
3354, BEAM  ,     1,     15,    209,    226,     90
3355, BEAM  ,     1,     15,    226,    242,     90
3356, BEAM  ,     1,     15,    242,    259,     90
3357, BEAM  ,     1,     15,    259,    275,     90
3358, BEAM  ,     1,     15,    275,    292,     90
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PROJECT TITLE : CASALPUSTERLENGO

	Company		Client	
	Author	Renato Vaira	File Name	Cavalc Coste V_2.mct

```
3361, BEAM  ,    1,    15,   194,   209,    90
3362, BEAM  ,    1,    15,   209,   227,    90
3363, BEAM  ,    1,    15,   227,   242,    90
3364, BEAM  ,    1,    15,   242,   260,    90
3365, BEAM  ,    1,    15,   260,   275,    90
3366, BEAM  ,    1,    15,   275,   293,    90
4001, BEAM  ,    3,    46,     1,   895,     0
4002, BEAM  ,    3,    46,   895,   887,     0
4003, BEAM  ,    3,    46,   887,   896,     0
4004, BEAM  ,    3,    46,   896,   888,     0
4005, BEAM  ,    3,    46,   888,   897,     0
4006, BEAM  ,    3,    46,   897,   889,     0
4007, BEAM  ,    3,    46,   889,   898,     0
4008, BEAM  ,    3,    46,   898,   890,     0
4009, BEAM  ,    3,    46,   890,   899,     0
4010, BEAM  ,    3,    46,   899,    25,     0
4011, BEAM  ,    3,    46,     2,   900,     0
4012, BEAM  ,    3,    46,   900,   891,     0
4013, BEAM  ,    3,    46,   891,   901,     0
4014, BEAM  ,    3,    46,   901,   892,     0
4015, BEAM  ,    3,    46,   892,   902,     0
4016, BEAM  ,    3,    46,   902,   893,     0
4017, BEAM  ,    3,    46,   893,   903,     0
4018, BEAM  ,    3,    46,   903,   894,     0
4019, BEAM  ,    3,    46,   894,   904,     0
4020, BEAM  ,    3,    46,   904,    26,     0
5009, BEAM  ,    2,    22,   720,   761,     0
5010, BEAM  ,    2,    22,   761,   802,     0
5011, BEAM  ,    2,    22,   802,   843,     0
5013, BEAM  ,    2,    23,   721,   762,     0
5014, BEAM  ,    2,    23,   762,   803,     0
5015, BEAM  ,    2,    23,   803,   844,     0
5017, BEAM  ,    2,    23,   723,   764,     0
5018, BEAM  ,    2,    23,   764,   805,     0
5019, BEAM  ,    2,    23,   805,   846,     0
5021, BEAM  ,    2,    23,   724,   765,     0
5022, BEAM  ,    2,    23,   765,   806,     0
5023, BEAM  ,    2,    23,   806,   847,     0
5025, BEAM  ,    2,    23,   726,   767,     0
5026, BEAM  ,    2,    23,   767,   808,     0
5027, BEAM  ,    2,    23,   808,   849,     0
5029, BEAM  ,    2,    24,   727,   768,     0
5030, BEAM  ,    2,    24,   768,   809,     0
5031, BEAM  ,    2,    24,   809,   850,     0
5033, BEAM  ,    2,    25,   729,   770,     0
5034, BEAM  ,    2,    25,   770,   811,     0
5035, BEAM  ,    2,    25,   811,   852,     0
5037, BEAM  ,    2,    25,   731,   772,     0
5038, BEAM  ,    2,    25,   772,   813,     0
5039, BEAM  ,    2,    25,   813,   854,     0
5041, BEAM  ,    2,    25,   733,   774,     0
5042, BEAM  ,    2,    25,   774,   815,     0
5043, BEAM  ,    2,    25,   815,   856,     0
5045, BEAM  ,    2,    26,   735,   776,     0
5046, BEAM  ,    2,    26,   776,   817,     0
5047, BEAM  ,    2,    26,   817,   858,     0
5049, BEAM  ,    2,    27,   736,   777,     0
5050, BEAM  ,    2,    27,   777,   818,     0
5051, BEAM  ,    2,    27,   818,   859,     0
5053, BEAM  ,    2,    27,   738,   779,     0
5054, BEAM  ,    2,    27,   779,   820,     0
5055, BEAM  ,    2,    27,   820,   861,     0
5070, BEAM  ,    2,    27,   863,   822,     0
5071, BEAM  ,    2,    27,   822,   781,     0
5072, BEAM  ,    2,    27,   781,   740,     0
5074, BEAM  ,    2,    27,   865,   824,     0
5075, BEAM  ,    2,    27,   824,   783,     0
5076, BEAM  ,    2,    27,   783,   742,     0
5078, BEAM  ,    2,    26,   866,   825,     0
5079, BEAM  ,    2,    26,   825,   784,     0
5080, BEAM  ,    2,    26,   784,   743,     0
5082, BEAM  ,    2,    25,   868,   827,     0
5083, BEAM  ,    2,    25,   827,   786,     0
5084, BEAM  ,    2,    25,   786,   745,     0
5086, BEAM  ,    2,    25,   870,   829,     0
5087, BEAM  ,    2,    25,   829,   788,     0
5088, BEAM  ,    2,    25,   788,   747,     0
5090, BEAM  ,    2,    25,   872,   831,     0
```

```
  5091, BEAM  ,     2,     25,    831,    790,      0
  5092, BEAM  ,     2,     25,    790,    749,      0
  5094, BEAM  ,     2,     24,    874,    833,      0
  5095, BEAM  ,     2,     24,    833,    792,      0
  5096, BEAM  ,     2,     24,    792,    751,      0
  5098, BEAM  ,     2,     23,    875,    834,      0
  5099, BEAM  ,     2,     23,    834,    793,      0
  5100, BEAM  ,     2,     23,    793,    752,      0
  5102, BEAM  ,     2,     23,    877,    836,      0
  5103, BEAM  ,     2,     23,    836,    795,      0
  5104, BEAM  ,     2,     23,    795,    754,      0
  5110, BEAM  ,     2,     23,    878,    837,      0
  5111, BEAM  ,     2,     23,    837,    796,      0
  5112, BEAM  ,     2,     23,    796,    755,      0
  5114, BEAM  ,     2,     23,    880,    839,      0
  5115, BEAM  ,     2,     23,    839,    798,      0
  5116, BEAM  ,     2,     23,    798,    757,      0
  5118, BEAM  ,     2,     22,    881,    840,      0
  5119, BEAM  ,     2,     22,    840,    799,      0
  5120, BEAM  ,     2,     22,    799,    758,      0

*GROUP    ; Group
   TRAVI PRINCIPALI, 719to882, 101to140 201to240 301to340 401to440, 0
   TRASVERSI INTERMEDI, 107to134 327to452 489to495 497to504 506to519 521to528 \
        530to543 545to552 554to567 569to576 578to584 609to696, 1014to1019 \
        1022to1027 1030to1035 1038to1043 1110to1422by8 1111to1423by8 \
        1112to1424by8 1113to1425by8 1114to1426by8 1115to1427by8 1430to1514by4 \
        1431to1515by4 1432to1516by4, 0
   TRASVERSI PILE, 51to58 169to174 496to568by24 505to577by24, 2001to2003 \
        2005to2007 2009to2014 2017to2022 2025to2030 2033to2038 2041to2043 \
        2045to2047, 0
   PILE      , 1 2 25 26, 4001to4020, 0
   NODI      , 1 2 21to28 31to38 41to48 51to58 61to72 77to84 87to102 107to134 \
        143to154 159to166 169to174 177to293 327to452 489to584 609to696 719to886, \
        , 0
   CONTROVENTI, 41to48 61to72 87to102 143to154 177to293, 3001to3361by8 \
        3002to3362by8 3003to3363by8 3004to3364by8 3005to3365by8 3006to3366by8, 0
   SOLETTA FITTIZIA, , 5009to5053by4 5010to5054by4 5011to5055by4 5070to5102by4 \
        5071to5103by4 5072to5104by4 5110to5112 5114to5116 5118to5120, 0

*BNDR-GROUP    ; Boundary Group
 RIGID LINK, 0
 APPOGGI SPALLE, 0
 SUPPORTI, 0
 CONTR.FITTIZI SOLETTA, 0
 APPOGGI PILE, 6492008

*LOAD-GROUP    ; Load Group
 PESO SOLETTA
 PESO FINITURE
 PESO ACCIAIO E PILE

*MATERIAL    ; Material
    1, STEEL, S355 (g x1.15)    , 0, 0, , C, YES, 0.05, 2, 2.1000e+008,   0.3, 1.2000e-005, 88.53, 9.025
    2, CONC , C32/40 SOL.TRASV  , 0, 0, , C, YES, 0.05, 2, 3.3345e+007,   0.2, 1.0000e-005,     0,     0
    3, CONC , C28/35 PILE       , 0, 0, , C, NO, 0.05, 1, NTC08(RC)  ,           , C28/35
    4, CONC , C32/40 SOLETTA    , 0, 0, , C, YES, 0.05, 2, 3.3345e+007,   0.2, 1.0000e-005,     0,     0
    5, SRC  , COMPOSITO         , 0, 0, , C, YES, 0.05, 2, 2.1000e+008,   0.3, 1.2000e-005, 88.53,  9.02,\
                                  2, 3.3345e+007,   0.2, 1.0000e-005,     0,     0

*MATL-COLOR
    1, 255,   0,   0,    0, 255,   0,    0,   0, 255,  NO, 0.5
    2, 255,   0,   0,    0, 255,   0,    0,   0, 255,  NO, 0.5
    3, 255,   0,   0,    0, 255,   0,    0,   0, 255,  NO, 0.5
    4, 255,   0,   0,    0, 255,   0,    0,   0, 255,  NO, 0.5
    5, 255,   0,   0,    0, 255,   0,    0,   0, 255,  NO, 0.5

*TDM-TYPE    ; Time Dependent Material
   NAME=SOLETTA, European, 32000, 70, 0.3, Class N, 1, 1, NO

*TDM-ELAST    ; Time Dependent Material(Comp. Strength)
   NAME=SOLETTA, CODE, EUROPEAN, 40000, 2

*TDM-LINK    ; Time Dependent Material Link
    4, SOLETTA, SOLETTA


*SECTION    ; Section
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PROJECT TITLE : CASALPUSTERLENGO

	Company		Client	
	Author	Renato Vaira	File Name	Cavalc Coste V_2.mct

```
1, COMPOSITE , C1 Interno         , CT, 0, 0, 0, 0, 0, 0, YES, I
   0.94, 0.015, 0.5, 0.03, 0.6, 0.03
   0, 0, 0, 0, 0, 0
   0
   0
   0
   3.2, 1, 0,   3.2, 0.24, 0.06,   6.2978, 0, 0.3, 0.2, NO, ,
2, COMPOSITE , C2 Interno         , CT, 0, 0, 0, 0, 0, 0, YES, I
   0.93, 0.015, 0.5, 0.03, 0.6, 0.04
   0, 0, 0, 0, 0, 0
   0
   0
   0
   3.2, 1, 0,   3.2, 0.24, 0.06,   6.2978, 0, 0.3, 0.2, NO, ,
3, COMPOSITE , C1 Esterno         , CT, 0, 0, 0, 0, 0, 0, YES, I
   0.94, 0.015, 0.5, 0.03, 0.6, 0.03
   0, 0, 0, 0, 0, 0
   0
   0
   0
   2.95, 1, 0,   2.95, 0.24, 0.06,   6.2978, 0, 0.3, 0.2, NO, ,
4, COMPOSITE , C2 esterno         , CT, 0, 0, 0, 0, 0, 0, YES, I
   0.93, 0.015, 0.5, 0.03, 0.6, 0.04
   0, 0, 0, 0, 0, 0
   0
   0
   0
   2.95, 1, 0,   2.95, 0.24, 0.06,   6.2978, 0, 0.3, 0.2, NO, ,
5, TAPERED   , C4 Interno Sx      , CT, 0, 0, 0, 0, 0, 0, 0, 0, YES, CP_I, 1, 1, CMP-I
   1, 0,   3.2, 0.24, 0.06,   6.2978, 0, 0.3, 0.2, NO, ,
   3.2, 0.92, 0.02, 0.6, , 0.04, 0.7, , 0.04
   3.2, 1.92, 0.02, 0.6, , 0.04, 0.7, , 0.04
   0, 0, 0, 0, 0, 0
   0
   0
   0
   0, 0, 0, 0, 0, 0
   0
   0
   0

6, TAPERED   , C4 Interno Dx      , CT, 0, 0, 0, 0, 0, 0, 0, 0, YES, CP_I, 1, 1, CMP-I
   1, 0,   3.2, 0.24, 0.06,   6.2978, 0, 0.3, 0.2, NO, ,
   3.2, 1.92, 0.02, 0.6, , 0.04, 0.7, , 0.04
   3.2, 0.92, 0.02, 0.6, , 0.04, 0.7, , 0.04
   0, 0, 0, 0, 0, 0
   0
   0
   0
   0, 0, 0, 0, 0, 0
   0
   0
   0

7, COMPOSITE , C5 Interno         , CT, 0, 0, 0, 0, 0, 0, YES, I
   0.93, 0.02, 0.5, 0.03, 0.6, 0.04
   0, 0, 0, 0, 0, 0
   0
   0
   0
   3.2, 1, 0,   3.2, 0.24, 0.06,   6.2978, 0, 0.3, 0.2, NO, ,
8, COMPOSITE , C6 Interno         , CT, 0, 0, 0, 0, 0, 0, YES, I
   0.93, 0.012, 0.5, 0.03, 0.6, 0.04
   0, 0, 0, 0, 0, 0
   0
   0
   0
   3.2, 1, 0,   3.2, 0.24, 0.06,   6.2978, 0, 0.3, 0.2, NO, ,
9, TAPERED   , C4 Esterno Sx      , CT, 0, 0, 0, 0, 0, 0, 0, 0, YES, CP_I, 1, 1, CMP-I
   1, 0,   2.95, 0.24, 0.06,   6.2978, 0, 0.3, 0.2, NO, ,
   2.95, 0.92, 0.02, 0.6, , 0.04, 0.7, , 0.04
   2.95, 1.92, 0.02, 0.6, , 0.04, 0.7, , 0.04
   0, 0, 0, 0, 0, 0
   0
   0
   0
   0, 0, 0, 0, 0, 0
   0
```

```
        0
        0

   10, TAPERED   , C4 Esterno Dx     , CT, 0, 0, 0, 0, 0, 0, 0, 0, YES, CP_I, 1, 1, CMP-I
        1, 0,   2.95, 0.24, 0.06,   6.2978, 0, 0.3, 0.2, NO, ,
        2.95, 1.92, 0.02, 0.6, , 0.04, 0.7, , 0.04
        2.95, 0.92, 0.02, 0.6, , 0.04, 0.7, , 0.04
        0, 0, 0, 0, 0, 0
        0
        0
        0
        0, 0, 0, 0, 0, 0
        0
        0
        0

   11, COMPOSITE , C3 Interno        , CT, 0, 0, 0, 0, 0, 0, YES, I
        0.93, 0.02, 0.5, 0.03, 0.6, 0.04
        0, 0, 0, 0, 0, 0
        0
        0
        0
        3.2, 1, 0,   3.2, 0.24, 0.06,   6.2978, 0, 0.3, 0.2, NO, ,
   12, COMPOSITE , C5 Esterno        , CT, 0, 0, 0, 0, 0, 0, YES, I
        0.93, 0.02, 0.5, 0.03, 0.6, 0.04
        0, 0, 0, 0, 0, 0
        0
        0
        0
        2.95, 1, 0,   2.95, 0.24, 0.06,   6.2978, 0, 0.3, 0.2, NO, ,
   13, COMPOSITE , C6 Esterno        , CT, 0, 0, 0, 0, 0, 0, YES, I
        0.93, 0.012, 0.5, 0.03, 0.6, 0.04
        0, 0, 0, 0, 0, 0
        0
        0
        0
        2.95, 1, 0,   2.95, 0.24, 0.06,   6.2978, 0, 0.3, 0.2, NO, ,
   14, COMPOSITE , C3 Esterno        , CT, 0, 0, 0, 0, 0, 0, YES, I
        0.93, 0.02, 0.5, 0.03, 0.6, 0.04
        0, 0, 0, 0, 0, 0
        0
        0
        0
        2.95, 1, 0,   2.95, 0.24, 0.06,   6.2978, 0, 0.3, 0.2, NO, ,
   15, DBUSER    , CONTROV 2L80x10d15, CC, 0, 0, 0, 0, 0, 0, YES, 2L , 2, 0.08, 0.08, 0.01, 0.01, 0.015, 0,
0, 0, 0, 0
   16, COMPOSITE , C4 Interno Centr  , CT, 0, 0, 0, 0, 0, 0, YES, I
        1.92, 0.02, 0.6, 0.04, 0.7, 0.04
        0, 0, 0, 0, 0, 0
        0
        0
        0
        3.2, 1, 0,   3.2, 0.24, 0.06,   6.2978, 0, 0.3, 0.2, NO, ,
   17, DBUSER    , HSUP_CORR 2L80x10d15, CC, 0, 0, 0, 0, 0, 0, YES, 2L , 2, 0.08, 0.08, 0.01, 0.01, 0.015, 0
, 0, 0, 0, 0
   18, DBUSER    , HINF_CORR 2L80x10d15, CC, 0, 0, 0, 0, 0, 0, YES, 2L , 2, 0.08, 0.08, 0.01, 0.01, 0.015, 0
, 0, 0, 0, 0
   19, DBUSER    , HSUP_PILE 2L100x10d20, CC, 0, 0, 0, 0, 0, 0, YES, 2L , 2, 0.1, 0.1, 0.01, 0.01, 0.02, 0,
0, 0, 0, 0
   20, DBUSER    , DIAG_PILE 2L80x8d20, CC, 0, 1, 0, 0, 0, 0, YES, 2L , 2, 0.08, 0.08, 0.008, 0.008, 0.02, 0
, 0, 0, 0, 0
   21, COMPOSITE , C4 Esterno Centr  , CT, 0, 0, 0, 0, 0, 0, YES, I
        1.92, 0.02, 0.6, 0.04, 0.7, 0.04
        0, 0, 0, 0, 0, 0
        0
        0
        0
        2.95, 1, 0,   2.95, 0.24, 0.06,   6.2978, 0, 0.3, 0.2, NO, ,
   22, DBUSER    , 330x30            , RT, 0, 0, 1, 0.8, 0, 0, NO, SB , 2, 0.3, 3.3, 0, 0, 0, 0, 0, 0, 0, 0
   23, DBUSER    , 500x30            , CT, 0, 0, 0, 0, 0, 0, 0, NO, SB , 2, 0.3, 5, 0, 0, 0, 0, 0, 0, 0, 0
   24, DBUSER    , 400x30            , LT, 0, 1, 1, 1.5, 0, 0, NO, SB , 2, 0.3, 4, 0, 0, 0, 0, 0, 0, 0, 0
   25, DBUSER    , 300x30            , CT, 0, 0, 0, 0, 0, 0, 0, NO, SB , 2, 0.3, 3, 0, 0, 0, 0, 0, 0, 0, 0
   26, DBUSER    , 400x30 dx         , RT, 0, 1, 1, 1.5, 0, 0, NO, SB , 2, 0.3, 4, 0, 0, 0, 0, 0, 0, 0, 0
   27, DBUSER    , 520x30            , CT, 0, 0, 0, 0, 0, 0, 0, NO, SB , 2, 0.3, 5.2, 0, 0, 0, 0, 0, 0, 0, 0
   46, DBUSER    , PILA              , CC, 0, 0, 0, 0, 0, 0, 0, YES, STRK, 2, 1.5, 12, 0, 0, 0, 0, 0, 0, 0, 0
   64, DBUSER    , DIAG_CORR 2L80x8d15, CC, 0, 0, 0, 0, 0, 0, YES, 2L , 2, 0.08, 0.08, 0.008, 0.008, 0.015,
0, 0, 0, 0, 0
   65, DBUSER    , HINF_PILE 2L100x10d20, CC, 0, 0, 0, 0, 0, 0, YES, 2L , 2, 0.1, 0.1, 0.01, 0.01, 0.02, 0,
```

```
0, 0, 0, 0

*SECT-COLOR
    1, 255,   0,   0,    0, 255,   0,    0,   0, 255,  NO, 0.5
    2, 255,   0,   0,    0, 255,   0,    0,   0, 255,  NO, 0.5
    3,   3, 111,   0,   93, 255,  87,    3, 111,   0,  NO, 0.5
    4,  70,  70,   0,  192, 255,   0,   70,  70,   0,  NO, 0.5
    5, 255,   0,   0,    0, 255,   0,    0,   0, 255,  NO, 0.5
    6,   0,  13,  13,    0, 128, 128,    0,  13,  13,  NO, 0.5
    7, 255,   0,   0,    0, 255,   0,    0,   0, 255,  NO, 0.5
    8, 123,  40,   0,  255, 192, 160,  123,  40,   0,  NO, 0.5
    9,   3,   0, 108,  163, 160, 255,    3,   0, 108,  NO, 0.5
   10,   3, 111,  66,  163, 255, 160,    3, 111,  66,  NO, 0.5
   11, 255,   0,   0,    0, 255,   0,    0,   0, 255,  NO, 0.5
   12,  87,  87,   0,  192, 192,   0,   87,  87,   0,  NO, 0.5
   13,   0,  72,  72,    0, 192, 192,    0,  72,  72,  NO, 0.5
   14, 102,  69,   0,  192, 128,   0,  102,  69,   0,  NO, 0.5
   15,  65, 165,  65,  192, 192, 192,   65, 165,  65,  NO, 0.5
   16,  87,  87,   0,  192, 192,   0,   87,  87,   0,  NO, 0.5
   17,  87,  87,   0,  192, 192,   0,   87,  87,   0,  NO, 0.5
   18,  87,  87,   0,  192, 192,   0,   87,  87,   0,  NO, 0.5
   19,  87,  87,   0,  192, 192,   0,   87,  87,   0,  NO, 0.5
   20,  87,  87,   0,  192, 192,   0,   87,  87,   0,  NO, 0.5
   21,  87,  87,   0,  192, 192,   0,   87,  87,   0,  NO, 0.5
   22,  70,  70,   0,  192, 255,   0,   70,  70,   0,  NO, 0.5
   23, 121,   0,  91,  255,   0, 192,  121,   0,  91,  NO, 0.5
   24,  89,   0, 162,  212, 160, 255,   89,   0, 162,  NO, 0.5
   25,   0,  43,  19,    0, 128,  57,    0,  43,  19,  NO, 0.5
   26, 115,   0,   0,  255,  87,  87,  115,   0,   0,  NO, 0.5
   27,  34,  77,   0,   85, 192,   0,   34,  77,   0,  NO, 0.5
   46,  85,  32,   0,  192,  72,   0,   85,  32,   0,  NO, 0.5
   64,  85,  32,   0,  192,  72,   0,   85,  32,   0,  NO, 0.5
   65,  85,  32,   0,  192,  72,   0,   85,  32,   0,  NO, 0.5

*COMP-GEN-SECT-PSC-DESIGN    ; Composite Section for PSC Design
     1, NO,  0, 0, 0, 0, 0, 0, 0,  0, 0, 0, 0, 0, 0, 0
     2, NO,  0, 0, 0, 0, 0, 0, 0,  0, 0, 0, 0, 0, 0, 0
     3, NO,  0, 0, 0, 0, 0, 0, 0,  0, 0, 0, 0, 0, 0, 0
     4, NO,  0, 0, 0, 0, 0, 0, 0,  0, 0, 0, 0, 0, 0, 0
     5, NO,  0, 0, 0, 0, 0, 0, 0,  0, 0, 0, 0, 0, 0, 0
     6, NO,  0, 0, 0, 0, 0, 0, 0,  0, 0, 0, 0, 0, 0, 0
     7, NO,  0, 0, 0, 0, 0, 0, 0,  0, 0, 0, 0, 0, 0, 0
     8, NO,  0, 0, 0, 0, 0, 0, 0,  0, 0, 0, 0, 0, 0, 0
     9, NO,  0, 0, 0, 0, 0, 0, 0,  0, 0, 0, 0, 0, 0, 0
    10, NO,  0, 0, 0, 0, 0, 0, 0,  0, 0, 0, 0, 0, 0, 0
    11, NO,  0, 0, 0, 0, 0, 0, 0,  0, 0, 0, 0, 0, 0, 0
    12, NO,  0, 0, 0, 0, 0, 0, 0,  0, 0, 0, 0, 0, 0, 0
    13, NO,  0, 0, 0, 0, 0, 0, 0,  0, 0, 0, 0, 0, 0, 0
    14, NO,  0, 0, 0, 0, 0, 0, 0,  0, 0, 0, 0, 0, 0, 0
    16, NO,  0, 0, 0, 0, 0, 0, 0,  0, 0, 0, 0, 0, 0, 0
    21, NO,  0, 0, 0, 0, 0, 0, 0,  0, 0, 0, 0, 0, 0, 0

*DGN-SECT
    1, COMPOSITE , C1 Interno         , CT, 0, 0, 0, 0, 0, 0, YES, I
       0.94, 0.015, 0.5, 0.03, 0.6, 0.03
       0, 0, 0, 0, 0, 0
       0
       0
       0
       3.2, 1, 0,   3.2, 0.24, 0.06,   6.2978, 0, 0.3, 0.2, NO, ,
    2, COMPOSITE , C2 Interno         , CT, 0, 0, 0, 0, 0, 0, YES, I
       0.93, 0.015, 0.5, 0.03, 0.6, 0.04
       0, 0, 0, 0, 0, 0
       0
       0
       0
       3.2, 1, 0,   3.2, 0.24, 0.06,   6.2978, 0, 0.3, 0.2, NO, ,
    3, COMPOSITE , C1 Esterno         , CT, 0, 0, 0, 0, 0, 0, YES, I
       0.94, 0.015, 0.5, 0.03, 0.6, 0.03
       0, 0, 0, 0, 0, 0
       0
       0
       0
       2.95, 1, 0,   2.95, 0.24, 0.06,   6.2978, 0, 0.3, 0.2, NO, ,
    4, COMPOSITE , C2 esterno         , CT, 0, 0, 0, 0, 0, 0, YES, I
       0.93, 0.015, 0.5, 0.03, 0.6, 0.04
       0, 0, 0, 0, 0, 0
       0
```

```
    0
    0
    2.95, 1, 0,   2.95, 0.24, 0.06,   6.2978, 0, 0.3, 0.2, NO, ,
 5, TAPERED   , C4 Interno Sx     , CT, 0, 0, 0, 0, 0, 0, 0, 0, YES, CP_I, 1, 1, CMP-I
    1, 0,   3.2, 0.24, 0.06,   6.2978, 0, 0.3, 0.2, NO, ,
    3.2, 0.92, 0.02, 0.6, , 0.04, 0.7, , 0.04
    3.2, 1.92, 0.02, 0.6, , 0.04, 0.7, , 0.04
    0, 0, 0, 0, 0, 0
    0
    0
    0
    0, 0, 0, 0, 0, 0
    0
    0
    0

 6, TAPERED   , C4 Interno Dx     , CT, 0, 0, 0, 0, 0, 0, 0, 0, YES, CP_I, 1, 1, CMP-I
    1, 0,   3.2, 0.24, 0.06,   6.2978, 0, 0.3, 0.2, NO, ,
    3.2, 1.92, 0.02, 0.6, , 0.04, 0.7, , 0.04
    3.2, 0.92, 0.02, 0.6, , 0.04, 0.7, , 0.04
    0, 0, 0, 0, 0, 0
    0
    0
    0
    0, 0, 0, 0, 0, 0
    0
    0
    0

 7, COMPOSITE , C5 Interno        , CT, 0, 0, 0, 0, 0, 0, YES, I
    0.93, 0.02, 0.5, 0.03, 0.6, 0.04
    0, 0, 0, 0, 0, 0
    0
    0
    0
    3.2, 1, 0,   3.2, 0.24, 0.06,   6.2978, 0, 0.3, 0.2, NO, ,
 8, COMPOSITE , C6 Interno        , CT, 0, 0, 0, 0, 0, 0, YES, I
    0.93, 0.012, 0.5, 0.03, 0.6, 0.04
    0, 0, 0, 0, 0, 0
    0
    0
    0
    3.2, 1, 0,   3.2, 0.24, 0.06,   6.2978, 0, 0.3, 0.2, NO, ,
 9, TAPERED   , C4 Esterno Sx     , CT, 0, 0, 0, 0, 0, 0, 0, 0, YES, CP_I, 1, 1, CMP-I
    1, 0,   2.95, 0.24, 0.06,   6.2978, 0, 0.3, 0.2, NO, ,
    2.95, 0.92, 0.02, 0.6, , 0.04, 0.7, , 0.04
    2.95, 1.92, 0.02, 0.6, , 0.04, 0.7, , 0.04
    0, 0, 0, 0, 0, 0
    0
    0
    0
    0, 0, 0, 0, 0, 0
    0
    0
    0

10, TAPERED   , C4 Esterno Dx     , CT, 0, 0, 0, 0, 0, 0, 0, 0, YES, CP_I, 1, 1, CMP-I
    1, 0,   2.95, 0.24, 0.06,   6.2978, 0, 0.3, 0.2, NO, ,
    2.95, 1.92, 0.02, 0.6, , 0.04, 0.7, , 0.04
    2.95, 0.92, 0.02, 0.6, , 0.04, 0.7, , 0.04
    0, 0, 0, 0, 0, 0
    0
    0
    0
    0, 0, 0, 0, 0, 0
    0
    0
    0

11, COMPOSITE , C3 Interno        , CT, 0, 0, 0, 0, 0, 0, YES, I
    0.93, 0.02, 0.5, 0.03, 0.6, 0.04
    0, 0, 0, 0, 0, 0
    0
    0
    0
    3.2, 1, 0,   3.2, 0.24, 0.06,   6.2978, 0, 0.3, 0.2, NO, ,
12, COMPOSITE , C5 Esterno        , CT, 0, 0, 0, 0, 0, 0, YES, I
    0.93, 0.02, 0.5, 0.03, 0.6, 0.04
```

```
        0, 0, 0, 0, 0, 0
        0
        0
        0
        2.95, 1, 0,   2.95, 0.24, 0.06,   6.2978, 0, 0.3, 0.2, NO, ,
   13, COMPOSITE , C6 Esterno        , CT, 0, 0, 0, 0, 0, 0, YES, I
        0.93, 0.012, 0.5, 0.03, 0.6, 0.04
        0, 0, 0, 0, 0, 0
        0
        0
        0
        2.95, 1, 0,   2.95, 0.24, 0.06,   6.2978, 0, 0.3, 0.2, NO, ,
   14, COMPOSITE , C3 Esterno        , CT, 0, 0, 0, 0, 0, 0, YES, I
        0.93, 0.02, 0.5, 0.03, 0.6, 0.04
        0, 0, 0, 0, 0, 0
        0
        0
        0
        2.95, 1, 0,   2.95, 0.24, 0.06,   6.2978, 0, 0.3, 0.2, NO, ,
   15, DBUSER    , CONTROV 2L80x10d15, CC, 0, 0, 0, 0, 0, 0, YES, 2L , 2, 0.08, 0.08, 0.01, 0.01, 0.015, 0,
0, 0, 0, 0
   16, COMPOSITE , C4 Interno Centr  , CT, 0, 0, 0, 0, 0, 0, YES, I
        1.92, 0.02, 0.6, 0.04, 0.7, 0.04
        0, 0, 0, 0, 0, 0
        0
        0
        0
        3.2, 1, 0,   3.2, 0.24, 0.06,   6.2978, 0, 0.3, 0.2, NO, ,
   17, DBUSER    , HSUP_CORR 2L80x10d15, CC, 0, 0, 0, 0, 0, 0, YES, 2L , 2, 0.08, 0.08, 0.01, 0.01, 0.015, 0
, 0, 0, 0, 0
   18, DBUSER    , HINF_CORR 2L80x10d15, CC, 0, 0, 0, 0, 0, 0, YES, 2L , 2, 0.08, 0.08, 0.01, 0.01, 0.015, 0
, 0, 0, 0, 0
   19, DBUSER    , HSUP_PILE 2L100x10d20, CC, 0, 0, 0, 0, 0, 0, YES, 2L , 2, 0.1, 0.1, 0.01, 0.01, 0.02, 0,
0, 0, 0, 0
   20, DBUSER    , DIAG_PILE 2L80x8d20, CC, 0, 1, 0, 0, 0, 0, YES, 2L , 2, 0.08, 0.08, 0.008, 0.008, 0.02, 0
, 0, 0, 0, 0
   21, COMPOSITE , C4 Esterno Centr  , CT, 0, 0, 0, 0, 0, 0, YES, I
        1.92, 0.02, 0.6, 0.04, 0.7, 0.04
        0, 0, 0, 0, 0, 0
        0
        0
        0
        2.95, 1, 0,   2.95, 0.24, 0.06,   6.2978, 0, 0.3, 0.2, NO, ,
   22, DBUSER    , 330x30            , RT, 0, 0, 1, 0.8, 0, 0, NO, SB , 2, 0.3, 3.3, 0, 0, 0, 0, 0, 0, 0, 0
   23, DBUSER    , 500x30            , CT, 0, 0, 0, 0, 0, 0, NO, SB , 2, 0.3, 5, 0, 0, 0, 0, 0, 0, 0, 0
   24, DBUSER    , 400x30            , LT, 0, 1, 1, 1.5, 0, 0, NO, SB , 2, 0.3, 4, 0, 0, 0, 0, 0, 0, 0, 0
   25, DBUSER    , 300x30            , CT, 0, 0, 0, 0, 0, 0, NO, SB , 2, 0.3, 3, 0, 0, 0, 0, 0, 0, 0, 0
   26, DBUSER    , 400x30 dx         , RT, 0, 1, 1, 1.5, 0, 0, NO, SB , 2, 0.3, 4, 0, 0, 0, 0, 0, 0, 0, 0
   27, DBUSER    , 520x30            , CT, 0, 0, 0, 0, 0, 0, NO, SB , 2, 0.3, 5.2, 0, 0, 0, 0, 0, 0, 0, 0
   46, DBUSER    , PILA              , CC, 0, 0, 0, 0, 0, 0, YES, STRK, 2, 1.5, 12, 0, 0, 0, 0, 0, 0, 0, 0
   64, DBUSER    , DIAG_CORR 2L80x8d15, CC, 0, 0, 0, 0, 0, 0, YES, 2L , 2, 0.08, 0.08, 0.008, 0.008, 0.015,
0, 0, 0, 0, 0
   65, DBUSER    , HINF_PILE 2L100x10d20, CC, 0, 0, 0, 0, 0, 0, YES, 2L , 2, 0.1, 0.1, 0.01, 0.01, 0.02, 0,
0, 0, 0, 0


*REBAR-PSC    ; Reinforcement of Section
   SECT=1, YES, NO, NO
        NO, , , , NO, , , , , , NO, , , , NO, , , NO, ,
        I, P16, 16, 0, 0, 0, 0.05, 0.2, 2
        I, P16, 16, 0, 0, 0, 0.22, 0.2, 2
        J, P16, 16, 0, 0, 0, 0.05, 0.2, 2
        J, P16, 16, 0, 0, 0, 0.22, 0.2, 2
   SECT=2, YES, NO, NO
        NO, , , , NO, , , , , , NO, , , , NO, , , NO, ,
        I, P16, 16, 0, 0, 0, 0.05, 0.2, 2
        I, P16, 16, 0, 0, 0, 0.22, 0.2, 2
        J, P16, 16, 0, 0, 0, 0.05, 0.2, 2
        J, P16, 16, 0, 0, 0, 0.22, 0.2, 2
   SECT=3, YES, NO, NO
        NO, , , , NO, , , , , , NO, , , , NO, , , NO, ,
        I, P16, 15, 0, 0, 0, 0.22, 0.2, 2
        I, P16, 15, 0, 0, 0, 0.05, 0.2, 2
        J, P16, 15, 0, 0, 0, 0.22, 0.2, 2
        J, P16, 15, 0, 0, 0, 0.05, 0.2, 2
   SECT=4, YES, NO, NO
        NO, , , , NO, , , , , , NO, , , , NO, , , NO, ,
        I, P16, 15, 0, 0, 0, 0.05, 0.2, 2
```

```
        I, P16, 15, 0, 0, 0, 0.22, 0.2, 2
        J, P16, 15, 0, 0, 0, 0.05, 0.2, 2
        J, P16, 15, 0, 0, 0, 0.22, 0.2, 2
   SECT=5, YES, NO, YES
        NO, , , , NO, , , , , , NO, , , , NO, , , NO, ,
        I, P20, 32, 0, 0, 0, 0.05, 0.1, 2
        I, P20, 32, 0, 0, 0, 0.22, 0.1, 2
        J, P20, 32, 0, 0, 0, 0.05, 0.1, 2
        J, P20, 32, 0, 0, 0, 0.22, 0.1, 2
   SECT=6, YES, NO, YES
        NO, , , , NO, , , , , , NO, , , , NO, , , NO, ,
        I, P20, 32, 0, 0, 0, 0.22, 0.1, 2
        I, P20, 32, 0, 0, 0, 0.05, 0.1, 2
        J, P20, 32, 0, 0, 0, 0.22, 0.1, 2
        J, P20, 32, 0, 0, 0, 0.05, 0.1, 2
   SECT=7, YES, NO, NO
        NO, , , , NO, , , , , , NO, , , , NO, , , NO, ,
        I, P20, 16, 0, 0, 0, 0.22, 0.2, 2
        I, P20, 16, 0, 0, 0, 0.05, 0.2, 2
        J, P20, 16, 0, 0, 0, 0.22, 0.2, 2
        J, P20, 16, 0, 0, 0, 0.05, 0.2, 2
   SECT=8, YES, NO, NO
        NO, , , , NO, , , , , , NO, , , , NO, , , NO, ,
        I, P16, 16, 0, 0, 0, 0.05, 0.2, 2
        I, P16, 16, 0, 0, 0, 0.22, 0.2, 2
        J, P16, 16, 0, 0, 0, 0.05, 0.2, 2
        J, P16, 16, 0, 0, 0, 0.22, 0.2, 2
   SECT=9, YES, NO, YES
        NO, , , , NO, , , , , , NO, , , , NO, , , NO, ,
        I, P20, 29, 0, 0, 0, 0.22, 0.1, 2
        I, P20, 29, 0, 0, 0, 0.05, 0.1, 2
        J, P20, 29, 0, 0, 0, 0.22, 0.1, 2
        J, P20, 29, 0, 0, 0, 0.05, 0.1, 2
   SECT=10, YES, NO, YES
        NO, , , , NO, , , , , , NO, , , , NO, , , NO, ,
        I, P20, 29, 0, 0, 0, 0.05, 0.1, 2
        I, P20, 29, 0, 0, 0, 0.22, 0.1, 2
        J, P20, 29, 0, 0, 0, 0.05, 0.1, 2
        J, P20, 29, 0, 0, 0, 0.22, 0.1, 2
   SECT=11, YES, NO, NO
        NO, , , , NO, , , , , , NO, , , , NO, , , NO, ,
        I, P20, 16, 0, 0, 0, 0.05, 0.2, 2
        I, P20, 16, 0, 0, 0, 0.22, 0.2, 2
        J, P20, 16, 0, 0, 0, 0.05, 0.2, 2
        J, P20, 16, 0, 0, 0, 0.22, 0.2, 2
   SECT=12, YES, NO, NO
        NO, , , , NO, , , , , , NO, , , , NO, , , NO, ,
        I, P20, 15, 0, 0, 0, 0.22, 0.2, 2
        I, P20, 15, 0, 0, 0, 0.05, 0.2, 2
        J, P20, 15, 0, 0, 0, 0.22, 0.2, 2
        J, P20, 15, 0, 0, 0, 0.05, 0.2, 2
   SECT=13, YES, NO, NO
        NO, , , , NO, , , , , , NO, , , , NO, , , NO, ,
        I, P16, 15, 0, 0, 0, 0.05, 0.2, 2
        I, P16, 15, 0, 0, 0, 0.22, 0.2, 2
        J, P16, 15, 0, 0, 0, 0.05, 0.2, 2
        J, P16, 15, 0, 0, 0, 0.22, 0.2, 2
   SECT=14, YES, NO, NO
        NO, , , , NO, , , , , , NO, , , , NO, , , NO, ,
        I, P20, 15, 0, 0, 0, 0.22, 0.2, 2
        I, P20, 15, 0, 0, 0, 0.05, 0.2, 2
        J, P20, 15, 0, 0, 0, 0.22, 0.2, 2
        J, P20, 15, 0, 0, 0, 0.05, 0.2, 2
   SECT=16, YES, NO, YES
        NO, , , , NO, , , , , , NO, , , , NO, , , NO, ,
        I, P20, 32, 0, 0, 0, 0.05, 0.1, 2
        I, P20, 32, 0, 0, 0, 0.22, 0.1, 2
        J, P20, 32, 0, 0, 0, 0.05, 0.1, 2
        J, P20, 32, 0, 0, 0, 0.22, 0.1, 2
   SECT=21, YES, NO, YES
        NO, , , , NO, , , , , , NO, , , , NO, , , NO, ,
        I, P20, 29, 0, 0, 0, 0.22, 0.1, 2
        I, P20, 29, 0, 0, 0, 0.05, 0.1, 2
        J, P20, 29, 0, 0, 0, 0.22, 0.1, 2
        J, P20, 29, 0, 0, 0, 0.05, 0.1, 2

*TS-GROUP    ; Tapered Section Group
T3 SX, 310 311,  LINEAR, , , ,  LINEAR, , , , 0
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T3 DX, 314 315,  LINEAR, , , ,  LINEAR, , , , 0
T1 SX, 110 111,  LINEAR, , , ,  LINEAR, , , , 0
T1 DX, 114 115,  LINEAR, , , ,  LINEAR, , , , 0
T2 SX, 210 211,  LINEAR, , , ,  LINEAR, , , , 0
T2 DX, 214 215,  LINEAR, , , ,  LINEAR, , , , 0
T4 SX, 410 411,  LINEAR, , , ,  LINEAR, , , , 0
T4 DX, 414 415,  LINEAR, , , ,  LINEAR, , , , 0
T1 SX 2, 126 127,  LINEAR, , , ,  LINEAR, , , , 0
T1 DX 2, 130 131,  LINEAR, , , ,  LINEAR, , , , 0
T2 SX 2, 226 227,  LINEAR, , , ,  LINEAR, , , , 0
T2 DX 2, 230 231,  LINEAR, , , ,  LINEAR, , , , 0
T3 SX 2, 326 327,  LINEAR, , , ,  LINEAR, , , , 0
T3 DX 2, 330 331,  LINEAR, , , ,  LINEAR, , , , 0
T4 SX 2, 426 427,  LINEAR, , , ,  LINEAR, , , , 0
T4 DX 2, 430 431,  LINEAR, , , ,  LINEAR, , , , 0

*STLDCASE    ; Static Load Cases
   Peso acciaio e pile, D ,
   Peso soletta, D ,
   Finiture, DW,
   Vento strutture (Y+), W ,
   Vento mobili (Y+), WL,
   Frenamento (X+), BRK,
   Termico Unif. +15°, T ,
   Termico diff. +5°/H, TPG,


*DGN-CTRL    ; General Design Data
   NO, NO, YES, , , , , , 0, 3D, YES, NO, NO, 0, 1, NO, 2

*DGN-STEEL    ; Steel Design Code
   CODE=Eurocode3-2:05, NO, 0
   1.05, 1.1, 1.25, 0, 0

*CONSTRAINT    ; Supports
   1 2 883 884, 111111, SUPPORTI

*ELASTICLINK
   185,    77,   159, GEN  ,     0, 767676, 1302, 1302, 1, 1, 1, NO, 0.5, 0.5, APPOGGI SPALLE
   186,    79,   161, GEN  ,     0, 767676, 1302, 1302, 1, 1, 1, NO, 0.5, 0.5, APPOGGI SPALLE
   187,    81,   163, GEN  ,     0, 767676, 1302, 1302, 1, 1, 1, NO, 0.5, 0.5, APPOGGI SPALLE
   188,    83,   165, GEN  ,     0, 767676, 1302, 1302, 1, 1, 1, NO, 0.5, 0.5, APPOGGI SPALLE
   190,    78,   160, GEN  ,     0, 767676, 1302, 1302, 1, 1, 1, NO, 0.5, 0.5, APPOGGI SPALLE
   191,    80,   162, GEN  ,     0, 767676, 1302, 1302, 1, 1, 1, NO, 0.5, 0.5, APPOGGI SPALLE
   192,    82,   164, GEN  ,     0, 767676, 1302, 1302, 1, 1, 1, NO, 0.5, 0.5, APPOGGI SPALLE
   193,    84,   166, GEN  ,     0, 767676, 1302, 1302, 1, 1, 1, NO, 0.5, 0.5, APPOGGI SPALLE
   195,    21,    31, GEN  ,     0, 1.79446e+006, 2855, 2855, 1, 1, 1, NO, 0.5, 0.5, APPOGGI PILE
   196,    23,    33, GEN  ,     0, 1.79446e+006, 2855, 2855, 1, 1, 1, NO, 0.5, 0.5, APPOGGI PILE
   197,   885,    35, GEN  ,     0, 1.79446e+006, 2855, 2855, 1, 1, 1, NO, 0.5, 0.5, APPOGGI PILE
   198,    27,    37, GEN  ,     0, 1.79446e+006, 2855, 2855, 1, 1, 1, NO, 0.5, 0.5, APPOGGI PILE
   200,    22,    32, GEN  ,     0, 1.79446e+006, 2855, 2855, 1, 1, 1, NO, 0.5, 0.5, APPOGGI PILE
   201,    24,    34, GEN  ,     0, 1.79446e+006, 2855, 2855, 1, 1, 1, NO, 0.5, 0.5, APPOGGI PILE
   202,   886,    36, GEN  ,     0, 1.79446e+006, 2855, 2855, 1, 1, 1, NO, 0.5, 0.5, APPOGGI PILE
   203,    28,    38, GEN  ,     0, 1.79446e+006, 2855, 2855, 1, 1, 1, NO, 0.5, 0.5, APPOGGI PILE

*MEMBERTYPE    ; Modify Member Type
   1014to1019 1022to1027 1030to1035 1038to1043 1110to1422by8 , BRACE, 0
   1111to1423by8 1112to1424by8 1113to1425by8 1114to1426by8 , BRACE, 0
   1115to1427by8 1430to1514by4 1431to1515by4 1432to1516by4 2001to2003 , BRACE, 0
   2005to2007 2009to2014 2017to2022 2025to2030 2033to2038 2041to2043 , BRACE, 0
   2045to2047 3001to3361by8 3002to3362by8 3003to3363by8 3004to3364by8 , BRACE, 0
   3005to3365by8 3006to3366by8, BRACE, 0

*RIGIDLINK    ; Rigid Link
    25, 111111, 21 23 27 885, RIGID LINK
    26, 111111, 22 24 28 886, RIGID LINK
   720, 111111, 159 177 327 489 609, RIGID LINK
   721, 111111, 178 328 490 610, RIGID LINK
   723, 111111, 179 329 491 611, RIGID LINK
   724, 111111, 180 330 492 612, RIGID LINK
   726, 111111, 181 331 493 613, RIGID LINK
   727, 111111, 182 332 494 614, RIGID LINK
   729, 111111, 87 107 495 615, RIGID LINK
   731, 111111, 31 41 51 496, RIGID LINK
   733, 111111, 88 108 497 616, RIGID LINK
   735, 111111, 183 333 498 617, RIGID LINK
   736, 111111, 184 334 499 618, RIGID LINK
   738, 111111, 185 335 500 619, RIGID LINK
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740, 111111, 186 336 501 620, RIGID LINK
742, 111111, 187 337 502 621, RIGID LINK
743, 111111, 188 338 503 622, RIGID LINK
745, 111111, 89 109 504 623, RIGID LINK
747, 111111, 32 42 52 505, RIGID LINK
749, 111111, 90 110 506 624, RIGID LINK
751, 111111, 189 339 507 625, RIGID LINK
752, 111111, 190 340 508 626, RIGID LINK
754, 111111, 191 341 509 627, RIGID LINK
755, 111111, 192 342 510 628, RIGID LINK
757, 111111, 193 343 511 629, RIGID LINK
758, 111111, 160 194 344 512 630, RIGID LINK
761, 111111, 161 210 363 513 631, RIGID LINK
762, 111111, 211 364 514 632, RIGID LINK
764, 111111, 212 365 515 633, RIGID LINK
765, 111111, 213 366 516 634, RIGID LINK
767, 111111, 214 367 517 635, RIGID LINK
768, 111111, 215 368 518 636, RIGID LINK
770, 111111, 91 115 519 637, RIGID LINK
772, 111111, 33 43 53 520, RIGID LINK
774, 111111, 92 116 521 638, RIGID LINK
776, 111111, 216 369 522 639, RIGID LINK
777, 111111, 217 370 523 640, RIGID LINK
779, 111111, 218 371 524 641, RIGID LINK
781, 111111, 219 372 525 642, RIGID LINK
783, 111111, 220 373 526 643, RIGID LINK
784, 111111, 221 374 527 644, RIGID LINK
786, 111111, 93 117 528 645, RIGID LINK
788, 111111, 34 44 54 529, RIGID LINK
790, 111111, 94 118 530 646, RIGID LINK
792, 111111, 222 375 531 647, RIGID LINK
793, 111111, 223 376 532 648, RIGID LINK
795, 111111, 224 377 533 649, RIGID LINK
796, 111111, 225 378 534 650, RIGID LINK
798, 111111, 226 379 535 651, RIGID LINK
799, 111111, 162 227 380 536 652, RIGID LINK
802, 111111, 163 243 399 537 653, RIGID LINK
803, 111111, 244 400 538 654, RIGID LINK
805, 111111, 245 401 539 655, RIGID LINK
806, 111111, 246 402 540 656, RIGID LINK
808, 111111, 247 403 541 657, RIGID LINK
809, 111111, 248 404 542 658, RIGID LINK
811, 111111, 95 123 543 659, RIGID LINK
813, 111111, 35 45 55 544, RIGID LINK
815, 111111, 96 124 545 660, RIGID LINK
817, 111111, 249 405 546 661, RIGID LINK
818, 111111, 250 406 547 662, RIGID LINK
820, 111111, 251 407 548 663, RIGID LINK
822, 111111, 252 408 549 664, RIGID LINK
824, 111111, 253 409 550 665, RIGID LINK
825, 111111, 254 410 551 666, RIGID LINK
827, 111111, 97 125 552 667, RIGID LINK
829, 111111, 36 46 56 553, RIGID LINK
831, 111111, 98 126 554 668, RIGID LINK
833, 111111, 255 411 555 669, RIGID LINK
834, 111111, 256 412 556 670, RIGID LINK
836, 111111, 257 413 557 671, RIGID LINK
837, 111111, 258 414 558 672, RIGID LINK
839, 111111, 259 415 559 673, RIGID LINK
840, 111111, 164 260 416 560 674, RIGID LINK
843, 111111, 165 276 435 561 675, RIGID LINK
844, 111111, 277 436 562 676, RIGID LINK
846, 111111, 278 437 563 677, RIGID LINK
847, 111111, 279 438 564 678, RIGID LINK
849, 111111, 280 439 565 679, RIGID LINK
850, 111111, 281 440 566 680, RIGID LINK
852, 111111, 99 131 567 681, RIGID LINK
854, 111111, 37 47 57 568, RIGID LINK
856, 111111, 100 132 569 682, RIGID LINK
858, 111111, 282 441 570 683, RIGID LINK
859, 111111, 283 442 571 684, RIGID LINK
861, 111111, 284 443 572 685, RIGID LINK
863, 111111, 285 444 573 686, RIGID LINK
865, 111111, 286 445 574 687, RIGID LINK
866, 111111, 287 446 575 688, RIGID LINK
868, 111111, 101 133 576 689, RIGID LINK
870, 111111, 38 48 58 577, RIGID LINK
872, 111111, 102 134 578 690, RIGID LINK
```

```
   874, 111111, 288 447 579 691, RIGID LINK
   875, 111111, 289 448 580 692, RIGID LINK
   877, 111111, 290 449 581 693, RIGID LINK
   878, 111111, 291 450 582 694, RIGID LINK
   880, 111111, 292 451 583 695, RIGID LINK
   881, 111111, 166 293 452 584 696, RIGID LINK
   883, 111111, 77to83by2, RIGID LINK
   884, 111111, 78to84by2, RIGID LINK

*LOADTOMASS, XYZ, YES, YES, YES, YES, 9.806
   Peso soletta, 1, Finiture, 1

*USE-STLD, Peso acciaio e pile

*SELFWEIGHT, 0, 0, -1, PESO ACCIAIO E PILE

; End of data for load case [Peso acciaio e pile] -------------------------

*USE-STLD, Peso soletta

*BEAMLOAD     ; Element Beam Loads
   101, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -23.23, 1, -23.23, 0, 0, 0, 0, PESO SOLETTA, NO, 0,
 0, NO
   102, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -23.23, 1, -23.23, 0, 0, 0, 0, PESO SOLETTA, NO, 0,
 0, NO
   103, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -23.23, 1, -23.23, 0, 0, 0, 0, PESO SOLETTA, NO, 0,
 0, NO
   104, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -23.23, 1, -23.23, 0, 0, 0, 0, PESO SOLETTA, NO, 0,
 0, NO
   105, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -23.23, 1, -23.23, 0, 0, 0, 0, PESO SOLETTA, NO, 0,
 0, NO
   106, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -23.23, 1, -23.23, 0, 0, 0, 0, PESO SOLETTA, NO, 0,
 0, NO
   107, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -23.23, 1, -23.23, 0, 0, 0, 0, PESO SOLETTA, NO, 0,
 0, NO
   108, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -23.23, 1, -23.23, 0, 0, 0, 0, PESO SOLETTA, NO, 0,
 0, NO
   109, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -23.23, 1, -23.23, 0, 0, 0, 0, PESO SOLETTA, NO, 0,
 0, NO
   110, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -23.23, 1, -23.23, 0, 0, 0, 0, PESO SOLETTA, NO, 0,
 0, NO
   111, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -23.23, 1, -23.23, 0, 0, 0, 0, PESO SOLETTA, NO, 0,
 0, NO
   112, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -23.23, 1, -23.23, 0, 0, 0, 0, PESO SOLETTA, NO, 0,
 0, NO
   113, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -23.23, 1, -23.23, 0, 0, 0, 0, PESO SOLETTA, NO, 0,
 0, NO
   114, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -23.23, 1, -23.23, 0, 0, 0, 0, PESO SOLETTA, NO, 0,
 0, NO
   115, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -23.23, 1, -23.23, 0, 0, 0, 0, PESO SOLETTA, NO, 0,
 0, NO
   116, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -23.23, 1, -23.23, 0, 0, 0, 0, PESO SOLETTA, NO, 0,
 0, NO
   117, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -23.23, 1, -23.23, 0, 0, 0, 0, PESO SOLETTA, NO, 0,
 0, NO
   118, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -23.23, 1, -23.23, 0, 0, 0, 0, PESO SOLETTA, NO, 0,
 0, NO
   119, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -23.23, 1, -23.23, 0, 0, 0, 0, PESO SOLETTA, NO, 0,
 0, NO
   120, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -23.23, 1, -23.23, 0, 0, 0, 0, PESO SOLETTA, NO, 0,
 0, NO
   121, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -23.23, 1, -23.23, 0, 0, 0, 0, PESO SOLETTA, NO, 0,
 0, NO
   122, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -23.23, 1, -23.23, 0, 0, 0, 0, PESO SOLETTA, NO, 0,
 0, NO
   123, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -23.23, 1, -23.23, 0, 0, 0, 0, PESO SOLETTA, NO, 0,
 0, NO
   124, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -23.23, 1, -23.23, 0, 0, 0, 0, PESO SOLETTA, NO, 0,
 0, NO
   125, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -23.23, 1, -23.23, 0, 0, 0, 0, PESO SOLETTA, NO, 0,
 0, NO
   126, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -23.23, 1, -23.23, 0, 0, 0, 0, PESO SOLETTA, NO, 0,
 0, NO
   127, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -23.23, 1, -23.23, 0, 0, 0, 0, PESO SOLETTA, NO, 0,
 0, NO
   128, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -23.23, 1, -23.23, 0, 0, 0, 0, PESO SOLETTA, NO, 0,
 0, NO
   129, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -23.23, 1, -23.23, 0, 0, 0, 0, PESO SOLETTA, NO, 0,
```

```
0, NO
  130, BEAM   , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -23.23, 1, -23.23, 0, 0, 0, 0, PESO SOLETTA, NO, 0,
0, NO
  131, BEAM   , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -23.23, 1, -23.23, 0, 0, 0, 0, PESO SOLETTA, NO, 0,
0, NO
  132, BEAM   , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -23.23, 1, -23.23, 0, 0, 0, 0, PESO SOLETTA, NO, 0,
0, NO
  133, BEAM   , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -23.23, 1, -23.23, 0, 0, 0, 0, PESO SOLETTA, NO, 0,
0, NO
  134, BEAM   , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -23.23, 1, -23.23, 0, 0, 0, 0, PESO SOLETTA, NO, 0,
0, NO
  135, BEAM   , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -23.23, 1, -23.23, 0, 0, 0, 0, PESO SOLETTA, NO, 0,
0, NO
  136, BEAM   , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -23.23, 1, -23.23, 0, 0, 0, 0, PESO SOLETTA, NO, 0,
0, NO
  137, BEAM   , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -23.23, 1, -23.23, 0, 0, 0, 0, PESO SOLETTA, NO, 0,
0, NO
  138, BEAM   , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -23.23, 1, -23.23, 0, 0, 0, 0, PESO SOLETTA, NO, 0,
0, NO
  139, BEAM   , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -23.23, 1, -23.23, 0, 0, 0, 0, PESO SOLETTA, NO, 0,
0, NO
  140, BEAM   , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -23.23, 1, -23.23, 0, 0, 0, 0, PESO SOLETTA, NO, 0,
0, NO
  201, BEAM   , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -29.6, 1, -29.6, 0, 0, 0, 0, PESO SOLETTA, NO, 0, 0
, NO
  202, BEAM   , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -29.6, 1, -29.6, 0, 0, 0, 0, PESO SOLETTA, NO, 0, 0
, NO
  203, BEAM   , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -29.6, 1, -29.6, 0, 0, 0, 0, PESO SOLETTA, NO, 0, 0
, NO
  204, BEAM   , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -29.6, 1, -29.6, 0, 0, 0, 0, PESO SOLETTA, NO, 0, 0
, NO
  205, BEAM   , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -29.6, 1, -29.6, 0, 0, 0, 0, PESO SOLETTA, NO, 0, 0
, NO
  206, BEAM   , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -29.6, 1, -29.6, 0, 0, 0, 0, PESO SOLETTA, NO, 0, 0
, NO
  207, BEAM   , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -29.6, 1, -29.6, 0, 0, 0, 0, PESO SOLETTA, NO, 0, 0
, NO
  208, BEAM   , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -29.6, 1, -29.6, 0, 0, 0, 0, PESO SOLETTA, NO, 0, 0
, NO
  209, BEAM   , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -29.6, 1, -29.6, 0, 0, 0, 0, PESO SOLETTA, NO, 0, 0
, NO
  210, BEAM   , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -29.6, 1, -29.6, 0, 0, 0, 0, PESO SOLETTA, NO, 0, 0
, NO
  211, BEAM   , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -29.6, 1, -29.6, 0, 0, 0, 0, PESO SOLETTA, NO, 0, 0
, NO
  212, BEAM   , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -29.6, 1, -29.6, 0, 0, 0, 0, PESO SOLETTA, NO, 0, 0
, NO
  213, BEAM   , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -29.6, 1, -29.6, 0, 0, 0, 0, PESO SOLETTA, NO, 0, 0
, NO
  214, BEAM   , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -29.6, 1, -29.6, 0, 0, 0, 0, PESO SOLETTA, NO, 0, 0
, NO
  215, BEAM   , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -29.6, 1, -29.6, 0, 0, 0, 0, PESO SOLETTA, NO, 0, 0
, NO
  216, BEAM   , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -29.6, 1, -29.6, 0, 0, 0, 0, PESO SOLETTA, NO, 0, 0
, NO
  217, BEAM   , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -29.6, 1, -29.6, 0, 0, 0, 0, PESO SOLETTA, NO, 0, 0
, NO
  218, BEAM   , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -29.6, 1, -29.6, 0, 0, 0, 0, PESO SOLETTA, NO, 0, 0
, NO
  219, BEAM   , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -29.6, 1, -29.6, 0, 0, 0, 0, PESO SOLETTA, NO, 0, 0
, NO
  220, BEAM   , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -29.6, 1, -29.6, 0, 0, 0, 0, PESO SOLETTA, NO, 0, 0
, NO
  221, BEAM   , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -29.6, 1, -29.6, 0, 0, 0, 0, PESO SOLETTA, NO, 0, 0
, NO
  222, BEAM   , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -29.6, 1, -29.6, 0, 0, 0, 0, PESO SOLETTA, NO, 0, 0
, NO
  223, BEAM   , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -29.6, 1, -29.6, 0, 0, 0, 0, PESO SOLETTA, NO, 0, 0
, NO
  224, BEAM   , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -29.6, 1, -29.6, 0, 0, 0, 0, PESO SOLETTA, NO, 0, 0
, NO
  225, BEAM   , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -29.6, 1, -29.6, 0, 0, 0, 0, PESO SOLETTA, NO, 0, 0
, NO
  226, BEAM   , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -29.6, 1, -29.6, 0, 0, 0, 0, PESO SOLETTA, NO, 0, 0
, NO
  227, BEAM   , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -29.6, 1, -29.6, 0, 0, 0, 0, PESO SOLETTA, NO, 0, 0
, NO
  228, BEAM   , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -29.6, 1, -29.6, 0, 0, 0, 0, PESO SOLETTA, NO, 0, 0
```

```
, NO
    229, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -29.6, 1, -29.6, 0, 0, 0, 0, PESO SOLETTA, NO, 0, 0
, NO
    230, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -29.6, 1, -29.6, 0, 0, 0, 0, PESO SOLETTA, NO, 0, 0
, NO
    231, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -29.6, 1, -29.6, 0, 0, 0, 0, PESO SOLETTA, NO, 0, 0
, NO
    232, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -29.6, 1, -29.6, 0, 0, 0, 0, PESO SOLETTA, NO, 0, 0
, NO
    233, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -29.6, 1, -29.6, 0, 0, 0, 0, PESO SOLETTA, NO, 0, 0
, NO
    234, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -29.6, 1, -29.6, 0, 0, 0, 0, PESO SOLETTA, NO, 0, 0
, NO
    235, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -29.6, 1, -29.6, 0, 0, 0, 0, PESO SOLETTA, NO, 0, 0
, NO
    236, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -29.6, 1, -29.6, 0, 0, 0, 0, PESO SOLETTA, NO, 0, 0
, NO
    237, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -29.6, 1, -29.6, 0, 0, 0, 0, PESO SOLETTA, NO, 0, 0
, NO
    238, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -29.6, 1, -29.6, 0, 0, 0, 0, PESO SOLETTA, NO, 0, 0
, NO
    239, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -29.6, 1, -29.6, 0, 0, 0, 0, PESO SOLETTA, NO, 0, 0
, NO
    240, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -29.6, 1, -29.6, 0, 0, 0, 0, PESO SOLETTA, NO, 0, 0
, NO
    301, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -29.6, 1, -29.6, 0, 0, 0, 0, PESO SOLETTA, NO, 0, 0
, NO
    302, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -29.6, 1, -29.6, 0, 0, 0, 0, PESO SOLETTA, NO, 0, 0
, NO
    303, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -29.6, 1, -29.6, 0, 0, 0, 0, PESO SOLETTA, NO, 0, 0
, NO
    304, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -29.6, 1, -29.6, 0, 0, 0, 0, PESO SOLETTA, NO, 0, 0
, NO
    305, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -29.6, 1, -29.6, 0, 0, 0, 0, PESO SOLETTA, NO, 0, 0
, NO
    306, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -29.6, 1, -29.6, 0, 0, 0, 0, PESO SOLETTA, NO, 0, 0
, NO
    307, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -29.6, 1, -29.6, 0, 0, 0, 0, PESO SOLETTA, NO, 0, 0
, NO
    308, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -29.6, 1, -29.6, 0, 0, 0, 0, PESO SOLETTA, NO, 0, 0
, NO
    309, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -29.6, 1, -29.6, 0, 0, 0, 0, PESO SOLETTA, NO, 0, 0
, NO
    310, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -29.6, 1, -29.6, 0, 0, 0, 0, PESO SOLETTA, NO, 0, 0
, NO
    311, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -29.6, 1, -29.6, 0, 0, 0, 0, PESO SOLETTA, NO, 0, 0
, NO
    312, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -29.6, 1, -29.6, 0, 0, 0, 0, PESO SOLETTA, NO, 0, 0
, NO
    313, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -29.6, 1, -29.6, 0, 0, 0, 0, PESO SOLETTA, NO, 0, 0
, NO
    314, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -29.6, 1, -29.6, 0, 0, 0, 0, PESO SOLETTA, NO, 0, 0
, NO
    315, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -29.6, 1, -29.6, 0, 0, 0, 0, PESO SOLETTA, NO, 0, 0
, NO
    316, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -29.6, 1, -29.6, 0, 0, 0, 0, PESO SOLETTA, NO, 0, 0
, NO
    317, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -29.6, 1, -29.6, 0, 0, 0, 0, PESO SOLETTA, NO, 0, 0
, NO
    318, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -29.6, 1, -29.6, 0, 0, 0, 0, PESO SOLETTA, NO, 0, 0
, NO
    319, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -29.6, 1, -29.6, 0, 0, 0, 0, PESO SOLETTA, NO, 0, 0
, NO
    320, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -29.6, 1, -29.6, 0, 0, 0, 0, PESO SOLETTA, NO, 0, 0
, NO
    321, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -29.6, 1, -29.6, 0, 0, 0, 0, PESO SOLETTA, NO, 0, 0
, NO
    322, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -29.6, 1, -29.6, 0, 0, 0, 0, PESO SOLETTA, NO, 0, 0
, NO
    323, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -29.6, 1, -29.6, 0, 0, 0, 0, PESO SOLETTA, NO, 0, 0
, NO
    324, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -29.6, 1, -29.6, 0, 0, 0, 0, PESO SOLETTA, NO, 0, 0
, NO
    325, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -29.6, 1, -29.6, 0, 0, 0, 0, PESO SOLETTA, NO, 0, 0
, NO
    326, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -29.6, 1, -29.6, 0, 0, 0, 0, PESO SOLETTA, NO, 0, 0
, NO
    327, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -29.6, 1, -29.6, 0, 0, 0, 0, PESO SOLETTA, NO, 0, 0
```

```
, NO
   328, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -29.6, 1, -29.6, 0, 0, 0, 0, PESO SOLETTA, NO, 0, 0
, NO
   329, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -29.6, 1, -29.6, 0, 0, 0, 0, PESO SOLETTA, NO, 0, 0
, NO
   330, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -29.6, 1, -29.6, 0, 0, 0, 0, PESO SOLETTA, NO, 0, 0
, NO
   331, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -29.6, 1, -29.6, 0, 0, 0, 0, PESO SOLETTA, NO, 0, 0
, NO
   332, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -29.6, 1, -29.6, 0, 0, 0, 0, PESO SOLETTA, NO, 0, 0
, NO
   333, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -29.6, 1, -29.6, 0, 0, 0, 0, PESO SOLETTA, NO, 0, 0
, NO
   334, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -29.6, 1, -29.6, 0, 0, 0, 0, PESO SOLETTA, NO, 0, 0
, NO
   335, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -29.6, 1, -29.6, 0, 0, 0, 0, PESO SOLETTA, NO, 0, 0
, NO
   336, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -29.6, 1, -29.6, 0, 0, 0, 0, PESO SOLETTA, NO, 0, 0
, NO
   337, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -29.6, 1, -29.6, 0, 0, 0, 0, PESO SOLETTA, NO, 0, 0
, NO
   338, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -29.6, 1, -29.6, 0, 0, 0, 0, PESO SOLETTA, NO, 0, 0
, NO
   339, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -29.6, 1, -29.6, 0, 0, 0, 0, PESO SOLETTA, NO, 0, 0
, NO
   340, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -29.6, 1, -29.6, 0, 0, 0, 0, PESO SOLETTA, NO, 0, 0
, NO
   401, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -23.23, 1, -23.23, 0, 0, 0, 0, PESO SOLETTA, NO, 0,
 0, NO
   402, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -23.23, 1, -23.23, 0, 0, 0, 0, PESO SOLETTA, NO, 0,
 0, NO
   403, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -23.23, 1, -23.23, 0, 0, 0, 0, PESO SOLETTA, NO, 0,
 0, NO
   404, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -23.23, 1, -23.23, 0, 0, 0, 0, PESO SOLETTA, NO, 0,
 0, NO
   405, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -23.23, 1, -23.23, 0, 0, 0, 0, PESO SOLETTA, NO, 0,
 0, NO
   406, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -23.23, 1, -23.23, 0, 0, 0, 0, PESO SOLETTA, NO, 0,
 0, NO
   407, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -23.23, 1, -23.23, 0, 0, 0, 0, PESO SOLETTA, NO, 0,
 0, NO
   408, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -23.23, 1, -23.23, 0, 0, 0, 0, PESO SOLETTA, NO, 0,
 0, NO
   409, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -23.23, 1, -23.23, 0, 0, 0, 0, PESO SOLETTA, NO, 0,
 0, NO
   410, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -23.23, 1, -23.23, 0, 0, 0, 0, PESO SOLETTA, NO, 0,
 0, NO
   411, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -23.23, 1, -23.23, 0, 0, 0, 0, PESO SOLETTA, NO, 0,
 0, NO
   412, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -23.23, 1, -23.23, 0, 0, 0, 0, PESO SOLETTA, NO, 0,
 0, NO
   413, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -23.23, 1, -23.23, 0, 0, 0, 0, PESO SOLETTA, NO, 0,
 0, NO
   414, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -23.23, 1, -23.23, 0, 0, 0, 0, PESO SOLETTA, NO, 0,
 0, NO
   415, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -23.23, 1, -23.23, 0, 0, 0, 0, PESO SOLETTA, NO, 0,
 0, NO
   416, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -23.23, 1, -23.23, 0, 0, 0, 0, PESO SOLETTA, NO, 0,
 0, NO
   417, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -23.23, 1, -23.23, 0, 0, 0, 0, PESO SOLETTA, NO, 0,
 0, NO
   418, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -23.23, 1, -23.23, 0, 0, 0, 0, PESO SOLETTA, NO, 0,
 0, NO
   419, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -23.23, 1, -23.23, 0, 0, 0, 0, PESO SOLETTA, NO, 0,
 0, NO
   420, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -23.23, 1, -23.23, 0, 0, 0, 0, PESO SOLETTA, NO, 0,
 0, NO
   421, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -23.23, 1, -23.23, 0, 0, 0, 0, PESO SOLETTA, NO, 0,
 0, NO
   422, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -23.23, 1, -23.23, 0, 0, 0, 0, PESO SOLETTA, NO, 0,
 0, NO
   423, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -23.23, 1, -23.23, 0, 0, 0, 0, PESO SOLETTA, NO, 0,
 0, NO
   424, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -23.23, 1, -23.23, 0, 0, 0, 0, PESO SOLETTA, NO, 0,
 0, NO
   425, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -23.23, 1, -23.23, 0, 0, 0, 0, PESO SOLETTA, NO, 0,
 0, NO
   426, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -23.23, 1, -23.23, 0, 0, 0, 0, PESO SOLETTA, NO, 0,
```

```
 0, NO
   427, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -23.23, 1, -23.23, 0, 0, 0, 0, PESO SOLETTA, NO, 0,
0, NO
   428, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -23.23, 1, -23.23, 0, 0, 0, 0, PESO SOLETTA, NO, 0,
0, NO
   429, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -23.23, 1, -23.23, 0, 0, 0, 0, PESO SOLETTA, NO, 0,
0, NO
   430, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -23.23, 1, -23.23, 0, 0, 0, 0, PESO SOLETTA, NO, 0,
0, NO
   431, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -23.23, 1, -23.23, 0, 0, 0, 0, PESO SOLETTA, NO, 0,
0, NO
   432, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -23.23, 1, -23.23, 0, 0, 0, 0, PESO SOLETTA, NO, 0,
0, NO
   433, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -23.23, 1, -23.23, 0, 0, 0, 0, PESO SOLETTA, NO, 0,
0, NO
   434, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -23.23, 1, -23.23, 0, 0, 0, 0, PESO SOLETTA, NO, 0,
0, NO
   435, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -23.23, 1, -23.23, 0, 0, 0, 0, PESO SOLETTA, NO, 0,
0, NO
   436, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -23.23, 1, -23.23, 0, 0, 0, 0, PESO SOLETTA, NO, 0,
0, NO
   437, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -23.23, 1, -23.23, 0, 0, 0, 0, PESO SOLETTA, NO, 0,
0, NO
   438, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -23.23, 1, -23.23, 0, 0, 0, 0, PESO SOLETTA, NO, 0,
0, NO
   439, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -23.23, 1, -23.23, 0, 0, 0, 0, PESO SOLETTA, NO, 0,
0, NO
   440, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -23.23, 1, -23.23, 0, 0, 0, 0, PESO SOLETTA, NO, 0,
0, NO

; End of data for load case [Peso soletta] -------------------------

*USE-STLD, Finiture

*BEAMLOAD     ; Element Beam Loads
   101, BEAM    , UNILOAD, GZ, NO , YES, 1, LY, -0.25, -0.25, NO, 0, -13.06, 1, -13.06, 0, 0, 0, 0, PESO FINI
TURE, NO, 0, 0, NO
   102, BEAM    , UNILOAD, GZ, NO , YES, 1, LY, -0.25, -0.25, NO, 0, -13.06, 1, -13.06, 0, 0, 0, 0, PESO FINI
TURE, NO, 0, 0, NO
   103, BEAM    , UNILOAD, GZ, NO , YES, 1, LY, -0.25, -0.25, NO, 0, -13.06, 1, -13.06, 0, 0, 0, 0, PESO FINI
TURE, NO, 0, 0, NO
   104, BEAM    , UNILOAD, GZ, NO , YES, 1, LY, -0.25, -0.25, NO, 0, -13.06, 1, -13.06, 0, 0, 0, 0, PESO FINI
TURE, NO, 0, 0, NO
   105, BEAM    , UNILOAD, GZ, NO , YES, 1, LY, -0.25, -0.25, NO, 0, -13.06, 1, -13.06, 0, 0, 0, 0, PESO FINI
TURE, NO, 0, 0, NO
   106, BEAM    , UNILOAD, GZ, NO , YES, 1, LY, -0.25, -0.25, NO, 0, -13.06, 1, -13.06, 0, 0, 0, 0, PESO FINI
TURE, NO, 0, 0, NO
   107, BEAM    , UNILOAD, GZ, NO , YES, 1, LY, -0.25, -0.25, NO, 0, -13.06, 1, -13.06, 0, 0, 0, 0, PESO FINI
TURE, NO, 0, 0, NO
   108, BEAM    , UNILOAD, GZ, NO , YES, 1, LY, -0.25, -0.25, NO, 0, -13.06, 1, -13.06, 0, 0, 0, 0, PESO FINI
TURE, NO, 0, 0, NO
   109, BEAM    , UNILOAD, GZ, NO , YES, 1, LY, -0.25, -0.25, NO, 0, -13.06, 1, -13.06, 0, 0, 0, 0, PESO FINI
TURE, NO, 0, 0, NO
   110, BEAM    , UNILOAD, GZ, NO , YES, 1, LY, -0.25, -0.25, NO, 0, -13.06, 1, -13.06, 0, 0, 0, 0, PESO FINI
TURE, NO, 0, 0, NO
   111, BEAM    , UNILOAD, GZ, NO , YES, 1, LY, -0.25, -0.25, NO, 0, -13.06, 1, -13.06, 0, 0, 0, 0, PESO FINI
TURE, NO, 0, 0, NO
   112, BEAM    , UNILOAD, GZ, NO , YES, 1, LY, -0.25, -0.25, NO, 0, -13.06, 1, -13.06, 0, 0, 0, 0, PESO FINI
TURE, NO, 0, 0, NO
   113, BEAM    , UNILOAD, GZ, NO , YES, 1, LY, -0.25, -0.25, NO, 0, -13.06, 1, -13.06, 0, 0, 0, 0, PESO FINI
TURE, NO, 0, 0, NO
   114, BEAM    , UNILOAD, GZ, NO , YES, 1, LY, -0.25, -0.25, NO, 0, -13.06, 1, -13.06, 0, 0, 0, 0, PESO FINI
TURE, NO, 0, 0, NO
   115, BEAM    , UNILOAD, GZ, NO , YES, 1, LY, -0.25, -0.25, NO, 0, -13.06, 1, -13.06, 0, 0, 0, 0, PESO FINI
TURE, NO, 0, 0, NO
   116, BEAM    , UNILOAD, GZ, NO , YES, 1, LY, -0.25, -0.25, NO, 0, -13.06, 1, -13.06, 0, 0, 0, 0, PESO FINI
TURE, NO, 0, 0, NO
   117, BEAM    , UNILOAD, GZ, NO , YES, 1, LY, -0.25, -0.25, NO, 0, -13.06, 1, -13.06, 0, 0, 0, 0, PESO FINI
TURE, NO, 0, 0, NO
   118, BEAM    , UNILOAD, GZ, NO , YES, 1, LY, -0.25, -0.25, NO, 0, -13.06, 1, -13.06, 0, 0, 0, 0, PESO FINI
TURE, NO, 0, 0, NO
   119, BEAM    , UNILOAD, GZ, NO , YES, 1, LY, -0.25, -0.25, NO, 0, -13.06, 1, -13.06, 0, 0, 0, 0, PESO FINI
TURE, NO, 0, 0, NO
   120, BEAM    , UNILOAD, GZ, NO , YES, 1, LY, -0.25, -0.25, NO, 0, -13.06, 1, -13.06, 0, 0, 0, 0, PESO FINI
TURE, NO, 0, 0, NO
   121, BEAM    , UNILOAD, GZ, NO , YES, 1, LY, -0.25, -0.25, NO, 0, -13.06, 1, -13.06, 0, 0, 0, 0, PESO FINI
TURE, NO, 0, 0, NO
   122, BEAM    , UNILOAD, GZ, NO , YES, 1, LY, -0.25, -0.25, NO, 0, -13.06, 1, -13.06, 0, 0, 0, 0, PESO FINI
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TURE, NO, 0, 0, NO
   123, BEAM   , UNILOAD, GZ, NO , YES, 1, LY, -0.25, -0.25, NO, 0, -13.06, 1, -13.06, 0, 0, 0, 0, PESO FINI
TURE, NO, 0, 0, NO
   124, BEAM   , UNILOAD, GZ, NO , YES, 1, LY, -0.25, -0.25, NO, 0, -13.06, 1, -13.06, 0, 0, 0, 0, PESO FINI
TURE, NO, 0, 0, NO
   125, BEAM   , UNILOAD, GZ, NO , YES, 1, LY, -0.25, -0.25, NO, 0, -13.06, 1, -13.06, 0, 0, 0, 0, PESO FINI
TURE, NO, 0, 0, NO
   126, BEAM   , UNILOAD, GZ, NO , YES, 1, LY, -0.25, -0.25, NO, 0, -13.06, 1, -13.06, 0, 0, 0, 0, PESO FINI
TURE, NO, 0, 0, NO
   127, BEAM   , UNILOAD, GZ, NO , YES, 1, LY, -0.25, -0.25, NO, 0, -13.06, 1, -13.06, 0, 0, 0, 0, PESO FINI
TURE, NO, 0, 0, NO
   128, BEAM   , UNILOAD, GZ, NO , YES, 1, LY, -0.25, -0.25, NO, 0, -13.06, 1, -13.06, 0, 0, 0, 0, PESO FINI
TURE, NO, 0, 0, NO
   129, BEAM   , UNILOAD, GZ, NO , YES, 1, LY, -0.25, -0.25, NO, 0, -13.06, 1, -13.06, 0, 0, 0, 0, PESO FINI
TURE, NO, 0, 0, NO
   130, BEAM   , UNILOAD, GZ, NO , YES, 1, LY, -0.25, -0.25, NO, 0, -13.06, 1, -13.06, 0, 0, 0, 0, PESO FINI
TURE, NO, 0, 0, NO
   131, BEAM   , UNILOAD, GZ, NO , YES, 1, LY, -0.25, -0.25, NO, 0, -13.06, 1, -13.06, 0, 0, 0, 0, PESO FINI
TURE, NO, 0, 0, NO
   132, BEAM   , UNILOAD, GZ, NO , YES, 1, LY, -0.25, -0.25, NO, 0, -13.06, 1, -13.06, 0, 0, 0, 0, PESO FINI
TURE, NO, 0, 0, NO
   133, BEAM   , UNILOAD, GZ, NO , YES, 1, LY, -0.25, -0.25, NO, 0, -13.06, 1, -13.06, 0, 0, 0, 0, PESO FINI
TURE, NO, 0, 0, NO
   134, BEAM   , UNILOAD, GZ, NO , YES, 1, LY, -0.25, -0.25, NO, 0, -13.06, 1, -13.06, 0, 0, 0, 0, PESO FINI
TURE, NO, 0, 0, NO
   135, BEAM   , UNILOAD, GZ, NO , YES, 1, LY, -0.25, -0.25, NO, 0, -13.06, 1, -13.06, 0, 0, 0, 0, PESO FINI
TURE, NO, 0, 0, NO
   136, BEAM   , UNILOAD, GZ, NO , YES, 1, LY, -0.25, -0.25, NO, 0, -13.06, 1, -13.06, 0, 0, 0, 0, PESO FINI
TURE, NO, 0, 0, NO
   137, BEAM   , UNILOAD, GZ, NO , YES, 1, LY, -0.25, -0.25, NO, 0, -13.06, 1, -13.06, 0, 0, 0, 0, PESO FINI
TURE, NO, 0, 0, NO
   138, BEAM   , UNILOAD, GZ, NO , YES, 1, LY, -0.25, -0.25, NO, 0, -13.06, 1, -13.06, 0, 0, 0, 0, PESO FINI
TURE, NO, 0, 0, NO
   139, BEAM   , UNILOAD, GZ, NO , YES, 1, LY, -0.25, -0.25, NO, 0, -13.06, 1, -13.06, 0, 0, 0, 0, PESO FINI
TURE, NO, 0, 0, NO
   140, BEAM   , UNILOAD, GZ, NO , YES, 1, LY, -0.25, -0.25, NO, 0, -13.06, 1, -13.06, 0, 0, 0, 0, PESO FINI
TURE, NO, 0, 0, NO
   201, BEAM   , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -8, 1, -8, 0, 0, 0, 0, PESO FINITURE, NO, 0, 0, NO
   202, BEAM   , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -8, 1, -8, 0, 0, 0, 0, PESO FINITURE, NO, 0, 0, NO
   203, BEAM   , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -8, 1, -8, 0, 0, 0, 0, PESO FINITURE, NO, 0, 0, NO
   204, BEAM   , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -8, 1, -8, 0, 0, 0, 0, PESO FINITURE, NO, 0, 0, NO
   205, BEAM   , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -8, 1, -8, 0, 0, 0, 0, PESO FINITURE, NO, 0, 0, NO
   206, BEAM   , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -8, 1, -8, 0, 0, 0, 0, PESO FINITURE, NO, 0, 0, NO
   207, BEAM   , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -8, 1, -8, 0, 0, 0, 0, PESO FINITURE, NO, 0, 0, NO
   208, BEAM   , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -8, 1, -8, 0, 0, 0, 0, PESO FINITURE, NO, 0, 0, NO
   209, BEAM   , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -8, 1, -8, 0, 0, 0, 0, PESO FINITURE, NO, 0, 0, NO
   210, BEAM   , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -8, 1, -8, 0, 0, 0, 0, PESO FINITURE, NO, 0, 0, NO
   211, BEAM   , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -8, 1, -8, 0, 0, 0, 0, PESO FINITURE, NO, 0, 0, NO
   212, BEAM   , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -8, 1, -8, 0, 0, 0, 0, PESO FINITURE, NO, 0, 0, NO
   213, BEAM   , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -8, 1, -8, 0, 0, 0, 0, PESO FINITURE, NO, 0, 0, NO
   214, BEAM   , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -8, 1, -8, 0, 0, 0, 0, PESO FINITURE, NO, 0, 0, NO
   215, BEAM   , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -8, 1, -8, 0, 0, 0, 0, PESO FINITURE, NO, 0, 0, NO
   216, BEAM   , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -8, 1, -8, 0, 0, 0, 0, PESO FINITURE, NO, 0, 0, NO
   217, BEAM   , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -8, 1, -8, 0, 0, 0, 0, PESO FINITURE, NO, 0, 0, NO
   218, BEAM   , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -8, 1, -8, 0, 0, 0, 0, PESO FINITURE, NO, 0, 0, NO
   219, BEAM   , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -8, 1, -8, 0, 0, 0, 0, PESO FINITURE, NO, 0, 0, NO
   220, BEAM   , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -8, 1, -8, 0, 0, 0, 0, PESO FINITURE, NO, 0, 0, NO
   221, BEAM   , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -8, 1, -8, 0, 0, 0, 0, PESO FINITURE, NO, 0, 0, NO
   222, BEAM   , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -8, 1, -8, 0, 0, 0, 0, PESO FINITURE, NO, 0, 0, NO
   223, BEAM   , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -8, 1, -8, 0, 0, 0, 0, PESO FINITURE, NO, 0, 0, NO
   224, BEAM   , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -8, 1, -8, 0, 0, 0, 0, PESO FINITURE, NO, 0, 0, NO
   225, BEAM   , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -8, 1, -8, 0, 0, 0, 0, PESO FINITURE, NO, 0, 0, NO
   226, BEAM   , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -8, 1, -8, 0, 0, 0, 0, PESO FINITURE, NO, 0, 0, NO
   227, BEAM   , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -8, 1, -8, 0, 0, 0, 0, PESO FINITURE, NO, 0, 0, NO
   228, BEAM   , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -8, 1, -8, 0, 0, 0, 0, PESO FINITURE, NO, 0, 0, NO
   229, BEAM   , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -8, 1, -8, 0, 0, 0, 0, PESO FINITURE, NO, 0, 0, NO
   230, BEAM   , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -8, 1, -8, 0, 0, 0, 0, PESO FINITURE, NO, 0, 0, NO
   231, BEAM   , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -8, 1, -8, 0, 0, 0, 0, PESO FINITURE, NO, 0, 0, NO
   232, BEAM   , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -8, 1, -8, 0, 0, 0, 0, PESO FINITURE, NO, 0, 0, NO
   233, BEAM   , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -8, 1, -8, 0, 0, 0, 0, PESO FINITURE, NO, 0, 0, NO
   234, BEAM   , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -8, 1, -8, 0, 0, 0, 0, PESO FINITURE, NO, 0, 0, NO
   235, BEAM   , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -8, 1, -8, 0, 0, 0, 0, PESO FINITURE, NO, 0, 0, NO
   236, BEAM   , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -8, 1, -8, 0, 0, 0, 0, PESO FINITURE, NO, 0, 0, NO
   237, BEAM   , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -8, 1, -8, 0, 0, 0, 0, PESO FINITURE, NO, 0, 0, NO
   238, BEAM   , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -8, 1, -8, 0, 0, 0, 0, PESO FINITURE, NO, 0, 0, NO
   239, BEAM   , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -8, 1, -8, 0, 0, 0, 0, PESO FINITURE, NO, 0, 0, NO
   240, BEAM   , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -8, 1, -8, 0, 0, 0, 0, PESO FINITURE, NO, 0, 0, NO
   301, BEAM   , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -8, 1, -8, 0, 0, 0, 0, PESO FINITURE, NO, 0, 0, NO
```

PROJECT TITLE : CASALPUSTERLENGO

	Company		Client	
	Author	Renato Vaira	File Name	Cavalc Coste V_2.mct

```
   302, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -8, 1, -8, 0, 0, 0, 0, PESO FINITURE, NO, 0, 0, NO
   303, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -8, 1, -8, 0, 0, 0, 0, PESO FINITURE, NO, 0, 0, NO
   304, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -8, 1, -8, 0, 0, 0, 0, PESO FINITURE, NO, 0, 0, NO
   305, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -8, 1, -8, 0, 0, 0, 0, PESO FINITURE, NO, 0, 0, NO
   306, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -8, 1, -8, 0, 0, 0, 0, PESO FINITURE, NO, 0, 0, NO
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   312, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -8, 1, -8, 0, 0, 0, 0, PESO FINITURE, NO, 0, 0, NO
   313, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -8, 1, -8, 0, 0, 0, 0, PESO FINITURE, NO, 0, 0, NO
   314, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -8, 1, -8, 0, 0, 0, 0, PESO FINITURE, NO, 0, 0, NO
   315, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -8, 1, -8, 0, 0, 0, 0, PESO FINITURE, NO, 0, 0, NO
   316, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -8, 1, -8, 0, 0, 0, 0, PESO FINITURE, NO, 0, 0, NO
   317, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -8, 1, -8, 0, 0, 0, 0, PESO FINITURE, NO, 0, 0, NO
   318, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -8, 1, -8, 0, 0, 0, 0, PESO FINITURE, NO, 0, 0, NO
   319, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -8, 1, -8, 0, 0, 0, 0, PESO FINITURE, NO, 0, 0, NO
   320, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -8, 1, -8, 0, 0, 0, 0, PESO FINITURE, NO, 0, 0, NO
   321, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -8, 1, -8, 0, 0, 0, 0, PESO FINITURE, NO, 0, 0, NO
   322, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -8, 1, -8, 0, 0, 0, 0, PESO FINITURE, NO, 0, 0, NO
   323, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -8, 1, -8, 0, 0, 0, 0, PESO FINITURE, NO, 0, 0, NO
   324, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -8, 1, -8, 0, 0, 0, 0, PESO FINITURE, NO, 0, 0, NO
   325, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -8, 1, -8, 0, 0, 0, 0, PESO FINITURE, NO, 0, 0, NO
   326, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -8, 1, -8, 0, 0, 0, 0, PESO FINITURE, NO, 0, 0, NO
   327, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -8, 1, -8, 0, 0, 0, 0, PESO FINITURE, NO, 0, 0, NO
   328, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -8, 1, -8, 0, 0, 0, 0, PESO FINITURE, NO, 0, 0, NO
   329, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -8, 1, -8, 0, 0, 0, 0, PESO FINITURE, NO, 0, 0, NO
   330, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -8, 1, -8, 0, 0, 0, 0, PESO FINITURE, NO, 0, 0, NO
   331, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -8, 1, -8, 0, 0, 0, 0, PESO FINITURE, NO, 0, 0, NO
   332, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -8, 1, -8, 0, 0, 0, 0, PESO FINITURE, NO, 0, 0, NO
   333, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -8, 1, -8, 0, 0, 0, 0, PESO FINITURE, NO, 0, 0, NO
   334, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -8, 1, -8, 0, 0, 0, 0, PESO FINITURE, NO, 0, 0, NO
   335, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -8, 1, -8, 0, 0, 0, 0, PESO FINITURE, NO, 0, 0, NO
   336, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -8, 1, -8, 0, 0, 0, 0, PESO FINITURE, NO, 0, 0, NO
   337, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -8, 1, -8, 0, 0, 0, 0, PESO FINITURE, NO, 0, 0, NO
   338, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -8, 1, -8, 0, 0, 0, 0, PESO FINITURE, NO, 0, 0, NO
   339, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -8, 1, -8, 0, 0, 0, 0, PESO FINITURE, NO, 0, 0, NO
   340, BEAM    , UNILOAD, GZ, NO , NO, aDir[1], , , , 0, -8, 1, -8, 0, 0, 0, 0, PESO FINITURE, NO, 0, 0, NO
   401, BEAM    , UNILOAD, GZ, NO , YES, 1, LY, 0.25, 0.25, NO, 0, -13.06, 1, -13.06, 0, 0, 0, 0, PESO FINITU
RE, NO, 0, 0, NO
   402, BEAM    , UNILOAD, GZ, NO , YES, 1, LY, 0.25, 0.25, NO, 0, -13.06, 1, -13.06, 0, 0, 0, 0, PESO FINITU
RE, NO, 0, 0, NO
   403, BEAM    , UNILOAD, GZ, NO , YES, 1, LY, 0.25, 0.25, NO, 0, -13.06, 1, -13.06, 0, 0, 0, 0, PESO FINITU
RE, NO, 0, 0, NO
   404, BEAM    , UNILOAD, GZ, NO , YES, 1, LY, 0.25, 0.25, NO, 0, -13.06, 1, -13.06, 0, 0, 0, 0, PESO FINITU
RE, NO, 0, 0, NO
   405, BEAM    , UNILOAD, GZ, NO , YES, 1, LY, 0.25, 0.25, NO, 0, -13.06, 1, -13.06, 0, 0, 0, 0, PESO FINITU
RE, NO, 0, 0, NO
   406, BEAM    , UNILOAD, GZ, NO , YES, 1, LY, 0.25, 0.25, NO, 0, -13.06, 1, -13.06, 0, 0, 0, 0, PESO FINITU
RE, NO, 0, 0, NO
   407, BEAM    , UNILOAD, GZ, NO , YES, 1, LY, 0.25, 0.25, NO, 0, -13.06, 1, -13.06, 0, 0, 0, 0, PESO FINITU
RE, NO, 0, 0, NO
   408, BEAM    , UNILOAD, GZ, NO , YES, 1, LY, 0.25, 0.25, NO, 0, -13.06, 1, -13.06, 0, 0, 0, 0, PESO FINITU
RE, NO, 0, 0, NO
   409, BEAM    , UNILOAD, GZ, NO , YES, 1, LY, 0.25, 0.25, NO, 0, -13.06, 1, -13.06, 0, 0, 0, 0, PESO FINITU
RE, NO, 0, 0, NO
   410, BEAM    , UNILOAD, GZ, NO , YES, 1, LY, 0.25, 0.25, NO, 0, -13.06, 1, -13.06, 0, 0, 0, 0, PESO FINITU
RE, NO, 0, 0, NO
   411, BEAM    , UNILOAD, GZ, NO , YES, 1, LY, 0.25, 0.25, NO, 0, -13.06, 1, -13.06, 0, 0, 0, 0, PESO FINITU
RE, NO, 0, 0, NO
   412, BEAM    , UNILOAD, GZ, NO , YES, 1, LY, 0.25, 0.25, NO, 0, -13.06, 1, -13.06, 0, 0, 0, 0, PESO FINITU
RE, NO, 0, 0, NO
   413, BEAM    , UNILOAD, GZ, NO , YES, 1, LY, 0.25, 0.25, NO, 0, -13.06, 1, -13.06, 0, 0, 0, 0, PESO FINITU
RE, NO, 0, 0, NO
   414, BEAM    , UNILOAD, GZ, NO , YES, 1, LY, 0.25, 0.25, NO, 0, -13.06, 1, -13.06, 0, 0, 0, 0, PESO FINITU
RE, NO, 0, 0, NO
   415, BEAM    , UNILOAD, GZ, NO , YES, 1, LY, 0.25, 0.25, NO, 0, -13.06, 1, -13.06, 0, 0, 0, 0, PESO FINITU
RE, NO, 0, 0, NO
   416, BEAM    , UNILOAD, GZ, NO , YES, 1, LY, 0.25, 0.25, NO, 0, -13.06, 1, -13.06, 0, 0, 0, 0, PESO FINITU
RE, NO, 0, 0, NO
   417, BEAM    , UNILOAD, GZ, NO , YES, 1, LY, 0.25, 0.25, NO, 0, -13.06, 1, -13.06, 0, 0, 0, 0, PESO FINITU
RE, NO, 0, 0, NO
   418, BEAM    , UNILOAD, GZ, NO , YES, 1, LY, 0.25, 0.25, NO, 0, -13.06, 1, -13.06, 0, 0, 0, 0, PESO FINITU
RE, NO, 0, 0, NO
   419, BEAM    , UNILOAD, GZ, NO , YES, 1, LY, 0.25, 0.25, NO, 0, -13.06, 1, -13.06, 0, 0, 0, 0, PESO FINITU
RE, NO, 0, 0, NO
   420, BEAM    , UNILOAD, GZ, NO , YES, 1, LY, 0.25, 0.25, NO, 0, -13.06, 1, -13.06, 0, 0, 0, 0, PESO FINITU
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RE, NO, 0, 0, NO
   421, BEAM   , UNILOAD, GZ, NO , YES, 1, LY, 0.25, 0.25, NO, 0, -13.06, 1, -13.06, 0, 0, 0, 0, PESO FINITU
RE, NO, 0, 0, NO
   422, BEAM   , UNILOAD, GZ, NO , YES, 1, LY, 0.25, 0.25, NO, 0, -13.06, 1, -13.06, 0, 0, 0, 0, PESO FINITU
RE, NO, 0, 0, NO
   423, BEAM   , UNILOAD, GZ, NO , YES, 1, LY, 0.25, 0.25, NO, 0, -13.06, 1, -13.06, 0, 0, 0, 0, PESO FINITU
RE, NO, 0, 0, NO
   424, BEAM   , UNILOAD, GZ, NO , YES, 1, LY, 0.25, 0.25, NO, 0, -13.06, 1, -13.06, 0, 0, 0, 0, PESO FINITU
RE, NO, 0, 0, NO
   425, BEAM   , UNILOAD, GZ, NO , YES, 1, LY, 0.25, 0.25, NO, 0, -13.06, 1, -13.06, 0, 0, 0, 0, PESO FINITU
RE, NO, 0, 0, NO
   426, BEAM   , UNILOAD, GZ, NO , YES, 1, LY, 0.25, 0.25, NO, 0, -13.06, 1, -13.06, 0, 0, 0, 0, PESO FINITU
RE, NO, 0, 0, NO
   427, BEAM   , UNILOAD, GZ, NO , YES, 1, LY, 0.25, 0.25, NO, 0, -13.06, 1, -13.06, 0, 0, 0, 0, PESO FINITU
RE, NO, 0, 0, NO
   428, BEAM   , UNILOAD, GZ, NO , YES, 1, LY, 0.25, 0.25, NO, 0, -13.06, 1, -13.06, 0, 0, 0, 0, PESO FINITU
RE, NO, 0, 0, NO
   429, BEAM   , UNILOAD, GZ, NO , YES, 1, LY, 0.25, 0.25, NO, 0, -13.06, 1, -13.06, 0, 0, 0, 0, PESO FINITU
RE, NO, 0, 0, NO
   430, BEAM   , UNILOAD, GZ, NO , YES, 1, LY, 0.25, 0.25, NO, 0, -13.06, 1, -13.06, 0, 0, 0, 0, PESO FINITU
RE, NO, 0, 0, NO
   431, BEAM   , UNILOAD, GZ, NO , YES, 1, LY, 0.25, 0.25, NO, 0, -13.06, 1, -13.06, 0, 0, 0, 0, PESO FINITU
RE, NO, 0, 0, NO
   432, BEAM   , UNILOAD, GZ, NO , YES, 1, LY, 0.25, 0.25, NO, 0, -13.06, 1, -13.06, 0, 0, 0, 0, PESO FINITU
RE, NO, 0, 0, NO
   433, BEAM   , UNILOAD, GZ, NO , YES, 1, LY, 0.25, 0.25, NO, 0, -13.06, 1, -13.06, 0, 0, 0, 0, PESO FINITU
RE, NO, 0, 0, NO
   434, BEAM   , UNILOAD, GZ, NO , YES, 1, LY, 0.25, 0.25, NO, 0, -13.06, 1, -13.06, 0, 0, 0, 0, PESO FINITU
RE, NO, 0, 0, NO
   435, BEAM   , UNILOAD, GZ, NO , YES, 1, LY, 0.25, 0.25, NO, 0, -13.06, 1, -13.06, 0, 0, 0, 0, PESO FINITU
RE, NO, 0, 0, NO
   436, BEAM   , UNILOAD, GZ, NO , YES, 1, LY, 0.25, 0.25, NO, 0, -13.06, 1, -13.06, 0, 0, 0, 0, PESO FINITU
RE, NO, 0, 0, NO
   437, BEAM   , UNILOAD, GZ, NO , YES, 1, LY, 0.25, 0.25, NO, 0, -13.06, 1, -13.06, 0, 0, 0, 0, PESO FINITU
RE, NO, 0, 0, NO
   438, BEAM   , UNILOAD, GZ, NO , YES, 1, LY, 0.25, 0.25, NO, 0, -13.06, 1, -13.06, 0, 0, 0, 0, PESO FINITU
RE, NO, 0, 0, NO
   439, BEAM   , UNILOAD, GZ, NO , YES, 1, LY, 0.25, 0.25, NO, 0, -13.06, 1, -13.06, 0, 0, 0, 0, PESO FINITU
RE, NO, 0, 0, NO
   440, BEAM   , UNILOAD, GZ, NO , YES, 1, LY, 0.25, 0.25, NO, 0, -13.06, 1, -13.06, 0, 0, 0, 0, PESO FINITU
RE, NO, 0, 0, NO

; End of data for load case [Finiture] -------------------------

*USE-STLD, Vento strutture (Y+)

*BEAMLOAD    ; Element Beam Loads
   101, BEAM   , UNILOAD, GY, NO , YES, 1, LZ, -0.25, -0.25, NO, 0, 3.03, 1, 3.03, 0, 0, 0, 0, , NO, 0, 0, N
O
   102, BEAM   , UNILOAD, GY, NO , YES, 1, LZ, -0.25, -0.25, NO, 0, 3.03, 1, 3.03, 0, 0, 0, 0, , NO, 0, 0, N
O
   103, BEAM   , UNILOAD, GY, NO , YES, 1, LZ, -0.25, -0.25, NO, 0, 3.03, 1, 3.03, 0, 0, 0, 0, , NO, 0, 0, N
O
   104, BEAM   , UNILOAD, GY, NO , YES, 1, LZ, -0.25, -0.25, NO, 0, 3.03, 1, 3.03, 0, 0, 0, 0, , NO, 0, 0, N
O
   105, BEAM   , UNILOAD, GY, NO , YES, 1, LZ, -0.25, -0.25, NO, 0, 3.03, 1, 3.03, 0, 0, 0, 0, , NO, 0, 0, N
O
   106, BEAM   , UNILOAD, GY, NO , YES, 1, LZ, -0.25, -0.25, NO, 0, 3.03, 1, 3.03, 0, 0, 0, 0, , NO, 0, 0, N
O
   107, BEAM   , UNILOAD, GY, NO , YES, 1, LZ, -0.25, -0.25, NO, 0, 3.03, 1, 3.03, 0, 0, 0, 0, , NO, 0, 0, N
O
   108, BEAM   , UNILOAD, GY, NO , YES, 1, LZ, -0.25, -0.25, NO, 0, 3.03, 1, 3.03, 0, 0, 0, 0, , NO, 0, 0, N
O
   109, BEAM   , UNILOAD, GY, NO , YES, 1, LZ, -0.25, -0.25, NO, 0, 3.03, 1, 3.03, 0, 0, 0, 0, , NO, 0, 0, N
O
   110, BEAM   , UNILOAD, GY, NO , YES, 1, LZ, -0.25, -0.51, YES, 0, 3.03, 1, 3.71, 0, 0, 0, 0, , NO, 0, 0,
NO
   111, BEAM   , UNILOAD, GY, NO , YES, 1, LZ, -0.51, -0.76, YES, 0, 3.71, 1, 4.38, 0, 0, 0, 0, , NO, 0, 0,
NO
   112, BEAM   , UNILOAD, GY, NO , YES, 1, LZ, -0.76, -0.76, NO, 0, 4.38, 1, 4.38, 0, 0, 0, 0, , NO, 0, 0, N
O
   113, BEAM   , UNILOAD, GY, NO , YES, 1, LZ, -0.76, -0.76, NO, 0, 4.38, 1, 4.38, 0, 0, 0, 0, , NO, 0, 0, N
O
   114, BEAM   , UNILOAD, GY, NO , YES, 1, LZ, -0.76, -0.51, YES, 0, 4.38, 1, 3.71, 0, 0, 0, 0, , NO, 0, 0,
NO
   115, BEAM   , UNILOAD, GY, NO , YES, 1, LZ, -0.51, -0.25, YES, 0, 3.71, 1, 3.03, 0, 0, 0, 0, , NO, 0, 0,
NO
   116, BEAM   , UNILOAD, GY, NO , YES, 1, LZ, -0.25, -0.25, NO, 0, 3.03, 1, 3.03, 0, 0, 0, 0, , NO, 0, 0, N
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```
O
   117, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, -0.25, -0.25, NO, 0, 3.03, 1, 3.03, 0, 0, 0, 0, , NO, 0, 0, N
O
   118, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, -0.25, -0.25, NO, 0, 3.03, 1, 3.03, 0, 0, 0, 0, , NO, 0, 0, N
O
   119, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, -0.25, -0.25, NO, 0, 3.03, 1, 3.03, 0, 0, 0, 0, , NO, 0, 0, N
O
   120, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, -0.25, -0.25, NO, 0, 3.03, 1, 3.03, 0, 0, 0, 0, , NO, 0, 0, N
O
   121, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, -0.25, -0.25, NO, 0, 3.03, 1, 3.03, 0, 0, 0, 0, , NO, 0, 0, N
O
   122, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, -0.25, -0.25, NO, 0, 3.03, 1, 3.03, 0, 0, 0, 0, , NO, 0, 0, N
O
   123, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, -0.25, -0.25, NO, 0, 3.03, 1, 3.03, 0, 0, 0, 0, , NO, 0, 0, N
O
   124, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, -0.25, -0.25, NO, 0, 3.03, 1, 3.03, 0, 0, 0, 0, , NO, 0, 0, N
O
   125, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, -0.25, -0.25, NO, 0, 3.03, 1, 3.03, 0, 0, 0, 0, , NO, 0, 0, N
O
   126, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, -0.25, -0.51, YES, 0, 3.03, 1, 3.71, 0, 0, 0, 0, , NO, 0, 0,
NO
   127, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, -0.51, -0.76, YES, 0, 3.71, 1, 4.38, 0, 0, 0, 0, , NO, 0, 0,
NO
   128, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, -0.76, -0.76, NO, 0, 4.38, 1, 4.38, 0, 0, 0, 0, , NO, 0, 0, N
O
   129, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, -0.76, -0.76, NO, 0, 4.38, 1, 4.38, 0, 0, 0, 0, , NO, 0, 0, N
O
   130, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, -0.76, -0.51, YES, 0, 4.38, 1, 3.71, 0, 0, 0, 0, , NO, 0, 0,
NO
   131, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, -0.51, -0.25, YES, 0, 3.71, 1, 3.03, 0, 0, 0, 0, , NO, 0, 0,
NO
   132, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, -0.25, -0.25, NO, 0, 3.03, 1, 3.03, 0, 0, 0, 0, , NO, 0, 0, N
O
   133, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, -0.25, -0.25, NO, 0, 3.03, 1, 3.03, 0, 0, 0, 0, , NO, 0, 0, N
O
   134, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, -0.25, -0.25, NO, 0, 3.03, 1, 3.03, 0, 0, 0, 0, , NO, 0, 0, N
O
   135, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, -0.25, -0.25, NO, 0, 3.03, 1, 3.03, 0, 0, 0, 0, , NO, 0, 0, N
O
   136, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, -0.25, -0.25, NO, 0, 3.03, 1, 3.03, 0, 0, 0, 0, , NO, 0, 0, N
O
   137, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, -0.25, -0.25, NO, 0, 3.03, 1, 3.03, 0, 0, 0, 0, , NO, 0, 0, N
O
   138, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, -0.25, -0.25, NO, 0, 3.03, 1, 3.03, 0, 0, 0, 0, , NO, 0, 0, N
O
   139, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, -0.25, -0.25, NO, 0, 3.03, 1, 3.03, 0, 0, 0, 0, , NO, 0, 0, N
O
   140, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, -0.25, -0.25, NO, 0, 3.03, 1, 3.03, 0, 0, 0, 0, , NO, 0, 0, N
O
   401, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, 0.11, 0.11, NO, 0, 2.69, 1, 2.69, 0, 0, 0, 0, , NO, 0, 0, NO
   402, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, 0.11, 0.11, NO, 0, 2.69, 1, 2.69, 0, 0, 0, 0, , NO, 0, 0, NO
   403, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, 0.11, 0.11, NO, 0, 2.69, 1, 2.69, 0, 0, 0, 0, , NO, 0, 0, NO
   404, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, 0.11, 0.11, NO, 0, 2.69, 1, 2.69, 0, 0, 0, 0, , NO, 0, 0, NO
   405, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, 0.11, 0.11, NO, 0, 2.69, 1, 2.69, 0, 0, 0, 0, , NO, 0, 0, NO
   406, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, 0.11, 0.11, NO, 0, 2.69, 1, 2.69, 0, 0, 0, 0, , NO, 0, 0, NO
   407, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, 0.11, 0.11, NO, 0, 2.69, 1, 2.69, 0, 0, 0, 0, , NO, 0, 0, NO
   408, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, 0.11, 0.11, NO, 0, 2.69, 1, 2.69, 0, 0, 0, 0, , NO, 0, 0, NO
   409, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, 0.11, 0.11, NO, 0, 2.69, 1, 2.69, 0, 0, 0, 0, , NO, 0, 0, NO
   410, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, 0.11, 0.2, YES, 0, 2.69, 1, 2.35, 0, 0, 0, 0, , NO, 0, 0, NO
   411, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, 0.2, 0.29, YES, 0, 2.35, 1, 2.01, 0, 0, 0, 0, , NO, 0, 0, NO
   412, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, 0.29, 0.29, NO, 0, 2.01, 1, 2.01, 0, 0, 0, 0, , NO, 0, 0, NO
   413, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, 0.29, 0.29, NO, 0, 2.01, 1, 2.01, 0, 0, 0, 0, , NO, 0, 0, NO
   414, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, 0.29, 0.2, YES, 0, 2.01, 1, 2.35, 0, 0, 0, 0, , NO, 0, 0, NO
   415, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, 0.2, 0.11, YES, 0, 2.35, 1, 2.69, 0, 0, 0, 0, , NO, 0, 0, NO
   416, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, 0.11, 0.11, NO, 0, 2.69, 1, 2.69, 0, 0, 0, 0, , NO, 0, 0, NO
   417, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, 0.11, 0.11, NO, 0, 2.69, 1, 2.69, 0, 0, 0, 0, , NO, 0, 0, NO
   418, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, 0.11, 0.11, NO, 0, 2.69, 1, 2.69, 0, 0, 0, 0, , NO, 0, 0, NO
   419, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, 0.11, 0.11, NO, 0, 2.69, 1, 2.69, 0, 0, 0, 0, , NO, 0, 0, NO
   420, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, 0.11, 0.11, NO, 0, 2.69, 1, 2.69, 0, 0, 0, 0, , NO, 0, 0, NO
   421, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, 0.11, 0.11, NO, 0, 2.69, 1, 2.69, 0, 0, 0, 0, , NO, 0, 0, NO
   422, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, 0.11, 0.11, NO, 0, 2.69, 1, 2.69, 0, 0, 0, 0, , NO, 0, 0, NO
   423, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, 0.11, 0.11, NO, 0, 2.69, 1, 2.69, 0, 0, 0, 0, , NO, 0, 0, NO
   424, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, 0.11, 0.11, NO, 0, 2.69, 1, 2.69, 0, 0, 0, 0, , NO, 0, 0, NO
   425, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, 0.11, 0.11, NO, 0, 2.69, 1, 2.69, 0, 0, 0, 0, , NO, 0, 0, NO
   426, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, 0.11, 0.2, YES, 0, 2.69, 1, 2.35, 0, 0, 0, 0, , NO, 0, 0, NO
   427, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, 0.2, 0.29, YES, 0, 2.35, 1, 2.01, 0, 0, 0, 0, , NO, 0, 0, NO
   428, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, 0.29, 0.29, NO, 0, 2.01, 1, 2.01, 0, 0, 0, 0, , NO, 0, 0, NO
   429, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, 0.29, 0.29, NO, 0, 2.01, 1, 2.01, 0, 0, 0, 0, , NO, 0, 0, NO
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   430, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, 0.29, 0.2, YES, 0, 2.01, 1, 2.35, 0, 0, 0, 0, , NO, 0, 0, NO
   431, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, 0.2, 0.11, YES, 0, 2.35, 1, 2.69, 0, 0, 0, 0, , NO, 0, 0, NO
   432, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, 0.11, 0.11, NO, 0, 2.69, 1, 2.69, 0, 0, 0, 0, , NO, 0, 0, NO
   433, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, 0.11, 0.11, NO, 0, 2.69, 1, 2.69, 0, 0, 0, 0, , NO, 0, 0, NO
   434, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, 0.11, 0.11, NO, 0, 2.69, 1, 2.69, 0, 0, 0, 0, , NO, 0, 0, NO
   435, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, 0.11, 0.11, NO, 0, 2.69, 1, 2.69, 0, 0, 0, 0, , NO, 0, 0, NO
   436, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, 0.11, 0.11, NO, 0, 2.69, 1, 2.69, 0, 0, 0, 0, , NO, 0, 0, NO
   437, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, 0.11, 0.11, NO, 0, 2.69, 1, 2.69, 0, 0, 0, 0, , NO, 0, 0, NO
   438, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, 0.11, 0.11, NO, 0, 2.69, 1, 2.69, 0, 0, 0, 0, , NO, 0, 0, NO
   439, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, 0.11, 0.11, NO, 0, 2.69, 1, 2.69, 0, 0, 0, 0, , NO, 0, 0, NO
   440, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, 0.11, 0.11, NO, 0, 2.69, 1, 2.69, 0, 0, 0, 0, , NO, 0, 0, NO
  4001, BEAM    , UNILOAD, GY, NO , NO, aDir[1], , , , 0, 1.74, 1, 1.74, 0, 0, 0, 0, , NO, 0, 0, NO
  4002, BEAM    , UNILOAD, GY, NO , NO, aDir[1], , , , 5.12411e-016, 1.74, 1, 1.74, 0, 0, 0, 0, , NO, 0, 0, N
O
  4003, BEAM    , UNILOAD, GY, NO , NO, aDir[1], , , , 0, 1.74, 1, 1.74, 0, 0, 0, 0, , NO, 0, 0, NO
  4004, BEAM    , UNILOAD, GY, NO , NO, aDir[1], , , , 0, 1.74, 1, 1.74, 0, 0, 0, 0, , NO, 0, 0, NO
  4005, BEAM    , UNILOAD, GY, NO , NO, aDir[1], , , , 0, 1.74, 1, 1.74, 0, 0, 0, 0, , NO, 0, 0, NO
  4006, BEAM    , UNILOAD, GY, NO , NO, aDir[1], , , , 6.83214e-016, 1.74, 1, 1.74, 0, 0, 0, 0, , NO, 0, 0, N
O
  4007, BEAM    , UNILOAD, GY, NO , NO, aDir[1], , , , 1.36643e-015, 1.74, 1, 1.74, 0, 0, 0, 0, , NO, 0, 0, N
O
  4008, BEAM    , UNILOAD, GY, NO , NO, aDir[1], , , , 1.70804e-016, 1.74, 1, 1.74, 0, 0, 0, 0, , NO, 0, 0, N
O
  4009, BEAM    , UNILOAD, GY, NO , NO, aDir[1], , , , 0, 1.74, 1, 1.74, 0, 0, 0, 0, , NO, 0, 0, NO
  4010, BEAM    , UNILOAD, GY, NO , NO, aDir[1], , , , 0, 1.74, 1, 1.74, 0, 0, 0, 0, , NO, 0, 0, NO
  4011, BEAM    , UNILOAD, GY, NO , NO, aDir[1], , , , 0, 1.74, 1, 1.74, 0, 0, 0, 0, , NO, 0, 0, NO
  4012, BEAM    , UNILOAD, GY, NO , NO, aDir[1], , , , 5.12411e-016, 1.74, 1, 1.74, 0, 0, 0, 0, , NO, 0, 0, N
O
  4013, BEAM    , UNILOAD, GY, NO , NO, aDir[1], , , , 0, 1.74, 1, 1.74, 0, 0, 0, 0, , NO, 0, 0, NO
  4014, BEAM    , UNILOAD, GY, NO , NO, aDir[1], , , , 0, 1.74, 1, 1.74, 0, 0, 0, 0, , NO, 0, 0, NO
  4015, BEAM    , UNILOAD, GY, NO , NO, aDir[1], , , , 0, 1.74, 1, 1.74, 0, 0, 0, 0, , NO, 0, 0, NO
  4016, BEAM    , UNILOAD, GY, NO , NO, aDir[1], , , , 6.83214e-016, 1.74, 1, 1.74, 0, 0, 0, 0, , NO, 0, 0, N
O
  4017, BEAM    , UNILOAD, GY, NO , NO, aDir[1], , , , 1.36643e-015, 1.74, 1, 1.74, 0, 0, 0, 0, , NO, 0, 0, N
O
  4018, BEAM    , UNILOAD, GY, NO , NO, aDir[1], , , , 1.70804e-016, 1.74, 1, 1.74, 0, 0, 0, 0, , NO, 0, 0, N
O
  4019, BEAM    , UNILOAD, GY, NO , NO, aDir[1], , , , 0, 1.74, 1, 1.74, 0, 0, 0, 0, , NO, 0, 0, NO
  4020, BEAM    , UNILOAD, GY, NO , NO, aDir[1], , , , 0, 1.74, 1, 1.74, 0, 0, 0, 0, , NO, 0, 0, NO

; End of data for load case [Vento strutture (Y+)] -------------------------

*USE-STLD, Vento mobili (Y+)

*BEAMLOAD     ; Element Beam Loads
   101, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, 2, 2, NO, 0, 2.32, 1, 2.32, 0, 0, 0, 0, , NO, 0, 0, NO
   102, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, 2, 2, NO, 0, 2.32, 1, 2.32, 0, 0, 0, 0, , NO, 0, 0, NO
   103, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, 2, 2, NO, 0, 2.32, 1, 2.32, 0, 0, 0, 0, , NO, 0, 0, NO
   104, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, 2, 2, NO, 0, 2.32, 1, 2.32, 0, 0, 0, 0, , NO, 0, 0, NO
   105, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, 2, 2, NO, 0, 2.32, 1, 2.32, 0, 0, 0, 0, , NO, 0, 0, NO
   106, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, 2, 2, NO, 0, 2.32, 1, 2.32, 0, 0, 0, 0, , NO, 0, 0, NO
   107, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, 2, 2, NO, 0, 2.32, 1, 2.32, 0, 0, 0, 0, , NO, 0, 0, NO
   108, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, 2, 2, NO, 0, 2.32, 1, 2.32, 0, 0, 0, 0, , NO, 0, 0, NO
   109, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, 2, 2, NO, 0, 2.32, 1, 2.32, 0, 0, 0, 0, , NO, 0, 0, NO
   110, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, 2, 2, NO, 0, 2.32, 1, 2.32, 0, 0, 0, 0, , NO, 0, 0, NO
   111, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, 2, 2, NO, 0, 2.32, 1, 2.32, 0, 0, 0, 0, , NO, 0, 0, NO
   112, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, 2, 2, NO, 0, 2.32, 1, 2.32, 0, 0, 0, 0, , NO, 0, 0, NO
   113, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, 2, 2, NO, 0, 2.32, 1, 2.32, 0, 0, 0, 0, , NO, 0, 0, NO
   114, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, 2, 2, NO, 0, 2.32, 1, 2.32, 0, 0, 0, 0, , NO, 0, 0, NO
   115, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, 2, 2, NO, 0, 2.32, 1, 2.32, 0, 0, 0, 0, , NO, 0, 0, NO
   116, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, 2, 2, NO, 0, 2.32, 1, 2.32, 0, 0, 0, 0, , NO, 0, 0, NO
   117, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, 2, 2, NO, 0, 2.32, 1, 2.32, 0, 0, 0, 0, , NO, 0, 0, NO
   118, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, 2, 2, NO, 0, 2.32, 1, 2.32, 0, 0, 0, 0, , NO, 0, 0, NO
   119, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, 2, 2, NO, 0, 2.32, 1, 2.32, 0, 0, 0, 0, , NO, 0, 0, NO
   120, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, 2, 2, NO, 0, 2.32, 1, 2.32, 0, 0, 0, 0, , NO, 0, 0, NO
   121, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, 2, 2, NO, 0, 2.32, 1, 2.32, 0, 0, 0, 0, , NO, 0, 0, NO
   122, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, 2, 2, NO, 0, 2.32, 1, 2.32, 0, 0, 0, 0, , NO, 0, 0, NO
   123, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, 2, 2, NO, 0, 2.32, 1, 2.32, 0, 0, 0, 0, , NO, 0, 0, NO
   124, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, 2, 2, NO, 0, 2.32, 1, 2.32, 0, 0, 0, 0, , NO, 0, 0, NO
   125, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, 2, 2, NO, 0, 2.32, 1, 2.32, 0, 0, 0, 0, , NO, 0, 0, NO
   126, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, 2, 2, NO, 0, 2.32, 1, 2.32, 0, 0, 0, 0, , NO, 0, 0, NO
   127, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, 2, 2, NO, 0, 2.32, 1, 2.32, 0, 0, 0, 0, , NO, 0, 0, NO
   128, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, 2, 2, NO, 0, 2.32, 1, 2.32, 0, 0, 0, 0, , NO, 0, 0, NO
   129, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, 2, 2, NO, 0, 2.32, 1, 2.32, 0, 0, 0, 0, , NO, 0, 0, NO
   130, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, 2, 2, NO, 0, 2.32, 1, 2.32, 0, 0, 0, 0, , NO, 0, 0, NO
   131, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, 2, 2, NO, 0, 2.32, 1, 2.32, 0, 0, 0, 0, , NO, 0, 0, NO
   132, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, 2, 2, NO, 0, 2.32, 1, 2.32, 0, 0, 0, 0, , NO, 0, 0, NO
   133, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, 2, 2, NO, 0, 2.32, 1, 2.32, 0, 0, 0, 0, , NO, 0, 0, NO
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   134, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, 2, 2, NO, 0, 2.32, 1, 2.32, 0, 0, 0, 0, , NO, 0, 0, NO
   135, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, 2, 2, NO, 0, 2.32, 1, 2.32, 0, 0, 0, 0, , NO, 0, 0, NO
   136, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, 2, 2, NO, 0, 2.32, 1, 2.32, 0, 0, 0, 0, , NO, 0, 0, NO
   137, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, 2, 2, NO, 0, 2.32, 1, 2.32, 0, 0, 0, 0, , NO, 0, 0, NO
   138, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, 2, 2, NO, 0, 2.32, 1, 2.32, 0, 0, 0, 0, , NO, 0, 0, NO
   139, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, 2, 2, NO, 0, 2.32, 1, 2.32, 0, 0, 0, 0, , NO, 0, 0, NO
   140, BEAM    , UNILOAD, GY, NO , YES, 1, LZ, 2, 2, NO, 0, 2.32, 1, 2.32, 0, 0, 0, 0, , NO, 0, 0, NO

; End of data for load case [Vento mobili (Y+)] -------------------------

*USE-STLD, Frenamento (X+)

*BEAMLOAD    ; Element Beam Loads
   101, BEAM    , UNILOAD, GX, NO , YES, 1, LZ, 0, 0, NO, 0, 1.56, 1, 1.56, 0, 0, 0, 0, , NO, 0, 0, NO
   102, BEAM    , UNILOAD, GX, NO , YES, 1, LZ, 0, 0, NO, 0, 1.56, 1, 1.56, 0, 0, 0, 0, , NO, 0, 0, NO
   103, BEAM    , UNILOAD, GX, NO , YES, 1, LZ, 0, 0, NO, 0, 1.56, 1, 1.56, 0, 0, 0, 0, , NO, 0, 0, NO
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PROJECT TITLE : CASALPUSTERLENGO

	Company		Client	
	Author	Renato Vaira	File Name	Cavalc Coste V_2.mct

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419, BEAM    , UNILOAD, GX, NO , YES, 1, LZ, 0, 0, NO, 0, 1.56, 1, 1.56, 0, 0, 0, 0, , NO, 0, 0, NO
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; End of data for load case [Frenamento (X+)] -------------------------

*USE-STLD, Termico Unif. +15°

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; End of data for load case [Termico Unif. +15°] --------------------------

*USE-STLD, Termico diff. +5°/H

*THERGRAD    ; Temperature Gradient
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   103, 1, 5, YES, 0, 0, YES, 0,
   104, 1, 5, YES, 0, 0, YES, 0,
   105, 1, 5, YES, 0, 0, YES, 0,
   106, 1, 5, YES, 0, 0, YES, 0,
   107, 1, 5, YES, 0, 0, YES, 0,
   108, 1, 5, YES, 0, 0, YES, 0,
   109, 1, 5, YES, 0, 0, YES, 0,
   110, 1, 5, YES, 0, 0, YES, 0,
   111, 1, 5, YES, 0, 0, YES, 0,
   112, 1, 5, YES, 0, 0, YES, 0,
   113, 1, 5, YES, 0, 0, YES, 0,
   114, 1, 5, YES, 0, 0, YES, 0,
   115, 1, 5, YES, 0, 0, YES, 0,
   116, 1, 5, YES, 0, 0, YES, 0,
   117, 1, 5, YES, 0, 0, YES, 0,
   118, 1, 5, YES, 0, 0, YES, 0,
   119, 1, 5, YES, 0, 0, YES, 0,
   120, 1, 5, YES, 0, 0, YES, 0,
   121, 1, 5, YES, 0, 0, YES, 0,
   122, 1, 5, YES, 0, 0, YES, 0,
   123, 1, 5, YES, 0, 0, YES, 0,
   124, 1, 5, YES, 0, 0, YES, 0,
   125, 1, 5, YES, 0, 0, YES, 0,
   126, 1, 5, YES, 0, 0, YES, 0,
   127, 1, 5, YES, 0, 0, YES, 0,
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129,  1,  5, YES,  0,  0, YES,  0,
130,  1,  5, YES,  0,  0, YES,  0,
131,  1,  5, YES,  0,  0, YES,  0,
132,  1,  5, YES,  0,  0, YES,  0,
133,  1,  5, YES,  0,  0, YES,  0,
134,  1,  5, YES,  0,  0, YES,  0,
135,  1,  5, YES,  0,  0, YES,  0,
136,  1,  5, YES,  0,  0, YES,  0,
137,  1,  5, YES,  0,  0, YES,  0,
138,  1,  5, YES,  0,  0, YES,  0,
139,  1,  5, YES,  0,  0, YES,  0,
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203,  1,  5, YES,  0,  0, YES,  0,
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205,  1,  5, YES,  0,  0, YES,  0,
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220,  1,  5, YES,  0,  0, YES,  0,
221,  1,  5, YES,  0,  0, YES,  0,
222,  1,  5, YES,  0,  0, YES,  0,
223,  1,  5, YES,  0,  0, YES,  0,
224,  1,  5, YES,  0,  0, YES,  0,
225,  1,  5, YES,  0,  0, YES,  0,
226,  1,  5, YES,  0,  0, YES,  0,
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228,  1,  5, YES,  0,  0, YES,  0,
229,  1,  5, YES,  0,  0, YES,  0,
230,  1,  5, YES,  0,  0, YES,  0,
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237,  1,  5, YES,  0,  0, YES,  0,
238,  1,  5, YES,  0,  0, YES,  0,
239,  1,  5, YES,  0,  0, YES,  0,
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317,  1,  5, YES,  0,  0, YES,  0,
318,  1,  5, YES,  0,  0, YES,  0,
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323,  1,  5, YES,  0,  0, YES,  0,
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325,  1,  5, YES,  0,  0, YES,  0,
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   330, 1, 5, YES, 0, 0, YES, 0,
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   404, 1, 5, YES, 0, 0, YES, 0,
   405, 1, 5, YES, 0, 0, YES, 0,
   406, 1, 5, YES, 0, 0, YES, 0,
   407, 1, 5, YES, 0, 0, YES, 0,
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   416, 1, 5, YES, 0, 0, YES, 0,
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   418, 1, 5, YES, 0, 0, YES, 0,
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   422, 1, 5, YES, 0, 0, YES, 0,
   423, 1, 5, YES, 0, 0, YES, 0,
   424, 1, 5, YES, 0, 0, YES, 0,
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   433, 1, 5, YES, 0, 0, YES, 0,
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   435, 1, 5, YES, 0, 0, YES, 0,
   436, 1, 5, YES, 0, 0, YES, 0,
   437, 1, 5, YES, 0, 0, YES, 0,
   438, 1, 5, YES, 0, 0, YES, 0,
   439, 1, 5, YES, 0, 0, YES, 0,
   440, 1, 5, YES, 0, 0, YES, 0,

; End of data for load case [Termico diff. +5°/H] -------------------------

*STAGE    ; Define Construction Stage
  NAME=Costruzione, 30, YES, NO
  STEP=3, 10
  AELEM=TRAVI PRINCIPALI, 1, TRASVERSI INTERMEDI, 1, TRASVERSI PILE, 1, PILE, 1, NODI, 1
        CONTROVENTI, 1
  ABNDR=RIGID LINK, DEFORMED, APPOGGI SPALLE, DEFORMED, SUPPORTI, DEFORMED
        APPOGGI PILE, DEFORMED
  ALOAD=PESO SOLETTA, LAST, PESO ACCIAIO E PILE, FIRST
  NAME=Esercizio, 10000, YES, NO
  STEP=3, 10, 32, 100, 316, 1000, 3162
  AELEM=SOLETTA FITTIZIA, 1
  ALOAD=PESO FINITURE, FIRST

*SFUNCTION    ; Spectrum Function
   FUNC=SLD Orizz, 1, 0, 1, 9.806, 0.05, , 1.000000
   USER
          0.000000,       0.06887,    0.140750,       0.17485
          0.422250,       0.17485,    0.487080,       0.15158
          0.551910,       0.13377,    0.616740,       0.11971
          0.681570,       0.10832,    0.746390,       0.09891
```

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        0.811220,        0.09101,    0.876050,        0.08427
        0.940880,        0.07847,    1.005710,        0.07341
        1.070540,        0.06896,    1.135370,        0.06503
        1.171200,        0.06304,    1.172200,        0.05143
        1.200200,        0.05023,    1.265030,        0.04765
        1.329860,        0.04533,    1.394690,        0.04322
        1.459520,         0.0413,    1.524340,        0.03955
        1.589170,        0.03793,    1.654000,        0.03645
        1.718830,        0.03507,    1.783660,         0.0338
        1.889200,        0.03013,    1.994740,        0.02702
        2.100280,        0.02437,    2.205820,         0.0221
        2.311360,        0.02013,    2.416900,        0.01841
        2.522440,         0.0169,    2.627980,        0.01557
        2.733520,        0.01439,    2.839060,        0.01334
        2.944600,         0.0124,    3.050140,        0.01156
        3.155680,         0.0108,    3.261220,        0.01011
        3.366760,        0.00949,    3.472300,        0.00892
        3.577840,         0.0084,    3.683380,        0.00793
        3.788920,        0.00749,    3.894460,        0.00709
        4.000000,        0.00672
FUNC=SLD Vert, 1, 0, 1, 9.806, 0.05, , 1.000000
USER
        0.000000,        0.01328,    0.050000,        0.03372
        0.150000,        0.03372,    0.235000,        0.02152
        0.320000,        0.01581,    0.405000,        0.01249
        0.490000,        0.01032,    0.575000,         0.0088
        0.660000,        0.00766,    0.745000,        0.00679
        0.830000,        0.00609,    0.915000,        0.00553
        1.000000,        0.00506,    1.094000,        0.00423
        1.188000,        0.00359,    1.281000,        0.00308
        1.375000,        0.00268,    1.469000,        0.00234
        1.563000,        0.00207,    1.656000,        0.00184
        1.750000,        0.00165,    1.844000,        0.00149
        1.938000,        0.00135,    2.031000,        0.00123
        2.125000,        0.00112,    2.219000,        0.00103
        2.313000,        0.00095,    2.406000,        0.00087
        2.500000,        0.00081,    2.594000,        0.00075
        2.688000,         0.0007,    2.781000,        0.00065
        2.875000,        0.00061,    2.969000,        0.00057
        3.063000,        0.00054,    3.156000,        0.00051
        3.250000,        0.00048,    3.344000,        0.00045
        3.438000,        0.00043,    3.531000,        0.00041
        3.625000,        0.00038,    3.719000,        0.00037
        3.813000,        0.00035,    3.906000,        0.00033
        4.000000,        0.00032
FUNC=SLV Orizz, 1, 0, 1, 9.806, 0.05, , 1.000000
USER
        0.000000,        0.15104,    0.155180,        0.38361
        0.465530,        0.38361,    0.538730,        0.33148
        0.611930,        0.29183,    0.685130,        0.26065
        0.758330,        0.23549,    0.831540,        0.21476
        0.904740,        0.19738,    0.977940,        0.18261
        1.051140,        0.16989,    1.124350,        0.15883
        1.171200,        0.15248,    1.172200,        0.12439
        1.197550,        0.12176,    1.270750,        0.11474
        1.343950,        0.10849,    1.417150,        0.10289
        1.490360,        0.09784,    1.563560,        0.09326
        1.636760,        0.08908,    1.709960,        0.08527
        1.783170,        0.08177,    1.856370,        0.07855
        1.929570,        0.07557,    2.002770,         0.0728
        2.097880,        0.06635,    2.192980,        0.06072
        2.288090,        0.05578,    2.383200,        0.05142
        2.478300,        0.04755,    2.573410,         0.0441
        2.668510,        0.04101,    2.763620,        0.03824
        2.858730,        0.03573,    2.953830,        0.03347
        3.048940,        0.03141,    3.144050,        0.02954
        3.239150,        0.02783,    3.334260,        0.02627
        3.429360,        0.02483,    3.524470,        0.02351
        3.619580,        0.02229,    3.714680,        0.02116
        3.809790,        0.02012,    3.904890,        0.01915
        4.000000,        0.01825
FUNC=SLV Vert, 1, 0, 1, 9.806, 0.05, , 1.000000
USER
        0.000000,        0.04314,    0.050000,        0.10955
        0.150000,        0.10955,    0.235000,        0.06993
        0.320000,        0.05135,    0.405000,        0.04058
        0.490000,        0.03354,    0.575000,        0.02858
        0.660000,         0.0249,    0.745000,        0.02206
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          0.830000,         0.0198,    0.915000,        0.01796
          1.000000,        0.01643,    1.094000,        0.01374
          1.188000,        0.01165,    1.281000,        0.01001
          1.375000,        0.00869,    1.469000,        0.00762
          1.563000,        0.00673,    1.656000,        0.00599
          1.750000,        0.00537,    1.844000,        0.00483
          1.938000,        0.00438,    2.031000,        0.00398
          2.125000,        0.00364,    2.219000,        0.00334
          2.313000,        0.00307,    2.406000,        0.00284
          2.500000,        0.00263,    2.594000,        0.00244
          2.688000,        0.00228,    2.781000,        0.00212
          2.875000,        0.00199,    2.969000,        0.00186
          3.063000,        0.00175,    3.156000,        0.00165
          3.250000,        0.00156,    3.344000,        0.00147
          3.438000,        0.00139,    3.531000,        0.00132
          3.625000,        0.00125,    3.719000,        0.00119
          3.813000,        0.00113,    3.906000,        0.00108
          4.000000,        0.00103
   FUNC=SLC Orizz, 1, 0, 1, 9.806, 0.05, , 1.000000
   USER
          0.000000,        0.19189,    0.157800,        0.48457
          0.473410,        0.48457,    0.551420,        0.41601
          0.629430,        0.36445,    0.707450,        0.32426
          0.785460,        0.29205,    0.863470,        0.26567
          0.941490,        0.24365,    1.019500,        0.22501
          1.097520,        0.20901,    1.171200,        0.19586
          1.172200,        0.15979,    1.175530,        0.15933
          1.253540,        0.14942,    1.331560,        0.14066
          1.409570,        0.13288,    1.487590,        0.12591
          1.565600,        0.11964,    1.643610,        0.11396
          1.721630,        0.10879,    1.799640,        0.10408
          1.877660,        0.09975,    1.955670,        0.09577
          2.033680,         0.0921,    2.111700,         0.0887
          2.201620,         0.0816,    2.291540,        0.07532
          2.381460,        0.06974,    2.471380,        0.06476
          2.561290,        0.06029,    2.651210,        0.05627
          2.741130,        0.05264,    2.831050,        0.04935
          2.920970,        0.04636,    3.010890,        0.04363
          3.100810,        0.04114,    3.190730,        0.03885
          3.280650,        0.03675,    3.370570,        0.03481
          3.460490,        0.03303,    3.550400,        0.03138
          3.640320,        0.02985,    3.730240,        0.02842
          3.820160,         0.0271,    3.910080,        0.02587
          4.000000,        0.02472
   FUNC=SLC Vert, 1, 0, 1, 9.806, 0.05, , 1.000000
   USER
          0.000000,        0.06177,    0.050000,        0.15598
          0.150000,        0.15598,    0.235000,        0.09956
          0.320000,        0.07312,    0.405000,        0.05777
          0.490000,        0.04775,    0.575000,        0.04069
          0.660000,        0.03545,    0.745000,        0.03141
          0.830000,        0.02819,    0.915000,        0.02557
          1.000000,         0.0234,    1.094000,        0.01956
          1.188000,        0.01659,    1.281000,        0.01425
          1.375000,        0.01238,    1.469000,        0.01085
          1.563000,        0.00958,    1.656000,        0.00853
          1.750000,        0.00764,    1.844000,        0.00688
          1.938000,        0.00623,    2.031000,        0.00567
          2.125000,        0.00518,    2.219000,        0.00475
          2.313000,        0.00438,    2.406000,        0.00404
          2.500000,        0.00374,    2.594000,        0.00348
          2.688000,        0.00324,    2.781000,        0.00302
          2.875000,        0.00283,    2.969000,        0.00265
          3.063000,        0.00249,    3.156000,        0.00235
          3.250000,        0.00222,    3.344000,        0.00209
          3.438000,        0.00198,    3.531000,        0.00188
          3.625000,        0.00178,    3.719000,        0.00169
          3.813000,        0.00161,    3.906000,        0.00153
          4.000000,        0.00146

*SPLDCASE    ; Spectrum Load Cases
   NAME=SLD Long (X+), XY, 0, 1, 1, NO, NO, LOG,
        CQC, YES, 0, NO
        SLD Orizz
   NAME=SLD Trasv (Y+), XY, 90, 1, 1, NO, NO, LOG,
        CQC, YES, 0, NO
        SLD Orizz
   NAME=SLD Vert (Z+), Z, 0, 1, 1, NO, NO, LOG,
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        CQC, YES, 0, NO
        SLD Vert
   NAME=SLV Long (X+), XY, 0, 1, 1, NO, NO, LOG,
        CQC, YES, 0, NO
        SLV Orizz
   NAME=SLV Trasv (Y+), XY, 90, 1, 1, NO, NO, LOG,
        CQC, YES, 0, NO
        SLV Orizz
   NAME=SLV Vert (Z+), Z, 0, 1, 1, NO, NO, LOG,
        CQC, YES, 0, NO
        SLV Vert
   NAME=SLC Long (X+), XY, 0, 1, 1, NO, NO, LOG,
        CQC, YES, 0, NO
        SLC Orizz
   NAME=SLC Trasv (Y+), XY, 90, 1, 1, NO, NO, LOG,
        CQC, YES, 0, NO
        SLC Orizz
   NAME=SLC Vert (Z+), Z, 0, 1, 1, NO, NO, LOG,
        CQC, YES, 0, NO
        SLC Vert

*MVLDCODE    ; Moving Load Code
   CODE=EUROCODE

*LINELANE    ; Traffic Line Lanes
   NAME=C. LENTA DX, LANE, , 0, 0, BOTH, 3, 2
          201, 0.025, 0, NO, 0,   202, 0.025, 0, NO, 0,   203, 0.025, 0, NO, 0
          204, 0.025, 0, NO, 0,   205, 0.025, 0, NO, 0,   206, 0.025, 0, NO, 0
          207, 0.025, 0, NO, 0,   208, 0.025, 0, NO, 0,   209, 0.025, 0, NO, 0
          210, 0.025, 0, NO, 0,   211, 0.025, 0, NO, 0,   212, 0.025, 0, NO, 0
          213, 0.025, 0, NO, 0,   214, 0.025, 0, NO, 0,   215, 0.025, 0, NO, 0
          216, 0.025, 0, NO, 0,   217, 0.025, 0, NO, 0,   218, 0.025, 0, NO, 0
          219, 0.025, 0, NO, 0,   220, 0.025, 0, NO, 0,   221, 0.025, 0, NO, 0
          222, 0.025, 0, NO, 0,   223, 0.025, 0, NO, 0,   224, 0.025, 0, NO, 0
          225, 0.025, 0, NO, 0,   226, 0.025, 0, NO, 0,   227, 0.025, 0, NO, 0
          228, 0.025, 0, NO, 0,   229, 0.025, 0, NO, 0,   230, 0.025, 0, NO, 0
          231, 0.025, 0, NO, 0,   232, 0.025, 0, NO, 0,   233, 0.025, 0, NO, 0
          234, 0.025, 0, NO, 0,   235, 0.025, 0, NO, 0,   236, 0.025, 0, NO, 0
          237, 0.025, 0, NO, 0,   238, 0.025, 0, NO, 0,   239, 0.025, 0, NO, 0
          240, 0.025, 0, NO, 0
   NAME=C.LENTA SX, LANE, , 0, 0, BOTH, 3, 2
          301, -0.025, 0, NO, 0,   302, -0.025, 0, NO, 0
          303, -0.025, 0, NO, 0,   304, -0.025, 0, NO, 0
          305, -0.025, 0, NO, 0,   306, -0.025, 0, NO, 0
          307, -0.025, 0, NO, 0,   308, -0.025, 0, NO, 0
          309, -0.025, 0, NO, 0,   310, -0.025, 0, NO, 0
          311, -0.025, 0, NO, 0,   312, -0.025, 0, NO, 0
          313, -0.025, 0, NO, 0,   314, -0.025, 0, NO, 0
          315, -0.025, 0, NO, 0,   316, -0.025, 0, NO, 0
          317, -0.025, 0, NO, 0,   318, -0.025, 0, NO, 0
          319, -0.025, 0, NO, 0,   320, -0.025, 0, NO, 0
          321, -0.025, 0, NO, 0,   322, -0.025, 0, NO, 0
          323, -0.025, 0, NO, 0,   324, -0.025, 0, NO, 0
          325, -0.025, 0, NO, 0,   326, -0.025, 0, NO, 0
          327, -0.025, 0, NO, 0,   328, -0.025, 0, NO, 0
          329, -0.025, 0, NO, 0,   330, -0.025, 0, NO, 0
          331, -0.025, 0, NO, 0,   332, -0.025, 0, NO, 0
          333, -0.025, 0, NO, 0,   334, -0.025, 0, NO, 0
          335, -0.025, 0, NO, 0,   336, -0.025, 0, NO, 0
          337, -0.025, 0, NO, 0,   338, -0.025, 0, NO, 0
          339, -0.025, 0, NO, 0,   340, -0.025, 0, NO, 0
   NAME=DX 1, LANE, , 0, 0, BOTH, 3, 2
          201, 1.15, 0, NO, 0,   202, 1.15, 0, NO, 0,   203, 1.15, 0, NO, 0
          204, 1.15, 0, NO, 0,   205, 1.15, 0, NO, 0,   206, 1.15, 0, NO, 0
          207, 1.15, 0, NO, 0,   208, 1.15, 0, NO, 0,   209, 1.15, 0, NO, 0
          210, 1.15, 0, NO, 0,   211, 1.15, 0, NO, 0,   212, 1.15, 0, NO, 0
          213, 1.15, 0, NO, 0,   214, 1.15, 0, NO, 0,   215, 1.15, 0, NO, 0
          216, 1.15, 0, NO, 0,   217, 1.15, 0, NO, 0,   218, 1.15, 0, NO, 0
          219, 1.15, 0, NO, 0,   220, 1.15, 0, NO, 0,   221, 1.15, 0, NO, 0
          222, 1.15, 0, NO, 0,   223, 1.15, 0, NO, 0,   224, 1.15, 0, NO, 0
          225, 1.15, 0, NO, 0,   226, 1.15, 0, NO, 0,   227, 1.15, 0, NO, 0
          228, 1.15, 0, NO, 0,   229, 1.15, 0, NO, 0,   230, 1.15, 0, NO, 0
          231, 1.15, 0, NO, 0,   232, 1.15, 0, NO, 0,   233, 1.15, 0, NO, 0
          234, 1.15, 0, NO, 0,   235, 1.15, 0, NO, 0,   236, 1.15, 0, NO, 0
          237, 1.15, 0, NO, 0,   238, 1.15, 0, NO, 0,   239, 1.15, 0, NO, 0
          240, 1.15, 0, NO, 0
   NAME=DX 2, LANE, , 0, 0, BOTH, 3, 2
          301, 1.35, 0, NO, 0,   302, 1.35, 0, NO, 0,   303, 1.35, 0, NO, 0
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        304, 1.35, 0, NO, 0,    305, 1.35, 0, NO, 0,    306, 1.35, 0, NO, 0
        307, 1.35, 0, NO, 0,    308, 1.35, 0, NO, 0,    309, 1.35, 0, NO, 0
        310, 1.35, 0, NO, 0,    311, 1.35, 0, NO, 0,    312, 1.35, 0, NO, 0
        313, 1.35, 0, NO, 0,    314, 1.35, 0, NO, 0,    315, 1.35, 0, NO, 0
        316, 1.35, 0, NO, 0,    317, 1.35, 0, NO, 0,    318, 1.35, 0, NO, 0
        319, 1.35, 0, NO, 0,    320, 1.35, 0, NO, 0,    321, 1.35, 0, NO, 0
        322, 1.35, 0, NO, 0,    323, 1.35, 0, NO, 0,    324, 1.35, 0, NO, 0
        325, 1.35, 0, NO, 0,    326, 1.35, 0, NO, 0,    327, 1.35, 0, NO, 0
        328, 1.35, 0, NO, 0,    329, 1.35, 0, NO, 0,    330, 1.35, 0, NO, 0
        331, 1.35, 0, NO, 0,    332, 1.35, 0, NO, 0,    333, 1.35, 0, NO, 0
        334, 1.35, 0, NO, 0,    335, 1.35, 0, NO, 0,    336, 1.35, 0, NO, 0
        337, 1.35, 0, NO, 0,    338, 1.35, 0, NO, 0,    339, 1.35, 0, NO, 0
        340, 1.35, 0, NO, 0
NAME=DX RIM, LANE, , 0, 0, BOTH, 2.5, 0
        301, -1.4, 0, NO, 0,    302, -1.4, 0, NO, 0,    303, -1.4, 0, NO, 0
        304, -1.4, 0, NO, 0,    305, -1.4, 0, NO, 0,    306, -1.4, 0, NO, 0
        307, -1.4, 0, NO, 0,    308, -1.4, 0, NO, 0,    309, -1.4, 0, NO, 0
        310, -1.4, 0, NO, 0,    311, -1.4, 0, NO, 0,    312, -1.4, 0, NO, 0
        313, -1.4, 0, NO, 0,    314, -1.4, 0, NO, 0,    315, -1.4, 0, NO, 0
        316, -1.4, 0, NO, 0,    317, -1.4, 0, NO, 0,    318, -1.4, 0, NO, 0
        319, -1.4, 0, NO, 0,    320, -1.4, 0, NO, 0,    321, -1.4, 0, NO, 0
        322, -1.4, 0, NO, 0,    323, -1.4, 0, NO, 0,    324, -1.4, 0, NO, 0
        325, -1.4, 0, NO, 0,    326, -1.4, 0, NO, 0,    327, -1.4, 0, NO, 0
        328, -1.4, 0, NO, 0,    329, -1.4, 0, NO, 0,    330, -1.4, 0, NO, 0
        331, -1.4, 0, NO, 0,    332, -1.4, 0, NO, 0,    333, -1.4, 0, NO, 0
        334, -1.4, 0, NO, 0,    335, -1.4, 0, NO, 0,    336, -1.4, 0, NO, 0
        337, -1.4, 0, NO, 0,    338, -1.4, 0, NO, 0,    339, -1.4, 0, NO, 0
        340, -1.4, 0, NO, 0
NAME=MARC DX, LANE, , 0, 0, BOTH, 1.2, 0
        101, 0.55, 0, NO, 0,    102, 0.55, 0, NO, 0,    103, 0.55, 0, NO, 0
        104, 0.55, 0, NO, 0,    105, 0.55, 0, NO, 0,    106, 0.55, 0, NO, 0
        107, 0.55, 0, NO, 0,    108, 0.55, 0, NO, 0,    109, 0.55, 0, NO, 0
        110, 0.55, 0, NO, 0,    111, 0.55, 0, NO, 0,    112, 0.55, 0, NO, 0
        113, 0.55, 0, NO, 0,    114, 0.55, 0, NO, 0,    115, 0.55, 0, NO, 0
        116, 0.55, 0, NO, 0,    117, 0.55, 0, NO, 0,    118, 0.55, 0, NO, 0
        119, 0.55, 0, NO, 0,    120, 0.55, 0, NO, 0,    121, 0.55, 0, NO, 0
        122, 0.55, 0, NO, 0,    123, 0.55, 0, NO, 0,    124, 0.55, 0, NO, 0
        125, 0.55, 0, NO, 0,    126, 0.55, 0, NO, 0,    127, 0.55, 0, NO, 0
        128, 0.55, 0, NO, 0,    129, 0.55, 0, NO, 0,    130, 0.55, 0, NO, 0
        131, 0.55, 0, NO, 0,    132, 0.55, 0, NO, 0,    133, 0.55, 0, NO, 0
        134, 0.55, 0, NO, 0,    135, 0.55, 0, NO, 0,    136, 0.55, 0, NO, 0
        137, 0.55, 0, NO, 0,    138, 0.55, 0, NO, 0,    139, 0.55, 0, NO, 0
        140, 0.55, 0, NO, 0
NAME=MARC SX, LANE, , 0, 0, BOTH, 1.2, 0
        401, -0.55, 0, NO, 0,    402, -0.55, 0, NO, 0,    403, -0.55, 0, NO, 0
        404, -0.55, 0, NO, 0,    405, -0.55, 0, NO, 0,    406, -0.55, 0, NO, 0
        407, -0.55, 0, NO, 0,    408, -0.55, 0, NO, 0,    409, -0.55, 0, NO, 0
        410, -0.55, 0, NO, 0,    411, -0.55, 0, NO, 0,    412, -0.55, 0, NO, 0
        413, -0.55, 0, NO, 0,    414, -0.55, 0, NO, 0,    415, -0.55, 0, NO, 0
        416, -0.55, 0, NO, 0,    417, -0.55, 0, NO, 0,    418, -0.55, 0, NO, 0
        419, -0.55, 0, NO, 0,    420, -0.55, 0, NO, 0,    421, -0.55, 0, NO, 0
        422, -0.55, 0, NO, 0,    423, -0.55, 0, NO, 0,    424, -0.55, 0, NO, 0
        425, -0.55, 0, NO, 0,    426, -0.55, 0, NO, 0,    427, -0.55, 0, NO, 0
        428, -0.55, 0, NO, 0,    429, -0.55, 0, NO, 0,    430, -0.55, 0, NO, 0
        431, -0.55, 0, NO, 0,    432, -0.55, 0, NO, 0,    433, -0.55, 0, NO, 0
        434, -0.55, 0, NO, 0,    435, -0.55, 0, NO, 0,    436, -0.55, 0, NO, 0
        437, -0.55, 0, NO, 0,    438, -0.55, 0, NO, 0,    439, -0.55, 0, NO, 0
        440, -0.55, 0, NO, 0
NAME=SX 1, LANE, , 0, 0, BOTH, 3, 2
        301, -1.15, 0, NO, 0,    302, -1.15, 0, NO, 0,    303, -1.15, 0, NO, 0
        304, -1.15, 0, NO, 0,    305, -1.15, 0, NO, 0,    306, -1.15, 0, NO, 0
        307, -1.15, 0, NO, 0,    308, -1.15, 0, NO, 0,    309, -1.15, 0, NO, 0
        310, -1.15, 0, NO, 0,    311, -1.15, 0, NO, 0,    312, -1.15, 0, NO, 0
        313, -1.15, 0, NO, 0,    314, -1.15, 0, NO, 0,    315, -1.15, 0, NO, 0
        316, -1.15, 0, NO, 0,    317, -1.15, 0, NO, 0,    318, -1.15, 0, NO, 0
        319, -1.15, 0, NO, 0,    320, -1.15, 0, NO, 0,    321, -1.15, 0, NO, 0
        322, -1.15, 0, NO, 0,    323, -1.15, 0, NO, 0,    324, -1.15, 0, NO, 0
        325, -1.15, 0, NO, 0,    326, -1.15, 0, NO, 0,    327, -1.15, 0, NO, 0
        328, -1.15, 0, NO, 0,    329, -1.15, 0, NO, 0,    330, -1.15, 0, NO, 0
        331, -1.15, 0, NO, 0,    332, -1.15, 0, NO, 0,    333, -1.15, 0, NO, 0
        334, -1.15, 0, NO, 0,    335, -1.15, 0, NO, 0,    336, -1.15, 0, NO, 0
        337, -1.15, 0, NO, 0,    338, -1.15, 0, NO, 0,    339, -1.15, 0, NO, 0
        340, -1.15, 0, NO, 0
NAME=SX 2, LANE, , 0, 0, BOTH, 3, 2
        201, -1.35, 0, NO, 0,    202, -1.35, 0, NO, 0,    203, -1.35, 0, NO, 0
        204, -1.35, 0, NO, 0,    205, -1.35, 0, NO, 0,    206, -1.35, 0, NO, 0
        207, -1.35, 0, NO, 0,    208, -1.35, 0, NO, 0,    209, -1.35, 0, NO, 0
        210, -1.35, 0, NO, 0,    211, -1.35, 0, NO, 0,    212, -1.35, 0, NO, 0
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          213, -1.35, 0, NO, 0,   214, -1.35, 0, NO, 0,   215, -1.35, 0, NO, 0
          216, -1.35, 0, NO, 0,   217, -1.35, 0, NO, 0,   218, -1.35, 0, NO, 0
          219, -1.35, 0, NO, 0,   220, -1.35, 0, NO, 0,   221, -1.35, 0, NO, 0
          222, -1.35, 0, NO, 0,   223, -1.35, 0, NO, 0,   224, -1.35, 0, NO, 0
          225, -1.35, 0, NO, 0,   226, -1.35, 0, NO, 0,   227, -1.35, 0, NO, 0
          228, -1.35, 0, NO, 0,   229, -1.35, 0, NO, 0,   230, -1.35, 0, NO, 0
          231, -1.35, 0, NO, 0,   232, -1.35, 0, NO, 0,   233, -1.35, 0, NO, 0
          234, -1.35, 0, NO, 0,   235, -1.35, 0, NO, 0,   236, -1.35, 0, NO, 0
          237, -1.35, 0, NO, 0,   238, -1.35, 0, NO, 0,   239, -1.35, 0, NO, 0
          240, -1.35, 0, NO, 0
   NAME=SX RIM, LANE, , 0, 0, BOTH, 2.5, 0
          201, 1.4, 0, NO, 0,   202, 1.4, 0, NO, 0,   203, 1.4, 0, NO, 0
          204, 1.4, 0, NO, 0,   205, 1.4, 0, NO, 0,   206, 1.4, 0, NO, 0
          207, 1.4, 0, NO, 0,   208, 1.4, 0, NO, 0,   209, 1.4, 0, NO, 0
          210, 1.4, 0, NO, 0,   211, 1.4, 0, NO, 0,   212, 1.4, 0, NO, 0
          213, 1.4, 0, NO, 0,   214, 1.4, 0, NO, 0,   215, 1.4, 0, NO, 0
          216, 1.4, 0, NO, 0,   217, 1.4, 0, NO, 0,   218, 1.4, 0, NO, 0
          219, 1.4, 0, NO, 0,   220, 1.4, 0, NO, 0,   221, 1.4, 0, NO, 0
          222, 1.4, 0, NO, 0,   223, 1.4, 0, NO, 0,   224, 1.4, 0, NO, 0
          225, 1.4, 0, NO, 0,   226, 1.4, 0, NO, 0,   227, 1.4, 0, NO, 0
          228, 1.4, 0, NO, 0,   229, 1.4, 0, NO, 0,   230, 1.4, 0, NO, 0
          231, 1.4, 0, NO, 0,   232, 1.4, 0, NO, 0,   233, 1.4, 0, NO, 0
          234, 1.4, 0, NO, 0,   235, 1.4, 0, NO, 0,   236, 1.4, 0, NO, 0
          237, 1.4, 0, NO, 0,   238, 1.4, 0, NO, 0,   239, 1.4, 0, NO, 0
          240, 1.4, 0, NO, 0

*VEHICLE    ; Vehicles
  NAME=Fatica 2, 1, 3, Fatigue Load Model 2 (630), , , 1, , ,
  NAME=Fatica 3 (1 veicolo), 1, 3, Fatigue Load Model 3 (One Vehicle), , , 1, , ,
  NAME=Schema 1, 1, 1, Load Model 1, 0.75, 0.4, , 1, 1, 1, 1, 1, 1, 1
  NAME=Schema 5, 1, 2, Uniform load (Road bridge footway), , , , 0.4, 2.5,

*MVLDCASE(EURO)    ; Moving Load Cases
   NAME=Mobili SLU DX, 1, , Schema 1, Schema 5, YES
        1, DX 1, DX 2
        2, DX RIM
        3, MARC DX, MARC SX
   NAME=Mobili SLU SX, 1, , Schema 1, Schema 5, YES
        1, SX 1, SX 2
        2, SX RIM
        3, MARC DX, MARC SX
   NAME=Mobili SLE DX, 1, , Schema 1, Schema 5, NO
        1, DX 1, DX 2
        2, DX RIM
        3, MARC DX, MARC SX
   NAME=Mobili SLE SX, 1, , Schema 1, Schema 5, NO
        1, SX 1, SX 2
        2, SX RIM
        3, MARC DX, MARC SX
   NAME=Fatica V.ILL., 2, , 1, YES
        Fatica 2, 1, 0, 1, C. LENTA DX, C.LENTA SX
   NAME=Fatica DANN.ACC., 2, , 1, YES
        Fatica 3 (1 veicolo), 1, 0, 1, C. LENTA DX, C.LENTA SX

*CPOSECT4CS    ; Composite Section for Construction Stage
   SEC=5, Costruzione, NORMAL, YES
       1, MATL, 1, , 0, 1, 1, 1, 1, 1, 1, 0
       2, MATL, 4, Esercizio, 1, 1, 1, 1, 1, 1, 1, 1, 0.3
   SEC=11, Costruzione, NORMAL, NO
       1, MATL, 1, , 1, 1, 1, 1, 1, 1, 1, 1, 0
       2, MATL, 4, Esercizio, 1, 1, 1, 1, 1, 1, 1, 1, 0.3
   SEC=1, Costruzione, NORMAL, NO
       1, MATL, 1, , 1, 1, 1, 1, 1, 1, 1, 1, 0
       2, MATL, 4, Esercizio, 1, 1, 1, 1, 1, 1, 1, 1, 0.3
   SEC=2, Costruzione, NORMAL, NO
       1, MATL, 1, , 1, 1, 1, 1, 1, 1, 1, 1, 0
       2, MATL, 4, Esercizio, 1, 1, 1, 1, 1, 1, 1, 1, 0.3
   SEC=7, Costruzione, NORMAL, NO
       1, MATL, 1, , 0, 1, 1, 1, 1, 1, 1, 1, 0
       2, MATL, 4, Esercizio, 1, 1, 1, 1, 1, 1, 1, 1, 0.3
   SEC=16, Costruzione, NORMAL, NO
       1, MATL, 1, , 1, 1, 1, 1, 1, 1, 1, 1, 0
       2, MATL, 4, Esercizio, 1, 1, 1, 1, 1, 1, 1, 1, 0.3
   SEC=3, Costruzione, NORMAL, NO
       1, MATL, 1, , 1, 1, 1, 1, 1, 1, 1, 1, 0
       2, MATL, 4, Esercizio, 1, 1, 1, 1, 1, 1, 1, 1, 0.3
   SEC=4, Costruzione, NORMAL, NO
       1, MATL, 1, , 1, 1, 1, 1, 1, 1, 1, 1, 0
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       2, MATL, 4, Esercizio, 1, 1, 1, 1, 1, 1, 1, 1, 0.3
   SEC=6, Costruzione, NORMAL, YES
       1, MATL, 1, , 1, 1, 1, 1, 1, 1, 1, 1, 0
       2, MATL, 4, Esercizio, 1, 1, 1, 1, 1, 1, 1, 1, 0.3
   SEC=8, Costruzione, NORMAL, NO
       1, MATL, 1, , 1, 1, 1, 1, 1, 1, 1, 1, 0
       2, MATL, 4, Esercizio, 1, 1, 1, 1, 1, 1, 1, 1, 0.3
   SEC=9, Costruzione, NORMAL, YES
       1, MATL, 1, , 1, 1, 1, 1, 1, 1, 1, 1, 0
       2, MATL, 4, Esercizio, 1, 1, 1, 1, 1, 1, 1, 1, 0.3
   SEC=10, Costruzione, NORMAL, YES
       1, MATL, 1, , 1, 1, 1, 1, 1, 1, 1, 1, 0
       2, MATL, 4, Esercizio, 1, 1, 1, 1, 1, 1, 1, 1, 0.3
   SEC=12, Costruzione, NORMAL, NO
       1, MATL, 1, , 1, 1, 1, 1, 1, 1, 1, 1, 0
       2, MATL, 4, Esercizio, 1, 1, 1, 1, 1, 1, 1, 1, 0.3
   SEC=13, Costruzione, NORMAL, NO
       1, MATL, 1, , 1, 1, 1, 1, 1, 1, 1, 1, 0
       2, MATL, 4, Esercizio, 1, 1, 1, 1, 1, 1, 1, 1, 0.3
   SEC=14, Costruzione, NORMAL, NO
       1, MATL, 1, , 1, 1, 1, 1, 1, 1, 1, 1, 0
       2, MATL, 4, Esercizio, 1, 1, 1, 1, 1, 1, 1, 1, 0.3
   SEC=21, Costruzione, NORMAL, NO
       1, MATL, 1, , 1, 1, 1, 1, 1, 1, 1, 1, 0
       2, MATL, 4, Esercizio, 1, 1, 1, 1, 1, 1, 1, 1, 0.3

*STAGE-COLOR    ; Diagram Color for Construction Stage
 Costruzione, 0, 157, 192
 Esercizio, 255, 255, 255

*STAGE-CTRL    ; Construction Stage Analysis Control Data
  YES, , INTERNAL, NO, YES, YES, NO, NO, NO, NO, NO, , , DW, W, DW, Erection Load 1, Erection Load 2, Erecti
on Load 3, YES, NO, , NO, NO
  NO
  NO
  YES, YES, BOTH, 5, 0.01, YES, NO, YES, YES, 0, YES
  NO, NO, 2, YES, 2, 5, 7, 10, 20
  NO, , , 1, NO
  Finiture

*LOADCOMB    ; Combinations
   NAME=Vento Strutture (Y-), GEN, INACTIVE, 0, 0, , 0, 0
        ST, Vento strutture (Y+), -1
   NAME=Vento Mobili (Y-), GEN, INACTIVE, 0, 0, , 0, 0
        ST, Vento mobili (Y+), -1
   NAME=Frenamento (X-), GEN, INACTIVE, 0, 0, , 0, 0
        ST, Frenamento (X+), -1
   NAME=Termico unif. -15°, GEN, INACTIVE, 0, 0, , 0, 0
        ST, Termico Unif. +15°, -1
   NAME=Termico diff. -5°/H, GEN, INACTIVE, 0, 0, , 0, 0
        ST, Termico diff. +5°/H, -1
   NAME=SLD Long (X-), GEN, INACTIVE, 0, 0, , 0, 0
        RS, SLD Long (X+), -1
   NAME=SLD Trasv (Y-), GEN, INACTIVE, 0, 0, , 0, 0
        RS, SLD Trasv (Y+), -1
   NAME=SLD Vert (Z-), GEN, INACTIVE, 0, 0, , 0, 0
        RS, SLD Vert (Z+), -1
   NAME=SLV Long (X-), GEN, INACTIVE, 0, 0, , 0, 0
        RS, SLV Long (X+), -1
   NAME=SLV Trasv (Y-), GEN, INACTIVE, 0, 0, , 0, 0
        RS, SLV Trasv (Y+), -1
   NAME=SLV Vert (Z-), GEN, INACTIVE, 0, 0, , 0, 0
        RS, SLV Vert (Z+), -1
   NAME=SLC Long (X-), GEN, INACTIVE, 0, 0, , 0, 0
        RS, SLC Long (X+), -1
   NAME=SLC Trasv (Y-), GEN, INACTIVE, 0, 0, , 0, 0
        RS, SLC Trasv (Y+), -1
   NAME=SLC Vert (Z-), GEN, INACTIVE, 0, 0, , 0, 0
        RS, SLC Vert (Z+), -1
   NAME=Vento Strutture INV, GEN, INACTIVE, 0, 1, , 0, 0
        ST, Vento strutture (Y+), 1, CB, Vento Strutture (Y-), 1
   NAME=Vento Mobili INV, GEN, INACTIVE, 0, 1, , 0, 0
        ST, Vento mobili (Y+), 1, CB, Vento Mobili (Y-), 1
   NAME=Frenamento INV, GEN, ACTIVE, 0, 1, , 0, 0
        ST, Frenamento (X+), 1, CB, Frenamento (X-), 1
   NAME=Termico unif. INV, GEN, ACTIVE, 0, 1, , 0, 0
        ST, Termico Unif. +15°, 1, CB, Termico unif. -15°, 1
   NAME=Termico diff. INV, GEN, ACTIVE, 0, 1, , 0, 0
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      ST, Termico diff. +5°/H, 1, CB, Termico diff. -5°/H, 1
NAME=SLD Long INV, GEN, INACTIVE, 0, 1, , 0, 0
      RS, SLD Long (X+), 1, CB, SLD Long (X-), 1
NAME=SLD Trasv INV, GEN, INACTIVE, 0, 1, , 0, 0
      RS, SLD Trasv (Y+), 1, CB, SLD Trasv (Y-), 1
NAME=SLD Vert INV, GEN, INACTIVE, 0, 1, , 0, 0
      RS, SLD Vert (Z+), 1, CB, SLD Vert (Z-), 1
NAME=SLV Long INV, GEN, INACTIVE, 0, 1, , 0, 0
      RS, SLV Long (X+), 1, CB, SLV Long (X-), 1
NAME=SLV Trasv INV, GEN, INACTIVE, 0, 1, , 0, 0
      RS, SLV Trasv (Y+), 1, CB, SLV Trasv (Y-), 1
NAME=SLV Vert INV, GEN, INACTIVE, 0, 1, , 0, 0
      RS, SLV Vert (Z+), 1, CB, SLV Vert (Z-), 1
NAME=SLC Long INV, GEN, INACTIVE, 0, 1, , 0, 0
      RS, SLC Long (X+), 1, CB, SLC Long (X-), 1
NAME=SLC Trasv INV, GEN, INACTIVE, 0, 1, , 0, 0
      RS, SLC Trasv (Y+), 1, CB, SLC Trasv (Y-), 1
NAME=SLC Vert INV, GEN, INACTIVE, 0, 1, , 0, 0
      RS, SLC Vert (Z+), 1, CB, SLC Vert (Z-), 1
NAME=Mobili SLU INV, GEN, ACTIVE, 0, 1, , 0, 0
      MV, Mobili SLU DX, 1, MV, Mobili SLU SX, 1
NAME=Mobili SLE INV, GEN, ACTIVE, 0, 1, , 0, 0
      MV, Mobili SLE DX, 1, MV, Mobili SLE SX, 1
NAME=GEN SLU Mobili, GEN, ACTIVE, 0, 0, , 0, 0
      CS, Dead Load, 1.35, CS, Erection Load 1, 1.5, CS, Creep Secondary, 1.2
      CS, Shrinkage Secondary, 1.2, CB, Vento Strutture INV, 0.9
      CB, Vento Mobili INV, 0.9, CB, Termico unif. INV, 0.72
      CB, Termico diff. INV, 0.72, CB, Mobili SLU INV, 1.35
NAME=GEN SLU Vento, GEN, ACTIVE, 0, 0, , 0, 0
      CS, Dead Load, 1.35, CS, Erection Load 1, 1.5, CS, Creep Secondary, 1.2
      CS, Shrinkage Secondary, 1.2, CB, Vento Strutture INV, 1.5
      CB, Vento Mobili INV, 1.5, CB, Termico unif. INV, 0.72
      CB, Termico diff. INV, 0.72, CB, Mobili SLE INV, 1.35
NAME=GEN SLU Frenamento, GEN, ACTIVE, 0, 0, , 0, 0
      CS, Dead Load, 1.35, CS, Erection Load 1, 1.5, CS, Creep Secondary, 1.2
      CS, Shrinkage Secondary, 1.2, CB, Frenamento INV, 1.35
      CB, Termico unif. INV, 0.72, CB, Termico diff. INV, 0.72
      CB, Mobili SLE INV, 1.35
NAME=GEN SLU Termico, GEN, ACTIVE, 0, 0, , 0, 0
      CS, Dead Load, 1.35, CS, Erection Load 1, 1.5, CS, Creep Secondary, 1.2
      CS, Shrinkage Secondary, 1.2, CB, Vento Strutture INV, 0.9
      CB, Vento Mobili INV, 0.9, CB, Termico unif. INV, 1.2
      CB, Termico diff. INV, 1.2, CB, Mobili SLE INV, 1.35
NAME=GEN SLD Long, GEN, ACTIVE, 0, 0, , 0, 0
      CS, Summation, 1, CB, Termico unif. INV, 0.5
      CB, Termico diff. INV, 0.5, CB, SLD Long INV, 1, CB, SLD Trasv INV, 0.3
      CB, SLD Vert INV, 0.3
NAME=GEN SLD Trasv, GEN, ACTIVE, 0, 0, , 0, 0
      CS, Summation, 1, CB, Termico unif. INV, 0.5
      CB, Termico diff. INV, 0.5, CB, SLD Long INV, 0.3, CB, SLD Trasv INV, 1
      CB, SLD Vert INV, 0.3
NAME=GEN SLD Vert, GEN, ACTIVE, 0, 0, , 0, 0
      CS, Summation, 1, CB, Termico unif. INV, 0.5
      CB, Termico diff. INV, 0.5, CB, SLD Long INV, 0.3
      CB, SLD Trasv INV, 0.3, CB, SLD Vert INV, 1
NAME=GEN SLV Long, GEN, ACTIVE, 0, 0, , 0, 0
      CS, Summation, 1, CB, Termico unif. INV, 0.5
      CB, Termico diff. INV, 0.5, CB, SLV Long INV, 1, CB, SLV Trasv INV, 0.3
      CB, SLV Vert INV, 0.3
NAME=GEN SLV Trasv, GEN, ACTIVE, 0, 0, , 0, 0
      CS, Summation, 1, CB, Termico unif. INV, 0.5
      CB, Termico diff. INV, 0.5, CB, SLV Long INV, 0.3, CB, SLV Trasv INV, 1
      CB, SLV Vert INV, 0.3
NAME=GEN SLV Vert, GEN, ACTIVE, 0, 0, , 0, 0
      CS, Summation, 1, CB, Termico unif. INV, 0.5
      CB, Termico diff. INV, 0.5, CB, SLV Long INV, 0.3
      CB, SLV Trasv INV, 0.3, CB, SLV Vert INV, 1
NAME=GEN SLC Long, GEN, ACTIVE, 0, 0, , 0, 0
      CS, Summation, 1, CB, Termico unif. INV, 0.5
      CB, Termico diff. INV, 0.5, CB, SLC Long INV, 1, CB, SLC Trasv INV, 0.3
      CB, SLC Vert INV, 0.3
NAME=GEN SLC Trasv, GEN, ACTIVE, 0, 0, , 0, 0
      CS, Summation, 1, CB, Termico unif. INV, 0.5
      CB, Termico diff. INV, 0.5, CB, SLC Long INV, 0.3, CB, SLC Trasv INV, 1
      CB, SLC Vert INV, 0.3
NAME=GEN SLC Vert, GEN, ACTIVE, 0, 0, , 0, 0
      CS, Summation, 1, CB, Termico unif. INV, 0.5
      CB, Termico diff. INV, 0.5, CB, SLC Long INV, 0.3
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      CB, SLC Trasv INV, 0.3, CB, SLC Vert INV, 1
NAME=GEN RARA Mobili, GEN, ACTIVE, 0, 0, , 0, 0
      CS, Summation, 1, CB, Vento Strutture INV, 0.6
      CB, Vento Mobili INV, 0.6, CB, Termico unif. INV, 0.6
      CB, Termico diff. INV, 0.6, CB, Mobili SLU INV, 1
NAME=GEN RARA Vento, GEN, ACTIVE, 0, 0, , 0, 0
      CS, Summation, 1, CB, Vento Strutture INV, 1, CB, Vento Mobili INV, 1
      CB, Termico unif. INV, 0.6, CB, Termico diff. INV, 0.6
      CB, Mobili SLE INV, 1
NAME=GEN RARA Frenam, GEN, ACTIVE, 0, 0, , 0, 0
      CS, Summation, 1, CB, Frenamento INV, 1, CB, Termico unif. INV, 0.6
      CB, Termico diff. INV, 0.6, CB, Mobili SLE INV, 1
NAME=GEN RARA Termico, GEN, ACTIVE, 0, 0, , 0, 0
      CS, Summation, 1, CB, Vento Strutture INV, 0.6
      CB, Vento Mobili INV, 0.6, CB, Termico unif. INV, 1
      CB, Termico diff. INV, 1, CB, Mobili SLE INV, 1
NAME=GEN FREQ Mobili, GEN, ACTIVE, 0, 0, , 0, 0
      CS, Summation, 1, CB, Termico unif. INV, 0.5
      CB, Termico diff. INV, 0.5, CB, Mobili SLE INV, 1
NAME=GEN FREQ Vento, GEN, ACTIVE, 0, 0, , 0, 0
      CS, Summation, 1, CB, Vento Strutture INV, 0.2
      CB, Vento Mobili INV, 0.2, CB, Termico unif. INV, 0.5
      CB, Termico diff. INV, 0.5
NAME=GEN FREQ Termico, GEN, ACTIVE, 0, 0, , 0, 0
      CS, Summation, 1, CB, Termico unif. INV, 0.6
      CB, Termico diff. INV, 0.6
NAME=GEN Q.P., GEN, ACTIVE, 0, 0, , 0, 0
      CS, Summation, 1, CB, Termico unif. INV, 0.5
      CB, Termico diff. INV, 0.5
NAME=GEN SLU INV, GEN, ACTIVE, 0, 1, , 0, 0
      CB, GEN SLU Mobili, 1, CB, GEN SLU Vento, 1, CB, GEN SLU Frenamento, 1
      CB, GEN SLU Termico, 1
NAME=GEN SLD INV, GEN, ACTIVE, 0, 1, , 0, 0
      CB, GEN SLD Long, 1, CB, GEN SLD Trasv, 1, CB, GEN SLD Vert, 1
NAME=GEN SLV INV, GEN, ACTIVE, 0, 1, , 0, 0
      CB, GEN SLV Long, 1, CB, GEN SLV Trasv, 1, CB, GEN SLV Vert, 1
NAME=GEN SLC INV, GEN, ACTIVE, 0, 1, , 0, 0
      CB, GEN SLC Long, 1, CB, GEN SLC Trasv, 1, CB, GEN SLC Vert, 1
NAME=GEN RARA INV, GEN, ACTIVE, 0, 1, , 0, 0
      CB, GEN RARA Mobili, 1, CB, GEN RARA Vento, 1, CB, GEN RARA Frenam, 1
      CB, GEN RARA Termico, 1
NAME=GEN FREQ INV, GEN, ACTIVE, 0, 1, , 0, 0
      CB, GEN FREQ Mobili, 1, CB, GEN FREQ Vento, 1, CB, GEN FREQ Termico, 1
NAME=VENTO TOT INV, GEN, ACTIVE, 0, 1, , 0, 0
      CB, Vento Strutture INV, 1, CB, Vento Mobili INV, 1
NAME=GEN SLU/SLV INV, GEN, ACTIVE, 0, 1, , 0, 0
      CB, GEN SLU Mobili, 1, CB, GEN SLU Vento, 1, CB, GEN SLU Frenamento, 1
      CB, GEN SLU Termico, 1, CB, GEN SLV Long, 1, CB, GEN SLV Trasv, 1
      CB, GEN SLV Vert, 1
NAME=Vento Strutture (Y-), STEEL, INACTIVE, 0, 0, , 0, 0
      ST, Vento strutture (Y+), -1
NAME=Vento Mobili (Y-), STEEL, INACTIVE, 0, 0, , 0, 0
      ST, Vento mobili (Y+), -1
NAME=Frenamento (X-), STEEL, INACTIVE, 0, 0, , 0, 0
      ST, Frenamento (X+), -1
NAME=Termico unif. -15°, STEEL, INACTIVE, 0, 0, , 0, 0
      ST, Termico Unif. +15°, -1
NAME=Termico diff. -5°/H, STEEL, INACTIVE, 0, 0, , 0, 0
      ST, Termico diff. +5°/H, -1
NAME=SLV Long (X-), STEEL, INACTIVE, 0, 0, , 0, 0
      RS, SLV Long (X+), -1
NAME=SLV Trasv (Y-), STEEL, INACTIVE, 0, 0, , 0, 0
      RS, SLV Trasv (Y+), -1
NAME=SLV Vert (Z-), STEEL, INACTIVE, 0, 0, , 0, 0
      RS, SLV Vert (Z+), -1
NAME=Vento Strutture INV, STEEL, INACTIVE, 0, 1, , 0, 0
      ST, Vento strutture (Y+), 1, CBS, Vento Strutture (Y-), 1
NAME=Vento Mobili INV, STEEL, INACTIVE, 0, 1, , 0, 0
      ST, Vento mobili (Y+), 1, CBS, Vento Mobili (Y-), 1
NAME=Frenamento INV, STEEL, INACTIVE, 0, 1, , 0, 0
      ST, Frenamento (X+), 1, CBS, Frenamento (X-), 1
NAME=Termico unif. INV, STEEL, INACTIVE, 0, 1, , 0, 0
      ST, Termico Unif. +15°, 1, CBS, Termico unif. -15°, 1
NAME=Termico diff. INV, STEEL, INACTIVE, 0, 1, , 0, 0
      ST, Termico diff. +5°/H, 1, CBS, Termico diff. -5°/H, 1
NAME=SLV Long INV, STEEL, INACTIVE, 0, 1, , 0, 0
      RS, SLV Long (X+), 1, CBS, SLV Long (X-), 1
NAME=SLV Trasv INV, STEEL, INACTIVE, 0, 1, , 0, 0
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      RS, SLV Trasv (Y+), 1, CBS, SLV Trasv (Y-), 1
   NAME=SLV Vert INV, STEEL, INACTIVE, 0, 1, , 0, 0
      RS, SLV Vert (Z+), 1, CBS, SLV Vert (Z-), 1
   NAME=Mobili SLU INV, STEEL, INACTIVE, 0, 1, , 0, 0
      MV, Mobili SLU DX, 1, MV, Mobili SLU SX, 1
   NAME=Mobili SLE INV, STEEL, INACTIVE, 0, 1, , 0, 0
      MV, Mobili SLE DX, 1, MV, Mobili SLE SX, 1
   NAME=ST SLU Mobili, STEEL, STRENGTH, 0, 0, , 0, 0
      CS, Dead Load, 1.35, CS, Erection Load 1, 1.5, CS, Creep Secondary, 1.2
      CS, Shrinkage Secondary, 1.2, CBS, Vento Strutture INV, 0.9
      CBS, Vento Mobili INV, 0.9, CBS, Termico unif. INV, 0.72
      CBS, Termico diff. INV, 0.72, CBS, Mobili SLU INV, 1.35
   NAME=ST SLU Vento, STEEL, STRENGTH, 0, 0, , 0, 0
      CS, Dead Load, 1.35, CS, Erection Load 1, 1.5, CS, Creep Secondary, 1.2
      CS, Shrinkage Secondary, 1.2, CBS, Vento Strutture INV, 1.5
      CBS, Vento Mobili INV, 1.5, CBS, Termico unif. INV, 0.72
      CBS, Termico diff. INV, 0.72, CBS, Mobili SLE INV, 1.35
   NAME=ST SLU Frenamento, STEEL, STRENGTH, 0, 0, , 0, 0
      CS, Dead Load, 1.35, CS, Erection Load 1, 1.5, CS, Creep Secondary, 1.2
      CS, Shrinkage Secondary, 1.2, CBS, Frenamento INV, 1.35
      CBS, Termico unif. INV, 0.72, CBS, Termico diff. INV, 0.72
      CBS, Mobili SLE INV, 1.35
   NAME=ST SLU Termico, STEEL, STRENGTH, 0, 0, , 0, 0
      CS, Dead Load, 1.35, CS, Erection Load 1, 1.5, CS, Creep Secondary, 1.2
      CS, Shrinkage Secondary, 1.2, CBS, Vento Strutture INV, 0.9
      CBS, Vento Mobili INV, 0.9, CBS, Termico unif. INV, 1.2
      CBS, Termico diff. INV, 1.2, CBS, Mobili SLE INV, 1.35
   NAME=ST SLV Long, STEEL, STRENGTH, 0, 0, , 0, 0
      CS, Summation, 1, CBS, Termico unif. INV, 0.5
      CBS, Termico diff. INV, 0.5, CBS, SLV Long INV, 1
      CBS, SLV Trasv INV, 0.3, CBS, SLV Vert INV, 0.3
   NAME=ST SLV Trasv, STEEL, STRENGTH, 0, 0, , 0, 0
      CS, Summation, 1, CBS, Termico unif. INV, 0.5
      CBS, Termico diff. INV, 0.5, CBS, SLV Long INV, 0.3
      CBS, SLV Trasv INV, 1, CBS, SLV Vert INV, 0.3
   NAME=ST SLV Vert, STEEL, STRENGTH, 0, 0, , 0, 0
      CS, Summation, 1, CBS, Termico unif. INV, 0.5
      CBS, Termico diff. INV, 0.5, CBS, SLV Long INV, 0.3
      CBS, SLV Trasv INV, 0.3, CBS, SLV Vert INV, 1
   NAME=ST FATICA VITA ILL., STEEL, SERVICE, 0, 0, , 0, 0
      MV, Fatica V.ILL., 1, CS, Summation, 1
   NAME=ST FATICA DANN.ACC., STEEL, SERVICE, 0, 0, , 0, 0
      MV, Fatica DANN.ACC., 1, CS, Summation, 1
   NAME=ST RARA Mobili, STEEL, SERVICE, 0, 0, , 3, 0
      CS, Summation, 1, CBS, Vento Strutture INV, 0.6
      CBS, Vento Mobili INV, 0.6, CBS, Termico unif. INV, 0.6
      CBS, Termico diff. INV, 0.6, CBS, Mobili SLU INV, 1
   NAME=ST RARA Vento, STEEL, SERVICE, 0, 0, , 3, 0
      CS, Summation, 1, CBS, Vento Strutture INV, 1, CBS, Vento Mobili INV, 1
      CBS, Termico unif. INV, 0.6, CBS, Termico diff. INV, 0.6
      CBS, Mobili SLE INV, 1
   NAME=ST RARA Frenamento, STEEL, SERVICE, 0, 0, , 3, 0
      CS, Summation, 1, CBS, Frenamento INV, 1, CBS, Termico unif. INV, 0.6
      CBS, Termico diff. INV, 0.6, CBS, Mobili SLE INV, 1
   NAME=ST RARA Termico, STEEL, SERVICE, 0, 0, , 3, 0
      CS, Summation, 1, CBS, Vento Strutture INV, 0.6
      CBS, Vento Mobili INV, 0.6, CBS, Termico unif. INV, 1
      CBS, Termico diff. INV, 1, CBS, Mobili SLE INV, 1
   NAME=ST FREQ Mobili, STEEL, SERVICE, 0, 0, , 2, 0
      CS, Summation, 1, CBS, Termico unif. INV, 0.5
      CBS, Termico diff. INV, 0.5, CBS, Mobili SLE INV, 1
   NAME=ST FREQ Vento, STEEL, SERVICE, 0, 0, , 2, 0
      CS, Summation, 1, CBS, Vento Strutture INV, 0.2
      CBS, Vento Mobili INV, 0.2, CBS, Termico unif. INV, 0.5
      CBS, Termico diff. INV, 0.5
   NAME=ST FREQ Termico, STEEL, SERVICE, 0, 0, , 2, 0
      CS, Summation, 1, CBS, Termico unif. INV, 0.6
      CBS, Termico diff. INV, 0.6
   NAME=ST Q.P., STEEL, SERVICE, 0, 0, , 1, 0
      CS, Summation, 1, CBS, Termico unif. INV, 0.5
      CBS, Termico diff. INV, 0.5
   NAME=FATICA VITA ILL., CONC, STRENGTH, 0, 0, , 0, 0
      CS, Summation, 1, MV, Fatica V.ILL., 1

*LC-COLOR    ; Diagram Color for Load Case
 ST, Peso acciaio e pile, 0, 192, 128, 255, 0, 192, 192, 192, 0
 ST, Peso soletta, 0, 128, 255, 255, 255, 87, 192, 0, 128
 ST, Finiture, 255, 128, 0, 192, 192, 192, 192, 192, 192
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PROJECT TITLE : CASALPUSTERLENGO

	Company		Client	
	Author	Renato Vaira	File Name	Cavalc Coste V_2.mct

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ST, Vento strutture (Y+), 255, 0, 128, 0, 128, 57, 192, 0, 192
ST, Vento mobili (Y+), 0, 192, 128, 255, 0, 192, 212, 160, 255
ST, Frenamento (X+), 255, 128, 0, 85, 0, 192, 160, 255, 255
ST, Termico Unif. +15°, 192, 0, 192, 0, 128, 57, 255, 87, 128
MV, Mobili SLU DX, 85, 192, 0, 163, 255, 160, 192, 192, 0
CS, Dead Load, 192, 128, 0, 255, 255, 255, 255, 160, 255
CS, Tendon Secondary, 163, 160, 255, 148, 87, 255, 255, 0, 192
CS, Creep Primary, 192, 0, 192, 163, 160, 255, 255, 0, 192
CS, Creep Secondary, 78, 0, 255, 255, 0, 192, 160, 192, 255
CS, Shrinkage Primary, 0, 192, 192, 192, 0, 192, 160, 192, 255
CS, Shrinkage Secondary, 0, 192, 192, 255, 255, 255, 210, 210, 210
CS, Summation, 0, 192, 128, 160, 255, 255, 192, 192, 0
RS, SLD Long (X+), 0, 128, 57, 255, 0, 192, 255, 87, 128
RS, SLD Trasv (Y+), 255, 0, 192, 192, 192, 192, 255, 255, 255
RS, SLD Vert (Z+), 192, 0, 128, 255, 192, 87, 0, 128, 57
RS, SLV Long (X+), 85, 0, 192, 192, 192, 0, 255, 192, 87
RS, SLV Trasv (Y+), 192, 72, 0, 192, 192, 0, 255, 0, 192
RS, SLV Vert (Z+), 192, 192, 192, 255, 192, 87, 210, 210, 210
RS, SLC Long (X+), 0, 128, 128, 85, 0, 192, 192, 192, 0
RS, SLC Trasv (Y+), 192, 0, 128, 255, 0, 192, 255, 0, 128
RS, SLC Vert (Z+), 255, 0, 128, 0, 157, 192, 192, 72, 0
ST, Termico diff. +5°/H, 0, 128, 192, 78, 0, 255, 0, 192, 128
MV, Mobili SLU SX, 160, 255, 255, 192, 72, 0, 192, 72, 0
MV, Mobili SLE DX, 78, 0, 255, 160, 255, 255, 255, 87, 87
CB, Vento Strutture (Y-), 255, 87, 87, 0, 192, 128, 0, 157, 192
CB, Vento Mobili (Y-), 192, 0, 192, 146, 0, 255, 192, 0, 128
MV, Mobili SLE SX, 85, 192, 0, 163, 160, 255, 0, 192, 192
CB, Frenamento (X-), 78, 0, 255, 85, 0, 192, 85, 192, 0
CB, Termico unif. -15°, 255, 255, 255, 128, 192, 0, 128, 192, 0
CB, Termico diff. -5°/H, 163, 160, 255, 255, 0, 192, 255, 0, 192
CB, SLD Long (X-), 210, 210, 210, 0, 128, 255, 0, 128, 128
CB, SLD Trasv (Y-), 255, 255, 87, 78, 0, 255, 85, 0, 192
CB, SLD Vert (Z-), 192, 0, 128, 128, 192, 0, 255, 0, 128
CB, SLV Long (X-), 0, 128, 192, 192, 0, 128, 0, 128, 192
CB, SLV Trasv (Y-), 148, 87, 255, 255, 0, 128, 192, 72, 0
CB, SLV Vert (Z-), 192, 72, 0, 0, 128, 192, 192, 0, 128
CB, SLC Long (X-), 212, 160, 255, 212, 160, 255, 85, 0, 192
CB, SLC Trasv (Y-), 255, 87, 87, 192, 128, 0, 0, 192, 128
CB, SLC Vert (Z-), 0, 157, 192, 146, 0, 255, 255, 128, 0
CB, Vento Strutture INV, 0, 192, 128, 255, 0, 128, 255, 255, 87
CB, Vento Mobili INV, 255, 87, 128, 192, 0, 128, 128, 192, 0
CB, Frenamento INV, 0, 128, 192, 192, 0, 192, 212, 160, 255
CB, Termico unif. INV, 255, 87, 128, 78, 0, 255, 192, 72, 0
CB, Termico diff. INV, 85, 0, 192, 255, 255, 255, 0, 128, 128
CB, SLD Long INV, 210, 210, 210, 255, 87, 87, 192, 192, 192
CB, SLD Trasv INV, 93, 255, 87, 0, 192, 128, 0, 128, 192
CB, SLD Vert INV, 192, 72, 0, 163, 160, 255, 192, 0, 192
CB, SLV Long INV, 192, 192, 0, 255, 128, 0, 255, 0, 192
CB, SLV Trasv INV, 0, 128, 192, 210, 210, 210, 93, 255, 87
CB, SLV Vert INV, 128, 192, 0, 255, 255, 255, 255, 192, 87
CB, SLC Long INV, 0, 128, 128, 255, 192, 160, 212, 160, 255
CB, SLC Trasv INV, 255, 192, 160, 255, 87, 87, 0, 192, 192
MV, Fatica V.ILL., 255, 87, 87, 255, 87, 87, 255, 255, 87
MV, Fatica DANN.ACC., 0, 157, 192, 148, 87, 255, 85, 0, 192
CB, SLC Vert INV, 163, 255, 160, 255, 87, 128, 255, 87, 87
CB, Mobili SLU INV, 160, 192, 255, 146, 0, 255, 255, 160, 255
CB, Mobili SLE INV, 255, 87, 128, 192, 0, 192, 93, 255, 87
CB, GEN SLU Mobili, 210, 210, 210, 255, 128, 0, 163, 255, 160
CB, GEN SLU Vento, 160, 255, 255, 128, 192, 0, 192, 0, 192
CB, GEN SLU Frenamento, 255, 128, 0, 0, 192, 128, 255, 192, 87
CB, GEN SLU Termico, 192, 192, 0, 0, 128, 128, 85, 0, 192
CB, GEN SLD Long, 0, 128, 192, 148, 87, 255, 85, 0, 192
CB, GEN SLD Trasv, 192, 0, 192, 93, 255, 87, 255, 160, 255
CB, GEN SLD Vert, 163, 255, 160, 78, 0, 255, 85, 192, 0
CB, GEN SLV Long, 255, 255, 87, 192, 192, 192, 192, 72, 0
CB, GEN SLV Trasv, 255, 0, 192, 212, 160, 255, 85, 0, 192
CB, GEN SLV Vert, 210, 210, 210, 160, 255, 255, 85, 192, 0
CB, GEN SLC Long, 0, 128, 128, 160, 255, 255, 78, 0, 255
CB, GEN SLC Trasv, 0, 192, 128, 255, 0, 128, 163, 255, 160
CB, GEN SLC Vert, 93, 255, 87, 85, 0, 192, 78, 0, 255
CB, GEN RARA Mobili, 255, 87, 128, 0, 192, 192, 255, 255, 255
CB, GEN RARA Vento, 212, 160, 255, 255, 192, 160, 255, 87, 87
CB, GEN RARA Frenam, 255, 87, 87, 255, 0, 128, 163, 160, 255
CB, GEN RARA Termico, 146, 0, 255, 255, 192, 160, 192, 128, 0
CB, GEN FREQ Mobili, 210, 210, 210, 93, 255, 87, 212, 160, 255
CB, GEN FREQ Vento, 85, 192, 0, 78, 0, 255, 93, 255, 87
CB, GEN FREQ Termico, 160, 255, 255, 85, 192, 0, 146, 0, 255
CB, GEN Q.P., 192, 0, 128, 255, 255, 255, 163, 255, 160
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 CBS, Vento Strutture (Y-), 255, 255, 255, 192, 192, 192, 192, 192, 192
 CBS, Vento Mobili (Y-), 163, 255, 160, 255, 87, 128, 255, 0, 128
 CBS, Frenamento (X-), 255, 0, 128, 0, 192, 192, 85, 192, 0
 CBS, Termico unif. -15°, 192, 192, 0, 163, 255, 160, 0, 128, 128
 CBS, Termico diff. -5°/H, 192, 128, 0, 255, 0, 192, 255, 87, 87
 CBS, SLV Long (X-), 85, 192, 0, 255, 87, 87, 192, 192, 0
 CBS, SLV Trasv (Y-), 85, 192, 0, 146, 0, 255, 0, 128, 128
 CBS, SLV Vert (Z-), 255, 192, 87, 255, 87, 128, 0, 192, 128
 CBS, Vento Strutture INV, 146, 0, 255, 78, 0, 255, 255, 160, 255
 CBS, Vento Mobili INV, 192, 128, 0, 192, 72, 0, 255, 255, 87
 CBS, Frenamento INV, 255, 87, 87, 0, 192, 128, 163, 160, 255
 CBS, Termico unif. INV, 192, 72, 0, 212, 160, 255, 0, 128, 192
 CBS, Termico diff. INV, 255, 87, 128, 210, 210, 210, 160, 192, 255
 CBS, SLV Long INV, 192, 0, 128, 255, 255, 87, 85, 0, 192
 CBS, SLV Trasv INV, 0, 192, 128, 255, 0, 192, 163, 255, 160
 CBS, SLV Vert INV, 0, 192, 128, 255, 255, 87, 128, 192, 0
 CBS, Mobili SLU INV, 255, 255, 255, 0, 128, 255, 163, 160, 255
 CBS, Mobili SLE INV, 255, 255, 87, 0, 128, 255, 163, 160, 255
 CBS, ST SLU Mobili, 78, 0, 255, 255, 255, 255, 255, 192, 87
 CBS, ST SLU Vento, 192, 0, 192, 212, 160, 255, 255, 255, 255
 CBS, ST SLU Frenamento, 192, 192, 192, 0, 128, 57, 255, 160, 255
 CBS, ST SLU Termico, 160, 192, 255, 192, 128, 0, 146, 0, 255
 CBS, ST SLV Long, 255, 128, 0, 210, 210, 210, 192, 128, 0
 CBS, ST SLV Trasv, 255, 0, 128, 255, 192, 87, 160, 192, 255
 CBS, ST SLV Vert, 0, 192, 128, 0, 128, 192, 0, 128, 128
 CBS, ST FATICA VITA ILL., 0, 192, 128, 192, 192, 192, 0, 128, 57
 CBS, ST FATICA DANN.ACC., 210, 210, 210, 192, 192, 192, 192, 192, 0
 CBS, ST RARA Mobili, 255, 0, 128, 146, 0, 255, 255, 0, 192
 CBS, ST RARA Vento, 78, 0, 255, 160, 192, 255, 255, 192, 160
 CBC, FATICA VITA ILL., 128, 192, 0, 192, 72, 0, 0, 128, 128
 CB, GEN SLU INV, 255, 255, 255, 163, 160, 255, 255, 255, 255
 CB, GEN SLD INV, 255, 255, 255, 255, 255, 87, 0, 192, 192
 CB, GEN SLV INV, 0, 192, 192, 192, 0, 192, 0, 128, 255
 CB, GEN SLC INV, 160, 192, 255, 210, 210, 210, 210, 210, 210
 CB, GEN RARA INV, 0, 128, 57, 0, 157, 192, 210, 210, 210
 CB, GEN FREQ INV, 0, 192, 128, 128, 192, 0, 255, 87, 87
 CBS, ST RARA Frenamento, 78, 0, 255, 0, 157, 192, 192, 0, 128
 CBS, ST RARA Termico, 160, 192, 255, 93, 255, 87, 85, 0, 192
 CBS, ST FREQ Mobili, 163, 255, 160, 192, 192, 0, 0, 128, 128
 CBS, ST FREQ Vento, 192, 192, 192, 85, 192, 0, 0, 128, 128
 CBS, ST FREQ Termico, 192, 0, 128, 255, 87, 128, 146, 0, 255
 CBS, ST Q.P., 255, 255, 87, 146, 0, 255, 160, 192, 255
 CB, VENTO TOT INV, 128, 192, 0, 0, 128, 128, 85, 0, 192
 CB, GEN SLU/SLV INV, 163, 160, 255, 255, 255, 255, 0, 192, 128
 CS, Erection Load 1, 160, 255, 255, 160, 192, 255, 255, 192, 87
 CS, Erection Load 2, 0, 128, 255, 192, 72, 0, 192, 72, 0
 CS, Erection Load 3, 255, 255, 87, 255, 255, 255, 192, 192, 192
 CS, Tendon Primary, 0, 128, 255, 255, 160, 255, 93, 255, 87

*ANAL-CTRL
   YES, YES, 10, 0.001, NO, YES, YES, NO, NO, NO, NO

*EIGEN-CTRL    ; Eigenvalue Analysis Control
   RITZ, NO, 0
   GROUND, ACCX, 10, GROUND, ACCY, 10, GROUND, ACCZ, 20

*MOVE-CTRL    ; Moving Load Analysis Control
   EXACT, ALL, 0, 10, 1, 0, 1, 0, 0.8, NODAL, NO, AXIAL, YES,   YES, NO, ,   YES, NO, ,   YES, NO, , 10, 1,
8.5

*DGN-MATL    ; Modify Steel(Concrete) Material
    1, STEEL, S355W             , 1, EN05(S)    ,            ,S355W
    2, CONC , C32/40 SOL.TRASV  , 2, 0, NO, 1, , , , 0, 0, 0, NO, 0, 0
    3, CONC , C28/35 PILE       , 1, NTC08(RC)  ,            ,C28/35        , NO, 1, , , , 0, 0, 19600, NO,
0, 0
    4, CONC , C32/40 SOLETTA    , 2, 0, NO, 1, , , , 0, 0, 0, NO, 0, 0
    5, SRC  , COMPOSITO         , 1, EN05(S)    ,            ,S355W         ,\
                                  1, NTC08(RC)  ,            , C32/40        , NTC08(RC), B450C, B450C, , 0,
 \
0.0000e+000,     0,\
, 0, 0,\
0, 0, 0,\
0, 0, 0,\
0, 0, 0,\
0, 0, 0,\
0.0000e+000,     0,\
, 0, 0,\
0, 0, 0,\
```

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0, 0, 0,\
0, 0, 0,\
0, 0, 0,\
0.0000e+000,      0,\
, 0, 0,\
0, 0, 0,\
0, 0, 0,\
0, 0, 0,\
0, 0, 0,\


*DGN-REBAR-PSC
   SECT=1, YES, NO, NO
        NO, , , , NO, , , , , , NO, , , , NO, , , NO, ,
        I, P16, 16, 0, 0, 0, 0.05, 0.2, 2
        I, P16, 16, 0, 0, 0, 0.22, 0.2, 2
        J, P16, 16, 0, 0, 0, 0.05, 0.2, 2
        J, P16, 16, 0, 0, 0, 0.22, 0.2, 2
   SECT=2, YES, NO, NO
        NO, , , , NO, , , , , , NO, , , , NO, , , NO, ,
        I, P16, 16, 0, 0, 0, 0.05, 0.2, 2
        I, P16, 16, 0, 0, 0, 0.22, 0.2, 2
        J, P16, 16, 0, 0, 0, 0.05, 0.2, 2
        J, P16, 16, 0, 0, 0, 0.22, 0.2, 2
   SECT=3, YES, NO, NO
        NO, , , , NO, , , , , , NO, , , , NO, , , NO, ,
        I, P16, 15, 0, 0, 0, 0.22, 0.2, 2
        I, P16, 15, 0, 0, 0, 0.05, 0.2, 2
        J, P16, 15, 0, 0, 0, 0.22, 0.2, 2
        J, P16, 15, 0, 0, 0, 0.05, 0.2, 2
   SECT=4, YES, NO, NO
        NO, , , , NO, , , , , , NO, , , , NO, , , NO, ,
        I, P16, 15, 0, 0, 0, 0.05, 0.2, 2
        I, P16, 15, 0, 0, 0, 0.22, 0.2, 2
        J, P16, 15, 0, 0, 0, 0.05, 0.2, 2
        J, P16, 15, 0, 0, 0, 0.22, 0.2, 2
   SECT=5, YES, NO, YES
        NO, , , , NO, , , , , , NO, , , , NO, , , NO, ,
        I, P20, 32, 0, 0, 0, 0.05, 0.1, 2
        I, P20, 32, 0, 0, 0, 0.22, 0.1, 2
        J, P20, 32, 0, 0, 0, 0.05, 0.1, 2
        J, P20, 32, 0, 0, 0, 0.22, 0.1, 2
   SECT=6, YES, NO, YES
        NO, , , , NO, , , , , , NO, , , , NO, , , NO, ,
        I, P20, 32, 0, 0, 0, 0.22, 0.1, 2
        I, P20, 32, 0, 0, 0, 0.05, 0.1, 2
        J, P20, 32, 0, 0, 0, 0.22, 0.1, 2
        J, P20, 32, 0, 0, 0, 0.05, 0.1, 2
   SECT=7, YES, NO, NO
        NO, , , , NO, , , , , , NO, , , , NO, , , NO, ,
        I, P20, 16, 0, 0, 0, 0.22, 0.2, 2
        I, P20, 16, 0, 0, 0, 0.05, 0.2, 2
        J, P20, 16, 0, 0, 0, 0.22, 0.2, 2
        J, P20, 16, 0, 0, 0, 0.05, 0.2, 2
   SECT=8, YES, NO, NO
        NO, , , , NO, , , , , , NO, , , , NO, , , NO, ,
        I, P16, 16, 0, 0, 0, 0.05, 0.2, 2
        I, P16, 16, 0, 0, 0, 0.22, 0.2, 2
        J, P16, 16, 0, 0, 0, 0.05, 0.2, 2
        J, P16, 16, 0, 0, 0, 0.22, 0.2, 2
   SECT=9, YES, NO, YES
        NO, , , , NO, , , , , , NO, , , , NO, , , NO, ,
        I, P20, 29, 0, 0, 0, 0.22, 0.1, 2
        I, P20, 29, 0, 0, 0, 0.05, 0.1, 2
        J, P20, 29, 0, 0, 0, 0.22, 0.1, 2
        J, P20, 29, 0, 0, 0, 0.05, 0.1, 2
   SECT=10, YES, NO, YES
        NO, , , , NO, , , , , , NO, , , , NO, , , NO, ,
        I, P20, 29, 0, 0, 0, 0.05, 0.1, 2
        I, P20, 29, 0, 0, 0, 0.22, 0.1, 2
        J, P20, 29, 0, 0, 0, 0.05, 0.1, 2
        J, P20, 29, 0, 0, 0, 0.22, 0.1, 2
   SECT=11, YES, NO, NO
        NO, , , , NO, , , , , , NO, , , , NO, , , NO, ,
        I, P20, 16, 0, 0, 0, 0.05, 0.2, 2
        I, P20, 16, 0, 0, 0, 0.22, 0.2, 2
        J, P20, 16, 0, 0, 0, 0.05, 0.2, 2
        J, P20, 16, 0, 0, 0, 0.22, 0.2, 2
```

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   SECT=12, YES, NO, NO
        NO, , , , NO, , , , , , NO, , , , NO, , , NO, ,
        I, P20, 15, 0, 0, 0, 0.22, 0.2, 2
        I, P20, 15, 0, 0, 0, 0.05, 0.2, 2
        J, P20, 15, 0, 0, 0, 0.22, 0.2, 2
        J, P20, 15, 0, 0, 0, 0.05, 0.2, 2
   SECT=13, YES, NO, NO
        NO, , , , NO, , , , , , NO, , , , NO, , , NO, ,
        I, P16, 15, 0, 0, 0, 0.05, 0.2, 2
        I, P16, 15, 0, 0, 0, 0.22, 0.2, 2
        J, P16, 15, 0, 0, 0, 0.05, 0.2, 2
        J, P16, 15, 0, 0, 0, 0.22, 0.2, 2
   SECT=14, YES, NO, NO
        NO, , , , NO, , , , , , NO, , , , NO, , , NO, ,
        I, P20, 15, 0, 0, 0, 0.22, 0.2, 2
        I, P20, 15, 0, 0, 0, 0.05, 0.2, 2
        J, P20, 15, 0, 0, 0, 0.22, 0.2, 2
        J, P20, 15, 0, 0, 0, 0.05, 0.2, 2
   SECT=16, YES, NO, YES
        NO, , , , NO, , , , , , NO, , , , NO, , , NO, ,
        I, P20, 32, 0, 0, 0, 0.05, 0.1, 2
        I, P20, 32, 0, 0, 0, 0.22, 0.1, 2
        J, P20, 32, 0, 0, 0, 0.05, 0.1, 2
        J, P20, 32, 0, 0, 0, 0.22, 0.1, 2
   SECT=21, YES, NO, YES
        NO, , , , NO, , , , , , NO, , , , NO, , , NO, ,
        I, P20, 29, 0, 0, 0, 0.22, 0.1, 2
        I, P20, 29, 0, 0, 0, 0.05, 0.1, 2
        J, P20, 29, 0, 0, 0, 0.22, 0.1, 2
        J, P20, 29, 0, 0, 0, 0.05, 0.1, 2

*DGN-TRANS_STIFFENER    ; Transverse Stiffener of Element
   ELEM=101, YES
        I, YES, NO, NO, 0, 0.2, 0.015, 5, 0, 0
   ELEM=102, YES
        I, YES, NO, NO, 0, 0.2, 0.015, 5, 0, 0
   ELEM=103, YES
        I, YES, NO, NO, 0, 0.2, 0.015, 5, 0, 0
   ELEM=104, YES
        I, YES, NO, NO, 0, 0.2, 0.015, 5, 0, 0
   ELEM=105, YES
        I, YES, NO, NO, 0, 0.2, 0.015, 5, 0, 0
   ELEM=106, YES
        I, YES, NO, NO, 0, 0.2, 0.015, 5, 0, 0
   ELEM=107, YES
        I, YES, NO, NO, 0, 0.2, 0.015, 5, 0, 0
   ELEM=108, YES
        I, YES, NO, NO, 0, 0.2, 0.015, 5, 0, 0
   ELEM=109, YES
        I, YES, NO, NO, 0, 0.2, 0.015, 5, 0, 0
   ELEM=110, YES
        I, YES, NO, NO, 0, 0.2, 0.015, 3, 0, 0
   ELEM=111, YES
        I, YES, NO, NO, 0, 0.2, 0.015, 3, 0, 0
   ELEM=112, YES
        I, YES, NO, NO, 0, 0.2, 0.015, 3, 0, 0
   ELEM=113, YES
        I, YES, NO, NO, 0, 0.2, 0.015, 3, 0, 0
   ELEM=114, YES
        I, YES, NO, NO, 0, 0.2, 0.015, 3, 0, 0
   ELEM=115, YES
        I, YES, NO, NO, 0, 0.2, 0.015, 3, 0, 0
   ELEM=116, YES
        I, YES, NO, NO, 0, 0.2, 0.015, 5.2, 0, 0
   ELEM=117, YES
        I, YES, NO, NO, 0, 0.2, 0.015, 5.2, 0, 0
   ELEM=118, YES
        I, YES, NO, NO, 0, 0.2, 0.015, 5.2, 0, 0
   ELEM=119, YES
        I, YES, NO, NO, 0, 0.2, 0.015, 5.2, 0, 0
   ELEM=120, YES
        I, YES, NO, NO, 0, 0.2, 0.015, 5.2, 0, 0
   ELEM=121, YES
        I, YES, NO, NO, 0, 0.2, 0.015, 5.2, 0, 0
   ELEM=122, YES
        I, YES, NO, NO, 0, 0.2, 0.015, 5.2, 0, 0
   ELEM=123, YES
        I, YES, NO, NO, 0, 0.2, 0.015, 5.2, 0, 0
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ELEM=124, YES
      I, YES, NO, NO, 0, 0.2, 0.015, 5.2, 0, 0
ELEM=125, YES
      I, YES, NO, NO, 0, 0.2, 0.015, 5.2, 0, 0
ELEM=126, YES
      I, YES, NO, NO, 0, 0.2, 0.015, 3, 0, 0
ELEM=127, YES
      I, YES, NO, NO, 0, 0.2, 0.015, 3, 0, 0
ELEM=128, YES
      I, YES, NO, NO, 0, 0.2, 0.015, 3, 0, 0
ELEM=129, YES
      I, YES, NO, NO, 0, 0.2, 0.015, 3, 0, 0
ELEM=130, YES
      I, YES, NO, NO, 0, 0.2, 0.015, 3, 0, 0
ELEM=131, YES
      I, YES, NO, NO, 0, 0.2, 0.015, 3, 0, 0
ELEM=132, YES
      I, YES, NO, NO, 0, 0.2, 0.015, 5, 0, 0
ELEM=133, YES
      I, YES, NO, NO, 0, 0.2, 0.015, 5, 0, 0
ELEM=134, YES
      I, YES, NO, NO, 0, 0.2, 0.015, 5, 0, 0
ELEM=135, YES
      I, YES, NO, NO, 0, 0.2, 0.015, 5, 0, 0
ELEM=136, YES
      I, YES, NO, NO, 0, 0.2, 0.015, 5, 0, 0
ELEM=137, YES
      I, YES, NO, NO, 0, 0.2, 0.015, 5, 0, 0
ELEM=138, YES
      I, YES, NO, NO, 0, 0.2, 0.015, 5, 0, 0
ELEM=139, YES
      I, YES, NO, NO, 0, 0.2, 0.015, 5, 0, 0
ELEM=140, YES
      I, YES, NO, NO, 0, 0.2, 0.015, 5, 0, 0
ELEM=201, YES
      I, YES, NO, NO, 1, 0.2, 0.015, 5, 0, 0
ELEM=202, YES
      I, YES, NO, NO, 1, 0.2, 0.015, 5, 0, 0
ELEM=203, YES
      I, YES, NO, NO, 1, 0.2, 0.015, 5, 0, 0
ELEM=204, YES
      I, YES, NO, NO, 1, 0.2, 0.015, 5, 0, 0
ELEM=205, YES
      I, YES, NO, NO, 1, 0.2, 0.015, 5, 0, 0
ELEM=206, YES
      I, YES, NO, NO, 1, 0.2, 0.015, 5, 0, 0
ELEM=207, YES
      I, YES, NO, NO, 1, 0.2, 0.015, 5, 0, 0
ELEM=208, YES
      I, YES, NO, NO, 1, 0.2, 0.015, 5, 0, 0
ELEM=209, YES
      I, YES, NO, NO, 1, 0.2, 0.015, 5, 0, 0
ELEM=210, YES
      I, YES, NO, NO, 1, 0.2, 0.015, 3, 0, 0
ELEM=211, YES
      I, YES, NO, NO, 1, 0.2, 0.015, 3, 0, 0
ELEM=212, YES
      I, YES, NO, NO, 1, 0.2, 0.015, 3, 0, 0
ELEM=213, YES
      I, YES, NO, NO, 1, 0.2, 0.015, 3, 0, 0
ELEM=214, YES
      I, YES, NO, NO, 1, 0.2, 0.015, 3, 0, 0
ELEM=215, YES
      I, YES, NO, NO, 1, 0.2, 0.015, 3, 0, 0
ELEM=216, YES
      I, YES, NO, NO, 1, 0.2, 0.015, 5.2, 0, 0
ELEM=217, YES
      I, YES, NO, NO, 1, 0.2, 0.015, 5.2, 0, 0
ELEM=218, YES
      I, YES, NO, NO, 1, 0.2, 0.015, 5.2, 0, 0
ELEM=219, YES
      I, YES, NO, NO, 1, 0.2, 0.015, 5.2, 0, 0
ELEM=220, YES
      I, YES, NO, NO, 1, 0.2, 0.015, 5.2, 0, 0
ELEM=221, YES
      I, YES, NO, NO, 1, 0.2, 0.015, 5.2, 0, 0
ELEM=222, YES
      I, YES, NO, NO, 1, 0.2, 0.015, 5.2, 0, 0
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ELEM=223, YES
      I, YES, NO, NO, 1, 0.2, 0.015, 5.2, 0, 0
ELEM=224, YES
      I, YES, NO, NO, 1, 0.2, 0.015, 5.2, 0, 0
ELEM=225, YES
      I, YES, NO, NO, 1, 0.2, 0.015, 3, 0, 0
ELEM=226, YES
      I, YES, NO, NO, 1, 0.2, 0.015, 3, 0, 0
ELEM=227, YES
      I, YES, NO, NO, 1, 0.2, 0.015, 3, 0, 0
ELEM=228, YES
      I, YES, NO, NO, 1, 0.2, 0.015, 3, 0, 0
ELEM=229, YES
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ELEM=230, YES
      I, YES, NO, NO, 1, 0.2, 0.015, 3, 0, 0
ELEM=231, YES
      I, YES, NO, NO, 1, 0.2, 0.015, 3, 0, 0
ELEM=232, YES
      I, YES, NO, NO, 1, 0.2, 0.015, 5, 0, 0
ELEM=233, YES
      I, YES, NO, NO, 1, 0.2, 0.015, 5, 0, 0
ELEM=234, YES
      I, YES, NO, NO, 1, 0.2, 0.015, 5, 0, 0
ELEM=235, YES
      I, YES, NO, NO, 1, 0.2, 0.015, 5, 0, 0
ELEM=236, YES
      I, YES, NO, NO, 1, 0.2, 0.015, 5, 0, 0
ELEM=237, YES
      I, YES, NO, NO, 1, 0.2, 0.015, 5, 0, 0
ELEM=238, YES
      I, YES, NO, NO, 1, 0.2, 0.015, 5, 0, 0
ELEM=239, YES
      I, YES, NO, NO, 1, 0.2, 0.015, 5, 0, 0
ELEM=240, YES
      I, YES, NO, NO, 1, 0.2, 0.015, 5, 0, 0
ELEM=301, YES
      I, YES, NO, NO, 1, 0.2, 0.015, 5, 0, 0
ELEM=302, YES
      I, YES, NO, NO, 1, 0.2, 0.015, 5, 0, 0
ELEM=303, YES
      I, YES, NO, NO, 1, 0.2, 0.015, 5, 0, 0
ELEM=304, YES
      I, YES, NO, NO, 1, 0.2, 0.015, 5, 0, 0
ELEM=305, YES
      I, YES, NO, NO, 1, 0.2, 0.015, 5, 0, 0
ELEM=306, YES
      I, YES, NO, NO, 1, 0.2, 0.015, 5, 0, 0
ELEM=307, YES
      I, YES, NO, NO, 1, 0.2, 0.015, 5, 0, 0
ELEM=308, YES
      I, YES, NO, NO, 1, 0.2, 0.015, 5, 0, 0
ELEM=309, YES
      I, YES, NO, NO, 1, 0.2, 0.015, 5, 0, 0
ELEM=310, YES
      I, YES, NO, NO, 1, 0.2, 0.015, 3, 0, 0
ELEM=311, YES
      I, YES, NO, NO, 1, 0.2, 0.015, 3, 0, 0
ELEM=312, YES
      I, YES, NO, NO, 1, 0.2, 0.015, 3, 0, 0
ELEM=313, YES
      I, YES, NO, NO, 1, 0.2, 0.015, 3, 0, 0
ELEM=314, YES
      I, YES, NO, NO, 1, 0.2, 0.015, 3, 0, 0
ELEM=315, YES
      I, YES, NO, NO, 1, 0.2, 0.015, 3, 0, 0
ELEM=316, YES
      I, YES, NO, NO, 1, 0.2, 0.015, 5.2, 0, 0
ELEM=317, YES
      I, YES, NO, NO, 1, 0.2, 0.015, 5.2, 0, 0
ELEM=318, YES
      I, YES, NO, NO, 1, 0.2, 0.015, 5.2, 0, 0
ELEM=319, YES
      I, YES, NO, NO, 1, 0.2, 0.015, 5.2, 0, 0
ELEM=320, YES
      I, YES, NO, NO, 1, 0.2, 0.015, 5.2, 0, 0
ELEM=321, YES
      I, YES, NO, NO, 1, 0.2, 0.015, 5.2, 0, 0
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ELEM=322, YES
      I, YES, NO, NO, 1, 0.2, 0.015, 5.2, 0, 0
ELEM=323, YES
      I, YES, NO, NO, 1, 0.2, 0.015, 5.2, 0, 0
ELEM=324, YES
      I, YES, NO, NO, 1, 0.2, 0.015, 5.2, 0, 0
ELEM=325, YES
      I, YES, NO, NO, 1, 0.2, 0.015, 3, 0, 0
ELEM=326, YES
      I, YES, NO, NO, 1, 0.2, 0.015, 3, 0, 0
ELEM=327, YES
      I, YES, NO, NO, 1, 0.2, 0.015, 3, 0, 0
ELEM=328, YES
      I, YES, NO, NO, 1, 0.2, 0.015, 3, 0, 0
ELEM=329, YES
      I, YES, NO, NO, 1, 0.2, 0.015, 3, 0, 0
ELEM=330, YES
      I, YES, NO, NO, 1, 0.2, 0.015, 3, 0, 0
ELEM=331, YES
      I, YES, NO, NO, 1, 0.2, 0.015, 3, 0, 0
ELEM=332, YES
      I, YES, NO, NO, 1, 0.2, 0.015, 5, 0, 0
ELEM=333, YES
      I, YES, NO, NO, 1, 0.2, 0.015, 5, 0, 0
ELEM=334, YES
      I, YES, NO, NO, 1, 0.2, 0.015, 5, 0, 0
ELEM=335, YES
      I, YES, NO, NO, 1, 0.2, 0.015, 5, 0, 0
ELEM=336, YES
      I, YES, NO, NO, 1, 0.2, 0.015, 5, 0, 0
ELEM=337, YES
      I, YES, NO, NO, 1, 0.2, 0.015, 5, 0, 0
ELEM=338, YES
      I, YES, NO, NO, 1, 0.2, 0.015, 5, 0, 0
ELEM=339, YES
      I, YES, NO, NO, 1, 0.2, 0.015, 5, 0, 0
ELEM=340, YES
      I, YES, NO, NO, 1, 0.2, 0.015, 5, 0, 0
ELEM=401, YES
      I, YES, NO, NO, 0, 0.2, 0.015, 5, 0, 0
ELEM=402, YES
      I, YES, NO, NO, 0, 0.2, 0.015, 5, 0, 0
ELEM=403, YES
      I, YES, NO, NO, 0, 0.2, 0.015, 5, 0, 0
ELEM=404, YES
      I, YES, NO, NO, 0, 0.2, 0.015, 5, 0, 0
ELEM=405, YES
      I, YES, NO, NO, 0, 0.2, 0.015, 5, 0, 0
ELEM=406, YES
      I, YES, NO, NO, 0, 0.2, 0.015, 5, 0, 0
ELEM=407, YES
      I, YES, NO, NO, 0, 0.2, 0.015, 5, 0, 0
ELEM=408, YES
      I, YES, NO, NO, 0, 0.2, 0.015, 5, 0, 0
ELEM=409, YES
      I, YES, NO, NO, 0, 0.2, 0.015, 5, 0, 0
ELEM=410, YES
      I, YES, NO, NO, 0, 0.2, 0.015, 3, 0, 0
ELEM=411, YES
      I, YES, NO, NO, 0, 0.2, 0.015, 3, 0, 0
ELEM=412, YES
      I, YES, NO, NO, 0, 0.2, 0.015, 3, 0, 0
ELEM=413, YES
      I, YES, NO, NO, 0, 0.2, 0.015, 3, 0, 0
ELEM=414, YES
      I, YES, NO, NO, 0, 0.2, 0.015, 3, 0, 0
ELEM=415, YES
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ELEM=416, YES
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ELEM=417, YES
      I, YES, NO, NO, 0, 0.2, 0.015, 5.2, 0, 0
ELEM=418, YES
      I, YES, NO, NO, 0, 0.2, 0.015, 5.2, 0, 0
ELEM=419, YES
      I, YES, NO, NO, 0, 0.2, 0.015, 5.2, 0, 0
ELEM=420, YES
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        I, YES, NO, NO, 0, 0.2, 0.015, 5.2, 0, 0
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   ELEM=425, YES
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   ELEM=428, YES
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   ELEM=433, YES
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   ELEM=435, YES
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   ELEM=436, YES
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   ELEM=437, YES
        I, YES, NO, NO, 0, 0.2, 0.015, 5, 0, 0
   ELEM=438, YES
        I, YES, NO, NO, 0, 0.2, 0.015, 5, 0, 0
   ELEM=439, YES
        I, YES, NO, NO, 0, 0.2, 0.015, 5, 0, 0
   ELEM=440, YES
        I, YES, NO, NO, 0, 0.2, 0.015, 5, 0, 0

*DGN-SHEAR_CONNECTOR    ; Shear Connector of Element
   ELEM=101, YES
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   ELEM=102, YES
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   ELEM=103, YES
        I, YES, 4, 450000, 0.0222, 0.175, 0.1, 0.2
   ELEM=104, YES
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   ELEM=105, YES
        I, YES, 3, 450000, 0.0222, 0.175, 0.15, 0.2
   ELEM=106, YES
        I, YES, 3, 450000, 0.0222, 0.175, 0.15, 0.2
   ELEM=107, YES
        I, YES, 4, 450000, 0.0222, 0.175, 0.1, 0.2
   ELEM=108, YES
        I, YES, 4, 450000, 0.0222, 0.175, 0.1, 0.2
   ELEM=109, YES
        I, YES, 4, 450000, 0.0222, 0.175, 0.1, 0.2
   ELEM=110, YES
        I, YES, 4, 450000, 0.0222, 0.175, 0.1, 0.2
   ELEM=111, YES
        I, YES, 4, 450000, 0.0222, 0.175, 0.1, 0.2
   ELEM=112, YES
        I, YES, 4, 450000, 0.0222, 0.175, 0.1, 0.2
   ELEM=113, YES
        I, YES, 4, 450000, 0.0222, 0.175, 0.1, 0.2
   ELEM=114, YES
        I, YES, 4, 450000, 0.0222, 0.175, 0.1, 0.2
   ELEM=115, YES
        I, YES, 4, 450000, 0.0222, 0.175, 0.1, 0.2
   ELEM=116, YES
        I, YES, 4, 450000, 0.0222, 0.175, 0.1, 0.2
   ELEM=117, YES
        I, YES, 4, 450000, 0.0222, 0.175, 0.1, 0.2
   ELEM=118, YES
        I, YES, 4, 450000, 0.0222, 0.175, 0.1, 0.2
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ELEM=119, YES
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ELEM=415, YES
      I, YES, 4, 450000, 0.0222, 0.175, 0.1, 0.2
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   ELEM=424, YES
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   ELEM=437, YES
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   ELEM=438, YES
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   ELEM=440, YES
        I, YES, 4, 450000, 0.0222, 0.175, 0.1, 0.2

*DGN-POSITION    ; Design Position of Element
   101to140 201to240 301to340 401to440, 2

*DGN-DESIGN OUTPUT    ; Composite Position for Design Output
   208, 1

*DGN-PLATEGIRDER    ; Composite Plate Girder Design
  1901, YES, YES, YES, YES, YES, NO, YES, YES, \
    1.5, 1.15, 1.05, 1.1, 1.25, 1, 1.15, 1, 50, 1, 0.6, 0.45, 0.8, 0.6, 0.95, 0.8, 0.9, 1, 1, 0.85, 1, 1.25,
 1.25, 1.25, 1.25, 1.25, 1, 0, YES, YES, YES, YES, YES, YES, YES, 0, NO, YES, NO, NO

*DGN-PLATE-LT-BUCKLING   ; Composite Girder Lateral-Torsional Buckling
   ELEM=101, YES
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   ELEM=102, YES
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   ELEM=103, YES
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   ELEM=104, YES
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   ELEM=105, YES
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   ELEM=106, YES
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   ELEM=107, YES
        I, YES, 0.1, 0.01, 2, 3.2
   ELEM=108, YES
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ELEM=109, YES
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ELEM=110, YES
      I, YES, 0.1, 0.01, 2, 3.2
ELEM=111, YES
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ELEM=112, YES
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ELEM=113, YES
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ELEM=114, YES
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ELEM=115, YES
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ELEM=121, YES
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ELEM=122, YES
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ELEM=123, YES
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ELEM=124, YES
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ELEM=125, YES
      I, YES, 0.1, 0.01, 2, 3.2
ELEM=126, YES
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ELEM=128, YES
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ELEM=206, YES
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ELEM=207, YES
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   ELEM=437, YES
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   ELEM=438, YES
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   ELEM=439, YES
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   ELEM=440, YES
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*DGN-PLATE-FTG   ; Composite Girder Fatigue Resistance
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   ELEM=102, YES
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   ELEM=103, YES
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ELEM=301, YES
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ELEM=340, YES
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ELEM=402, YES
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ELEM=420, YES
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ELEM=439, YES
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        I, YES, 1.1, 1
   ELEM=440, YES
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*K-FACTOR   ; Effective Length Factor
   1014to1019 1022to1027 1030to1035 1038to1043 1110to1422by8 , 0.65, 1.3
   1111to1423by8 1112to1424by8 1113to1425by8 1114to1426by8 , 0.65, 1.3
   1115to1427by8 2009to2014 2017to2022 2025to2030 2033to2038 , 0.65, 1.3
   3001to3361by8 3002to3362by8 3003to3363by8 3004to3364by8 , 0.65, 1.3
   3005to3365by8 3006to3366by8, 0.65, 1.3
   1430to1514by4 1431to1515by4 1432to1516by4 2001to2003 2005to2007 , 0.65, 0.65
   2041to2043 2045to2047, 0.65, 0.65

*DYNAGEN-TABLE    ; DynaGen Table
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0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,
0, 0, 0, 0, 0, 0
Elem, part, Lcom, Type, Sigma_Ed$ser, ALW, Tau_Ed$ser, ALW, SQRT(sigma^2+3tau^2), ALW, Lcom, Type, Sigma_c,
k*fck, Lcom, Type, Sigma_s, k*fsk, , , , , , , , , , , , , , , , , , , , , , , , , , , , , , , , , , , , ,
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 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, YES, YES, NO

*SECTION MANAGER-REBAR    ; Section Manager - Reinforcement
   SECT=1, YES, YES, NO
 2, 2
 1, 0, 0, 0, 16, 0, YES, P16, 0, 2, 0, 0, 0, 0, 0.05, 0.2
 -1.5, 0.268069, 0, 0, 1.5, 0.268069, 0
 1, 0, 0
 1, 0, 0, 0, 16, 0, YES, P16, 0, 2, 0, 0, 0, 0, 0.22, 0.2
 -1.5, 0.0980688, 0, 0, 1.5, 0.0980688, 0
 1, 0, 0
 1, 0, 0, 0, 16, 0, YES, P16, 0, 2, 0, 0, 0, 0, 0.05, 0.2
 -1.5, 0.268069, 0, 0, 1.5, 0.268069, 0
 1, 0, 0
 1, 0, 0, 0, 16, 0, YES, P16, 0, 2, 0, 0, 0, 0, 0.22, 0.2
 -1.5, 0.0980688, 0, 0, 1.5, 0.0980688, 0
 1, 0, 0
 NO, 0, 0, 0, NO, 0, 90, 0, 0, 1, NO, 0, 0, 0, NO, 0, 0, NO, 0, NO
 NO, 0, 0, 0, NO, 0, 90, 0, 0, 1, NO, 0, 0, 0, NO, 0, 0, NO, 0, NO
   SECT=2, YES, YES, NO
 2, 2
 1, 0, 0, 0, 16, 0, YES, P16, 0, 2, 0, 0, 0, 0, 0.05, 0.2
 -1.5, 0.299742, 0, 6.16954e-007, 1.5, 0.299742, 0
 1, 1.61, 0.990523
 1, 0, 0, 0, 16, 0, YES, P16, 0, 2, 0, 0, 0, 0, 0.22, 0.2
 -1.5, 0.129742, 0, 6.16954e-007, 1.5, 0.129742, 0
 1, 1.61, 0.990523
 1, 0, 0, 0, 16, 0, YES, P16, 0, 2, 0, 0, 0, 0, 0.05, 0.2
 -1.5, 0.299742, 0, 6.16954e-007, 1.5, 0.299742, 0
 1, 1.61, 0.990523
 1, 0, 0, 0, 16, 0, YES, P16, 0, 2, 0, 0, 0, 0, 0.22, 0.2
 -1.5, 0.129742, 0, 6.16954e-007, 1.5, 0.129742, 0
 1, 1.61, 0.990523
 NO, 0, 0, 0, NO, 0, 90, 0, 0, 1, NO, 0, 0, 0, NO, 0, 0, NO, 0, NO
 NO, 0, 0, 0, NO, 0, 90, 0, 0, 1, NO, 0, 0, 0, NO, 0, 0, NO, 0, NO
   SECT=3, YES, YES, NO
 2, 2
 1, 0, 0, 0, 15, 0, YES, P16, 0, 2, 0, 0, 0, 0, 0.22, 0.2
 -1.4, 0.109898, 0, 6.16954e-007, 1.4, 0.109898, 0
 1, 1.61, 0.990523
 1, 0, 0, 0, 15, 0, YES, P16, 0, 2, 0, 0, 0, 0, 0.05, 0.2
 -1.4, 0.279898, 0, 6.16954e-007, 1.4, 0.279898, 0
 1, 1.61, 0.990523
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1, 0, 0, 0, 15, 0, YES, P16, 0, 2, 0, 0, 0, 0, 0.22, 0.2
-1.4, 0.109898, 0, 6.16954e-007, 1.4, 0.109898, 0
1, 1.61, 0.990523
1, 0, 0, 0, 15, 0, YES, P16, 0, 2, 0, 0, 0, 0, 0.05, 0.2
-1.4, 0.279898, 0, 6.16954e-007, 1.4, 0.279898, 0
1, 1.61, 0.990523
NO, 0, 0, 0, NO, 0, 90, 0, 0, 1, NO, 0, 0, 0, NO, 0, 0, NO, 0, NO
NO, 0, 0, 0, NO, 0, 90, 0, 0, 1, NO, 0, 0, 0, NO, 0, 0, NO, 0, NO
  SECT=4, YES, YES, NO
2, 2
1, 0, 0, 0, 15, 0, YES, P16, 0, 2, 0, 0, 0, 0, 0.05, 0.2
-1.4, 0.312978, 0, 6.16954e-007, 1.4, 0.312978, 0
1, 1.61, 0.990523
1, 0, 0, 0, 15, 0, YES, P16, 0, 2, 0, 0, 0, 0, 0.22, 0.2
-1.4, 0.142978, 0, 6.16954e-007, 1.4, 0.142978, 0
1, 1.61, 0.990523
1, 0, 0, 0, 15, 0, YES, P16, 0, 2, 0, 0, 0, 0, 0.05, 0.2
-1.4, 0.312978, 0, 6.16954e-007, 1.4, 0.312978, 0
1, 1.61, 0.990523
1, 0, 0, 0, 15, 0, YES, P16, 0, 2, 0, 0, 0, 0, 0.22, 0.2
-1.4, 0.142978, 0, 6.16954e-007, 1.4, 0.142978, 0
1, 1.61, 0.990523
NO, 0, 0, 0, NO, 0, 90, 0, 0, 1, NO, 0, 0, 0, NO, 0, 0, NO, 0, NO
NO, 0, 0, 0, NO, 0, 90, 0, 0, 1, NO, 0, 0, 0, NO, 0, 0, NO, 0, NO
  SECT=5, YES, YES, YES
2, 2
1, 1, 0, 0, 32, 0, YES, P20, 0, 2, 0, 0, 0, 0, 0.05, 0.1
-1.55, 0.328865, 0, 0, 1.55, 0.328865, 0
1, 0, 0
1, 1, 0, 0, 32, 0, YES, P20, 0, 2, 0, 0, 0, 0, 0.22, 0.1
-1.55, 0.158865, 0, 0, 1.55, 0.158865, 0
1, 0, 0
1, 1, 0, 0, 32, 0, YES, P20, 0, 2, 0, 0, 0, 0, 0.05, 0.1
-1.55, 0.590807, 0, 0.261942, 1.55, 0.590807, 0
1, 0, 0.261942
1, 1, 0, 0, 32, 0, YES, P20, 0, 2, 0, 0, 0, 0, 0.22, 0.1
-1.55, 0.420807, 0, 0.261942, 1.55, 0.420807, 0
1, 0, 0.261942
NO, 0, 0, 0, NO, 0, 90, 0, 0, 1, NO, 0, 0, 0, NO, 0, 0, NO, 0, NO
NO, 0, 0, 0, NO, 0, 90, 0, 0, 1, NO, 0, 0, 0, NO, 0, 0, NO, 0, NO
  SECT=6, YES, YES, YES
2, 2
1, 0, 0, 0, 32, 0, YES, P20, 0, 2, 0, 0, 0, 0, 0.22, 0.1
-1.55, 0.420807, 0, 0, 1.55, 0.420807, 0
1, 0, 0
1, 0, 0, 0, 32, 0, YES, P20, 0, 2, 0, 0, 0, 0, 0.05, 0.1
-1.55, 0.590807, 0, 0, 1.55, 0.590807, 0
1, 0, 0
1, 0, 0, 0, 32, 0, YES, P20, 0, 2, 0, 0, 0, 0, 0.22, 0.1
-1.55, 0.158865, 0, -0.261942, 1.55, 0.158865, 0
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1, 0, 0, 0, 32, 0, YES, P20, 0, 2, 0, 0, 0, 0, 0.05, 0.1
-1.55, 0.328865, 0, -0.261942, 1.55, 0.328865, 0
1, 0, -0.261942
NO, 0, 0, 0, NO, 0, 90, 0, 0, 1, NO, 0, 0, 0, NO, 0, 0, NO, 0, NO
NO, 0, 0, 0, NO, 0, 90, 0, 0, 1, NO, 0, 0, 0, NO, 0, 0, NO, 0, NO
  SECT=7, YES, YES, NO
2, 2
1, 0, 0, 0, 16, 0, YES, P20, 0, 2, 0, 0, 0, 0, 0.22, 0.2
-1.5, 0.141273, 0, 0, 1.5, 0.141273, 0
1, 0, 0
1, 0, 0, 0, 16, 0, YES, P20, 0, 2, 0, 0, 0, 0, 0.05, 0.2
-1.5, 0.311273, 0, 0, 1.5, 0.311273, 0
1, 0, 0
1, 0, 0, 0, 16, 0, YES, P20, 0, 2, 0, 0, 0, 0, 0.22, 0.2
-1.5, 0.141273, 0, 0, 1.5, 0.141273, 0
1, 0, 0
1, 0, 0, 0, 16, 0, YES, P20, 0, 2, 0, 0, 0, 0, 0.05, 0.2
-1.5, 0.311273, 0, 0, 1.5, 0.311273, 0
1, 0, 0
NO, 0, 0, 0, NO, 0, 90, 0, 0, 1, NO, 0, 0, 0, NO, 0, 0, NO, 0, NO
NO, 0, 0, 0, NO, 0, 90, 0, 0, 1, NO, 0, 0, 0, NO, 0, 0, NO, 0, NO
  SECT=8, YES, YES, NO
2, 2
1, 0, 0, 0, 16, 0, YES, P16, 0, 2, 0, 0, 0, 0, 0.05, 0.2
-1.5, 0.292524, 0, 0, 1.5, 0.292524, 0
1, 0, 0
1, 0, 0, 0, 16, 0, YES, P16, 0, 2, 0, 0, 0, 0, 0.22, 0.2
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-1.5, 0.122524, 0, 0, 1.5, 0.122524, 0
1, 0, 0
1, 0, 0, 0, 16, 0, YES, P16, 0, 2, 0, 0, 0, 0, 0.05, 0.2
-1.5, 0.292524, 0, 0, 1.5, 0.292524, 0
1, 0, 0
1, 0, 0, 0, 16, 0, YES, P16, 0, 2, 0, 0, 0, 0, 0.22, 0.2
-1.5, 0.122524, 0, 0, 1.5, 0.122524, 0
1, 0, 0
NO, 0, 0, 0, NO, 0, 90, 0, 0, 1, NO, 0, 0, 0, NO, 0, 0, NO, 0, NO
NO, 0, 0, 0, NO, 0, 90, 0, 0, 1, NO, 0, 0, 0, NO, 0, 0, NO, 0, NO
  SECT=9, YES, YES, YES
2, 2
1, 0, 0, 0, 29, 0, YES, P20, 0, 2, 0, 0, 0, 0, 0.22, 0.1
-1.4, 0.172355, 0, 0, 1.4, 0.172355, 0
1, 0, 0
1, 0, 0, 0, 29, 0, YES, P20, 0, 2, 0, 0, 0, 0, 0.05, 0.1
-1.4, 0.342355, 0, 0, 1.4, 0.342355, 0
1, 0, 0
1, 0, 0, 0, 29, 0, YES, P20, 0, 2, 0, 0, 0, 0, 0.22, 0.1
-1.4, 0.445271, 0, 0.272916, 1.4, 0.445271, 0
1, 0, 0.272916
1, 0, 0, 0, 29, 0, YES, P20, 0, 2, 0, 0, 0, 0, 0.05, 0.1
-1.4, 0.615271, 0, 0.272916, 1.4, 0.615271, 0
1, 0, 0.272916
NO, 0, 0, 0, NO, 0, 90, 0, 0, 1, NO, 0, 0, 0, NO, 0, 0, NO, 0, NO
NO, 0, 0, 0, NO, 0, 90, 0, 0, 1, NO, 0, 0, 0, NO, 0, 0, NO, 0, NO
  SECT=10, YES, YES, YES
2, 2
1, 0, 0, 0, 29, 0, YES, P20, 0, 2, 0, 0, 0, 0, 0.05, 0.1
-1.4, 0.615271, 0, 0, 1.4, 0.615271, 0
1, 0, 0
1, 0, 0, 0, 29, 0, YES, P20, 0, 2, 0, 0, 0, 0, 0.22, 0.1
-1.4, 0.445271, 0, 0, 1.4, 0.445271, 0
1, 0, 0
1, 0, 0, 0, 29, 0, YES, P20, 0, 2, 0, 0, 0, 0, 0.05, 0.1
-1.4, 0.342355, 0, -0.272916, 1.4, 0.342355, 0
1, 0, -0.272916
1, 0, 0, 0, 29, 0, YES, P20, 0, 2, 0, 0, 0, 0, 0.22, 0.1
-1.4, 0.172355, 0, -0.272916, 1.4, 0.172355, 0
1, 0, -0.272916
NO, 0, 0, 0, NO, 0, 90, 0, 0, 1, NO, 0, 0, 0, NO, 0, 0, NO, 0, NO
NO, 0, 0, 0, NO, 0, 90, 0, 0, 1, NO, 0, 0, 0, NO, 0, 0, NO, 0, NO
  SECT=11, YES, YES, NO
2, 2
1, 0, 0, 0, 16, 0, YES, P20, 0, 2, 0, 0, 0, 0, 0.05, 0.2
-1.5, 0.311273, 0, -6.65975e-007, 1.5, 0.311273, 0
1, 1.61, 2.02956
1, 0, 0, 0, 16, 0, YES, P20, 0, 2, 0, 0, 0, 0, 0.22, 0.2
-1.5, 0.141273, 0, -6.65975e-007, 1.5, 0.141273, 0
1, 1.61, 2.02956
1, 0, 0, 0, 16, 0, YES, P20, 0, 2, 0, 0, 0, 0, 0.05, 0.2
-1.5, 0.311273, 0, -6.65975e-007, 1.5, 0.311273, 0
1, 1.61, 2.02956
1, 0, 0, 0, 16, 0, YES, P20, 0, 2, 0, 0, 0, 0, 0.22, 0.2
-1.5, 0.141273, 0, -6.65975e-007, 1.5, 0.141273, 0
1, 1.61, 2.02956
NO, 0, 0, 0, NO, 0, 90, 0, 0, 1, NO, 0, 0, 0, NO, 0, 0, NO, 0, NO
NO, 0, 0, 0, NO, 0, 90, 0, 0, 1, NO, 0, 0, 0, NO, 0, 0, NO, 0, NO
  SECT=12, YES, YES, NO
2, 2
1, 0, 0, 0, 15, 0, YES, P20, 0, 2, 0, 0, 0, 0, 0.22, 0.2
-1.4, 0.154793, 0, -6.65975e-007, 1.4, 0.154793, 0
1, 1.61, 2.02956
1, 0, 0, 0, 15, 0, YES, P20, 0, 2, 0, 0, 0, 0, 0.05, 0.2
-1.4, 0.324793, 0, -6.65975e-007, 1.4, 0.324793, 0
1, 1.61, 2.02956
1, 0, 0, 0, 15, 0, YES, P20, 0, 2, 0, 0, 0, 0, 0.22, 0.2
-1.4, 0.154793, 0, -6.65975e-007, 1.4, 0.154793, 0
1, 1.61, 2.02956
1, 0, 0, 0, 15, 0, YES, P20, 0, 2, 0, 0, 0, 0, 0.05, 0.2
-1.4, 0.324793, 0, -6.65975e-007, 1.4, 0.324793, 0
1, 1.61, 2.02956
NO, 0, 0, 0, NO, 0, 90, 0, 0, 1, NO, 0, 0, 0, NO, 0, 0, NO, 0, NO
NO, 0, 0, 0, NO, 0, 90, 0, 0, 1, NO, 0, 0, 0, NO, 0, 0, NO, 0, NO
  SECT=13, YES, YES, NO
2, 2
1, 0, 0, 0, 15, 0, YES, P16, 0, 2, 0, 0, 0, 0, 0.05, 0.2
-1.4, 0.305564, 0, -6.65975e-007, 1.4, 0.305564, 0
```

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 1, 1.61, 2.02956
 1, 0, 0, 0, 15, 0, YES, P16, 0, 2, 0, 0, 0, 0, 0.22, 0.2
 -1.4, 0.135564, 0, -6.65975e-007, 1.4, 0.135564, 0
 1, 1.61, 2.02956
 1, 0, 0, 0, 15, 0, YES, P16, 0, 2, 0, 0, 0, 0, 0.05, 0.2
 -1.4, 0.305564, 0, -6.65975e-007, 1.4, 0.305564, 0
 1, 1.61, 2.02956
 1, 0, 0, 0, 15, 0, YES, P16, 0, 2, 0, 0, 0, 0, 0.22, 0.2
 -1.4, 0.135564, 0, -6.65975e-007, 1.4, 0.135564, 0
 1, 1.61, 2.02956
 NO, 0, 0, 0, NO, 0, 90, 0, 0, 1, NO, 0, 0, 0, NO, 0, 0, NO, 0, NO
 NO, 0, 0, 0, NO, 0, 90, 0, 0, 1, NO, 0, 0, 0, NO, 0, 0, NO, 0, NO
   SECT=14, YES, YES, NO
 2, 2
 1, 0, 0, 0, 15, 0, YES, P20, 0, 2, 0, 0, 0, 0, 0.22, 0.2
 -1.4, 0.154793, 0, -6.65975e-007, 1.4, 0.154793, 0
 1, 1.61, 2.02956
 1, 0, 0, 0, 15, 0, YES, P20, 0, 2, 0, 0, 0, 0, 0.05, 0.2
 -1.4, 0.324793, 0, -6.65975e-007, 1.4, 0.324793, 0
 1, 1.61, 2.02956
 1, 0, 0, 0, 15, 0, YES, P20, 0, 2, 0, 0, 0, 0, 0.22, 0.2
 -1.4, 0.154793, 0, -6.65975e-007, 1.4, 0.154793, 0
 1, 1.61, 2.02956
 1, 0, 0, 0, 15, 0, YES, P20, 0, 2, 0, 0, 0, 0, 0.05, 0.2
 -1.4, 0.324793, 0, -6.65975e-007, 1.4, 0.324793, 0
 1, 1.61, 2.02956
 NO, 0, 0, 0, NO, 0, 90, 0, 0, 1, NO, 0, 0, 0, NO, 0, 0, NO, 0, NO
 NO, 0, 0, 0, NO, 0, 90, 0, 0, 1, NO, 0, 0, 0, NO, 0, 0, NO, 0, NO
   SECT=16, YES, YES, YES
 2, 2
 1, 0, 0, 0, 32, 0, YES, P20, 0, 2, 0, 0, 0, 0, 0.05, 0.1
 -1.55, 0.590807, 0, 0, 1.55, 0.590807, 0
 1, 0, 0
 1, 0, 0, 0, 32, 0, YES, P20, 0, 2, 0, 0, 0, 0, 0.22, 0.1
 -1.55, 0.420807, 0, 0, 1.55, 0.420807, 0
 1, 0, 0
 1, 0, 0, 0, 32, 0, YES, P20, 0, 2, 0, 0, 0, 0, 0.05, 0.1
 -1.55, 0.590807, 0, 0, 1.55, 0.590807, 0
 1, 0, 0
 1, 0, 0, 0, 32, 0, YES, P20, 0, 2, 0, 0, 0, 0, 0.22, 0.1
 -1.55, 0.420807, 0, 0, 1.55, 0.420807, 0
 1, 0, 0
 NO, 0, 0, 0, NO, 0, 90, 0, 0, 1, NO, 0, 0, 0, NO, 0, 0, NO, 0, NO
 NO, 0, 0, 0, NO, 0, 90, 0, 0, 1, NO, 0, 0, 0, NO, 0, 0, NO, 0, NO
   SECT=21, YES, YES, YES
 2, 2
 1, 0, 0, 0, 29, 0, YES, P20, 0, 2, 0, 0, 0, 0, 0.22, 0.1
 -1.4, 0.445271, 0, 0, 1.4, 0.445271, 0
 1, 0, 0
 1, 0, 0, 0, 29, 0, YES, P20, 0, 2, 0, 0, 0, 0, 0.05, 0.1
 -1.4, 0.615271, 0, 0, 1.4, 0.615271, 0
 1, 0, 0
 1, 0, 0, 0, 29, 0, YES, P20, 0, 2, 0, 0, 0, 0, 0.22, 0.1
 -1.4, 0.445271, 0, 0, 1.4, 0.445271, 0
 1, 0, 0
 1, 0, 0, 0, 29, 0, YES, P20, 0, 2, 0, 0, 0, 0, 0.05, 0.1
 -1.4, 0.615271, 0, 0, 1.4, 0.615271, 0
 1, 0, 0
 NO, 0, 0, 0, NO, 0, 90, 0, 0, 1, NO, 0, 0, 0, NO, 0, 0, NO, 0, NO
 NO, 0, 0, 0, NO, 0, 90, 0, 0, 1, NO, 0, 0, 0, NO, 0, 0, NO, 0, NO

*SECTION MANAGER-REBAR DESIGN    ; Section Manager - Reinforcement Design
   SECT=1, YES, YES, NO
 2, 2
 1, 0, 0, 0, 16, 0, YES, P16, 0, 2, 0, 0, 0, 0, 0.05, 0.2
 -1.5, 0.268069, 0, 0, 1.5, 0.268069, 0
 1, 0, 0
 1, 0, 0, 0, 16, 0, YES, P16, 0, 2, 0, 0, 0, 0, 0.22, 0.2
 -1.5, 0.0980688, 0, 0, 1.5, 0.0980688, 0
 1, 0, 0
 1, 0, 0, 0, 16, 0, YES, P16, 0, 2, 0, 0, 0, 0, 0.05, 0.2
 -1.5, 0.268069, 0, 0, 1.5, 0.268069, 0
 1, 0, 0
 1, 0, 0, 0, 16, 0, YES, P16, 0, 2, 0, 0, 0, 0, 0.22, 0.2
 -1.5, 0.0980688, 0, 0, 1.5, 0.0980688, 0
 1, 0, 0
 NO, 0, 0, 0, NO, 0, 90, 0, 0, 1, NO, 0, 0, 0, NO, 0, 0, NO, 0, NO
 NO, 0, 0, 0, NO, 0, 90, 0, 0, 1, NO, 0, 0, 0, NO, 0, 0, NO, 0, NO
```

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  SECT=2, YES, YES, NO
2, 2
1, 0, 0, 0, 16, 0, YES, P16, 0, 2, 0, 0, 0, 0, 0.05, 0.2
-1.5, 0.299742, 0, 6.16954e-007, 1.5, 0.299742, 0
1, 1.61, 0.990523
1, 0, 0, 0, 16, 0, YES, P16, 0, 2, 0, 0, 0, 0, 0.22, 0.2
-1.5, 0.129742, 0, 6.16954e-007, 1.5, 0.129742, 0
1, 1.61, 0.990523
1, 0, 0, 0, 16, 0, YES, P16, 0, 2, 0, 0, 0, 0, 0.05, 0.2
-1.5, 0.299742, 0, 6.16954e-007, 1.5, 0.299742, 0
1, 1.61, 0.990523
1, 0, 0, 0, 16, 0, YES, P16, 0, 2, 0, 0, 0, 0, 0.22, 0.2
-1.5, 0.129742, 0, 6.16954e-007, 1.5, 0.129742, 0
1, 1.61, 0.990523
NO, 0, 0, 0, NO, 0, 90, 0, 0, 1, NO, 0, 0, 0, NO, 0, 0, NO, 0, NO
NO, 0, 0, 0, NO, 0, 90, 0, 0, 1, NO, 0, 0, 0, NO, 0, 0, NO, 0, NO
  SECT=3, YES, YES, NO
2, 2
1, 0, 0, 0, 15, 0, YES, P16, 0, 2, 0, 0, 0, 0, 0.22, 0.2
-1.4, 0.109898, 0, 6.16954e-007, 1.4, 0.109898, 0
1, 1.61, 0.990523
1, 0, 0, 0, 15, 0, YES, P16, 0, 2, 0, 0, 0, 0, 0.05, 0.2
-1.4, 0.279898, 0, 6.16954e-007, 1.4, 0.279898, 0
1, 1.61, 0.990523
1, 0, 0, 0, 15, 0, YES, P16, 0, 2, 0, 0, 0, 0, 0.22, 0.2
-1.4, 0.109898, 0, 6.16954e-007, 1.4, 0.109898, 0
1, 1.61, 0.990523
1, 0, 0, 0, 15, 0, YES, P16, 0, 2, 0, 0, 0, 0, 0.05, 0.2
-1.4, 0.279898, 0, 6.16954e-007, 1.4, 0.279898, 0
1, 1.61, 0.990523
NO, 0, 0, 0, NO, 0, 90, 0, 0, 1, NO, 0, 0, 0, NO, 0, 0, NO, 0, NO
NO, 0, 0, 0, NO, 0, 90, 0, 0, 1, NO, 0, 0, 0, NO, 0, 0, NO, 0, NO
  SECT=4, YES, YES, NO
2, 2
1, 0, 0, 0, 15, 0, YES, P16, 0, 2, 0, 0, 0, 0, 0.05, 0.2
-1.4, 0.312978, 0, 6.16954e-007, 1.4, 0.312978, 0
1, 1.61, 0.990523
1, 0, 0, 0, 15, 0, YES, P16, 0, 2, 0, 0, 0, 0, 0.22, 0.2
-1.4, 0.142978, 0, 6.16954e-007, 1.4, 0.142978, 0
1, 1.61, 0.990523
1, 0, 0, 0, 15, 0, YES, P16, 0, 2, 0, 0, 0, 0, 0.05, 0.2
-1.4, 0.312978, 0, 6.16954e-007, 1.4, 0.312978, 0
1, 1.61, 0.990523
1, 0, 0, 0, 15, 0, YES, P16, 0, 2, 0, 0, 0, 0, 0.22, 0.2
-1.4, 0.142978, 0, 6.16954e-007, 1.4, 0.142978, 0
1, 1.61, 0.990523
NO, 0, 0, 0, NO, 0, 90, 0, 0, 1, NO, 0, 0, 0, NO, 0, 0, NO, 0, NO
NO, 0, 0, 0, NO, 0, 90, 0, 0, 1, NO, 0, 0, 0, NO, 0, 0, NO, 0, NO
  SECT=5, YES, YES, YES
2, 2
1, 1, 0, 0, 32, 0, YES, P20, 0, 2, 0, 0, 0, 0, 0.05, 0.1
-1.55, 0.328865, 0, 0, 1.55, 0.328865, 0
1, 0, 0
1, 1, 0, 0, 32, 0, YES, P20, 0, 2, 0, 0, 0, 0, 0.22, 0.1
-1.55, 0.158865, 0, 0, 1.55, 0.158865, 0
1, 0, 0
1, 1, 0, 0, 32, 0, YES, P20, 0, 2, 0, 0, 0, 0, 0.05, 0.1
-1.55, 0.590807, 0, 0.261942, 1.55, 0.590807, 0
1, 0, 0.261942
1, 1, 0, 0, 32, 0, YES, P20, 0, 2, 0, 0, 0, 0, 0.22, 0.1
-1.55, 0.420807, 0, 0.261942, 1.55, 0.420807, 0
1, 0, 0.261942
NO, 0, 0, 0, NO, 0, 90, 0, 0, 1, NO, 0, 0, 0, NO, 0, 0, NO, 0, NO
NO, 0, 0, 0, NO, 0, 90, 0, 0, 1, NO, 0, 0, 0, NO, 0, 0, NO, 0, NO
  SECT=6, YES, YES, YES
2, 2
1, 0, 0, 0, 32, 0, YES, P20, 0, 2, 0, 0, 0, 0, 0.22, 0.1
-1.55, 0.420807, 0, 0, 1.55, 0.420807, 0
1, 0, 0
1, 0, 0, 0, 32, 0, YES, P20, 0, 2, 0, 0, 0, 0, 0.05, 0.1
-1.55, 0.590807, 0, 0, 1.55, 0.590807, 0
1, 0, 0
1, 0, 0, 0, 32, 0, YES, P20, 0, 2, 0, 0, 0, 0, 0.22, 0.1
-1.55, 0.158865, 0, -0.261942, 1.55, 0.158865, 0
1, 0, -0.261942
1, 0, 0, 0, 32, 0, YES, P20, 0, 2, 0, 0, 0, 0, 0.05, 0.1
-1.55, 0.328865, 0, -0.261942, 1.55, 0.328865, 0
1, 0, -0.261942
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NO, 0, 0, 0, NO, 0, 90, 0, 0, 1, NO, 0, 0, 0, NO, 0, 0, NO, 0, NO
NO, 0, 0, 0, NO, 0, 90, 0, 0, 1, NO, 0, 0, 0, NO, 0, 0, NO, 0, NO
  SECT=7, YES, YES, NO
2, 2
1, 0, 0, 0, 16, 0, YES, P20, 0, 2, 0, 0, 0, 0, 0.22, 0.2
-1.5, 0.141273, 0, 0, 1.5, 0.141273, 0
1, 0, 0
1, 0, 0, 0, 16, 0, YES, P20, 0, 2, 0, 0, 0, 0, 0.05, 0.2
-1.5, 0.311273, 0, 0, 1.5, 0.311273, 0
1, 0, 0
1, 0, 0, 0, 16, 0, YES, P20, 0, 2, 0, 0, 0, 0, 0.22, 0.2
-1.5, 0.141273, 0, 0, 1.5, 0.141273, 0
1, 0, 0
1, 0, 0, 0, 16, 0, YES, P20, 0, 2, 0, 0, 0, 0, 0.05, 0.2
-1.5, 0.311273, 0, 0, 1.5, 0.311273, 0
1, 0, 0
NO, 0, 0, 0, NO, 0, 90, 0, 0, 1, NO, 0, 0, 0, NO, 0, 0, NO, 0, NO
NO, 0, 0, 0, NO, 0, 90, 0, 0, 1, NO, 0, 0, 0, NO, 0, 0, NO, 0, NO
  SECT=8, YES, YES, NO
2, 2
1, 0, 0, 0, 16, 0, YES, P16, 0, 2, 0, 0, 0, 0, 0.05, 0.2
-1.5, 0.292524, 0, 0, 1.5, 0.292524, 0
1, 0, 0
1, 0, 0, 0, 16, 0, YES, P16, 0, 2, 0, 0, 0, 0, 0.22, 0.2
-1.5, 0.122524, 0, 0, 1.5, 0.122524, 0
1, 0, 0
1, 0, 0, 0, 16, 0, YES, P16, 0, 2, 0, 0, 0, 0, 0.05, 0.2
-1.5, 0.292524, 0, 0, 1.5, 0.292524, 0
1, 0, 0
1, 0, 0, 0, 16, 0, YES, P16, 0, 2, 0, 0, 0, 0, 0.22, 0.2
-1.5, 0.122524, 0, 0, 1.5, 0.122524, 0
1, 0, 0
NO, 0, 0, 0, NO, 0, 90, 0, 0, 1, NO, 0, 0, 0, NO, 0, 0, NO, 0, NO
NO, 0, 0, 0, NO, 0, 90, 0, 0, 1, NO, 0, 0, 0, NO, 0, 0, NO, 0, NO
  SECT=9, YES, YES, YES
2, 2
1, 0, 0, 0, 29, 0, YES, P20, 0, 2, 0, 0, 0, 0, 0.22, 0.1
-1.4, 0.172355, 0, 0, 1.4, 0.172355, 0
1, 0, 0
1, 0, 0, 0, 29, 0, YES, P20, 0, 2, 0, 0, 0, 0, 0.05, 0.1
-1.4, 0.342355, 0, 0, 1.4, 0.342355, 0
1, 0, 0
1, 0, 0, 0, 29, 0, YES, P20, 0, 2, 0, 0, 0, 0, 0.22, 0.1
-1.4, 0.445271, 0, 0.272916, 1.4, 0.445271, 0
1, 0, 0.272916
1, 0, 0, 0, 29, 0, YES, P20, 0, 2, 0, 0, 0, 0, 0.05, 0.1
-1.4, 0.615271, 0, 0.272916, 1.4, 0.615271, 0
1, 0, 0.272916
NO, 0, 0, 0, NO, 0, 90, 0, 0, 1, NO, 0, 0, 0, NO, 0, 0, NO, 0, NO
NO, 0, 0, 0, NO, 0, 90, 0, 0, 1, NO, 0, 0, 0, NO, 0, 0, NO, 0, NO
  SECT=10, YES, YES, YES
2, 2
1, 0, 0, 0, 29, 0, YES, P20, 0, 2, 0, 0, 0, 0, 0.05, 0.1
-1.4, 0.615271, 0, 0, 1.4, 0.615271, 0
1, 0, 0
1, 0, 0, 0, 29, 0, YES, P20, 0, 2, 0, 0, 0, 0, 0.22, 0.1
-1.4, 0.445271, 0, 0, 1.4, 0.445271, 0
1, 0, 0
1, 0, 0, 0, 29, 0, YES, P20, 0, 2, 0, 0, 0, 0, 0.05, 0.1
-1.4, 0.342355, 0, -0.272916, 1.4, 0.342355, 0
1, 0, -0.272916
1, 0, 0, 0, 29, 0, YES, P20, 0, 2, 0, 0, 0, 0, 0.22, 0.1
-1.4, 0.172355, 0, -0.272916, 1.4, 0.172355, 0
1, 0, -0.272916
NO, 0, 0, 0, NO, 0, 90, 0, 0, 1, NO, 0, 0, 0, NO, 0, 0, NO, 0, NO
NO, 0, 0, 0, NO, 0, 90, 0, 0, 1, NO, 0, 0, 0, NO, 0, 0, NO, 0, NO
  SECT=11, YES, YES, NO
2, 2
1, 0, 0, 0, 16, 0, YES, P20, 0, 2, 0, 0, 0, 0, 0.05, 0.2
-1.5, 0.311273, 0, -6.65975e-007, 1.5, 0.311273, 0
1, 1.61, 2.02956
1, 0, 0, 0, 16, 0, YES, P20, 0, 2, 0, 0, 0, 0, 0.22, 0.2
-1.5, 0.141273, 0, -6.65975e-007, 1.5, 0.141273, 0
1, 1.61, 2.02956
1, 0, 0, 0, 16, 0, YES, P20, 0, 2, 0, 0, 0, 0, 0.05, 0.2
-1.5, 0.311273, 0, -6.65975e-007, 1.5, 0.311273, 0
1, 1.61, 2.02956
1, 0, 0, 0, 16, 0, YES, P20, 0, 2, 0, 0, 0, 0, 0.22, 0.2
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-1.5, 0.141273, 0, -6.65975e-007, 1.5, 0.141273, 0
1, 1.61, 2.02956
NO, 0, 0, 0, NO, 0, 90, 0, 0, 1, NO, 0, 0, 0, NO, 0, 0, NO, 0, NO
NO, 0, 0, 0, NO, 0, 90, 0, 0, 1, NO, 0, 0, 0, NO, 0, 0, NO, 0, NO
  SECT=12, YES, YES, NO
2, 2
1, 0, 0, 0, 15, 0, YES, P20, 0, 2, 0, 0, 0, 0, 0.22, 0.2
-1.4, 0.154793, 0, -6.65975e-007, 1.4, 0.154793, 0
1, 1.61, 2.02956
1, 0, 0, 0, 15, 0, YES, P20, 0, 2, 0, 0, 0, 0, 0.05, 0.2
-1.4, 0.324793, 0, -6.65975e-007, 1.4, 0.324793, 0
1, 1.61, 2.02956
1, 0, 0, 0, 15, 0, YES, P20, 0, 2, 0, 0, 0, 0, 0.22, 0.2
-1.4, 0.154793, 0, -6.65975e-007, 1.4, 0.154793, 0
1, 1.61, 2.02956
1, 0, 0, 0, 15, 0, YES, P20, 0, 2, 0, 0, 0, 0, 0.05, 0.2
-1.4, 0.324793, 0, -6.65975e-007, 1.4, 0.324793, 0
1, 1.61, 2.02956
NO, 0, 0, 0, NO, 0, 90, 0, 0, 1, NO, 0, 0, 0, NO, 0, 0, NO, 0, NO
NO, 0, 0, 0, NO, 0, 90, 0, 0, 1, NO, 0, 0, 0, NO, 0, 0, NO, 0, NO
  SECT=13, YES, YES, NO
2, 2
1, 0, 0, 0, 15, 0, YES, P16, 0, 2, 0, 0, 0, 0, 0.05, 0.2
-1.4, 0.305564, 0, -6.65975e-007, 1.4, 0.305564, 0
1, 1.61, 2.02956
1, 0, 0, 0, 15, 0, YES, P16, 0, 2, 0, 0, 0, 0, 0.22, 0.2
-1.4, 0.135564, 0, -6.65975e-007, 1.4, 0.135564, 0
1, 1.61, 2.02956
1, 0, 0, 0, 15, 0, YES, P16, 0, 2, 0, 0, 0, 0, 0.05, 0.2
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1, 1.61, 2.02956
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NO, 0, 0, 0, NO, 0, 90, 0, 0, 1, NO, 0, 0, 0, NO, 0, 0, NO, 0, NO
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1, 1.61, 2.02956
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2, 2
1, 0, 0, 0, 32, 0, YES, P20, 0, 2, 0, 0, 0, 0, 0.05, 0.1
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PROJECT TITLE : CASALPUSTERLENGO

	Company		Client	
	Author	Renato Vaira	File Name	Cavalc Coste V_2.mct

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*SECTION MANAGER-GROUP & PART    ; Section Manager - Group & Part
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   SECT=2, YES
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   SECT=3, YES
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   SECT=4, YES
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   SECT=13, YES
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   SECT=14, YES
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   SECT=16, YES
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*SECTION MANAGER-STIFFENER    ; Section Manager - Stiffener
   SECT=1, YES
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   SECT=2, YES
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   SECT=3, YES
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   SECT=4, YES
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   SECT=5, YES
 0, 0
   SECT=6, YES
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   SECT=7, YES
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*ENDDATA
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