

**SGC Grosseto Fano (E78).  
Tratto Nodo di Arezzo (S. Zeno) - Selci Lama (E45).  
Adeguamento a 4 corsie del tratto Le Ville - Selci Lama (E45).  
Lotto 7.**

**PROGETTO DEFINITIVO**

**PG 364**

ANAS - DIREZIONE PROGETTAZIONE E REALIZZAZIONE LAVORI

|  |  |  |
|--|--|--|
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**OPERE D'ARTE MINORI**  
Opere di Sostegno  
**MURO DI SOSTEGNO OS11**  
Relazione Tecnica e di Calcolo

|                        |             |                   |                             |         |                  |              |
|------------------------|-------------|-------------------|-----------------------------|---------|------------------|--------------|
| <b>CODICE PROGETTO</b> |             |                   | <b>NOME FILE</b>            |         | <b>REVISIONE</b> | <b>SCALA</b> |
| COMP.                  | PROGETTO    | LIV. ANNO N.PROG. | T00OS11STRRE01A             |         |                  |              |
| DP                     | LO702G      | D2110             | CODICE ELAB. T00OS11STRRE01 |         | A                | -            |
| D                      |             |                   |                             |         |                  |              |
| C                      |             |                   |                             |         |                  |              |
| B                      |             |                   |                             |         |                  |              |
| A                      | Emissione   |                   | Giugno '24                  | Suraci  | Suraci           | Guiducci     |
| REV.                   | DESCRIZIONE |                   | DATA                        | REDATTO | VERIFICATO       | APPROVATO    |

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PROGETTAZIONE ATI:

## **1. NORMATIVE DI RIFERIMENTO E RICHIAMI TEORICI**

### **1.1 NORMATIVE DI RIFERIMENTO**

#### **Normative di riferimento**

- Legge nr. 1086 del 05/11/1971.  
Norme per la disciplina delle opere in conglomerato cementizio, normale e precompresso ed a struttura metallica.
- Legge nr. 64 del 02/02/1974.  
Provvedimenti per le costruzioni con particolari prescrizioni per le zone sismiche.
- D.M. LL.PP. del 11/03/1988.  
Norme tecniche riguardanti le indagini sui terreni e sulle rocce, la stabilità dei pendii naturali e delle scarpate, i criteri generali e le prescrizioni per la progettazione, l'esecuzione e il collaudo delle opere di sostegno delle terre e delle opere di fondazione.
- D.M. LL.PP. del 14/02/1992.  
Norme tecniche per l'esecuzione delle opere in cemento armato normale e precompresso e per le strutture metalliche.
- D.M. 9 Gennaio 1996  
Norme Tecniche per il calcolo, l'esecuzione ed il collaudo delle strutture in cemento armato normale e precompresso e per le strutture metalliche
- D.M. 16 Gennaio 1996  
Norme Tecniche relative ai 'Criteri generali per la verifica di sicurezza delle costruzioni e dei carichi e sovraccarichi'
- D.M. 16 Gennaio 1996  
Norme Tecniche per le costruzioni in zone sismiche
- Circolare Ministero LL.PP. 15 Ottobre 1996 N. 252 AA.GG./S.T.C.  
Istruzioni per l'applicazione delle Norme Tecniche di cui al D.M. 9 Gennaio 1996
- Circolare Ministero LL.PP. 10 Aprile 1997 N. 65/AA.GG.  
Istruzioni per l'applicazione delle Norme Tecniche per le costruzioni in zone sismiche di cui al D.M. 16 Gennaio 1996
- Norme Tecniche per le Costruzioni 2018 (D.M. 17 Gennaio 2018)
- Circolare C.S.LL.PP. 21/01/2019 n.7 - Istruzioni per l'applicazione dell'Aggiornamento delle Norme tecniche per le costruzioni di cui al D.M. 17 gennaio 2018

PROGETTAZIONE ATI:

## 2. RICHIAMI TEORICI

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

- Calcolo della spinta del terreno
- Verifica a ribaltamento
- Verifica a scorrimento del muro sul piano di posa
- Verifica della stabilità complessa fondazione terreno (carico limite)
- Verifica della stabilità globale

Se il muro è in calcestruzzo armato: Calcolo delle sollecitazioni sia del muro che della fondazione, progetto delle armature e relative verifiche dei materiali.

Se il muro è a gravità: Calcolo delle sollecitazioni sia del muro che della fondazione e verifica in diverse sezioni al ribaltamento, allo scorrimento ed allo schiacciamento.

### Calcolo della spinta sul muro

#### *Valori caratteristici e valori di calcolo*

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

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

#### *Metodo di Culmann*

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

I passi del procedimento risolutivo sono i seguenti:

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

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

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

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

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

#### *Spinta in presenza di falda*

Nel caso in cui a monte della parete sia presente la falda il diagramma delle pressioni risulta modificato a causa della sottospinta che l'acqua esercita sul terreno. Il peso di volume del terreno al di sopra della linea di falda non subisce variazioni. Viceversa, al di sotto del livello di falda va considerato il peso di volume efficace

$$Y' = \gamma_{\text{sat}} - \gamma_w$$

dove  $\gamma_{\text{sat}}$  è il peso di volume saturo del terreno (dipendente dall'indice dei pori) e  $\gamma_w$  è il peso specifico dell'acqua. Quindi il diagramma delle pressioni al di sotto della linea di falda ha una pendenza minore. Al diagramma così ottenuto va sommato il diagramma triangolare legato alla pressione esercitata dall'acqua.

#### *Spinta in presenza di sisma*

PROGETTAZIONE ATI:



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

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

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

$$\varepsilon' = \varepsilon + \theta \quad \beta' = \beta + \theta$$

dove  $\theta = \arctg(k_h/(1 \pm k_v))$  essendo  $k_h$  il coefficiente sismico orizzontale e  $k_v$  il coefficiente sismico verticale, definito in funzione di  $k_h$ . In presenza di falda a monte,  $\theta$  assume le seguenti espressioni:

Terreno a bassa permeabilità

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

Terreno a permeabilità elevata

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

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

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

dove il coefficiente  $A$  vale

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

In presenza di falda a monte, nel coefficiente  $A$  si tiene conto dell'influenza dei pesi di volume nel calcolo di  $\theta$ .

Adottando il metodo di Mononobe-Okabe per il calcolo della spinta, il coefficiente  $A$  viene posto pari a 1.

Tale incremento di spinta è applicato a metà altezza della parete di spinta nel caso di forma rettangolare del diagramma di incremento sismico, allo stesso punto di applicazione della spinta statica nel caso in cui la forma del diagramma di incremento sismico è uguale a quella del diagramma statico.

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

$$F_{IH} = k_h W \quad F_{IV} = \pm k_v W$$

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

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

### Verifica alla stabilità globale

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

Viene usata la tecnica della suddivisione a strisce della superficie di scorrimento da analizzare. La superficie di scorrimento viene supposta circolare e determinata in modo tale da non avere intersezione con il profilo del muro. In presenza di pali, per ogni centro vengono analizzate 3 famiglie di superfici di scorrimento: la prima famiglia di superfici passa per tacco della fondazione, la seconda per il punto centrale della lunghezza dei pali, la terza per il piede dei pali. Si determina il minimo coefficiente di sicurezza su una maglia di centri di dimensioni 10x10 posta in prossimità della sommità del muro. Il numero di strisce è pari a 25.

Si adotta per la verifica di stabilità globale il metodo di Bishop.

Il coefficiente di sicurezza nel metodo di Bishop si esprime secondo la seguente formula:

$$\eta = \frac{\sum_{i=0}^n \left[ \frac{c_i b_i + (W_i - u_i b_i) \tan \varphi_i}{m} \right]}{\sum_{i=0}^n W_i \sin \alpha_i}$$

dove il termine  $m$  è espresso da

PROGETTAZIONE ATI:

$$m = \left( 1 + \frac{\tan \phi_1 \tan \alpha_1}{\eta} \right) \cos \alpha_1$$

In questa espressione  $n$  è il numero delle strisce considerate,  $b$  e  $\alpha_1$  sono la larghezza e l'inclinazione della base della striscia  $i$ esima rispetto all'orizzontale,  $W$  è il peso della striscia  $i$ esima,  $c$  e  $\phi_1$  sono le caratteristiche del terreno (coesione ed angolo di attrito) lungo la base della striscia ed  $u$  è la pressione neutra lungo la base della striscia.

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

### Analisi dei pali

Per l'analisi della capacità portante dei pali occorre determinare alcune caratteristiche del terreno in cui si va ad operare. In particolare bisogna conoscere l'angolo d'attrito  $\phi$  e la coesione  $c$ . Per pali soggetti a carichi trasversali è necessario conoscere il modulo di reazione laterale o il modulo elastico laterale.

La capacità portante di un palo solitamente viene valutata come somma di due contributi: portata di base (o di punta) e portata per attrito laterale lungo il fusto. Cioè si assume valida l'espressione:

$$Q = Q_p + Q_l - W_p$$

dove:

$Q_T$  portanza totale del palo  
 $Q_P$  portanza di base del palo  
 $Q_L$  portanza per attrito laterale del palo  
 $W_P$  peso proprio del palo

e le due componenti  $Q_p$  e  $Q_l$  sono calcolate in modo indipendente fra loro.

Dalla capacità portante del palo si ricava il carico ammissibile del palo  $Q_A$  applicando il coefficiente di sicurezza della portanza alla punta  $\eta_p$  ed il coefficiente di sicurezza della portanza per attrito laterale  $\eta_l$ .

Palo compresso:

$$Q_A = \frac{Q_p}{\eta_p} + \frac{Q_l}{\eta_l} - W_p$$

Palo teso:

$$Q_A = \frac{Q_l}{\eta_l} - W_p$$

### Capacità portante di punta

In generale la capacità portante di punta viene calcolata tramite l'espressione:

$$Q_p = A_p \left( cN'_c + qN'_q + \frac{1}{2} B\gamma N'_\gamma \right)$$

dove:

$A_p$  è l'area portante efficace della punta del palo  
 $c$  è la coesione  
 $q$  è la pressione geostatica alla quota della punta del palo  
 $\gamma$  è il peso specifico del terreno  
 $D$  è il diametro del palo  
 $N'_c$   $N'_q$   $N'_\gamma$  sono i coefficienti di capacità portante corretti per tener conto degli effetti di forma e di profondità.

### Capacità portante per resistenza laterale

La resistenza laterale è data dall'integrale esteso a tutta la superficie laterale del palo delle tensioni tangenziali palo-terreno in condizioni limite:

$$Q_l = \int_S \tau_a dS$$

dove  $\tau_a$  è dato dalla nota relazione di Coulomb

PROGETTAZIONE ATI:

$$\tau_s = c_s + \sigma_s \tan \delta$$

dove:

- $c_a$  è l'adesione palo-terreno
- $\delta$  è l'angolo di attrito palo-terreno
- $\gamma$  è il peso specifico del terreno
- $z$  è la generica quota a partire dalla testa del palo
- $L$  è la lunghezza del palo
- $P$  è il perimetro del palo
- $K_s$  è il coefficiente di spinta che dipende dalle caratteristiche meccaniche e fisiche del terreno dal suo stato di addensamento e dalle modalità di realizzazione del palo.

#### Portanza trasversale dei pali - Analisi ad elementi finiti

Nel modello di terreno alla Winkler il terreno viene schematizzato come una serie di molle elastiche indipendenti fra di loro. Le molle che schematizzano il terreno vengono caratterizzate tramite una costante elastica  $K$  espressa in  $\text{Kg/cm}^2/\text{cm}$  che rappresenta la pressione (in  $\text{Kg/cm}^2$ ) che bisogna applicare per ottenere l'abbassamento di 1 cm.

Nel metodo degli elementi finiti occorre discretizzare il particolare problema. Nel caso specifico il palo viene suddiviso in un certo numero di elementi di eguale lunghezza. Ogni elemento è caratterizzato da una sezione avente area ed inerzia coincidente con quella del palo.

Il terreno viene schematizzato come una serie di molle orizzontali che reagiscono agli spostamenti nei due versi. La rigidità assiale della singola molla è proporzionale alla costante di Winkler orizzontale del terreno, al diametro del palo ed alla lunghezza dell'elemento. La molla, però, non viene vista come un elemento infinitamente elastico ma come un elemento con comportamento del tipo elastoplastico perfetto (diagramma sforzi-deformazioni di tipo bilatero). Essa presenta una resistenza crescente al crescere degli spostamenti fino a che l'entità degli spostamenti si mantiene al di sotto di un certo spostamento limite,  $X_{\max}$  oppure fino a quando non si raggiunge il valore della pressione limite. Superato tale limite non si ha un incremento di resistenza. È evidente che assumendo un comportamento di questo tipo ci si addentra in un tipico problema non lineare che può essere risolto solo mediante una analisi al passo.

Questa modellazione presenta il notevole vantaggio di poter schematizzare tutti quei comportamenti individuati da Broms e che sarebbe impossibile trattare in un modello numerico. In particolare risulta automatico analizzare casi in cui si ha insufficiente portanza non per rottura del palo ma per rottura del terreno (vedi il caso di un palo molto rigido in un terreno molle).

#### Determinazione degli scarichi sul palo.

Gli scarichi sui pali vengono determinati mediante il metodo delle rigidità.

La piastra di fondazione viene considerata infinitamente rigida (3 gradi di libertà) ed i pali vengono considerati incastrati o incernierati (la scelta del vincolo viene fatta dall'Utente nella tabella CARATTERISTICHE del sottomenu PALI) a tale piastra.

Viene effettuata una prima analisi di ogni palo di ciascuna fila (i pali di ogni fila hanno le stesse caratteristiche) per costruire una curva carichi-spostamenti del palo. Questa curva viene costruita considerando il palo elastico. Si tratta, in definitiva, della matrice di rigidità del palo  $K_e$ , costruita imponendo traslazioni e rotazioni unitarie per determinare le corrispondenti sollecitazioni in testa al palo.

Nota la matrice di rigidità di ogni palo si assembla la matrice globale (di dimensioni  $3 \times 3$ ) della palificata,  $K$ .

A questo punto, note le forze agenti in fondazione ( $N$ ,  $T$ ,  $M$ ) si possono ricavare gli spostamenti della piastra (abbassamento, traslazione e rotazione) e le forze che si scaricano su ciascun palo. Infatti indicando con  $p$  il vettore dei carichi e con  $u$  il vettore degli spostamenti della piastra abbiamo:

$$u = K^{-1}p$$

Noti gli spostamenti della piastra, e quindi della testa dei pali, abbiamo gli scarichi su ciascun palo. Allora per ciascun palo viene effettuata un'analisi elastoplastica incrementale (tramite il metodo degli elementi finiti) che, tenendo conto della plasticizzazione del terreno, calcola le sollecitazioni in tutte le sezioni del palo.

Se, le caratteristiche del terreno (rappresentate da  $K_h$ ) sono tali che se non è possibile raggiungere l'equilibrio si ha collasso per 'rottura' del terreno.

### 3. DATI

#### Materiali

##### Simbologia adottata

|                            |   |
|----------------------------|---|
| n°                         | Indice materiale  |
| Descr                      | Descrizione del materiale   |
| <b>Calcestruzzo armato</b> |   |
| C                          | Classe di resistenza del cls  |
| A                          | Classe di resistenza dell'acciaio   |
| $\gamma$                   | Peso specifico, espresso in [kg/mc]   |
| R <sub>ck</sub>            | Resistenza caratteristica a compressione, espressa in [kg/cm <sup>2</sup> ] |
| E                          | Modulo elastico, espresso in [kg/cm <sup>2</sup> ]                          |
| $\nu$                      | Coeff. di Poisson   |
| n                          | Coeff. di omogenizzazione acciaio/cls                                       |
| ntc                        | Coeff. di omogenizzazione cls tesoro/compresso                              |

#### Calcestruzzo armato

| n° | Descr  | C      | A     | $\gamma$<br>[kg/mc] | R <sub>ck</sub><br>[kg/cm <sup>2</sup> ] | E<br>[kg/cm <sup>2</sup> ] | $\nu$ | n     | ntc  |
|----|--------|--------|-------|---------------------|--|----------------------------|-------|-------|------|
| 1  | C32/40 | C32/40 | B450C | 2500.00             | 407.88                                   | 343054                     | 0.30  | 15.00 | 0.50 |
| 5  | C28/35 | C28/35 | B450C | 2500.00             | 356.90                                   | 332300                     | 0.30  | 15.00 | 0.50 |

#### Acciai

| Descr | f <sub>yk</sub><br>[kg/cm <sup>2</sup> ] | f <sub>uk</sub><br>[kg/cm <sup>2</sup> ] |
|-------|--|--|
| B450C | 4588.65                                  | 5506.38                                  |

#### Tipologie pali

##### Simbologia adottata

|        |  |
|--------|--|
| n°     | Indice tipologia palo  |
| Descr  | Descrizione tipologia palo   |
| P      | Contributo portanza palo (laterale e/o punta)  |
| T      | Tecnologia costruttiva (trivellato, infisso o elica continua)                        |
| V      | Vincolo palo-fondazione: Cerniera o Incastro (libero o impedito di ruotare in testa) |
| Imat   | Indice materiale che lo costituisce  |
| BD     | usa metodo di Bustamante-Doix  |
| PN     | Portanza nota  |
| Pp, Pl | Portanza di punta e laterale caratteristica, espressa in [kg]                        |

| n° | Descr          | P                | T          | V       | Imat | BD | PN | Pp | Pl |
|----|----------------|------------------|------------|---------|------|----|----|----|----|
| 1  | Tipologia palo | Laterale + Punta | Trivellato | Incasso | 5    | NO | NO | -- | -- |

#### Geometria profilo terreno a monte del muro

##### Simbologia adottata

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

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

| n° | X<br>[m] | Y<br>[m] | A<br>[°] |
|----|----------|----------|----------|
| 1  | 0.00     | 0.00     | 0.000    |
| 2  | 20.00    | 0.00     | 0.000    |

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

#### Falda

##### Simbologia adottata

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

PROGETTAZIONE ATI:

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

| n° | X<br>[m] | Y<br>[m] | A<br>[°] |
|----|----------|----------|----------|
| 1  | -4.00    | -12.00   | 0.000    |
| 2  | 10.00    | -12.00   | 0.000    |
| 3  | 20.00    | -12.00   | 0.000    |

## Geometria muro

### *Geometria paramento e fondazione*

Lunghezza muro 10.00 [m]

#### Paramento

Materiale C32/40  
Altezza paramento 8.60 [m]  
Altezza paramento libero 8.60 [m]  
Spessore in sommità 0.50 [m]  
Spessore all'attacco con la fondazione 1.00 [m]  
Inclinazione paramento esterno 0.00 [°]  
Inclinazione paramento interno 3.30 [°]

#### Mensola di marciapiede

Posizione rispetto alla testa del muro 0.00 [m]  
Lunghezza 0.25 [m]  
Spessore all'estremità libera 0.80 [m]  
Spessore all'incastro 0.80 [m]

#### Fondazione

Materiale C32/40  
Lunghezza mensola di valle 1.20 [m]  
Lunghezza mensola di monte 3.50 [m]  
Lunghezza totale 5.70 [m]  
Inclinazione piano di posa 0.00 [°]  
Spessore 1.50 [m]  
Spessore magrone 0.20 [m]

PROGETTAZIONE ATI:

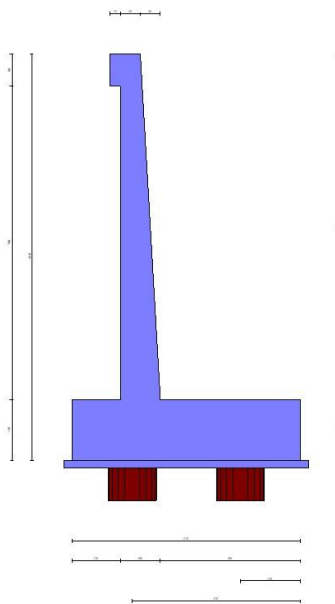


Fig. 1 - Sezione quotata del muro

### Descrizione pali di fondazione

#### Simbologia adottata

|          |  |
|----------|--|
| n°       | numero d'ordine della fila   |
| X        | ascissa della fila misurata dallo spigolo di monte della fondazione espressa in [m]            |
| I        | interasse tra i pali, espressa in [m]  |
| f        | franco laterale (distanza minima dal bordo laterale), espressa in [m]                          |
| Np       | Numero di pali della fila  |
| D        | diametro dei pali della fila espresso in [cm]  |
| L        | lunghezza dei pali della fila espressa in [m]  |
| $\alpha$ | inclinazione dei pali della fila rispetto alla verticale espressa in [°]                       |
| ALL      | allineamento dei pali della fila rispetto al baricentro della fondazione (CENTRATI o SFALSATI) |

| n° | Tipologia      | X<br>[m] | I<br>[m] | f<br>[m] | Np | D<br>[cm] | L<br>[m] | $\alpha$<br>[°] | ALL      |
|----|----------------|----------|----------|----------|----|-----------|----------|-----------------|----------|
| 1  | Tipologia palo | 1.50     | 1.40     | 0.10     | 7  | 120.00    | 21.00    | 0.00            | Centrati |
| 2  | Tipologia palo | 4.20     | 1.40     | 0.10     | 7  | 120.00    | 21.00    | 0.00            | Centrati |

PROGETTAZIONE ATI:

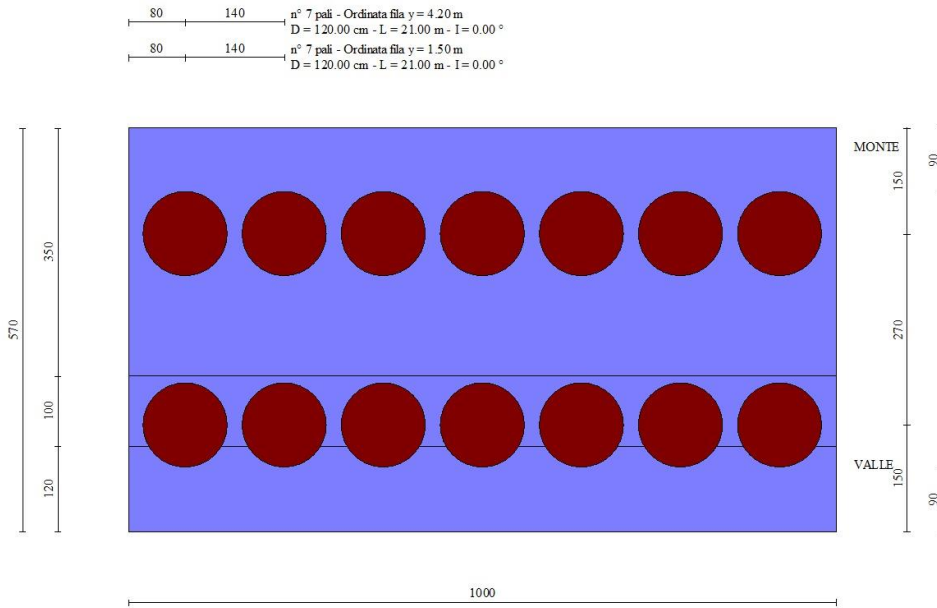


Fig. 2 - Pianta pali

## Descrizione terreni

### Parametri di resistenza

#### Simbologia adottata

|   |   |
|---|---|
| n°  | Indice del terreno  |
| Descr   | Descrizione terreno   |
| $\gamma$  | Peso di volume del terreno espresso in [kg/mc]                        |
| $\gamma_s$  | Peso di volume saturo del terreno espresso in [kg/mc]                 |
| $\phi$  | Angolo d'attrito interno espresso in [°]                              |
| $\delta$  | Angolo d'attrito terra-muro espresso in [°]                           |
| c   | Coesione espressa in [kg/cm <sup>2</sup> ]                            |
| ca  | Adesione terra-muro espressa in [kg/cm <sup>2</sup> ]                 |
| Per calcolo portanza con il metodo di Bustamante-Doix |   |
| Cesp  | Coeff. di espansione laterale (solo per il metodo di Bustamante-Doix) |
| $\tau_l$  | Tensione tangenziale limite, espressa in [kg/cm <sup>2</sup> ]        |

| n° | Descr                  | $\gamma$<br>[kg/mc] | $\gamma_{sat}$<br>[kg/mc] | $\phi$<br>[°] | $\delta$<br>[°] | c<br>[kg/cm <sup>2</sup> ] | ca<br>[kg/cm <sup>2</sup> ] | Cesp  | $\tau_l$<br>[kg/cm <sup>2</sup> ] |       |
|----|------------------------|---------------------|---------------------------|---------------|-----------------|----------------------------|-----------------------------|-------|-----------------------------------|-------|
| 1  | Terreno di riempimento | 1500.00             | 1700.00                   | 34.000        | 22.667          | 0.00                       | 0.00                        | 1.000 | 0.00                              | (CAR) |
|    |                        |                     |                           | 34.000        | 22.667          | 0.00                       | 0.00                        |       |                                   | (MIN) |
|    |                        |                     |                           | 34.000        | 22.667          | 0.00                       | 0.00                        |       |                                   | (MED) |
| 2  | Terreno UG10           | 1800.00             | 2000.00                   | 36.000        | 24.000          | 0.00                       | 0.00                        | 1.000 | 0.00                              | (CAR) |
|    |                        |                     |                           | 36.000        | 24.000          | 0.00                       | 0.00                        |       |                                   | (MIN) |
|    |                        |                     |                           | 36.000        | 24.000          | 0.00                       | 0.00                        |       |                                   | (MED) |
| 3  | Terreno UG1b           | 1800.00             | 2000.00                   | 28.000        | 18.667          | 0.10                       | 0.05                        | 1.000 | 0.00                              | (CAR) |
|    |                        |                     |                           | 28.000        | 18.667          | 0.10                       | 0.05                        |       |                                   | (MIN) |
|    |                        |                     |                           | 28.000        | 18.667          | 0.10                       | 0.05                        |       |                                   | (MED) |
| 4  | Terreno UG9            | 2000.00             | 2200.00                   | 26.000        | 17.333          | 0.20                       | 0.10                        | 1.000 | 0.00                              | (CAR) |
|    |                        |                     |                           | 26.000        | 17.333          | 0.20                       | 0.10                        |       |                                   | (MIN) |
|    |                        |                     |                           | 26.000        | 17.333          | 0.20                       | 0.10                        |       |                                   | (MED) |
| 5  | Terreno UG7a           | 1950.00             | 2150.00                   | 40.000        | 26.667          | 0.00                       | 0.00                        | 1.000 | 0.00                              | (CAR) |
|    |                        |                     |                           | 40.000        | 26.667          | 0.00                       | 0.00                        |       |                                   | (MIN) |
|    |                        |                     |                           | 40.000        | 26.667          | 0.00                       | 0.00                        |       |                                   | (MED) |
| 6  | Terreno UG7b           | 1900.00             | 2100.00                   | 29.000        | 19.333          | 0.03                       | 0.01                        | 1.000 | 0.00                              | (CAR) |
|    |                        |                     |                           | 29.000        | 19.333          | 0.03                       | 0.01                        |       |                                   | (MIN) |
|    |                        |                     |                           | 29.000        | 19.333          | 0.03                       | 0.01                        |       |                                   | (MED) |
| 7  | Terreno UG1a           | 2000.00             | 2200.00                   | 36.000        | 24.000          | 0.00                       | 0.00                        | 1.000 | 0.00                              | (CAR) |
|    |                        |                     |                           | 36.000        | 24.000          | 0.00                       | 0.00                        |       |                                   | (MIN) |
|    |                        |                     |                           | 36.000        | 24.000          | 0.00                       | 0.00                        |       |                                   | (MED) |

## Stratigrafia

#### Simbologia adottata

n° Indice dello strato  
PROGETTAZIONE ATI:

H Spessore dello strato espresso in [m]  
 $\alpha$  Inclinazione espressa in [°]  
 Terreno Terreno dello strato  
 Kwn, Kwt Costante di Winkler normale e tangenziale alla superficie espressa in Kg/cm<sup>2</sup>/cm  
 Per calcolo pali (solo se presenti)  
 Kw Costante di Winkler orizzontale espressa in Kg/cm<sup>2</sup>/cm  
 Ks Coefficiente di spinta  
 Cesp Coefficiente di espansione laterale (per tutti i metodi tranne il metodo di Bustamante-Doix)

Per calcolo della spinta con coeff. di spinta definiti (usati solo se attiva l'opzione 'Usa coeff. di spinta da strato')  
 Kststa, Kstsis Coeff. di spinta statico e sismico

| n° | H<br>[m] | $\alpha$<br>[°] | Terreno                | Kwn<br>[Kg/cm <sup>2</sup> ] | Kwt<br>[Kg/cm <sup>2</sup> ] | Kw<br>[Kg/cm <sup>2</sup> ] | Ks    | Cesp  | Kststa | Kstsis |
|----|----------|-----------------|------------------------|------------------------------|------------------------------|-----------------------------|-------|-------|--------|--------|
| 1  | 8.00     | 0.000           | Terreno di riempimento | 0.000                        | 0.000                        | 7.589                       | 0.500 | 1.000 | ---    | ---    |
| 2  | 5.50     | 0.000           | Terreno UG1b           | 0.000                        | 0.000                        | 13.199                      | 0.000 | 1.000 | ---    | ---    |
| 3  | 12.00    | 0.000           | Terreno UG10           | 0.000                        | 0.000                        | 17.538                      | 0.000 | 1.000 | ---    | ---    |
| 4  | 30.00    | 0.000           | Terreno UG9            | 0.000                        | 0.000                        | 19.004                      | 0.000 | 1.000 | ---    | ---    |

Terreno di riempimento: Terreno di riempimento  
 Inclinazione riempimento (rispetto alla verticale): 0.00 [°]

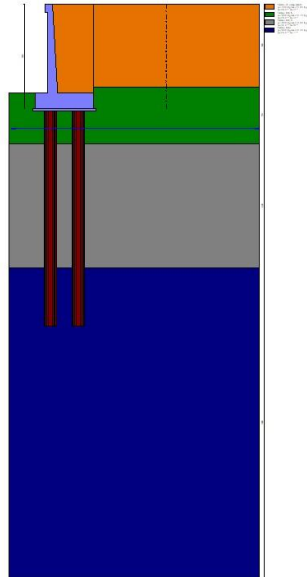


Fig. 3 - Stratigrafia

### Condizioni di carico

#### Simbologia adottata

Carichi verticali positivi verso il basso.  
 Carichi orizzontali positivi verso sinistra.  
 Momento positivo senso antiorario.  
 X Ascissa del punto di applicazione del carico concentrato espressa in [m]  
 Fx Componente orizzontale del carico concentrato espressa in [kg]  
 Fy Componente verticale del carico concentrato espressa in [kg]  
 M Momento espresso in [kgm]  
 Xi Ascissa del punto iniziale del carico ripartito espressa in [m]  
 Xf Ascissa del punto finale del carico ripartito espressa in [m]  
 Qi Intensità del carico per x=Xi espressa in [kg]  
 Qf Intensità del carico per x=Xf espressa in [kg]

### Condizione n° 1 (urto veicolo in svio) - ECCEZIONALE

#### Carichi sul muro

| n° | Tipo        | Dest      | X; Y<br>[m] | Fx<br>[kg] | Fy<br>[kg] | M<br>[kgm] | Xi<br>[m] | Xf<br>[m] | Qi<br>[kg] | Qf<br>[kg] |
|----|-------------|-----------|-------------|------------|------------|------------|-----------|-----------|------------|------------|
| 1  | Concentrato | Paramento | 0.00; 0.00  | 2000.00    | 100.00     | 1245.00    |           |           |            |            |

PROGETTAZIONE ATI:



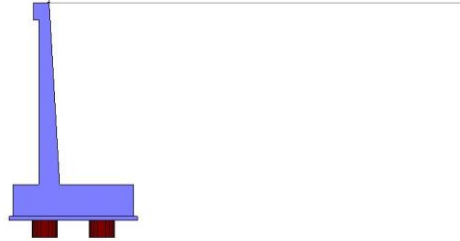


Fig. 4 - Carichi sul muro

Condizione n° 2 (urto veicolo in svio) - ECCEZIONALE

Carichi sul terreno

| n° | Tipo        | X<br>[m] | Fx<br>[kg] | Fy<br>[kg] | M<br>[kgm] | Xi<br>[m] | Xf<br>[m] | Qi<br>[kg] | Qf<br>[kg] |
|----|-------------|----------|------------|------------|------------|-----------|-----------|------------|------------|
| 1  | Concentrato | 0.50     | 0.00       | 20000.00   | 0.00       |           |           |            |            |

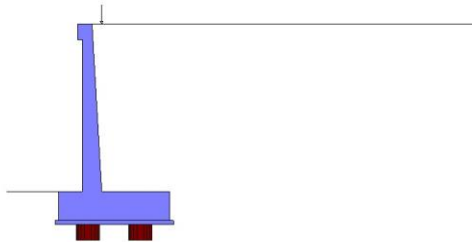


Fig. 5 - Carichi sul terreno

Condizione n° 3 (carico stradale uniforme) - VARIABILE

Coeff. di combinazione  $\Psi_0=1.00 - \Psi_1=1.00 - \Psi_2=1.00$

Carichi sul terreno

| n° | Tipo        | X<br>[m] | Fx<br>[kg] | Fy<br>[kg] | M<br>[kgm] | Xi<br>[m] | Xf<br>[m] | Qi<br>[kg] | Qf<br>[kg] |
|----|-------------|----------|------------|------------|------------|-----------|-----------|------------|------------|
| 1  | Distribuito |          |            |            |            | 0.00      | 11.00     | 1000.00    | 1000.00    |

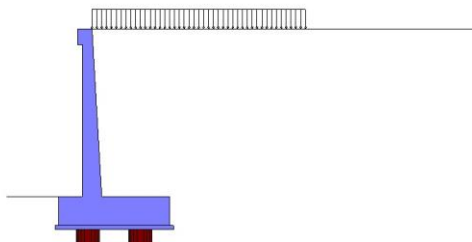


Fig. 6 - Carichi sul terreno

PROGETTAZIONE ATI:

## Normativa

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

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

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

Coeff. parziali per i parametri geotecnici del terreno

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

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

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

Carichi verticali. Coeff. parziali  $\gamma_R$  da applicare alle resistenze caratteristiche

| Resistenza            |               | Pali infissi |    |      | Pali trivellati |    |      | Pali ad elica continua |    |      |
|-----------------------|---------------|--------------|----|------|-----------------|----|------|------------------------|----|------|
|                       |               | R1           | R2 | R3   | R1              | R2 | R3   | R1                     | R2 | R3   |
| Punta                 | $\gamma_b$    | --           | -- | 1.15 | --              | -- | 1.35 | --                     | -- | 1.30 |
| Laterale compressione | $\gamma_s$    | --           | -- | 1.15 | --              | -- | 1.15 | --                     | -- | 1.15 |
| Totale compressione   | $\gamma_t$    | --           | -- | 1.15 | --              | -- | 1.30 | --                     | -- | 1.25 |
| Laterale trazione     | $\gamma_{st}$ | --           | -- | 1.25 | --              | -- | 1.25 | --                     | -- | 1.25 |

Carichi trasversali. Coeff. parziali  $\gamma_R$  da applicare alle resistenze caratteristiche

|             |            | R1 | R2 | R3   |
|-------------|------------|----|----|------|
| Trasversale | $\gamma_t$ | -- | -- | 1.30 |

Coefficienti di riduzione  $\zeta$  per la determinazione della resistenza caratteristica dei pali

Numero di verticali indagate 1

$\zeta_3=1.70$   $\zeta_4=1.70$

## Descrizione combinazioni di carico

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

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

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

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

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

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

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

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

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

PROGETTAZIONE ATI:

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

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

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

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

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

In particolare si sono considerate le seguenti combinazioni:

Simbologia adottata

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

Combinazione n° 1 - STR (A1-M1-R3)

| Condizione               | $\gamma$ | $\Psi$ | Effetto     |
|--------------------------|----------|--------|-------------|
| Peso muro                | 1.00     | --     | Favorevole  |
| Peso terrapieno          | 1.00     | --     | Favorevole  |
| Spinta terreno           | 1.30     | --     | Sfavorevole |
| carico stradale uniforme | 1.50     | 1.00   | Sfavorevole |

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

| Condizione               | $\gamma$ | $\Psi$ | Effetto     |
|--------------------------|----------|--------|-------------|
| Peso muro                | 1.00     | --     | Favorevole  |
| Peso terrapieno          | 1.00     | --     | Favorevole  |
| Spinta terreno           | 1.00     | --     | Sfavorevole |
| carico stradale uniforme | 1.00     | 1.00   | Sfavorevole |

Combinazione n° 3 - STR (A1-M1-R3) H - V

| Condizione               | $\gamma$ | $\Psi$ | Effetto     |
|--------------------------|----------|--------|-------------|
| Peso muro                | 1.00     | --     | Sfavorevole |
| Peso terrapieno          | 1.00     | --     | Sfavorevole |
| Spinta terreno           | 1.00     | --     | Sfavorevole |
| carico stradale uniforme | 1.00     | 1.00   | Sfavorevole |

Combinazione n° 4 - STR (A1-M1-R3)

| Condizione               | $\gamma$ | $\Psi$ | Effetto     |
|--------------------------|----------|--------|-------------|
| Peso muro                | 1.30     | --     | Sfavorevole |
| Peso terrapieno          | 1.30     | --     | Sfavorevole |
| Spinta terreno           | 1.30     | --     | Sfavorevole |
| carico stradale uniforme | 1.50     | 1.00   | Sfavorevole |

Combinazione n° 5 - STR (A1-M1-R3)

| Condizione               | $\gamma$ | $\Psi$ | Effetto     |
|--------------------------|----------|--------|-------------|
| Peso muro                | 1.00     | --     | Favorevole  |
| Peso terrapieno          | 1.30     | --     | Sfavorevole |
| Spinta terreno           | 1.30     | --     | Sfavorevole |
| carico stradale uniforme | 1.50     | 1.00   | Sfavorevole |

Combinazione n° 6 - STR (A1-M1-R3)

| Condizione               | $\gamma$ | $\Psi$ | Effetto     |
|--------------------------|----------|--------|-------------|
| Peso muro                | 1.30     | --     | Sfavorevole |
| Peso terrapieno          | 1.00     | --     | Favorevole  |
| Spinta terreno           | 1.30     | --     | Sfavorevole |
| carico stradale uniforme | 1.50     | 1.00   | Sfavorevole |

Combinazione n° 7 - GEO (A2-M2-R2)

| Condizione               | $\gamma$ | $\Psi$ | Effetto     |
|--------------------------|----------|--------|-------------|
| Peso muro                | 1.00     | --     | Sfavorevole |
| Peso terrapieno          | 1.00     | --     | Sfavorevole |
| Spinta terreno           | 1.00     | --     | Sfavorevole |
| carico stradale uniforme | 1.30     | 1.00   | Sfavorevole |

PROGETTAZIONE ATI:

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

| Condizione               | $\gamma$ | $\Psi$ | Effetto     |
|--------------------------|----------|--------|-------------|
| Peso muro                | 1.00     | --     | Sfavorevole |
| Peso terrapieno          | 1.00     | --     | Sfavorevole |
| Spinta terreno           | 1.00     | --     | Sfavorevole |
| carico stradale uniforme | 1.00     | 1.00   | Sfavorevole |

Combinazione n° 9 - GEO (A2-M2-R2) H - V

| Condizione               | $\gamma$ | $\Psi$ | Effetto     |
|--------------------------|----------|--------|-------------|
| Peso muro                | 1.00     | --     | Sfavorevole |
| Peso terrapieno          | 1.00     | --     | Sfavorevole |
| Spinta terreno           | 1.00     | --     | Sfavorevole |
| carico stradale uniforme | 1.00     | 1.00   | Sfavorevole |

Combinazione n° 10 - EQU (A1-M1-R3)

| Condizione               | $\gamma$ | $\Psi$ | Effetto     |
|--------------------------|----------|--------|-------------|
| Peso muro                | 1.00     | --     | Favorevole  |
| Peso terrapieno          | 1.00     | --     | Favorevole  |
| Spinta terreno           | 1.30     | --     | Sfavorevole |
| carico stradale uniforme | 1.50     | 1.00   | Sfavorevole |

Combinazione n° 11 - EQU (A1-M1-R3) H + V

| Condizione               | $\gamma$ | $\Psi$ | Effetto     |
|--------------------------|----------|--------|-------------|
| Peso muro                | 1.00     | --     | Favorevole  |
| Peso terrapieno          | 1.00     | --     | Favorevole  |
| Spinta terreno           | 1.00     | --     | Sfavorevole |
| carico stradale uniforme | 1.00     | 1.00   | Sfavorevole |

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

| Condizione               | $\gamma$ | $\Psi$ | Effetto     |
|--------------------------|----------|--------|-------------|
| Peso muro                | 1.00     | --     | Favorevole  |
| Peso terrapieno          | 1.00     | --     | Favorevole  |
| Spinta terreno           | 1.00     | --     | Sfavorevole |
| carico stradale uniforme | 1.00     | 1.00   | Sfavorevole |

Combinazione n° 13 - ECC

| Condizione               | $\gamma$ | $\Psi$ | Effetto     |
|--------------------------|----------|--------|-------------|
| Peso muro                | 1.00     | --     | Sfavorevole |
| Peso terrapieno          | 1.00     | --     | Sfavorevole |
| Spinta terreno           | 1.00     | --     | Sfavorevole |
| urto veicolo in svio     | 1.00     | 1.00   | Sfavorevole |
| carico stradale uniforme | 1.00     | 1.00   | Sfavorevole |

Combinazione n° 14 - ECC

| Condizione               | $\gamma$ | $\Psi$ | Effetto     |
|--------------------------|----------|--------|-------------|
| Peso muro                | 1.00     | --     | Sfavorevole |
| Peso terrapieno          | 1.00     | --     | Sfavorevole |
| Spinta terreno           | 1.00     | --     | Sfavorevole |
| urto veicolo in svio     | 1.00     | 1.00   | Sfavorevole |
| carico stradale uniforme | 1.00     | 1.00   | Sfavorevole |

Combinazione n° 15 - SLER

| Condizione               | $\gamma$ | $\Psi$ | Effetto     |
|--------------------------|----------|--------|-------------|
| Peso muro                | 1.00     | --     | Sfavorevole |
| Peso terrapieno          | 1.00     | --     | Sfavorevole |
| Spinta terreno           | 1.00     | --     | Sfavorevole |
| carico stradale uniforme | 1.00     | 1.00   | Sfavorevole |

Combinazione n° 16 - SLEF

| Condizione               | $\gamma$ | $\Psi$ | Effetto     |
|--------------------------|----------|--------|-------------|
| Peso muro                | 1.00     | --     | Sfavorevole |
| Peso terrapieno          | 1.00     | --     | Sfavorevole |
| Spinta terreno           | 1.00     | --     | Sfavorevole |
| carico stradale uniforme | 1.00     | 1.00   | Sfavorevole |

Combinazione n° 17 - SLEQ

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

PROGETTAZIONE ATI:

| Condizione               | $\gamma$ | $\Psi$ | Effetto     |
|--------------------------|----------|--------|-------------|
| Peso terrapieno          | 1.00     | --     | Sfavorevole |
| Spinta terreno           | 1.00     | --     | Sfavorevole |
| carico stradale uniforme | 1.00     | 1.00   | Sfavorevole |

Combinazione n° 18 - SLEQ H + V

| Condizione               | $\gamma$ | $\Psi$ | Effetto     |
|--------------------------|----------|--------|-------------|
| Peso muro                | 1.00     | --     | Sfavorevole |
| Peso terrapieno          | 1.00     | --     | Sfavorevole |
| Spinta terreno           | 1.00     | --     | Sfavorevole |
| carico stradale uniforme | 1.00     | 1.00   | Sfavorevole |

Combinazione n° 19 - SLEQ H - V

| Condizione               | $\gamma$ | $\Psi$ | Effetto     |
|--------------------------|----------|--------|-------------|
| Peso muro                | 1.00     | --     | Sfavorevole |
| Peso terrapieno          | 1.00     | --     | Sfavorevole |
| Spinta terreno           | 1.00     | --     | Sfavorevole |
| carico stradale uniforme | 1.00     | 1.00   | Sfavorevole |

Combinazione n° 20 - HYD

| Condizione               | $\gamma$ | $\Psi$ | Effetto     |
|--------------------------|----------|--------|-------------|
| Peso muro                | 1.00     | --     | Favorevole  |
| Peso terrapieno          | 1.00     | --     | Favorevole  |
| Spinta terreno           | 1.00     | --     | Sfavorevole |
| carico stradale uniforme | 1.00     | 1.00   | Sfavorevole |

Combinazione n° 21 - UPL

| Condizione               | $\gamma$ | $\Psi$ | Effetto     |
|--------------------------|----------|--------|-------------|
| Peso muro                | 0.90     | --     | Favorevole  |
| Peso terrapieno          | 0.90     | --     | Favorevole  |
| Spinta terreno           | 1.10     | --     | Sfavorevole |
| carico stradale uniforme | 1.50     | 1.00   | Sfavorevole |

Dati sismici

|                                |                               |
|--------------------------------|-------------------------------|
| Comune                         | Selci                         |
| Provincia                      | Rieti                         |
| Regione                        | Lazio                         |
| Latitudine                     | 42.312870                     |
| Longitudine                    | 12.625858                     |
| Indice punti di interpolazione | 26516 - 26738 - 26739 - 26517 |
| Vita nominale                  | 100 anni                      |
| Classe d'uso                   | IV                            |
| Tipo costruzione               | Opere strategiche             |
| Vita di riferimento            | 200 anni                      |

|   | Simbolo | U.M.                | SLU   | SLE   |
|---|---------|---------------------|-------|-------|
| Accelerazione al suolo  | $a_g$   | [m/s <sup>2</sup> ] | 2.284 | 1.111 |
| Accelerazione al suolo  | $a_g/g$ | [%]                 | 0.233 | 0.113 |
| Massimo fattore amplificazione spettro orizzontale              | F0      |                     | 2.486 | 2.420 |
| Periodo inizio tratto spettro a velocità costante               | Tc*     |                     | 0.328 | 0.296 |
| Tipo di sottosuolo - Coefficiente stratigrafico                 | Ss      |                     | C     | 1.353 |
| Categoria topografica - Coefficiente amplificazione topografica | St      |                     | T1    | 1.000 |

| Stato limite ...      | Coeff. di riduzione $\beta_m$ | kh [%] | kv [%] |
|-----------------------|-------------------------------|--------|--------|
| Ultimo                | 1.000                         | 31.501 | 15.751 |
| Ultimo - Ribaltamento | 1.000                         | 31.501 | 15.751 |
| Esercizio             | 1.000                         | 16.990 | 8.495  |

Forma diagramma incremento sismico  **Rettangolare**

PROGETTAZIONE ATI:

## Opzioni di calcolo

### Spinta

|                                |               |
|--------------------------------|---------------|
| Metodo di calcolo della spinta | Culmann       |
| Tipo di spinta                 | Spinta attiva |
| Terreno a bassa permeabilità   | NO            |
| Superficie di spinta limitata  | SI            |
| Distanza dalla testa del muro  | 11.00         |

### Stabilità globale

|   |        |
|---|--------|
| Metodo di calcolo della stabilità globale | Bishop |
|---|--------|

### Altro

|  |       |
|--|-------|
| Partecipazione spinta passiva terreno antistante                   | 0.00  |
| Partecipazione resistenza passiva dente di fondazione              | 50.00 |
| Componente verticale della spinta nel calcolo delle sollecitazioni | NO    |
| Considera terreno sulla fondazione di valle                        | NO    |
| Considera spinta e peso acqua fondazione di valle                  | NO    |
| Calcolo percorso filtrazione nella verifica a sifonamento          | Bligh |

### Spostamenti

|  |           |
|--|-----------|
| Modello a blocchi                                  |           |
| Non è stato richiesto il calcolo degli spostamenti |           |
| Spostamento limite                                 | 5.00 [cm] |

### Opzioni calcolo pali

#### Portanza verticale

|  |   |
|--|---|
| Metodo di calcolo della portanza alla punta  | Berezantzev   |
| Metodo di calcolo della portanza alla laterale   | Integrazione delle tensioni tangenziali ( $k_s \sigma_v \tan(\delta) + c_a$ ) |
| Correzione angolo di attrito in funzione del tipo di palo (infisso/trivellato)                   | Attiva  |
| Andamento pressione verticale nel calcolo della portanza alla punta $\sigma_v$ con la profondità | Pressione geostatica  |
| Andamento pressione verticale nel calcolo della portanza laterale                                | Pressione geostatica  |

#### Portanza trasversale

|                                |   |
|--------------------------------|---|
| Costante di Winkler: da strato |   |
| Criterio rottura palo-terreno  |   |
| - Spostamento limite           | Non attivo                                    |
| - Pressione limite             | Pressione passiva con moltiplicatore $M=3.00$ |
| - Palo infinitamente elastico  | Non attivo                                    |

#### Cedimenti

|                               |                             |
|-------------------------------|-----------------------------|
| Metodo di calcolo             | Metodo agli elementi finiti |
| Spostamento limite alla punta | 1.00 [cm]                   |
| Spostamento limite laterale   | 0.50 [cm]                   |

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

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

### Specifiche per le verifiche nelle combinazioni allo Stato Limite di Esercizio (SLE)

#### Paramento e fondazione muro

Verifiche strutturali nelle combinazioni SLD eseguite. Struttura in classe d'uso III o IV

|                                 |           |
|---------------------------------|-----------|
| Condizioni ambientali           | Ordinarie |
| Armatura ad aderenza migliorata | SI        |

#### Verifica a fessurazione

|  |  |
|--|--|
| Sensibilità armatura                     | Poco sensibile                                     |
| Metodo di calcolo aperture delle fessure | Eurocodice 2 (Ed. 2004) - NTC 2008 II Formulazione |
| Calcolo momento fessurazione             | Apertura   |
| Resistenza a trazione per                | Flessione  |
| Valori limite aperture delle fessure:    | $w_1=0.20$   |
|  | $w_2=0.30$   |
|  | $w_3=0.40$   |

PROGETTAZIONE ATI:

*Verifica delle tensioni*

Valori limite delle tensioni nei materiali:

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

PROGETTAZIONE ATI:

## Risultati per combinazione

### Spinta e forze

#### Simbologia adottata

|        |  |
|--------|--|
| Ic     | Indice della combinazione  |
| A      | Tipo azione  |
| I      | Inclinazione della spinta, espressa in [°]                               |
| V      | Valore dell'azione, espressa in [kg]                                     |
| Cx, Cy | Componente in direzione X ed Y dell'azione, espressa in [kg]             |
| Px, Py | Coordinata X ed Y del punto di applicazione dell'azione, espressa in [m] |

| Ic | A   | V<br>[kg] | I<br>[°] | Cx<br>[kg] | Cy<br>[kg]  | Px<br>[m] | Py<br>[m] |
|----|---|-----------|----------|------------|-------------|-----------|-----------|
| 1  | Spinta statica                            | 29805     | 21.20    | 27788      | 10780       | 4.00      | -6.58     |
|    | Peso/Inerzia muro                         |           |          | 0          | 37940/0     | 0.59      | -7.29     |
|    | Peso/Inerzia terrapieno                   |           |          | 0          | 54342/0     | 2.11      | -4.20     |
|    | Peso dell'acqua sulla fondazione di valle |           |          |            | 0           | 0.00      | 0.00      |
|    | Resistenza pali                           |           |          | -86836     |             |           |           |
| 2  | Spinta statica                            | 21987     | 21.35    | 20478      | 8005        | 4.00      | -6.54     |
|    | Incremento di spinta sismica              |           | 22296    | 20766      | 8117        | 4.00      | -5.05     |
|    | Peso/Inerzia muro                         |           |          | 11952      | 37940/5976  | 0.59      | -7.29     |
|    | Peso/Inerzia terrapieno                   |           |          | 16489      | 52344/8245  | 2.11      | -4.20     |
|    | Peso dell'acqua sulla fondazione di valle |           |          |            | 0           | 0.00      | 0.00      |
|    | Resistenza pali                           |           |          | -73032     |             |           |           |
| 3  | Spinta statica                            | 21987     | 21.46    | 20463      | 8044        | 4.00      | -6.54     |
|    | Incremento di spinta sismica              |           | 15301    | 14240      | 5598        | 4.00      | -5.05     |
|    | Peso/Inerzia muro                         |           |          | 11952      | 37940/-5976 | 0.59      | -7.29     |
|    | Peso/Inerzia terrapieno                   |           |          | 16489      | 52344/-8245 | 2.11      | -4.20     |
|    | Peso dell'acqua sulla fondazione di valle |           |          |            | 0           | 0.00      | 0.00      |
|    | Resistenza pali                           |           |          | -71186     |             |           |           |
| 4  | Spinta statica                            | 29805     | 21.20    | 27788      | 10780       | 4.00      | -6.58     |
|    | Peso/Inerzia muro                         |           |          | 0          | 49322/0     | 0.59      | -7.29     |
|    | Peso/Inerzia terrapieno                   |           |          | 0          | 68847/0     | 2.11      | -4.20     |
|    | Peso dell'acqua sulla fondazione di valle |           |          |            | 0           | 0.00      | 0.00      |
|    | Resistenza pali                           |           |          | -90709     |             |           |           |
| 5  | Spinta statica                            | 29805     | 21.20    | 27788      | 10780       | 4.00      | -6.58     |
|    | Peso/Inerzia muro                         |           |          | 0          | 37940/0     | 0.59      | -7.29     |
|    | Peso/Inerzia terrapieno                   |           |          | 0          | 68847/0     | 2.11      | -4.20     |
|    | Peso dell'acqua sulla fondazione di valle |           |          |            | 0           | 0.00      | 0.00      |
|    | Resistenza pali                           |           |          | -94058     |             |           |           |
| 6  | Spinta statica                            | 29805     | 21.20    | 27788      | 10780       | 4.00      | -6.58     |
|    | Peso/Inerzia muro                         |           |          | 0          | 49322/0     | 0.59      | -7.29     |
|    | Peso/Inerzia terrapieno                   |           |          | 0          | 54342/0     | 2.11      | -4.20     |
|    | Peso dell'acqua sulla fondazione di valle |           |          |            | 0           | 0.00      | 0.00      |
|    | Resistenza pali                           |           |          | -83830     |             |           |           |
| 13 | Spinta statica                            | 21987     | 21.26    | 20491      | 7971        | 4.00      | -6.54     |
|    | Peso/Inerzia muro                         |           |          | 0          | 37940/0     | 0.59      | -7.29     |
|    | Peso/Inerzia terrapieno                   |           |          | 0          | 52344/0     | 2.11      | -4.20     |
|    | Peso dell'acqua sulla fondazione di valle |           |          |            | 0           | 0.00      | 0.00      |
|    | Risultante forze sul muro                 |           |          | 2000       | 100         | --        | --        |
|    | Resistenza pali                           |           |          | -102264    |             |           |           |
| 14 | Spinta statica                            | 28038     | 25.97    | 25208      | 12276       | 4.00      | -2.98     |
|    | Peso/Inerzia muro                         |           |          | 0          | 37940/0     | 0.59      | -7.29     |
|    | Peso/Inerzia terrapieno                   |           |          | 0          | 72344/0     | 2.15      | -4.23     |
|    | Peso dell'acqua sulla fondazione di valle |           |          |            | 0           | 0.00      | 0.00      |
|    | Resistenza pali                           |           |          | -79875     |             |           |           |
| 15 | Spinta statica                            | 21987     | 21.26    | 20491      | 7971        | 4.00      | -6.54     |
|    | Peso/Inerzia muro                         |           |          | 0          | 37940/0     | 0.59      | -7.29     |
|    | Peso/Inerzia terrapieno                   |           |          | 0          | 52344/0     | 2.11      | -4.20     |
|    | Peso dell'acqua sulla fondazione di valle |           |          |            | 0           | 0.00      | 0.00      |
|    | Resistenza pali                           |           |          | -116887    |             |           |           |
| 16 | Spinta statica                            | 21987     | 21.26    | 20491      | 7971        | 4.00      | -6.54     |
|    | Peso/Inerzia muro                         |           |          | 0          | 37940/0     | 0.59      | -7.29     |
|    | Peso/Inerzia terrapieno                   |           |          | 0          | 52344/0     | 2.11      | -4.20     |
|    | Peso dell'acqua sulla fondazione di valle |           |          |            | 0           | 0.00      | 0.00      |
|    | Resistenza pali                           |           |          | -116887    |             |           |           |
| 17 | Spinta statica                            | 21987     | 21.26    | 20491      | 7971        | 4.00      | -6.54     |
|    | Peso/Inerzia muro                         |           |          | 0          | 37940/0     | 0.59      | -7.29     |
|    | Peso/Inerzia terrapieno                   |           |          | 0          | 52344/0     | 2.11      | -4.20     |
|    | Peso dell'acqua sulla fondazione di valle |           |          |            | 0           | 0.00      | 0.00      |
|    | Resistenza pali                           |           |          | -116887    |             |           |           |
| 18 | Spinta statica                            | 21987     | 21.27    | 20489      | 7977        | 4.00      | -6.54     |

PROGETTAZIONE ATI:



| Ic | A   | V<br>[kg] | I<br>[°] | Cx<br>[kg] | Cy<br>[kg]  | Px<br>[m] | Py<br>[m] |
|----|---|-----------|----------|------------|-------------|-----------|-----------|
|    | Incremento di spinta sismica              |           | 11589    | 10800      | 4204        | 4.00      | -5.05     |
|    | Peso/Inerzia muro                         |           |          | 6446       | 37940/3223  | 0.59      | -7.29     |
|    | Peso/Inerzia terrapieno                   |           |          | 8893       | 52344/4447  | 2.11      | -4.20     |
|    | Peso dell'acqua sulla fondazione di valle |           |          |            | 0           | 0.00      | 0.00      |
|    | Resistenza pali                           |           |          | -94857     |             |           |           |
| 19 | Spinta statica                            | 21987     | 21.33    | 20480      | 7998        | 4.00      | -6.54     |
|    | Incremento di spinta sismica              |           | 7554     | 7037       | 2748        | 4.00      | -5.05     |
|    | Peso/Inerzia muro                         |           |          | 6446       | 37940/-3223 | 0.59      | -7.29     |
|    | Peso/Inerzia terrapieno                   |           |          | 8893       | 52344/-4447 | 2.11      | -4.20     |
|    | Peso dell'acqua sulla fondazione di valle |           |          |            | 0           | 0.00      | 0.00      |
|    | Resistenza pali                           |           |          | -93747     |             |           |           |

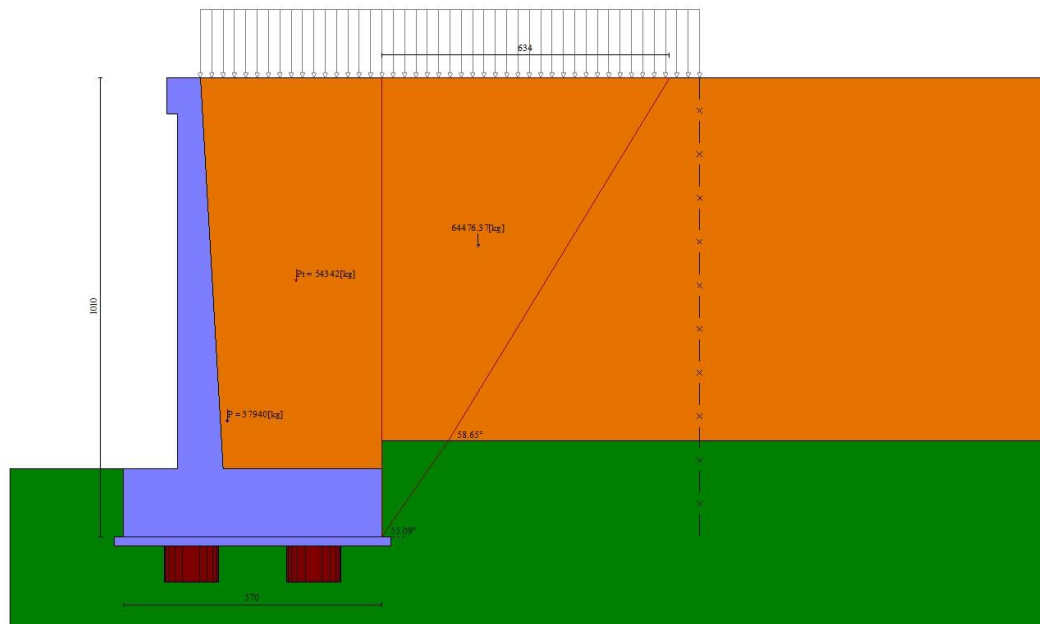


Fig. 7 - Cuneo di spinta (combinazione statica) (Combinazione n° 1)

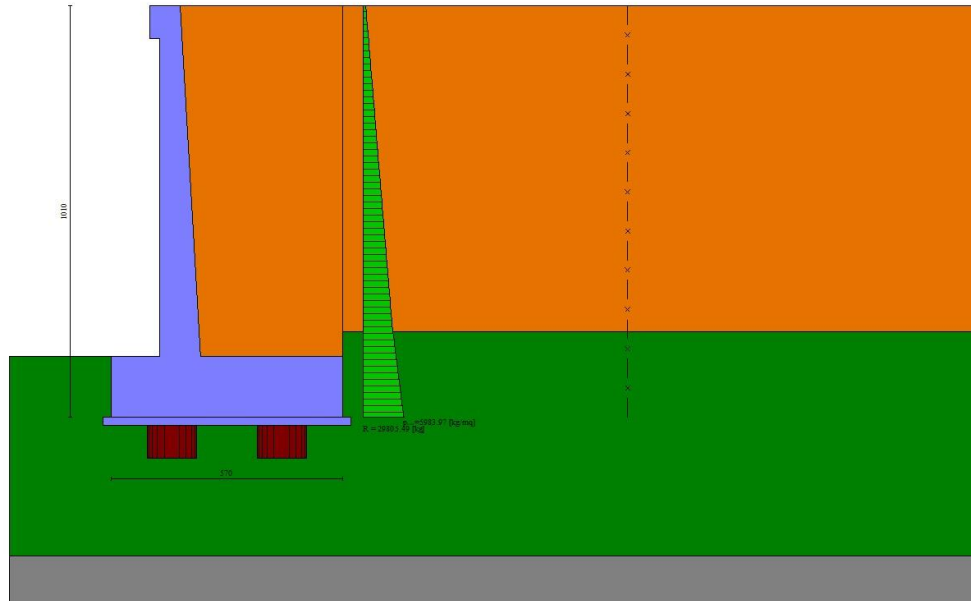


Fig. 8 - Diagramma delle pressioni (combinazione statica) (Combinazione n° 1)

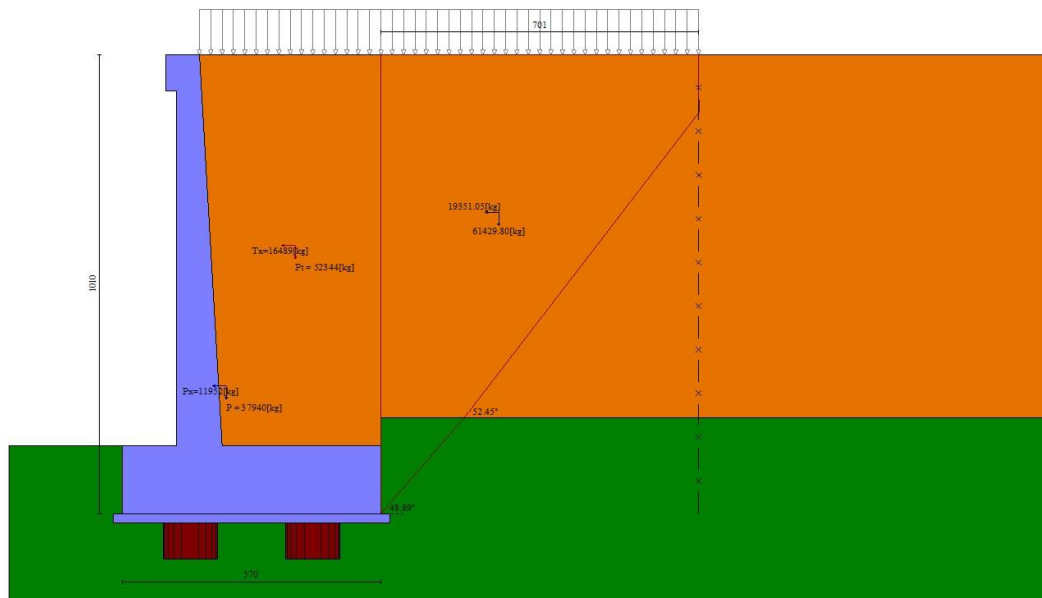


Fig. 9 - Cuneo di spinta (combinazione sismica) (Combinazione n° 2)

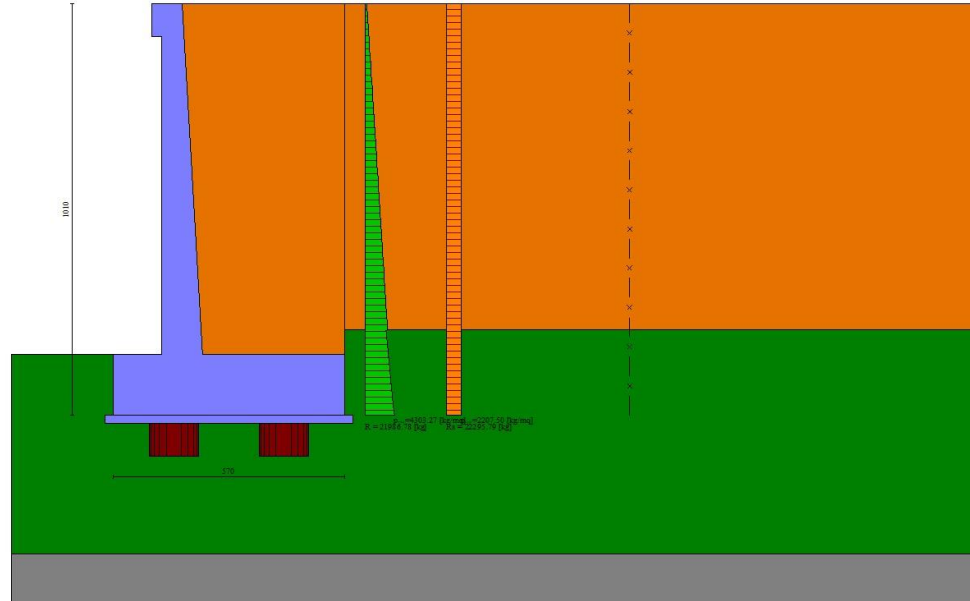


Fig. 10 - Diagramma delle pressioni (combinazione sismica) (Combinazione n° 2)

## Risultanti globali

### Simbologia adottata

|     |   |
|-----|---|
| Cmb | Indice/Tipo combinazione                                |
| N   | Componente normale al piano di posa, espressa in [kg]   |
| T   | Componente parallela al piano di posa, espressa in [kg] |
| Mr  | Momento ribaltante, espresso in [kgm]                   |
| Ms  | Momento stabilizzante, espresso in [kgm]                |
| ecc | Eccentricità risultante, espressa in [m]                |

| Ic                  | N<br>[kg] | T<br>[kg] | Mr<br>[kgm] | Ms<br>[kgm] | ecc<br>[m] |
|---------------------|-----------|-----------|-------------|-------------|------------|
| 1 - STR (A1-M1-R3)  | 103063    | 27788     | 97938       | 355180      | 0.352      |
| 2 - STR (A1-M1-R3)  | 120627    | 69684     | 308592      | 423303      | 1.897      |
| 3 - STR (A1-M1-R3)  | 89706     | 63143     | 320689      | 364067      | 2.364      |
| 4 - STR (A1-M1-R3)  | 128949    | 27788     | 97938       | 436644      | 0.221      |
| 5 - STR (A1-M1-R3)  | 117567    | 27788     | 97938       | 410575      | 0.189      |
| 6 - STR (A1-M1-R3)  | 114445    | 27788     | 97938       | 381249      | 0.372      |
| 7 - GEO (A2-M2-R2)  | 100068    | 27614     | 98420       | 339711      | 0.437      |
| 8 - GEO (A2-M2-R2)  | 120627    | 69684     | 308592      | 423303      | 1.897      |
| 9 - GEO (A2-M2-R2)  | 89706     | 63143     | 320689      | 364067      | 2.364      |
| 10 - EQU (A1-M1-R3) | 103063    | 27788     | 97938       | 2048246     | -16.076    |
| 11 - EQU (A1-M1-R3) | 120627    | 69684     | 308592      | 2116369     | -12.139    |
| 12 - EQU (A1-M1-R3) | 89706     | 63143     | 320689      | 2057133     | -16.509    |
| 13 - ECC            | 98355     | 22491     | 94366       | 331938      | 0.432      |
| 14 - ECC            | 122561    | 25208     | 179578      | 435209      | 0.762      |
| 15 - SLER           | 98255     | 20491     | 72921       | 331768      | 0.213      |
| 16 - SLEF           | 98255     | 20491     | 72921       | 331768      | 0.213      |
| 17 - SLEQ           | 98255     | 20491     | 72921       | 331768      | 0.213      |
| 18 - SLEQ           | 110135    | 46628     | 198025      | 380075      | 1.195      |
| 19 - SLEQ           | 93361     | 42856     | 203320      | 347577      | 1.303      |
| 20 - HYD            | 98255     | 20491     | 72921       | 331768      | 0.213      |
| 21 - UPL            | 93220     | 30791     | 109560      | 321111      | 0.579      |

## Scarichi in testa ai pali

### Simbologia adottata

|     |                                  |
|-----|----------------------------------|
| Cmb | Indice/Tipo combinazione         |
| Ip  | Indice palo                      |
| N   | Sforzo normale, espresso in [kg] |
| M   | Momento, espresso in [kgm]       |
| T   | Taglio, espresso in [kg]         |

| Cmb | Ip | N | M | T |
|-----|----|---|---|---|
|-----|----|---|---|---|

PROGETTAZIONE ATI:

|                          |   | [kg]   | [kgm] | [kg]   |
|--------------------------|---|--------|-------|--------|
| 1 - STR (A1-M1-R3)       | 1 | 55374  | 1132  | -19848 |
|                          | 2 | 91858  | 1132  | -19848 |
| 2 - STR (A1-M1-R3) H + V | 1 | -9620  | 33966 | -49773 |
|                          | 2 | 181944 | 33966 | -49773 |
| 3 - STR (A1-M1-R3) H - V | 1 | -22004 | 35159 | -45101 |
|                          | 2 | 150155 | 35159 | -45101 |
| 4 - STR (A1-M1-R3)       | 1 | 75766  | -1869 | -19848 |
|                          | 2 | 108447 | -1869 | -19848 |
| 5 - STR (A1-M1-R3)       | 1 | 69155  | -4334 | -19848 |
|                          | 2 | 98798  | -4334 | -19848 |
| 6 - STR (A1-M1-R3)       | 1 | 61962  | 3566  | -19848 |
|                          | 2 | 101530 | 3566  | -19848 |
| 13 - ECC                 | 1 | 52718  | 6566  | -16065 |
|                          | 2 | 87789  | 6566  | -16065 |
| 14 - ECC                 | 1 | 56386  | 24481 | -18005 |
|                          | 2 | 118701 | 24481 | -18005 |
| 15 - SLER                | 1 | 58497  | -935  | -14636 |
|                          | 2 | 81867  | -935  | -14636 |
| 16 - SLEF                | 1 | 58497  | -935  | -14636 |
|                          | 2 | 81867  | -935  | -14636 |
| 17 - SLEQ                | 1 | 58497  | -935  | -14636 |
|                          | 2 | 81867  | -935  | -14636 |
| 18 - SLEQ H + V          | 1 | 26101  | 22878 | -33305 |
|                          | 2 | 131234 | 22878 | -33305 |
| 19 - SLEQ H - V          | 1 | 19016  | 22385 | -30611 |
|                          | 2 | 114357 | 22385 | -30611 |

## Verifiche geotecniche

### Quadro riassuntivo coeff. di sicurezza calcolati

#### Simbologia adottata

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

| Cmb                 | Sismica | FS <sub>SCO</sub> | FS <sub>RIB</sub> | FS <sub>QLIM</sub> | FS <sub>STAB</sub> | FS <sub>HYD</sub> | FS <sub>UPL</sub> |
|---------------------|---------|-------------------|-------------------|--------------------|--------------------|-------------------|-------------------|
| 1 - STR (A1-M1-R3)  |         | 3.125             |                   |                    |                    |                   |                   |
| 2 - STR (A1-M1-R3)  | H + V   | 1.048             |                   |                    |                    |                   |                   |
| 3 - STR (A1-M1-R3)  | H - V   | 1.127             |                   |                    |                    |                   |                   |
| 4 - STR (A1-M1-R3)  |         | 3.264             |                   |                    |                    |                   |                   |
| 5 - STR (A1-M1-R3)  |         | 3.385             |                   |                    |                    |                   |                   |
| 6 - STR (A1-M1-R3)  |         | 3.017             |                   |                    |                    |                   |                   |
| 7 - GEO (A2-M2-R2)  |         |                   |                   |                    | 3.223              |                   |                   |
| 8 - GEO (A2-M2-R2)  | H + V   |                   |                   |                    | 1.894              |                   |                   |
| 9 - GEO (A2-M2-R2)  | H - V   |                   |                   |                    | 1.449              |                   |                   |
| 10 - EQU (A1-M1-R3) |         |                   | 20.914            |                    |                    |                   |                   |
| 11 - EQU (A1-M1-R3) | H + V   |                   | 6.858             |                    |                    |                   |                   |
| 12 - EQU (A1-M1-R3) | H - V   |                   | 6.415             |                    |                    |                   |                   |
| 20 - HYD            |         |                   |                   |                    |                    | 100.000           |                   |
| 21 - UPL            |         |                   |                   |                    |                    |                   | 100.000           |

### Verifiche portanza trasversale (scorrimento)

#### Simbologia adottata

|     |   |
|-----|---|
| Ic  | Indice/Tipo combinazione  |
| Ip  | Indice palo   |
| T   | Carico orizzontale agente alla testa del palo, espresso in [kg] |
| Td  | Portanza trasversale di progetto, espresso in [kg]              |
| Fso | Fattore di sicurezza (Td/T)                                     |

PROGETTAZIONE ATI:

| Ic                       | Ip | T<br>[kg] | Td<br>[kg] | FS <sub>o</sub> |
|--------------------------|----|-----------|------------|-----------------|
| 1 - STR (A1-M1-R3)       | 1  | -19848    | 62026      | 3.125           |
|                          | 2  | -19848    | 62026      | 3.125           |
| 2 - STR (A1-M1-R3) H + V | 1  | -49773    | 52166      | 1.048           |
|                          | 2  | -49773    | 52166      | 1.048           |
| 3 - STR (A1-M1-R3) H - V | 1  | -45101    | 50847      | 1.127           |
|                          | 2  | -45101    | 50847      | 1.127           |
| 4 - STR (A1-M1-R3)       | 1  | -19848    | 64792      | 3.264           |
|                          | 2  | -19848    | 64792      | 3.264           |
| 5 - STR (A1-M1-R3)       | 1  | -19848    | 67185      | 3.385           |
|                          | 2  | -19848    | 67185      | 3.385           |
| 6 - STR (A1-M1-R3)       | 1  | -19848    | 59878      | 3.017           |
|                          | 2  | -19848    | 59878      | 3.017           |

### Verifiche portanza verticale

#### Simbologia adottata

|     |   |
|-----|---|
| Ic  | Indice/Tipo combinazione                                      |
| Ip  | Indice palo   |
| N   | Carico verticale agente alla testa del palo, espresso in [kg] |
| Pd  | Portanza di progetto, espresso in [kg]                        |
| FSv | Fattore di sicurezza (Pd/N)                                   |

| Ic                       | Ip | N<br>[kg] | Pd<br>[kg] | FS <sub>v</sub> |
|--------------------------|----|-----------|------------|-----------------|
| 1 - STR (A1-M1-R3)       | 1  | 55374     | 183750     | 3.318           |
|                          | 2  | 91858     | 183750     | 2.000           |
| 2 - STR (A1-M1-R3) H + V | 1  | -9620     | 182624     | 18.985          |
|                          | 2  | 181944    | 183750     | 1.010           |
| 3 - STR (A1-M1-R3) H - V | 1  | -22004    | 182624     | 8.299           |
|                          | 2  | 150155    | 183750     | 1.224           |
| 4 - STR (A1-M1-R3)       | 1  | 75766     | 183750     | 2.425           |
|                          | 2  | 108447    | 183750     | 1.694           |
| 5 - STR (A1-M1-R3)       | 1  | 69155     | 183750     | 2.657           |
|                          | 2  | 98798     | 183750     | 1.860           |
| 6 - STR (A1-M1-R3)       | 1  | 61962     | 183750     | 2.966           |
|                          | 2  | 101530    | 183750     | 1.810           |

### Dettagli calcolo portanza verticale

#### Simbologia adottata

|          |  |
|----------|--|
| n°       | Indice palo  |
| Nc, Nq   | Coeff. di capacità portante  |
| N'c, N'q | Coeff. di capacità portante corretti                               |
| Zc       | Massima profondità andamento pressione geostatica, espressa in [m] |
| Pp, Pl   | Portanza di punta e laterale caratteristica, espresse in [kg]      |
| A        | Attrito negativo, espresso in [kg]                                 |
| Wp       | Peso palo, espresso in [kg]  |

| n° | Nc     | N'c    | Nq     | N'q    | Zc<br>[m] | Pp<br>[kg] | Pl<br>[kg] | A<br>[kg] | Wp<br>[kg] |
|----|--------|--------|--------|--------|-----------|------------|------------|-----------|------------|
| 1  | 36.657 | 36.657 | 16.560 | 16.560 | --        | 525668     | 27520      | 0         | 59376      |
|    |        |        |        |        |           | 525668     | 27520      |           |            |
| 2  | 36.657 | 36.657 | 16.560 | 16.560 | --        | 525668     | 27520      | 0         | 59376      |
|    |        |        |        |        |           | 525668     | 27520      |           |            |

### Verifica a ribaltamento

#### Simbologia adottata

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

La verifica viene eseguita rispetto allo spigolo inferiore esterno della fondazione

| n°                  | Ms<br>[kgm] | Mr<br>[kgm] | FS     |
|---------------------|-------------|-------------|--------|
| 10 - EQU (A1-M1-R3) | 2048246     | 97938       | 20.914 |

PROGETTAZIONE ATI:

| n°                        | Ms<br>[kgm] | Mr<br>[kgm] | FS    |
|---------------------------|-------------|-------------|-------|
| 11 - EQU (A1-M1-R3) H + V | 2116369     | 308592      | 6.858 |
| 12 - EQU (A1-M1-R3) H - V | 2057133     | 320689      | 6.415 |

### Verifica stabilità globale muro + terreno

#### Simbologia adottata

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

| Ic                       | C<br>[m]    | R<br>[m] | FS    |
|--------------------------|-------------|----------|-------|
| 7 - GEO (A2-M2-R2)       | -4.50; 3.00 | 34.81    | 3.223 |
| 8 - GEO (A2-M2-R2) H + V | -4.00; 4.50 | 36.19    | 1.894 |
| 9 - GEO (A2-M2-R2) H - V | -4.00; 4.50 | 36.19    | 1.449 |

### Dettagli strisce verifiche stabilità

#### Simbologia adottata

|  |   |
|--|---|
| Le ascisse X sono considerate positive verso monte   |   |
| Le ordinate Y sono considerate positive verso l'alto |   |
| Origine in testa al muro (spigolo contro terra)      |   |
| W  | peso della striscia espresso in [kg]  |
| Qy   | carico sulla striscia espresso in [kg]  |
| Qf   | carico acqua sulla striscia espresso in [kg]  |
| $\alpha$   | angolo fra la base della striscia e l'orizzontale espresso in [°] (positivo antiorario) |
| $\phi$   | angolo d'attrito del terreno lungo la base della striscia                               |
| c  | coesione del terreno lungo la base della striscia espressa in [kg/cmq]                  |
| b  | larghezza della striscia espressa in [m]  |
| u  | pressione neutra lungo la base della striscia espressa in [kg/cmq]                      |
| Tx; Ty   | Resistenza al taglio fornita dai tiranti in direzione X ed Y espressa in [kg/cmq]       |

#### Combinazione n° 7 - GEO (A2-M2-R2)

| n° | W<br>[kg] | Qy<br>[kg] | Qf<br>[kg] | b<br>[m]      | $\alpha$<br>[°] | $\phi$<br>[°] | c<br>[kg/cmq] | u<br>[kg/cmq] | Tx; Ty<br>[kg] |
|----|-----------|------------|------------|---------------|-----------------|---------------|---------------|---------------|----------------|
| 1  | 22007     | 0          | 0          | 30.19 - 2.70  | 75.866          | 28.352        | 0.00          | 0.000         |                |
| 2  | 58797     | 0          | 0          | 2.70          | 62.032          | 23.043        | 0.08          | 0.127         |                |
| 3  | 82323     | 0          | 0          | 2.70          | 53.544          | 30.167        | 0.00          | 0.564         |                |
| 4  | 99901     | 0          | 0          | 2.70          | 46.566          | 30.167        | 0.00          | 0.889         |                |
| 5  | 113816    | 0          | 0          | 2.70          | 40.411          | 30.167        | 0.00          | 1.147         |                |
| 6  | 125237    | 0          | 0          | 2.70          | 34.783          | 21.315        | 0.16          | 1.356         |                |
| 7  | 135242    | 0          | 0          | 2.70          | 29.521          | 21.315        | 0.16          | 1.526         |                |
| 8  | 143446    | 3141       | 0          | 2.70          | 24.522          | 21.315        | 0.16          | 1.664         |                |
| 9  | 149982    | 3511       | 0          | 2.70          | 19.716          | 21.315        | 0.16          | 1.774         |                |
| 10 | 155723    | 3511       | 0          | 2.70          | 15.052          | 21.315        | 0.16          | 1.859         |                |
| 11 | 140832    | 3511       | 0          | 2.70          | 10.489          | 21.315        | 0.16          | 1.920         |                |
| 12 | 126602    | 626        | 0          | 2.70          | 5.992           | 21.315        | 0.16          | 1.959         |                |
| 13 | 104554    | 0          | 0          | 2.70          | 1.532           | 21.315        | 0.16          | 1.977         |                |
| 14 | 104404    | 0          | 0          | 2.70          | -2.918          | 21.315        | 0.16          | 1.974         |                |
| 15 | 103284    | 0          | 0          | 2.70          | -7.386          | 21.315        | 0.16          | 1.949         |                |
| 16 | 101174    | 0          | 0          | 2.70          | -11.900         | 21.315        | 0.16          | 1.904         |                |
| 17 | 98032     | 0          | 0          | 2.70          | -16.491         | 21.315        | 0.16          | 1.835         |                |
| 18 | 93792     | 0          | 0          | 2.70          | -21.194         | 21.315        | 0.16          | 1.743         |                |
| 19 | 88356     | 0          | 0          | 2.70          | -26.054         | 21.315        | 0.16          | 1.624         |                |
| 20 | 81581     | 0          | 0          | 2.70          | -31.126         | 21.315        | 0.16          | 1.477         |                |
| 21 | 73251     | 0          | 0          | 2.70          | -36.489         | 30.167        | 0.00          | 1.295         |                |
| 22 | 63031     | 0          | 0          | 2.70          | -42.259         | 30.167        | 0.00          | 1.073         |                |
| 23 | 50357     | 0          | 0          | 2.70          | -48.629         | 30.167        | 0.00          | 0.797         |                |
| 24 | 34135     | 0          | 0          | 2.70          | -55.969         | 30.167        | 0.00          | 0.443         |                |
| 25 | 12037     | 0          | 0          | -37.33 - 2.70 | -65.161         | 23.043        | 0.08          | 0.000         |                |

Resistenza al taglio pali 0 [kg]

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

| n° | W<br>[kg] | Qy<br>[kg] | Qf<br>[kg] | b<br>[m]     | $\alpha$<br>[°] | $\phi$<br>[°] | c<br>[kg/cmq] | u<br>[kg/cmq] | Tx; Ty<br>[kg] |
|----|-----------|------------|------------|--------------|-----------------|---------------|---------------|---------------|----------------|
| 1  | 21194     | 0          | 0          | 31.92 - 2.79 | 74.515          | 34.000        | 0.00          | 0.000         |                |
| 2  | 57255     | 0          | 0          | 2.79         | 61.632          | 28.000        | 0.10          | 0.064         |                |
| 3  | 81843     | 0          | 0          | 2.79         | 53.291          | 36.000        | 0.00          | 0.509         |                |
| 4  | 100408    | 0          | 0          | 2.79         | 46.398          | 36.000        | 0.00          | 0.842         |                |
| 5  | 115146    | 0          | 0          | 2.79         | 40.305          | 36.000        | 0.00          | 1.106         |                |
| 6  | 127179    | 0          | 0          | 2.79         | 34.726          | 36.000        | 0.00          | 1.321         |                |
| 7  | 137703    | 0          | 0          | 2.79         | 29.506          | 26.000        | 0.20          | 1.496         |                |
| 8  | 146437    | 1374       | 0          | 2.79         | 24.545          | 26.000        | 0.20          | 1.639         |                |

PROGETTAZIONE ATI:

| n° | W<br>[kg] | Qy<br>[kg] | Qf<br>[kg] | b<br>[m]      | α<br>[°] | φ<br>[°] | c<br>[kg/cmq] | u<br>[kg/cmq] | Tx; Ty<br>[kg] |
|----|-----------|------------|------------|---------------|----------|----------|---------------|---------------|----------------|
| 9  | 153407    | 2786       | 0          | 2.79          | 19.774   | 26.000   | 0.20          | 1.753         |                |
| 10 | 158789    | 2786       | 0          | 2.79          | 15.144   | 26.000   | 0.20          | 1.840         |                |
| 11 | 165075    | 2786       | 0          | 2.79          | 10.613   | 26.000   | 0.20          | 1.904         |                |
| 12 | 140257    | 1267       | 0          | 2.79          | 6.149    | 26.000   | 0.20          | 1.945         |                |
| 13 | 107535    | 0          | 0          | 2.79          | 1.723    | 26.000   | 0.20          | 1.964         |                |
| 14 | 107152    | 0          | 0          | 2.79          | -2.693   | 26.000   | 0.20          | 1.962         |                |
| 15 | 106017    | 0          | 0          | 2.79          | -7.126   | 26.000   | 0.20          | 1.938         |                |
| 16 | 103837    | 0          | 0          | 2.79          | -11.602  | 26.000   | 0.20          | 1.892         |                |
| 17 | 100571    | 0          | 0          | 2.79          | -16.151  | 26.000   | 0.20          | 1.823         |                |
| 18 | 96152     | 0          | 0          | 2.79          | -20.809  | 26.000   | 0.20          | 1.730         |                |
| 19 | 90479     | 0          | 0          | 2.79          | -25.616  | 26.000   | 0.20          | 1.610         |                |
| 20 | 83408     | 0          | 0          | 2.79          | -30.628  | 26.000   | 0.20          | 1.461         |                |
| 21 | 74721     | 0          | 0          | 2.79          | -35.917  | 36.000   | 0.00          | 1.277         |                |
| 22 | 64083     | 0          | 0          | 2.79          | -41.592  | 36.000   | 0.00          | 1.053         |                |
| 23 | 50940     | 0          | 0          | 2.79          | -47.830  | 36.000   | 0.00          | 0.775         |                |
| 24 | 34242     | 0          | 0          | 2.79          | -54.963  | 36.000   | 0.00          | 0.423         |                |
| 25 | 11987     | 0          | 0          | -37.74 - 2.79 | -63.716  | 28.000   | 0.10          | 0.000         |                |

Resistenza al taglio pali 0 [kg]

Combinazione n° 9 - GEO (A2-M2-R2) H - V

| n° | W<br>[kg] | Qy<br>[kg] | Qf<br>[kg] | b<br>[m]      | α<br>[°] | φ<br>[°] | c<br>[kg/cmq] | u<br>[kg/cmq] | Tx; Ty<br>[kg] |
|----|-----------|------------|------------|---------------|----------|----------|---------------|---------------|----------------|
| 1  | 21194     | 0          | 0          | 31.92 - 2.79  | 74.515   | 34.000   | 0.00          | 0.000         |                |
| 2  | 57255     | 0          | 0          | 2.79          | 61.632   | 28.000   | 0.10          | 0.064         |                |
| 3  | 81843     | 0          | 0          | 2.79          | 53.291   | 36.000   | 0.00          | 0.509         |                |
| 4  | 100408    | 0          | 0          | 2.79          | 46.398   | 36.000   | 0.00          | 0.842         |                |
| 5  | 115146    | 0          | 0          | 2.79          | 40.305   | 36.000   | 0.00          | 1.106         |                |
| 6  | 127179    | 0          | 0          | 2.79          | 34.726   | 36.000   | 0.00          | 1.321         |                |
| 7  | 137703    | 0          | 0          | 2.79          | 29.506   | 26.000   | 0.20          | 1.496         |                |
| 8  | 146437    | 1374       | 0          | 2.79          | 24.545   | 26.000   | 0.20          | 1.639         |                |
| 9  | 153407    | 2786       | 0          | 2.79          | 19.774   | 26.000   | 0.20          | 1.753         |                |
| 10 | 158789    | 2786       | 0          | 2.79          | 15.144   | 26.000   | 0.20          | 1.840         |                |
| 11 | 165075    | 2786       | 0          | 2.79          | 10.613   | 26.000   | 0.20          | 1.904         |                |
| 12 | 140257    | 1267       | 0          | 2.79          | 6.149    | 26.000   | 0.20          | 1.945         |                |
| 13 | 107535    | 0          | 0          | 2.79          | 1.723    | 26.000   | 0.20          | 1.964         |                |
| 14 | 107152    | 0          | 0          | 2.79          | -2.693   | 26.000   | 0.20          | 1.962         |                |
| 15 | 106017    | 0          | 0          | 2.79          | -7.126   | 26.000   | 0.20          | 1.938         |                |
| 16 | 103837    | 0          | 0          | 2.79          | -11.602  | 26.000   | 0.20          | 1.892         |                |
| 17 | 100571    | 0          | 0          | 2.79          | -16.151  | 26.000   | 0.20          | 1.823         |                |
| 18 | 96152     | 0          | 0          | 2.79          | -20.809  | 26.000   | 0.20          | 1.730         |                |
| 19 | 90479     | 0          | 0          | 2.79          | -25.616  | 26.000   | 0.20          | 1.610         |                |
| 20 | 83408     | 0          | 0          | 2.79          | -30.628  | 26.000   | 0.20          | 1.461         |                |
| 21 | 74721     | 0          | 0          | 2.79          | -35.917  | 36.000   | 0.00          | 1.277         |                |
| 22 | 64083     | 0          | 0          | 2.79          | -41.592  | 36.000   | 0.00          | 1.053         |                |
| 23 | 50940     | 0          | 0          | 2.79          | -47.830  | 36.000   | 0.00          | 0.775         |                |
| 24 | 34242     | 0          | 0          | 2.79          | -54.963  | 36.000   | 0.00          | 0.423         |                |
| 25 | 11987     | 0          | 0          | -37.74 - 2.79 | -63.716  | 28.000   | 0.10          | 0.000         |                |

Resistenza al taglio pali 0 [kg]



Fig. 11 - Stabilità fronte di scavo - Cerchio critico (Combinazione n° 9)

### Verifica a sifonamento

#### Simbologia adottata

|            |   |
|------------|---|
| Ic         | Indice della combinazione                               |
| $\Delta H$ | perdita di carico, espressa in [m]                      |
| L          | Lunghezza di filtrazione, espressa in [m]               |
| $\gamma m$ | Peso galleggiamento medio, espressa in [kg/mc]          |
| ic         | gradiente idraulico critico                             |
| ie         | gradiente idraulico di efflusso                         |
| FS         | Fattore di sicurezza a sifonamento (rapporto tra ic/ie) |

| Ic | $\Delta H$<br>[m] | L<br>[m] | $\gamma m$<br>[kg/mc] | ic    | ie    | FS      |
|----|-------------------|----------|-----------------------|-------|-------|---------|
| 20 | 99998.10          | 0.00     | 0.00                  | 0.000 | 0.000 | 100.000 |

### Verifica a sollevamento

#### Simbologia adottata

|    |  |
|----|--|
| As | Azione stabilizzante, espressa in [kg]                   |
| Ai | Azione instabilizzante, espressa in [kg]                 |
| Rp | Resistenza di progetto, espressa in [kg]                 |
| FS | Fattore di sicurezza a sollevamento (rapporto tra As/Ai) |

| Ic | As<br>[kg] | Ai<br>[kg] | FS      |
|----|------------|------------|---------|
| 21 | 93220      | 0          | 100.000 |

### Cedimenti pali

#### Simbologia adottata

|    |                             |
|----|-----------------------------|
| Ic | Indice combinazione         |
| Ip | Indice palo                 |
| w  | Cedimento, espresso in [cm] |

| Ic | Ip | w<br>[cm] |
|----|----|-----------|
| 15 | 1  | 0.1313    |
|    | 2  | 0.1838    |
| 16 | 1  | 0.1313    |
|    | 2  | 0.1838    |

PROGETTAZIONE ATI:



| Ic | Ip | w<br>[cm] |
|----|----|-----------|
| 17 | 1  | 0.1313    |
|    | 2  | 0.1838    |

## Spostamenti

### Simbologia adottata

Cmb Tipo combinazione

#### Modello a blocchi

X Spostamento in direzione X (positivo verso monte), espresso in [cm]

Y Spostamento in direzione Y (positivo verso l'alto), espresso in [cm]

Phi Rotazione (positiva antioraria), espresso in [°]

### Spostamenti ottenuti con il modello a blocchi

| Cmb                       | X<br>[cm] | Y<br>[cm] | Phi<br>[°] |
|---------------------------|-----------|-----------|------------|
| 1 - STR (A1-M1-R3)        | -0.17712  | -0.18208  | 0.01738    |
| 2 - STR (A1-M1-R3) H + V  | -0.93497  | -0.28185  | 0.09124    |
| 3 - STR (A1-M1-R3) H - V  | -0.82682  | -0.22332  | 0.08200    |
| 4 - STR (A1-M1-R3)        | -0.16260  | -0.22183  | 0.01557    |
| 5 - STR (A1-M1-R3)        | -0.15113  | -0.20218  | 0.01412    |
| 6 - STR (A1-M1-R3)        | -0.18889  | -0.20175  | 0.01885    |
| 10 - EQU (A1-M1-R3)       | -0.17712  | -0.18208  | 0.01738    |
| 11 - EQU (A1-M1-R3) H + V | -0.93497  | -0.28185  | 0.09124    |
| 12 - EQU (A1-M1-R3) H - V | -0.82682  | -0.22332  | 0.08200    |
| 13 - ECC                  | -0.16242  | -0.17388  | 0.01670    |
| 14 - ECC                  | -0.27164  | -0.22527  | 0.02968    |
| 15 - SLER                 | -0.11556  | -0.16832  | 0.01113    |
| 16 - SLEF                 | -0.11556  | -0.16832  | 0.01113    |
| 17 - SLEQ                 | -0.11556  | -0.16832  | 0.01113    |
| 18 - SLEQ H + V           | -0.49197  | -0.22512  | 0.05008    |
| 19 - SLEQ H - V           | -0.44209  | -0.19370  | 0.04541    |

## Sollecitazioni

### Elementi calcolati a trave

#### Simbologia adottata

n° Indice della sezione

X Posizione della sezione, espresso in [m]

N Sforzo normale, espresso in [kg]. Positivo se di compressione.

T Taglio, espresso in [kg]. Positivo se diretto da monte verso valle

M Momento, espresso in [kgm]. Positivo se tende le fibre contro terra (a monte)

La posizione delle sezioni di verifica fanno riferimento al sistema di riferimento globale la cui origine è nello spigolo in alto a destra del paramento.

### Elementi calcolati a piastra

#### Simbologia adottata

Mx, My Momenti flettenti, espresso in [kgm]

Mxy Momento torcente, espresso in [kgm]. Positivo se diretto da monte verso valle

Tx, Ty Tagli, espresso in [kg]. Positivo se tende le fibre contro terra (a monte)

I momenti flettenti sono positivi se tendono le fibre inferiori (intradosso fondazione, paramento esterno)

## Paramento

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

| n° | X<br>[m] | N<br>[kg] | T<br>[kg] | M<br>[kgm] |
|----|----------|-----------|-----------|------------|
| 1  | 0.00     | 500       | 0         | 63         |
| 2  | -0.10    | 626       | 40        | 65         |
| 3  | -0.20    | 753       | 85        | 71         |
| 4  | -0.30    | 881       | 135       | 83         |
| 5  | -0.40    | 1012      | 189       | 101        |
| 6  | -0.50    | 1143      | 249       | 124        |
| 7  | -0.60    | 1276      | 313       | 154        |
| 8  | -0.70    | 1410      | 382       | 191        |
| 9  | -0.80    | 1546      | 456       | 236        |
| 10 | -0.90    | 1683      | 535       | 289        |
| 11 | -1.00    | 1822      | 619       | 350        |
| 12 | -1.10    | 1962      | 707       | 420        |
| 13 | -1.20    | 2104      | 801       | 500        |
| 14 | -1.30    | 2247      | 899       | 590        |
| 15 | -1.40    | 2391      | 1003      | 690        |

PROGETTAZIONE ATI:

| n° | X<br>[m] | N<br>[kg] | T<br>[kg] | M<br>[kgm] |
|----|----------|-----------|-----------|------------|
| 16 | -1.50    | 2537      | 1111      | 802        |
| 17 | -1.60    | 2685      | 1224      | 924        |
| 18 | -1.70    | 2833      | 1342      | 1059       |
| 19 | -1.80    | 2984      | 1464      | 1206       |
| 20 | -1.90    | 3135      | 1592      | 1366       |
| 21 | -2.00    | 3288      | 1725      | 1540       |
| 22 | -2.10    | 3443      | 1862      | 1728       |
| 23 | -2.20    | 3599      | 2004      | 1930       |
| 24 | -2.30    | 3756      | 2151      | 2146       |
| 25 | -2.40    | 3915      | 2303      | 2379       |
| 26 | -2.50    | 4075      | 2460      | 2627       |
| 27 | -2.60    | 4237      | 2622      | 2892       |
| 28 | -2.70    | 4400      | 2789      | 3173       |
| 29 | -2.80    | 4565      | 2960      | 3472       |
| 30 | -2.90    | 4731      | 3136      | 3789       |
| 31 | -3.00    | 4899      | 3318      | 4124       |
| 32 | -3.10    | 5068      | 3504      | 4478       |
| 33 | -3.20    | 5238      | 3695      | 4851       |
| 34 | -3.30    | 5410      | 3891      | 5244       |
| 35 | -3.40    | 5583      | 4091      | 5658       |
| 36 | -3.50    | 5758      | 4297      | 6092       |
| 37 | -3.60    | 5934      | 4507      | 6547       |
| 38 | -3.70    | 6112      | 4723      | 7025       |
| 39 | -3.80    | 6291      | 4943      | 7525       |
| 40 | -3.90    | 6471      | 5168      | 8047       |
| 41 | -4.00    | 6653      | 5398      | 8593       |
| 42 | -4.10    | 6837      | 5633      | 9162       |
| 43 | -4.20    | 7021      | 5873      | 9756       |
| 44 | -4.30    | 7208      | 6117      | 10375      |
| 45 | -4.40    | 7395      | 6367      | 11018      |
| 46 | -4.50    | 7585      | 6621      | 11688      |
| 47 | -4.60    | 7775      | 6880      | 12384      |
| 48 | -4.70    | 7967      | 7144      | 13106      |
| 49 | -4.80    | 8161      | 7413      | 13856      |
| 50 | -4.90    | 8356      | 7687      | 14633      |
| 51 | -5.00    | 8552      | 7966      | 15439      |
| 52 | -5.10    | 8750      | 8249      | 16273      |
| 53 | -5.20    | 8949      | 8538      | 17136      |
| 54 | -5.30    | 9150      | 8831      | 18029      |
| 55 | -5.40    | 9352      | 9129      | 18952      |
| 56 | -5.50    | 9555      | 9432      | 19906      |
| 57 | -5.60    | 9760      | 9740      | 20891      |
| 58 | -5.70    | 9967      | 10053     | 21908      |
| 59 | -5.80    | 10175     | 10371     | 22957      |
| 60 | -5.90    | 10384     | 10693     | 24038      |
| 61 | -6.00    | 10595     | 11021     | 25153      |
| 62 | -6.10    | 10807     | 11353     | 26301      |
| 63 | -6.20    | 11021     | 11690     | 27483      |
| 64 | -6.30    | 11236     | 12032     | 28700      |
| 65 | -6.40    | 11452     | 12379     | 29951      |
| 66 | -6.50    | 11670     | 12731     | 31239      |
| 67 | -6.60    | 11890     | 13088     | 32562      |
| 68 | -6.70    | 12110     | 13449     | 33922      |
| 69 | -6.80    | 12333     | 13816     | 35319      |
| 70 | -6.90    | 12556     | 14187     | 36754      |
| 71 | -7.00    | 12782     | 14563     | 38226      |
| 72 | -7.10    | 13008     | 14944     | 39737      |
| 73 | -7.20    | 13236     | 15330     | 41287      |
| 74 | -7.30    | 13466     | 15721     | 42877      |
| 75 | -7.40    | 13697     | 16117     | 44506      |
| 76 | -7.50    | 13929     | 16517     | 46177      |
| 77 | -7.60    | 14163     | 16923     | 47888      |
| 78 | -7.70    | 14398     | 17333     | 49640      |
| 79 | -7.80    | 14635     | 17748     | 51434      |
| 80 | -7.90    | 14873     | 18168     | 53271      |
| 81 | -8.00    | 15113     | 18593     | 55151      |
| 82 | -8.10    | 15354     | 19023     | 57074      |
| 83 | -8.20    | 15596     | 19457     | 59041      |
| 84 | -8.30    | 15840     | 19897     | 61053      |
| 85 | -8.40    | 16086     | 20341     | 63109      |
| 86 | -8.50    | 16332     | 20790     | 65211      |
| 87 | -8.60    | 16581     | 21245     | 67359      |

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

| n° | X<br>[m] | N<br>[kg] | T<br>[kg] | M<br>[kgm] |
|----|----------|-----------|-----------|------------|
| 1  | 0.00     | 579       | 0         | 72         |
| 2  | -0.10    | 724       | 270       | 86         |
| 3  | -0.20    | 871       | 543       | 127        |
| 4  | -0.30    | 1020      | 821       | 196        |
| 5  | -0.40    | 1171      | 1103      | 294        |
| 6  | -0.50    | 1323      | 1390      | 421        |
| 7  | -0.60    | 1477      | 1680      | 577        |

PROGETTAZIONE ATI:

| n° | X<br>[m] | N<br>[kg] | T<br>[kg] | M<br>[kgm] |
|----|----------|-----------|-----------|------------|
| 8  | -0.70    | 1632      | 1975      | 762        |
| 9  | -0.80    | 1790      | 2274      | 978        |
| 10 | -0.90    | 1949      | 2577      | 1224       |
| 11 | -1.00    | 2109      | 2884      | 1501       |
| 12 | -1.10    | 2271      | 3196      | 1810       |
| 13 | -1.20    | 2435      | 3511      | 2150       |
| 14 | -1.30    | 2601      | 3831      | 2523       |
| 15 | -1.40    | 2768      | 4155      | 2928       |
| 16 | -1.50    | 2937      | 4484      | 3367       |
| 17 | -1.60    | 3107      | 4816      | 3839       |
| 18 | -1.70    | 3280      | 5153      | 4345       |
| 19 | -1.80    | 3453      | 5494      | 4885       |
| 20 | -1.90    | 3629      | 5839      | 5460       |
| 21 | -2.00    | 3806      | 6188      | 6071       |
| 22 | -2.10    | 3985      | 6542      | 6717       |
| 23 | -2.20    | 4166      | 6900      | 7399       |
| 24 | -2.30    | 4348      | 7262      | 8117       |
| 25 | -2.40    | 4532      | 7628      | 8873       |
| 26 | -2.50    | 4717      | 7998      | 9666       |
| 27 | -2.60    | 4905      | 8373      | 10497      |
| 28 | -2.70    | 5094      | 8752      | 11366      |
| 29 | -2.80    | 5284      | 9134      | 12273      |
| 30 | -2.90    | 5476      | 9522      | 13220      |
| 31 | -3.00    | 5670      | 9913      | 14206      |
| 32 | -3.10    | 5866      | 10309     | 15232      |
| 33 | -3.20    | 6063      | 10708     | 16298      |
| 34 | -3.30    | 6262      | 11112     | 17405      |
| 35 | -3.40    | 6463      | 11521     | 18554      |
| 36 | -3.50    | 6665      | 11933     | 19743      |
| 37 | -3.60    | 6869      | 12349     | 20975      |
| 38 | -3.70    | 7074      | 12770     | 22250      |
| 39 | -3.80    | 7282      | 13195     | 23567      |
| 40 | -3.90    | 7491      | 13624     | 24928      |
| 41 | -4.00    | 7701      | 14058     | 26332      |
| 42 | -4.10    | 7913      | 14495     | 27780      |
| 43 | -4.20    | 8127      | 14937     | 29273      |
| 44 | -4.30    | 8343      | 15383     | 30812      |
| 45 | -4.40    | 8560      | 15833     | 32395      |
| 46 | -4.50    | 8779      | 16288     | 34024      |
| 47 | -4.60    | 9000      | 16746     | 35700      |
| 48 | -4.70    | 9222      | 17209     | 37422      |
| 49 | -4.80    | 9446      | 17676     | 39192      |
| 50 | -4.90    | 9672      | 18147     | 41009      |
| 51 | -5.00    | 9899      | 18623     | 42874      |
| 52 | -5.10    | 10128     | 19102     | 44787      |
| 53 | -5.20    | 10358     | 19586     | 46750      |
| 54 | -5.30    | 10591     | 20074     | 48761      |
| 55 | -5.40    | 10825     | 20567     | 50822      |
| 56 | -5.50    | 11060     | 21063     | 52934      |
| 57 | -5.60    | 11298     | 21564     | 55095      |
| 58 | -5.70    | 11537     | 22068     | 57308      |
| 59 | -5.80    | 11777     | 22578     | 59573      |
| 60 | -5.90    | 12019     | 23091     | 61889      |
| 61 | -6.00    | 12263     | 23608     | 64257      |
| 62 | -6.10    | 12509     | 24130     | 66678      |
| 63 | -6.20    | 12756     | 24656     | 69152      |
| 64 | -6.30    | 13005     | 25186     | 71679      |
| 65 | -6.40    | 13256     | 25720     | 74261      |
| 66 | -6.50    | 13508     | 26258     | 76896      |
| 67 | -6.60    | 13762     | 26801     | 79587      |
| 68 | -6.70    | 14018     | 27348     | 82333      |
| 69 | -6.80    | 14275     | 27899     | 85134      |
| 70 | -6.90    | 14534     | 28454     | 87992      |
| 71 | -7.00    | 14795     | 29014     | 90906      |
| 72 | -7.10    | 15057     | 29577     | 93877      |
| 73 | -7.20    | 15321     | 30145     | 96905      |
| 74 | -7.30    | 15587     | 30717     | 99991      |
| 75 | -7.40    | 15854     | 31294     | 103135     |
| 76 | -7.50    | 16123     | 31874     | 106338     |
| 77 | -7.60    | 16394     | 32459     | 109600     |
| 78 | -7.70    | 16666     | 33048     | 112921     |
| 79 | -7.80    | 16940     | 33641     | 116302     |
| 80 | -7.90    | 17216     | 34238     | 119743     |
| 81 | -8.00    | 17493     | 34840     | 123246     |
| 82 | -8.10    | 17772     | 35445     | 126809     |
| 83 | -8.20    | 18053     | 36055     | 130434     |
| 84 | -8.30    | 18335     | 36669     | 134121     |
| 85 | -8.40    | 18619     | 37288     | 137870     |
| 86 | -8.50    | 18905     | 37910     | 141683     |
| 87 | -8.60    | 19192     | 38537     | 145558     |

Combinazione n° 3 - STR (A1-M1-R3) H - V

| n° | X | N | T | M |
|----|---|---|---|---|
|----|---|---|---|---|

PROGETTAZIONE ATI:

|    | [m]   | [kg]  | [kg]  | [kgm]  |
|----|-------|-------|-------|--------|
| 1  | 0.00  | 500   | 0     | 63     |
| 2  | -0.10 | 606   | 238   | 75     |
| 3  | -0.20 | 713   | 481   | 111    |
| 4  | -0.30 | 821   | 728   | 172    |
| 5  | -0.40 | 931   | 979   | 259    |
| 6  | -0.50 | 1042  | 1235  | 371    |
| 7  | -0.60 | 1154  | 1494  | 509    |
| 8  | -0.70 | 1267  | 1758  | 673    |
| 9  | -0.80 | 1381  | 2026  | 865    |
| 10 | -0.90 | 1497  | 2298  | 1084   |
| 11 | -1.00 | 1614  | 2574  | 1330   |
| 12 | -1.10 | 1732  | 2854  | 1605   |
| 13 | -1.20 | 1851  | 3139  | 1908   |
| 14 | -1.30 | 1972  | 3428  | 2241   |
| 15 | -1.40 | 2093  | 3721  | 2603   |
| 16 | -1.50 | 2216  | 4018  | 2994   |
| 17 | -1.60 | 2340  | 4320  | 3416   |
| 18 | -1.70 | 2466  | 4626  | 3869   |
| 19 | -1.80 | 2592  | 4936  | 4353   |
| 20 | -1.90 | 2720  | 5250  | 4868   |
| 21 | -2.00 | 2849  | 5568  | 5416   |
| 22 | -2.10 | 2979  | 5890  | 5996   |
| 23 | -2.20 | 3111  | 6217  | 6608   |
| 24 | -2.30 | 3243  | 6548  | 7254   |
| 25 | -2.40 | 3377  | 6883  | 7934   |
| 26 | -2.50 | 3512  | 7223  | 8648   |
| 27 | -2.60 | 3649  | 7566  | 9396   |
| 28 | -2.70 | 3786  | 7914  | 10179  |
| 29 | -2.80 | 3925  | 8266  | 10998  |
| 30 | -2.90 | 4065  | 8622  | 11852  |
| 31 | -3.00 | 4206  | 8982  | 12743  |
| 32 | -3.10 | 4348  | 9347  | 13670  |
| 33 | -3.20 | 4492  | 9716  | 14635  |
| 34 | -3.30 | 4637  | 10088 | 15636  |
| 35 | -3.40 | 4783  | 10466 | 16676  |
| 36 | -3.50 | 4930  | 10847 | 17754  |
| 37 | -3.60 | 5078  | 11233 | 18871  |
| 38 | -3.70 | 5228  | 11622 | 20027  |
| 39 | -3.80 | 5379  | 12016 | 21223  |
| 40 | -3.90 | 5531  | 12414 | 22459  |
| 41 | -4.00 | 5684  | 12817 | 23735  |
| 42 | -4.10 | 5839  | 13223 | 25052  |
| 43 | -4.20 | 5994  | 13634 | 26411  |
| 44 | -4.30 | 6151  | 14049 | 27811  |
| 45 | -4.40 | 6309  | 14468 | 29253  |
| 46 | -4.50 | 6469  | 14892 | 30738  |
| 47 | -4.60 | 6629  | 15319 | 32266  |
| 48 | -4.70 | 6791  | 15751 | 33838  |
| 49 | -4.80 | 6954  | 16187 | 35453  |
| 50 | -4.90 | 7118  | 16627 | 37112  |
| 51 | -5.00 | 7284  | 17072 | 38817  |
| 52 | -5.10 | 7450  | 17520 | 40566  |
| 53 | -5.20 | 7618  | 17973 | 42361  |
| 54 | -5.30 | 7787  | 18430 | 44202  |
| 55 | -5.40 | 7958  | 18891 | 46089  |
| 56 | -5.50 | 8129  | 19357 | 48023  |
| 57 | -5.60 | 8302  | 19826 | 50004  |
| 58 | -5.70 | 8476  | 20300 | 52033  |
| 59 | -5.80 | 8651  | 20778 | 54110  |
| 60 | -5.90 | 8827  | 21260 | 56236  |
| 61 | -6.00 | 9005  | 21747 | 58411  |
| 62 | -6.10 | 9184  | 22237 | 60635  |
| 63 | -6.20 | 9364  | 22732 | 62908  |
| 64 | -6.30 | 9545  | 23231 | 65232  |
| 65 | -6.40 | 9727  | 23734 | 67607  |
| 66 | -6.50 | 9911  | 24242 | 70032  |
| 67 | -6.60 | 10096 | 24753 | 72510  |
| 68 | -6.70 | 10282 | 25269 | 75039  |
| 69 | -6.80 | 10469 | 25789 | 77620  |
| 70 | -6.90 | 10658 | 26313 | 80254  |
| 71 | -7.00 | 10847 | 26842 | 82941  |
| 72 | -7.10 | 11038 | 27375 | 85682  |
| 73 | -7.20 | 11230 | 27911 | 88477  |
| 74 | -7.30 | 11424 | 28452 | 91327  |
| 75 | -7.40 | 11618 | 28998 | 94231  |
| 76 | -7.50 | 11814 | 29547 | 97190  |
| 77 | -7.60 | 12011 | 30101 | 100206 |
| 78 | -7.70 | 12209 | 30659 | 103277 |
| 79 | -7.80 | 12409 | 31221 | 106405 |
| 80 | -7.90 | 12609 | 31787 | 109590 |
| 81 | -8.00 | 12811 | 32357 | 112832 |
| 82 | -8.10 | 13014 | 32932 | 116133 |
| 83 | -8.20 | 13219 | 33511 | 119491 |
| 84 | -8.30 | 13424 | 34094 | 122908 |
| 85 | -8.40 | 13631 | 34681 | 126385 |
| 86 | -8.50 | 13839 | 35273 | 129920 |

PROGETTAZIONE ATI:

| n° | X<br>[m] | N<br>[kg] | T<br>[kg] | M<br>[kgm] |
|----|----------|-----------|-----------|------------|
| 87 | -8.60    | 14048     | 35869     | 133516     |

Combinazione n° 4 - STR (A1-M1-R3)

| n° | X<br>[m] | N<br>[kg] | T<br>[kg] | M<br>[kgm] |
|----|----------|-----------|-----------|------------|
| 1  | 0.00     | 650       | 0         | 81         |
| 2  | -0.10    | 813       | 40        | 83         |
| 3  | -0.20    | 979       | 85        | 90         |
| 4  | -0.30    | 1146      | 135       | 102        |
| 5  | -0.40    | 1315      | 189       | 120        |
| 6  | -0.50    | 1486      | 249       | 144        |
| 7  | -0.60    | 1659      | 313       | 175        |
| 8  | -0.70    | 1833      | 382       | 213        |
| 9  | -0.80    | 2010      | 456       | 258        |
| 10 | -0.90    | 2188      | 535       | 312        |
| 11 | -1.00    | 2369      | 619       | 374        |
| 12 | -1.10    | 2551      | 707       | 446        |
| 13 | -1.20    | 2735      | 801       | 527        |
| 14 | -1.30    | 2921      | 899       | 618        |
| 15 | -1.40    | 3109      | 1003      | 720        |
| 16 | -1.50    | 3298      | 1111      | 833        |
| 17 | -1.60    | 3490      | 1224      | 958        |
| 18 | -1.70    | 3683      | 1342      | 1094       |
| 19 | -1.80    | 3879      | 1464      | 1244       |
| 20 | -1.90    | 4076      | 1592      | 1406       |
| 21 | -2.00    | 4275      | 1725      | 1582       |
| 22 | -2.10    | 4476      | 1862      | 1772       |
| 23 | -2.20    | 4678      | 2004      | 1977       |
| 24 | -2.30    | 4883      | 2151      | 2196       |
| 25 | -2.40    | 5090      | 2303      | 2431       |
| 26 | -2.50    | 5298      | 2460      | 2683       |
| 27 | -2.60    | 5508      | 2622      | 2950       |
| 28 | -2.70    | 5721      | 2789      | 3235       |
| 29 | -2.80    | 5935      | 2960      | 3538       |
| 30 | -2.90    | 6150      | 3136      | 3858       |
| 31 | -3.00    | 6368      | 3318      | 4197       |
| 32 | -3.10    | 6588      | 3504      | 4555       |
| 33 | -3.20    | 6809      | 3695      | 4932       |
| 34 | -3.30    | 7033      | 3891      | 5329       |
| 35 | -3.40    | 7258      | 4091      | 5747       |
| 36 | -3.50    | 7485      | 4297      | 6186       |
| 37 | -3.60    | 7714      | 4507      | 6646       |
| 38 | -3.70    | 7945      | 4723      | 7128       |
| 39 | -3.80    | 8178      | 4943      | 7633       |
| 40 | -3.90    | 8413      | 5168      | 8160       |
| 41 | -4.00    | 8649      | 5398      | 8711       |
| 42 | -4.10    | 8888      | 5633      | 9286       |
| 43 | -4.20    | 9128      | 5873      | 9886       |
| 44 | -4.30    | 9370      | 6117      | 10510      |
| 45 | -4.40    | 9614      | 6367      | 11159      |
| 46 | -4.50    | 9860      | 6621      | 11835      |
| 47 | -4.60    | 10108     | 6880      | 12537      |
| 48 | -4.70    | 10357     | 7144      | 13266      |
| 49 | -4.80    | 10609     | 7413      | 14022      |
| 50 | -4.90    | 10862     | 7687      | 14806      |
| 51 | -5.00    | 11117     | 7966      | 15618      |
| 52 | -5.10    | 11375     | 8249      | 16460      |
| 53 | -5.20    | 11634     | 8538      | 17330      |
| 54 | -5.30    | 11894     | 8831      | 18231      |
| 55 | -5.40    | 12157     | 9129      | 19162      |
| 56 | -5.50    | 12422     | 9432      | 20123      |
| 57 | -5.60    | 12688     | 9740      | 21116      |
| 58 | -5.70    | 12957     | 10053     | 22141      |
| 59 | -5.80    | 13227     | 10371     | 23198      |
| 60 | -5.90    | 13499     | 10693     | 24288      |
| 61 | -6.00    | 13773     | 11021     | 25411      |
| 62 | -6.10    | 14049     | 11353     | 26568      |
| 63 | -6.20    | 14327     | 11690     | 27759      |
| 64 | -6.30    | 14606     | 12032     | 28985      |
| 65 | -6.40    | 14888     | 12379     | 30246      |
| 66 | -6.50    | 15171     | 12731     | 31543      |
| 67 | -6.60    | 15456     | 13088     | 32876      |
| 68 | -6.70    | 15744     | 13449     | 34246      |
| 69 | -6.80    | 16033     | 13816     | 35653      |
| 70 | -6.90    | 16323     | 14187     | 37098      |
| 71 | -7.00    | 16616     | 14563     | 38581      |
| 72 | -7.10    | 16911     | 14944     | 40103      |
| 73 | -7.20    | 17207     | 15330     | 41664      |
| 74 | -7.30    | 17506     | 15721     | 43265      |
| 75 | -7.40    | 17806     | 16117     | 44905      |
| 76 | -7.50    | 18108     | 16517     | 46587      |
| 77 | -7.60    | 18412     | 16923     | 48310      |
| 78 | -7.70    | 18718     | 17333     | 50074      |

PROGETTAZIONE ATI:

| n° | X<br>[m] | N<br>[kg] | T<br>[kg] | M<br>[kgm] |
|----|----------|-----------|-----------|------------|
| 79 | -7.80    | 19026     | 17748     | 51881      |
| 80 | -7.90    | 19335     | 18168     | 53730      |
| 81 | -8.00    | 19647     | 18593     | 55622      |
| 82 | -8.10    | 19960     | 19023     | 57558      |
| 83 | -8.20    | 20275     | 19457     | 59538      |
| 84 | -8.30    | 20592     | 19897     | 61563      |
| 85 | -8.40    | 20911     | 20341     | 63633      |
| 86 | -8.50    | 21232     | 20790     | 65748      |
| 87 | -8.60    | 21555     | 21245     | 67910      |

Combinazione n° 5 - STR (A1-M1-R3)

| n° | X<br>[m] | N<br>[kg] | T<br>[kg] | M<br>[kgm] |
|----|----------|-----------|-----------|------------|
| 1  | 0.00     | 500       | 0         | 63         |
| 2  | -0.10    | 626       | 40        | 65         |
| 3  | -0.20    | 753       | 85        | 71         |
| 4  | -0.30    | 881       | 135       | 83         |
| 5  | -0.40    | 1012      | 189       | 101        |
| 6  | -0.50    | 1143      | 249       | 124        |
| 7  | -0.60    | 1276      | 313       | 154        |
| 8  | -0.70    | 1410      | 382       | 191        |
| 9  | -0.80    | 1546      | 456       | 236        |
| 10 | -0.90    | 1683      | 535       | 289        |
| 11 | -1.00    | 1822      | 619       | 350        |
| 12 | -1.10    | 1962      | 707       | 420        |
| 13 | -1.20    | 2104      | 801       | 500        |
| 14 | -1.30    | 2247      | 899       | 590        |
| 15 | -1.40    | 2391      | 1003      | 690        |
| 16 | -1.50    | 2537      | 1111      | 802        |
| 17 | -1.60    | 2685      | 1224      | 924        |
| 18 | -1.70    | 2833      | 1342      | 1059       |
| 19 | -1.80    | 2984      | 1464      | 1206       |
| 20 | -1.90    | 3135      | 1592      | 1366       |
| 21 | -2.00    | 3288      | 1725      | 1540       |
| 22 | -2.10    | 3443      | 1862      | 1728       |
| 23 | -2.20    | 3599      | 2004      | 1930       |
| 24 | -2.30    | 3756      | 2151      | 2146       |
| 25 | -2.40    | 3915      | 2303      | 2379       |
| 26 | -2.50    | 4075      | 2460      | 2627       |
| 27 | -2.60    | 4237      | 2622      | 2892       |
| 28 | -2.70    | 4400      | 2789      | 3173       |
| 29 | -2.80    | 4565      | 2960      | 3472       |
| 30 | -2.90    | 4731      | 3136      | 3789       |
| 31 | -3.00    | 4899      | 3318      | 4124       |
| 32 | -3.10    | 5068      | 3504      | 4478       |
| 33 | -3.20    | 5238      | 3695      | 4851       |
| 34 | -3.30    | 5410      | 3891      | 5244       |
| 35 | -3.40    | 5583      | 4091      | 5658       |
| 36 | -3.50    | 5758      | 4297      | 6092       |
| 37 | -3.60    | 5934      | 4507      | 6547       |
| 38 | -3.70    | 6112      | 4723      | 7025       |
| 39 | -3.80    | 6291      | 4943      | 7525       |
| 40 | -3.90    | 6471      | 5168      | 8047       |
| 41 | -4.00    | 6653      | 5398      | 8593       |
| 42 | -4.10    | 6837      | 5633      | 9162       |
| 43 | -4.20    | 7021      | 5873      | 9756       |
| 44 | -4.30    | 7208      | 6117      | 10375      |
| 45 | -4.40    | 7395      | 6367      | 11018      |
| 46 | -4.50    | 7585      | 6621      | 11688      |
| 47 | -4.60    | 7775      | 6880      | 12384      |
| 48 | -4.70    | 7967      | 7144      | 13106      |
| 49 | -4.80    | 8161      | 7413      | 13856      |
| 50 | -4.90    | 8356      | 7687      | 14633      |
| 51 | -5.00    | 8552      | 7966      | 15439      |
| 52 | -5.10    | 8750      | 8249      | 16273      |
| 53 | -5.20    | 8949      | 8538      | 17136      |
| 54 | -5.30    | 9150      | 8831      | 18029      |
| 55 | -5.40    | 9352      | 9129      | 18952      |
| 56 | -5.50    | 9555      | 9432      | 19906      |
| 57 | -5.60    | 9760      | 9740      | 20891      |
| 58 | -5.70    | 9967      | 10053     | 21908      |
| 59 | -5.80    | 10175     | 10371     | 22957      |
| 60 | -5.90    | 10384     | 10693     | 24038      |
| 61 | -6.00    | 10595     | 11021     | 25153      |
| 62 | -6.10    | 10807     | 11353     | 26301      |
| 63 | -6.20    | 11021     | 11690     | 27483      |
| 64 | -6.30    | 11236     | 12032     | 28700      |
| 65 | -6.40    | 11452     | 12379     | 29951      |
| 66 | -6.50    | 11670     | 12731     | 31239      |
| 67 | -6.60    | 11890     | 13088     | 32562      |
| 68 | -6.70    | 12110     | 13449     | 33922      |
| 69 | -6.80    | 12333     | 13816     | 35319      |
| 70 | -6.90    | 12556     | 14187     | 36754      |

PROGETTAZIONE ATI:

| n° | X<br>[m] | N<br>[kg] | T<br>[kg] | M<br>[kgm] |
|----|----------|-----------|-----------|------------|
| 71 | -7.00    | 12782     | 14563     | 38226      |
| 72 | -7.10    | 13008     | 14944     | 39737      |
| 73 | -7.20    | 13236     | 15330     | 41287      |
| 74 | -7.30    | 13466     | 15721     | 42877      |
| 75 | -7.40    | 13697     | 16117     | 44506      |
| 76 | -7.50    | 13929     | 16517     | 46177      |
| 77 | -7.60    | 14163     | 16923     | 47888      |
| 78 | -7.70    | 14398     | 17333     | 49640      |
| 79 | -7.80    | 14635     | 17748     | 51434      |
| 80 | -7.90    | 14873     | 18168     | 53271      |
| 81 | -8.00    | 15113     | 18593     | 55151      |
| 82 | -8.10    | 15354     | 19023     | 57074      |
| 83 | -8.20    | 15596     | 19457     | 59041      |
| 84 | -8.30    | 15840     | 19897     | 61053      |
| 85 | -8.40    | 16086     | 20341     | 63109      |
| 86 | -8.50    | 16332     | 20790     | 65211      |
| 87 | -8.60    | 16581     | 21245     | 67359      |

Combinazione n° 6 - STR (A1-M1-R3)

| n° | X<br>[m] | N<br>[kg] | T<br>[kg] | M<br>[kgm] |
|----|----------|-----------|-----------|------------|
| 1  | 0.00     | 650       | 0         | 81         |
| 2  | -0.10    | 813       | 40        | 83         |
| 3  | -0.20    | 979       | 85        | 90         |
| 4  | -0.30    | 1146      | 135       | 102        |
| 5  | -0.40    | 1315      | 189       | 120        |
| 6  | -0.50    | 1486      | 249       | 144        |
| 7  | -0.60    | 1659      | 313       | 175        |
| 8  | -0.70    | 1833      | 382       | 213        |
| 9  | -0.80    | 2010      | 456       | 258        |
| 10 | -0.90    | 2188      | 535       | 312        |
| 11 | -1.00    | 2369      | 619       | 374        |
| 12 | -1.10    | 2551      | 707       | 446        |
| 13 | -1.20    | 2735      | 801       | 527        |
| 14 | -1.30    | 2921      | 899       | 618        |
| 15 | -1.40    | 3109      | 1003      | 720        |
| 16 | -1.50    | 3298      | 1111      | 833        |
| 17 | -1.60    | 3490      | 1224      | 958        |
| 18 | -1.70    | 3683      | 1342      | 1094       |
| 19 | -1.80    | 3879      | 1464      | 1244       |
| 20 | -1.90    | 4076      | 1592      | 1406       |
| 21 | -2.00    | 4275      | 1725      | 1582       |
| 22 | -2.10    | 4476      | 1862      | 1772       |
| 23 | -2.20    | 4678      | 2004      | 1977       |
| 24 | -2.30    | 4883      | 2151      | 2196       |
| 25 | -2.40    | 5090      | 2303      | 2431       |
| 26 | -2.50    | 5298      | 2460      | 2683       |
| 27 | -2.60    | 5508      | 2622      | 2950       |
| 28 | -2.70    | 5721      | 2789      | 3235       |
| 29 | -2.80    | 5935      | 2960      | 3538       |
| 30 | -2.90    | 6150      | 3136      | 3858       |
| 31 | -3.00    | 6368      | 3318      | 4197       |
| 32 | -3.10    | 6588      | 3504      | 4555       |
| 33 | -3.20    | 6809      | 3695      | 4932       |
| 34 | -3.30    | 7033      | 3891      | 5329       |
| 35 | -3.40    | 7258      | 4091      | 5747       |
| 36 | -3.50    | 7485      | 4297      | 6186       |
| 37 | -3.60    | 7714      | 4507      | 6646       |
| 38 | -3.70    | 7945      | 4723      | 7128       |
| 39 | -3.80    | 8178      | 4943      | 7633       |
| 40 | -3.90    | 8413      | 5168      | 8160       |
| 41 | -4.00    | 8649      | 5398      | 8711       |
| 42 | -4.10    | 8888      | 5633      | 9286       |
| 43 | -4.20    | 9128      | 5873      | 9886       |
| 44 | -4.30    | 9370      | 6117      | 10510      |
| 45 | -4.40    | 9614      | 6367      | 11159      |
| 46 | -4.50    | 9860      | 6621      | 11835      |
| 47 | -4.60    | 10108     | 6880      | 12537      |
| 48 | -4.70    | 10357     | 7144      | 13266      |
| 49 | -4.80    | 10609     | 7413      | 14022      |
| 50 | -4.90    | 10862     | 7687      | 14806      |
| 51 | -5.00    | 11117     | 7966      | 15618      |
| 52 | -5.10    | 11375     | 8249      | 16460      |
| 53 | -5.20    | 11634     | 8538      | 17330      |
| 54 | -5.30    | 11894     | 8831      | 18231      |
| 55 | -5.40    | 12157     | 9129      | 19162      |
| 56 | -5.50    | 12422     | 9432      | 20123      |
| 57 | -5.60    | 12688     | 9740      | 21116      |
| 58 | -5.70    | 12957     | 10053     | 22141      |
| 59 | -5.80    | 13227     | 10371     | 23198      |
| 60 | -5.90    | 13499     | 10693     | 24288      |
| 61 | -6.00    | 13773     | 11021     | 25411      |
| 62 | -6.10    | 14049     | 11353     | 26568      |

PROGETTAZIONE ATI:

| n° | X<br>[m] | N<br>[kg] | T<br>[kg] | M<br>[kgm] |
|----|----------|-----------|-----------|------------|
| 63 | -6.20    | 14327     | 11690     | 27759      |
| 64 | -6.30    | 14606     | 12032     | 28985      |
| 65 | -6.40    | 14888     | 12379     | 30246      |
| 66 | -6.50    | 15171     | 12731     | 31543      |
| 67 | -6.60    | 15456     | 13088     | 32876      |
| 68 | -6.70    | 15744     | 13449     | 34246      |
| 69 | -6.80    | 16033     | 13816     | 35653      |
| 70 | -6.90    | 16323     | 14187     | 37098      |
| 71 | -7.00    | 16616     | 14563     | 38581      |
| 72 | -7.10    | 16911     | 14944     | 40103      |
| 73 | -7.20    | 17207     | 15330     | 41664      |
| 74 | -7.30    | 17506     | 15721     | 43265      |
| 75 | -7.40    | 17806     | 16117     | 44905      |
| 76 | -7.50    | 18108     | 16517     | 46587      |
| 77 | -7.60    | 18412     | 16923     | 48310      |
| 78 | -7.70    | 18718     | 17333     | 50074      |
| 79 | -7.80    | 19026     | 17748     | 51881      |
| 80 | -7.90    | 19335     | 18168     | 53730      |
| 81 | -8.00    | 19647     | 18593     | 55622      |
| 82 | -8.10    | 19960     | 19023     | 57558      |
| 83 | -8.20    | 20275     | 19457     | 59538      |
| 84 | -8.30    | 20592     | 19897     | 61563      |
| 85 | -8.40    | 20911     | 20341     | 63633      |
| 86 | -8.50    | 21232     | 20790     | 65748      |
| 87 | -8.60    | 21555     | 21245     | 67910      |

Combinazione n° 13 - ECC

| n° | X<br>[m] | N<br>[kg] | T<br>[kg] | M<br>[kgm] |
|----|----------|-----------|-----------|------------|
| 1  | 0.00     | 600       | 2000      | 1283       |
| 2  | -0.10    | 726       | 2027      | 1484       |
| 3  | -0.20    | 853       | 2058      | 1689       |
| 4  | -0.30    | 981       | 2092      | 1898       |
| 5  | -0.40    | 1112      | 2130      | 2111       |
| 6  | -0.50    | 1243      | 2172      | 2328       |
| 7  | -0.60    | 1376      | 2218      | 2549       |
| 8  | -0.70    | 1510      | 2267      | 2776       |
| 9  | -0.80    | 1646      | 2320      | 3009       |
| 10 | -0.90    | 1783      | 2377      | 3247       |
| 11 | -1.00    | 1922      | 2438      | 3492       |
| 12 | -1.10    | 2062      | 2502      | 3743       |
| 13 | -1.20    | 2204      | 2570      | 4001       |
| 14 | -1.30    | 2347      | 2642      | 4267       |
| 15 | -1.40    | 2491      | 2717      | 4540       |
| 16 | -1.50    | 2637      | 2797      | 4822       |
| 17 | -1.60    | 2785      | 2880      | 5112       |
| 18 | -1.70    | 2933      | 2967      | 5411       |
| 19 | -1.80    | 3084      | 3057      | 5720       |
| 20 | -1.90    | 3235      | 3152      | 6038       |
| 21 | -2.00    | 3388      | 3250      | 6366       |
| 22 | -2.10    | 3543      | 3352      | 6704       |
| 23 | -2.20    | 3699      | 3457      | 7054       |
| 24 | -2.30    | 3856      | 3566      | 7414       |
| 25 | -2.40    | 4015      | 3680      | 7787       |
| 26 | -2.50    | 4175      | 3796      | 8171       |
| 27 | -2.60    | 4337      | 3917      | 8567       |
| 28 | -2.70    | 4500      | 4041      | 8976       |
| 29 | -2.80    | 4665      | 4169      | 9399       |
| 30 | -2.90    | 4831      | 4301      | 9834       |
| 31 | -3.00    | 4999      | 4437      | 10284      |
| 32 | -3.10    | 5168      | 4576      | 10748      |
| 33 | -3.20    | 5338      | 4719      | 11226      |
| 34 | -3.30    | 5510      | 4866      | 11720      |
| 35 | -3.40    | 5683      | 5016      | 12228      |
| 36 | -3.50    | 5858      | 5171      | 12753      |
| 37 | -3.60    | 6034      | 5329      | 13294      |
| 38 | -3.70    | 6212      | 5491      | 13851      |
| 39 | -3.80    | 6391      | 5656      | 14425      |
| 40 | -3.90    | 6571      | 5826      | 15016      |
| 41 | -4.00    | 6753      | 5999      | 15625      |
| 42 | -4.10    | 6937      | 6175      | 16252      |
| 43 | -4.20    | 7121      | 6356      | 16897      |
| 44 | -4.30    | 7308      | 6540      | 17561      |
| 45 | -4.40    | 7495      | 6728      | 18245      |
| 46 | -4.50    | 7685      | 6920      | 18948      |
| 47 | -4.60    | 7875      | 7116      | 19670      |
| 48 | -4.70    | 8067      | 7315      | 20413      |
| 49 | -4.80    | 8261      | 7518      | 21177      |
| 50 | -4.90    | 8456      | 7725      | 21962      |
| 51 | -5.00    | 8652      | 7935      | 22768      |
| 52 | -5.10    | 8850      | 8150      | 23596      |
| 53 | -5.20    | 9049      | 8368      | 24446      |
| 54 | -5.30    | 9250      | 8589      | 25319      |

PROGETTAZIONE ATI:



| n° | X<br>[m] | N<br>[kg] | T<br>[kg] | M<br>[kgm] |
|----|----------|-----------|-----------|------------|
| 55 | -5.40    | 9452      | 8815      | 26215      |
| 56 | -5.50    | 9655      | 9044      | 27134      |
| 57 | -5.60    | 9860      | 9277      | 28076      |
| 58 | -5.70    | 10067     | 9514      | 29043      |
| 59 | -5.80    | 10275     | 9755      | 30035      |
| 60 | -5.90    | 10484     | 9999      | 31051      |
| 61 | -6.00    | 10695     | 10247     | 32092      |
| 62 | -6.10    | 10907     | 10499     | 33159      |
| 63 | -6.20    | 11121     | 10754     | 34252      |
| 64 | -6.30    | 11336     | 11013     | 35371      |
| 65 | -6.40    | 11552     | 11277     | 36517      |
| 66 | -6.50    | 11770     | 11543     | 37690      |
| 67 | -6.60    | 11990     | 11814     | 38891      |
| 68 | -6.70    | 12210     | 12088     | 40119      |
| 69 | -6.80    | 12433     | 12366     | 41376      |
| 70 | -6.90    | 12656     | 12648     | 42662      |
| 71 | -7.00    | 12882     | 12933     | 43976      |
| 72 | -7.10    | 13108     | 13223     | 45320      |
| 73 | -7.20    | 13336     | 13516     | 46693      |
| 74 | -7.30    | 13566     | 13812     | 48097      |
| 75 | -7.40    | 13797     | 14113     | 49531      |
| 76 | -7.50    | 14029     | 14417     | 50996      |
| 77 | -7.60    | 14263     | 14725     | 52493      |
| 78 | -7.70    | 14498     | 15037     | 54021      |
| 79 | -7.80    | 14735     | 15352     | 55581      |
| 80 | -7.90    | 14973     | 15672     | 57174      |
| 81 | -8.00    | 15213     | 15995     | 58799      |
| 82 | -8.10    | 15454     | 16321     | 60458      |
| 83 | -8.20    | 15696     | 16652     | 62150      |
| 84 | -8.30    | 15940     | 16986     | 63876      |
| 85 | -8.40    | 16186     | 17324     | 65636      |
| 86 | -8.50    | 16432     | 17666     | 67431      |
| 87 | -8.60    | 16681     | 18011     | 69261      |

Combinazione n° 14 - ECC

| n° | X<br>[m] | N<br>[kg] | T<br>[kg] | M<br>[kgm] |
|----|----------|-----------|-----------|------------|
| 1  | 0.00     | 500       | 0         | 63         |
| 2  | -0.10    | 626       | 128       | 67         |
| 3  | -0.20    | 753       | 514       | 97         |
| 4  | -0.30    | 881       | 1262      | 183        |
| 5  | -0.40    | 1012      | 2479      | 368        |
| 6  | -0.50    | 1143      | 3959      | 691        |
| 7  | -0.60    | 1276      | 5494      | 1165       |
| 8  | -0.70    | 1410      | 6927      | 1791       |
| 9  | -0.80    | 1546      | 8098      | 2547       |
| 10 | -0.90    | 1683      | 9065      | 3410       |
| 11 | -1.00    | 1822      | 9886      | 4362       |
| 12 | -1.10    | 1962      | 10588     | 5390       |
| 13 | -1.20    | 2104      | 11200     | 6485       |
| 14 | -1.30    | 2247      | 11737     | 7637       |
| 15 | -1.40    | 2391      | 12214     | 8840       |
| 16 | -1.50    | 2537      | 12641     | 10089      |
| 17 | -1.60    | 2685      | 13026     | 11379      |
| 18 | -1.70    | 2833      | 13374     | 12706      |
| 19 | -1.80    | 2984      | 13693     | 14066      |
| 20 | -1.90    | 3135      | 13985     | 15458      |
| 21 | -2.00    | 3288      | 14255     | 16878      |
| 22 | -2.10    | 3443      | 14505     | 18324      |
| 23 | -2.20    | 3599      | 14738     | 19795      |
| 24 | -2.30    | 3756      | 14955     | 21289      |
| 25 | -2.40    | 3915      | 15158     | 22804      |
| 26 | -2.50    | 4075      | 15349     | 24340      |
| 27 | -2.60    | 4237      | 15530     | 25895      |
| 28 | -2.70    | 4400      | 15701     | 27467      |
| 29 | -2.80    | 4565      | 15863     | 29057      |
| 30 | -2.90    | 4731      | 16017     | 30663      |
| 31 | -3.00    | 4899      | 16164     | 32285      |
| 32 | -3.10    | 5068      | 16303     | 33921      |
| 33 | -3.20    | 5238      | 16437     | 35572      |
| 34 | -3.30    | 5410      | 16565     | 37236      |
| 35 | -3.40    | 5583      | 16689     | 38913      |
| 36 | -3.50    | 5758      | 16805     | 40602      |
| 37 | -3.60    | 5934      | 16911     | 42304      |
| 38 | -3.70    | 6112      | 17006     | 44016      |
| 39 | -3.80    | 6291      | 17090     | 45737      |
| 40 | -3.90    | 6471      | 17167     | 47467      |
| 41 | -4.00    | 6653      | 17243     | 49205      |
| 42 | -4.10    | 6837      | 17318     | 50951      |
| 43 | -4.20    | 7021      | 17394     | 52705      |
| 44 | -4.30    | 7208      | 17473     | 54467      |
| 45 | -4.40    | 7395      | 17552     | 56238      |
| 46 | -4.50    | 7585      | 17634     | 58018      |

PROGETTAZIONE ATI:

| n° | X<br>[m] | N<br>[kg] | T<br>[kg] | M<br>[kgm] |
|----|----------|-----------|-----------|------------|
| 47 | -4.60    | 7775      | 17717     | 59806      |
| 48 | -4.70    | 7967      | 17801     | 61603      |
| 49 | -4.80    | 8161      | 17887     | 63409      |
| 50 | -4.90    | 8356      | 17975     | 65225      |
| 51 | -5.00    | 8552      | 18064     | 67049      |
| 52 | -5.10    | 8750      | 18155     | 68884      |
| 53 | -5.20    | 8949      | 18248     | 70728      |
| 54 | -5.30    | 9150      | 18342     | 72582      |
| 55 | -5.40    | 9352      | 18438     | 74446      |
| 56 | -5.50    | 9555      | 18535     | 76321      |
| 57 | -5.60    | 9760      | 18634     | 78206      |
| 58 | -5.70    | 9967      | 18737     | 80101      |
| 59 | -5.80    | 10175     | 18845     | 82008      |
| 60 | -5.90    | 10384     | 18961     | 83926      |
| 61 | -6.00    | 10595     | 19087     | 85857      |
| 62 | -6.10    | 10807     | 19224     | 87802      |
| 63 | -6.20    | 11021     | 19371     | 89762      |
| 64 | -6.30    | 11236     | 19528     | 91737      |
| 65 | -6.40    | 11452     | 19694     | 93730      |
| 66 | -6.50    | 11670     | 19870     | 95740      |
| 67 | -6.60    | 11890     | 20054     | 97768      |
| 68 | -6.70    | 12110     | 20246     | 99816      |
| 69 | -6.80    | 12333     | 20446     | 101885     |
| 70 | -6.90    | 12556     | 20654     | 103974     |
| 71 | -7.00    | 12782     | 20869     | 106085     |
| 72 | -7.10    | 13008     | 21092     | 108219     |
| 73 | -7.20    | 13236     | 21321     | 110376     |
| 74 | -7.30    | 13466     | 21557     | 112557     |
| 75 | -7.40    | 13697     | 21799     | 114762     |
| 76 | -7.50    | 13929     | 22048     | 116993     |
| 77 | -7.60    | 14163     | 22303     | 119250     |
| 78 | -7.70    | 14398     | 22564     | 121533     |
| 79 | -7.80    | 14635     | 22831     | 123843     |
| 80 | -7.90    | 14873     | 23104     | 126181     |
| 81 | -8.00    | 15113     | 23382     | 128547     |
| 82 | -8.10    | 15354     | 23666     | 130941     |
| 83 | -8.20    | 15596     | 23956     | 133366     |
| 84 | -8.30    | 15840     | 24250     | 135820     |
| 85 | -8.40    | 16086     | 24550     | 138304     |
| 86 | -8.50    | 16332     | 24855     | 140820     |
| 87 | -8.60    | 16581     | 25166     | 143367     |

Combinazione n° 15 - SLER

| n° | X<br>[m] | N<br>[kg] | T<br>[kg] | M<br>[kgm] |
|----|----------|-----------|-----------|------------|
| 1  | 0.00     | 500       | 0         | 63         |
| 2  | -0.10    | 626       | 27        | 64         |
| 3  | -0.20    | 753       | 58        | 69         |
| 4  | -0.30    | 881       | 92        | 77         |
| 5  | -0.40    | 1012      | 130       | 89         |
| 6  | -0.50    | 1143      | 172       | 106        |
| 7  | -0.60    | 1276      | 218       | 128        |
| 8  | -0.70    | 1410      | 267       | 154        |
| 9  | -0.80    | 1546      | 320       | 186        |
| 10 | -0.90    | 1683      | 377       | 224        |
| 11 | -1.00    | 1822      | 438       | 269        |
| 12 | -1.10    | 1962      | 502       | 320        |
| 13 | -1.20    | 2104      | 570       | 378        |
| 14 | -1.30    | 2247      | 642       | 443        |
| 15 | -1.40    | 2391      | 717       | 516        |
| 16 | -1.50    | 2537      | 797       | 598        |
| 17 | -1.60    | 2685      | 880       | 687        |
| 18 | -1.70    | 2833      | 967       | 786        |
| 19 | -1.80    | 2984      | 1057      | 894        |
| 20 | -1.90    | 3135      | 1152      | 1012       |
| 21 | -2.00    | 3288      | 1250      | 1140       |
| 22 | -2.10    | 3443      | 1352      | 1278       |
| 23 | -2.20    | 3599      | 1457      | 1427       |
| 24 | -2.30    | 3756      | 1566      | 1588       |
| 25 | -2.40    | 3915      | 1680      | 1760       |
| 26 | -2.50    | 4075      | 1796      | 1943       |
| 27 | -2.60    | 4237      | 1917      | 2140       |
| 28 | -2.70    | 4400      | 2041      | 2349       |
| 29 | -2.80    | 4565      | 2169      | 2571       |
| 30 | -2.90    | 4731      | 2301      | 2806       |
| 31 | -3.00    | 4899      | 2437      | 3055       |
| 32 | -3.10    | 5068      | 2576      | 3319       |
| 33 | -3.20    | 5238      | 2719      | 3597       |
| 34 | -3.30    | 5410      | 2866      | 3890       |
| 35 | -3.40    | 5583      | 3016      | 4199       |
| 36 | -3.50    | 5758      | 3171      | 4523       |
| 37 | -3.60    | 5934      | 3329      | 4863       |
| 38 | -3.70    | 6112      | 3491      | 5220       |

PROGETTAZIONE ATI:

| n° | X<br>[m] | N<br>[kg] | T<br>[kg] | M<br>[kgm] |
|----|----------|-----------|-----------|------------|
| 39 | -3.80    | 6291      | 3656      | 5594       |
| 40 | -3.90    | 6471      | 3826      | 5985       |
| 41 | -4.00    | 6653      | 3999      | 6393       |
| 42 | -4.10    | 6837      | 4175      | 6820       |
| 43 | -4.20    | 7021      | 4356      | 7265       |
| 44 | -4.30    | 7208      | 4540      | 7729       |
| 45 | -4.40    | 7395      | 4728      | 8212       |
| 46 | -4.50    | 7585      | 4920      | 8715       |
| 47 | -4.60    | 7775      | 5116      | 9237       |
| 48 | -4.70    | 7967      | 5315      | 9780       |
| 49 | -4.80    | 8161      | 5518      | 10343      |
| 50 | -4.90    | 8356      | 5725      | 10928      |
| 51 | -5.00    | 8552      | 5935      | 11534      |
| 52 | -5.10    | 8750      | 6150      | 12161      |
| 53 | -5.20    | 8949      | 6368      | 12811      |
| 54 | -5.30    | 9150      | 6589      | 13484      |
| 55 | -5.40    | 9352      | 6815      | 14179      |
| 56 | -5.50    | 9555      | 7044      | 14898      |
| 57 | -5.60    | 9760      | 7277      | 15640      |
| 58 | -5.70    | 9967      | 7514      | 16407      |
| 59 | -5.80    | 10175     | 7755      | 17198      |
| 60 | -5.90    | 10384     | 7999      | 18014      |
| 61 | -6.00    | 10595     | 8247      | 18855      |
| 62 | -6.10    | 10807     | 8499      | 19721      |
| 63 | -6.20    | 11021     | 8754      | 20614      |
| 64 | -6.30    | 11236     | 9013      | 21533      |
| 65 | -6.40    | 11452     | 9277      | 22479      |
| 66 | -6.50    | 11670     | 9543      | 23452      |
| 67 | -6.60    | 11890     | 9814      | 24452      |
| 68 | -6.70    | 12110     | 10088     | 25480      |
| 69 | -6.80    | 12333     | 10366     | 26537      |
| 70 | -6.90    | 12556     | 10648     | 27622      |
| 71 | -7.00    | 12782     | 10933     | 28736      |
| 72 | -7.10    | 13008     | 11223     | 29879      |
| 73 | -7.20    | 13236     | 11516     | 31053      |
| 74 | -7.30    | 13466     | 11812     | 32256      |
| 75 | -7.40    | 13697     | 12113     | 33490      |
| 76 | -7.50    | 13929     | 12417     | 34755      |
| 77 | -7.60    | 14163     | 12725     | 36051      |
| 78 | -7.70    | 14398     | 13037     | 37379      |
| 79 | -7.80    | 14635     | 13352     | 38739      |
| 80 | -7.90    | 14873     | 13672     | 40131      |
| 81 | -8.00    | 15113     | 13995     | 41556      |
| 82 | -8.10    | 15354     | 14321     | 43014      |
| 83 | -8.20    | 15596     | 14652     | 44506      |
| 84 | -8.30    | 15840     | 14986     | 46032      |
| 85 | -8.40    | 16086     | 15324     | 47592      |
| 86 | -8.50    | 16332     | 15666     | 49187      |
| 87 | -8.60    | 16581     | 16011     | 50816      |

Combinazione n° 16 - SLEF

| n° | X<br>[m] | N<br>[kg] | T<br>[kg] | M<br>[kgm] |
|----|----------|-----------|-----------|------------|
| 1  | 0.00     | 500       | 0         | 63         |
| 2  | -0.10    | 626       | 27        | 64         |
| 3  | -0.20    | 753       | 58        | 69         |
| 4  | -0.30    | 881       | 92        | 77         |
| 5  | -0.40    | 1012      | 130       | 89         |
| 6  | -0.50    | 1143      | 172       | 106        |
| 7  | -0.60    | 1276      | 218       | 128        |
| 8  | -0.70    | 1410      | 267       | 154        |
| 9  | -0.80    | 1546      | 320       | 186        |
| 10 | -0.90    | 1683      | 377       | 224        |
| 11 | -1.00    | 1822      | 438       | 269        |
| 12 | -1.10    | 1962      | 502       | 320        |
| 13 | -1.20    | 2104      | 570       | 378        |
| 14 | -1.30    | 2247      | 642       | 443        |
| 15 | -1.40    | 2391      | 717       | 516        |
| 16 | -1.50    | 2537      | 797       | 598        |
| 17 | -1.60    | 2685      | 880       | 687        |
| 18 | -1.70    | 2833      | 967       | 786        |
| 19 | -1.80    | 2984      | 1057      | 894        |
| 20 | -1.90    | 3135      | 1152      | 1012       |
| 21 | -2.00    | 3288      | 1250      | 1140       |
| 22 | -2.10    | 3443      | 1352      | 1278       |
| 23 | -2.20    | 3599      | 1457      | 1427       |
| 24 | -2.30    | 3756      | 1566      | 1588       |
| 25 | -2.40    | 3915      | 1680      | 1760       |
| 26 | -2.50    | 4075      | 1796      | 1943       |
| 27 | -2.60    | 4237      | 1917      | 2140       |
| 28 | -2.70    | 4400      | 2041      | 2349       |
| 29 | -2.80    | 4565      | 2169      | 2571       |
| 30 | -2.90    | 4731      | 2301      | 2806       |

PROGETTAZIONE ATI:

| n° | X<br>[m] | N<br>[kg] | T<br>[kg] | M<br>[kgm] |
|----|----------|-----------|-----------|------------|
| 31 | -3.00    | 4899      | 2437      | 3055       |
| 32 | -3.10    | 5068      | 2576      | 3319       |
| 33 | -3.20    | 5238      | 2719      | 3597       |
| 34 | -3.30    | 5410      | 2866      | 3890       |
| 35 | -3.40    | 5583      | 3016      | 4199       |
| 36 | -3.50    | 5758      | 3171      | 4523       |
| 37 | -3.60    | 5934      | 3329      | 4863       |
| 38 | -3.70    | 6112      | 3491      | 5220       |
| 39 | -3.80    | 6291      | 3656      | 5594       |
| 40 | -3.90    | 6471      | 3826      | 5985       |
| 41 | -4.00    | 6653      | 3999      | 6393       |
| 42 | -4.10    | 6837      | 4175      | 6820       |
| 43 | -4.20    | 7021      | 4356      | 7265       |
| 44 | -4.30    | 7208      | 4540      | 7729       |
| 45 | -4.40    | 7395      | 4728      | 8212       |
| 46 | -4.50    | 7585      | 4920      | 8715       |
| 47 | -4.60    | 7775      | 5116      | 9237       |
| 48 | -4.70    | 7967      | 5315      | 9780       |
| 49 | -4.80    | 8161      | 5518      | 10343      |
| 50 | -4.90    | 8356      | 5725      | 10928      |
| 51 | -5.00    | 8552      | 5935      | 11534      |
| 52 | -5.10    | 8750      | 6150      | 12161      |
| 53 | -5.20    | 8949      | 6368      | 12811      |
| 54 | -5.30    | 9150      | 6589      | 13484      |
| 55 | -5.40    | 9352      | 6815      | 14179      |
| 56 | -5.50    | 9555      | 7044      | 14898      |
| 57 | -5.60    | 9760      | 7277      | 15640      |
| 58 | -5.70    | 9967      | 7514      | 16407      |
| 59 | -5.80    | 10175     | 7755      | 17198      |
| 60 | -5.90    | 10384     | 7999      | 18014      |
| 61 | -6.00    | 10595     | 8247      | 18855      |
| 62 | -6.10    | 10807     | 8499      | 19721      |
| 63 | -6.20    | 11021     | 8754      | 20614      |
| 64 | -6.30    | 11236     | 9013      | 21533      |
| 65 | -6.40    | 11452     | 9277      | 22479      |
| 66 | -6.50    | 11670     | 9543      | 23452      |
| 67 | -6.60    | 11890     | 9814      | 24452      |
| 68 | -6.70    | 12110     | 10088     | 25480      |
| 69 | -6.80    | 12333     | 10366     | 26537      |
| 70 | -6.90    | 12556     | 10648     | 27622      |
| 71 | -7.00    | 12782     | 10933     | 28736      |
| 72 | -7.10    | 13008     | 11223     | 29879      |
| 73 | -7.20    | 13236     | 11516     | 31053      |
| 74 | -7.30    | 13466     | 11812     | 32256      |
| 75 | -7.40    | 13697     | 12113     | 33490      |
| 76 | -7.50    | 13929     | 12417     | 34755      |
| 77 | -7.60    | 14163     | 12725     | 36051      |
| 78 | -7.70    | 14398     | 13037     | 37379      |
| 79 | -7.80    | 14635     | 13352     | 38739      |
| 80 | -7.90    | 14873     | 13672     | 40131      |
| 81 | -8.00    | 15113     | 13995     | 41556      |
| 82 | -8.10    | 15354     | 14321     | 43014      |
| 83 | -8.20    | 15596     | 14652     | 44506      |
| 84 | -8.30    | 15840     | 14986     | 46032      |
| 85 | -8.40    | 16086     | 15324     | 47592      |
| 86 | -8.50    | 16332     | 15666     | 49187      |
| 87 | -8.60    | 16581     | 16011     | 50816      |

Combinazione n° 17 - SLEQ

| n° | X<br>[m] | N<br>[kg] | T<br>[kg] | M<br>[kgm] |
|----|----------|-----------|-----------|------------|
| 1  | 0.00     | 500       | 0         | 63         |
| 2  | -0.10    | 626       | 27        | 64         |
| 3  | -0.20    | 753       | 58        | 69         |
| 4  | -0.30    | 881       | 92        | 77         |
| 5  | -0.40    | 1012      | 130       | 89         |
| 6  | -0.50    | 1143      | 172       | 106        |
| 7  | -0.60    | 1276      | 218       | 128        |
| 8  | -0.70    | 1410      | 267       | 154        |
| 9  | -0.80    | 1546      | 320       | 186        |
| 10 | -0.90    | 1683      | 377       | 224        |
| 11 | -1.00    | 1822      | 438       | 269        |
| 12 | -1.10    | 1962      | 502       | 320        |
| 13 | -1.20    | 2104      | 570       | 378        |
| 14 | -1.30    | 2247      | 642       | 443        |
| 15 | -1.40    | 2391      | 717       | 516        |
| 16 | -1.50    | 2537      | 797       | 598        |
| 17 | -1.60    | 2685      | 880       | 687        |
| 18 | -1.70    | 2833      | 967       | 786        |
| 19 | -1.80    | 2984      | 1057      | 894        |
| 20 | -1.90    | 3135      | 1152      | 1012       |
| 21 | -2.00    | 3288      | 1250      | 1140       |
| 22 | -2.10    | 3443      | 1352      | 1278       |

PROGETTAZIONE ATI:

| n° | X<br>[m] | N<br>[kg] | T<br>[kg] | M<br>[kgm] |
|----|----------|-----------|-----------|------------|
| 23 | -2.20    | 3599      | 1457      | 1427       |
| 24 | -2.30    | 3756      | 1566      | 1588       |
| 25 | -2.40    | 3915      | 1680      | 1760       |
| 26 | -2.50    | 4075      | 1796      | 1943       |
| 27 | -2.60    | 4237      | 1917      | 2140       |
| 28 | -2.70    | 4400      | 2041      | 2349       |
| 29 | -2.80    | 4565      | 2169      | 2571       |
| 30 | -2.90    | 4731      | 2301      | 2806       |
| 31 | -3.00    | 4899      | 2437      | 3055       |
| 32 | -3.10    | 5068      | 2576      | 3319       |
| 33 | -3.20    | 5238      | 2719      | 3597       |
| 34 | -3.30    | 5410      | 2866      | 3890       |
| 35 | -3.40    | 5583      | 3016      | 4199       |
| 36 | -3.50    | 5758      | 3171      | 4523       |
| 37 | -3.60    | 5934      | 3329      | 4863       |
| 38 | -3.70    | 6112      | 3491      | 5220       |
| 39 | -3.80    | 6291      | 3656      | 5594       |
| 40 | -3.90    | 6471      | 3826      | 5985       |
| 41 | -4.00    | 6653      | 3999      | 6393       |
| 42 | -4.10    | 6837      | 4175      | 6820       |
| 43 | -4.20    | 7021      | 4356      | 7265       |
| 44 | -4.30    | 7208      | 4540      | 7729       |
| 45 | -4.40    | 7395      | 4728      | 8212       |
| 46 | -4.50    | 7585      | 4920      | 8715       |
| 47 | -4.60    | 7775      | 5116      | 9237       |
| 48 | -4.70    | 7967      | 5315      | 9780       |
| 49 | -4.80    | 8161      | 5518      | 10343      |
| 50 | -4.90    | 8356      | 5725      | 10928      |
| 51 | -5.00    | 8552      | 5935      | 11534      |
| 52 | -5.10    | 8750      | 6150      | 12161      |
| 53 | -5.20    | 8949      | 6368      | 12811      |
| 54 | -5.30    | 9150      | 6589      | 13484      |
| 55 | -5.40    | 9352      | 6815      | 14179      |
| 56 | -5.50    | 9555      | 7044      | 14898      |
| 57 | -5.60    | 9760      | 7277      | 15640      |
| 58 | -5.70    | 9967      | 7514      | 16407      |
| 59 | -5.80    | 10175     | 7755      | 17198      |
| 60 | -5.90    | 10384     | 7999      | 18014      |
| 61 | -6.00    | 10595     | 8247      | 18855      |
| 62 | -6.10    | 10807     | 8499      | 19721      |
| 63 | -6.20    | 11021     | 8754      | 20614      |
| 64 | -6.30    | 11236     | 9013      | 21533      |
| 65 | -6.40    | 11452     | 9277      | 22479      |
| 66 | -6.50    | 11670     | 9543      | 23452      |
| 67 | -6.60    | 11890     | 9814      | 24452      |
| 68 | -6.70    | 12110     | 10088     | 25480      |
| 69 | -6.80    | 12333     | 10366     | 26537      |
| 70 | -6.90    | 12556     | 10648     | 27622      |
| 71 | -7.00    | 12782     | 10933     | 28736      |
| 72 | -7.10    | 13008     | 11223     | 29879      |
| 73 | -7.20    | 13236     | 11516     | 31053      |
| 74 | -7.30    | 13466     | 11812     | 32256      |
| 75 | -7.40    | 13697     | 12113     | 33490      |
| 76 | -7.50    | 13929     | 12417     | 34755      |
| 77 | -7.60    | 14163     | 12725     | 36051      |
| 78 | -7.70    | 14398     | 13037     | 37379      |
| 79 | -7.80    | 14635     | 13352     | 38739      |
| 80 | -7.90    | 14873     | 13672     | 40131      |
| 81 | -8.00    | 15113     | 13995     | 41556      |
| 82 | -8.10    | 15354     | 14321     | 43014      |
| 83 | -8.20    | 15596     | 14652     | 44506      |
| 84 | -8.30    | 15840     | 14986     | 46032      |
| 85 | -8.40    | 16086     | 15324     | 47592      |
| 86 | -8.50    | 16332     | 15666     | 49187      |
| 87 | -8.60    | 16581     | 16011     | 50816      |

Combinazione n° 18 - SLEQ H + V

| n° | X<br>[m] | N<br>[kg] | T<br>[kg] | M<br>[kgm] |
|----|----------|-----------|-----------|------------|
| 1  | 0.00     | 542       | 0         | 68         |
| 2  | -0.10    | 679       | 144       | 75         |
| 3  | -0.20    | 817       | 292       | 98         |
| 4  | -0.30    | 956       | 444       | 135        |
| 5  | -0.40    | 1097      | 600       | 189        |
| 6  | -0.50    | 1240      | 760       | 259        |
| 7  | -0.60    | 1384      | 923       | 345        |
| 8  | -0.70    | 1530      | 1091      | 448        |
| 9  | -0.80    | 1677      | 1263      | 569        |
| 10 | -0.90    | 1826      | 1439      | 708        |
| 11 | -1.00    | 1977      | 1619      | 864        |
| 12 | -1.10    | 2129      | 1803      | 1040       |
| 13 | -1.20    | 2283      | 1990      | 1234       |
| 14 | -1.30    | 2438      | 2182      | 1448       |

PROGETTAZIONE ATI:

| n° | X<br>[m] | N<br>[kg] | T<br>[kg] | M<br>[kgm] |
|----|----------|-----------|-----------|------------|
| 15 | -1.40    | 2594      | 2378      | 1682       |
| 16 | -1.50    | 2753      | 2578      | 1935       |
| 17 | -1.60    | 2913      | 2782      | 2210       |
| 18 | -1.70    | 3074      | 2989      | 2506       |
| 19 | -1.80    | 3237      | 3201      | 2823       |
| 20 | -1.90    | 3402      | 3417      | 3162       |
| 21 | -2.00    | 3568      | 3637      | 3523       |
| 22 | -2.10    | 3735      | 3860      | 3906       |
| 23 | -2.20    | 3905      | 4088      | 4313       |
| 24 | -2.30    | 4075      | 4320      | 4744       |
| 25 | -2.40    | 4248      | 4556      | 5198       |
| 26 | -2.50    | 4422      | 4795      | 5676       |
| 27 | -2.60    | 4597      | 5039      | 6179       |
| 28 | -2.70    | 4774      | 5287      | 6708       |
| 29 | -2.80    | 4953      | 5539      | 7261       |
| 30 | -2.90    | 5133      | 5794      | 7841       |
| 31 | -3.00    | 5315      | 6054      | 8447       |
| 32 | -3.10    | 5498      | 6318      | 9079       |
| 33 | -3.20    | 5683      | 6585      | 9739       |
| 34 | -3.30    | 5869      | 6857      | 10426      |
| 35 | -3.40    | 6057      | 7133      | 11141      |
| 36 | -3.50    | 6247      | 7412      | 11885      |
| 37 | -3.60    | 6438      | 7696      | 12657      |
| 38 | -3.70    | 6631      | 7984      | 13458      |
| 39 | -3.80    | 6825      | 8275      | 14289      |
| 40 | -3.90    | 7021      | 8571      | 15149      |
| 41 | -4.00    | 7218      | 8871      | 16040      |
| 42 | -4.10    | 7417      | 9174      | 16962      |
| 43 | -4.20    | 7618      | 9482      | 17915      |
| 44 | -4.30    | 7820      | 9793      | 18899      |
| 45 | -4.40    | 8024      | 10109     | 19916      |
| 46 | -4.50    | 8229      | 10429     | 20965      |
| 47 | -4.60    | 8436      | 10752     | 22046      |
| 48 | -4.70    | 8644      | 11080     | 23161      |
| 49 | -4.80    | 8854      | 11411     | 24309      |
| 50 | -4.90    | 9065      | 11747     | 25491      |
| 51 | -5.00    | 9278      | 12087     | 26708      |
| 52 | -5.10    | 9493      | 12430     | 27959      |
| 53 | -5.20    | 9709      | 12778     | 29245      |
| 54 | -5.30    | 9927      | 13129     | 30567      |
| 55 | -5.40    | 10146     | 13485     | 31925      |
| 56 | -5.50    | 10367     | 13844     | 33320      |
| 57 | -5.60    | 10589     | 14208     | 34751      |
| 58 | -5.70    | 10813     | 14575     | 36219      |
| 59 | -5.80    | 11039     | 14947     | 37726      |
| 60 | -5.90    | 11266     | 15322     | 39270      |
| 61 | -6.00    | 11495     | 15702     | 40852      |
| 62 | -6.10    | 11725     | 16085     | 42473      |
| 63 | -6.20    | 11957     | 16473     | 44134      |
| 64 | -6.30    | 12190     | 16864     | 45834      |
| 65 | -6.40    | 12425     | 17260     | 47574      |
| 66 | -6.50    | 12662     | 17659     | 49354      |
| 67 | -6.60    | 12900     | 18063     | 51176      |
| 68 | -6.70    | 13139     | 18470     | 53038      |
| 69 | -6.80    | 13380     | 18882     | 54942      |
| 70 | -6.90    | 13623     | 19297     | 56889      |
| 71 | -7.00    | 13867     | 19717     | 58877      |
| 72 | -7.10    | 14113     | 20140     | 60909      |
| 73 | -7.20    | 14361     | 20567     | 62984      |
| 74 | -7.30    | 14610     | 20999     | 65102      |
| 75 | -7.40    | 14860     | 21434     | 67265      |
| 76 | -7.50    | 15112     | 21874     | 69472      |
| 77 | -7.60    | 15366     | 22317     | 71724      |
| 78 | -7.70    | 15621     | 22764     | 74021      |
| 79 | -7.80    | 15878     | 23216     | 76364      |
| 80 | -7.90    | 16137     | 23671     | 78753      |
| 81 | -8.00    | 16397     | 24131     | 81188      |
| 82 | -8.10    | 16658     | 24594     | 83670      |
| 83 | -8.20    | 16921     | 25061     | 86200      |
| 84 | -8.30    | 17186     | 25533     | 88777      |
| 85 | -8.40    | 17452     | 26008     | 91402      |
| 86 | -8.50    | 17720     | 26487     | 94076      |
| 87 | -8.60    | 17989     | 26971     | 96799      |

Combinazione n° 19 - SLEQ H - V

| n° | X<br>[m] | N<br>[kg] | T<br>[kg] | M<br>[kgm] |
|----|----------|-----------|-----------|------------|
| 1  | 0.00     | 500       | 0         | 63         |
| 2  | -0.10    | 615       | 115       | 68         |
| 3  | -0.20    | 731       | 235       | 86         |
| 4  | -0.30    | 849       | 358       | 117        |
| 5  | -0.40    | 968       | 485       | 160        |
| 6  | -0.50    | 1088      | 617       | 217        |

PROGETTAZIONE ATI:

| n° | X<br>[m] | N<br>[kg] | T<br>[kg] | M<br>[kgm] |
|----|----------|-----------|-----------|------------|
| 7  | -0.60    | 1210      | 752       | 287        |
| 8  | -0.70    | 1333      | 891       | 371        |
| 9  | -0.80    | 1457      | 1034      | 470        |
| 10 | -0.90    | 1583      | 1182      | 584        |
| 11 | -1.00    | 1710      | 1333      | 713        |
| 12 | -1.10    | 1838      | 1488      | 858        |
| 13 | -1.20    | 1968      | 1647      | 1018       |
| 14 | -1.30    | 2098      | 1811      | 1196       |
| 15 | -1.40    | 2231      | 1978      | 1390       |
| 16 | -1.50    | 2364      | 2149      | 1601       |
| 17 | -1.60    | 2499      | 2324      | 1830       |
| 18 | -1.70    | 2635      | 2503      | 2078       |
| 19 | -1.80    | 2773      | 2687      | 2344       |
| 20 | -1.90    | 2911      | 2874      | 2628       |
| 21 | -2.00    | 3051      | 3065      | 2932       |
| 22 | -2.10    | 3193      | 3260      | 3256       |
| 23 | -2.20    | 3336      | 3459      | 3600       |
| 24 | -2.30    | 3480      | 3662      | 3965       |
| 25 | -2.40    | 3625      | 3870      | 4350       |
| 26 | -2.50    | 3772      | 4081      | 4757       |
| 27 | -2.60    | 3920      | 4296      | 5185       |
| 28 | -2.70    | 4069      | 4515      | 5636       |
| 29 | -2.80    | 4220      | 4738      | 6109       |
| 30 | -2.90    | 4372      | 4965      | 6605       |
| 31 | -3.00    | 4525      | 5196      | 7124       |
| 32 | -3.10    | 4680      | 5431      | 7667       |
| 33 | -3.20    | 4836      | 5671      | 8235       |
| 34 | -3.30    | 4993      | 5914      | 8827       |
| 35 | -3.40    | 5151      | 6161      | 9444       |
| 36 | -3.50    | 5311      | 6412      | 10086      |
| 37 | -3.60    | 5472      | 6667      | 10754      |
| 38 | -3.70    | 5635      | 6926      | 11448      |
| 39 | -3.80    | 5799      | 7189      | 12169      |
| 40 | -3.90    | 5964      | 7456      | 12916      |
| 41 | -4.00    | 6130      | 7727      | 13692      |
| 42 | -4.10    | 6298      | 8002      | 14494      |
| 43 | -4.20    | 6467      | 8281      | 15326      |
| 44 | -4.30    | 6638      | 8564      | 16185      |
| 45 | -4.40    | 6810      | 8851      | 17074      |
| 46 | -4.50    | 6983      | 9142      | 17992      |
| 47 | -4.60    | 7157      | 9437      | 18940      |
| 48 | -4.70    | 7333      | 9736      | 19918      |
| 49 | -4.80    | 7510      | 10039     | 20927      |
| 50 | -4.90    | 7688      | 10346     | 21966      |
| 51 | -5.00    | 7868      | 10657     | 23037      |
| 52 | -5.10    | 8049      | 10972     | 24140      |
| 53 | -5.20    | 8231      | 11291     | 25276      |
| 54 | -5.30    | 8415      | 11614     | 26443      |
| 55 | -5.40    | 8600      | 11941     | 27644      |
| 56 | -5.50    | 8786      | 12272     | 28878      |
| 57 | -5.60    | 8974      | 12607     | 30146      |
| 58 | -5.70    | 9163      | 12946     | 31449      |
| 59 | -5.80    | 9353      | 13289     | 32786      |
| 60 | -5.90    | 9544      | 13636     | 34158      |
| 61 | -6.00    | 9737      | 13987     | 35565      |
| 62 | -6.10    | 9931      | 14342     | 37008      |
| 63 | -6.20    | 10127     | 14700     | 38488      |
| 64 | -6.30    | 10324     | 15063     | 40004      |
| 65 | -6.40    | 10522     | 15430     | 41557      |
| 66 | -6.50    | 10721     | 15801     | 43148      |
| 67 | -6.60    | 10922     | 16176     | 44777      |
| 68 | -6.70    | 11124     | 16555     | 46444      |
| 69 | -6.80    | 11328     | 16938     | 48149      |
| 70 | -6.90    | 11532     | 17325     | 49894      |
| 71 | -7.00    | 11738     | 17715     | 51678      |
| 72 | -7.10    | 11946     | 18110     | 53502      |
| 73 | -7.20    | 12154     | 18509     | 55366      |
| 74 | -7.30    | 12364     | 18912     | 57271      |
| 75 | -7.40    | 12576     | 19319     | 59217      |
| 76 | -7.50    | 12788     | 19730     | 61204      |
| 77 | -7.60    | 13002     | 20144     | 63234      |
| 78 | -7.70    | 13218     | 20563     | 65305      |
| 79 | -7.80    | 13434     | 20986     | 67420      |
| 80 | -7.90    | 13652     | 21413     | 69577      |
| 81 | -8.00    | 13871     | 21843     | 71778      |
| 82 | -8.10    | 14092     | 22278     | 74023      |
| 83 | -8.20    | 14314     | 22717     | 76312      |
| 84 | -8.30    | 14537     | 23160     | 78646      |
| 85 | -8.40    | 14762     | 23607     | 81025      |
| 86 | -8.50    | 14987     | 24057     | 83450      |
| 87 | -8.60    | 15215     | 24512     | 85921      |

PROGETTAZIONE ATI:

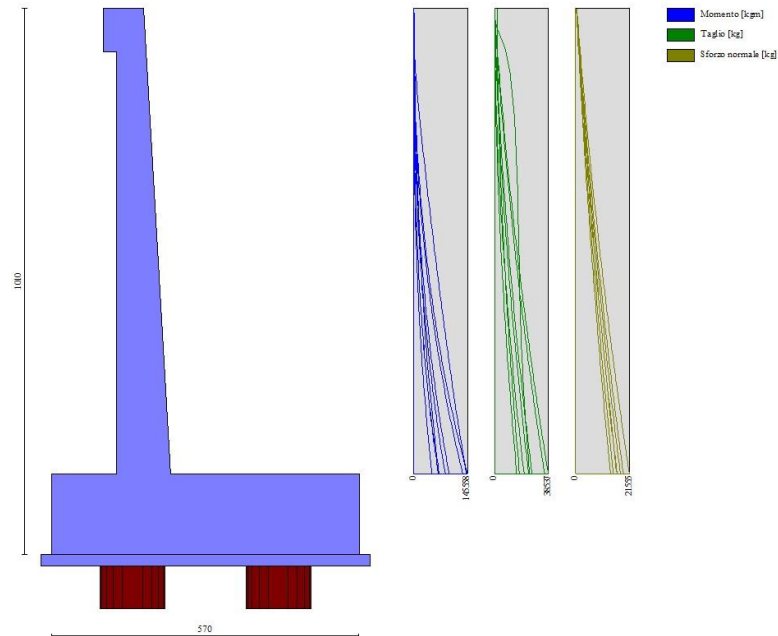


Fig. 12 - Paramento (Inviluppo)

*Mensola valle*

Combinazione n° 1 - STR (A1-M1-R3)

| n° | X<br>[m] | N<br>[kg] | T<br>[kg] | M<br>[kgm] |
|----|----------|-----------|-----------|------------|
| 1  | -0.75    | 0         | 0         | 0          |
| 2  | -0.67    | 0         | 167       | 7          |
| 3  | -0.58    | 0         | 333       | 28         |
| 4  | -0.50    | 0         | 500       | 63         |

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

| n° | X<br>[m] | N<br>[kg] | T<br>[kg] | M<br>[kgm] |
|----|----------|-----------|-----------|------------|
| 1  | -0.75    | 0         | 0         | 0          |
| 2  | -0.67    | 0         | 193       | 8          |
| 3  | -0.58    | 0         | 386       | 32         |
| 4  | -0.50    | 0         | 579       | 72         |

Combinazione n° 3 - STR (A1-M1-R3) H - V

| n° | X<br>[m] | N<br>[kg] | T<br>[kg] | M<br>[kgm] |
|----|----------|-----------|-----------|------------|
| 1  | -0.75    | 0         | 0         | 0          |
| 2  | -0.67    | 0         | 167       | 7          |
| 3  | -0.58    | 0         | 333       | 28         |
| 4  | -0.50    | 0         | 500       | 63         |

Combinazione n° 4 - STR (A1-M1-R3)

| n° | X<br>[m] | N<br>[kg] | T<br>[kg] | M<br>[kgm] |
|----|----------|-----------|-----------|------------|
| 1  | -0.75    | 0         | 0         | 0          |
| 2  | -0.67    | 0         | 217       | 9          |
| 3  | -0.58    | 0         | 433       | 36         |
| 4  | -0.50    | 0         | 650       | 81         |

Combinazione n° 5 - STR (A1-M1-R3)

| n° | X<br>[m] | N<br>[kg] | T<br>[kg] | M<br>[kgm] |
|----|----------|-----------|-----------|------------|
| 1  | -0.75    | 0         | 0         | 0          |

PROGETTAZIONE ATI:



| n° | X<br>[m] | N<br>[kg] | T<br>[kg] | M<br>[kgm] |
|----|----------|-----------|-----------|------------|
| 2  | -0.67    | 0         | 167       | 7          |
| 3  | -0.58    | 0         | 333       | 28         |
| 4  | -0.50    | 0         | 500       | 63         |

Combinazione n° 6 - STR (A1-M1-R3)

| n° | X<br>[m] | N<br>[kg] | T<br>[kg] | M<br>[kgm] |
|----|----------|-----------|-----------|------------|
| 1  | -0.75    | 0         | 0         | 0          |
| 2  | -0.67    | 0         | 217       | 9          |
| 3  | -0.58    | 0         | 433       | 36         |
| 4  | -0.50    | 0         | 650       | 81         |

Combinazione n° 13 - ECC

| n° | X<br>[m] | N<br>[kg] | T<br>[kg] | M<br>[kgm] |
|----|----------|-----------|-----------|------------|
| 1  | -0.75    | 0         | 0         | 0          |
| 2  | -0.67    | 0         | 167       | 7          |
| 3  | -0.58    | 0         | 333       | 28         |
| 4  | -0.50    | 0         | 500       | 63         |

Combinazione n° 14 - ECC

| n° | X<br>[m] | N<br>[kg] | T<br>[kg] | M<br>[kgm] |
|----|----------|-----------|-----------|------------|
| 1  | -0.75    | 0         | 0         | 0          |
| 2  | -0.67    | 0         | 167       | 7          |
| 3  | -0.58    | 0         | 333       | 28         |
| 4  | -0.50    | 0         | 500       | 63         |

Combinazione n° 15 - SLER

| n° | X<br>[m] | N<br>[kg] | T<br>[kg] | M<br>[kgm] |
|----|----------|-----------|-----------|------------|
| 1  | -0.75    | 0         | 0         | 0          |
| 2  | -0.67    | 0         | 167       | 7          |
| 3  | -0.58    | 0         | 333       | 28         |
| 4  | -0.50    | 0         | 500       | 63         |

Combinazione n° 16 - SLEF

| n° | X<br>[m] | N<br>[kg] | T<br>[kg] | M<br>[kgm] |
|----|----------|-----------|-----------|------------|
| 1  | -0.75    | 0         | 0         | 0          |
| 2  | -0.67    | 0         | 167       | 7          |
| 3  | -0.58    | 0         | 333       | 28         |
| 4  | -0.50    | 0         | 500       | 63         |

Combinazione n° 17 - SLEQ

| n° | X<br>[m] | N<br>[kg] | T<br>[kg] | M<br>[kgm] |
|----|----------|-----------|-----------|------------|
| 1  | -0.75    | 0         | 0         | 0          |
| 2  | -0.67    | 0         | 167       | 7          |
| 3  | -0.58    | 0         | 333       | 28         |
| 4  | -0.50    | 0         | 500       | 63         |

Combinazione n° 18 - SLEQ H + V

| n° | X<br>[m] | N<br>[kg] | T<br>[kg] | M<br>[kgm] |
|----|----------|-----------|-----------|------------|
| 1  | -0.75    | 0         | 0         | 0          |
| 2  | -0.67    | 0         | 181       | 8          |
| 3  | -0.58    | 0         | 362       | 30         |
| 4  | -0.50    | 0         | 542       | 68         |

Combinazione n° 19 - SLEQ H - V

| n° | X<br>[m] | N<br>[kg] | T<br>[kg] | M<br>[kgm] |
|----|----------|-----------|-----------|------------|
| 1  | -0.75    | 0         | 0         | 0          |
| 2  | -0.67    | 0         | 167       | 7          |
| 3  | -0.58    | 0         | 333       | 28         |
| 4  | -0.50    | 0         | 500       | 63         |

PROGETTAZIONE ATI:

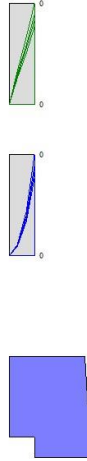


Fig. 13 - Mensola valle (Inviluppo)

*Piastra fondazione*

Combinazione n° 1 - STR (A1-M1-R3)

| In | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |
|----|-------------|-------------|--------------|------------|------------|
| 1  | 2           | -4          | 16           | -25        | 599        |
| 2  | 17          | -1          | 10           | -14        | 539        |
| 3  | 30          | -158        | 19           | 19         | 1085       |
| 4  | 23          | -146        | 30           | 7          | 1155       |
| 5  | 39          | -11         | 11           | 18         | 542        |
| 6  | 35          | -178        | 15           | 39         | 1097       |
| 7  | -19         | -678        | 6            | 59         | 2185       |
| 8  | 8           | -577        | 50           | 38         | 2207       |
| 9  | -47         | -678        | -1           | 75         | 2219       |
| 10 | 58          | -9          | 6            | 50         | 556        |
| 11 | 29          | -176        | 6            | 49         | 1117       |
| 12 | -102        | -680        | -9           | 62         | 2246       |
| 13 | -117        | -1460       | -69          | 91         | 3305       |
| 14 | 21          | -1404       | -70          | 91         | 3174       |
| 15 | -291        | -1495       | -63          | 78         | 3359       |
| 16 | -370        | -1513       | -40          | 52         | 3386       |
| 17 | 56          | -2          | 2            | 60         | 565        |
| 18 | 7           | -172        | 0            | 49         | 1131       |
| 19 | -144        | -679        | -8           | 46         | 2264       |
| 20 | -414        | -1521       | -21          | 33         | 3400       |
| 21 | -803        | -2677       | -161         | 0          | 3869       |
| 22 | -832        | -2774       | -309         | 0          | 3644       |
| 23 | -810        | -2701       | -89          | 0          | 3931       |
| 24 | -813        | -2709       | -52          | 0          | 3956       |
| 25 | -814        | -2715       | -26          | 0          | 3967       |
| 26 | 41          | 0           | 1            | 54         | 568        |
| 27 | -13         | -170        | -1           | 41         | 1135       |
| 28 | -170        | -679        | -5           | 33         | 2269       |
| 29 | -436        | -1525       | -11          | 20         | 3401       |
| 30 | -815        | -2716       | -12          | 0          | 3967       |
| 31 | -815        | -2716       | -12          | 0          | 3967       |
| 32 | -815        | -2716       | -12          | 0          | 3967       |
| 33 | -815        | -2716       | -12          | 0          | 3967       |
| 34 | -815        | -2716       | -12          | 0          | 3967       |
| 35 | -815        | -2716       | -12          | 0          | 3967       |
| 36 | -815        | -2716       | -12          | 0          | 3967       |
| 37 | 26          | 1           | 1            | 41         | 568        |
| 38 | -28         | -170        | -1           | 31         | 1135       |
| 39 | -185        | -678        | -2           | 23         | 2267       |
| 40 | -446        | -1526       | -5           | 13         | 3398       |
| 41 | -814        | -2715       | -5           | 0          | 3963       |

PROGETTAZIONE ATI:

| In  | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |
|-----|-------------|-------------|--------------|------------|------------|
| 42  | -814        | -2715       | -5           | 0          | 3963       |
| 43  | -814        | -2715       | -5           | 0          | 3963       |
| 44  | -814        | -2715       | -5           | 0          | 3963       |
| 45  | -814        | -2715       | -5           | 0          | 3963       |
| 46  | -814        | -2715       | -5           | 0          | 3963       |
| 47  | -814        | -2715       | -5           | 0          | 3963       |
| 48  | -814        | -2715       | -5           | 0          | 3963       |
| 49  | -814        | -2715       | -5           | 0          | 3963       |
| 50  | 15          | 0           | 1            | 30         | 567        |
| 51  | -38         | -170        | 0            | 22         | 1133       |
| 52  | -193        | -678        | 0            | 15         | 2264       |
| 53  | -452        | -1525       | -1           | 8          | 3393       |
| 54  | -814        | -2713       | -2           | 0          | 3957       |
| 55  | -814        | -2713       | -2           | 0          | 3957       |
| 56  | -814        | -2713       | -2           | 0          | 3957       |
| 57  | -16817      | -56057      | 6191         | 0          | -30815     |
| 58  | -18348      | -61161      | 10199        | 0          | -21443     |
| 59  | -17090      | -56968      | 3961         | 0          | -34198     |
| 60  | -17335      | -57783      | 2572         | 0          | -35648     |
| 61  | -17542      | -58473      | 1438         | 0          | -36261     |
| 62  | -17645      | -58815      | 771          | 0          | -36249     |
| 63  | -17680      | -58933      | 378          | 0          | -36004     |
| 64  | -17678      | -58926      | 152          | 0          | -35699     |
| 65  | 8           | 0           | 1            | 20         | 566        |
| 66  | -44         | -169        | 1            | 15         | 1131       |
| 67  | -198        | -678        | 1            | 10         | 2260       |
| 68  | -455        | -1525       | 0            | 5          | 3388       |
| 69  | -813        | -2710       | 0            | 0          | 3952       |
| 70  | -813        | -2710       | 0            | 0          | 3952       |
| 71  | -813        | -2710       | 0            | 0          | 3952       |
| 72  | -17658      | -58859      | 25           | 0          | -35408     |
| 73  | -3045       | -44078      | 3011         | 2742       | -27584     |
| 74  | 74          | -44145      | 2960         | 2396       | -20443     |
| 75  | -7612       | -44918      | 3199         | 2939       | -30427     |
| 76  | -10028      | -45650      | 2229         | 2494       | -31716     |
| 77  | -11706      | -46277      | 1305         | 1868       | -32333     |
| 78  | -12734      | -46688      | 708          | 1285       | -32380     |
| 79  | -13335      | -46909      | 341          | 849        | -32185     |
| 80  | -13687      | -47011      | 128          | 538        | -31918     |
| 81  | -13888      | -47051      | 8            | 327        | -31669     |
| 82  | 3           | 0           | 1            | 14         | 565        |
| 83  | -48         | -169        | 1            | 10         | 1129       |
| 84  | -201        | -677        | 1            | 6          | 2257       |
| 85  | -456        | -1523       | 1            | 3          | 3384       |
| 86  | -812        | -2708       | 1            | 0          | 3947       |
| 87  | -812        | -2708       | 1            | 0          | 3947       |
| 88  | -812        | -2708       | 1            | 0          | 3947       |
| 89  | -17629      | -58762      | -42          | 0          | -35153     |
| 90  | -14001      | -47046      | -59          | 193        | -31443     |
| 91  | -1568       | -36798      | 678          | 2840       | -21375     |
| 92  | -78         | -33156      | -141         | 1881       | -18934     |
| 93  | -3303       | -36856      | 961          | 3757       | -22908     |
| 94  | -5753       | -37056      | 976          | 3395       | -23782     |
| 95  | -7832       | -37297      | 679          | 2679       | -24379     |
| 96  | -9224       | -37531      | 386          | 1957       | -24592     |
| 97  | -10097      | -37651      | 168          | 1376       | -24465     |
| 98  | -10640      | -37725      | 51           | 914        | -24266     |
| 99  | -10962      | -37808      | -15          | 581        | -24141     |
| 100 | -11159      | -37862      | -76          | 383        | -24033     |
| 101 | 1           | 0           | 1            | 9          | 564        |
| 102 | -50         | -169        | 1            | 6          | 1128       |
| 103 | -203        | -677        | 1            | 3          | 2255       |
| 104 | -457        | -1522       | 1            | 1          | 3381       |
| 105 | -812        | -2706       | 1            | 0          | 3944       |
| 106 | -812        | -2706       | 1            | 0          | 3944       |
| 107 | -812        | -2706       | 1            | 0          | 3944       |
| 108 | -17596      | -58652      | -72          | 0          | -34934     |
| 109 | -14065      | -47006      | -90          | 109        | -31235     |
| 110 | -11288      | -37835      | -110         | 257        | -23810     |
| 111 | -854        | -29819      | -558         | 2422       | -15767     |
| 112 | 119         | -28108      | -584         | 1470       | -17267     |
| 113 | -2265       | -30410      | -457         | 3478       | -15552     |
| 114 | -3864       | -30441      | -122         | 3320       | -15523     |
| 115 | -5606       | -30686      | 113          | 2699       | -16442     |
| 116 | -6898       | -30905      | 47           | 2154       | -16918     |
| 117 | -7867       | -30906      | -71          | 1687       | -16712     |
| 118 | -8499       | -30853      | -36          | 1109       | -16223     |
| 119 | -8856       | -31072      | 7            | 651        | -16606     |
| 120 | -9056       | -31235      | -96          | 522        | -16788     |
| 121 | -9272       | -31149      | -185         | 464        | -16402     |
| 122 | 0           | 0           | 0            | 5          | 564        |
| 123 | -51         | -169        | 1            | 4          | 1127       |
| 124 | -203        | -676        | 1            | 2          | 2253       |
| 125 | -457        | -1521       | 1            | 1          | 3379       |
| 126 | -811        | -2704       | 1            | 0          | 3942       |

PROGETTAZIONE ATI:

| In  | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |
|-----|-------------|-------------|--------------|------------|------------|
| 127 | -811        | -2704       | 1            | 0          | 3942       |
| 128 | -811        | -2704       | 1            | 0          | 3942       |
| 129 | -17565      | -58549      | -77          | 0          | -34759     |
| 130 | -14098      | -46956      | -90          | 54         | -31064     |
| 131 | -11370      | -37799      | -93          | 143        | -23628     |
| 132 | -9410       | -31017      | -99          | 226        | -15847     |
| 133 | -1080       | -25933      | -1171        | 2785       | -11556     |
| 134 | -104        | -25192      | -915         | 1992       | -15493     |
| 135 | -2378       | -25669      | -1376        | 3788       | -6817      |
| 136 | -3813       | -25960      | -734         | 2891       | -6707      |
| 137 | -4606       | -26287      | -66          | 1793       | -7879      |
| 138 | -5568       | -27198      | -222         | 2061       | -11617     |
| 139 | -6519       | -26537      | -489         | 2271       | -8362      |
| 140 | -7496       | -26347      | -112         | 1150       | -7101      |
| 141 | -7484       | -26708      | 241          | 113        | -8443      |
| 142 | -7601       | -27533      | -114         | 597        | -11839     |
| 143 | -7940       | -26812      | -464         | 1141       | -8358      |
| 144 | -8472       | -26558      | -102         | 286        | -6968      |
| 145 | -1          | 0           | 0            | 3          | 563        |
| 146 | -52         | -169        | 0            | 2          | 1126       |
| 147 | -204        | -676        | 1            | 1          | 2252       |
| 148 | -457        | -1521       | 1            | 0          | 3377       |
| 149 | -811        | -2703       | 1            | 0          | 3940       |
| 150 | -811        | -2703       | 1            | 0          | 3940       |
| 151 | -811        | -2703       | 1            | 0          | 3940       |
| 152 | -17540      | -58466      | -66          | 0          | -34632     |
| 153 | -14112      | -46920      | -75          | 21         | -30953     |
| 154 | -11406      | -37810      | -63          | 63         | -23578     |
| 155 | -9443       | -31171      | -2           | 25         | -16233     |
| 156 | -8147       | -26861      | 267          | -535       | -8255      |
| 157 | -864        | -23545      | -1435        | 7781       | -11054     |
| 158 | 136         | -22959      | -971         | 3765       | -15667     |
| 159 | -4824       | -25365      | -1984        | 7079       | -3615      |
| 160 | -5110       | -22520      | -1006        | 1400       | 22210      |
| 161 | -5510       | -25807      | 88           | -2166      | -6960      |
| 162 | -2937       | -24292      | -377         | 1684       | -10502     |
| 163 | -6839       | -26038      | -952         | 5962       | -7482      |
| 164 | -7990       | -23348      | -167         | 1082       | 20806      |
| 165 | -7688       | -26207      | 579          | -3750      | -7688      |
| 166 | -4680       | -24634      | -126         | 617        | -10952     |
| 167 | -8147       | -26315      | -834         | 5028       | -7700      |
| 168 | -8949       | -23568      | -104         | 322        | 20748      |
| 169 | -8376       | -26375      | 632          | -4356      | -7652      |
| 170 | -1          | 0           | 0            | 2          | 563        |
| 171 | -52         | -169        | 0            | 1          | 1126       |
| 172 | -204        | -676        | 0            | 0          | 2251       |
| 173 | -457        | -1520       | 1            | 0          | 3376       |
| 174 | -811        | -2702       | 1            | 0          | 3939       |
| 175 | -811        | -2702       | 1            | 0          | 3939       |
| 176 | -811        | -2702       | 1            | 0          | 3939       |
| 177 | -17521      | -58404      | -49          | 0          | -34545     |
| 178 | -14117      | -46891      | -56          | 8          | -30877     |
| 179 | -11425      | -37826      | -57          | 43         | -23572     |
| 180 | -9431       | -31287      | -59          | 81         | -16460     |
| 181 | -8044       | -27637      | -60          | 113        | -11646     |
| 182 | -5162       | -24757      | -60          | 136        | -10874     |
| 183 | -65         | -20022      | -658         | 11095      | -14861     |
| 184 | 413         | -19669      | -638         | 4722       | -17839     |
| 185 | -2010       | -22730      | -558         | 41598      | -13619     |
| 186 | -20053      | -36893      | -847         | 5890       | -10551     |
| 187 | -690        | -21465      | -969         | -29495     | -13449     |
| 188 | -1083       | -20586      | -424         | 1359       | -13397     |
| 189 | -1607       | -21753      | 35           | 31527      | -13880     |
| 190 | -21562      | -37160      | -198         | 955        | -11325     |
| 191 | -2309       | -21910      | -472         | -29606     | -14148     |
| 192 | -2470       | -20909      | -136         | 600        | -13943     |
| 193 | -2747       | -22007      | 194          | 30832      | -14225     |
| 194 | -22457      | -37359      | -105         | 339        | -11507     |
| 195 | -2988       | -22064      | -399         | -30135     | -14220     |
| 196 | -2967       | -21025      | -60          | 151        | -13951     |
| 197 | -1          | 0           | 0            | 1          | 563        |
| 198 | -52         | -169        | 0            | 0          | 1126       |
| 199 | -204        | -676        | 0            | 0          | 2251       |
| 200 | -457        | -1520       | 0            | 0          | 3376       |
| 201 | -810        | -2701       | 0            | 0          | 3938       |
| 202 | -810        | -2701       | 0            | 0          | 3938       |
| 203 | -810        | -2701       | 0            | 0          | 3938       |
| 204 | -17508      | -58362      | -27          | 0          | -34489     |
| 205 | -14120      | -46863      | -33          | 5          | -30817     |
| 206 | -11444      | -37786      | -46          | 37         | -23462     |
| 207 | -9504       | -31172      | -112         | 153        | -16144     |
| 208 | -8227       | -26878      | -383         | 776        | -8193      |
| 209 | -8471       | -26399      | -749         | 4641       | -7615      |
| 210 | -3093       | -22089      | 284          | 30446      | -14204     |
| 211 | -559        | -13593      | 242          | 6114       | -17939     |

PROGETTAZIONE ATI:

| In  | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |
|-----|-------------|-------------|--------------|------------|------------|
| 212 | 98          | -13648      | -249         | 2981       | -18977     |
| 213 | -4081       | -14770      | 365          | 4008       | -22395     |
| 214 | -2993       | -9740       | -654         | 149        | -44087     |
| 215 | -3707       | -15391      | -1412        | -1608      | -18949     |
| 216 | -553        | -14072      | -393         | 966        | -16192     |
| 217 | -4192       | -15619      | 612          | 3921       | -19301     |
| 218 | -4139       | -10584      | -207         | 798        | -44063     |
| 219 | -4736       | -15736      | -1056        | -2334      | -19576     |
| 220 | -1608       | -14329      | -141         | 565        | -16732     |
| 221 | -5138       | -15807      | 768          | 3469       | -19684     |
| 222 | -4941       | -10729      | -105         | 348        | -44301     |
| 223 | -5384       | -15850      | -974         | -2764      | -19707     |
| 224 | -2106       | -14416      | -58          | 164        | -16793     |
| 225 | -5497       | -15871      | 860          | 3096       | -19705     |
| 226 | -1          | 0           | 0            | 0          | 563        |
| 227 | -52         | -169        | 0            | 0          | 1125       |
| 228 | -204        | -676        | 0            | 0          | 2251       |
| 229 | -457        | -1520       | 0            | 0          | 3376       |
| 230 | -810        | -2701       | 0            | 0          | 3938       |
| 231 | -810        | -2701       | 0            | 0          | 3938       |
| 232 | -810        | -2701       | 0            | 0          | 3938       |
| 233 | -17504      | -58345      | 0            | 0          | -34468     |
| 234 | -14121      | -46849      | 0            | 0          | -30790     |
| 235 | -11455      | -37756      | 0            | 0          | -23395     |
| 236 | -9544       | -31024      | 0            | 0          | -15670     |
| 237 | -8643       | -26595      | 0            | 0          | -6849      |
| 238 | -9148       | -23620      | 0            | 0          | 20816      |
| 239 | -22675      | -37411      | 0            | 0          | -11482     |
| 240 | -5173       | -10771      | 0            | 0          | -44304     |
| 241 | -512        | -6384       | 111          | 659        | -15278     |
| 242 | -189        | -6907       | -155         | 661        | -15961     |
| 243 | -696        | -5306       | 18           | 1086       | -17459     |
| 244 | -988        | -5412       | -429         | 683        | -16456     |
| 245 | -661        | -5833       | -728         | 282        | -16724     |
| 246 | -923        | -7025       | -304         | 729        | -14270     |
| 247 | -991        | -6042       | 120          | 1049       | -17022     |
| 248 | -1487       | -5680       | -190         | 686        | -17258     |
| 249 | -1414       | -6109       | -517         | 293        | -17257     |
| 250 | -1714       | -7178       | -135         | 553        | -14733     |
| 251 | -1781       | -6147       | 243          | 801        | -17360     |
| 252 | -2205       | -5759       | -98          | 370        | -17480     |
| 253 | -2026       | -6172       | -437         | -62        | -17392     |
| 254 | -2204       | -7228       | -54          | 182        | -14808     |
| 255 | -2144       | -6185       | 332          | 428        | -17398     |
| 256 | -2445       | -5784       | 0            | 0          | -17498     |
| 257 | -1          | 0           | 0            | -1         | 563        |
| 258 | -52         | -169        | 0            | 0          | 1126       |
| 259 | -204        | -676        | 0            | 0          | 2251       |
| 260 | -457        | -1520       | 0            | 0          | 3376       |
| 261 | -810        | -2701       | 0            | 0          | 3938       |
| 262 | -810        | -2701       | 0            | 0          | 3938       |
| 263 | -810        | -2701       | 0            | 0          | 3938       |
| 264 | -17508      | -58362      | 27           | 0          | -34489     |
| 265 | -14120      | -46863      | 33           | -5         | -30817     |
| 266 | -11444      | -37786      | 46           | -37        | -23462     |
| 267 | -9504       | -31172      | 112          | -153       | -16144     |
| 268 | -8227       | -26878      | 383          | -776       | -8193      |
| 269 | -8471       | -26399      | 749          | -4641      | -7615      |
| 270 | -3093       | -22089      | -284         | -30446     | -14204     |
| 271 | -5497       | -15871      | -860         | -3096      | -19705     |
| 272 | -2144       | -6185       | -332         | -428       | -17398     |
| 273 | 124         | -1513       | -18          | 9          | -8177      |
| 274 | -39         | -1913       | -151         | -72        | -9002      |
| 275 | 187         | -1364       | -89          | 59         | -7903      |
| 276 | 303         | -1279       | -199         | 152        | -8146      |
| 277 | 335         | -1515       | -256         | 330        | -7860      |
| 278 | 339         | -1623       | -180         | 541        | -7989      |
| 279 | 194         | -1576       | -96          | 697        | -8099      |
| 280 | 51          | -1434       | -128         | 696        | -8464      |
| 281 | -145        | -1595       | -166         | 641        | -8241      |
| 282 | -294        | -1677       | -94          | 625        | -8275      |
| 283 | -484        | -1606       | -24          | 584        | -8305      |
| 284 | -603        | -1456       | -68          | 445        | -8602      |
| 285 | -726        | -1614       | -111         | 297        | -8328      |
| 286 | -772        | -1694       | -37          | 226        | -8327      |
| 287 | -846        | -1620       | 38           | 154        | -8334      |
| 288 | -844        | -1466       | 0            | 0          | -8617      |
| 289 | -846        | -1620       | -38          | -154       | -8334      |
| 290 | -1          | 0           | 0            | -2         | 563        |
| 291 | -52         | -169        | 0            | -1         | 1126       |
| 292 | -204        | -676        | 0            | 0          | 2251       |
| 293 | -457        | -1520       | -1           | 0          | 3376       |
| 294 | -811        | -2702       | -1           | 0          | 3939       |
| 295 | -811        | -2702       | -1           | 0          | 3939       |
| 296 | -811        | -2702       | -1           | 0          | 3939       |

PROGETTAZIONE ATI:

| In  | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |
|-----|-------------|-------------|--------------|------------|------------|
| 297 | -17521      | -58404      | 49           | 0          | -34545     |
| 298 | -14117      | -46891      | 56           | -8         | -30877     |
| 299 | -11425      | -37826      | 57           | -43        | -23572     |
| 300 | -9431       | -31287      | 59           | -81        | -16460     |
| 301 | -8044       | -27637      | 60           | -113       | -11646     |
| 302 | -5162       | -24757      | 60           | -136       | -10874     |
| 303 | -2967       | -21025      | 60           | -151       | -13951     |
| 304 | -2106       | -14416      | 58           | -164       | -16793     |
| 305 | -2204       | -7228       | 54           | -182       | -14808     |
| 306 | -772        | -1694       | 37           | -226       | -8327      |
| 307 | 61          | -61         | -15          | -529       | -4089      |
| 308 | -28         | -108        | -77          | -425       | -4817      |
| 309 | 236         | -12         | -32          | -459       | -3977      |
| 310 | 432         | 1           | -88          | -88        | -3885      |
| 311 | 605         | -23         | -115         | 333        | -3967      |
| 312 | 660         | -58         | -106         | 691        | -3961      |
| 313 | 616         | -13         | -88          | 902        | -4094      |
| 314 | 487         | 11          | -90          | 976        | -4126      |
| 315 | 341         | -2          | -93          | 958        | -4175      |
| 316 | 176         | -34         | -71          | 895        | -4133      |
| 317 | 24          | 2           | -50          | 792        | -4212      |
| 318 | -116        | 20          | -52          | 649        | -4205      |
| 319 | -209        | 1           | -52          | 490        | -4226      |
| 320 | -283        | -34         | -28          | 336        | -4164      |
| 321 | -326        | 1           | -2           | 177        | -4230      |
| 322 | -350        | 18          | 0            | 0          | -4215      |
| 323 | -326        | 1           | 2            | -177       | -4230      |
| 324 | -283        | -34         | 28           | -336       | -4164      |
| 325 | -1          | 0           | 0            | -3         | 563        |
| 326 | -52         | -169        | 0            | -2         | 1126       |
| 327 | -204        | -676        | -1           | -1         | 2252       |
| 328 | -457        | -1521       | -1           | 0          | 3377       |
| 329 | -811        | -2703       | -1           | 0          | 3940       |
| 330 | -811        | -2703       | -1           | 0          | 3940       |
| 331 | -811        | -2703       | -1           | 0          | 3940       |
| 332 | -17540      | -58466      | 66           | 0          | -34632     |
| 333 | -14112      | -46920      | 75           | -21        | -30953     |
| 334 | -11406      | -37810      | 63           | -63        | -23578     |
| 335 | -9443       | -31171      | 2            | -25        | -16233     |
| 336 | -8147       | -26861      | -267         | 535        | -8255      |
| 337 | -8376       | -26375      | -632         | 4356       | -7652      |
| 338 | -2988       | -22064      | 399          | 30135      | -14220     |
| 339 | -5384       | -15850      | 974          | 2764       | -19707     |
| 340 | -2026       | -6172       | 437          | 62         | -17392     |
| 341 | -726        | -1614       | 111          | -297       | -8328      |
| 342 | -209        | 1           | 52           | -490       | -4226      |
| 343 | 0           | 0           | 0            | -5         | 564        |
| 344 | -51         | -169        | -1           | -4         | 1127       |
| 345 | -203        | -676        | -1           | -2         | 2253       |
| 346 | -457        | -1521       | -1           | -1         | 3379       |
| 347 | -811        | -2704       | -1           | 0          | 3942       |
| 348 | -811        | -2704       | -1           | 0          | 3942       |
| 349 | -811        | -2704       | -1           | 0          | 3942       |
| 350 | -17565      | -58549      | 77           | 0          | -34759     |
| 351 | -14098      | -46956      | 90           | -54        | -31064     |
| 352 | -11370      | -37799      | 93           | -143       | -23628     |
| 353 | -9410       | -31017      | 99           | -226       | -15847     |
| 354 | -8472       | -26558      | 102          | -286       | -6968      |
| 355 | -8949       | -23568      | 104          | -322       | 20748      |
| 356 | -22457      | -37359      | 105          | -339       | -11507     |
| 357 | -4941       | -10729      | 105          | -348       | -44301     |
| 358 | -2205       | -5759       | 98           | -370       | -17480     |
| 359 | -603        | -1456       | 68           | -445       | -8602      |
| 360 | -116        | 20          | 52           | -649       | -4205      |
| 361 | 1           | 0           | -1           | -9         | 564        |
| 362 | -50         | -169        | -1           | -6         | 1128       |
| 363 | -203        | -677        | -1           | -3         | 2255       |
| 364 | -457        | -1522       | -1           | -1         | 3381       |
| 365 | -812        | -2706       | -1           | 0          | 3944       |
| 366 | -812        | -2706       | -1           | 0          | 3944       |
| 367 | -812        | -2706       | -1           | 0          | 3944       |
| 368 | -17596      | -58652      | 72           | 0          | -34934     |
| 369 | -14065      | -47006      | 90           | -109       | -31235     |
| 370 | -11288      | -37835      | 110          | -257       | -23810     |
| 371 | -9272       | -31149      | 185          | -464       | -16402     |
| 372 | -7940       | -26812      | 464          | -1141      | -8358      |
| 373 | -8147       | -26315      | 834          | -5028      | -7700      |
| 374 | -2747       | -22007      | -194         | -30832     | -14225     |
| 375 | -5138       | -15807      | -768         | -3469      | -19684     |
| 376 | -1781       | -6147       | -243         | -801       | -17360     |
| 377 | -484        | -1606       | 24           | -584       | -8305      |
| 378 | 24          | 2           | 50           | -792       | -4212      |
| 379 | 3           | 0           | -1           | -14        | 565        |
| 380 | -48         | -169        | -1           | -10        | 1129       |
| 381 | -201        | -677        | -1           | -6         | 2257       |

PROGETTAZIONE ATI:

| In  | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |
|-----|-------------|-------------|--------------|------------|------------|
| 382 | -456        | -1523       | -1           | -3         | 3384       |
| 383 | -812        | -2708       | -1           | 0          | 3947       |
| 384 | -812        | -2708       | -1           | 0          | 3947       |
| 385 | -812        | -2708       | -1           | 0          | 3947       |
| 386 | -17629      | -58762      | 42           | 0          | -35153     |
| 387 | -14001      | -47046      | 59           | -193       | -31443     |
| 388 | -11159      | -37862      | 76           | -383       | -24033     |
| 389 | -9056       | -31235      | 96           | -522       | -16788     |
| 390 | -7601       | -27533      | 114          | -597       | -11839     |
| 391 | -4680       | -24634      | 126          | -617       | -10952     |
| 392 | -2470       | -20909      | 136          | -600       | -13943     |
| 393 | -1608       | -14329      | 141          | -565       | -16732     |
| 394 | -1714       | -7178       | 135          | -553       | -14733     |
| 395 | -294        | -1677       | 94           | -625       | -8275      |
| 396 | 176         | -34         | 71           | -895       | -4133      |
| 397 | 8           | 0           | -1           | -20        | 566        |
| 398 | -44         | -169        | -1           | -15        | 1131       |
| 399 | -198        | -678        | -1           | -10        | 2260       |
| 400 | -455        | -1525       | 0            | -5         | 3388       |
| 401 | -813        | -2710       | 0            | 0          | 3952       |
| 402 | -813        | -2710       | 0            | 0          | 3952       |
| 403 | -813        | -2710       | 0            | 0          | 3952       |
| 404 | -17658      | -58859      | -25          | 0          | -35408     |
| 405 | -13888      | -47051      | -8           | -327       | -31669     |
| 406 | -10962      | -37808      | 15           | -581       | -24141     |
| 407 | -8856       | -31072      | -7           | -651       | -16606     |
| 408 | -7484       | -26708      | -241         | -113       | -8443      |
| 409 | -7688       | -26207      | -579         | 3750       | -7688      |
| 410 | -2309       | -21910      | 472          | 29606      | -14148     |
| 411 | -4736       | -15736      | 1056         | 2334       | -19576     |
| 412 | -1414       | -6109       | 517          | -293       | -17257     |
| 413 | -145        | -1595       | 166          | -641       | -8241      |
| 414 | 341         | -2          | 93           | -958       | -4175      |
| 415 | 15          | 0           | -1           | -30        | 567        |
| 416 | -38         | -170        | 0            | -22        | 1133       |
| 417 | -193        | -678        | 0            | -15        | 2264       |
| 418 | -452        | -1525       | 1            | -8         | 3393       |
| 419 | -814        | -2713       | 2            | 0          | 3957       |
| 420 | -814        | -2713       | 2            | 0          | 3957       |
| 421 | -814        | -2713       | 2            | 0          | 3957       |
| 422 | -17678      | -58926      | -152         | 0          | -35699     |
| 423 | -13687      | -47011      | -128         | -538       | -31918     |
| 424 | -10640      | -37725      | -51          | -914       | -24266     |
| 425 | -8499       | -30853      | 36           | -1109      | -16223     |
| 426 | -7496       | -26347      | 112          | -1150      | -7101      |
| 427 | -7990       | -23348      | 167          | -1082      | 20806      |
| 428 | -21562      | -37160      | 198          | -955       | -11325     |
| 429 | -4139       | -10584      | 207          | -798       | -44063     |
| 430 | -1487       | -5680       | 190          | -686       | -17258     |
| 431 | 51          | -1434       | 128          | -696       | -8464      |
| 432 | 487         | 11          | 90           | -976       | -4126      |
| 433 | 26          | 1           | -1           | -41        | 568        |
| 434 | -28         | -170        | 1            | -31        | 1135       |
| 435 | -185        | -678        | 2            | -23        | 2267       |
| 436 | -446        | -1526       | 5            | -13        | 3398       |
| 437 | -814        | -2715       | 5            | 0          | 3963       |
| 438 | -814        | -2715       | 5            | 0          | 3963       |
| 439 | -814        | -2715       | 5            | 0          | 3963       |
| 440 | -17680      | -58933      | -378         | 0          | -36004     |
| 441 | -13335      | -46909      | -341         | -849       | -32185     |
| 442 | -10097      | -37651      | -168         | -1376      | -24465     |
| 443 | -7867       | -30906      | 71           | -1687      | -16712     |
| 444 | -6519       | -26537      | 489          | -2271      | -8362      |
| 445 | -6839       | -26038      | 952          | -5962      | -7482      |
| 446 | -1607       | -21753      | -35          | -31527     | -13880     |
| 447 | -4192       | -15619      | -612         | -3921      | -19301     |
| 448 | -991        | -6042       | -120         | -1049      | -17022     |
| 449 | 194         | -1576       | 96           | -697       | -8099      |
| 450 | 616         | -13         | 88           | -902       | -4094      |
| 451 | 41          | 0           | -1           | -54        | 568        |
| 452 | -13         | -170        | 1            | -41        | 1135       |
| 453 | -170        | -679        | 5            | -33        | 2269       |
| 454 | -436        | -1525       | 11           | -20        | 3401       |
| 455 | -815        | -2716       | 12           | 0          | 3967       |
| 456 | -815        | -2716       | 12           | 0          | 3967       |
| 457 | -815        | -2716       | 12           | 0          | 3967       |
| 458 | -17645      | -58815      | -771         | 0          | -36249     |
| 459 | -12734      | -46688      | -708         | -1285      | -32380     |
| 460 | -9224       | -37531      | -386         | -1957      | -24592     |
| 461 | -6898       | -30905      | -47          | -2154      | -16918     |
| 462 | -5568       | -27198      | 222          | -2061      | -11617     |
| 463 | -2937       | -24292      | 377          | -1684      | -10502     |
| 464 | -1083       | -20586      | 424          | -1359      | -13397     |
| 465 | -553        | -14072      | 393          | -966       | -16192     |
| 466 | -923        | -7025       | 304          | -729       | -14270     |

PROGETTAZIONE ATI:

| In  | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |
|-----|-------------|-------------|--------------|------------|------------|
| 467 | 339         | -1623       | 180          | -541       | -7989      |
| 468 | 660         | -58         | 106          | -691       | -3961      |
| 469 | 56          | -2          | -2           | -60        | 565        |
| 470 | 7           | -172        | 0            | -49        | 1131       |
| 471 | -144        | -679        | 8            | -46        | 2264       |
| 472 | -414        | -1521       | 21           | -33        | 3400       |
| 473 | -814        | -2715       | 26           | 0          | 3967       |
| 474 | -814        | -2715       | 26           | 0          | 3967       |
| 475 | -814        | -2715       | 26           | 0          | 3967       |
| 476 | -17542      | -58473      | -1438        | 0          | -36261     |
| 477 | -11706      | -46277      | -1305        | -1868      | -32333     |
| 478 | -7832       | -37297      | -679         | -2679      | -24379     |
| 479 | -5606       | -30686      | -113         | -2699      | -16442     |
| 480 | -4606       | -26287      | 66           | -1793      | -7879      |
| 481 | -5510       | -25807      | -88          | 2166       | -6960      |
| 482 | -690        | -21465      | 969          | 29495      | -13449     |
| 483 | -3707       | -15391      | 1412         | 1608       | -18949     |
| 484 | -661        | -5833       | 728          | -282       | -16724     |
| 485 | 335         | -1515       | 256          | -330       | -7860      |
| 486 | 605         | -23         | 115          | -333       | -3967      |
| 487 | 58          | -9          | -6           | -50        | 556        |
| 488 | 29          | -176        | -6           | -49        | 1117       |
| 489 | -102        | -680        | 9            | -62        | 2246       |
| 490 | -370        | -1513       | 40           | -52        | 3386       |
| 491 | -813        | -2709       | 52           | 0          | 3956       |
| 492 | -813        | -2709       | 52           | 0          | 3956       |
| 493 | -813        | -2709       | 52           | 0          | 3956       |
| 494 | -17335      | -57783      | -2572        | 0          | -35648     |
| 495 | -10028      | -45650      | -2229        | -2494      | -31716     |
| 496 | -5753       | -37056      | -976         | -3395      | -23782     |
| 497 | -3864       | -30441      | 122          | -3320      | -15523     |
| 498 | -3813       | -25960      | 734          | -2891      | -6707      |
| 499 | -5110       | -22520      | 1006         | -1400      | 22210      |
| 500 | -20053      | -36893      | 847          | -5890      | -10551     |
| 501 | -2993       | -9740       | 654          | -149       | -44087     |
| 502 | -988        | -5412       | 429          | -683       | -16456     |
| 503 | 303         | -1279       | 199          | -152       | -8146      |
| 504 | 432         | 1           | 88           | 88         | -3885      |
| 505 | 39          | -11         | -11          | -18        | 542        |
| 506 | 35          | -178        | -15          | -39        | 1097       |
| 507 | -47         | -678        | 1            | -75        | 2219       |
| 508 | -291        | -1495       | 63           | -78        | 3359       |
| 509 | -810        | -2701       | 89           | 0          | 3931       |
| 510 | -810        | -2701       | 89           | 0          | 3931       |
| 511 | -810        | -2701       | 89           | 0          | 3931       |
| 512 | -17090      | -56968      | -3961        | 0          | -34198     |
| 513 | -7612       | -44918      | -3199        | -2939      | -30427     |
| 514 | -3303       | -36856      | -961         | -3757      | -22908     |
| 515 | -2265       | -30410      | 457          | -3478      | -15552     |
| 516 | -2378       | -25669      | 1376         | -3788      | -6817      |
| 517 | -4824       | -25365      | 1984         | -7079      | -3615      |
| 518 | -2010       | -22730      | 558          | -41598     | -13619     |
| 519 | -4081       | -14770      | -365         | -4008      | -22395     |
| 520 | -696        | -5306       | -18          | -1086      | -17459     |
| 521 | 187         | -1364       | 89           | -59        | -7903      |
| 522 | 236         | -12         | 32           | 459        | -3977      |
| 523 | 17          | -1          | -10          | 14         | 539        |
| 524 | 30          | -158        | -19          | -19        | 1085       |
| 525 | -19         | -678        | -6           | -59        | 2185       |
| 526 | -117        | -1460       | 69           | -91        | 3305       |
| 527 | -803        | -2677       | 161          | 0          | 3869       |
| 528 | -803        | -2677       | 161          | 0          | 3869       |
| 529 | -803        | -2677       | 161          | 0          | 3869       |
| 530 | -16817      | -56057      | -6191        | 0          | -30815     |
| 531 | -3045       | -44078      | -3011        | -2742      | -27584     |
| 532 | -1568       | -36798      | -678         | -2840      | -21375     |
| 533 | -854        | -29819      | 558          | -2422      | -15767     |
| 534 | -1080       | -25933      | 1171         | -2785      | -11556     |
| 535 | -864        | -23545      | 1435         | -7781      | -11054     |
| 536 | -65         | -20022      | 658          | -11095     | -14861     |
| 537 | -559        | -13593      | -242         | -6114      | -17939     |
| 538 | -512        | -6384       | -111         | -659       | -15278     |
| 539 | 124         | -1513       | 18           | -9         | -8177      |
| 540 | 61          | -61         | 15           | 529        | -4089      |
| 541 | 2           | -4          | -16          | 25         | 599        |
| 542 | 23          | -146        | -30          | -7         | 1155       |
| 543 | 8           | -577        | -50          | -38        | 2207       |
| 544 | 21          | -1404       | 70           | -91        | 3174       |
| 545 | -832        | -2774       | 309          | 0          | 3644       |
| 546 | -832        | -2774       | 309          | 0          | 3644       |
| 547 | -832        | -2774       | 309          | 0          | 3644       |
| 548 | -18348      | -61161      | -10199       | 0          | -21443     |
| 549 | 74          | -44145      | -2960        | -2396      | -20443     |
| 550 | -78         | -33156      | 141          | -1881      | -18934     |
| 551 | 119         | -28108      | 584          | -1470      | -17267     |

PROGETTAZIONE ATI:



| In  | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |
|-----|-------------|-------------|--------------|------------|------------|
| 552 | -104        | -25192      | 915          | -1992      | -15493     |
| 553 | 136         | -22959      | 971          | -3765      | -15667     |
| 554 | 413         | -19669      | 638          | -4722      | -17839     |
| 555 | 98          | -13648      | 249          | -2981      | -18977     |
| 556 | -189        | -6907       | 155          | -661       | -15961     |
| 557 | -39         | -1913       | 151          | 72         | -9002      |
| 558 | -28         | -108        | 77           | 425        | -4817      |

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

| In | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |
|----|-------------|-------------|--------------|------------|------------|
| 1  | 2           | -4          | 16           | -25        | 599        |
| 2  | 17          | -1          | 10           | -14        | 539        |
| 3  | 30          | -158        | 19           | 19         | 1085       |
| 4  | 23          | -146        | 30           | 7          | 1155       |
| 5  | 39          | -11         | 11           | 18         | 542        |
| 6  | 35          | -178        | 15           | 39         | 1097       |
| 7  | -19         | -678        | 6            | 59         | 2185       |
| 8  | 8           | -577        | 50           | 38         | 2207       |
| 9  | -47         | -678        | -1           | 75         | 2219       |
| 10 | 58          | -9          | 6            | 50         | 556        |
| 11 | 29          | -176        | 6            | 49         | 1117       |
| 12 | -102        | -680        | -9           | 62         | 2246       |
| 13 | -117        | -1460       | -69          | 91         | 3305       |
| 14 | 21          | -1404       | -70          | 91         | 3174       |
| 15 | -291        | -1495       | -63          | 78         | 3359       |
| 16 | -370        | -1513       | -40          | 52         | 3386       |
| 17 | 56          | -2          | 2            | 60         | 565        |
| 18 | 7           | -172        | 0            | 49         | 1131       |
| 19 | -144        | -679        | -8           | 46         | 2264       |
| 20 | -414        | -1521       | -21          | 33         | 3400       |
| 21 | -803        | -2677       | -161         | 0          | 3869       |
| 22 | -832        | -2774       | -309         | 0          | 3644       |
| 23 | -810        | -2701       | -89          | 0          | 3931       |
| 24 | -813        | -2709       | -52          | 0          | 3956       |
| 25 | -814        | -2715       | -26          | 0          | 3967       |
| 26 | 41          | 0           | 1            | 54         | 568        |
| 27 | -13         | -170        | -1           | 41         | 1135       |
| 28 | -170        | -679        | -5           | 33         | 2269       |
| 29 | -436        | -1525       | -11          | 20         | 3401       |
| 30 | -815        | -2716       | -12          | 0          | 3967       |
| 31 | -815        | -2716       | -12          | 0          | 3967       |
| 32 | -815        | -2716       | -12          | 0          | 3967       |
| 33 | -815        | -2716       | -12          | 0          | 3967       |
| 34 | -815        | -2716       | -12          | 0          | 3967       |
| 35 | -815        | -2716       | -12          | 0          | 3967       |
| 36 | -815        | -2716       | -12          | 0          | 3967       |
| 37 | 26          | 1           | 1            | 41         | 568        |
| 38 | -28         | -170        | -1           | 31         | 1135       |
| 39 | -185        | -678        | -2           | 23         | 2267       |
| 40 | -446        | -1526       | -5           | 13         | 3398       |
| 41 | -814        | -2715       | -5           | 0          | 3963       |
| 42 | -814        | -2715       | -5           | 0          | 3963       |
| 43 | -814        | -2715       | -5           | 0          | 3963       |
| 44 | -814        | -2715       | -5           | 0          | 3963       |
| 45 | -814        | -2715       | -5           | 0          | 3963       |
| 46 | -814        | -2715       | -5           | 0          | 3963       |
| 47 | -814        | -2715       | -5           | 0          | 3963       |
| 48 | -814        | -2715       | -5           | 0          | 3963       |
| 49 | -814        | -2715       | -5           | 0          | 3963       |
| 50 | 15          | 0           | 1            | 30         | 567        |
| 51 | -38         | -170        | 0            | 22         | 1133       |
| 52 | -193        | -678        | 0            | 15         | 2264       |
| 53 | -452        | -1525       | -1           | 8          | 3393       |
| 54 | -814        | -2713       | -2           | 0          | 3957       |
| 55 | -814        | -2713       | -2           | 0          | 3957       |
| 56 | -814        | -2713       | -2           | 0          | 3957       |
| 57 | -16817      | -56057      | 17935        | 0          | -30815     |
| 58 | -18348      | -61161      | 28118        | 0          | -20800     |
| 59 | -17090      | -56968      | 12307        | 0          | -34198     |
| 60 | -17335      | -57783      | 8686         | 0          | -35648     |
| 61 | -17542      | -58473      | 5566         | 0          | -36261     |
| 62 | -17645      | -58815      | 3598         | 0          | -36249     |
| 63 | -17680      | -58933      | 2333         | 0          | -36004     |
| 64 | -17678      | -58926      | 1505         | 0          | -35699     |
| 65 | 8           | 0           | 1            | 20         | 566        |
| 66 | -44         | -169        | 1            | 15         | 1131       |
| 67 | -198        | -678        | 1            | 10         | 2260       |
| 68 | -455        | -1525       | 0            | 5          | 3388       |
| 69 | -813        | -2710       | 0            | 0          | 3952       |
| 70 | -813        | -2710       | 0            | 0          | 3952       |
| 71 | -813        | -2710       | 0            | 0          | 3952       |
| 72 | -17658      | -58859      | 963          | 0          | -35408     |

PROGETTAZIONE ATI:

| In  | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |
|-----|-------------|-------------|--------------|------------|------------|
| 73  | -3045       | -44078      | 9488         | 6895       | -27584     |
| 74  | 74          | -44145      | 8807         | 5880       | -20443     |
| 75  | -7612       | -44918      | 10666        | 7796       | -30427     |
| 76  | -10028      | -45650      | 8143         | 7107       | -31716     |
| 77  | -11706      | -46277      | 5481         | 5767       | -32333     |
| 78  | -12734      | -46688      | 3657         | 4351       | -32380     |
| 79  | -13335      | -46909      | 2437         | 3184       | -32185     |
| 80  | -13687      | -47011      | 1590         | 2285       | -31918     |
| 81  | -13888      | -47051      | 1020         | 1623       | -31669     |
| 82  | 3           | 0           | 1            | 14         | 565        |
| 83  | -48         | -169        | 1            | 10         | 1129       |
| 84  | -201        | -677        | 1            | 6          | 2257       |
| 85  | -456        | -1523       | 1            | 3          | 3384       |
| 86  | -812        | -2708       | 1            | 0          | 3947       |
| 87  | -812        | -2708       | 1            | 0          | 3947       |
| 88  | -812        | -2708       | 1            | 0          | 3947       |
| 89  | -17629      | -58762      | 620          | 0          | -35153     |
| 90  | -14001      | -47046      | 677          | 1156       | -31443     |
| 91  | -1568       | -36798      | 3767         | 7548       | -21375     |
| 92  | -78         | -33156      | 1015         | 4975       | -18934     |
| 93  | -3303       | -36856      | 5254         | 10151      | -22908     |
| 94  | -5753       | -37056      | 5085         | 9543       | -23782     |
| 95  | -7832       | -37297      | 3828         | 7974       | -24379     |
| 96  | -9224       | -37531      | 2858         | 6218       | -24592     |
| 97  | -10097      | -37651      | 2125         | 4701       | -24465     |
| 98  | -10640      | -37725      | 1413         | 3448       | -24266     |
| 99  | -10962      | -37808      | 873          | 2492       | -24141     |
| 100 | -11159      | -37862      | 666          | 1831       | -24033     |
| 101 | 1           | 0           | 1            | 9          | 564        |
| 102 | -50         | -169        | 1            | 6          | 1128       |
| 103 | -203        | -677        | 1            | 3          | 2255       |
| 104 | -457        | -1522       | 1            | 1          | 3381       |
| 105 | -812        | -2706       | 1            | 0          | 3944       |
| 106 | -812        | -2706       | 1            | 0          | 3944       |
| 107 | -812        | -2706       | 1            | 0          | 3944       |
| 108 | -17596      | -58652      | 397          | 0          | -34934     |
| 109 | -14065      | -47006      | 455          | 819        | -31235     |
| 110 | -11288      | -37835      | 550          | 1346       | -23810     |
| 111 | -854        | -29819      | 1189         | 6325       | -15767     |
| 112 | 1136        | -28108      | -90          | 3951       | -17267     |
| 113 | -2265       | -30410      | 2165         | 9213       | -15552     |
| 114 | -3864       | -30441      | 2223         | 9208       | -15523     |
| 115 | -5606       | -30686      | 1837         | 7917       | -16442     |
| 116 | -6898       | -30905      | 1990         | 6488       | -16918     |
| 117 | -7867       | -30906      | 2079         | 5163       | -16712     |
| 118 | -8499       | -30853      | 1241         | 3824       | -16223     |
| 119 | -8856       | -31072      | 457          | 2742       | -16606     |
| 120 | -9056       | -31235      | 679          | 2145       | -16788     |
| 121 | -9272       | -31149      | 956          | 1714       | -16402     |
| 122 | 0           | 0           | 0            | 5          | 564        |
| 123 | -51         | -169        | 1            | 4          | 1127       |
| 124 | -203        | -676        | 1            | 2          | 2253       |
| 125 | -457        | -1521       | 1            | 1          | 3379       |
| 126 | -811        | -2704       | 1            | 0          | 3942       |
| 127 | -811        | -2704       | 1            | 0          | 3942       |
| 128 | -811        | -2704       | 1            | 0          | 3942       |
| 129 | -17565      | -58549      | 241          | 0          | -34759     |
| 130 | -14098      | -46956      | 271          | 561        | -31064     |
| 131 | -11370      | -37799      | 291          | 927        | -23628     |
| 132 | -9410       | -31017      | 330          | 1135       | -15847     |
| 133 | -230        | -25933      | 880          | 5538       | -11556     |
| 134 | 502         | -25192      | -324         | 3472       | -15493     |
| 135 | -2037       | -25669      | 1674         | 7783       | -6817      |
| 136 | -3813       | -25960      | 168          | 7400       | -6707      |
| 137 | -4606       | -26287      | -66          | 6290       | -7879      |
| 138 | -5568       | -27198      | 1160         | 5751       | -11617     |
| 139 | -6519       | -26537      | 3073         | 5206       | -8362      |
| 140 | -7496       | -26347      | 1053         | 3670       | -7101      |
| 141 | -7484       | -26708      | 241          | 2289       | -8443      |
| 142 | -7601       | -27533      | 682          | 2195       | -11839     |
| 143 | -7940       | -26812      | 2411         | 2225       | -8358      |
| 144 | -8472       | -26558      | 366          | 1219       | -6968      |
| 145 | -1          | 0           | 0            | 3          | 563        |
| 146 | -52         | -169        | 0            | 2          | 1126       |
| 147 | -204        | -676        | 1            | 1          | 2252       |
| 148 | -457        | -1521       | 1            | 0          | 3377       |
| 149 | -811        | -2703       | 1            | 0          | 3940       |
| 150 | -811        | -2703       | 1            | 0          | 3940       |
| 151 | -811        | -2703       | 1            | 0          | 3940       |
| 152 | -17540      | -58466      | 137          | 0          | -34632     |
| 153 | -14112      | -46920      | 141          | 366        | -30953     |
| 154 | -11406      | -37810      | 78           | 597        | -23578     |
| 155 | -9443       | -31171      | -2           | 645        | -16233     |
| 156 | -8147       | -26861      | 267          | 287        | -8255      |
| 157 | -864        | -23545      | 1165         | 7781       | -11054     |

PROGETTAZIONE ATI:

| In  | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |
|-----|-------------|-------------|--------------|------------|------------|
| 158 | 136         | -22959      | -920         | 3765       | -15667     |
| 159 | 637         | -25365      | 2686         | 7079       | -3615      |
| 160 | -5110       | -22520      | -1006        | 5315       | 22210      |
| 161 | -4339       | -25807      | 88           | 3226       | -6960      |
| 162 | -2937       | -24292      | 465          | 4451       | -10502     |
| 163 | -6839       | -26038      | 4563         | 5962       | -7482      |
| 164 | -7990       | -23348      | 857          | 3192       | 20806      |
| 165 | -7688       | -26207      | 579          | 894        | -7688      |
| 166 | -4680       | -24634      | 660          | 2063       | -10952     |
| 167 | -8147       | -26315      | 4280         | 5028       | -7700      |
| 168 | -8949       | -23568      | 386          | 1211       | 20748      |
| 169 | -8376       | -26375      | 632          | -832       | -7652      |
| 170 | -1          | 0           | 0            | 2          | 563        |
| 171 | -52         | -169        | 0            | 1          | 1126       |
| 172 | -204        | -676        | 0            | 0          | 2251       |
| 173 | -457        | -1520       | 1            | 0          | 3376       |
| 174 | -811        | -2702       | 1            | 0          | 3939       |
| 175 | -811        | -2702       | 1            | 0          | 3939       |
| 176 | -811        | -2702       | 1            | 0          | 3939       |
| 177 | -17521      | -58404      | 79           | 0          | -34545     |
| 178 | -14117      | -46891      | 91           | 227        | -30877     |
| 179 | -11425      | -37826      | 105          | 388        | -23572     |
| 180 | -9431       | -31287      | 128          | 489        | -16460     |
| 181 | -8044       | -27637      | 152          | 542        | -11646     |
| 182 | -5162       | -24757      | 168          | 557        | -10874     |
| 183 | 29          | -20022      | 35           | 11095      | -14861     |
| 184 | 413         | -19669      | -638         | 4722       | -17839     |
| 185 | -76         | -22730      | 11649        | 41598      | -13619     |
| 186 | 1729        | -30084      | 243          | 5890       | -10551     |
| 187 | -690        | -21465      | -969         | 8522       | -13449     |
| 188 | -1083       | -20586      | 106          | 3081       | -13397     |
| 189 | -1607       | -21753      | 10589        | 31527      | -13880     |
| 190 | -3364       | -30516      | 673          | 2561       | -11325     |
| 191 | -2309       | -21910      | -472         | 7580       | -14148     |
| 192 | -2470       | -20909      | 607          | 1825       | -13943     |
| 193 | -2747       | -22007      | 10587        | 30832      | -14225     |
| 194 | -6256       | -31111      | 381          | 1141       | -11507     |
| 195 | -2988       | -22064      | -399         | 6219       | -14220     |
| 196 | -2967       | -21025      | 173          | 544        | -13951     |
| 197 | -1          | 0           | 0            | 1          | 563        |
| 198 | -52         | -169        | 0            | 0          | 1126       |
| 199 | -204        | -676        | 0            | 0          | 2251       |
| 200 | -457        | -1520       | 0            | 0          | 3376       |
| 201 | -810        | -2701       | 0            | 0          | 3938       |
| 202 | -810        | -2701       | 0            | 0          | 3938       |
| 203 | -810        | -2701       | 0            | 0          | 3938       |
| 204 | -17508      | -58362      | 41           | 0          | -34489     |
| 205 | -14120      | -46863      | 63           | 114        | -30817     |
| 206 | -11444      | -37786      | 152          | 215        | -23462     |
| 207 | -9504       | -31172      | 534          | 372        | -16144     |
| 208 | -8227       | -26878      | 1972         | 831        | -8193      |
| 209 | -8471       | -26399      | 3841         | 4641       | -7615      |
| 210 | -3093       | -22089      | 10173        | 30446      | -14204     |
| 211 | 1992        | -13593      | 949          | 6114       | -17939     |
| 212 | 325         | -13648      | -249         | 2981       | -18977     |
| 213 | -375        | -14495      | 1597         | 4008       | -18826     |
| 214 | 3275        | 9478        | -654         | 328        | -3940      |
| 215 | 351         | -15391      | -1412        | 3894       | -18949     |
| 216 | 3920        | -14072      | -161         | 1646       | -16192     |
| 217 | -590        | -15619      | 3337         | 3921       | -19301     |
| 218 | 2243        | 8298        | 498          | 1816       | -6450      |
| 219 | -2125       | -15736      | -1056        | 4598       | -19576     |
| 220 | 971         | -14329      | 517          | 1503       | -16732     |
| 221 | -3372       | -15807      | 3477         | 3469       | -19684     |
| 222 | -223        | 7982        | 343          | 1022       | -7580      |
| 223 | -4193       | -15850      | -974         | 3669       | -19707     |
| 224 | -673        | -14416      | 160          | 509        | -16793     |
| 225 | -4592       | -15871      | 3117         | 3096       | -19705     |
| 226 | -1          | 0           | 0            | 0          | 563        |
| 227 | -52         | -169        | 0            | 0          | 1125       |
| 228 | -204        | -676        | 0            | 0          | 2251       |
| 229 | -457        | -1520       | 0            | 0          | 3376       |
| 230 | -810        | -2701       | 0            | 0          | 3938       |
| 231 | -810        | -2701       | 0            | 0          | 3938       |
| 232 | -810        | -2701       | 0            | 0          | 3938       |
| 233 | -17504      | -58345      | 0            | 0          | -34468     |
| 234 | -14121      | -46849      | 0            | 0          | -30790     |
| 235 | -11455      | -37756      | 0            | 0          | -23395     |
| 236 | -9544       | -31024      | 0            | 0          | -15670     |
| 237 | -8643       | -26595      | 0            | 0          | -6849      |
| 238 | -9148       | -23620      | 0            | 0          | 20816      |
| 239 | -7048       | -31350      | 0            | 0          | -11482     |
| 240 | -1027       | 7826        | 0            | 0          | -7729      |
| 241 | -178        | -6384       | 390          | 659        | -15278     |
| 242 | -189        | -6907       | -83          | 661        | -15961     |

PROGETTAZIONE ATI:

| In  | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |
|-----|-------------|-------------|--------------|------------|------------|
| 243 | 482         | -3615       | 472          | 1086       | -11692     |
| 244 | 2054        | -949        | -429         | 683        | -9256      |
| 245 | 2478        | -4872       | -728         | 282        | -11173     |
| 246 | 2498        | -7025       | -121         | 729        | -14144     |
| 247 | 2442        | -5100       | 1501         | 1049       | -12165     |
| 248 | 2459        | -961        | 348          | 1146       | -10264     |
| 249 | 1432        | -5131       | -517         | 1729       | -12988     |
| 250 | 753         | -7178       | 392          | 1186       | -14733     |
| 251 | 356         | -5190       | 1665         | 801        | -13398     |
| 252 | 392         | -1071       | 269          | 887        | -11133     |
| 253 | -432        | -5258       | -437         | 1184       | -13570     |
| 254 | -801        | -7228       | 127          | 461        | -14808     |
| 255 | -834        | -5299       | 1389         | 428        | -13629     |
| 256 | -409        | -1150       | 0            | 0          | -11265     |
| 257 | -1          | 0           | 0            | -1         | 563        |
| 258 | -52         | -169        | 0            | 0          | 1126       |
| 259 | -204        | -676        | 0            | 0          | 2251       |
| 260 | -457        | -1520       | 0            | 0          | 3376       |
| 261 | -810        | -2701       | 0            | 0          | 3938       |
| 262 | -810        | -2701       | 0            | 0          | 3938       |
| 263 | -810        | -2701       | 0            | 0          | 3938       |
| 264 | -17508      | -58362      | 27           | 0          | -34489     |
| 265 | -14120      | -46863      | 33           | -5         | -30817     |
| 266 | -11444      | -37786      | 46           | -37        | -23462     |
| 267 | -9504       | -31172      | 112          | -153       | -16144     |
| 268 | -8227       | -26878      | 383          | -776       | -8193      |
| 269 | -8471       | -26399      | 749          | -1970      | -7615      |
| 270 | -3093       | -22089      | -284         | 5118       | -14204     |
| 271 | -4592       | -15871      | -860         | 2649       | -19705     |
| 272 | -834        | -5299       | -332         | 269        | -13629     |
| 273 | 217         | -1513       | 156          | 9          | -8177      |
| 274 | -39         | -1913       | -116         | -72        | -9002      |
| 275 | 961         | -751        | -7           | 59         | -6396      |
| 276 | 1843        | -538        | -199         | 152        | -5372      |
| 277 | 2726        | -1209       | -256         | 330        | -5601      |
| 278 | 3127        | -1623       | -49          | 541        | -6136      |
| 279 | 3228        | -1254       | 343          | 697        | -6043      |
| 280 | 3048        | -613        | 192          | 696        | -5855      |
| 281 | 2569        | -1219       | -16          | 899        | -6482      |
| 282 | 2028        | -1677       | 223          | 896        | -6990      |
| 283 | 1616        | -1215       | 438          | 785        | -6702      |
| 284 | 1259        | -601        | 154          | 745        | -6323      |
| 285 | 855         | -1232       | -111         | 660        | -6799      |
| 286 | 544         | -1694       | 73           | 404        | -7199      |
| 287 | 453         | -1246       | 279          | 154        | -6835      |
| 288 | 465         | -627        | 0            | 0          | -6401      |
| 289 | 453         | -1246       | -38          | -134       | -6835      |
| 290 | -1          | 0           | 0            | -2         | 563        |
| 291 | -52         | -169        | 0            | -1         | 1126       |
| 292 | -204        | -676        | 0            | 0          | 2251       |
| 293 | -457        | -1520       | -1           | 0          | 3376       |
| 294 | -811        | -2702       | -1           | 0          | 3939       |
| 295 | -811        | -2702       | -1           | 0          | 3939       |
| 296 | -811        | -2702       | -1           | 0          | 3939       |
| 297 | -17521      | -58404      | 49           | 0          | -34545     |
| 298 | -14117      | -46891      | 56           | -8         | -30877     |
| 299 | -11425      | -37826      | 57           | -43        | -23572     |
| 300 | -9431       | -31287      | 59           | -81        | -16460     |
| 301 | -8044       | -27637      | 60           | -113       | -11646     |
| 302 | -5162       | -24757      | 60           | -136       | -10874     |
| 303 | -2967       | -21025      | 60           | -151       | -13951     |
| 304 | -673        | -14416      | 58           | -164       | -16793     |
| 305 | -801        | -7228       | 54           | -182       | -14808     |
| 306 | 544         | -1694       | 37           | -226       | -7199      |
| 307 | 146         | -61         | 106          | -529       | -4089      |
| 308 | -28         | -108        | -7           | -425       | -4817      |
| 309 | 744         | 69          | 104          | -459       | -3267      |
| 310 | 1579        | 91          | -45          | -88        | -2766      |
| 311 | 2595        | -23         | -91          | 333        | -2753      |
| 312 | 3244        | -58         | 14           | 691        | -2962      |
| 313 | 3420        | -13         | 119          | 902        | -2987      |
| 314 | 3250        | 101         | 90           | 976        | -3016      |
| 315 | 2894        | -2          | 40           | 958        | -3215      |
| 316 | 2449        | -34         | 95           | 895        | -3399      |
| 317 | 1975        | 11          | 142          | 792        | -3328      |
| 318 | 1552        | 150         | 62           | 649        | -3256      |
| 319 | 1226        | 12          | -17          | 504        | -3380      |
| 320 | 993         | -34         | 28           | 336        | -3509      |
| 321 | 832         | 11          | 74           | 177        | -3400      |
| 322 | 772         | 148         | 0            | 0          | -3300      |
| 323 | 832         | 11          | 2            | -128       | -3400      |
| 324 | 993         | -34         | 28           | -327       | -3509      |
| 325 | -1          | 0           | 0            | -3         | 563        |
| 326 | -52         | -169        | 0            | -2         | 1126       |
| 327 | -204        | -676        | -1           | -1         | 2252       |

PROGETTAZIONE ATI:

| In  | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |
|-----|-------------|-------------|--------------|------------|------------|
| 328 | -457        | -1521       | -1           | 0          | 3377       |
| 329 | -811        | -2703       | -1           | 0          | 3940       |
| 330 | -811        | -2703       | -1           | 0          | 3940       |
| 331 | -811        | -2703       | -1           | 0          | 3940       |
| 332 | -17540      | -58466      | 66           | 0          | -34632     |
| 333 | -14112      | -46920      | 75           | -21        | -30953     |
| 334 | -11406      | -37810      | 63           | -63        | -23578     |
| 335 | -9443       | -31171      | 259          | -25        | -16233     |
| 336 | -8147       | -26861      | 1652         | 535        | -8255      |
| 337 | -8376       | -26375      | 3492         | 4356       | -7652      |
| 338 | -2988       | -22064      | 9818         | 30135      | -14220     |
| 339 | -4193       | -15850      | 2790         | 2764       | -19707     |
| 340 | -432        | -5258       | 1130         | 62         | -13570     |
| 341 | 855         | -1232       | 131          | -297       | -6799      |
| 342 | 1226        | 12          | 52           | -490       | -3380      |
| 343 | 0           | 0           | 0            | -5         | 564        |
| 344 | -51         | -169        | -1           | -4         | 1127       |
| 345 | -203        | -676        | -1           | -2         | 2253       |
| 346 | -457        | -1521       | -1           | -1         | 3379       |
| 347 | -811        | -2704       | -1           | 0          | 3942       |
| 348 | -811        | -2704       | -1           | 0          | 3942       |
| 349 | -811        | -2704       | -1           | 0          | 3942       |
| 350 | -17565      | -58549      | 77           | 0          | -34759     |
| 351 | -14098      | -46956      | 90           | -54        | -31064     |
| 352 | -11370      | -37799      | 93           | -143       | -23628     |
| 353 | -9410       | -31017      | 99           | -226       | -15847     |
| 354 | -8472       | -26558      | 102          | -286       | -6968      |
| 355 | -8949       | -23568      | 104          | -322       | 20748      |
| 356 | -6256       | -31111      | 105          | -339       | -11507     |
| 357 | -223        | 7982        | 105          | -348       | -7580      |
| 358 | 392         | -1071       | 98           | -370       | -11133     |
| 359 | 1259        | -601        | 68           | -445       | -6323      |
| 360 | 1552        | 150         | 52           | -566       | -3256      |
| 361 | 1           | 0           | -1           | -9         | 564        |
| 362 | -50         | -169        | -1           | -6         | 1128       |
| 363 | -203        | -677        | -1           | -3         | 2255       |
| 364 | -457        | -1522       | -1           | -1         | 3381       |
| 365 | -812        | -2706       | -1           | 0          | 3944       |
| 366 | -812        | -2706       | -1           | 0          | 3944       |
| 367 | -812        | -2706       | -1           | 0          | 3944       |
| 368 | -17596      | -58652      | 72           | 0          | -34934     |
| 369 | -14065      | -47006      | 90           | -109       | -31235     |
| 370 | -11288      | -37835      | 110          | -257       | -23810     |
| 371 | -9272       | -31149      | 185          | -464       | -16402     |
| 372 | -7940       | -26812      | 464          | -1141      | -8358      |
| 373 | -8147       | -26315      | 834          | -3303      | -7700      |
| 374 | -2747       | -22007      | -194         | 3915       | -14225     |
| 375 | -3372       | -15807      | -768         | 1631       | -19684     |
| 376 | 356         | -5190       | -243         | -561       | -13398     |
| 377 | 1616        | -1215       | 24           | -584       | -6702      |
| 378 | 1975        | 11          | 50           | -575       | -3328      |
| 379 | 3           | 0           | -1           | -14        | 565        |
| 380 | -48         | -169        | -1           | -10        | 1129       |
| 381 | -201        | -677        | -1           | -6         | 2257       |
| 382 | -456        | -1523       | -1           | -3         | 3384       |
| 383 | -812        | -2708       | -1           | 0          | 3947       |
| 384 | -812        | -2708       | -1           | 0          | 3947       |
| 385 | -812        | -2708       | -1           | 0          | 3947       |
| 386 | -17629      | -58762      | 42           | 0          | -35153     |
| 387 | -14001      | -47046      | 59           | -193       | -31443     |
| 388 | -11159      | -37862      | 76           | -383       | -24033     |
| 389 | -9056       | -31235      | 96           | -522       | -16788     |
| 390 | -7601       | -27533      | 114          | -597       | -11839     |
| 391 | -4680       | -24634      | 126          | -617       | -10952     |
| 392 | -2470       | -20909      | 136          | -600       | -13943     |
| 393 | 971         | -14329      | 141          | -565       | -16732     |
| 394 | 753         | -7178       | 135          | -553       | -14733     |
| 395 | 2028        | -1677       | 94           | -625       | -6990      |
| 396 | 2449        | -34         | 71           | -590       | -3399      |
| 397 | 8           | 0           | -1           | -20        | 566        |
| 398 | -44         | -169        | -1           | -15        | 1131       |
| 399 | -198        | -678        | -1           | -10        | 2260       |
| 400 | -455        | -1525       | 0            | -5         | 3388       |
| 401 | -813        | -2710       | 0            | 0          | 3952       |
| 402 | -813        | -2710       | 0            | 0          | 3952       |
| 403 | -813        | -2710       | 0            | 0          | 3952       |
| 404 | -17658      | -58859      | -25          | 0          | -35408     |
| 405 | -13888      | -47051      | -8           | -327       | -31669     |
| 406 | -10962      | -37808      | 15           | -581       | -24141     |
| 407 | -8856       | -31072      | -7           | -651       | -16606     |
| 408 | -7484       | -26708      | 1030         | -113       | -8443      |
| 409 | -7688       | -26207      | 2973         | 3750       | -7688      |
| 410 | -2309       | -21910      | 9408         | 29606      | -14148     |
| 411 | -2125       | -15736      | 2486         | 2334       | -19576     |
| 412 | 1432        | -5131       | 920          | -293       | -12988     |

PROGETTAZIONE ATI:

| In  | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |
|-----|-------------|-------------|--------------|------------|------------|
| 413 | 2569        | -1219       | 166          | -641       | -6482      |
| 414 | 2894        | -2          | 93           | -493       | -3215      |
| 415 | 15          | 0           | -1           | -30        | 567        |
| 416 | -38         | -170        | 0            | -22        | 1133       |
| 417 | -193        | -678        | 0            | -15        | 2264       |
| 418 | -452        | -1525       | 1            | -8         | 3393       |
| 419 | -814        | -2713       | 2            | 0          | 3957       |
| 420 | -814        | -2713       | 2            | 0          | 3957       |
| 421 | -814        | -2713       | 2            | 0          | 3957       |
| 422 | -17678      | -58926      | -152         | 0          | -35699     |
| 423 | -13687      | -47011      | -128         | -538       | -31918     |
| 424 | -10640      | -37725      | -51          | -914       | -24266     |
| 425 | -8499       | -30853      | 36           | -1109      | -16223     |
| 426 | -7496       | -26347      | 112          | -1150      | -7101      |
| 427 | -7990       | -23348      | 167          | -1082      | 20806      |
| 428 | -3364       | -30516      | 198          | -955       | -11325     |
| 429 | 2243        | 8298        | 207          | -798       | -6450      |
| 430 | 2459        | -961        | 190          | -686       | -10264     |
| 431 | 3048        | -613        | 128          | -602       | -5855      |
| 432 | 3250        | 101         | 90           | -152       | -3016      |
| 433 | 26          | 1           | -1           | -41        | 568        |
| 434 | -28         | -170        | 1            | -31        | 1135       |
| 435 | -185        | -678        | 2            | -23        | 2267       |
| 436 | -446        | -1526       | 5            | -13        | 3398       |
| 437 | -814        | -2715       | 5            | 0          | 3963       |
| 438 | -814        | -2715       | 5            | 0          | 3963       |
| 439 | -814        | -2715       | 5            | 0          | 3963       |
| 440 | -17680      | -58933      | -378         | 0          | -36004     |
| 441 | -13335      | -46909      | -341         | -849       | -32185     |
| 442 | -10097      | -37651      | -168         | -1376      | -24465     |
| 443 | -7867       | -30906      | 71           | -1687      | -16712     |
| 444 | -6519       | -26537      | 489          | -2271      | -8362      |
| 445 | -6839       | -26038      | 952          | -5538      | -7482      |
| 446 | -1607       | -21753      | -35          | 2502       | -13880     |
| 447 | -590        | -15619      | -612         | 1087       | -19301     |
| 448 | 2442        | -5100       | -120         | -392       | -12165     |
| 449 | 3228        | -1254       | 96           | -99        | -6043      |
| 450 | 3420        | -13         | 88           | 413        | -2987      |
| 451 | 41          | 0           | -1           | -54        | 568        |
| 452 | -13         | -170        | 1            | -41        | 1135       |
| 453 | -170        | -679        | 5            | -33        | 2269       |
| 454 | -436        | -1525       | 11           | -20        | 3401       |
| 455 | -815        | -2716       | 12           | 0          | 3967       |
| 456 | -815        | -2716       | 12           | 0          | 3967       |
| 457 | -815        | -2716       | 12           | 0          | 3967       |
| 458 | -17645      | -58815      | -771         | 0          | -36249     |
| 459 | -12734      | -46688      | -708         | -1285      | -32380     |
| 460 | -9224       | -37531      | -386         | -1957      | -24592     |
| 461 | -6898       | -30905      | -47          | -2154      | -16918     |
| 462 | -5568       | -27198      | 222          | -2061      | -11617     |
| 463 | -2937       | -24292      | 377          | -1684      | -10502     |
| 464 | -1083       | -20586      | 424          | -1359      | -13397     |
| 465 | 3920        | -14072      | 393          | -966       | -16192     |
| 466 | 2498        | -7025       | 304          | -387       | -14144     |
| 467 | 3127        | -1623       | 180          | 482        | -6136      |
| 468 | 3244        | -58         | 106          | 1161       | -2962      |
| 469 | 56          | -2          | -2           | -60        | 565        |
| 470 | 7           | -172        | 0            | -49        | 1131       |
| 471 | -144        | -679        | 8            | -46        | 2264       |
| 472 | -414        | -1521       | 21           | -33        | 3400       |
| 473 | -814        | -2715       | 26           | 0          | 3967       |
| 474 | -814        | -2715       | 26           | 0          | 3967       |
| 475 | -814        | -2715       | 26           | 0          | 3967       |
| 476 | -17542      | -58473      | -1438        | 0          | -36261     |
| 477 | -11706      | -46277      | -1305        | -1868      | -32333     |
| 478 | -7832       | -37297      | -679         | -2679      | -24379     |
| 479 | -5606       | -30686      | -113         | -2699      | -16442     |
| 480 | -4606       | -26287      | 1005         | -1793      | -7879      |
| 481 | -4339       | -25807      | 3803         | 2166       | -6960      |
| 482 | -690        | -21465      | 11140        | 29495      | -13449     |
| 483 | 351         | -15391      | 3713         | 1608       | -18949     |
| 484 | 2478        | -4872       | 1844         | -150       | -11173     |
| 485 | 2726        | -1209       | 452          | 1208       | -5601      |
| 486 | 2595        | -23         | 115          | 2120       | -2753      |
| 487 | 58          | -9          | -6           | -50        | 556        |
| 488 | 29          | -176        | -6           | -49        | 1117       |
| 489 | -102        | -680        | 9            | -62        | 2246       |
| 490 | -370        | -1513       | 40           | -52        | 3386       |
| 491 | -813        | -2709       | 52           | 0          | 3956       |
| 492 | -813        | -2709       | 52           | 0          | 3956       |
| 493 | -813        | -2709       | 52           | 0          | 3956       |
| 494 | -17335      | -57783      | -2572        | 0          | -35648     |
| 495 | -10028      | -45650      | -2229        | -2494      | -31716     |
| 496 | -5753       | -37056      | -976         | -3395      | -23782     |
| 497 | -3864       | -30441      | 122          | -3320      | -15523     |

PROGETTAZIONE ATI:

| In  | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |
|-----|-------------|-------------|--------------|------------|------------|
| 498 | -3813       | -25960      | 734          | -2891      | -6707      |
| 499 | -5110       | -22520      | 1207         | -1400      | 22210      |
| 500 | 1729        | -30084      | 847          | -1826      | -10551     |
| 501 | 3275        | 9478        | 1738         | -149       | -3940      |
| 502 | 2054        | -949        | 958          | 1168       | -9256      |
| 503 | 1843        | -538        | 344          | 1964       | -5372      |
| 504 | 1579        | 91          | 88           | 3052       | -2766      |
| 505 | 39          | -11         | -11          | -18        | 542        |
| 506 | 35          | -178        | -15          | -39        | 1097       |
| 507 | -47         | -678        | 1            | -75        | 2219       |
| 508 | -291        | -1495       | 63           | -78        | 3359       |
| 509 | -810        | -2701       | 89           | 0          | 3931       |
| 510 | -810        | -2701       | 89           | 0          | 3931       |
| 511 | -810        | -2701       | 89           | 0          | 3931       |
| 512 | -17090      | -56968      | -3961        | 0          | -34198     |
| 513 | -7612       | -44918      | -3199        | -2939      | -30427     |
| 514 | -3303       | -36856      | -961         | -3757      | -22908     |
| 515 | -2265       | -30410      | 457          | -3478      | -15552     |
| 516 | -2037       | -25669      | 1376         | -3788      | -6817      |
| 517 | 637         | -25365      | 1984         | -6838      | -3615      |
| 518 | -76         | -22730      | 558          | 5275       | -13619     |
| 519 | -375        | -14495      | -365         | 4187       | -18826     |
| 520 | 482         | -3615       | -18          | 2556       | -11692     |
| 521 | 961         | -751        | 89           | 2262       | -6396      |
| 522 | 744         | 69          | 32           | 3401       | -3267      |
| 523 | 17          | -1          | -10          | 14         | 539        |
| 524 | 30          | -158        | -19          | -19        | 1085       |
| 525 | -19         | -678        | -6           | -59        | 2185       |
| 526 | -117        | -1460       | 69           | -91        | 3305       |
| 527 | -803        | -2677       | 161          | 0          | 3869       |
| 528 | -803        | -2677       | 161          | 0          | 3869       |
| 529 | -803        | -2677       | 161          | 0          | 3869       |
| 530 | -16817      | -56057      | -6191        | 0          | -30815     |
| 531 | -3045       | -44078      | -3011        | -2742      | -27584     |
| 532 | -1568       | -36798      | -678         | -2840      | -21375     |
| 533 | -854        | -29819      | 558          | -2422      | -15767     |
| 534 | -230        | -25933      | 1171         | -2785      | -11556     |
| 535 | -864        | -23545      | 1435         | -4229      | -11054     |
| 536 | 29          | -20022      | 658          | 879        | -14861     |
| 537 | 1992        | -13593      | -242         | 4284       | -17939     |
| 538 | -178        | -6384       | -111         | 2406       | -15278     |
| 539 | 217         | -1513       | 18           | 1584       | -8177      |
| 540 | 146         | -61         | 15           | 2522       | -4089      |
| 541 | 2           | -4          | -16          | 25         | 599        |
| 542 | 23          | -146        | -30          | -7         | 1155       |
| 543 | 8           | -577        | -50          | -38        | 2207       |
| 544 | 21          | -1404       | 70           | -91        | 3174       |
| 545 | -832        | -2774       | 309          | 0          | 3644       |
| 546 | -832        | -2774       | 309          | 0          | 3644       |
| 547 | -832        | -2774       | 309          | 0          | 3644       |
| 548 | -18348      | -61161      | -10199       | 0          | -20800     |
| 549 | 74          | -44145      | -2960        | -2396      | -20443     |
| 550 | -78         | -33156      | 141          | -1881      | -18934     |
| 551 | 1136        | -28108      | 584          | -1470      | -17267     |
| 552 | 502         | -25192      | 915          | -1992      | -15493     |
| 553 | 136         | -22959      | 971          | -2388      | -15667     |
| 554 | 413         | -19669      | 965          | 302        | -17839     |
| 555 | 325         | -13648      | 683          | 2405       | -18977     |
| 556 | -189        | -6907       | 155          | 1838       | -15961     |
| 557 | -39         | -1913       | 151          | 937        | -9002      |
| 558 | -28         | -108        | 77           | 1691       | -4817      |

Combinazione n° 3 - STR (A1-M1-R3) H - V

| In | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |
|----|-------------|-------------|--------------|------------|------------|
| 1  | 2           | -4          | 16           | -25        | 599        |
| 2  | 17          | -1          | 10           | -14        | 539        |
| 3  | 30          | -158        | 19           | 1085       |            |
| 4  | 23          | -146        | 30           | 7          | 1155       |
| 5  | 39          | -11         | 11           | 18         | 542        |
| 6  | 35          | -178        | 15           | 39         | 1097       |
| 7  | -19         | -678        | 6            | 59         | 2185       |
| 8  | 8           | -577        | 50           | 38         | 2207       |
| 9  | -47         | -678        | -1           | 75         | 2219       |
| 10 | 58          | -9          | 6            | 50         | 556        |
| 11 | 29          | -176        | 6            | 49         | 1117       |
| 12 | -102        | -680        | -9           | 62         | 2246       |
| 13 | -117        | -1460       | -69          | 91         | 3305       |
| 14 | 21          | -1404       | -70          | 91         | 3174       |
| 15 | -291        | -1495       | -63          | 78         | 3359       |
| 16 | -370        | -1513       | -40          | 52         | 3386       |
| 17 | 56          | -2          | 2            | 60         | 565        |
| 18 | 7           | -172        | 0            | 49         | 1131       |

PROGETTAZIONE ATI:

| In  | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |
|-----|-------------|-------------|--------------|------------|------------|
| 19  | -144        | -679        | -8           | 46         | 2264       |
| 20  | -414        | -1521       | -21          | 33         | 3400       |
| 21  | -803        | -2677       | -161         | 0          | 3869       |
| 22  | -832        | -2774       | -309         | 0          | 3644       |
| 23  | -810        | -2701       | -89          | 0          | 3931       |
| 24  | -813        | -2709       | -52          | 0          | 3956       |
| 25  | -814        | -2715       | -26          | 0          | 3967       |
| 26  | 41          | 0           | 1            | 54         | 568        |
| 27  | -13         | -170        | -1           | 41         | 1135       |
| 28  | -170        | -679        | -5           | 33         | 2269       |
| 29  | -436        | -1525       | -11          | 20         | 3401       |
| 30  | -815        | -2716       | -12          | 0          | 3967       |
| 31  | -815        | -2716       | -12          | 0          | 3967       |
| 32  | -815        | -2716       | -12          | 0          | 3967       |
| 33  | -815        | -2716       | -12          | 0          | 3967       |
| 34  | -815        | -2716       | -12          | 0          | 3967       |
| 35  | -815        | -2716       | -12          | 0          | 3967       |
| 36  | -815        | -2716       | -12          | 0          | 3967       |
| 37  | 26          | 1           | 1            | 41         | 568        |
| 38  | -28         | -170        | -1           | 31         | 1135       |
| 39  | -185        | -678        | -2           | 23         | 2267       |
| 40  | -446        | -1526       | -5           | 13         | 3398       |
| 41  | -814        | -2715       | -5           | 0          | 3963       |
| 42  | -814        | -2715       | -5           | 0          | 3963       |
| 43  | -814        | -2715       | -5           | 0          | 3963       |
| 44  | -814        | -2715       | -5           | 0          | 3963       |
| 45  | -814        | -2715       | -5           | 0          | 3963       |
| 46  | -814        | -2715       | -5           | 0          | 3963       |
| 47  | -814        | -2715       | -5           | 0          | 3963       |
| 48  | -814        | -2715       | -5           | 0          | 3963       |
| 49  | -814        | -2715       | -5           | 0          | 3963       |
| 50  | 15          | 0           | 1            | 30         | 567        |
| 51  | -38         | -170        | 0            | 22         | 1133       |
| 52  | -193        | -678        | 0            | 15         | 2264       |
| 53  | -452        | -1525       | -1           | 8          | 3393       |
| 54  | -814        | -2713       | -2           | 0          | 3957       |
| 55  | -814        | -2713       | -2           | 0          | 3957       |
| 56  | -814        | -2713       | -2           | 0          | 3957       |
| 57  | -16817      | -56057      | 20144        | 0          | -30815     |
| 58  | -18348      | -61161      | 31569        | 0          | -20800     |
| 59  | -17090      | -56968      | 13836        | 0          | -34198     |
| 60  | -17335      | -57783      | 9784         | 0          | -35648     |
| 61  | -17542      | -58473      | 6296         | 0          | -36261     |
| 62  | -17645      | -58815      | 4092         | 0          | -36249     |
| 63  | -17680      | -58933      | 2674         | 0          | -36004     |
| 64  | -17678      | -58926      | 1740         | 0          | -35699     |
| 65  | 8           | 0           | 1            | 20         | 566        |
| 66  | -44         | -169        | 1            | 15         | 1131       |
| 67  | -198        | -678        | 1            | 10         | 2260       |
| 68  | -455        | -1525       | 0            | 5          | 3388       |
| 69  | -813        | -2710       | 0            | 0          | 3952       |
| 70  | -813        | -2710       | 0            | 0          | 3952       |
| 71  | -813        | -2710       | 0            | 0          | 3952       |
| 72  | -17658      | -58859      | 1127         | 0          | -35408     |
| 73  | -3045       | -44078      | 10659        | 7741       | -27584     |
| 74  | 74          | -44145      | 9880         | 6608       | -20443     |
| 75  | -7612       | -44918      | 11994        | 8741       | -30427     |
| 76  | -10028      | -45650      | 9180         | 7961       | -31716     |
| 77  | -11706      | -46277      | 6210         | 6464       | -32333     |
| 78  | -12734      | -46688      | 4169         | 4884       | -32380     |
| 79  | -13335      | -46909      | 2798         | 3585       | -32185     |
| 80  | -13687      | -47011      | 1843         | 2585       | -31918     |
| 81  | -13888      | -47051      | 1198         | 1846       | -31669     |
| 82  | 3           | 0           | 1            | 14         | 565        |
| 83  | -48         | -169        | 1            | 10         | 1129       |
| 84  | -201        | -677        | 1            | 6          | 2257       |
| 85  | -456        | -1523       | 1            | 3          | 3384       |
| 86  | -812        | -2708       | 1            | 0          | 3947       |
| 87  | -812        | -2708       | 1            | 0          | 3947       |
| 88  | -812        | -2708       | 1            | 0          | 3947       |
| 89  | -17629      | -58762      | 734          | 0          | -35153     |
| 90  | -14001      | -47046      | 804          | 1321       | -31443     |
| 91  | -1568       | -36798      | 4221         | 8421       | -21375     |
| 92  | -78         | -33156      | 1110         | 5555       | -18934     |
| 93  | -3303       | -36856      | 5909         | 11311      | -22908     |
| 94  | -5753       | -37056      | 5751         | 10633      | -23782     |
| 95  | -7832       | -37297      | 4364         | 8898       | -24379     |
| 96  | -9224       | -37531      | 3278         | 6947       | -24592     |
| 97  | -10097      | -37651      | 2448         | 5262       | -24465     |
| 98  | -10640      | -37725      | 1647         | 3880       | -24266     |
| 99  | -10962      | -37808      | 1038         | 2823       | -24141     |
| 100 | -11159      | -37862      | 793          | 2079       | -24033     |
| 101 | 1           | 0           | 1            | 9          | 564        |
| 102 | -50         | -169        | 1            | 6          | 1128       |
| 103 | -203        | -677        | 1            | 3          | 2255       |

PROGETTAZIONE ATI:



| In  | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |
|-----|-------------|-------------|--------------|------------|------------|
| 104 | -457        | -1522       | 1            | 1          | 3381       |
| 105 | -812        | -2706       | 1            | 0          | 3944       |
| 106 | -812        | -2706       | 1            | 0          | 3944       |
| 107 | -812        | -2706       | 1            | 0          | 3944       |
| 108 | -17596      | -58652      | 477          | 0          | -34934     |
| 109 | -14065      | -47006      | 546          | 940        | -31235     |
| 110 | -11288      | -37835      | 650          | 1527       | -23810     |
| 111 | -854        | -29819      | 1321         | 6915       | -15767     |
| 112 | 1254        | -28108      | -90          | 4328       | -17267     |
| 113 | -2265       | -30410      | 2444         | 10103      | -15552     |
| 114 | -3864       | -30441      | 2559         | 10169      | -15523     |
| 115 | -5606       | -30686      | 2159         | 8800       | -16442     |
| 116 | -6898       | -30905      | 2313         | 7210       | -16918     |
| 117 | -7867       | -30906      | 2387         | 5724       | -16712     |
| 118 | -8499       | -30853      | 1459         | 4284       | -16223     |
| 119 | -8856       | -31072      | 591          | 3121       | -16606     |
| 120 | -9056       | -31235      | 811          | 2422       | -16788     |
| 121 | -9272       | -31149      | 1092         | 1906       | -16402     |
| 122 | 0           | 0           | 0            | 5          | 564        |
| 123 | -51         | -169        | 1            | 4          | 1127       |
| 124 | -203        | -676        | 1            | 2          | 2253       |
| 125 | -457        | -1521       | 1            | 1          | 3379       |
| 126 | -811        | -2704       | 1            | 0          | 3942       |
| 127 | -811        | -2704       | 1            | 0          | 3942       |
| 128 | -811        | -2704       | 1            | 0          | 3942       |
| 129 | -17565      | -58549      | 295          | 0          | -34759     |
| 130 | -14098      | -46956      | 333          | 648        | -31064     |
| 131 | -11370      | -37799      | 356          | 1061       | -23628     |
| 132 | -9410       | -31017      | 401          | 1291       | -15847     |
| 133 | -135        | -25933      | 989          | 5702       | -11556     |
| 134 | 573         | -25192      | -324         | 3496       | -15493     |
| 135 | -2009       | -25669      | 1872         | 8148       | -6817      |
| 136 | -3813       | -25960      | 285          | 8053       | -6707      |
| 137 | -4606       | -26287      | -66          | 7093       | -7879      |
| 138 | -5568       | -27198      | 1391         | 6346       | -11617     |
| 139 | -6519       | -26537      | 3451         | 5587       | -8362      |
| 140 | -7496       | -26347      | 1250         | 4093       | -7101      |
| 141 | -7484       | -26708      | 241          | 2764       | -8443      |
| 142 | -7601       | -27533      | 816          | 2467       | -11839     |
| 143 | -7940       | -26812      | 2672         | 2305       | -8358      |
| 144 | -8472       | -26558      | 444          | 1379       | -6968      |
| 145 | -1          | 0           | 0            | 3          | 563        |
| 146 | -52         | -169        | 0            | 2          | 1126       |
| 147 | -204        | -676        | 1            | 1          | 2252       |
| 148 | -457        | -1521       | 1            | 0          | 3377       |
| 149 | -811        | -2703       | 1            | 0          | 3940       |
| 150 | -811        | -2703       | 1            | 0          | 3940       |
| 151 | -811        | -2703       | 1            | 0          | 3940       |
| 152 | -17540      | -58466      | 173          | 0          | -34632     |
| 153 | -14112      | -46920      | 181          | 426        | -30953     |
| 154 | -11406      | -37810      | 114          | 693        | -23578     |
| 155 | -9443       | -31171      | -2           | 775        | -16233     |
| 156 | -8147       | -26861      | 267          | 534        | -8255      |
| 157 | -864        | -23545      | 1295         | 7781       | -11054     |
| 158 | 136         | -22959      | -920         | 3765       | -15667     |
| 159 | 1532        | -25365      | 2962         | 7079       | -3615      |
| 160 | -5072       | -22520      | -1006        | 5869       | 22210      |
| 161 | -4012       | -25807      | 88           | 4495       | -6960      |
| 162 | -2937       | -24292      | 614          | 4897       | -10502     |
| 163 | -6839       | -26038      | 5053         | 5962       | -7482      |
| 164 | -7990       | -23348      | 1029         | 3546       | 20806      |
| 165 | -7688       | -26207      | 579          | 2112       | -7688      |
| 166 | -4680       | -24634      | 791          | 2311       | -10952     |
| 167 | -8147       | -26315      | 4699         | 5028       | -7700      |
| 168 | -8949       | -23568      | 467          | 1364       | 20748      |
| 169 | -8376       | -26375      | 632          | 198        | -7652      |
| 170 | -1          | 0           | 0            | 2          | 563        |
| 171 | -52         | -169        | 0            | 1          | 1126       |
| 172 | -204        | -676        | 0            | 0          | 2251       |
| 173 | -457        | -1520       | 1            | 0          | 3376       |
| 174 | -811        | -2702       | 1            | 0          | 3939       |
| 175 | -811        | -2702       | 1            | 0          | 3939       |
| 176 | -811        | -2702       | 1            | 0          | 3939       |
| 177 | -17521      | -58404      | 101          | 0          | -34545     |
| 178 | -14117      | -46891      | 116          | 265        | -30877     |
| 179 | -11425      | -37826      | 132          | 447        | -23572     |
| 180 | -9431       | -31287      | 160          | 560        | -16460     |
| 181 | -8044       | -27637      | 187          | 616        | -11646     |
| 182 | -5162       | -24757      | 206          | 630        | -10874     |
| 183 | 57          | -20022      | 35           | 11095      | -14861     |
| 184 | 413         | -19669      | -638         | 4722       | -17839     |
| 185 | 333         | -22730      | 11981        | 41598      | -13619     |
| 186 | 6037        | -27804      | 243          | 5890       | -10551     |
| 187 | -690        | -21465      | -969         | 15685      | -13449     |
| 188 | -1083       | -20586      | 197          | 3357       | -13397     |

PROGETTAZIONE ATI:

| In  | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |
|-----|-------------|-------------|--------------|------------|------------|
| 189 | -1607       | -21753      | 11080        | 31527      | -13880     |
| 190 | 359         | -28272      | 817          | 2833       | -11325     |
| 191 | -2309       | -21910      | -472         | 14623      | -14148     |
| 192 | -2470       | -20909      | 729          | 2037       | -13943     |
| 193 | -2747       | -22007      | 11047        | 30832      | -14225     |
| 194 | -2883       | -28928      | 460          | 1281       | -11507     |
| 195 | -2988       | -22064      | -399         | 13121      | -14220     |
| 196 | -2967       | -21025      | 210          | 613        | -13951     |
| 197 | -1          | 0           | 0            | 1          | 563        |
| 198 | -52         | -169        | 0            | 0          | 1126       |
| 199 | -204        | -676        | 0            | 0          | 2251       |
| 200 | -457        | -1520       | 0            | 0          | 3376       |
| 201 | -810        | -2701       | 0            | 0          | 3938       |
| 202 | -810        | -2701       | 0            | 0          | 3938       |
| 203 | -810        | -2701       | 0            | 0          | 3938       |
| 204 | -17508      | -58362      | 52           | 0          | -34489     |
| 205 | -14120      | -46863      | 76           | 132        | -30817     |
| 206 | -11444      | -37786      | 173          | 241        | -23462     |
| 207 | -9504       | -31172      | 587          | 387        | -16144     |
| 208 | -8227       | -26878      | 2146         | 831        | -8193      |
| 209 | -8471       | -26399      | 4174         | 4641       | -7615      |
| 210 | -3093       | -22089      | 10551        | 30446      | -14204     |
| 211 | 2254        | -13593      | 949          | 6114       | -17939     |
| 212 | 325         | -13648      | -249         | 2981       | -18977     |
| 213 | 587         | -14391      | 1597         | 4008       | -18826     |
| 214 | 4174        | 9502        | -654         | 426        | 1248       |
| 215 | 1245        | -15391      | -1412        | 4608       | -18949     |
| 216 | 4201        | -14072      | -115         | 1765       | -16192     |
| 217 | 177         | -15619      | 3367         | 3921       | -19301     |
| 218 | 3001        | 8409        | 613          | 1997       | -1661      |
| 219 | -1535       | -15736      | -1056        | 5554       | -19576     |
| 220 | 971         | -14329      | 623          | 1670       | -16732     |
| 221 | -2935       | -15807      | 3503         | 3469       | -19684     |
| 222 | 237         | 8070        | 415          | 1142       | -2934      |
| 223 | -3858       | -15850      | -974         | 4536       | -19707     |
| 224 | -673        | -14416      | 195          | 570        | -16793     |
| 225 | -4307       | -15871      | 3117         | 3096       | -19705     |
| 226 | -1          | 0           | 0            | 0          | 563        |
| 227 | -52         | -169        | 0            | 0          | 1125       |
| 228 | -204        | -676        | 0            | 0          | 2251       |
| 229 | -457        | -1520       | 0            | 0          | 3376       |
| 230 | -810        | -2701       | 0            | 0          | 3938       |
| 231 | -810        | -2701       | 0            | 0          | 3938       |
| 232 | -810        | -2701       | 0            | 0          | 3938       |
| 233 | -17504      | -58345      | 0            | 0          | -34468     |
| 234 | -14121      | -46849      | 0            | 0          | -30790     |
| 235 | -11455      | -37756      | 0            | 0          | -23395     |
| 236 | -9544       | -31024      | 0            | 0          | -15670     |
| 237 | -8643       | -26595      | 0            | 0          | -6849      |
| 238 | -9148       | -23620      | 0            | 0          | 20816      |
| 239 | -3777       | -29197      | 0            | 0          | -11482     |
| 240 | -669        | 7896        | 0            | 0          | -3105      |
| 241 | 13          | -6384       | 390          | 659        | -15278     |
| 242 | -189        | -6907       | -83          | 661        | -15961     |
| 243 | 826         | -3615       | 472          | 1086       | -11318     |
| 244 | 2610        | -915        | -429         | 683        | -8872      |
| 245 | 3027        | -4872       | -728         | 282        | -10802     |
| 246 | 3095        | -7025       | -95          | 729        | -14144     |
| 247 | 2998        | -5100       | 1544         | 1049       | -11898     |
| 248 | 3045        | -899        | 433          | 1244       | -9926      |
| 249 | 1870        | -5131       | -517         | 1941       | -12810     |
| 250 | 1142        | -7178       | 475          | 1307       | -14733     |
| 251 | 665         | -5190       | 1716         | 801        | -13268     |
| 252 | 728         | -1011       | 327          | 984        | -10895     |
| 253 | -222        | -5258       | -437         | 1354       | -13461     |
| 254 | -605        | -7228       | 155          | 513        | -14808     |
| 255 | -674        | -5299       | 1389         | 428        | -13529     |
| 256 | -174        | -1099       | 0            | 0          | -11044     |
| 257 | -1          | 0           | 0            | -1         | 563        |
| 258 | -52         | -169        | 0            | 0          | 1126       |
| 259 | -204        | -676        | 0            | 0          | 2251       |
| 260 | -457        | -1520       | 0            | 0          | 3376       |
| 261 | -810        | -2701       | 0            | 0          | 3938       |
| 262 | -810        | -2701       | 0            | 0          | 3938       |
| 263 | -810        | -2701       | 0            | 0          | 3938       |
| 264 | -17508      | -58362      | 27           | 0          | -34489     |
| 265 | -14120      | -46863      | 33           | -5         | -30817     |
| 266 | -11444      | -37786      | 46           | -37        | -23462     |
| 267 | -9504       | -31172      | 112          | -153       | -16144     |
| 268 | -8227       | -26878      | 383          | -735       | -8193      |
| 269 | -8471       | -26399      | 749          | -1088      | -7615      |
| 270 | -3093       | -22089      | -284         | 11881      | -14204     |
| 271 | -4307       | -15871      | -860         | 3394       | -19705     |
| 272 | -674        | -5299       | -332         | 337        | -13529     |
| 273 | 302         | -1513       | 156          | 9          | -8177      |

PROGETTAZIONE ATI:

| In  | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |
|-----|-------------|-------------|--------------|------------|------------|
| 274 | -39         | -1913       | -116         | -72        | -9002      |
| 275 | 1176        | -749        | -7           | 59         | -6396      |
| 276 | 2185        | -538        | -199         | 152        | -5218      |
| 277 | 3191        | -1209       | -256         | 330        | -5513      |
| 278 | 3644        | -1623       | -35          | 541        | -6073      |
| 279 | 3765        | -1254       | 378          | 697        | -5990      |
| 280 | 3556        | -613        | 241          | 696        | -5747      |
| 281 | 3029        | -1208       | 38           | 965        | -6472      |
| 282 | 2421        | -1677       | 272          | 966        | -6990      |
| 283 | 1960        | -1202       | 478          | 845        | -6702      |
| 284 | 1550        | -595        | 189          | 810        | -6263      |
| 285 | 1104        | -1220       | -104         | 724        | -6799      |
| 286 | 753         | -1694       | 90           | 441        | -7199      |
| 287 | 652         | -1236       | 286          | 154        | -6835      |
| 288 | 657         | -623        | 0            | 0          | -6351      |
| 289 | 652         | -1236       | -38          | -134       | -6835      |
| 290 | -1          | 0           | 0            | -2         | 563        |
| 291 | -52         | -169        | 0            | -1         | 1126       |
| 292 | -204        | -676        | 0            | 0          | 2251       |
| 293 | -457        | -1520       | -1           | 0          | 3376       |
| 294 | -811        | -2702       | -1           | 0          | 3939       |
| 295 | -811        | -2702       | -1           | 0          | 3939       |
| 296 | -811        | -2702       | -1           | 0          | 3939       |
| 297 | -17521      | -58404      | 49           | 0          | -34545     |
| 298 | -14117      | -46891      | 56           | -8         | -30877     |
| 299 | -11425      | -37826      | 57           | -43        | -23572     |
| 300 | -9431       | -31287      | 59           | -81        | -16460     |
| 301 | -8044       | -27637      | 60           | -113       | -11646     |
| 302 | -5162       | -24757      | 60           | -136       | -10874     |
| 303 | -2967       | -21025      | 60           | -151       | -13951     |
| 304 | -673        | -14416      | 58           | -164       | -16793     |
| 305 | -605        | -7228       | 54           | -182       | -14808     |
| 306 | 753         | -1694       | 37           | -226       | -7199      |
| 307 | 186         | -61         | 106          | -529       | -4089      |
| 308 | -28         | -108        | -7           | -425       | -4817      |
| 309 | 884         | 69          | 104          | -459       | -3265      |
| 310 | 1851        | 91          | -45          | -88        | -2724      |
| 311 | 3007        | -23         | -91          | 333        | -2693      |
| 312 | 3742        | -58         | 26           | 691        | -2931      |
| 313 | 3940        | -13         | 140          | 902        | -2948      |
| 314 | 3750        | 101         | 116          | 976        | -2988      |
| 315 | 3345        | -2          | 67           | 958        | -3196      |
| 316 | 2844        | -34         | 120          | 895        | -3399      |
| 317 | 2311        | 12          | 163          | 792        | -3320      |
| 318 | 1838        | 154         | 80           | 649        | -3251      |
| 319 | 1468        | 14          | -4           | 519        | -3378      |
| 320 | 1205        | -34         | 36           | 337        | -3509      |
| 321 | 1024        | 12          | 78           | 177        | -3400      |
| 322 | 959         | 151         | 0            | 0          | -3300      |
| 323 | 1024        | 12          | 2            | -128       | -3400      |
| 324 | 1205        | -34         | 28           | -327       | -3509      |
| 325 | -1          | 0           | 0            | -3         | 563        |
| 326 | -52         | -169        | 0            | -2         | 1126       |
| 327 | -204        | -676        | -1           | -1         | 2251       |
| 328 | -457        | -1521       | -1           | 0          | 3377       |
| 329 | -811        | -2703       | -1           | 0          | 3940       |
| 330 | -811        | -2703       | -1           | 0          | 3940       |
| 331 | -811        | -2703       | -1           | 0          | 3940       |
| 332 | -17540      | -58466      | 66           | 0          | -34632     |
| 333 | -14112      | -46920      | 75           | -21        | -30953     |
| 334 | -11406      | -37810      | 63           | -63        | -23578     |
| 335 | -9443       | -31171      | 259          | -25        | -16233     |
| 336 | -8147       | -26861      | 1754         | 535        | -8255      |
| 337 | -8376       | -26375      | 3748         | 4356       | -7652      |
| 338 | -2988       | -22064      | 10120        | 30135      | -14220     |
| 339 | -3858       | -15850      | 2790         | 2764       | -19707     |
| 340 | -222        | -5258       | 1130         | 62         | -13461     |
| 341 | 1104        | -1220       | 131          | -297       | -6799      |
| 342 | 1468        | 14          | 52           | -490       | -3378      |
| 343 | 0           | 0           | 0            | -5         | 564        |
| 344 | -51         | -169        | -1           | -4         | 1127       |
| 345 | -203        | -676        | -1           | -2         | 2253       |
| 346 | -457        | -1521       | -1           | -1         | 3379       |
| 347 | -811        | -2704       | -1           | 0          | 3942       |
| 348 | -811        | -2704       | -1           | 0          | 3942       |
| 349 | -811        | -2704       | -1           | 0          | 3942       |
| 350 | -17565      | -58549      | 77           | 0          | -34759     |
| 351 | -14098      | -46956      | 90           | -54        | -31064     |
| 352 | -11370      | -37799      | 93           | -143       | -23628     |
| 353 | -9410       | -31017      | 99           | -226       | -15847     |
| 354 | -8472       | -26558      | 102          | -286       | -6968      |
| 355 | -8949       | -23568      | 104          | -322       | 20748      |
| 356 | -2883       | -28928      | 105          | -339       | -11507     |
| 357 | 237         | 8070        | 105          | -348       | -2934      |
| 358 | 728         | -1011       | 98           | -370       | -10895     |

PROGETTAZIONE ATI:

| In  | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |
|-----|-------------|-------------|--------------|------------|------------|
| 359 | 1550        | -595        | 68           | -445       | -6263      |
| 360 | 1838        | 154         | 52           | -566       | -3251      |
| 361 | 1           | 0           | -1           | -9         | 564        |
| 362 | -50         | -169        | -1           | -6         | 1128       |
| 363 | -203        | -677        | -1           | -3         | 2255       |
| 364 | -457        | -1522       | -1           | -1         | 3381       |
| 365 | -812        | -2706       | -1           | 0          | 3944       |
| 366 | -812        | -2706       | -1           | 0          | 3944       |
| 367 | -812        | -2706       | -1           | 0          | 3944       |
| 368 | -17596      | -58652      | 72           | 0          | -34934     |
| 369 | -14065      | -47006      | 90           | -109       | -31235     |
| 370 | -11288      | -37835      | 110          | -257       | -23810     |
| 371 | -9272       | -31149      | 185          | -464       | -16402     |
| 372 | -7940       | -26812      | 464          | -1141      | -8358      |
| 373 | -8147       | -26315      | 834          | -2584      | -7700      |
| 374 | -2747       | -22007      | -194         | 10536      | -14225     |
| 375 | -2935       | -15807      | -768         | 2260       | -19684     |
| 376 | 665         | -5190       | -243         | -561       | -13268     |
| 377 | 1960        | -1202       | 24           | -584       | -6702      |
| 378 | 2311        | 12          | 50           | -574       | -3320      |
| 379 | 3           | 0           | -1           | -14        | 565        |
| 380 | -48         | -169        | -1           | -10        | 1129       |
| 381 | -201        | -677        | -1           | -6         | 2257       |
| 382 | -456        | -1523       | -1           | -3         | 3384       |
| 383 | -812        | -2708       | -1           | 0          | 3947       |
| 384 | -812        | -2708       | -1           | 0          | 3947       |
| 385 | -812        | -2708       | -1           | 0          | 3947       |
| 386 | -17629      | -58762      | 42           | 0          | -35153     |
| 387 | -14001      | -47046      | 59           | -193       | -31443     |
| 388 | -11159      | -37862      | 76           | -383       | -24033     |
| 389 | -9056       | -31235      | 96           | -522       | -16788     |
| 390 | -7601       | -27533      | 114          | -597       | -11839     |
| 391 | -4680       | -24634      | 126          | -617       | -10952     |
| 392 | -2470       | -20909      | 136          | -600       | -13943     |
| 393 | 971         | -14329      | 141          | -565       | -16732     |
| 394 | 1142        | -7178       | 135          | -553       | -14733     |
| 395 | 2421        | -1677       | 94           | -625       | -6990      |
| 396 | 2844        | -34         | 71           | -577       | -3399      |
| 397 | 8           | 0           | -1           | -20        | 566        |
| 398 | -44         | -169        | -1           | -15        | 1131       |
| 399 | -198        | -678        | -1           | -10        | 2260       |
| 400 | -455        | -1525       | 0            | -5         | 3388       |
| 401 | -813        | -2710       | 0            | 0          | 3952       |
| 402 | -813        | -2710       | 0            | 0          | 3952       |
| 403 | -813        | -2710       | 0            | 0          | 3952       |
| 404 | -17658      | -58859      | -25          | 0          | -35408     |
| 405 | -13888      | -47051      | -8           | -327       | -31669     |
| 406 | -10962      | -37808      | 15           | -581       | -24141     |
| 407 | -8856       | -31072      | -7           | -651       | -16606     |
| 408 | -7484       | -26708      | 1030         | -113       | -8443      |
| 409 | -7688       | -26207      | 3133         | 3750       | -7688      |
| 410 | -2309       | -21910      | 9629         | 29606      | -14148     |
| 411 | -1535       | -15736      | 2486         | 2334       | -19576     |
| 412 | 1870        | -5131       | 920          | -293       | -12810     |
| 413 | 3029        | -1208       | 166          | -641       | -6472      |
| 414 | 3345        | -2          | 93           | -459       | -3196      |
| 415 | 15          | 0           | -1           | -30        | 567        |
| 416 | -38         | -170        | 0            | -22        | 1133       |
| 417 | -193        | -678        | 0            | -15        | 2264       |
| 418 | -452        | -1525       | 1            | -8         | 3393       |
| 419 | -814        | -2713       | 2            | 0          | 3957       |
| 420 | -814        | -2713       | 2            | 0          | 3957       |
| 421 | -814        | -2713       | 2            | 0          | 3957       |
| 422 | -17678      | -58926      | -152         | 0          | -35699     |
| 423 | -13687      | -47011      | -128         | -538       | -31918     |
| 424 | -10640      | -37725      | -51          | -914       | -24266     |
| 425 | -8499       | -30853      | 36           | -1109      | -16223     |
| 426 | -7496       | -26347      | 112          | -1150      | -7101      |
| 427 | -7990       | -23348      | 167          | -1082      | 20806      |
| 428 | 359         | -28272      | 198          | -955       | -11325     |
| 429 | 3001        | 8409        | 207          | -798       | -1661      |
| 430 | 3045        | -899        | 190          | -686       | -9926      |
| 431 | 3556        | -613        | 128          | -602       | -5747      |
| 432 | 3750        | 101         | 90           | -76        | -2988      |
| 433 | 26          | 1           | -1           | -41        | 568        |
| 434 | -28         | -170        | 1            | -31        | 1135       |
| 435 | -185        | -678        | 2            | -23        | 2267       |
| 436 | -446        | -1526       | 5            | -13        | 3398       |
| 437 | -814        | -2715       | 5            | 0          | 3963       |
| 438 | -814        | -2715       | 5            | 0          | 3963       |
| 439 | -814        | -2715       | 5            | 0          | 3963       |
| 440 | -17680      | -58933      | -378         | 0          | -36004     |
| 441 | -13335      | -46909      | -341         | -849       | -32185     |
| 442 | -10097      | -37651      | -168         | -1376      | -24465     |
| 443 | -7867       | -30906      | 71           | -1687      | -16712     |

PROGETTAZIONE ATI:

| In  | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |
|-----|-------------|-------------|--------------|------------|------------|
| 444 | -6519       | -26537      | 489          | -2271      | -8362      |
| 445 | -6839       | -26038      | 952          | -5025      | -7482      |
| 446 | -1607       | -21753      | -35          | 9012       | -13880     |
| 447 | 177         | -15619      | -612         | 1701       | -19301     |
| 448 | 2998        | -5100       | -120         | -355       | -11898     |
| 449 | 3765        | -1254       | 96           | -53        | -5990      |
| 450 | 3940        | -13         | 88           | 548        | -2948      |
| 451 | 41          | 0           | -1           | -54        | 568        |
| 452 | -13         | -170        | 1            | -41        | 1135       |
| 453 | -170        | -679        | 5            | -33        | 2269       |
| 454 | -436        | -1525       | 11           | -20        | 3401       |
| 455 | -815        | -2716       | 12           | 0          | 3967       |
| 456 | -815        | -2716       | 12           | 0          | 3967       |
| 457 | -815        | -2716       | 12           | 0          | 3967       |
| 458 | -17645      | -58815      | -771         | 0          | -36249     |
| 459 | -12734      | -46688      | -708         | -1285      | -32380     |
| 460 | -9224       | -37531      | -386         | -1957      | -24592     |
| 461 | -6898       | -30905      | -47          | -2154      | -16918     |
| 462 | -5568       | -27198      | 222          | -2061      | -11617     |
| 463 | -2937       | -24292      | 377          | -1684      | -10502     |
| 464 | -1083       | -20586      | 424          | -1359      | -13397     |
| 465 | 4201        | -14072      | 393          | -966       | -16192     |
| 466 | 3095        | -7025       | 304          | -365       | -14144     |
| 467 | 3644        | -1623       | 180          | 594        | -6073      |
| 468 | 3742        | -58         | 106          | 1372       | -2931      |
| 469 | 56          | -2          | -2           | -60        | 565        |
| 470 | 7           | -172        | 0            | -49        | 1131       |
| 471 | -144        | -679        | 8            | -46        | 2264       |
| 472 | -414        | -1521       | 21           | -33        | 3400       |
| 473 | -814        | -2715       | 26           | 0          | 3967       |
| 474 | -814        | -2715       | 26           | 0          | 3967       |
| 475 | -814        | -2715       | 26           | 0          | 3967       |
| 476 | -17542      | -58473      | -1438        | 0          | -36261     |
| 477 | -11706      | -46277      | -1305        | -1868      | -32333     |
| 478 | -7832       | -37297      | -679         | -2679      | -24379     |
| 479 | -5606       | -30686      | -113         | -2699      | -16442     |
| 480 | -4606       | -26287      | 1005         | -1793      | -7879      |
| 481 | -4012       | -25807      | 4025         | 2166       | -6960      |
| 482 | -690        | -21465      | 11501        | 29495      | -13449     |
| 483 | 1245        | -15391      | 3713         | 1608       | -18949     |
| 484 | 3027        | -4872       | 1855         | -136       | -10802     |
| 485 | 3191        | -1209       | 466          | 1404       | -5513      |
| 486 | 3007        | -23         | 115          | 2422       | -2693      |
| 487 | 58          | -9          | -6           | -50        | 556        |
| 488 | 29          | -176        | -6           | -49        | 1117       |
| 489 | -102        | -680        | 9            | -62        | 2246       |
| 490 | -370        | -1513       | 40           | -52        | 3386       |
| 491 | -813        | -2709       | 52           | 0          | 3956       |
| 492 | -813        | -2709       | 52           | 0          | 3956       |
| 493 | -813        | -2709       | 52           | 0          | 3956       |
| 494 | -17335      | -57783      | -2572        | 0          | -35648     |
| 495 | -10028      | -45650      | -2229        | -2494      | -31716     |
| 496 | -5753       | -37056      | -976         | -3395      | -23782     |
| 497 | -3864       | -30441      | 122          | -3320      | -15523     |
| 498 | -3813       | -25960      | 734          | -2891      | -6707      |
| 499 | -5072       | -22520      | 1218         | -1400      | 22210      |
| 500 | 6037        | -27804      | 847          | -981       | -10551     |
| 501 | 4174        | 9502        | 1875         | -149       | 1248       |
| 502 | 2610        | -915        | 1056         | 1410       | -8872      |
| 503 | 2185        | -538        | 392          | 2242       | -5218      |
| 504 | 1851        | 91          | 88           | 3439       | -2724      |
| 505 | 39          | -11         | -11          | -18        | 542        |
| 506 | 35          | -178        | -15          | -39        | 1097       |
| 507 | -47         | -678        | 1            | -75        | 2219       |
| 508 | -291        | -1495       | 63           | -78        | 3359       |
| 509 | -810        | -2701       | 89           | 0          | 3931       |
| 510 | -810        | -2701       | 89           | 0          | 3931       |
| 511 | -810        | -2701       | 89           | 0          | 3931       |
| 512 | -17090      | -56968      | -3961        | 0          | -34198     |
| 513 | -7612       | -44918      | -3199        | -2939      | -30427     |
| 514 | -3303       | -36856      | -961         | -3757      | -22908     |
| 515 | -2265       | -30410      | 457          | -3478      | -15552     |
| 516 | -2009       | -25669      | 1376         | -3788      | -6817      |
| 517 | 1532        | -25365      | 1984         | -6103      | -3615      |
| 518 | 333         | -22730      | 558          | 14258      | -13619     |
| 519 | 587         | -14391      | -365         | 5202       | -18826     |
| 520 | 826         | -3615       | -18          | 3004       | -11318     |
| 521 | 1176        | -749        | 89           | 2571       | -6396      |
| 522 | 884         | 69          | 32           | 3810       | -3265      |
| 523 | 17          | -1          | -10          | 14         | 539        |
| 524 | 30          | -158        | -19          | -19        | 1085       |
| 525 | -19         | -678        | -6           | -59        | 2185       |
| 526 | -117        | -1460       | 69           | -91        | 3305       |
| 527 | -803        | -2677       | 161          | 0          | 3869       |
| 528 | -803        | -2677       | 161          | 0          | 3869       |

PROGETTAZIONE ATI:

| In  | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |
|-----|-------------|-------------|--------------|------------|------------|
| 529 | -803        | -2677       | 161          | 0          | 3869       |
| 530 | -16817      | -56057      | -6191        | 0          | -30815     |
| 531 | -3045       | -44078      | -3011        | -2742      | -27584     |
| 532 | -1568       | -36798      | -678         | -2840      | -21375     |
| 533 | -854        | -29819      | 558          | -2422      | -15767     |
| 534 | -135        | -25933      | 1171         | -2785      | -11556     |
| 535 | -864        | -23545      | 1435         | -3012      | -11054     |
| 536 | 57          | -20022      | 658          | 3205       | -14861     |
| 537 | 2254        | -13593      | -242         | 5809       | -17939     |
| 538 | 13          | -6384       | -111         | 2753       | -15278     |
| 539 | 302         | -1513       | 18           | 1800       | -8177      |
| 540 | 186         | -61         | 15           | 2819       | -4089      |
| 541 | 2           | -4          | -16          | 25         | 599        |
| 542 | 23          | -146        | -30          | -7         | 1155       |
| 543 | 8           | -577        | -50          | -38        | 2207       |
| 544 | 21          | -1404       | 70           | -91        | 3174       |
| 545 | -832        | -2774       | 309          | 0          | 3644       |
| 546 | -832        | -2774       | 309          | 0          | 3644       |
| 547 | -832        | -2774       | 309          | 0          | 3644       |
| 548 | -18348      | -61161      | -10199       | 0          | -20800     |
| 549 | 74          | -44145      | -2960        | -2396      | -20443     |
| 550 | -78         | -33156      | 141          | -1881      | -18934     |
| 551 | 1254        | -28108      | 584          | -1470      | -17267     |
| 552 | 573         | -25192      | 915          | -1992      | -15493     |
| 553 | 136         | -22959      | 1007         | -1829      | -15667     |
| 554 | 413         | -19669      | 1102         | 1289       | -17839     |
| 555 | 325         | -13648      | 846          | 3183       | -18977     |
| 556 | -189        | -6907       | 180          | 2137       | -15961     |
| 557 | -39         | -1913       | 151          | 1056       | -9002      |
| 558 | -28         | -108        | 77           | 1892       | -4817      |

Combinazione n° 4 - STR (A1-M1-R3)

| In | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |
|----|-------------|-------------|--------------|------------|------------|
| 1  | 2           | -4          | 21           | -25        | 778        |
| 2  | 22          | -1          | 12           | -14        | 701        |
| 3  | 39          | -158        | 25           | 24         | 1410       |
| 4  | 30          | -146        | 38           | 9          | 1502       |
| 5  | 51          | -11         | 14           | 24         | 705        |
| 6  | 46          | -178        | 19           | 50         | 1426       |
| 7  | -19         | -678        | 7            | 76         | 2841       |
| 8  | 11          | -577        | 65           | 49         | 2869       |
| 9  | -47         | -678        | -1           | 97         | 2885       |
| 10 | 75          | -9          | 8            | 66         | 723        |
| 11 | 37          | -176        | 8            | 64         | 1451       |
| 12 | -102        | -680        | -9           | 80         | 2920       |
| 13 | -117        | -1460       | -69          | 119        | 4297       |
| 14 | 28          | -1404       | -70          | 118        | 4126       |
| 15 | -291        | -1495       | -63          | 101        | 4367       |
| 16 | -370        | -1513       | -40          | 68         | 4401       |
| 17 | 72          | -2          | 3            | 78         | 735        |
| 18 | 9           | -172        | 0            | 64         | 1470       |
| 19 | -144        | -679        | -8           | 60         | 2944       |
| 20 | -414        | -1521       | -21          | 43         | 4420       |
| 21 | -803        | -2677       | -161         | 0          | 5030       |
| 22 | -832        | -2774       | -309         | 0          | 4738       |
| 23 | -810        | -2701       | -89          | 0          | 5111       |
| 24 | -813        | -2709       | -52          | 0          | 5143       |
| 25 | -814        | -2715       | -26          | 0          | 5157       |
| 26 | 54          | 0           | 1            | 70         | 738        |
| 27 | -13         | -170        | -1           | 54         | 1476       |
| 28 | -170        | -679        | -5           | 43         | 2950       |
| 29 | -436        | -1525       | -11          | 26         | 4422       |
| 30 | -815        | -2716       | -12          | 0          | 5157       |
| 31 | -815        | -2716       | -12          | 0          | 5157       |
| 32 | -815        | -2716       | -12          | 0          | 5157       |
| 33 | -815        | -2716       | -12          | 0          | 5157       |
| 34 | -815        | -2716       | -12          | 0          | 5157       |
| 35 | -815        | -2716       | -12          | 0          | 5157       |
| 36 | -815        | -2716       | -12          | 0          | 5157       |
| 37 | 34          | 1           | 1            | 54         | 738        |
| 38 | -28         | -170        | -1           | 41         | 1475       |
| 39 | -185        | -678        | -2           | 30         | 2948       |
| 40 | -446        | -1526       | -5           | 16         | 4417       |
| 41 | -814        | -2715       | -5           | 0          | 5151       |
| 42 | -814        | -2715       | -5           | 0          | 5151       |
| 43 | -814        | -2715       | -5           | 0          | 5151       |
| 44 | -814        | -2715       | -5           | 0          | 5151       |
| 45 | -814        | -2715       | -5           | 0          | 5151       |
| 46 | -814        | -2715       | -5           | 0          | 5151       |
| 47 | -814        | -2715       | -5           | 0          | 5151       |
| 48 | -814        | -2715       | -5           | 0          | 5151       |
| 49 | -814        | -2715       | -5           | 0          | 5151       |

PROGETTAZIONE ATI:

| In  | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |
|-----|-------------|-------------|--------------|------------|------------|
| 50  | 19          | 1           | 1            | 39         | 737        |
| 51  | -38         | -170        | 0            | 29         | 1473       |
| 52  | -193        | -678        | 0            | 20         | 2943       |
| 53  | -452        | -1525       | -1           | 10         | 4411       |
| 54  | -814        | -2713       | -2           | 0          | 5144       |
| 55  | -814        | -2713       | -2           | 0          | 5144       |
| 56  | -814        | -2713       | -2           | 0          | 5144       |
| 57  | -10443      | -34810      | 20144        | 0          | -23715     |
| 58  | -11208      | -37361      | 31569        | 0          | -18869     |
| 59  | -10556      | -35187      | 13836        | 0          | -25204     |
| 60  | -10616      | -35385      | 9784         | 0          | -25649     |
| 61  | -10619      | -35398      | 6296         | 0          | -25581     |
| 62  | -10572      | -35240      | 4092         | 0          | -25244     |
| 63  | -10497      | -34991      | 2674         | 0          | -24845     |
| 64  | -10416      | -34721      | 1740         | 0          | -24474     |
| 65  | 10          | 0           | 1            | 27         | 735        |
| 66  | -44         | -169        | 1            | 19         | 1470       |
| 67  | -198        | -678        | 1            | 13         | 2938       |
| 68  | -455        | -1525       | 1            | 6          | 4405       |
| 69  | -813        | -2710       | 0            | 0          | 5137       |
| 70  | -813        | -2710       | 0            | 0          | 5137       |
| 71  | -813        | -2710       | 0            | 0          | 5137       |
| 72  | -10341      | -34471      | 1127         | 0          | -24164     |
| 73  | -1728       | -25952      | 10659        | 7741       | -20081     |
| 74  | 186         | -25709      | 9880         | 6608       | -16659     |
| 75  | -4433       | -26398      | 11994        | 8741       | -21244     |
| 76  | -5885       | -26671      | 9180         | 7961       | -21600     |
| 77  | -6852       | -26795      | 6210         | 6464       | -21555     |
| 78  | -7410       | -26797      | 4169         | 4884       | -21266     |
| 79  | -7702       | -26691      | 2798         | 3585       | -20902     |
| 80  | -7844       | -26544      | 1843         | 2585       | -20555     |
| 81  | -7901       | -26410      | 1198         | 1846       | -20275     |
| 82  | 5           | 0           | 1            | 18         | 734        |
| 83  | -48         | -169        | 1            | 12         | 1468       |
| 84  | -201        | -677        | 1            | 8          | 2934       |
| 85  | -456        | -1523       | 2            | 3          | 4399       |
| 86  | -812        | -2708       | 1            | 0          | 5131       |
| 87  | -812        | -2708       | 1            | 0          | 5131       |
| 88  | -812        | -2708       | 1            | 0          | 5131       |
| 89  | -10273      | -34243      | 734          | 0          | -23911     |
| 90  | -7913       | -26276      | 804          | 1321       | -20044     |
| 91  | -901        | -21245      | 4221         | 8421       | -13026     |
| 92  | -37         | -19162      | 1110         | 5555       | -12476     |
| 93  | -1923       | -21166      | 5909         | 11311      | -13328     |
| 94  | -3383       | -21151      | 5751         | 10633      | -13438     |
| 95  | -4598       | -21186      | 4364         | 8898       | -13423     |
| 96  | -5388       | -21217      | 3278         | 6947       | -13295     |
| 97  | -5858       | -21095      | 2448         | 5262       | -12955     |
| 98  | -6126       | -20961      | 1647         | 3880       | -12641     |
| 99  | -6255       | -20938      | 1038         | 2823       | -12463     |
| 100 | -6316       | -20915      | 793          | 2079       | -12340     |
| 101 | 1           | 0           | 1            | 11         | 733        |
| 102 | -50         | -169        | 1            | 8          | 1466       |
| 103 | -203        | -677        | 1            | 4          | 2931       |
| 104 | -457        | -1522       | 2            | 2          | 4395       |
| 105 | -812        | -2706       | 2            | 0          | 5127       |
| 106 | -812        | -2706       | 2            | 0          | 5127       |
| 107 | -812        | -2706       | 2            | 0          | 5127       |
| 108 | -10210      | -34033      | 477          | 0          | -23706     |
| 109 | -7906       | -26128      | 546          | 940        | -19842     |
| 110 | -6352       | -20766      | 650          | 1527       | -12099     |
| 111 | -667        | -17927      | 1321         | 6915       | -6460      |
| 112 | 1254        | -17209      | -90          | 4328       | -8409      |
| 113 | -1669       | -17971      | 2444         | 10103      | -5519      |
| 114 | -2681       | -17805      | 2559         | 10169      | -4820      |
| 115 | -3681       | -18132      | 2159         | 8800       | -5329      |
| 116 | -4379       | -18389      | 2313         | 7210       | -5482      |
| 117 | -4948       | -18129      | 2387         | 5724       | -5010      |
| 118 | -5285       | -17785      | 1459         | 4284       | -4281      |
| 119 | -5426       | -18082      | 591          | 3121       | -4682      |
| 120 | -5459       | -18307      | 811          | 2422       | -4856      |
| 121 | -5581       | -18000      | 1092         | 1906       | -4406      |
| 122 | 0           | 0           | 1            | 7          | 733        |
| 123 | -51         | -169        | 1            | 5          | 1465       |
| 124 | -203        | -676        | 1            | 2          | 2929       |
| 125 | -457        | -1521       | 2            | 1          | 4392       |
| 126 | -811        | -2704       | 1            | 0          | 5124       |
| 127 | -811        | -2704       | 1            | 0          | 5124       |
| 128 | -811        | -2704       | 1            | 0          | 5124       |
| 129 | -10158      | -33859      | 295          | 0          | -23547     |
| 130 | -7889       | -25997      | 333          | 648        | -19683     |
| 131 | -6368       | -20628      | 356          | 1061       | -11914     |
| 132 | -5644       | -17633      | 401          | 1291       | -3739      |
| 133 | -135        | -17888      | 989          | 5702       | -1683      |
| 134 | 573         | -17666      | -324         | 3496       | -5517      |

PROGETTAZIONE ATI:

| In  | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |
|-----|-------------|-------------|--------------|------------|------------|
| 135 | -2009       | -16700      | 1872         | 8148       | 4321       |
| 136 | -3632       | -16505      | 285          | 8053       | 4557       |
| 137 | -3760       | -17453      | -66          | 7093       | 3752       |
| 138 | -4202       | -19022      | 1391         | 6346       | -696       |
| 139 | -4843       | -17652      | 3451         | 5587       | 3807       |
| 140 | -5633       | -16688      | 1250         | 4093       | 5393       |
| 141 | -5319       | -17696      | 303          | 2764       | 3981       |
| 142 | -5211       | -19114      | 816          | 2467       | -372       |
| 143 | -5505       | -17683      | 2672         | 2305       | 4165       |
| 144 | -6045       | -16672      | 444          | 1379       | 5748       |
| 145 | -1          | 0           | 0            | 4          | 732        |
| 146 | -52         | -169        | 1            | 3          | 1464       |
| 147 | -204        | -676        | 1            | 1          | 2928       |
| 148 | -457        | -1521       | 1            | 0          | 4391       |
| 149 | -811        | -2703       | 1            | 0          | 5122       |
| 150 | -811        | -2703       | 1            | 0          | 5122       |
| 151 | -811        | -2703       | 1            | 0          | 5122       |
| 152 | -10120      | -33732      | 173          | 0          | -23437     |
| 153 | -7869       | -25916      | 181          | 426        | -19585     |
| 154 | -6357       | -20627      | 114          | 693        | -11873     |
| 155 | -5619       | -17923      | -2           | 775        | -4223      |
| 156 | -5567       | -17652      | 495          | 534        | 4302       |
| 157 | -864        | -19245      | 1295         | 9742       | -2234      |
| 158 | 204         | -18803      | -909         | 4661       | -6327      |
| 159 | 1532        | -21376      | 2962         | 8268       | 6832       |
| 160 | -5072       | -14565      | -1006        | 5869       | 41085      |
| 161 | -4012       | -22104      | 549          | 4495       | 2739       |
| 162 | -1565       | -19914      | 614          | 4897       | -1435      |
| 163 | -6839       | -22322      | 5053         | 6847       | 2681       |
| 164 | -7564       | -15601      | 1029         | 3546       | 40343      |
| 165 | -7279       | -22426      | 970          | 2112       | 2734       |
| 166 | -2450       | -20144      | 791          | 2311       | -1348      |
| 167 | -7476       | -22458      | 4699         | 6187       | 2837       |
| 168 | -7987       | -15673      | 467          | 1364       | 40535      |
| 169 | -7556       | -22458      | 1170         | 198        | 2929       |
| 170 | -1          | 0           | 0            | 2          | 732        |
| 171 | -52         | -169        | 0            | 1          | 1463       |
| 172 | -204        | -676        | 1            | 1          | 2927       |
| 173 | -457        | -1520       | 1            | 0          | 4389       |
| 174 | -811        | -2702       | 1            | 0          | 5121       |
| 175 | -811        | -2702       | 1            | 0          | 5121       |
| 176 | -811        | -2702       | 1            | 0          | 5121       |
| 177 | -10093      | -33644      | 101          | 0          | -23363     |
| 178 | -7852       | -25861      | 116          | 265        | -19520     |
| 179 | -6345       | -20645      | 132          | 447        | -11883     |
| 180 | -5555       | -18159      | 160          | 560        | -4489      |
| 181 | -5355       | -19059      | 187          | 616        | -103       |
| 182 | -2626       | -20150      | 206          | 630        | -1171      |
| 183 | 57          | -18596      | 35           | 14942      | -9192      |
| 184 | 563         | -17987      | -484         | 6353       | -10940     |
| 185 | 333         | -22327      | 11981        | 56434      | -8773      |
| 186 | 6037        | -27804      | 243          | 7350       | -6532      |
| 187 | -384        | -20505      | -76          | 15685      | -8346      |
| 188 | -549        | -19215      | 197          | 3357       | -7769      |
| 189 | -903        | -20827      | 11080        | 42339      | -8404      |
| 190 | 359         | -28272      | 817          | 2833       | -6661      |
| 191 | -1263       | -20960      | 214          | 14623      | -8436      |
| 192 | -1257       | -19501      | 729          | 2037       | -7836      |
| 193 | -1461       | -21013      | 11047        | 41785      | -8398      |
| 194 | -2883       | -28928      | 460          | 1281       | -6601      |
| 195 | -1554       | -21029      | 409          | 13121      | -8346      |
| 196 | -1455       | -19539      | 210          | 613        | -7740      |
| 197 | -1          | 0           | 0            | 1          | 732        |
| 198 | -52         | -169        | 0            | 1          | 1463       |
| 199 | -204        | -676        | 0            | 0          | 2926       |
| 200 | -457        | -1520       | 0            | 0          | 4389       |
| 201 | -810        | -2701       | 0            | 0          | 5120       |
| 202 | -810        | -2701       | 0            | 0          | 5120       |
| 203 | -810        | -2701       | 0            | 0          | 5120       |
| 204 | -10074      | -33581      | 52           | 0          | -23314     |
| 205 | -7843       | -25806      | 76           | 132        | -19467     |
| 206 | -6347       | -20551      | 173          | 241        | -11766     |
| 207 | -5623       | -17877      | 587          | 387        | -4133      |
| 208 | -5583       | -17629      | 2146         | 921        | 4372       |
| 209 | -7583       | -22451      | 4174         | 6026       | 2980       |
| 210 | -1589       | -21032      | 10551        | 41594      | -8314      |
| 211 | 2254        | -13593      | 949          | 8714       | -15822     |
| 212 | 325         | -13281      | -41          | 4306       | -15253     |
| 213 | 587         | -14391      | 1597         | 5798       | -18826     |
| 214 | 4174        | 9502        | -463         | 426        | 1248       |
| 215 | 1245        | -15391      | -1402        | 4608       | -18527     |
| 216 | 4201        | -14072      | -115         | 1765       | -14274     |
| 217 | 177         | -15619      | 3367         | 5068       | -18614     |
| 218 | 3001        | 8409        | 613          | 1997       | -1661      |
| 219 | -1535       | -15736      | -1056        | 5554       | -18700     |

PROGETTAZIONE ATI:



| In  | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |
|-----|-------------|-------------|--------------|------------|------------|
| 220 | 971         | -14329      | 623          | 1670       | -14436     |
| 221 | -2935       | -15807      | 3503         | 4620       | -18711     |
| 222 | 237         | 8070        | 415          | 1142       | -2934      |
| 223 | -3858       | -15850      | -974         | 4536       | -18690     |
| 224 | -673        | -14416      | 195          | 570        | -14404     |
| 225 | -4307       | -15871      | 3117         | 4403       | -18673     |
| 226 | -1          | 0           | 0            | 0          | 732        |
| 227 | -52         | -169        | 0            | 0          | 1463       |
| 228 | -204        | -676        | 0            | 0          | 2926       |
| 229 | -457        | -1520       | 0            | 0          | 4388       |
| 230 | -810        | -2701       | 0            | 0          | 5120       |
| 231 | -810        | -2701       | 0            | 0          | 5120       |
| 232 | -810        | -2701       | 0            | 0          | 5120       |
| 233 | -10067      | -33556      | 0            | 0          | -23296     |
| 234 | -7841       | -25778      | 0            | 0          | -19441     |
| 235 | -6354       | -20480      | 0            | 0          | -11698     |
| 236 | -5660       | -17545      | 0            | 0          | -3559      |
| 237 | -6085       | -16630      | 0            | 0          | 5887       |
| 238 | -8046       | -15664      | 0            | 0          | 40634      |
| 239 | -3777       | -29197      | 0            | 0          | -6539      |
| 240 | -669        | 7896        | 0            | 0          | -3105      |
| 241 | 13          | -6384       | 390          | 1254       | -15005     |
| 242 | -189        | -6798       | -48          | 1171       | -14529     |
| 243 | 826         | -3615       | 472          | 1848       | -11318     |
| 244 | 2610        | -915        | -303         | 1092       | -8872      |
| 245 | 3027        | -4872       | -690         | 317        | -10802     |
| 246 | 3095        | -7025       | -95          | 803        | -14144     |
| 247 | 2998        | -5100       | 1544         | 1170       | -11898     |
| 248 | 3045        | -899        | 433          | 1244       | -9926      |
| 249 | 1870        | -5131       | -517         | 1941       | -12810     |
| 250 | 1142        | -7178       | 475          | 1307       | -14669     |
| 251 | 665         | -5190       | 1716         | 823        | -13268     |
| 252 | 728         | -1011       | 327          | 984        | -10895     |
| 253 | -222        | -5258       | -437         | 1354       | -13461     |
| 254 | -605        | -7228       | 155          | 513        | -14676     |
| 255 | -674        | -5299       | 1389         | 562        | -13529     |
| 256 | -174        | -1099       | 0            | 0          | -11044     |
| 257 | -1          | 0           | 0            | -1         | 732        |
| 258 | -52         | -169        | 0            | 0          | 1463       |
| 259 | -204        | -676        | 0            | 0          | 2926       |
| 260 | -457        | -1520       | 0            | 0          | 4389       |
| 261 | -810        | -2701       | 0            | 0          | 5120       |
| 262 | -810        | -2701       | 0            | 0          | 5120       |
| 263 | -810        | -2701       | 0            | 0          | 5120       |
| 264 | -10074      | -33581      | 44           | 0          | -23314     |
| 265 | -7843       | -25806      | 55           | 22         | -19467     |
| 266 | -6347       | -20551      | 83           | 1          | -11766     |
| 267 | -5623       | -17877      | 211          | -131       | -4133      |
| 268 | -5583       | -17629      | 724          | -735       | 4372       |
| 269 | -7583       | -22451      | 1405         | -1088      | 2980       |
| 270 | -1589       | -21032      | 644          | 11881      | -8314      |
| 271 | -4307       | -15871      | -841         | 3394       | -18673     |
| 272 | -674        | -5299       | -303         | 337        | -13529     |
| 273 | 302         | -1513       | 156          | 348        | -8177      |
| 274 | -39         | -1833       | -116         | 110        | -8547      |
| 275 | 1176        | -749        | -7           | 547        | -6396      |
| 276 | 2185        | -538        | -142         | 597        | -5218      |
| 277 | 3191        | -1209       | -239         | 654        | -5513      |
| 278 | 3644        | -1623       | -35          | 748        | -6073      |
| 279 | 3765        | -1254       | 378          | 810        | -5990      |
| 280 | 3556        | -613        | 241          | 703        | -5747      |
| 281 | 3029        | -1208       | 38           | 965        | -6472      |
| 282 | 2421        | -1677       | 272          | 966        | -6990      |
| 283 | 1960        | -1202       | 478          | 845        | -6702      |
| 284 | 1550        | -595        | 189          | 810        | -6263      |
| 285 | 1104        | -1220       | -104         | 724        | -6799      |
| 286 | 753         | -1694       | 90           | 441        | -7199      |
| 287 | 652         | -1236       | 286          | 154        | -6835      |
| 288 | 657         | -623        | 0            | 0          | -6351      |
| 289 | 652         | -1236       | -20          | -134       | -6835      |
| 290 | -1          | 0           | 0            | -2         | 732        |
| 291 | -52         | -169        | 0            | -1         | 1463       |
| 292 | -204        | -676        | 0            | 0          | 2927       |
| 293 | -457        | -1520       | -1           | 0          | 4389       |
| 294 | -811        | -2702       | -1           | 0          | 5121       |
| 295 | -811        | -2702       | -1           | 0          | 5121       |
| 296 | -811        | -2702       | -1           | 0          | 5121       |
| 297 | -10093      | -33644      | 84           | 0          | -23363     |
| 298 | -7852       | -25861      | 96           | 47         | -19520     |
| 299 | -6345       | -20645      | 100          | 43         | -11883     |
| 300 | -5555       | -18159      | 109          | 20         | -4489      |
| 301 | -5355       | -19059      | 115          | -8         | -103       |
| 302 | -2626       | -20150      | 119          | -33        | -1171      |
| 303 | -1455       | -19539      | 119          | -55        | -7740      |
| 304 | -673        | -14416      | 113          | -80        | -14404     |

PROGETTAZIONE ATI:

| In  | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |
|-----|-------------|-------------|--------------|------------|------------|
| 305 | -605        | -7228       | 99           | -114       | -14676     |
| 306 | 753         | -1694       | 65           | -183       | -7199      |
| 307 | 186         | -61         | 106          | -95        | -4089      |
| 308 | -6          | -79         | -7           | -138       | -4593      |
| 309 | 884         | 69          | 104          | 159        | -3265      |
| 310 | 1851        | 91          | -45          | 520        | -2724      |
| 311 | 3007        | 5           | -91          | 831        | -2693      |
| 312 | 3742        | -36         | 26           | 1065       | -2931      |
| 313 | 3940        | 0           | 140          | 1167       | -2948      |
| 314 | 3750        | 101         | 116          | 1147       | -2988      |
| 315 | 3345        | 0           | 67           | 1062       | -3196      |
| 316 | 2844        | -33         | 120          | 962        | -3399      |
| 317 | 2311        | 12          | 163          | 837        | -3320      |
| 318 | 1838        | 154         | 80           | 669        | -3251      |
| 319 | 1468        | 14          | -4           | 519        | -3378      |
| 320 | 1205        | -34         | 36           | 339        | -3509      |
| 321 | 1024        | 12          | 78           | 184        | -3400      |
| 322 | 959         | 151         | 0            | 0          | -3300      |
| 323 | 1024        | 12          | 11           | -128       | -3400      |
| 324 | 1205        | -34         | 41           | -327       | -3509      |
| 325 | -1          | 0           | 0            | -3         | 732        |
| 326 | -52         | -169        | 0            | -2         | 1464       |
| 327 | -204        | -676        | -1           | -1         | 2928       |
| 328 | -457        | -1521       | -1           | 0          | 4391       |
| 329 | -811        | -2703       | -1           | 0          | 5122       |
| 330 | -811        | -2703       | -1           | 0          | 5122       |
| 331 | -811        | -2703       | -1           | 0          | 5122       |
| 332 | -10120      | -33732      | 122          | 0          | -23437     |
| 333 | -7869       | -25916      | 136          | 68         | -19585     |
| 334 | -6357       | -20627      | 116          | 77         | -11873     |
| 335 | -5619       | -17923      | 259          | 161        | -4223      |
| 336 | -5567       | -17652      | 1754         | 895        | 4302       |
| 337 | -7556       | -22458      | 3748         | 5949       | 2929       |
| 338 | -1554       | -21029      | 10120        | 41475      | -8346      |
| 339 | -3858       | -15850      | 2790         | 4237       | -18690     |
| 340 | -222        | -5258       | 1130         | 329        | -13461     |
| 341 | 1104        | -1220       | 148          | -214       | -6799      |
| 342 | 1468        | 14          | 71           | -490       | -3378      |
| 343 | 0           | 0           | 0            | -5         | 733        |
| 344 | -51         | -169        | -1           | -4         | 1465       |
| 345 | -203        | -676        | -1           | -2         | 2929       |
| 346 | -457        | -1521       | -1           | -1         | 4392       |
| 347 | -811        | -2704       | -1           | 0          | 5124       |
| 348 | -811        | -2704       | -1           | 0          | 5124       |
| 349 | -811        | -2704       | -1           | 0          | 5124       |
| 350 | -10158      | -33859      | 161          | 0          | -23547     |
| 351 | -7889       | -25997      | 185          | 74         | -19683     |
| 352 | -6368       | -20628      | 194          | 52         | -11914     |
| 353 | -5644       | -17633      | 210          | -3         | -3739      |
| 354 | -6045       | -16672      | 223          | -59        | 5748       |
| 355 | -7987       | -15673      | 229          | -107       | 40535      |
| 356 | -2883       | -28928      | 228          | -145       | -6601      |
| 357 | 237         | 8070        | 217          | -185       | -2934      |
| 358 | 728         | -1011       | 190          | -244       | -10895     |
| 359 | 1550        | -595        | 124          | -370       | -6263      |
| 360 | 1838        | 154         | 80           | -566       | -3251      |
| 361 | 1           | 0           | -1           | -9         | 733        |
| 362 | -50         | -169        | -1           | -6         | 1466       |
| 363 | -203        | -677        | -1           | -3         | 2931       |
| 364 | -457        | -1522       | -1           | -1         | 4395       |
| 365 | -812        | -2706       | -1           | 0          | 5127       |
| 366 | -812        | -2706       | -1           | 0          | 5127       |
| 367 | -812        | -2706       | -1           | 0          | 5127       |
| 368 | -10210      | -34033      | 195          | 0          | -23706     |
| 369 | -7906       | -26128      | 229          | 66         | -19842     |
| 370 | -6352       | -20766      | 267          | 5          | -12099     |
| 371 | -5581       | -18000      | 413          | -191       | -4406      |
| 372 | -5505       | -17683      | 938          | -1039      | 4165       |
| 373 | -7476       | -22458      | 1625         | -2584      | 2837       |
| 374 | -1461       | -21013      | 862          | 10536      | -8398      |
| 375 | -2935       | -15807      | -635         | 2260       | -18711     |
| 376 | 665         | -5190       | -123         | -561       | -13268     |
| 377 | 1960        | -1202       | 97           | -526       | -6702      |
| 378 | 2311        | 12          | 87           | -574       | -3320      |
| 379 | 5           | 0           | -1           | -14        | 734        |
| 380 | -48         | -169        | -1           | -10        | 1468       |
| 381 | -201        | -677        | -1           | -6         | 2934       |
| 382 | -456        | -1523       | -1           | -3         | 4399       |
| 383 | -812        | -2708       | -1           | 0          | 5131       |
| 384 | -812        | -2708       | -1           | 0          | 5131       |
| 385 | -812        | -2708       | -1           | 0          | 5131       |
| 386 | -10273      | -34243      | 214          | 0          | -23911     |
| 387 | -7913       | -26276      | 251          | 45         | -20044     |
| 388 | -6316       | -20915      | 268          | -30        | -12340     |
| 389 | -5459       | -18307      | 297          | -130       | -4856      |

PROGETTAZIONE ATI:

| In  | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |
|-----|-------------|-------------|--------------|------------|------------|
| 390 | -5211       | -19114      | 318          | -215       | -372       |
| 391 | -2450       | -20144      | 327          | -274       | -1348      |
| 392 | -1257       | -19501      | 324          | -310       | -7836      |
| 393 | 971         | -14329      | 306          | -341       | -14436     |
| 394 | 1142        | -7178       | 266          | -398       | -14669     |
| 395 | 2421        | -1677       | 173          | -554       | -6990      |
| 396 | 2844        | -33         | 112          | -577       | -3399      |
| 397 | 10          | 0           | -1           | -20        | 735        |
| 398 | -44         | -169        | -1           | -15        | 1470       |
| 399 | -198        | -678        | -1           | -10        | 2938       |
| 400 | -455        | -1525       | 0            | -5         | 4405       |
| 401 | -813        | -2710       | 0            | 0          | 5137       |
| 402 | -813        | -2710       | 0            | 0          | 5137       |
| 403 | -813        | -2710       | 0            | 0          | 5137       |
| 404 | -10341      | -34471      | 217          | 0          | -24164     |
| 405 | -7901       | -26410      | 255          | -8         | -20275     |
| 406 | -6255       | -20938      | 259          | -112       | -12463     |
| 407 | -5426       | -18082      | 176          | -120       | -4682      |
| 408 | -5319       | -17696      | 1030         | 561        | 3981       |
| 409 | -7279       | -22426      | 3133         | 5600       | 2734       |
| 410 | -1263       | -20960      | 9629         | 41136      | -8436      |
| 411 | -1535       | -15736      | 2486         | 3921       | -18700     |
| 412 | 1870        | -5131       | 920          | 22         | -12810     |
| 413 | 3029        | -1208       | 245          | -574       | -6472      |
| 414 | 3345        | 0           | 135          | -459       | -3196      |
| 415 | 19          | 1           | -1           | -30        | 737        |
| 416 | -38         | -170        | 0            | -22        | 1473       |
| 417 | -193        | -678        | 0            | -15        | 2943       |
| 418 | -452        | -1525       | 2            | -8         | 4411       |
| 419 | -814        | -2713       | 2            | 0          | 5144       |
| 420 | -814        | -2713       | 2            | 0          | 5144       |
| 421 | -814        | -2713       | 2            | 0          | 5144       |
| 422 | -10416      | -34721      | 192          | 0          | -24474     |
| 423 | -7844       | -26544      | 244          | -114       | -20555     |
| 424 | -6126       | -20961      | 297          | -307       | -12641     |
| 425 | -5285       | -17785      | 363          | -468       | -4281      |
| 426 | -5633       | -16688      | 411          | -564       | 5393       |
| 427 | -7564       | -15601      | 431          | -596       | 40343      |
| 428 | 359         | -28272      | 422          | -588       | -6661      |
| 429 | 3001        | 8409        | 388          | -564       | -1661      |
| 430 | 3045        | -899        | 326          | -573       | -9926      |
| 431 | 3556        | -613        | 208          | -602       | -5747      |
| 432 | 3750        | 101         | 134          | -76        | -2988      |
| 433 | 34          | 1           | -1           | -41        | 738        |
| 434 | -28         | -170        | 1            | -31        | 1475       |
| 435 | -185        | -678        | 3            | -23        | 2948       |
| 436 | -446        | -1526       | 6            | -13        | 4417       |
| 437 | -814        | -2715       | 7            | 0          | 5151       |
| 438 | -814        | -2715       | 7            | 0          | 5151       |
| 439 | -814        | -2715       | 7            | 0          | 5151       |
| 440 | -10497      | -34991      | 111          | 0          | -24845     |
| 441 | -7702       | -26691      | 183          | -287       | -20902     |
| 442 | -5858       | -21095      | 310          | -594       | -12955     |
| 443 | -4948       | -18129      | 550          | -911       | -5010      |
| 444 | -4843       | -17652      | 1140         | -1762      | 3807       |
| 445 | -6839       | -22322      | 1851         | -5025      | 2681       |
| 446 | -903        | -20827      | 1072         | 9012       | -8404      |
| 447 | 177         | -15619      | -467         | 1701       | -18614     |
| 448 | 2998        | -5100       | -5           | -355       | -11898     |
| 449 | 3765        | -1254       | 164          | -53        | -5990      |
| 450 | 3940        | 0           | 127          | 548        | -2948      |
| 451 | 54          | 0           | -1           | -54        | 738        |
| 452 | -13         | -170        | 1            | -41        | 1476       |
| 453 | -170        | -679        | 7            | -33        | 2950       |
| 454 | -436        | -1525       | 14           | -20        | 4422       |
| 455 | -815        | -2716       | 16           | 0          | 5157       |
| 456 | -815        | -2716       | 16           | 0          | 5157       |
| 457 | -815        | -2716       | 16           | 0          | 5157       |
| 458 | -10572      | -35240      | -69          | 0          | -25244     |
| 459 | -7410       | -26797      | 23           | -546       | -21266     |
| 460 | -5388       | -21217      | 224          | -950       | -13295     |
| 461 | -4379       | -18389      | 436          | -1161      | -5482      |
| 462 | -4202       | -19022      | 576          | -1249      | -696       |
| 463 | -1565       | -19914      | 613          | -1081      | -1435      |
| 464 | -549        | -19215      | 577          | -999       | -7769      |
| 465 | 4201        | -14072      | 477          | -829       | -14274     |
| 466 | 3095        | -7025       | 357          | -365       | -14144     |
| 467 | 3644        | -1623       | 211          | 594        | -6073      |
| 468 | 3742        | -36         | 130          | 1372       | -2931      |
| 469 | 72          | -2          | -2           | -60        | 735        |
| 470 | 9           | -172        | 0            | -49        | 1470       |
| 471 | -144        | -679        | 11           | -46        | 2944       |
| 472 | -414        | -1521       | 28           | -33        | 4420       |
| 473 | -814        | -2715       | 33           | 0          | 5157       |
| 474 | -814        | -2715       | 33           | 0          | 5157       |

PROGETTAZIONE ATI:

| In  | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |
|-----|-------------|-------------|--------------|------------|------------|
| 475 | -814        | -2715       | 33           | 0          | 5157       |
| 476 | -10619      | -35398      | -417         | 0          | -25581     |
| 477 | -6852       | -26795      | -277         | -915       | -21555     |
| 478 | -4598       | -21186      | 93           | -1417      | -13423     |
| 479 | -3681       | -18132      | 354          | -1491      | -5329      |
| 480 | -3760       | -17453      | 1005         | -681       | 3752       |
| 481 | -4012       | -22104      | 4025         | 4049       | 2739       |
| 482 | -384        | -20505      | 11501        | 41205      | -8346      |
| 483 | 1245        | -15391      | 3713         | 2805       | -18527     |
| 484 | 3027        | -4872       | 1855         | -136       | -10802     |
| 485 | 3191        | -1209       | 466          | 1404       | -5513      |
| 486 | 3007        | 5           | 121          | 2422       | -2693      |
| 487 | 75          | -9          | -6           | -50        | 723        |
| 488 | 37          | -176        | -6           | -49        | 1451       |
| 489 | -102        | -680        | 12           | -62        | 2920       |
| 490 | -370        | -1513       | 51           | -52        | 4401       |
| 491 | -813        | -2709       | 67           | 0          | 5143       |
| 492 | -813        | -2709       | 67           | 0          | 5143       |
| 493 | -813        | -2709       | 67           | 0          | 5143       |
| 494 | -10616      | -35385      | -1055        | 0          | -25649     |
| 495 | -5885       | -26671      | -782         | -1342      | -21600     |
| 496 | -3383       | -21151      | -13          | -1921      | -13438     |
| 497 | -2681       | -17805      | 647          | -2011      | -4820      |
| 498 | -3632       | -16505      | 950          | -2003      | 4557       |
| 499 | -5072       | -14565      | 1218         | -598       | 41085      |
| 500 | 6037        | -27804      | 905          | -981       | -6532      |
| 501 | 4174        | 9502        | 1875         | -28        | 1248       |
| 502 | 2610        | -915        | 1056         | 1410       | -8872      |
| 503 | 2185        | -538        | 392          | 2242       | -5218      |
| 504 | 1851        | 91          | 88           | 3439       | -2724      |
| 505 | 51          | -11         | -11          | -18        | 705        |
| 506 | 46          | -178        | -15          | -39        | 1426       |
| 507 | -47         | -678        | 1            | -75        | 2885       |
| 508 | -291        | -1495       | 82           | -78        | 4367       |
| 509 | -810        | -2701       | 116          | 0          | 5111       |
| 510 | -810        | -2701       | 116          | 0          | 5111       |
| 511 | -810        | -2701       | 116          | 0          | 5111       |
| 512 | -10556      | -35187      | -1873        | 0          | -25204     |
| 513 | -4433       | -26398      | -1366        | -1685      | -21244     |
| 514 | -1923       | -21166      | -1           | -2201      | -13328     |
| 515 | -1669       | -17971      | 940          | -2269      | -5519      |
| 516 | -2009       | -16700      | 1821         | -3309      | 4321       |
| 517 | 1532        | -21376      | 2628         | -6103      | 6832       |
| 518 | 333         | -22327      | 1579         | 14258      | -8773      |
| 519 | 587         | -14391      | -365         | 5202       | -18826     |
| 520 | 826         | -3615       | -18          | 3004       | -11318     |
| 521 | 1176        | -749        | 89           | 2571       | -6396      |
| 522 | 884         | 69          | 32           | 3810       | -3265      |
| 523 | 22          | -1          | -10          | 19         | 701        |
| 524 | 39          | -158        | -19          | -19        | 1410       |
| 525 | -19         | -678        | -6           | -59        | 2841       |
| 526 | -117        | -1460       | 89           | -91        | 4297       |
| 527 | -803        | -2677       | 209          | 0          | 5030       |
| 528 | -803        | -2677       | 209          | 0          | 5030       |
| 529 | -803        | -2677       | 209          | 0          | 5030       |
| 530 | -10443      | -34810      | -3211        | 0          | -23715     |
| 531 | -1728       | -25952      | -1409        | -1633      | -20081     |
| 532 | -901        | -21245      | -7           | -1676      | -13026     |
| 533 | -667        | -17927      | 827          | -1620      | -6460      |
| 534 | -135        | -17888      | 1451         | -2567      | -1683      |
| 535 | -864        | -19245      | 1778         | -3012      | -2234      |
| 536 | 57          | -18596      | 658          | 3205       | -9192      |
| 537 | 2254        | -13593      | -242         | 5809       | -15822     |
| 538 | 13          | -6384       | -111         | 2753       | -15005     |
| 539 | 302         | -1513       | 18           | 1800       | -8177      |
| 540 | 186         | -61         | 15           | 2819       | -4089      |
| 541 | 2           | -4          | -16          | 33         | 778        |
| 542 | 30          | -146        | -30          | -7         | 1502       |
| 543 | 11          | -577        | -50          | -38        | 2869       |
| 544 | 28          | -1404       | 91           | -91        | 4126       |
| 545 | -832        | -2774       | 401          | 0          | 4738       |
| 546 | -832        | -2774       | 401          | 0          | 4738       |
| 547 | -832        | -2774       | 401          | 0          | 4738       |
| 548 | -11208      | -37361      | -5587        | 0          | -18869     |
| 549 | 186         | -25709      | -1504        | -1447      | -16659     |
| 550 | -37         | -19162      | 318          | -1108      | -12476     |
| 551 | 1254        | -17209      | 584          | -955       | -8409      |
| 552 | 573         | -17666      | 915          | -1973      | -5517      |
| 553 | 204         | -18803      | 1007         | -1829      | -6327      |
| 554 | 563         | -17987      | 1102         | 1289       | -10940     |
| 555 | 325         | -13281      | 846          | 3183       | -15253     |
| 556 | -189        | -6798       | 180          | 2137       | -14529     |
| 557 | -39         | -1833       | 151          | 1056       | -8547      |
| 558 | -6          | -79         | 77           | 1892       | -4593      |

PROGETTAZIONE ATI:

Combinazione n° 5 - STR (A1-M1-R3)

| In | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |
|----|-------------|-------------|--------------|------------|------------|
| 1  | 2           | -4          | 21           | -25        | 778        |
| 2  | 22          | -1          | 12           | -14        | 701        |
| 3  | 39          | -158        | 25           | 24         | 1410       |
| 4  | 30          | -146        | 38           | 9          | 1502       |
| 5  | 51          | -11         | 14           | 24         | 705        |
| 6  | 46          | -178        | 19           | 50         | 1426       |
| 7  | -19         | -678        | 7            | 76         | 2841       |
| 8  | 11          | -577        | 65           | 49         | 2869       |
| 9  | -47         | -678        | -1           | 97         | 2885       |
| 10 | 75          | -9          | 8            | 66         | 723        |
| 11 | 37          | -176        | 8            | 64         | 1451       |
| 12 | -102        | -680        | -9           | 80         | 2920       |
| 13 | -117        | -1460       | -69          | 119        | 4297       |
| 14 | 28          | -1404       | -70          | 118        | 4126       |
| 15 | -291        | -1495       | -63          | 101        | 4367       |
| 16 | -370        | -1513       | -40          | 68         | 4401       |
| 17 | 72          | -2          | 3            | 78         | 735        |
| 18 | 9           | -172        | 0            | 64         | 1470       |
| 19 | -144        | -679        | -8           | 60         | 2944       |
| 20 | -414        | -1521       | -21          | 43         | 4420       |
| 21 | -803        | -2677       | -161         | 0          | 5030       |
| 22 | -832        | -2774       | -309         | 0          | 4738       |
| 23 | -810        | -2701       | -89          | 0          | 5111       |
| 24 | -813        | -2709       | -52          | 0          | 5143       |
| 25 | -814        | -2715       | -26          | 0          | 5157       |
| 26 | 54          | 0           | 1            | 70         | 738        |
| 27 | -13         | -170        | -1           | 54         | 1476       |
| 28 | -170        | -679        | -5           | 43         | 2950       |
| 29 | -436        | -1525       | -11          | 26         | 4422       |
| 30 | -815        | -2716       | -12          | 0          | 5157       |
| 31 | -815        | -2716       | -12          | 0          | 5157       |
| 32 | -815        | -2716       | -12          | 0          | 5157       |
| 33 | -815        | -2716       | -12          | 0          | 5157       |
| 34 | -815        | -2716       | -12          | 0          | 5157       |
| 35 | -815        | -2716       | -12          | 0          | 5157       |
| 36 | -815        | -2716       | -12          | 0          | 5157       |
| 37 | 34          | 1           | 1            | 54         | 738        |
| 38 | -28         | -170        | -1           | 41         | 1475       |
| 39 | -185        | -678        | -2           | 30         | 2948       |
| 40 | -446        | -1526       | -5           | 16         | 4417       |
| 41 | -814        | -2715       | -5           | 0          | 5151       |
| 42 | -814        | -2715       | -5           | 0          | 5151       |
| 43 | -814        | -2715       | -5           | 0          | 5151       |
| 44 | -814        | -2715       | -5           | 0          | 5151       |
| 45 | -814        | -2715       | -5           | 0          | 5151       |
| 46 | -814        | -2715       | -5           | 0          | 5151       |
| 47 | -814        | -2715       | -5           | 0          | 5151       |
| 48 | -814        | -2715       | -5           | 0          | 5151       |
| 49 | -814        | -2715       | -5           | 0          | 5151       |
| 50 | 19          | 1           | 1            | 39         | 737        |
| 51 | -38         | -170        | 0            | 29         | 1473       |
| 52 | -193        | -678        | 0            | 20         | 2943       |
| 53 | -452        | -1525       | -1           | 10         | 4411       |
| 54 | -814        | -2713       | -2           | 0          | 5144       |
| 55 | -814        | -2713       | -2           | 0          | 5144       |
| 56 | -814        | -2713       | -2           | 0          | 5144       |
| 57 | -10443      | -34810      | 20144        | 0          | -23715     |
| 58 | -11208      | -37361      | 31569        | 0          | -18869     |
| 59 | -10556      | -35187      | 13836        | 0          | -25204     |
| 60 | -10616      | -35385      | 9784         | 0          | -25649     |
| 61 | -10619      | -35398      | 6296         | 0          | -25581     |
| 62 | -10572      | -35240      | 4092         | 0          | -25244     |
| 63 | -10497      | -34991      | 2674         | 0          | -24845     |
| 64 | -10416      | -34721      | 1740         | 0          | -24474     |
| 65 | 10          | 0           | 1            | 27         | 735        |
| 66 | -44         | -169        | 1            | 19         | 1470       |
| 67 | -198        | -678        | 1            | 13         | 2938       |
| 68 | -455        | -1525       | 1            | 6          | 4405       |
| 69 | -813        | -2710       | 0            | 0          | 5137       |
| 70 | -813        | -2710       | 0            | 0          | 5137       |
| 71 | -813        | -2710       | 0            | 0          | 5137       |
| 72 | -10341      | -34471      | 1127         | 0          | -24164     |
| 73 | -1728       | -25952      | 10659        | 7741       | -20081     |
| 74 | 190         | -25709      | 9880         | 6608       | -16659     |
| 75 | -4433       | -26398      | 11994        | 8741       | -21244     |
| 76 | -5885       | -26671      | 9180         | 7961       | -21600     |
| 77 | -6852       | -26795      | 6210         | 6464       | -21555     |
| 78 | -7410       | -26797      | 4169         | 4884       | -21266     |
| 79 | -7702       | -26691      | 2798         | 3585       | -20902     |
| 80 | -7844       | -26544      | 1843         | 2585       | -20555     |
| 81 | -7901       | -26410      | 1198         | 1846       | -20275     |
| 82 | 5           | 0           | 1            | 18         | 734        |
| 83 | -48         | -169        | 1            | 12         | 1468       |

PROGETTAZIONE ATI:

| In  | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |
|-----|-------------|-------------|--------------|------------|------------|
| 84  | -201        | -677        | 1            | 8          | 2934       |
| 85  | -456        | -1523       | 2            | 3          | 4399       |
| 86  | -812        | -2708       | 1            | 0          | 5131       |
| 87  | -812        | -2708       | 1            | 0          | 5131       |
| 88  | -812        | -2708       | 1            | 0          | 5131       |
| 89  | -10273      | -34243      | 734          | 0          | -23911     |
| 90  | -7913       | -26276      | 804          | 1321       | -20044     |
| 91  | -901        | -21146      | 4221         | 8421       | -13026     |
| 92  | -37         | -19039      | 1110         | 5555       | -12476     |
| 93  | -1923       | -21047      | 5909         | 11311      | -13328     |
| 94  | -3383       | -21024      | 5751         | 10633      | -13438     |
| 95  | -4592       | -21078      | 4364         | 8898       | -13423     |
| 96  | -5369       | -21131      | 3278         | 6947       | -13295     |
| 97  | -5827       | -21007      | 2448         | 5262       | -12955     |
| 98  | -6089       | -20869      | 1647         | 3880       | -12641     |
| 99  | -6220       | -20871      | 1038         | 2823       | -12463     |
| 100 | -6284       | -20871      | 793          | 2079       | -12340     |
| 101 | 1           | 0           | 1            | 11         | 733        |
| 102 | -50         | -169        | 1            | 8          | 1466       |
| 103 | -203        | -677        | 1            | 4          | 2931       |
| 104 | -457        | -1522       | 2            | 2          | 4395       |
| 105 | -812        | -2706       | 2            | 0          | 5127       |
| 106 | -812        | -2706       | 2            | 0          | 5127       |
| 107 | -812        | -2706       | 2            | 0          | 5127       |
| 108 | -10210      | -34033      | 477          | 0          | -23706     |
| 109 | -7906       | -26128      | 546          | 940        | -19842     |
| 110 | -6320       | -20717      | 650          | 1527       | -12099     |
| 111 | -663        | -17367      | 1321         | 6915       | -6460      |
| 112 | 1254        | -16727      | -90          | 4328       | -8409      |
| 113 | -1619       | -17322      | 2444         | 10103      | -5519      |
| 114 | -2580       | -17116      | 2559         | 10169      | -4820      |
| 115 | -3536       | -17500      | 2159         | 8800       | -5329      |
| 116 | -4211       | -17816      | 2313         | 7210       | -5482      |
| 117 | -4752       | -17502      | 2387         | 5724       | -5010      |
| 118 | -5070       | -17094      | 1459         | 4284       | -4281      |
| 119 | -5218       | -17463      | 591          | 3121       | -4682      |
| 120 | -5260       | -17753      | 811          | 2422       | -4856      |
| 121 | -5375       | -17392      | 1092         | 1906       | -4406      |
| 122 | 0           | 0           | 1            | 7          | 733        |
| 123 | -51         | -169        | 1            | 5          | 1465       |
| 124 | -203        | -676        | 1            | 2          | 2929       |
| 125 | -457        | -1521       | 2            | 1          | 4392       |
| 126 | -811        | -2704       | 1            | 0          | 5124       |
| 127 | -811        | -2704       | 1            | 0          | 5124       |
| 128 | -811        | -2704       | 1            | 0          | 5124       |
| 129 | -10158      | -33859      | 295          | 0          | -23547     |
| 130 | -7889       | -25997      | 333          | 648        | -19683     |
| 131 | -6337       | -20572      | 356          | 1061       | -11914     |
| 132 | -5430       | -16961      | 401          | 1291       | -3739      |
| 133 | -135        | -16842      | 989          | 5702       | -1683      |
| 134 | 573         | -16774      | -324         | 3496       | -5517      |
| 135 | -2009       | -15409      | 1872         | 8148       | 4321       |
| 136 | -3307       | -14910      | 285          | 8053       | 4557       |
| 137 | -3443       | -16210      | 52           | 7093       | 3752       |
| 138 | -3852       | -17944      | 1391         | 6346       | -696       |
| 139 | -4458       | -16406      | 3451         | 5587       | 3807       |
| 140 | -5149       | -15061      | 1250         | 4093       | 5393       |
| 141 | -4919       | -16449      | 419          | 2764       | 3981       |
| 142 | -4821       | -18032      | 816          | 2467       | -372       |
| 143 | -5105       | -16439      | 2672         | 2305       | 4165       |
| 144 | -5559       | -15050      | 444          | 1379       | 5748       |
| 145 | -1          | 0           | 0            | 4          | 732        |
| 146 | -52         | -169        | 1            | 3          | 1464       |
| 147 | -204        | -676        | 1            | 1          | 2928       |
| 148 | -457        | -1521       | 1            | 0          | 4391       |
| 149 | -811        | -2703       | 1            | 0          | 5122       |
| 150 | -811        | -2703       | 1            | 0          | 5122       |
| 151 | -811        | -2703       | 1            | 0          | 5122       |
| 152 | -10120      | -33732      | 173          | 0          | -23437     |
| 153 | -7869       | -25916      | 181          | 426        | -19585     |
| 154 | -6330       | -20591      | 114          | 693        | -11873     |
| 155 | -5416       | -17322      | 30           | 775        | -4223      |
| 156 | -5170       | -16412      | 592          | 534        | 4302       |
| 157 | -665        | -17746      | 1295         | 9742       | -2234      |
| 158 | 216         | -17526      | -909         | 4661       | -6327      |
| 159 | 1532        | -19530      | 2962         | 8268       | 6832       |
| 160 | -5072       | -11149      | -941         | 5869       | 41085      |
| 161 | -4012       | -20413      | 766          | 4495       | 2739       |
| 162 | -1076       | -18355      | 614          | 4897       | -1435      |
| 163 | -6278       | -20609      | 5053         | 6847       | 2681       |
| 164 | -6591       | -12183      | 1029         | 3546       | 40343      |
| 165 | -6688       | -20704      | 1164         | 2112       | 2734       |
| 166 | -1931       | -18570      | 791          | 2311       | -1348      |
| 167 | -6885       | -20734      | 4699         | 6187       | 2837       |
| 168 | -7010       | -12252      | 467          | 1364       | 40535      |

PROGETTAZIONE ATI:

| In  | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |
|-----|-------------|-------------|--------------|------------|------------|
| 169 | -6967       | -20735      | 1346         | 198        | 2929       |
| 170 | -1          | 0           | 0            | 2          | 732        |
| 171 | -52         | -169        | 0            | 1          | 1463       |
| 172 | -204        | -676        | 1            | 1          | 2927       |
| 173 | -457        | -1520       | 1            | 0          | 4389       |
| 174 | -811        | -2702       | 1            | 0          | 5121       |
| 175 | -811        | -2702       | 1            | 0          | 5121       |
| 176 | -811        | -2702       | 1            | 0          | 5121       |
| 177 | -10093      | -33644      | 101          | 0          | -23363     |
| 178 | -7852       | -25861      | 116          | 265        | -19520     |
| 179 | -6322       | -20627      | 132          | 447        | -11883     |
| 180 | -5363       | -17620      | 160          | 560        | -4489      |
| 181 | -4969       | -17984      | 187          | 616        | -103       |
| 182 | -2111       | -18577      | 206          | 630        | -1171      |
| 183 | 57          | -17074      | 35           | 14942      | -9192      |
| 184 | 563         | -16551      | -484         | 6353       | -10715     |
| 185 | 333         | -20503      | 11981        | 56434      | -8773      |
| 186 | 6037        | -27804      | 243          | 7350       | -6532      |
| 187 | -324        | -18840      | 738          | 15685      | -8346      |
| 188 | -478        | -17623      | 197          | 3357       | -7769      |
| 189 | -812        | -19132      | 11080        | 42339      | -8404      |
| 190 | 359         | -28272      | 817          | 2833       | -6661      |
| 191 | -1162       | -19253      | 973          | 14623      | -8436      |
| 192 | -1164       | -17883      | 729          | 2037       | -7836      |
| 193 | -1359       | -19302      | 11047        | 41785      | -8398      |
| 194 | -2883       | -28928      | 460          | 1281       | -6601      |
| 195 | -1454       | -19317      | 1152         | 13121      | -8346      |
| 196 | -1365       | -17920      | 210          | 613        | -7740      |
| 197 | -1          | 0           | 0            | 1          | 732        |
| 198 | -52         | -169        | 0            | 1          | 1463       |
| 199 | -204        | -676        | 0            | 0          | 2926       |
| 200 | -457        | -1520       | 0            | 0          | 4389       |
| 201 | -810        | -2701       | 0            | 0          | 5120       |
| 202 | -810        | -2701       | 0            | 0          | 5120       |
| 203 | -810        | -2701       | 0            | 0          | 5120       |
| 204 | -10074      | -33581      | 52           | 0          | -23314     |
| 205 | -7843       | -25806      | 76           | 132        | -19467     |
| 206 | -6324       | -20522      | 173          | 241        | -11766     |
| 207 | -5423       | -17281      | 587          | 387        | -4133      |
| 208 | -5189       | -16392      | 2146         | 921        | 4372       |
| 209 | -6996       | -20730      | 4174         | 6026       | 2980       |
| 210 | -1491       | -19320      | 10551        | 41594      | -8314      |
| 211 | 2254        | -12560      | 949          | 8714       | -15099     |
| 212 | 325         | -12103      | -41          | 4306       | -14452     |
| 213 | 587         | -14391      | 1597         | 5798       | -18826     |
| 214 | 4174        | 9502        | -410         | 426        | 1248       |
| 215 | 1245        | -14718      | -1046        | 4608       | -17762     |
| 216 | 4201        | -13111      | -115         | 1765       | -13653     |
| 217 | 177         | -14972      | 3367         | 5068       | -17838     |
| 218 | 3001        | 8409        | 613          | 1997       | -1661      |
| 219 | -1535       | -15084      | -896         | 5554       | -17920     |
| 220 | 971         | -13358      | 623          | 1670       | -13805     |
| 221 | -2935       | -15132      | 3503         | 4620       | -17930     |
| 222 | 237         | 8070        | 415          | 1142       | -2934      |
| 223 | -3858       | -15152      | -730         | 4536       | -17911     |
| 224 | -673        | -13401      | 195          | 570        | -13776     |
| 225 | -4307       | -15159      | 3117         | 4403       | -17896     |
| 226 | -1          | 0           | 0            | 0          | 732        |
| 227 | -52         | -169        | 0            | 0          | 1463       |
| 228 | -204        | -676        | 0            | 0          | 2926       |
| 229 | -457        | -1520       | 0            | 0          | 4388       |
| 230 | -810        | -2701       | 0            | 0          | 5120       |
| 231 | -810        | -2701       | 0            | 0          | 5120       |
| 232 | -810        | -2701       | 0            | 0          | 5120       |
| 233 | -10067      | -33556      | 0            | 0          | -23296     |
| 234 | -7841       | -25778      | 0            | 0          | -19441     |
| 235 | -6329       | -20437      | 0            | 0          | -11698     |
| 236 | -5450       | -16881      | 0            | 0          | -3559      |
| 237 | -5603       | -15013      | 0            | 0          | 5887       |
| 238 | -7073       | -12244      | 0            | 0          | 40634      |
| 239 | -3777       | -29197      | 0            | 0          | -6539      |
| 240 | -669        | 7896        | 0            | 0          | -3105      |
| 241 | 13          | -5999       | 390          | 1256       | -14200     |
| 242 | -180        | -6157       | -48          | 1171       | -13726     |
| 243 | 826         | -3615       | 472          | 1848       | -11318     |
| 244 | 2610        | -915        | -292         | 1092       | -8872      |
| 245 | 3027        | -4872       | -536         | 317        | -10802     |
| 246 | 3095        | -6672       | -95          | 803        | -13709     |
| 247 | 2998        | -5100       | 1544         | 1170       | -11898     |
| 248 | 3045        | -899        | 433          | 1244       | -9926      |
| 249 | 1870        | -5131       | -493         | 1941       | -12810     |
| 250 | 1142        | -6842       | 475          | 1307       | -13906     |
| 251 | 665         | -5190       | 1716         | 823        | -13268     |
| 252 | 728         | -1011       | 327          | 984        | -10895     |
| 253 | -222        | -5258       | -352         | 1354       | -13461     |

PROGETTAZIONE ATI:

| In  | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |
|-----|-------------|-------------|--------------|------------|------------|
| 254 | -605        | -6874       | 155          | 513        | -13912     |
| 255 | -674        | -5299       | 1389         | 562        | -13529     |
| 256 | -174        | -1099       | 0            | 0          | -11044     |
| 257 | -1          | 0           | 0            | -1         | 732        |
| 258 | -52         | -169        | 0            | 0          | 1463       |
| 259 | -204        | -676        | 0            | 0          | 2926       |
| 260 | -457        | -1520       | 0            | 0          | 4389       |
| 261 | -810        | -2701       | 0            | 0          | 5120       |
| 262 | -810        | -2701       | 0            | 0          | 5120       |
| 263 | -810        | -2701       | 0            | 0          | 5120       |
| 264 | -10074      | -33581      | 44           | 0          | -23314     |
| 265 | -7843       | -25806      | 55           | 22         | -19467     |
| 266 | -6324       | -20522      | 84           | 3          | -11766     |
| 267 | -5423       | -17281      | 229          | -109       | -4133      |
| 268 | -5189       | -16392      | 803          | -735       | 4372       |
| 269 | -6996       | -20730      | 1563         | -1088      | 2980       |
| 270 | -1491       | -19320      | 1369         | 11881      | -8314      |
| 271 | -4307       | -15159      | -522         | 3394       | -17896     |
| 272 | -674        | -5299       | -169         | 337        | -13529     |
| 273 | 302         | -1439       | 156          | 348        | -7777      |
| 274 | 1           | -1645       | -116         | 113        | -8103      |
| 275 | 1176        | -749        | -7           | 547        | -6396      |
| 276 | 2185        | -538        | -142         | 597        | -5218      |
| 277 | 3191        | -1209       | -212         | 654        | -5513      |
| 278 | 3644        | -1536       | -35          | 748        | -6073      |
| 279 | 3765        | -1254       | 378          | 810        | -5990      |
| 280 | 3556        | -613        | 241          | 703        | -5747      |
| 281 | 3029        | -1208       | 38           | 965        | -6472      |
| 282 | 2421        | -1609       | 272          | 966        | -6990      |
| 283 | 1960        | -1202       | 478          | 845        | -6702      |
| 284 | 1550        | -595        | 189          | 810        | -6263      |
| 285 | 1104        | -1220       | -104         | 724        | -6799      |
| 286 | 753         | -1623       | 90           | 441        | -7199      |
| 287 | 652         | -1236       | 286          | 154        | -6835      |
| 288 | 657         | -623        | 0            | 0          | -6351      |
| 289 | 652         | -1236       | 2            | -134       | -6835      |
| 290 | -1          | 0           | 0            | -2         | 732        |
| 291 | -52         | -169        | 0            | -1         | 1463       |
| 292 | -204        | -676        | 0            | 0          | 2927       |
| 293 | -457        | -1520       | -1           | 0          | 4389       |
| 294 | -811        | -2702       | -1           | 0          | 5121       |
| 295 | -811        | -2702       | -1           | 0          | 5121       |
| 296 | -811        | -2702       | -1           | 0          | 5121       |
| 297 | -10093      | -33644      | 84           | 0          | -23363     |
| 298 | -7852       | -25861      | 96           | 47         | -19520     |
| 299 | -6322       | -20627      | 100          | 43         | -11883     |
| 300 | -5363       | -17620      | 109          | 20         | -4489      |
| 301 | -4969       | -17984      | 115          | -8         | -103       |
| 302 | -2111       | -18577      | 119          | -33        | -1171      |
| 303 | -1365       | -17920      | 119          | -55        | -7740      |
| 304 | -673        | -13401      | 113          | -79        | -13776     |
| 305 | -605        | -6874       | 99           | -111       | -13912     |
| 306 | 753         | -1623       | 65           | -176       | -7199      |
| 307 | 186         | -57         | 106          | -79        | -3878      |
| 308 | -2          | -59         | -7           | -131       | -4369      |
| 309 | 884         | 69          | 104          | 182        | -3265      |
| 310 | 1851        | 91          | -45          | 535        | -2724      |
| 311 | 3007        | 5           | -91          | 831        | -2693      |
| 312 | 3742        | -24         | 26           | 1065       | -2931      |
| 313 | 3940        | 0           | 140          | 1167       | -2948      |
| 314 | 3750        | 101         | 116          | 1147       | -2988      |
| 315 | 3345        | 0           | 67           | 1062       | -3196      |
| 316 | 2844        | -20         | 120          | 962        | -3399      |
| 317 | 2311        | 12          | 163          | 837        | -3320      |
| 318 | 1838        | 154         | 80           | 669        | -3251      |
| 319 | 1468        | 14          | -4           | 519        | -3378      |
| 320 | 1205        | -21         | 36           | 339        | -3509      |
| 321 | 1024        | 12          | 78           | 184        | -3400      |
| 322 | 959         | 151         | 0            | 0          | -3300      |
| 323 | 1024        | 12          | 15           | -128       | -3400      |
| 324 | 1205        | -21         | 41           | -323       | -3509      |
| 325 | -1          | 0           | 0            | -3         | 732        |
| 326 | -52         | -169        | 0            | -2         | 1464       |
| 327 | -204        | -676        | -1           | -1         | 2928       |
| 328 | -457        | -1521       | -1           | 0          | 4391       |
| 329 | -811        | -2703       | -1           | 0          | 5122       |
| 330 | -811        | -2703       | -1           | 0          | 5122       |
| 331 | -811        | -2703       | -1           | 0          | 5122       |
| 332 | -10120      | -33732      | 122          | 0          | -23437     |
| 333 | -7869       | -25916      | 136          | 68         | -19585     |
| 334 | -6330       | -20591      | 116          | 77         | -11873     |
| 335 | -5416       | -17322      | 259          | 161        | -4223      |
| 336 | -5170       | -16412      | 1754         | 895        | 4302       |
| 337 | -6967       | -20735      | 3748         | 5949       | 2929       |
| 338 | -1454       | -19317      | 10120        | 41475      | -8346      |

PROGETTAZIONE ATI:



| In  | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |
|-----|-------------|-------------|--------------|------------|------------|
| 339 | -3858       | -15152      | 2790         | 4237       | -17911     |
| 340 | -222        | -5258       | 1130         | 329        | -13461     |
| 341 | 1104        | -1220       | 148          | -205       | -6799      |
| 342 | 1468        | 14          | 71           | -467       | -3378      |
| 343 | 0           | 0           | 0            | -5         | 733        |
| 344 | -51         | -169        | -1           | -4         | 1465       |
| 345 | -203        | -676        | -1           | -2         | 2929       |
| 346 | -457        | -1521       | -1           | -1         | 4392       |
| 347 | -811        | -2704       | -1           | 0          | 5124       |
| 348 | -811        | -2704       | -1           | 0          | 5124       |
| 349 | -811        | -2704       | -1           | 0          | 5124       |
| 350 | -10158      | -33859      | 161          | 0          | -23547     |
| 351 | -7889       | -25997      | 185          | 74         | -19683     |
| 352 | -6337       | -20572      | 194          | 52         | -11914     |
| 353 | -5430       | -16961      | 210          | -3         | -3739      |
| 354 | -5559       | -15050      | 223          | -59        | 5748       |
| 355 | -7010       | -12252      | 229          | -107       | 40535      |
| 356 | -2883       | -28928      | 228          | -145       | -6601      |
| 357 | 237         | 8070        | 217          | -182       | -2934      |
| 358 | 728         | -1011       | 190          | -238       | -10895     |
| 359 | 1550        | -595        | 124          | -357       | -6263      |
| 360 | 1838        | 154         | 80           | -566       | -3251      |
| 361 | 1           | 0           | -1           | -9         | 733        |
| 362 | -50         | -169        | -1           | -6         | 1466       |
| 363 | -203        | -677        | -1           | -3         | 2931       |
| 364 | -457        | -1522       | -1           | -1         | 4395       |
| 365 | -812        | -2706       | -1           | 0          | 5127       |
| 366 | -812        | -2706       | -1           | 0          | 5127       |
| 367 | -812        | -2706       | -1           | 0          | 5127       |
| 368 | -10210      | -34033      | 195          | 0          | -23706     |
| 369 | -7906       | -26128      | 229          | 66         | -19842     |
| 370 | -6320       | -20717      | 267          | 5          | -12099     |
| 371 | -5375       | -17392      | 413          | -175       | -4406      |
| 372 | -5105       | -16439      | 998          | -909       | 4165       |
| 373 | -6885       | -20734      | 1765         | -2584      | 2837       |
| 374 | -1359       | -19302      | 1569         | 10536      | -8398      |
| 375 | -2935       | -15132      | -331         | 2260       | -17930     |
| 376 | 665         | -5190       | -2           | -561       | -13268     |
| 377 | 1960        | -1202       | 111          | -509       | -6702      |
| 378 | 2311        | 12          | 87           | -574       | -3320      |
| 379 | 5           | 0           | -1           | -14        | 734        |
| 380 | -48         | -169        | -1           | -10        | 1468       |
| 381 | -201        | -677        | -1           | -6         | 2934       |
| 382 | -456        | -1523       | -1           | -3         | 4399       |
| 383 | -812        | -2708       | -1           | 0          | 5131       |
| 384 | -812        | -2708       | -1           | 0          | 5131       |
| 385 | -812        | -2708       | -1           | 0          | 5131       |
| 386 | -10273      | -34243      | 214          | 0          | -23911     |
| 387 | -7913       | -26276      | 251          | 45         | -20044     |
| 388 | -6284       | -20871      | 268          | -30        | -12340     |
| 389 | -5260       | -17753      | 297          | -130       | -4856      |
| 390 | -4821       | -18032      | 318          | -215       | -372       |
| 391 | -1931       | -18570      | 327          | -269       | -1348      |
| 392 | -1164       | -17883      | 324          | -302       | -7836      |
| 393 | 971         | -13358      | 306          | -331       | -13805     |
| 394 | 1142        | -6842       | 266          | -386       | -13906     |
| 395 | 2421        | -1609       | 173          | -534       | -6990      |
| 396 | 2844        | -20         | 112          | -577       | -3399      |
| 397 | 10          | 0           | -1           | -20        | 735        |
| 398 | -44         | -169        | -1           | -15        | 1470       |
| 399 | -198        | -678        | -1           | -10        | 2938       |
| 400 | -455        | -1525       | 0            | -5         | 4405       |
| 401 | -813        | -2710       | 0            | 0          | 5137       |
| 402 | -813        | -2710       | 0            | 0          | 5137       |
| 403 | -813        | -2710       | 0            | 0          | 5137       |
| 404 | -10341      | -34471      | 217          | 0          | -24164     |
| 405 | -7901       | -26410      | 255          | -8         | -20275     |
| 406 | -6220       | -20871      | 259          | -112       | -12463     |
| 407 | -5218       | -17463      | 176          | -120       | -4682      |
| 408 | -4919       | -16449      | 1030         | 561        | 3981       |
| 409 | -6688       | -20704      | 3133         | 5600       | 2734       |
| 410 | -1162       | -19253      | 9629         | 41136      | -8436      |
| 411 | -1535       | -15084      | 2486         | 3921       | -17920     |
| 412 | 1870        | -5131       | 920          | 28         | -12810     |
| 413 | 3029        | -1208       | 245          | -552       | -6472      |
| 414 | 3345        | 0           | 135          | -459       | -3196      |
| 415 | 19          | 1           | -1           | -30        | 737        |
| 416 | -38         | -170        | 0            | -22        | 1473       |
| 417 | -193        | -678        | 0            | -15        | 2943       |
| 418 | -452        | -1525       | 2            | -8         | 4411       |
| 419 | -814        | -2713       | 2            | 0          | 5144       |
| 420 | -814        | -2713       | 2            | 0          | 5144       |
| 421 | -814        | -2713       | 2            | 0          | 5144       |
| 422 | -10416      | -34721      | 192          | 0          | -24474     |
| 423 | -7844       | -26544      | 244          | -114       | -20555     |

PROGETTAZIONE ATI:

| In  | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |
|-----|-------------|-------------|--------------|------------|------------|
| 424 | -6089       | -20869      | 297          | -307       | -12641     |
| 425 | -5070       | -17094      | 363          | -459       | -4281      |
| 426 | -5149       | -15061      | 411          | -545       | 5393       |
| 427 | -6591       | -12183      | 431          | -571       | 40343      |
| 428 | 359         | -28272      | 422          | -562       | -6661      |
| 429 | 3001        | 8409        | 388          | -540       | -1661      |
| 430 | 3045        | -899        | 326          | -552       | -9926      |
| 431 | 3556        | -613        | 208          | -602       | -5747      |
| 432 | 3750        | 101         | 134          | -76        | -2988      |
| 433 | 34          | 1           | -1           | -41        | 738        |
| 434 | -28         | -170        | 1            | -31        | 1475       |
| 435 | -185        | -678        | 3            | -23        | 2948       |
| 436 | -446        | -1526       | 6            | -13        | 4417       |
| 437 | -814        | -2715       | 7            | 0          | 5151       |
| 438 | -814        | -2715       | 7            | 0          | 5151       |
| 439 | -814        | -2715       | 7            | 0          | 5151       |
| 440 | -10497      | -34991      | 111          | 0          | -24845     |
| 441 | -7702       | -26691      | 183          | -287       | -20902     |
| 442 | -5827       | -21007      | 310          | -581       | -12955     |
| 443 | -4752       | -17502      | 550          | -860       | -5010      |
| 444 | -4458       | -16406      | 1180         | -1591      | 3807       |
| 445 | -6278       | -20609      | 1971         | -5025      | 2681       |
| 446 | -812        | -19132      | 1762         | 9012       | -8404      |
| 447 | 177         | -14972      | -175         | 1701       | -17838     |
| 448 | 2998        | -5100       | 109          | -355       | -11898     |
| 449 | 3765        | -1254       | 175          | -53        | -5990      |
| 450 | 3940        | 0           | 127          | 548        | -2948      |
| 451 | 54          | 0           | -1           | -54        | 738        |
| 452 | -13         | -170        | 1            | -41        | 1476       |
| 453 | -170        | -679        | 7            | -33        | 2950       |
| 454 | -436        | -1525       | 14           | -20        | 4422       |
| 455 | -815        | -2716       | 16           | 0          | 5157       |
| 456 | -815        | -2716       | 16           | 0          | 5157       |
| 457 | -815        | -2716       | 16           | 0          | 5157       |
| 458 | -10572      | -35240      | -69          | 0          | -25244     |
| 459 | -7410       | -26797      | 23           | -544       | -21266     |
| 460 | -5369       | -21131      | 224          | -927       | -13295     |
| 461 | -4211       | -17816      | 436          | -1111      | -5482      |
| 462 | -3852       | -17944      | 576          | -1176      | -696       |
| 463 | -1076       | -18355      | 613          | -1016      | -1435      |
| 464 | -478        | -17623      | 577          | -935       | -7769      |
| 465 | 4201        | -13111      | 477          | -781       | -13653     |
| 466 | 3095        | -6672       | 357          | -365       | -13709     |
| 467 | 3644        | -1536       | 211          | 594        | -6073      |
| 468 | 3742        | -24         | 130          | 1372       | -2931      |
| 469 | 72          | -2          | -2           | -60        | 735        |
| 470 | 9           | -172        | 0            | -49        | 1470       |
| 471 | -144        | -679        | 11           | -46        | 2944       |
| 472 | -414        | -1521       | 28           | -33        | 4420       |
| 473 | -814        | -2715       | 33           | 0          | 5157       |
| 474 | -814        | -2715       | 33           | 0          | 5157       |
| 475 | -814        | -2715       | 33           | 0          | 5157       |
| 476 | -10619      | -35398      | -417         | 0          | -25581     |
| 477 | -6852       | -26795      | -277         | -910       | -21555     |
| 478 | -4592       | -21078      | 93           | -1383      | -13423     |
| 479 | -3536       | -17500      | 354          | -1434      | -5329      |
| 480 | -3443       | -16210      | 1005         | -681       | 3752       |
| 481 | -4012       | -20413      | 4025         | 4049       | 2739       |
| 482 | -324        | -18840      | 11501        | 41205      | -8346      |
| 483 | 1245        | -14718      | 3713         | 2805       | -17762     |
| 484 | 3027        | -4872       | 1855         | -136       | -10802     |
| 485 | 3191        | -1209       | 466          | 1404       | -5513      |
| 486 | 3007        | 5           | 121          | 2422       | -2693      |
| 487 | 75          | -9          | -6           | -50        | 723        |
| 488 | 37          | -176        | -6           | -49        | 1451       |
| 489 | -102        | -680        | 12           | -62        | 2920       |
| 490 | -370        | -1513       | 51           | -52        | 4401       |
| 491 | -813        | -2709       | 67           | 0          | 5143       |
| 492 | -813        | -2709       | 67           | 0          | 5143       |
| 493 | -813        | -2709       | 67           | 0          | 5143       |
| 494 | -10616      | -35385      | -1055        | 0          | -25649     |
| 495 | -5885       | -26671      | -782         | -1338      | -21600     |
| 496 | -3383       | -21024      | -13          | -1875      | -13438     |
| 497 | -2580       | -17116      | 647          | -1900      | -4820      |
| 498 | -3307       | -14910      | 950          | -1833      | 4557       |
| 499 | -5072       | -11149      | 1218         | -519       | 41085      |
| 500 | 6037        | -27804      | 972          | -981       | -6532      |
| 501 | 4174        | 9502        | 1875         | -28        | 1248       |
| 502 | 2610        | -915        | 1056         | 1410       | -8872      |
| 503 | 2185        | -538        | 392          | 2242       | -5218      |
| 504 | 1851        | 91          | 88           | 3439       | -2724      |
| 505 | 51          | -11         | -11          | -18        | 705        |
| 506 | 46          | -178        | -15          | -39        | 1426       |
| 507 | -47         | -678        | 1            | -75        | 2885       |
| 508 | -291        | -1495       | 82           | -78        | 4367       |

PROGETTAZIONE ATI:

| In  | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |
|-----|-------------|-------------|--------------|------------|------------|
| 509 | -810        | -2701       | 116          | 0          | 5111       |
| 510 | -810        | -2701       | 116          | 0          | 5111       |
| 511 | -810        | -2701       | 116          | 0          | 5111       |
| 512 | -10556      | -35187      | -1873        | 0          | -25204     |
| 513 | -4433       | -26398      | -1366        | -1685      | -21244     |
| 514 | -1923       | -21047      | 10           | -2157      | -13328     |
| 515 | -1619       | -17322      | 962          | -2110      | -5519      |
| 516 | -2009       | -15409      | 1881         | -2913      | 4321       |
| 517 | 1532        | -19530      | 2748         | -6103      | 6832       |
| 518 | 333         | -20503      | 2509         | 14258      | -8773      |
| 519 | 587         | -14391      | -290         | 5202       | -18826     |
| 520 | 826         | -3615       | -18          | 3004       | -11318     |
| 521 | 1176        | -749        | 89           | 2571       | -6396      |
| 522 | 884         | 69          | 45           | 3810       | -3265      |
| 523 | 22          | -1          | -10          | 19         | 701        |
| 524 | 39          | -158        | -19          | -19        | 1410       |
| 525 | -19         | -678        | -6           | -59        | 2841       |
| 526 | -117        | -1460       | 89           | -91        | 4297       |
| 527 | -803        | -2677       | 209          | 0          | 5030       |
| 528 | -803        | -2677       | 209          | 0          | 5030       |
| 529 | -803        | -2677       | 209          | 0          | 5030       |
| 530 | -10443      | -34810      | -3211        | 0          | -23715     |
| 531 | -1728       | -25952      | -1409        | -1633      | -20081     |
| 532 | -901        | -21146      | 12           | -1652      | -13026     |
| 533 | -663        | -17367      | 863          | -1496      | -6460      |
| 534 | -135        | -16842      | 1492         | -2217      | -1683      |
| 535 | -665        | -17746      | 1839         | -3012      | -2234      |
| 536 | 57          | -17074      | 704          | 3205       | -9192      |
| 537 | 2254        | -12560      | -222         | 5809       | -15099     |
| 538 | 13          | -5999       | -111         | 2753       | -14200     |
| 539 | 302         | -1439       | 22           | 1800       | -7777      |
| 540 | 186         | -57         | 29           | 2819       | -3878      |
| 541 | 2           | -4          | -16          | 33         | 778        |
| 542 | 30          | -146        | -30          | -7         | 1502       |
| 543 | 11          | -577        | -50          | -38        | 2869       |
| 544 | 28          | -1404       | 91           | -91        | 4126       |
| 545 | -832        | -2774       | 401          | 0          | 4738       |
| 546 | -832        | -2774       | 401          | 0          | 4738       |
| 547 | -832        | -2774       | 401          | 0          | 4738       |
| 548 | -11208      | -37361      | -5587        | 0          | -18869     |
| 549 | 190         | -25709      | -1504        | -1447      | -16659     |
| 550 | -37         | -19039      | 353          | -1096      | -12476     |
| 551 | 1254        | -16727      | 618          | -883       | -8409      |
| 552 | 573         | -16774      | 944          | -1702      | -5517      |
| 553 | 216         | -17526      | 1007         | -1829      | -6327      |
| 554 | 563         | -16551      | 1102         | 1289       | -10715     |
| 555 | 325         | -12103      | 846          | 3183       | -14452     |
| 556 | -180        | -6157       | 180          | 2137       | -13726     |
| 557 | 1           | -1645       | 151          | 1056       | -8103      |
| 558 | -2          | -59         | 81           | 1892       | -4369      |

**Combinazione n° 6 - STR (A1-M1-R3)**

| In | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |
|----|-------------|-------------|--------------|------------|------------|
| 1  | 2           | -4          | 21           | -25        | 778        |
| 2  | 22          | -1          | 12           | -14        | 701        |
| 3  | 39          | -158        | 25           | 24         | 1410       |
| 4  | 30          | -146        | 38           | 9          | 1502       |
| 5  | 51          | -11         | 14           | 24         | 705        |
| 6  | 46          | -178        | 19           | 50         | 1426       |
| 7  | -19         | -678        | 7            | 76         | 2841       |
| 8  | 11          | -577        | 65           | 49         | 2869       |
| 9  | -47         | -678        | -1           | 97         | 2885       |
| 10 | 75          | -9          | 8            | 66         | 723        |
| 11 | 37          | -176        | 8            | 64         | 1451       |
| 12 | -102        | -680        | -9           | 80         | 2920       |
| 13 | -117        | -1460       | -69          | 119        | 4297       |
| 14 | 28          | -1404       | -70          | 118        | 4126       |
| 15 | -291        | -1495       | -63          | 101        | 4367       |
| 16 | -370        | -1513       | -40          | 68         | 4401       |
| 17 | 72          | -2          | 3            | 78         | 735        |
| 18 | 9           | -172        | 0            | 64         | 1470       |
| 19 | -144        | -679        | -8           | 60         | 2944       |
| 20 | -414        | -1521       | -21          | 43         | 4420       |
| 21 | -803        | -2677       | -161         | 0          | 5030       |
| 22 | -832        | -2774       | -309         | 0          | 4738       |
| 23 | -810        | -2701       | -89          | 0          | 5111       |
| 24 | -813        | -2709       | -52          | 0          | 5143       |
| 25 | -814        | -2715       | -26          | 0          | 5157       |
| 26 | 54          | 0           | 1            | 70         | 738        |
| 27 | -13         | -170        | -1           | 54         | 1476       |
| 28 | -170        | -679        | -5           | 43         | 2950       |
| 29 | -436        | -1525       | -11          | 26         | 4422       |

PROGETTAZIONE ATI:

| In  | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |
|-----|-------------|-------------|--------------|------------|------------|
| 30  | -815        | -2716       | -12          | 0          | 5157       |
| 31  | -815        | -2716       | -12          | 0          | 5157       |
| 32  | -815        | -2716       | -12          | 0          | 5157       |
| 33  | -815        | -2716       | -12          | 0          | 5157       |
| 34  | -815        | -2716       | -12          | 0          | 5157       |
| 35  | -815        | -2716       | -12          | 0          | 5157       |
| 36  | -815        | -2716       | -12          | 0          | 5157       |
| 37  | 34          | 1           | 1            | 54         | 738        |
| 38  | -28         | -170        | -1           | 41         | 1475       |
| 39  | -185        | -678        | -2           | 30         | 2948       |
| 40  | -446        | -1526       | -5           | 16         | 4417       |
| 41  | -814        | -2715       | -5           | 0          | 5151       |
| 42  | -814        | -2715       | -5           | 0          | 5151       |
| 43  | -814        | -2715       | -5           | 0          | 5151       |
| 44  | -814        | -2715       | -5           | 0          | 5151       |
| 45  | -814        | -2715       | -5           | 0          | 5151       |
| 46  | -814        | -2715       | -5           | 0          | 5151       |
| 47  | -814        | -2715       | -5           | 0          | 5151       |
| 48  | -814        | -2715       | -5           | 0          | 5151       |
| 49  | -814        | -2715       | -5           | 0          | 5151       |
| 50  | 19          | 1           | 1            | 39         | 737        |
| 51  | -38         | -170        | 0            | 29         | 1473       |
| 52  | -193        | -678        | 0            | 20         | 2943       |
| 53  | -452        | -1525       | -1           | 10         | 4411       |
| 54  | -814        | -2713       | -2           | 0          | 5144       |
| 55  | -814        | -2713       | -2           | 0          | 5144       |
| 56  | -814        | -2713       | -2           | 0          | 5144       |
| 57  | -10443      | -34810      | 20144        | 0          | -23715     |
| 58  | -11208      | -37361      | 31569        | 0          | -18869     |
| 59  | -10556      | -35187      | 13836        | 0          | -25204     |
| 60  | -10616      | -35385      | 9784         | 0          | -25649     |
| 61  | -10619      | -35398      | 6296         | 0          | -25581     |
| 62  | -10572      | -35240      | 4092         | 0          | -25244     |
| 63  | -10497      | -34991      | 2674         | 0          | -24845     |
| 64  | -10416      | -34721      | 1740         | 0          | -24474     |
| 65  | 10          | 0           | 1            | 27         | 735        |
| 66  | -44         | -169        | 1            | 19         | 1470       |
| 67  | -198        | -678        | 1            | 13         | 2938       |
| 68  | -455        | -1525       | 1            | 6          | 4405       |
| 69  | -813        | -2710       | 0            | 0          | 5137       |
| 70  | -813        | -2710       | 0            | 0          | 5137       |
| 71  | -813        | -2710       | 0            | 0          | 5137       |
| 72  | -10341      | -34471      | 1127         | 0          | -24164     |
| 73  | -1728       | -25952      | 10659        | 7741       | -20081     |
| 74  | 190         | -25709      | 9880         | 6608       | -16659     |
| 75  | -4433       | -26398      | 11994        | 8741       | -21244     |
| 76  | -5885       | -26671      | 9180         | 7961       | -21600     |
| 77  | -6852       | -26795      | 6210         | 6464       | -21555     |
| 78  | -7410       | -26797      | 4169         | 4884       | -21266     |
| 79  | -7702       | -26691      | 2798         | 3585       | -20902     |
| 80  | -7844       | -26544      | 1843         | 2585       | -20555     |
| 81  | -7901       | -26410      | 1198         | 1846       | -20275     |
| 82  | 5           | 0           | 1            | 18         | 734        |
| 83  | -48         | -169        | 1            | 12         | 1468       |
| 84  | -201        | -677        | 1            | 8          | 2934       |
| 85  | -456        | -1523       | 2            | 3          | 4399       |
| 86  | -812        | -2708       | 1            | 0          | 5131       |
| 87  | -812        | -2708       | 1            | 0          | 5131       |
| 88  | -812        | -2708       | 1            | 0          | 5131       |
| 89  | -10273      | -34243      | 734          | 0          | -23911     |
| 90  | -7913       | -26276      | 804          | 1321       | -20044     |
| 91  | -901        | -21146      | 4221         | 8421       | -13026     |
| 92  | -37         | -19039      | 1110         | 5555       | -12476     |
| 93  | -1923       | -21047      | 5909         | 11311      | -13328     |
| 94  | -3383       | -21024      | 5751         | 10633      | -13438     |
| 95  | -4592       | -21078      | 4364         | 8898       | -13423     |
| 96  | -5369       | -21131      | 3278         | 6947       | -13295     |
| 97  | -5827       | -21007      | 2448         | 5262       | -12955     |
| 98  | -6089       | -20869      | 1647         | 3880       | -12641     |
| 99  | -6220       | -20871      | 1038         | 2823       | -12463     |
| 100 | -6284       | -20871      | 793          | 2079       | -12340     |
| 101 | 1           | 0           | 1            | 11         | 733        |
| 102 | -50         | -169        | 1            | 8          | 1466       |
| 103 | -203        | -677        | 1            | 4          | 2931       |
| 104 | -457        | -1522       | 2            | 2          | 4395       |
| 105 | -812        | -2706       | 2            | 0          | 5127       |
| 106 | -812        | -2706       | 2            | 0          | 5127       |
| 107 | -812        | -2706       | 2            | 0          | 5127       |
| 108 | -10210      | -34033      | 477          | 0          | -23706     |
| 109 | -7906       | -26128      | 546          | 940        | -19842     |
| 110 | -6320       | -20717      | 650          | 1527       | -12099     |
| 111 | -663        | -17367      | 1321         | 6915       | -6460      |
| 112 | 1254        | -16727      | -90          | 4328       | -8409      |
| 113 | -1619       | -17322      | 2444         | 10103      | -5519      |
| 114 | -2580       | -17116      | 2559         | 10169      | -4820      |

PROGETTAZIONE ATI:

| In  | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |
|-----|-------------|-------------|--------------|------------|------------|
| 115 | -3536       | -17500      | 2159         | 8800       | -5329      |
| 116 | -4211       | -17816      | 2313         | 7210       | -5482      |
| 117 | -4752       | -17502      | 2387         | 5724       | -5010      |
| 118 | -5070       | -17094      | 1459         | 4284       | -4281      |
| 119 | -5218       | -17463      | 591          | 3121       | -4682      |
| 120 | -5260       | -17753      | 811          | 2422       | -4856      |
| 121 | -5375       | -17392      | 1092         | 1906       | -4406      |
| 122 | 0           | 0           | 1            | 7          | 733        |
| 123 | -51         | -169        | 1            | 5          | 1465       |
| 124 | -203        | -676        | 1            | 2          | 2929       |
| 125 | -457        | -1521       | 2            | 1          | 4392       |
| 126 | -811        | -2704       | 1            | 0          | 5124       |
| 127 | -811        | -2704       | 1            | 0          | 5124       |
| 128 | -811        | -2704       | 1            | 0          | 5124       |
| 129 | -10158      | -33859      | 295          | 0          | -23547     |
| 130 | -7889       | -25997      | 333          | 648        | -19683     |
| 131 | -6337       | -20572      | 356          | 1061       | -11914     |
| 132 | -5430       | -16961      | 401          | 1291       | -3739      |
| 133 | -135        | -16842      | 989          | 5702       | -1683      |
| 134 | 573         | -16774      | -324         | 3496       | -5517      |
| 135 | -2009       | -15409      | 1872         | 8148       | 4321       |
| 136 | -3307       | -14910      | 285          | 8053       | 4557       |
| 137 | -3443       | -16210      | 52           | 7093       | 3752       |
| 138 | -3852       | -17944      | 1391         | 6346       | -696       |
| 139 | -4458       | -16406      | 3451         | 5587       | 3807       |
| 140 | -5149       | -15061      | 1250         | 4093       | 5393       |
| 141 | -4919       | -16449      | 419          | 2764       | 3981       |
| 142 | -4821       | -18032      | 816          | 2467       | -372       |
| 143 | -5105       | -16439      | 2672         | 2305       | 4165       |
| 144 | -5559       | -15050      | 444          | 1379       | 5748       |
| 145 | -1          | 0           | 0            | 4          | 732        |
| 146 | -52         | -169        | 1            | 3          | 1464       |
| 147 | -204        | -676        | 1            | 1          | 2928       |
| 148 | -457        | -1521       | 1            | 0          | 4391       |
| 149 | -811        | -2703       | 1            | 0          | 5122       |
| 150 | -811        | -2703       | 1            | 0          | 5122       |
| 151 | -811        | -2703       | 1            | 0          | 5122       |
| 152 | -10120      | -33732      | 173          | 0          | -23437     |
| 153 | -7869       | -25916      | 181          | 426        | -19585     |
| 154 | -6330       | -20591      | 114          | 693        | -11873     |
| 155 | -5416       | -17322      | 30           | 775        | -4223      |
| 156 | -5170       | -16412      | 592          | 534        | 4302       |
| 157 | -665        | -17746      | 1295         | 9742       | -2234      |
| 158 | 216         | -17526      | -909         | 4661       | -6327      |
| 159 | 1532        | -19530      | 2962         | 8268       | 6832       |
| 160 | -5072       | -11149      | -941         | 5869       | 41085      |
| 161 | -4012       | -20413      | 766          | 4495       | 2739       |
| 162 | -1076       | -18355      | 614          | 4897       | -1435      |
| 163 | -6278       | -20609      | 5053         | 6847       | 2681       |
| 164 | -6591       | -12183      | 1029         | 3546       | 40343      |
| 165 | -6688       | -20704      | 1164         | 2112       | 2734       |
| 166 | -1931       | -18570      | 791          | 2311       | -1348      |
| 167 | -6885       | -20734      | 4699         | 6187       | 2837       |
| 168 | -7010       | -12252      | 467          | 1364       | 40535      |
| 169 | -6967       | -20735      | 1346         | 198        | 2929       |
| 170 | -1          | 0           | 0            | 2          | 732        |
| 171 | -52         | -169        | 0            | 1          | 1463       |
| 172 | -204        | -676        | 1            | 1          | 2927       |
| 173 | -457        | -1520       | 1            | 0          | 4389       |
| 174 | -811        | -2702       | 1            | 0          | 5121       |
| 175 | -811        | -2702       | 1            | 0          | 5121       |
| 176 | -811        | -2702       | 1            | 0          | 5121       |
| 177 | -10093      | -33644      | 101          | 0          | -23363     |
| 178 | -7852       | -25861      | 116          | 265        | -19520     |
| 179 | -6322       | -20627      | 132          | 447        | -11883     |
| 180 | -5363       | -17620      | 160          | 560        | -4489      |
| 181 | -4969       | -17984      | 187          | 616        | -103       |
| 182 | -2111       | -18577      | 206          | 630        | -1171      |
| 183 | 57          | -17074      | 35           | 14942      | -9192      |
| 184 | 563         | -16551      | -484         | 6353       | -10715     |
| 185 | 333         | -20503      | 11981        | 56434      | -8773      |
| 186 | 6037        | -27804      | 243          | 7350       | -6532      |
| 187 | -324        | -18840      | 738          | 15685      | -8346      |
| 188 | -478        | -17623      | 197          | 3357       | -7769      |
| 189 | -812        | -19132      | 11080        | 42339      | -8404      |
| 190 | 359         | -28272      | 817          | 2833       | -6661      |
| 191 | -1162       | -19253      | 973          | 14623      | -8436      |
| 192 | -1164       | -17883      | 729          | 2037       | -7836      |
| 193 | -1359       | -19302      | 11047        | 41785      | -8398      |
| 194 | -2883       | -28928      | 460          | 1281       | -6601      |
| 195 | -1454       | -19317      | 1152         | 13121      | -8346      |
| 196 | -1365       | -17920      | 210          | 613        | -7740      |
| 197 | -1          | 0           | 0            | 1          | 732        |
| 198 | -52         | -169        | 0            | 1          | 1463       |
| 199 | -204        | -676        | 0            | 0          | 2926       |

PROGETTAZIONE ATI:

| In  | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |
|-----|-------------|-------------|--------------|------------|------------|
| 200 | -457        | -1520       | 0            | 0          | 4389       |
| 201 | -810        | -2701       | 0            | 0          | 5120       |
| 202 | -810        | -2701       | 0            | 0          | 5120       |
| 203 | -810        | -2701       | 0            | 0          | 5120       |
| 204 | -10074      | -33581      | 52           | 0          | -23314     |
| 205 | -7843       | -25806      | 76           | 132        | -19467     |
| 206 | -6324       | -20522      | 173          | 241        | -11766     |
| 207 | -5423       | -17281      | 587          | 387        | -4133      |
| 208 | -5189       | -16392      | 2146         | 921        | 4372       |
| 209 | -6996       | -20730      | 4174         | 6026       | 2980       |
| 210 | -1491       | -19320      | 10551        | 41594      | -8314      |
| 211 | 2254        | -12560      | 949          | 8714       | -15099     |
| 212 | 325         | -12103      | -41          | 4306       | -14452     |
| 213 | 587         | -14391      | 1597         | 5798       | -18826     |
| 214 | 4174        | 9502        | -410         | 426        | 1248       |
| 215 | 1245        | -14718      | -1046        | 4608       | -17762     |
| 216 | 4201        | -13111      | -115         | 1765       | -13653     |
| 217 | 177         | -14972      | 3367         | 5068       | -17838     |
| 218 | 3001        | 8409        | 613          | 1997       | -1661      |
| 219 | -1535       | -15084      | -896         | 5554       | -17920     |
| 220 | 971         | -13358      | 623          | 1670       | -13805     |
| 221 | -2935       | -15132      | 3503         | 4620       | -17930     |
| 222 | 237         | 8070        | 415          | 1142       | -2934      |
| 223 | -3858       | -15152      | -730         | 4536       | -17911     |
| 224 | -673        | -13401      | 195          | 570        | -13776     |
| 225 | -4307       | -15159      | 3117         | 4403       | -17896     |
| 226 | -1          | 0           | 0            | 0          | 732        |
| 227 | -52         | -169        | 0            | 0          | 1463       |
| 228 | -204        | -676        | 0            | 0          | 2926       |
| 229 | -457        | -1520       | 0            | 0          | 4389       |
| 230 | -810        | -2701       | 0            | 0          | 5120       |
| 231 | -810        | -2701       | 0            | 0          | 5120       |
| 232 | -810        | -2701       | 0            | 0          | 5120       |
| 233 | -10067      | -33556      | 0            | 0          | -23296     |
| 234 | -7841       | -25778      | 0            | 0          | -19441     |
| 235 | -6329       | -20437      | 0            | 0          | -11698     |
| 236 | -5450       | -16881      | 0            | 0          | -3559      |
| 237 | -5603       | -15013      | 0            | 0          | 5887       |
| 238 | -7073       | -12244      | 0            | 0          | 40634      |
| 239 | -3777       | -29197      | 0            | 0          | -6539      |
| 240 | -669        | 7896        | 0            | 0          | -3105      |
| 241 | 13          | -5999       | 390          | 1256       | -14200     |
| 242 | -180        | -6157       | -48          | 1171       | -13726     |
| 243 | 826         | -3615       | 472          | 1848       | -11318     |
| 244 | 2610        | -915        | -292         | 1092       | -8872      |
| 245 | 3027        | -4872       | -536         | 317        | -10802     |
| 246 | 3095        | -6672       | -95          | 803        | -13709     |
| 247 | 2998        | -5100       | 1544         | 1170       | -11898     |
| 248 | 3045        | -899        | 433          | 1244       | -9926      |
| 249 | 1870        | -5131       | -493         | 1941       | -12810     |
| 250 | 1142        | -6842       | 475          | 1307       | -13906     |
| 251 | 665         | -5190       | 1716         | 823        | -13268     |
| 252 | 728         | -1011       | 327          | 984        | -10895     |
| 253 | -222        | -5258       | -352         | 1354       | -13461     |
| 254 | -605        | -6874       | 155          | 513        | -13912     |
| 255 | -674        | -5299       | 1389         | 562        | -13529     |
| 256 | -174        | -1099       | 0            | 0          | -11044     |
| 257 | -1          | 0           | 0            | -1         | 732        |
| 258 | -52         | -169        | 0            | 0          | 1463       |
| 259 | -204        | -676        | 0            | 0          | 2926       |
| 260 | -457        | -1520       | 0            | 0          | 4389       |
| 261 | -810        | -2701       | 0            | 0          | 5120       |
| 262 | -810        | -2701       | 0            | 0          | 5120       |
| 263 | -810        | -2701       | 0            | 0          | 5120       |
| 264 | -10074      | -33581      | 44           | 0          | -23314     |
| 265 | -7843       | -25806      | 55           | 22         | -19467     |
| 266 | -6324       | -20522      | 84           | 3          | -11766     |
| 267 | -5423       | -17281      | 229          | -109       | -4133      |
| 268 | -5189       | -16392      | 803          | -735       | 4372       |
| 269 | -6996       | -20730      | 1563         | -1088      | 2980       |
| 270 | -1491       | -19320      | 1369         | 11881      | -8314      |
| 271 | -4307       | -15159      | -522         | 3394       | -17896     |
| 272 | -674        | -5299       | -169         | 337        | -13529     |
| 273 | 302         | -1439       | 156          | 348        | -7777      |
| 274 | 1           | -1645       | -116         | 113        | -8103      |
| 275 | 1176        | -749        | -7           | 547        | -6396      |
| 276 | 2185        | -538        | -142         | 597        | -5218      |
| 277 | 3191        | -1209       | -212         | 654        | -5513      |
| 278 | 3644        | -1536       | -35          | 748        | -6073      |
| 279 | 3765        | -1254       | 378          | 810        | -5990      |
| 280 | 3556        | -613        | 241          | 720        | -5747      |
| 281 | 3029        | -1208       | 38           | 965        | -6472      |
| 282 | 2421        | -1609       | 272          | 966        | -6990      |
| 283 | 1960        | -1202       | 478          | 845        | -6702      |
| 284 | 1550        | -595        | 189          | 810        | -6263      |

PROGETTAZIONE ATI:

| In  | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |
|-----|-------------|-------------|--------------|------------|------------|
| 285 | 1104        | -1220       | -104         | 724        | -6799      |
| 286 | 753         | -1623       | 90           | 441        | -7199      |
| 287 | 652         | -1236       | 286          | 158        | -6835      |
| 288 | 657         | -623        | 0            | 0          | -6351      |
| 289 | 652         | -1236       | 2            | -134       | -6835      |
| 290 | -1          | 0           | 0            | -2         | 732        |
| 291 | -52         | -169        | 0            | -1         | 1463       |
| 292 | -204        | -676        | 0            | 0          | 2927       |
| 293 | -457        | -1520       | -1           | 0          | 4389       |
| 294 | -811        | -2702       | -1           | 0          | 5121       |
| 295 | -811        | -2702       | -1           | 0          | 5121       |
| 296 | -811        | -2702       | -1           | 0          | 5121       |
| 297 | -10093      | -33644      | 84           | 0          | -23363     |
| 298 | -7852       | -25861      | 96           | 47         | -19520     |
| 299 | -6322       | -20627      | 100          | 43         | -11883     |
| 300 | -5363       | -17620      | 109          | 20         | -4489      |
| 301 | -4969       | -17984      | 115          | -8         | -103       |
| 302 | -2111       | -18577      | 119          | -33        | -1171      |
| 303 | -1365       | -17920      | 119          | -55        | -7740      |
| 304 | -673        | -13401      | 113          | -79        | -13776     |
| 305 | -605        | -6874       | 99           | -111       | -13912     |
| 306 | 753         | -1623       | 65           | -176       | -7199      |
| 307 | 186         | -57         | 106          | -79        | -3878      |
| 308 | -2          | -59         | -7           | -131       | -4369      |
| 309 | 884         | 69          | 104          | 182        | -3265      |
| 310 | 1851        | 91          | -45          | 535        | -2724      |
| 311 | 3007        | 5           | -91          | 831        | -2693      |
| 312 | 3742        | -24         | 26           | 1065       | -2931      |
| 313 | 3940        | 0           | 140          | 1167       | -2948      |
| 314 | 3750        | 101         | 116          | 1147       | -2988      |
| 315 | 3345        | 0           | 67           | 1062       | -3196      |
| 316 | 2844        | -20         | 120          | 962        | -3399      |
| 317 | 2311        | 12          | 163          | 837        | -3320      |
| 318 | 1838        | 154         | 80           | 680        | -3251      |
| 319 | 1468        | 14          | -4           | 519        | -3378      |
| 320 | 1205        | -21         | 36           | 352        | -3509      |
| 321 | 1024        | 12          | 78           | 184        | -3400      |
| 322 | 959         | 151         | 0            | 0          | -3300      |
| 323 | 1024        | 12          | 15           | -128       | -3400      |
| 324 | 1205        | -21         | 41           | -323       | -3509      |
| 325 | -1          | 0           | 0            | -3         | 732        |
| 326 | -52         | -169        | 0            | -2         | 1464       |
| 327 | -204        | -676        | -1           | -1         | 2928       |
| 328 | -457        | -1521       | -1           | 0          | 4391       |
| 329 | -811        | -2703       | -1           | 0          | 5122       |
| 330 | -811        | -2703       | -1           | 0          | 5122       |
| 331 | -811        | -2703       | -1           | 0          | 5122       |
| 332 | -10120      | -33732      | 122          | 0          | -23437     |
| 333 | -7869       | -25916      | 136          | 68         | -19585     |
| 334 | -6330       | -20591      | 116          | 77         | -11873     |
| 335 | -5416       | -17322      | 259          | 161        | -4223      |
| 336 | -5170       | -16412      | 1754         | 895        | 4302       |
| 337 | -6967       | -20735      | 3748         | 5949       | 2929       |
| 338 | -1454       | -19317      | 10120        | 41475      | -8346      |
| 339 | -3858       | -15152      | 2790         | 4237       | -17911     |
| 340 | -222        | -5258       | 1130         | 329        | -13461     |
| 341 | 1104        | -1220       | 148          | -205       | -6799      |
| 342 | 1468        | 14          | 71           | -467       | -3378      |
| 343 | 0           | 0           | 0            | -5         | 733        |
| 344 | -51         | -169        | -1           | -4         | 1465       |
| 345 | -203        | -676        | -1           | -2         | 2929       |
| 346 | -457        | -1521       | -1           | -1         | 4392       |
| 347 | -811        | -2704       | -1           | 0          | 5124       |
| 348 | -811        | -2704       | -1           | 0          | 5124       |
| 349 | -811        | -2704       | -1           | 0          | 5124       |
| 350 | -10158      | -33859      | 161          | 0          | -23547     |
| 351 | -7889       | -25997      | 185          | 74         | -19683     |
| 352 | -6337       | -20572      | 194          | 52         | -11914     |
| 353 | -5430       | -16961      | 210          | -3         | -3739      |
| 354 | -5559       | -15050      | 223          | -59        | 5748       |
| 355 | -7010       | -12252      | 229          | -107       | 40535      |
| 356 | -2883       | -28928      | 228          | -145       | -6601      |
| 357 | 237         | 8070        | 217          | -182       | -2934      |
| 358 | 728         | -1011       | 190          | -238       | -10895     |
| 359 | 1550        | -595        | 124          | -357       | -6263      |
| 360 | 1838        | 154         | 80           | -566       | -3251      |
| 361 | 1           | 0           | -1           | -9         | 733        |
| 362 | -50         | -169        | -1           | -6         | 1466       |
| 363 | -203        | -677        | -1           | -3         | 2931       |
| 364 | -457        | -1522       | -1           | -1         | 4395       |
| 365 | -812        | -2706       | -1           | 0          | 5127       |
| 366 | -812        | -2706       | -1           | 0          | 5127       |
| 367 | -812        | -2706       | -1           | 0          | 5127       |
| 368 | -10210      | -34033      | 195          | 0          | -23706     |
| 369 | -7906       | -26128      | 229          | 66         | -19842     |

PROGETTAZIONE ATI:

| In  | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |
|-----|-------------|-------------|--------------|------------|------------|
| 370 | -6320       | -20717      | 267          | 5          | -12099     |
| 371 | -5375       | -17392      | 413          | -175       | -4406      |
| 372 | -5105       | -16439      | 998          | -909       | 4165       |
| 373 | -6885       | -20734      | 1765         | -2584      | 2837       |
| 374 | -1359       | -19302      | 1569         | 10536      | -8398      |
| 375 | -2935       | -15132      | -331         | 2260       | -17930     |
| 376 | 665         | -5190       | -2           | -561       | -13268     |
| 377 | 1960        | -1202       | 111          | -509       | -6702      |
| 378 | 2311        | 12          | 87           | -574       | -3320      |
| 379 | 5           | 0           | -1           | -14        | 734        |
| 380 | -48         | -169        | -1           | -10        | 1468       |
| 381 | -201        | -677        | -1           | -6         | 2934       |
| 382 | -456        | -1523       | -1           | -3         | 4399       |
| 383 | -812        | -2708       | -1           | 0          | 5131       |
| 384 | -812        | -2708       | -1           | 0          | 5131       |
| 385 | -812        | -2708       | -1           | 0          | 5131       |
| 386 | -10273      | -34243      | 214          | 0          | -23911     |
| 387 | -7913       | -26276      | 251          | 45         | -20044     |
| 388 | -6284       | -20871      | 268          | -30        | -12340     |
| 389 | -5260       | -17753      | 297          | -130       | -4856      |
| 390 | -4821       | -18032      | 318          | -215       | -372       |
| 391 | -1931       | -18570      | 327          | -269       | -1348      |
| 392 | -1164       | -17883      | 324          | -302       | -7836      |
| 393 | 971         | -13358      | 306          | -331       | -13805     |
| 394 | 1142        | -6842       | 266          | -386       | -13906     |
| 395 | 2421        | -1609       | 173          | -534       | -6990      |
| 396 | 2844        | -20         | 112          | -577       | -3399      |
| 397 | 10          | 0           | -1           | -20        | 735        |
| 398 | -44         | -169        | -1           | -15        | 1470       |
| 399 | -198        | -678        | -1           | -10        | 2938       |
| 400 | -455        | -1525       | 0            | -5         | 4405       |
| 401 | -813        | -2710       | 0            | 0          | 5137       |
| 402 | -813        | -2710       | 0            | 0          | 5137       |
| 403 | -813        | -2710       | 0            | 0          | 5137       |
| 404 | -10341      | -34471      | 217          | 0          | -24164     |
| 405 | -7901       | -26410      | 255          | -8         | -20275     |
| 406 | -6220       | -20871      | 259          | -112       | -12463     |
| 407 | -5218       | -17463      | 176          | -120       | -4682      |
| 408 | -4919       | -16449      | 1030         | 561        | 3981       |
| 409 | -6688       | -20704      | 3133         | 5600       | 2734       |
| 410 | -1162       | -19253      | 9629         | 41136      | -8436      |
| 411 | -1535       | -15084      | 2486         | 3921       | -17920     |
| 412 | 1870        | -5131       | 920          | 28         | -12810     |
| 413 | 3029        | -1208       | 245          | -552       | -6472      |
| 414 | 3345        | 0           | 135          | -459       | -3196      |
| 415 | 19          | 1           | -1           | -30        | 737        |
| 416 | -38         | -170        | 0            | -22        | 1473       |
| 417 | -193        | -678        | 0            | -15        | 2943       |
| 418 | -452        | -1525       | 2            | -8         | 4411       |
| 419 | -814        | -2713       | 2            | 0          | 5144       |
| 420 | -814        | -2713       | 2            | 0          | 5144       |
| 421 | -814        | -2713       | 2            | 0          | 5144       |
| 422 | -10416      | -34721      | 192          | 0          | -24474     |
| 423 | -7844       | -26544      | 244          | -114       | -20555     |
| 424 | -6089       | -20869      | 297          | -307       | -12641     |
| 425 | -5070       | -17094      | 363          | -459       | -4281      |
| 426 | -5149       | -15061      | 411          | -545       | 5393       |
| 427 | -6591       | -12183      | 431          | -571       | 40343      |
| 428 | 359         | -28272      | 422          | -562       | -6661      |
| 429 | 3001        | 8409        | 388          | -540       | -1661      |
| 430 | 3045        | -899        | 326          | -552       | -9926      |
| 431 | 3556        | -613        | 208          | -602       | -5747      |
| 432 | 3750        | 101         | 134          | -76        | -2988      |
| 433 | 34          | 1           | -1           | -41        | 738        |
| 434 | -28         | -170        | 1            | -31        | 1475       |
| 435 | -185        | -678        | 3            | -23        | 2948       |
| 436 | -446        | -1526       | 6            | -13        | 4417       |
| 437 | -814        | -2715       | 7            | 0          | 5151       |
| 438 | -814        | -2715       | 7            | 0          | 5151       |
| 439 | -814        | -2715       | 7            | 0          | 5151       |
| 440 | -10497      | -34991      | 111          | 0          | -24845     |
| 441 | -7702       | -26691      | 183          | -287       | -20902     |
| 442 | -5827       | -21007      | 310          | -581       | -12955     |
| 443 | -4752       | -17502      | 550          | -860       | -5010      |
| 444 | -4458       | -16406      | 1180         | -1591      | 3807       |
| 445 | -6278       | -20609      | 1971         | -5025      | 2681       |
| 446 | -812        | -19132      | 1762         | 9012       | -8404      |
| 447 | 177         | -14972      | -175         | 1701       | -17838     |
| 448 | 2998        | -5100       | 109          | -355       | -11898     |
| 449 | 3765        | -1254       | 175          | -53        | -5990      |
| 450 | 3940        | 0           | 127          | 548        | -2948      |
| 451 | 54          | 0           | -1           | -54        | 738        |
| 452 | -13         | -170        | 1            | -41        | 1476       |
| 453 | -170        | -679        | 7            | -33        | 2950       |
| 454 | -436        | -1525       | 14           | -20        | 4422       |

PROGETTAZIONE ATI:



| In  | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |
|-----|-------------|-------------|--------------|------------|------------|
| 455 | -815        | -2716       | 16           | 0          | 5157       |
| 456 | -815        | -2716       | 16           | 0          | 5157       |
| 457 | -815        | -2716       | 16           | 0          | 5157       |
| 458 | -10572      | -35240      | -69          | 0          | -25244     |
| 459 | -7410       | -26797      | 23           | -544       | -21266     |
| 460 | -5369       | -21131      | 224          | -927       | -13295     |
| 461 | -4211       | -17816      | 436          | -1111      | -5482      |
| 462 | -3852       | -17944      | 576          | -1176      | -696       |
| 463 | -1076       | -18355      | 613          | -1016      | -1435      |
| 464 | -478        | -17623      | 577          | -935       | -7769      |
| 465 | 4201        | -13111      | 477          | -781       | -13653     |
| 466 | 3095        | -6672       | 357          | -365       | -13709     |
| 467 | 3644        | -1536       | 211          | 594        | -6073      |
| 468 | 3742        | -24         | 130          | 1372       | -2931      |
| 469 | 72          | -2          | -2           | -60        | 735        |
| 470 | 9           | -172        | 0            | -49        | 1470       |
| 471 | -144        | -679        | 11           | -46        | 2944       |
| 472 | -414        | -1521       | 28           | -33        | 4420       |
| 473 | -814        | -2715       | 33           | 0          | 5157       |
| 474 | -814        | -2715       | 33           | 0          | 5157       |
| 475 | -814        | -2715       | 33           | 0          | 5157       |
| 476 | -10619      | -35398      | -417         | 0          | -25581     |
| 477 | -6852       | -26795      | -277         | -910       | -21555     |
| 478 | -4592       | -21078      | 93           | -1383      | -13423     |
| 479 | -3536       | -17500      | 354          | -1434      | -5329      |
| 480 | -3443       | -16210      | 1005         | -681       | 3752       |
| 481 | -4012       | -20413      | 4025         | 4049       | 2739       |
| 482 | -324        | -18840      | 11501        | 41205      | -8346      |
| 483 | 1245        | -14718      | 3713         | 2805       | -17762     |
| 484 | 3027        | -4872       | 1855         | -136       | -10802     |
| 485 | 3191        | -1209       | 466          | 1404       | -5513      |
| 486 | 3007        | 5           | 121          | 2422       | -2693      |
| 487 | 75          | -9          | -6           | -50        | 723        |
| 488 | 37          | -176        | -6           | -49        | 1451       |
| 489 | -102        | -680        | 12           | -62        | 2920       |
| 490 | -370        | -1513       | 51           | -52        | 4401       |
| 491 | -813        | -2709       | 67           | 0          | 5143       |
| 492 | -813        | -2709       | 67           | 0          | 5143       |
| 493 | -813        | -2709       | 67           | 0          | 5143       |
| 494 | -10616      | -35385      | -1055        | 0          | -25649     |
| 495 | -5885       | -26671      | -782         | -1338      | -21600     |
| 496 | -3383       | -21024      | -13          | -1875      | -13438     |
| 497 | -2580       | -17116      | 647          | -1900      | -4820      |
| 498 | -3307       | -14910      | 950          | -1833      | 4557       |
| 499 | -5072       | -11149      | 1218         | -519       | 41085      |
| 500 | 6037        | -27804      | 972          | -981       | -6532      |
| 501 | 4174        | 9502        | 1875         | -28        | 1248       |
| 502 | 2610        | -915        | 1056         | 1410       | -8872      |
| 503 | 2185        | -538        | 392          | 2242       | -5218      |
| 504 | 1851        | 91          | 88           | 3439       | -2724      |
| 505 | 51          | -11         | -11          | -18        | 705        |
| 506 | 46          | -178        | -15          | -39        | 1426       |
| 507 | -47         | -678        | 1            | -75        | 2885       |
| 508 | -291        | -1495       | 82           | -78        | 4367       |
| 509 | -810        | -2701       | 116          | 0          | 5111       |
| 510 | -810        | -2701       | 116          | 0          | 5111       |
| 511 | -810        | -2701       | 116          | 0          | 5111       |
| 512 | -10556      | -35187      | -1873        | 0          | -25204     |
| 513 | -4433       | -26398      | -1366        | -1685      | -21244     |
| 514 | -1923       | -21047      | 10           | -2157      | -13328     |
| 515 | -1619       | -17322      | 962          | -2110      | -5519      |
| 516 | -2009       | -15409      | 1881         | -2913      | 4321       |
| 517 | 1532        | -19530      | 2748         | -6103      | 6832       |
| 518 | 333         | -20503      | 2509         | 14258      | -8773      |
| 519 | 587         | -14391      | -290         | 5202       | -18826     |
| 520 | 826         | -3615       | -18          | 3004       | -11318     |
| 521 | 1176        | -749        | 89           | 2571       | -6396      |
| 522 | 884         | 69          | 45           | 3810       | -3265      |
| 523 | 22          | -1          | -10          | 19         | 701        |
| 524 | 39          | -158        | -19          | -19        | 1410       |
| 525 | -19         | -678        | -6           | -59        | 2841       |
| 526 | -117        | -1460       | 89           | -91        | 4297       |
| 527 | -803        | -2677       | 209          | 0          | 5030       |
| 528 | -803        | -2677       | 209          | 0          | 5030       |
| 529 | -803        | -2677       | 209          | 0          | 5030       |
| 530 | -10443      | -34810      | -3211        | 0          | -23715     |
| 531 | -1728       | -25952      | -1409        | -1633      | -20081     |
| 532 | -901        | -21146      | 12           | -1652      | -13026     |
| 533 | -663        | -17367      | 863          | -1496      | -6460      |
| 534 | -135        | -16842      | 1492         | -2217      | -1683      |
| 535 | -665        | -17746      | 1839         | -3012      | -2234      |
| 536 | 57          | -17074      | 704          | 3205       | -9192      |
| 537 | 2254        | -12560      | -222         | 5809       | -15099     |
| 538 | 13          | -5999       | -111         | 2753       | -14200     |
| 539 | 302         | -1439       | 22           | 1800       | -7777      |

PROGETTAZIONE ATI:

| In  | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |
|-----|-------------|-------------|--------------|------------|------------|
| 540 | 186         | -57         | 29           | 2819       | -3878      |
| 541 | 2           | -4          | -16          | 33         | 778        |
| 542 | 30          | -146        | -30          | -7         | 1502       |
| 543 | 11          | -577        | -50          | -38        | 2869       |
| 544 | 28          | -1404       | 91           | -91        | 4126       |
| 545 | -832        | -2774       | 401          | 0          | 4738       |
| 546 | -832        | -2774       | 401          | 0          | 4738       |
| 547 | -832        | -2774       | 401          | 0          | 4738       |
| 548 | -11208      | -37361      | -5587        | 0          | -18869     |
| 549 | 190         | -25709      | -1504        | -1447      | -16659     |
| 550 | -37         | -19039      | 353          | -1096      | -12476     |
| 551 | 1254        | -16727      | 618          | -883       | -8409      |
| 552 | 573         | -16774      | 944          | -1702      | -5517      |
| 553 | 216         | -17526      | 1007         | -1829      | -6327      |
| 554 | 563         | -16551      | 1102         | 1289       | -10715     |
| 555 | 325         | -12103      | 846          | 3183       | -14452     |
| 556 | -180        | -6157       | 180          | 2137       | -13726     |
| 557 | 1           | -1645       | 151          | 1056       | -8103      |
| 558 | -2          | -59         | 81           | 1892       | -4369      |

Combinazione n° 13 - ECC

| In | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |
|----|-------------|-------------|--------------|------------|------------|
| 1  | 2           | -4          | 21           | -25        | 778        |
| 2  | 22          | -1          | 12           | -14        | 701        |
| 3  | 39          | -158        | 25           | 24         | 1410       |
| 4  | 30          | -146        | 38           | 9          | 1502       |
| 5  | 51          | -11         | 14           | 24         | 705        |
| 6  | 46          | -178        | 19           | 50         | 1426       |
| 7  | -19         | -678        | 7            | 76         | 2841       |
| 8  | 11          | -577        | 65           | 49         | 2869       |
| 9  | -47         | -678        | -1           | 97         | 2885       |
| 10 | 75          | -9          | 8            | 66         | 723        |
| 11 | 37          | -176        | 8            | 64         | 1451       |
| 12 | -102        | -680        | -9           | 80         | 2920       |
| 13 | -117        | -1460       | -69          | 119        | 4297       |
| 14 | 28          | -1404       | -70          | 118        | 4126       |
| 15 | -291        | -1495       | -63          | 101        | 4367       |
| 16 | -370        | -1513       | -40          | 68         | 4401       |
| 17 | 72          | -2          | 3            | 78         | 735        |
| 18 | 9           | -172        | 0            | 64         | 1470       |
| 19 | -144        | -679        | -8           | 60         | 2944       |
| 20 | -414        | -1521       | -21          | 43         | 4420       |
| 21 | -803        | -2677       | -161         | 0          | 5030       |
| 22 | -832        | -2774       | -309         | 0          | 4738       |
| 23 | -810        | -2701       | -89          | 0          | 5111       |
| 24 | -813        | -2709       | -52          | 0          | 5143       |
| 25 | -814        | -2715       | -26          | 0          | 5157       |
| 26 | 54          | 0           | 1            | 70         | 738        |
| 27 | -13         | -170        | -1           | 54         | 1476       |
| 28 | -170        | -679        | -5           | 43         | 2950       |
| 29 | -436        | -1525       | -11          | 26         | 4422       |
| 30 | -815        | -2716       | -12          | 0          | 5157       |
| 31 | -815        | -2716       | -12          | 0          | 5157       |
| 32 | -815        | -2716       | -12          | 0          | 5157       |
| 33 | -815        | -2716       | -12          | 0          | 5157       |
| 34 | -815        | -2716       | -12          | 0          | 5157       |
| 35 | -815        | -2716       | -12          | 0          | 5157       |
| 36 | -815        | -2716       | -12          | 0          | 5157       |
| 37 | 34          | 1           | 1            | 54         | 738        |
| 38 | -28         | -170        | -1           | 41         | 1475       |
| 39 | -185        | -678        | -2           | 30         | 2948       |
| 40 | -446        | -1526       | -5           | 16         | 4417       |
| 41 | -814        | -2715       | -5           | 0          | 5151       |
| 42 | -814        | -2715       | -5           | 0          | 5151       |
| 43 | -814        | -2715       | -5           | 0          | 5151       |
| 44 | -814        | -2715       | -5           | 0          | 5151       |
| 45 | -814        | -2715       | -5           | 0          | 5151       |
| 46 | -814        | -2715       | -5           | 0          | 5151       |
| 47 | -814        | -2715       | -5           | 0          | 5151       |
| 48 | -814        | -2715       | -5           | 0          | 5151       |
| 49 | -814        | -2715       | -5           | 0          | 5151       |
| 50 | 19          | 1           | 1            | 39         | 737        |
| 51 | -38         | -170        | 0            | 29         | 1473       |
| 52 | -193        | -678        | 0            | 20         | 2943       |
| 53 | -452        | -1525       | -1           | 10         | 4411       |
| 54 | -814        | -2713       | -2           | 0          | 5144       |
| 55 | -814        | -2713       | -2           | 0          | 5144       |
| 56 | -814        | -2713       | -2           | 0          | 5144       |
| 57 | -10443      | -34810      | 20144        | 0          | -19622     |
| 58 | -11208      | -37361      | 31569        | 0          | -13141     |
| 59 | -10556      | -35187      | 13836        | 0          | -21957     |
| 60 | -10616      | -35385      | 9784         | 0          | -22921     |

PROGETTAZIONE ATI:

| In  | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |
|-----|-------------|-------------|--------------|------------|------------|
| 61  | -10619      | -35398      | 6296         | 0          | -23266     |
| 62  | -10572      | -35240      | 4092         | 0          | -23169     |
| 63  | -10497      | -34991      | 2674         | 0          | -22916     |
| 64  | -10416      | -34721      | 1740         | 0          | -22634     |
| 65  | 10          | 0           | 1            | 27         | 735        |
| 66  | -44         | -169        | 1            | 19         | 1470       |
| 67  | -198        | -678        | 1            | 13         | 2938       |
| 68  | -455        | -1525       | 1            | 6          | 4405       |
| 69  | -813        | -2710       | 0            | 0          | 5137       |
| 70  | -813        | -2710       | 0            | 0          | 5137       |
| 71  | -813        | -2710       | 0            | 0          | 5137       |
| 72  | -10341      | -34471      | 1127         | 0          | -22381     |
| 73  | -1728       | -25952      | 10659        | 7741       | -17010     |
| 74  | 190         | -25709      | 9880         | 6608       | -11996     |
| 75  | -4433       | -26398      | 11994        | 8741       | -18963     |
| 76  | -5885       | -26671      | 9180         | 7961       | -19797     |
| 77  | -6852       | -26795      | 6210         | 6464       | -20139     |
| 78  | -7410       | -26797      | 4169         | 4884       | -20086     |
| 79  | -7702       | -26691      | 2798         | 3585       | -19864     |
| 80  | -7844       | -26544      | 1843         | 2585       | -19606     |
| 81  | -7901       | -26410      | 1198         | 1846       | -19390     |
| 82  | 5           | 0           | 1            | 18         | 734        |
| 83  | -48         | -169        | 1            | 12         | 1468       |
| 84  | -201        | -677        | 1            | 8          | 2934       |
| 85  | -456        | -1523       | 2            | 3          | 4399       |
| 86  | -812        | -2708       | 1            | 0          | 5131       |
| 87  | -812        | -2708       | 1            | 0          | 5131       |
| 88  | -812        | -2708       | 1            | 0          | 5131       |
| 89  | -10273      | -34243      | 734          | 0          | -22166     |
| 90  | -7913       | -26276      | 804          | 1321       | -19201     |
| 91  | -901        | -21146      | 4221         | 8421       | -12006     |
| 92  | -37         | -19039      | 1110         | 5555       | -10145     |
| 93  | -1923       | -21047      | 5909         | 11311      | -12978     |
| 94  | -3383       | -21024      | 5751         | 10633      | -13438     |
| 95  | -4592       | -21078      | 4364         | 8898       | -13423     |
| 96  | -5369       | -21131      | 3278         | 6947       | -13295     |
| 97  | -5827       | -21007      | 2448         | 5262       | -12955     |
| 98  | -6089       | -20869      | 1647         | 3880       | -12641     |
| 99  | -6220       | -20871      | 1038         | 2823       | -12463     |
| 100 | -6284       | -20871      | 793          | 2079       | -12340     |
| 101 | 1           | 0           | 1            | 11         | 733        |
| 102 | -50         | -169        | 1            | 8          | 1466       |
| 103 | -203        | -677        | 1            | 4          | 2931       |
| 104 | -457        | -1522       | 2            | 2          | 4395       |
| 105 | -812        | -2706       | 2            | 0          | 5127       |
| 106 | -812        | -2706       | 2            | 0          | 5127       |
| 107 | -812        | -2706       | 2            | 0          | 5127       |
| 108 | -10210      | -34033      | 477          | 0          | -21982     |
| 109 | -7906       | -26128      | 546          | 940        | -19021     |
| 110 | -6320       | -20717      | 650          | 1527       | -12099     |
| 111 | -598        | -17367      | 1321         | 6915       | -6460      |
| 112 | 1254        | -16727      | -90          | 4328       | -8409      |
| 113 | -1619       | -17322      | 2444         | 10103      | -5519      |
| 114 | -2580       | -17116      | 2559         | 10169      | -4820      |
| 115 | -3536       | -17500      | 2159         | 8800       | -5329      |
| 116 | -4211       | -17816      | 2313         | 7210       | -5482      |
| 117 | -4752       | -17502      | 2387         | 5724       | -5010      |
| 118 | -5070       | -17094      | 1459         | 4284       | -4281      |
| 119 | -5218       | -17463      | 591          | 3121       | -4682      |
| 120 | -5260       | -17753      | 811          | 2422       | -4856      |
| 121 | -5375       | -17392      | 1092         | 1906       | -4406      |
| 122 | 0           | 0           | 1            | 7          | 733        |
| 123 | -51         | -169        | 1            | 5          | 1465       |
| 124 | -203        | -676        | 1            | 2          | 2929       |
| 125 | -457        | -1521       | 2            | 1          | 4392       |
| 126 | -811        | -2704       | 1            | 0          | 5124       |
| 127 | -811        | -2704       | 1            | 0          | 5124       |
| 128 | -811        | -2704       | 1            | 0          | 5124       |
| 129 | -10158      | -33859      | 295          | 0          | -21836     |
| 130 | -7889       | -25997      | 333          | 648        | -18874     |
| 131 | -6337       | -20572      | 356          | 1061       | -11914     |
| 132 | -5430       | -16961      | 401          | 1291       | -3739      |
| 133 | -135        | -16842      | 989          | 5702       | -1683      |
| 134 | 573         | -16774      | -324         | 3496       | -5517      |
| 135 | -1985       | -15409      | 1872         | 8148       | 4321       |
| 136 | -3307       | -14910      | 285          | 8053       | 4557       |
| 137 | -3443       | -16210      | 52           | 7093       | 3752       |
| 138 | -3852       | -17944      | 1391         | 6346       | -696       |
| 139 | -4458       | -16406      | 3451         | 5587       | 3807       |
| 140 | -5149       | -15061      | 1250         | 4093       | 5393       |
| 141 | -4919       | -16449      | 419          | 2764       | 3981       |
| 142 | -4821       | -18032      | 816          | 2467       | -372       |
| 143 | -5105       | -16439      | 2672         | 2305       | 4165       |
| 144 | -5559       | -15050      | 444          | 1379       | 5748       |
| 145 | -1          | 0           | 0            | 4          | 732        |

PROGETTAZIONE ATI:

| In  | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |
|-----|-------------|-------------|--------------|------------|------------|
| 146 | -52         | -169        | 1            | 3          | 1464       |
| 147 | -204        | -676        | 1            | 1          | 2928       |
| 148 | -457        | -1521       | 1            | 0          | 4391       |
| 149 | -811        | -2703       | 1            | 0          | 5122       |
| 150 | -811        | -2703       | 1            | 0          | 5122       |
| 151 | -811        | -2703       | 1            | 0          | 5122       |
| 152 | -10120      | -33732      | 173          | 0          | -21736     |
| 153 | -7869       | -25916      | 181          | 426        | -18789     |
| 154 | -6330       | -20591      | 114          | 693        | -11873     |
| 155 | -5416       | -17322      | 30           | 775        | -4223      |
| 156 | -5170       | -16412      | 592          | 534        | 4302       |
| 157 | -665        | -17746      | 1295         | 9742       | -2234      |
| 158 | 216         | -17526      | -664         | 4661       | -6327      |
| 159 | 1532        | -19530      | 2962         | 8268       | 6832       |
| 160 | -5072       | -11149      | -880         | 5869       | 41085      |
| 161 | -4012       | -20413      | 766          | 4495       | 2739       |
| 162 | -1076       | -18355      | 614          | 4897       | -1435      |
| 163 | -6018       | -20609      | 5053         | 6847       | 2681       |
| 164 | -6591       | -12183      | 1029         | 3546       | 40343      |
| 165 | -6641       | -20704      | 1164         | 2112       | 2734       |
| 166 | -1931       | -18570      | 791          | 2311       | -1348      |
| 167 | -6885       | -20734      | 4699         | 6187       | 2837       |
| 168 | -7010       | -12252      | 467          | 1364       | 40535      |
| 169 | -6967       | -20735      | 1346         | 198        | 2929       |
| 170 | -1          | 0           | 0            | 2          | 732        |
| 171 | -52         | -169        | 0            | 1          | 1463       |
| 172 | -204        | -676        | 1            | 1          | 2927       |
| 173 | -457        | -1520       | 1            | 0          | 4389       |
| 174 | -811        | -2702       | 1            | 0          | 5121       |
| 175 | -811        | -2702       | 1            | 0          | 5121       |
| 176 | -811        | -2702       | 1            | 0          | 5121       |
| 177 | -10093      | -33644      | 101          | 0          | -21668     |
| 178 | -7852       | -25861      | 116          | 265        | -18734     |
| 179 | -6322       | -20627      | 132          | 447        | -11883     |
| 180 | -5363       | -17620      | 160          | 560        | -4489      |
| 181 | -4969       | -17984      | 187          | 616        | -103       |
| 182 | -2111       | -18577      | 206          | 630        | -1171      |
| 183 | 57          | -17074      | 35           | 14942      | -9192      |
| 184 | 563         | -16551      | -386         | 6353       | -10715     |
| 185 | 333         | -19795      | 11981        | 56434      | -8416      |
| 186 | 6037        | -27804      | 243          | 7350       | -2722      |
| 187 | -324        | -18573      | 738          | 15685      | -8346      |
| 188 | -478        | -17623      | 197          | 3357       | -7769      |
| 189 | -812        | -18841      | 11080        | 42339      | -8404      |
| 190 | 359         | -28272      | 817          | 2833       | -3378      |
| 191 | -1162       | -18976      | 973          | 14623      | -8436      |
| 192 | -1164       | -17883      | 729          | 2037       | -7836      |
| 193 | -1359       | -19053      | 11047        | 41785      | -8398      |
| 194 | -2883       | -28928      | 460          | 1281       | -3488      |
| 195 | -1454       | -19094      | 1152         | 13121      | -8346      |
| 196 | -1365       | -17920      | 210          | 613        | -7740      |
| 197 | -1          | 0           | 0            | 1          | 732        |
| 198 | -52         | -169        | 0            | 1          | 1463       |
| 199 | -204        | -676        | 0            | 0          | 2926       |
| 200 | -457        | -1520       | 0            | 0          | 4389       |
| 201 | -810        | -2701       | 0            | 0          | 5120       |
| 202 | -810        | -2701       | 0            | 0          | 5120       |
| 203 | -810        | -2701       | 0            | 0          | 5120       |
| 204 | -10074      | -33581      | 52           | 0          | -21620     |
| 205 | -7843       | -25806      | 76           | 132        | -18680     |
| 206 | -6324       | -20522      | 173          | 241        | -11766     |
| 207 | -5423       | -17281      | 587          | 387        | -4133      |
| 208 | -5189       | -16392      | 2146         | 921        | 4372       |
| 209 | -6996       | -20730      | 4174         | 6026       | 2980       |
| 210 | -1491       | -19112      | 10551        | 41594      | -8314      |
| 211 | 2254        | -11834      | 949          | 8714       | -14005     |
| 212 | 325         | -12081      | -36          | 4306       | -14452     |
| 213 | 587         | -12631      | 1597         | 5798       | -17695     |
| 214 | 4174        | 9502        | -410         | 426        | 1248       |
| 215 | 1245        | -13625      | -1046        | 4608       | -14752     |
| 216 | 4201        | -12306      | -115         | 1765       | -12567     |
| 217 | 177         | -13832      | 3367         | 5068       | -15024     |
| 218 | 3001        | 8409        | 613          | 1997       | -1661      |
| 219 | -1535       | -13940      | -896         | 5554       | -15229     |
| 220 | 971         | -12547      | 623          | 1670       | -12969     |
| 221 | -2935       | -13999      | 3503         | 4620       | -15305     |
| 222 | 237         | 8070        | 415          | 1142       | -2934      |
| 223 | -3858       | -14032      | -730         | 4536       | -15318     |
| 224 | -673        | -12615      | 195          | 570        | -13007     |
| 225 | -4307       | -14047      | 3117         | 4403       | -15314     |
| 226 | -1          | 0           | 0            | 0          | 732        |
| 227 | -52         | -169        | 0            | 0          | 1463       |
| 228 | -204        | -676        | 0            | 0          | 2926       |
| 229 | -457        | -1520       | 0            | 0          | 4388       |
| 230 | -810        | -2701       | 0            | 0          | 5120       |

PROGETTAZIONE ATI:

| In  | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |
|-----|-------------|-------------|--------------|------------|------------|
| 231 | -810        | -2701       | 0            | 0          | 5120       |
| 232 | -810        | -2701       | 0            | 0          | 5120       |
| 233 | -10067      | -33556      | 0            | 0          | -21602     |
| 234 | -7841       | -25778      | 0            | 0          | -18652     |
| 235 | -6329       | -20437      | 0            | 0          | -11698     |
| 236 | -5450       | -16881      | 0            | 0          | -3559      |
| 237 | -5603       | -15013      | 0            | 0          | 5887       |
| 238 | -7073       | -12244      | 0            | 0          | 40634      |
| 239 | -3777       | -29197      | 0            | 0          | -3461      |
| 240 | -669        | 7896        | 0            | 0          | -3105      |
| 241 | 13          | -5593       | 390          | 1256       | -12328     |
| 242 | -180        | -6157       | 50           | 1171       | -12821     |
| 243 | 826         | -3615       | 472          | 1848       | -11318     |
| 244 | 2610        | -915        | -292         | 1092       | -8872      |
| 245 | 3027        | -4622       | -536         | 317        | -10802     |
| 246 | 3095        | -6305       | -95          | 803        | -11489     |
| 247 | 2998        | -4845       | 1544         | 1170       | -11898     |
| 248 | 3045        | -899        | 433          | 1244       | -9926      |
| 249 | 1870        | -4911       | -493         | 1941       | -12810     |
| 250 | 1142        | -6452       | 475          | 1307       | -11854     |
| 251 | 665         | -4945       | 1716         | 823        | -13268     |
| 252 | 728         | -1011       | 327          | 984        | -10895     |
| 253 | -222        | -4965       | -352         | 1354       | -13461     |
| 254 | -605        | -6493       | 155          | 513        | -11909     |
| 255 | -674        | -4975       | 1389         | 562        | -13529     |
| 256 | -174        | -1099       | 0            | 0          | -11044     |
| 257 | -1          | 0           | 0            | -1         | 732        |
| 258 | -52         | -169        | 0            | 0          | 1463       |
| 259 | -204        | -676        | 0            | 0          | 2926       |
| 260 | -457        | -1520       | 0            | 0          | 4389       |
| 261 | -810        | -2701       | 0            | 0          | 5120       |
| 262 | -810        | -2701       | 0            | 0          | 5120       |
| 263 | -810        | -2701       | 0            | 0          | 5120       |
| 264 | -10074      | -33581      | 44           | 0          | -21620     |
| 265 | -7843       | -25806      | 55           | 22         | -18680     |
| 266 | -6324       | -20522      | 84           | 3          | -11766     |
| 267 | -5423       | -17281      | 229          | -109       | -4133      |
| 268 | -5189       | -16392      | 803          | -735       | 4372       |
| 269 | -6996       | -20730      | 1563         | -1088      | 2980       |
| 270 | -1491       | -19112      | 1369         | 11881      | -8314      |
| 271 | -4307       | -14047      | -522         | 3394       | -15314     |
| 272 | -674        | -4975       | -169         | 337        | -13529     |
| 273 | 302         | -1306       | 156          | 348        | -6610      |
| 274 | 1           | -1645       | -62          | 113        | -7202      |
| 275 | 1176        | -749        | 44           | 547        | -6324      |
| 276 | 2185        | -538        | -121         | 597        | -5218      |
| 277 | 3191        | -1195       | -212         | 654        | -5513      |
| 278 | 3644        | -1398       | -35          | 748        | -6073      |
| 279 | 3765        | -1254       | 378          | 810        | -5990      |
| 280 | 3556        | -613        | 241          | 720        | -5747      |
| 281 | 3029        | -1208       | 38           | 965        | -6472      |
| 282 | 2421        | -1460       | 272          | 966        | -6681      |
| 283 | 1960        | -1202       | 478          | 845        | -6645      |
| 284 | 1550        | -595        | 189          | 810        | -6263      |
| 285 | 1104        | -1220       | -104         | 724        | -6662      |
| 286 | 753         | -1475       | 90           | 441        | -6721      |
| 287 | 652         | -1236       | 286          | 158        | -6667      |
| 288 | 657         | -623        | 0            | 0          | -6351      |
| 289 | 652         | -1236       | 2            | -114       | -6667      |
| 290 | -1          | 0           | 0            | -2         | 732        |
| 291 | -52         | -169        | 0            | -1         | 1463       |
| 292 | -204        | -676        | 0            | 0          | 2927       |
| 293 | -457        | -1520       | -1           | 0          | 4389       |
| 294 | -811        | -2702       | -1           | 0          | 5121       |
| 295 | -811        | -2702       | -1           | 0          | 5121       |
| 296 | -811        | -2702       | -1           | 0          | 5121       |
| 297 | -10093      | -33644      | 84           | 0          | -21668     |
| 298 | -7852       | -25861      | 96           | 47         | -18734     |
| 299 | -6322       | -20627      | 100          | 43         | -11883     |
| 300 | -5363       | -17620      | 109          | 20         | -4489      |
| 301 | -4969       | -17984      | 115          | -8         | -103       |
| 302 | -2111       | -18577      | 119          | -33        | -1171      |
| 303 | -1365       | -17920      | 119          | -55        | -7740      |
| 304 | -673        | -12615      | 113          | -79        | -13007     |
| 305 | -605        | -6493       | 99           | -111       | -11909     |
| 306 | 753         | -1475       | 65           | -171       | -6721      |
| 307 | 186         | -57         | 106          | -79        | -3304      |
| 308 | -2          | -59         | -7           | -131       | -3822      |
| 309 | 884         | 69          | 104          | 182        | -3211      |
| 310 | 1851        | 91          | -45          | 535        | -2724      |
| 311 | 3007        | 5           | -91          | 831        | -2693      |
| 312 | 3742        | -24         | 26           | 1065       | -2931      |
| 313 | 3940        | 0           | 140          | 1167       | -2948      |
| 314 | 3750        | 101         | 116          | 1147       | -2988      |
| 315 | 3345        | 0           | 67           | 1062       | -3196      |

PROGETTAZIONE ATI:

| In  | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |
|-----|-------------|-------------|--------------|------------|------------|
| 316 | 2844        | -20         | 120          | 962        | -3322      |
| 317 | 2311        | 12          | 163          | 837        | -3320      |
| 318 | 1838        | 154         | 80           | 680        | -3251      |
| 319 | 1468        | 14          | -4           | 519        | -3378      |
| 320 | 1205        | -21         | 36           | 352        | -3347      |
| 321 | 1024        | 12          | 78           | 184        | -3392      |
| 322 | 959         | 151         | 0            | 0          | -3300      |
| 323 | 1024        | 12          | 15           | -128       | -3392      |
| 324 | 1205        | -21         | 41           | -267       | -3347      |
| 325 | -1          | 0           | 0            | -3         | 732        |
| 326 | -52         | -169        | 0            | -2         | 1464       |
| 327 | -204        | -676        | -1           | -1         | 2928       |
| 328 | -457        | -1521       | -1           | 0          | 4391       |
| 329 | -811        | -2703       | -1           | 0          | 5122       |
| 330 | -811        | -2703       | -1           | 0          | 5122       |
| 331 | -811        | -2703       | -1           | 0          | 5122       |
| 332 | -10120      | -33732      | 122          | 0          | -21736     |
| 333 | -7869       | -25916      | 136          | 68         | -18789     |
| 334 | -6330       | -20591      | 116          | 77         | -11873     |
| 335 | -5416       | -17322      | 259          | 161        | -4223      |
| 336 | -5170       | -16412      | 1754         | 895        | 4302       |
| 337 | -6967       | -20735      | 3748         | 5949       | 2929       |
| 338 | -1454       | -19094      | 10120        | 41475      | -8346      |
| 339 | -3858       | -14032      | 2790         | 4237       | -15318     |
| 340 | -222        | -4965       | 1130         | 329        | -13461     |
| 341 | 1104        | -1220       | 148          | -205       | -6662      |
| 342 | 1468        | 14          | 71           | -394       | -3378      |
| 343 | 0           | 0           | 0            | -5         | 733        |
| 344 | -51         | -169        | -1           | -4         | 1465       |
| 345 | -203        | -676        | -1           | -2         | 2929       |
| 346 | -457        | -1521       | -1           | -1         | 4392       |
| 347 | -811        | -2704       | -1           | 0          | 5124       |
| 348 | -811        | -2704       | -1           | 0          | 5124       |
| 349 | -811        | -2704       | -1           | 0          | 5124       |
| 350 | -10158      | -33859      | 161          | 0          | -21836     |
| 351 | -7889       | -25997      | 185          | 74         | -18874     |
| 352 | -6337       | -20572      | 194          | 52         | -11914     |
| 353 | -5430       | -16961      | 210          | -3         | -3739      |
| 354 | -5559       | -15050      | 223          | -59        | 5748       |
| 355 | -7010       | -12252      | 229          | -107       | 40535      |
| 356 | -2883       | -28928      | 228          | -145       | -3488      |
| 357 | 237         | 8070        | 217          | -182       | -2934      |
| 358 | 728         | -1011       | 190          | -238       | -10895     |
| 359 | 1550        | -595        | 124          | -337       | -6263      |
| 360 | 1838        | 154         | 80           | -515       | -3251      |
| 361 | 1           | 0           | -1           | -9         | 733        |
| 362 | -50         | -169        | -1           | -6         | 1466       |
| 363 | -203        | -677        | -1           | -3         | 2931       |
| 364 | -457        | -1522       | -1           | -1         | 4395       |
| 365 | -812        | -2706       | -1           | 0          | 5127       |
| 366 | -812        | -2706       | -1           | 0          | 5127       |
| 367 | -812        | -2706       | -1           | 0          | 5127       |
| 368 | -10210      | -34033      | 195          | 0          | -21982     |
| 369 | -7906       | -26128      | 229          | 66         | -19021     |
| 370 | -6320       | -20717      | 267          | 5          | -12099     |
| 371 | -5375       | -17392      | 413          | -175       | -4406      |
| 372 | -5105       | -16439      | 998          | -909       | 4165       |
| 373 | -6885       | -20734      | 1765         | -2584      | 2837       |
| 374 | -1359       | -19053      | 1569         | 10536      | -8398      |
| 375 | -2935       | -13999      | -331         | 2260       | -15305     |
| 376 | 665         | -4945       | -2           | -561       | -13268     |
| 377 | 1960        | -1202       | 111          | -441       | -6645      |
| 378 | 2311        | 12          | 87           | -574       | -3320      |
| 379 | 5           | 0           | -1           | -14        | 734        |
| 380 | -48         | -169        | -1           | -10        | 1468       |
| 381 | -201        | -677        | -1           | -6         | 2934       |
| 382 | -456        | -1523       | -1           | -3         | 4399       |
| 383 | -812        | -2708       | -1           | 0          | 5131       |
| 384 | -812        | -2708       | -1           | 0          | 5131       |
| 385 | -812        | -2708       | -1           | 0          | 5131       |
| 386 | -10273      | -34243      | 214          | 0          | -22166     |
| 387 | -7913       | -26276      | 251          | 45         | -19201     |
| 388 | -6284       | -20871      | 268          | -30        | -12340     |
| 389 | -5260       | -17753      | 297          | -130       | -4856      |
| 390 | -4821       | -18032      | 318          | -215       | -372       |
| 391 | -1931       | -18570      | 327          | -269       | -1348      |
| 392 | -1164       | -17883      | 324          | -302       | -7836      |
| 393 | 971         | -12547      | 306          | -331       | -12969     |
| 394 | 1142        | -6452       | 266          | -386       | -11854     |
| 395 | 2421        | -1460       | 173          | -476       | -6681      |
| 396 | 2844        | -20         | 112          | -577       | -3322      |
| 397 | 10          | 0           | -1           | -20        | 735        |
| 398 | -44         | -169        | -1           | -15        | 1470       |
| 399 | -198        | -678        | -1           | -10        | 2938       |
| 400 | -455        | -1525       | 0            | -5         | 4405       |

PROGETTAZIONE ATI:

| In  | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |
|-----|-------------|-------------|--------------|------------|------------|
| 401 | -813        | -2710       | 0            | 0          | 5137       |
| 402 | -813        | -2710       | 0            | 0          | 5137       |
| 403 | -813        | -2710       | 0            | 0          | 5137       |
| 404 | -10341      | -34471      | 217          | 0          | -22381     |
| 405 | -7901       | -26410      | 255          | -8         | -19390     |
| 406 | -6220       | -20871      | 259          | -112       | -12463     |
| 407 | -5218       | -17463      | 176          | -120       | -4682      |
| 408 | -4919       | -16449      | 1030         | 561        | 3981       |
| 409 | -6641       | -20704      | 3133         | 5600       | 2734       |
| 410 | -1162       | -18976      | 9629         | 41136      | -8436      |
| 411 | -1535       | -13940      | 2486         | 3921       | -15229     |
| 412 | 1870        | -4911       | 920          | 28         | -12810     |
| 413 | 3029        | -1208       | 245          | -491       | -6472      |
| 414 | 3345        | 0           | 135          | -459       | -3196      |
| 415 | 19          | 1           | -1           | -30        | 737        |
| 416 | -38         | -170        | 0            | -22        | 1473       |
| 417 | -193        | -678        | 0            | -15        | 2943       |
| 418 | -452        | -1525       | 2            | -8         | 4411       |
| 419 | -814        | -2713       | 2            | 0          | 5144       |
| 420 | -814        | -2713       | 2            | 0          | 5144       |
| 421 | -814        | -2713       | 2            | 0          | 5144       |
| 422 | -10416      | -34721      | 192          | 0          | -22634     |
| 423 | -7844       | -26544      | 244          | -114       | -19606     |
| 424 | -6089       | -20869      | 297          | -307       | -12641     |
| 425 | -5070       | -17094      | 363          | -459       | -4281      |
| 426 | -5149       | -15061      | 411          | -545       | 5393       |
| 427 | -6591       | -12183      | 431          | -571       | 40343      |
| 428 | 359         | -28272      | 422          | -562       | -3378      |
| 429 | 3001        | 8409        | 388          | -540       | -1661      |
| 430 | 3045        | -899        | 326          | -522       | -9926      |
| 431 | 3556        | -613        | 208          | -531       | -5747      |
| 432 | 3750        | 101         | 134          | -76        | -2988      |
| 433 | 34          | 1           | -1           | -41        | 738        |
| 434 | -28         | -170        | 1            | -31        | 1475       |
| 435 | -185        | -678        | 3            | -23        | 2948       |
| 436 | -446        | -1526       | 6            | -13        | 4417       |
| 437 | -814        | -2715       | 7            | 0          | 5151       |
| 438 | -814        | -2715       | 7            | 0          | 5151       |
| 439 | -814        | -2715       | 7            | 0          | 5151       |
| 440 | -10497      | -34991      | 111          | 0          | -22916     |
| 441 | -7702       | -26691      | 183          | -287       | -19864     |
| 442 | -5827       | -21007      | 310          | -581       | -12955     |
| 443 | -4752       | -17502      | 550          | -860       | -5010      |
| 444 | -4458       | -16406      | 1180         | -1591      | 3807       |
| 445 | -6018       | -20609      | 1971         | -5025      | 2681       |
| 446 | -812        | -18841      | 1762         | 9012       | -8404      |
| 447 | 177         | -13832      | -175         | 1701       | -15024     |
| 448 | 2998        | -4845       | 109          | -355       | -11898     |
| 449 | 3765        | -1254       | 175          | -53        | -5990      |
| 450 | 3940        | 0           | 127          | 548        | -2948      |
| 451 | 54          | 0           | -1           | -54        | 738        |
| 452 | -13         | -170        | 1            | -41        | 1476       |
| 453 | -170        | -679        | 7            | -33        | 2950       |
| 454 | -436        | -1525       | 14           | -20        | 4422       |
| 455 | -815        | -2716       | 16           | 0          | 5157       |
| 456 | -815        | -2716       | 16           | 0          | 5157       |
| 457 | -815        | -2716       | 16           | 0          | 5157       |
| 458 | -10572      | -35240      | -69          | 0          | -23169     |
| 459 | -7410       | -26797      | 23           | -544       | -20086     |
| 460 | -5369       | -21131      | 224          | -927       | -13295     |
| 461 | -4211       | -17816      | 436          | -1111      | -5482      |
| 462 | -3852       | -17944      | 576          | -1176      | -696       |
| 463 | -1076       | -18355      | 613          | -1016      | -1435      |
| 464 | -478        | -17623      | 577          | -935       | -7769      |
| 465 | 4201        | -12306      | 477          | -775       | -12567     |
| 466 | 3095        | -6305       | 357          | -365       | -11489     |
| 467 | 3644        | -1398       | 211          | 594        | -6073      |
| 468 | 3742        | -24         | 130          | 1372       | -2931      |
| 469 | 72          | -2          | -2           | -60        | 735        |
| 470 | 9           | -172        | 0            | -49        | 1470       |
| 471 | -144        | -679        | 11           | -46        | 2944       |
| 472 | -414        | -1521       | 28           | -33        | 4420       |
| 473 | -814        | -2715       | 33           | 0          | 5157       |
| 474 | -814        | -2715       | 33           | 0          | 5157       |
| 475 | -814        | -2715       | 33           | 0          | 5157       |
| 476 | -10619      | -35398      | -417         | 0          | -23266     |
| 477 | -6852       | -26795      | -277         | -910       | -20139     |
| 478 | -4592       | -21078      | 93           | -1383      | -13423     |
| 479 | -3536       | -17500      | 354          | -1434      | -5329      |
| 480 | -3443       | -16210      | 1005         | -681       | 3752       |
| 481 | -4012       | -20413      | 4025         | 4049       | 2739       |
| 482 | -324        | -18573      | 11501        | 41205      | -8346      |
| 483 | 1245        | -13625      | 3713         | 2805       | -14752     |
| 484 | 3027        | -4622       | 1855         | -136       | -10802     |
| 485 | 3191        | -1195       | 466          | 1404       | -5513      |

PROGETTAZIONE ATI:

| In  | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |
|-----|-------------|-------------|--------------|------------|------------|
| 486 | 3007        | 5           | 121          | 2422       | -2693      |
| 487 | 75          | -9          | -6           | -50        | 723        |
| 488 | 37          | -176        | -6           | -49        | 1451       |
| 489 | -102        | -680        | 12           | -62        | 2920       |
| 490 | -370        | -1513       | 51           | -52        | 4401       |
| 491 | -813        | -2709       | 67           | 0          | 5143       |
| 492 | -813        | -2709       | 67           | 0          | 5143       |
| 493 | -813        | -2709       | 67           | 0          | 5143       |
| 494 | -10616      | -35385      | -1055        | 0          | -22921     |
| 495 | -5885       | -26671      | -782         | -1338      | -19797     |
| 496 | -3383       | -21024      | -13          | -1875      | -13438     |
| 497 | -2580       | -17116      | 647          | -1900      | -4820      |
| 498 | -3307       | -14910      | 950          | -1833      | 4557       |
| 499 | -5072       | -11149      | 1218         | -519       | 41085      |
| 500 | 6037        | -27804      | 972          | -981       | -2722      |
| 501 | 4174        | 9502        | 1875         | -2         | 1248       |
| 502 | 2610        | -915        | 1056         | 1410       | -8872      |
| 503 | 2185        | -538        | 392          | 2242       | -5218      |
| 504 | 1851        | 91          | 88           | 3439       | -2724      |
| 505 | 51          | -11         | -11          | -18        | 705        |
| 506 | 46          | -178        | -15          | -39        | 1426       |
| 507 | -47         | -678        | 1            | -75        | 2885       |
| 508 | -291        | -1495       | 82           | -78        | 4367       |
| 509 | -810        | -2701       | 116          | 0          | 5111       |
| 510 | -810        | -2701       | 116          | 0          | 5111       |
| 511 | -810        | -2701       | 116          | 0          | 5111       |
| 512 | -10556      | -35187      | -1873        | 0          | -21957     |
| 513 | -4433       | -26398      | -1366        | -1685      | -18963     |
| 514 | -1923       | -21047      | 10           | -2157      | -12978     |
| 515 | -1619       | -17322      | 962          | -2110      | -5519      |
| 516 | -1985       | -15409      | 1881         | -2913      | 4321       |
| 517 | 1532        | -19530      | 2748         | -6103      | 6832       |
| 518 | 333         | -19795      | 2509         | 14258      | -8416      |
| 519 | 587         | -12631      | -290         | 5202       | -17695     |
| 520 | 826         | -3615       | -18          | 3004       | -11318     |
| 521 | 1176        | -749        | 89           | 2571       | -6324      |
| 522 | 884         | 69          | 45           | 3810       | -3211      |
| 523 | 22          | -1          | -10          | 19         | 701        |
| 524 | 39          | -158        | -19          | -19        | 1410       |
| 525 | -19         | -678        | -6           | -59        | 2841       |
| 526 | -117        | -1460       | 89           | -91        | 4297       |
| 527 | -803        | -2677       | 209          | 0          | 5030       |
| 528 | -803        | -2677       | 209          | 0          | 5030       |
| 529 | -803        | -2677       | 209          | 0          | 5030       |
| 530 | -10443      | -34810      | -3211        | 0          | -19622     |
| 531 | -1728       | -25952      | -1409        | -1633      | -17010     |
| 532 | -901        | -21146      | 12           | -1652      | -12006     |
| 533 | -598        | -17367      | 863          | -1496      | -6460      |
| 534 | -135        | -16842      | 1492         | -2217      | -1683      |
| 535 | -665        | -17746      | 1839         | -3012      | -2234      |
| 536 | 57          | -17074      | 704          | 3205       | -9192      |
| 537 | 2254        | -11834      | -222         | 5809       | -14005     |
| 538 | 13          | -5593       | -111         | 2753       | -12328     |
| 539 | 302         | -1306       | 22           | 1800       | -6610      |
| 540 | 186         | -57         | 29           | 2819       | -3304      |
| 541 | 2           | -4          | -16          | 33         | 778        |
| 542 | 30          | -146        | -30          | -7         | 1502       |
| 543 | 11          | -577        | -50          | -38        | 2869       |
| 544 | 28          | -1404       | 91           | -91        | 4126       |
| 545 | -832        | -2774       | 401          | 0          | 4738       |
| 546 | -832        | -2774       | 401          | 0          | 4738       |
| 547 | -832        | -2774       | 401          | 0          | 4738       |
| 548 | -11208      | -37361      | -5587        | 0          | -13141     |
| 549 | 190         | -25709      | -1504        | -1447      | -11996     |
| 550 | -37         | -19039      | 353          | -1096      | -10145     |
| 551 | 1254        | -16727      | 618          | -883       | -8409      |
| 552 | 573         | -16774      | 944          | -1702      | -5517      |
| 553 | 216         | -17526      | 1007         | -1829      | -6327      |
| 554 | 563         | -16551      | 1102         | 1289       | -10715     |
| 555 | 325         | -12081      | 846          | 3183       | -14452     |
| 556 | -180        | -6157       | 180          | 2137       | -12821     |
| 557 | 1           | -1645       | 151          | 1056       | -7202      |
| 558 | -2          | -59         | 81           | 1892       | -3822      |

**Combinazione n° 14 - ECC**

| In | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |
|----|-------------|-------------|--------------|------------|------------|
| 1  | 2           | -4          | 21           | -25        | 778        |
| 2  | 22          | -1          | 12           | -14        | 701        |
| 3  | 39          | -158        | 25           | 24         | 1410       |
| 4  | 30          | -146        | 38           | 9          | 1502       |
| 5  | 51          | -11         | 14           | 24         | 705        |
| 6  | 46          | -178        | 19           | 50         | 1426       |

PROGETTAZIONE ATI:



| In | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |
|----|-------------|-------------|--------------|------------|------------|
| 7  | -19         | -678        | 7            | 76         | 2841       |
| 8  | 11          | -577        | 65           | 49         | 2869       |
| 9  | -47         | -678        | -1           | 97         | 2885       |
| 10 | 75          | -9          | 8            | 66         | 723        |
| 11 | 37          | -176        | 8            | 64         | 1451       |
| 12 | -102        | -680        | -9           | 80         | 2920       |
| 13 | -117        | -1460       | -69          | 119        | 4297       |
| 14 | 28          | -1404       | -70          | 118        | 4126       |
| 15 | -291        | -1495       | -63          | 101        | 4367       |
| 16 | -370        | -1513       | -40          | 68         | 4401       |
| 17 | 72          | -2          | 3            | 78         | 735        |
| 18 | 9           | -172        | 0            | 64         | 1470       |
| 19 | -144        | -679        | -8           | 60         | 2944       |
| 20 | -414        | -1521       | -21          | 43         | 4420       |
| 21 | -803        | -2677       | -161         | 0          | 5030       |
| 22 | -832        | -2774       | -309         | 0          | 4738       |
| 23 | -810        | -2701       | -89          | 0          | 5111       |
| 24 | -813        | -2709       | -52          | 0          | 5143       |
| 25 | -814        | -2715       | -26          | 0          | 5157       |
| 26 | 54          | 0           | 1            | 70         | 738        |
| 27 | -13         | -170        | -1           | 54         | 1476       |
| 28 | -170        | -679        | -5           | 43         | 2950       |
| 29 | -436        | -1525       | -11          | 26         | 4422       |
| 30 | -815        | -2716       | -12          | 0          | 5157       |
| 31 | -815        | -2716       | -12          | 0          | 5157       |
| 32 | -815        | -2716       | -12          | 0          | 5157       |
| 33 | -815        | -2716       | -12          | 0          | 5157       |
| 34 | -815        | -2716       | -12          | 0          | 5157       |
| 35 | -815        | -2716       | -12          | 0          | 5157       |
| 36 | -815        | -2716       | -12          | 0          | 5157       |
| 37 | 34          | 1           | 1            | 54         | 738        |
| 38 | -28         | -170        | -1           | 41         | 1475       |
| 39 | -185        | -678        | -2           | 30         | 2948       |
| 40 | -446        | -1526       | -5           | 16         | 4417       |
| 41 | -814        | -2715       | -5           | 0          | 5151       |
| 42 | -814        | -2715       | -5           | 0          | 5151       |
| 43 | -814        | -2715       | -5           | 0          | 5151       |
| 44 | -814        | -2715       | -5           | 0          | 5151       |
| 45 | -814        | -2715       | -5           | 0          | 5151       |
| 46 | -814        | -2715       | -5           | 0          | 5151       |
| 47 | -814        | -2715       | -5           | 0          | 5151       |
| 48 | -814        | -2715       | -5           | 0          | 5151       |
| 49 | -814        | -2715       | -5           | 0          | 5151       |
| 50 | 19          | 1           | 1            | 39         | 737        |
| 51 | -38         | -170        | 0            | 29         | 1473       |
| 52 | -193        | -678        | 0            | 20         | 2943       |
| 53 | -452        | -1525       | -1           | 10         | 4411       |
| 54 | -814        | -2713       | -2           | 0          | 5144       |
| 55 | -814        | -2713       | -2           | 0          | 5144       |
| 56 | -814        | -2713       | -2           | 0          | 5144       |
| 57 | -10443      | -34810      | 20144        | 0          | -19622     |
| 58 | -11208      | -37361      | 31569        | 0          | -11043     |
| 59 | -10556      | -35187      | 13836        | 0          | -21957     |
| 60 | -10616      | -35385      | 9784         | 0          | -22921     |
| 61 | -10619      | -35398      | 6296         | 0          | -23266     |
| 62 | -10572      | -35240      | 4092         | 0          | -23169     |
| 63 | -10497      | -34991      | 2674         | 0          | -22916     |
| 64 | -10416      | -34721      | 1740         | 0          | -22634     |
| 65 | 10          | 0           | 1            | 27         | 735        |
| 66 | -44         | -169        | 1            | 19         | 1470       |
| 67 | -198        | -678        | 1            | 13         | 2938       |
| 68 | -455        | -1525       | 1            | 6          | 4405       |
| 69 | -813        | -2710       | 0            | 0          | 5137       |
| 70 | -813        | -2710       | 0            | 0          | 5137       |
| 71 | -813        | -2710       | 0            | 0          | 5137       |
| 72 | -10341      | -34471      | 1127         | 0          | -22381     |
| 73 | -1728       | -25952      | 10659        | 7741       | -15229     |
| 74 | 190         | -25709      | 9880         | 6608       | -7857      |
| 75 | -4433       | -26398      | 11994        | 8741       | -18215     |
| 76 | -5885       | -26671      | 9180         | 7961       | -19559     |
| 77 | -6852       | -26795      | 6210         | 6464       | -20139     |
| 78 | -7410       | -26797      | 4169         | 4884       | -20086     |
| 79 | -7702       | -26691      | 2798         | 3585       | -19864     |
| 80 | -7844       | -26544      | 1843         | 2585       | -19606     |
| 81 | -7901       | -26410      | 1198         | 1846       | -19390     |
| 82 | 5           | 0           | 1            | 18         | 734        |
| 83 | -48         | -169        | 1            | 12         | 1468       |
| 84 | -201        | -677        | 1            | 8          | 2934       |
| 85 | -456        | -1523       | 2            | 3          | 4399       |
| 86 | -812        | -2708       | 1            | 0          | 5131       |
| 87 | -812        | -2708       | 1            | 0          | 5131       |
| 88 | -812        | -2708       | 1            | 0          | 5131       |
| 89 | -10273      | -34243      | 734          | 0          | -22166     |
| 90 | -7913       | -26276      | 804          | 1321       | -19201     |
| 91 | -901        | -21146      | 4221         | 8421       | -8340      |

PROGETTAZIONE ATI:

| In  | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |
|-----|-------------|-------------|--------------|------------|------------|
| 92  | -33         | -19039      | 1110         | 5555       | -4667      |
| 93  | -1923       | -21047      | 5909         | 11311      | -9991      |
| 94  | -3383       | -21024      | 5751         | 10633      | -10773     |
| 95  | -4592       | -21078      | 4364         | 8898       | -11391     |
| 96  | -5369       | -21131      | 3278         | 6947       | -11644     |
| 97  | -5827       | -21007      | 2448         | 5262       | -11391     |
| 98  | -6089       | -20869      | 1647         | 3880       | -11079     |
| 99  | -6220       | -20871      | 1038         | 2823       | -11050     |
| 100 | -6284       | -20871      | 793          | 2079       | -11037     |
| 101 | 1           | 0           | 1            | 11         | 733        |
| 102 | -50         | -169        | 1            | 8          | 1466       |
| 103 | -203        | -677        | 1            | 4          | 2931       |
| 104 | -457        | -1522       | 2            | 2          | 4395       |
| 105 | -812        | -2706       | 2            | 0          | 5127       |
| 106 | -812        | -2706       | 2            | 0          | 5127       |
| 107 | -812        | -2706       | 2            | 0          | 5127       |
| 108 | -10210      | -34033      | 477          | 0          | -21982     |
| 109 | -7906       | -26128      | 546          | 940        | -19021     |
| 110 | -6320       | -20717      | 650          | 1527       | -10714     |
| 111 | -598        | -17367      | 1321         | 6915       | -4609      |
| 112 | 1254        | -16727      | 100          | 4328       | -4921      |
| 113 | -1619       | -17322      | 2444         | 10103      | -4019      |
| 114 | -2580       | -17116      | 2559         | 10169      | -3619      |
| 115 | -3536       | -17500      | 2159         | 8800       | -4874      |
| 116 | -4211       | -17816      | 2313         | 7210       | -5482      |
| 117 | -4752       | -17502      | 2387         | 5724       | -5010      |
| 118 | -5070       | -17094      | 1459         | 4284       | -4078      |
| 119 | -5218       | -17463      | 591          | 3121       | -4682      |
| 120 | -5260       | -17753      | 811          | 2422       | -4856      |
| 121 | -5375       | -17392      | 1092         | 1906       | -4406      |
| 122 | 0           | 0           | 1            | 7          | 733        |
| 123 | -51         | -169        | 1            | 5          | 1465       |
| 124 | -203        | -676        | 1            | 2          | 2929       |
| 125 | -457        | -1521       | 2            | 1          | 4392       |
| 126 | -811        | -2704       | 1            | 0          | 5124       |
| 127 | -811        | -2704       | 1            | 0          | 5124       |
| 128 | -811        | -2704       | 1            | 0          | 5124       |
| 129 | -10158      | -33859      | 295          | 0          | -21836     |
| 130 | -7889       | -25997      | 333          | 648        | -18859     |
| 131 | -6337       | -20572      | 356          | 1061       | -10430     |
| 132 | -5430       | -16961      | 401          | 1291       | -3717      |
| 133 | -135        | -16842      | 989          | 5702       | -1683      |
| 134 | 573         | -16774      | -43          | 3496       | -5517      |
| 135 | -1985       | -15409      | 1872         | 8148       | 4321       |
| 136 | -3307       | -14910      | 285          | 8053       | 5476       |
| 137 | -3443       | -16210      | 52           | 7093       | 3752       |
| 138 | -3852       | -17944      | 1391         | 6346       | -696       |
| 139 | -4458       | -16406      | 3451         | 5587       | 3807       |
| 140 | -5149       | -15061      | 1250         | 4093       | 5393       |
| 141 | -4919       | -16449      | 419          | 2764       | 3981       |
| 142 | -4821       | -18032      | 816          | 2467       | -372       |
| 143 | -5105       | -16439      | 2672         | 2305       | 4165       |
| 144 | -5559       | -15050      | 444          | 1379       | 5748       |
| 145 | -1          | 0           | 0            | 4          | 732        |
| 146 | -52         | -169        | 1            | 3          | 1464       |
| 147 | -204        | -676        | 1            | 1          | 2928       |
| 148 | -457        | -1521       | 1            | 0          | 4391       |
| 149 | -811        | -2703       | 1            | 0          | 5122       |
| 150 | -811        | -2703       | 1            | 0          | 5122       |
| 151 | -811        | -2703       | 1            | 0          | 5122       |
| 152 | -10120      | -33732      | 173          | 0          | -21736     |
| 153 | -7869       | -25916      | 181          | 426        | -18766     |
| 154 | -6330       | -20591      | 114          | 693        | -10481     |
| 155 | -5416       | -17322      | 30           | 775        | -4223      |
| 156 | -5170       | -16412      | 592          | 534        | 4302       |
| 157 | -665        | -17746      | 1295         | 10342      | -2234      |
| 158 | 216         | -17526      | -481         | 5165       | -6327      |
| 159 | 1532        | -19530      | 2962         | 10264      | 6832       |
| 160 | -5072       | -11149      | -880         | 5869       | 41085      |
| 161 | -4012       | -20413      | 766          | 4495       | 2739       |
| 162 | -1076       | -18355      | 614          | 4897       | -1435      |
| 163 | -6018       | -20609      | 5053         | 7938       | 2681       |
| 164 | -6591       | -12183      | 1029         | 3546       | 40343      |
| 165 | -6641       | -20704      | 1164         | 2112       | 2734       |
| 166 | -1931       | -18570      | 791          | 2311       | -1348      |
| 167 | -6885       | -20734      | 4699         | 6867       | 2837       |
| 168 | -7010       | -12252      | 467          | 1364       | 40535      |
| 169 | -6967       | -20735      | 1346         | 198        | 2929       |
| 170 | -1          | 0           | 0            | 2          | 732        |
| 171 | -52         | -169        | 0            | 1          | 1463       |
| 172 | -204        | -676        | 1            | 1          | 2927       |
| 173 | -457        | -1520       | 1            | 0          | 4389       |
| 174 | -811        | -2702       | 1            | 0          | 5121       |
| 175 | -811        | -2702       | 1            | 0          | 5121       |
| 176 | -811        | -2702       | 1            | 0          | 5121       |

PROGETTAZIONE ATI:

| In  | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |
|-----|-------------|-------------|--------------|------------|------------|
| 177 | -10093      | -33644      | 101          | 0          | -21668     |
| 178 | -7852       | -25861      | 116          | 265        | -18709     |
| 179 | -6322       | -20627      | 132          | 447        | -10574     |
| 180 | -5363       | -17620      | 160          | 560        | -4489      |
| 181 | -4969       | -17984      | 187          | 616        | -103       |
| 182 | -2111       | -18577      | 206          | 630        | -1171      |
| 183 | 57          | -17074      | 364          | 14942      | -9192      |
| 184 | 563         | -16551      | -251         | 6353       | -10715     |
| 185 | 333         | -19795      | 11981        | 56434      | -7595      |
| 186 | 6037        | -27804      | 265          | 7350       | 7555       |
| 187 | -324        | -18573      | 738          | 15685      | -8346      |
| 188 | -478        | -17623      | 197          | 3357       | -7769      |
| 189 | -812        | -18841      | 11080        | 42339      | -8404      |
| 190 | 359         | -28272      | 817          | 2833       | 6100       |
| 191 | -1162       | -18976      | 973          | 14623      | -8436      |
| 192 | -1164       | -17883      | 729          | 2037       | -7836      |
| 193 | -1359       | -19053      | 11047        | 41785      | -8398      |
| 194 | -2883       | -28928      | 460          | 1281       | 5823       |
| 195 | -1454       | -19094      | 1152         | 13121      | -8346      |
| 196 | -1365       | -17920      | 210          | 613        | -7740      |
| 197 | -1          | 0           | 0            | 1          | 732        |
| 198 | -52         | -169        | 0            | 1          | 1463       |
| 199 | -204        | -676        | 0            | 0          | 2926       |
| 200 | -457        | -1520       | 0            | 0          | 4389       |
| 201 | -810        | -2701       | 0            | 0          | 5120       |
| 202 | -810        | -2701       | 0            | 0          | 5120       |
| 203 | -810        | -2701       | 0            | 0          | 5120       |
| 204 | -10074      | -33581      | 52           | 0          | -21620     |
| 205 | -7843       | -25806      | 76           | 132        | -18629     |
| 206 | -6324       | -20522      | 173          | 241        | -10366     |
| 207 | -5423       | -17281      | 587          | 387        | -4133      |
| 208 | -5189       | -16392      | 2146         | 1273       | 4372       |
| 209 | -6996       | -20730      | 4174         | 6435       | 2980       |
| 210 | -1491       | -19112      | 10551        | 41594      | -8314      |
| 211 | 2254        | -11834      | 1829         | 8714       | -14005     |
| 212 | 337         | -12081      | 162          | 4306       | -14452     |
| 213 | 587         | -12631      | 2689         | 5798       | -17412     |
| 214 | 4174        | 9502        | -410         | 426        | 1248       |
| 215 | 1245        | -13625      | -1046        | 4608       | -14752     |
| 216 | 4201        | -12306      | -115         | 1765       | -12567     |
| 217 | 177         | -13832      | 3367         | 5068       | -15024     |
| 218 | 3001        | 8409        | 613          | 1997       | -1661      |
| 219 | -1535       | -13940      | -896         | 5554       | -15229     |
| 220 | 992         | -12547      | 623          | 1670       | -12969     |
| 221 | -2935       | -13999      | 3503         | 4620       | -15305     |
| 222 | 237         | 8070        | 415          | 1142       | -2934      |
| 223 | -3858       | -14032      | -730         | 4536       | -15318     |
| 224 | 480         | -12615      | 195          | 570        | -13007     |
| 225 | -4307       | -14047      | 3117         | 4403       | -15314     |
| 226 | -1          | 0           | 0            | 0          | 732        |
| 227 | -52         | -169        | 0            | 0          | 1463       |
| 228 | -204        | -676        | 0            | 0          | 2926       |
| 229 | -457        | -1520       | 0            | 0          | 4388       |
| 230 | -810        | -2701       | 0            | 0          | 5120       |
| 231 | -810        | -2701       | 0            | 0          | 5120       |
| 232 | -810        | -2701       | 0            | 0          | 5120       |
| 233 | -10067      | -33556      | 0            | 0          | -21602     |
| 234 | -7841       | -25778      | 0            | 0          | -18581     |
| 235 | -6329       | -20437      | 0            | 0          | -10198     |
| 236 | -5450       | -16881      | 0            | 0          | -3546      |
| 237 | -5603       | -15013      | 0            | 0          | 5887       |
| 238 | -7073       | -12244      | 0            | 0          | 40634      |
| 239 | -3777       | -29197      | 0            | 0          | 5831       |
| 240 | -669        | 7896        | 0            | 0          | -3105      |
| 241 | 13          | -5593       | 1000         | 1256       | -12328     |
| 242 | -180        | -6157       | 385          | 1171       | -12821     |
| 243 | 826         | -3231       | 1162         | 1848       | -11318     |
| 244 | 2610        | -915        | -292         | 1092       | -8872      |
| 245 | 3027        | -4564       | -536         | 317        | -10802     |
| 246 | 3095        | -6305       | -95          | 803        | -11489     |
| 247 | 2998        | -4845       | 1544         | 1170       | -11898     |
| 248 | 3045        | -899        | 433          | 1244       | -9926      |
| 249 | 1870        | -4911       | -493         | 1941       | -12810     |
| 250 | 1142        | -6452       | 475          | 1307       | -11854     |
| 251 | 665         | -4945       | 1716         | 823        | -13268     |
| 252 | 728         | -1011       | 327          | 984        | -10895     |
| 253 | -222        | -4965       | -352         | 1354       | -13461     |
| 254 | -605        | -6493       | 155          | 513        | -11909     |
| 255 | -674        | -4975       | 1389         | 562        | -13529     |
| 256 | -174        | -1099       | 0            | 0          | -11044     |
| 257 | -1          | 0           | 0            | -1         | 732        |
| 258 | -52         | -169        | 0            | 0          | 1463       |
| 259 | -204        | -676        | 0            | 0          | 2926       |
| 260 | -457        | -1520       | 0            | 0          | 4389       |
| 261 | -810        | -2701       | 0            | 0          | 5120       |

PROGETTAZIONE ATI:

| In  | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |
|-----|-------------|-------------|--------------|------------|------------|
| 262 | -810        | -2701       | 0            | 0          | 5120       |
| 263 | -810        | -2701       | 0            | 0          | 5120       |
| 264 | -10074      | -33581      | 44           | 0          | -21620     |
| 265 | -7843       | -25806      | 55           | 22         | -18629     |
| 266 | -6324       | -20522      | 84           | 3          | -10366     |
| 267 | -5423       | -17281      | 229          | -109       | -4133      |
| 268 | -5189       | -16392      | 803          | -735       | 4372       |
| 269 | -6996       | -20730      | 1563         | -1088      | 2980       |
| 270 | -1491       | -19112      | 1369         | 11881      | -8314      |
| 271 | -4307       | -14047      | -522         | 3394       | -15314     |
| 272 | -674        | -4975       | -169         | 337        | -13529     |
| 273 | 302         | -1306       | 353          | 348        | -6610      |
| 274 | 1           | -1645       | 49           | 113        | -7202      |
| 275 | 1176        | -749        | 275          | 547        | -6318      |
| 276 | 2185        | -497        | -88          | 597        | -5218      |
| 277 | 3191        | -1159       | -212         | 654        | -5513      |
| 278 | 3644        | -1398       | -35          | 748        | -6073      |
| 279 | 3765        | -1254       | 378          | 810        | -5990      |
| 280 | 3556        | -613        | 241          | 720        | -5747      |
| 281 | 3029        | -1208       | 38           | 965        | -6472      |
| 282 | 2421        | -1460       | 272          | 966        | -6681      |
| 283 | 1960        | -1202       | 478          | 845        | -6632      |
| 284 | 1550        | -595        | 189          | 810        | -6263      |
| 285 | 1104        | -1220       | -104         | 724        | -6662      |
| 286 | 753         | -1475       | 90           | 441        | -6721      |
| 287 | 652         | -1236       | 286          | 158        | -6667      |
| 288 | 657         | -623        | 0            | 0          | -6351      |
| 289 | 652         | -1236       | 2            | -98        | -6667      |
| 290 | -1          | 0           | 0            | -2         | 732        |
| 291 | -52         | -169        | 0            | -1         | 1463       |
| 292 | -204        | -676        | 0            | 0          | 2927       |
| 293 | -457        | -1520       | -1           | 0          | 4389       |
| 294 | -811        | -2702       | -1           | 0          | 5121       |
| 295 | -811        | -2702       | -1           | 0          | 5121       |
| 296 | -811        | -2702       | -1           | 0          | 5121       |
| 297 | -10093      | -33644      | 84           | 0          | -21668     |
| 298 | -7852       | -25861      | 96           | 47         | -18709     |
| 299 | -6322       | -20627      | 100          | 43         | -10574     |
| 300 | -5363       | -17620      | 109          | 20         | -4489      |
| 301 | -4969       | -17984      | 115          | -8         | -103       |
| 302 | -2111       | -18577      | 119          | -33        | -1171      |
| 303 | -1365       | -17920      | 119          | -55        | -7740      |
| 304 | 480         | -12615      | 113          | -79        | -13007     |
| 305 | -605        | -6493       | 99           | -111       | -11909     |
| 306 | 753         | -1475       | 65           | -171       | -6721      |
| 307 | 186         | -57         | 129          | -79        | -3304      |
| 308 | -2          | -59         | 35           | -131       | -3822      |
| 309 | 884         | 91          | 147          | 182        | -3211      |
| 310 | 1851        | 158         | 8            | 535        | -2724      |
| 311 | 3007        | 5           | -91          | 831        | -2693      |
| 312 | 3742        | -24         | 26           | 1065       | -2931      |
| 313 | 3940        | 0           | 140          | 1167       | -2948      |
| 314 | 3750        | 102         | 116          | 1147       | -2988      |
| 315 | 3345        | 0           | 67           | 1062       | -3196      |
| 316 | 2844        | -20         | 120          | 962        | -3322      |
| 317 | 2311        | 12          | 163          | 837        | -3320      |
| 318 | 1838        | 154         | 80           | 680        | -3251      |
| 319 | 1468        | 14          | -4           | 519        | -3378      |
| 320 | 1205        | -21         | 36           | 352        | -3347      |
| 321 | 1024        | 12          | 78           | 184        | -3392      |
| 322 | 959         | 151         | 0            | 0          | -3300      |
| 323 | 1024        | 12          | 15           | -119       | -3392      |
| 324 | 1205        | -21         | 41           | -267       | -3347      |
| 325 | -1          | 0           | 0            | -3         | 732        |
| 326 | -52         | -169        | 0            | -2         | 1464       |
| 327 | -204        | -676        | -1           | -1         | 2928       |
| 328 | -457        | -1521       | -1           | 0          | 4391       |
| 329 | -811        | -2703       | -1           | 0          | 5122       |
| 330 | -811        | -2703       | -1           | 0          | 5122       |
| 331 | -811        | -2703       | -1           | 0          | 5122       |
| 332 | -10120      | -33732      | 122          | 0          | -21736     |
| 333 | -7869       | -25916      | 136          | 68         | -18766     |
| 334 | -6330       | -20591      | 116          | 77         | -10481     |
| 335 | -5416       | -17322      | 290          | 161        | -4223      |
| 336 | -5170       | -16412      | 1754         | 990        | 4302       |
| 337 | -6967       | -20735      | 3748         | 6114       | 2929       |
| 338 | -1454       | -19094      | 10120        | 41475      | -8346      |
| 339 | -3858       | -14032      | 3131         | 4237       | -15318     |
| 340 | -222        | -4965       | 1356         | 329        | -13461     |
| 341 | 1104        | -1220       | 261          | -205       | -6662      |
| 342 | 1468        | 14          | 81           | -394       | -3378      |
| 343 | 0           | 0           | 0            | -5         | 733        |
| 344 | -51         | -169        | -1           | -4         | 1465       |
| 345 | -203        | -676        | -1           | -2         | 2929       |
| 346 | -457        | -1521       | -1           | -1         | 4392       |

PROGETTAZIONE ATI:

| In  | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |
|-----|-------------|-------------|--------------|------------|------------|
| 347 | -811        | -2704       | -1           | 0          | 5124       |
| 348 | -811        | -2704       | -1           | 0          | 5124       |
| 349 | -811        | -2704       | -1           | 0          | 5124       |
| 350 | -10158      | -33859      | 161          | 0          | -21836     |
| 351 | -7889       | -25997      | 185          | 74         | -18859     |
| 352 | -6337       | -20572      | 194          | 52         | -10430     |
| 353 | -5430       | -16961      | 210          | -3         | -3717      |
| 354 | -5559       | -15050      | 223          | -59        | 5748       |
| 355 | -7010       | -12252      | 229          | -107       | 40535      |
| 356 | -2883       | -28928      | 228          | -145       | 5823       |
| 357 | 237         | 8070        | 217          | -182       | -2934      |
| 358 | 728         | -1011       | 190          | -238       | -10895     |
| 359 | 1550        | -595        | 124          | -337       | -6263      |
| 360 | 1838        | 154         | 80           | -515       | -3251      |
| 361 | 1           | 0           | -1           | -9         | 733        |
| 362 | -50         | -169        | -1           | -6         | 1466       |
| 363 | -203        | -677        | -1           | -3         | 2931       |
| 364 | -457        | -1522       | -1           | -1         | 4395       |
| 365 | -812        | -2706       | -1           | 0          | 5127       |
| 366 | -812        | -2706       | -1           | 0          | 5127       |
| 367 | -812        | -2706       | -1           | 0          | 5127       |
| 368 | -10210      | -34033      | 195          | 0          | -21982     |
| 369 | -7906       | -26128      | 229          | 66         | -19021     |
| 370 | -6320       | -20717      | 267          | 5          | -10714     |
| 371 | -5375       | -17392      | 413          | -175       | -4406      |
| 372 | -5105       | -16439      | 998          | -909       | 4165       |
| 373 | -6885       | -20734      | 1765         | -2584      | 2837       |
| 374 | -1359       | -19053      | 1569         | 10536      | -8398      |
| 375 | -2935       | -13999      | -331         | 2260       | -15305     |
| 376 | 665         | -4945       | -2           | -479       | -13268     |
| 377 | 1960        | -1202       | 111          | -441       | -6632      |
| 378 | 2311        | 12          | 87           | -574       | -3320      |
| 379 | 5           | 0           | -1           | -14        | 734        |
| 380 | -48         | -169        | -1           | -10        | 1468       |
| 381 | -201        | -677        | -1           | -6         | 2934       |
| 382 | -456        | -1523       | -1           | -3         | 4399       |
| 383 | -812        | -2708       | -1           | 0          | 5131       |
| 384 | -812        | -2708       | -1           | 0          | 5131       |
| 385 | -812        | -2708       | -1           | 0          | 5131       |
| 386 | -10273      | -34243      | 214          | 0          | -22166     |
| 387 | -7913       | -26276      | 251          | 45         | -19201     |
| 388 | -6284       | -20871      | 268          | -30        | -11037     |
| 389 | -5260       | -17753      | 297          | -130       | -4856      |
| 390 | -4821       | -18032      | 318          | -215       | -372       |
| 391 | -1931       | -18570      | 327          | -269       | -1348      |
| 392 | -1164       | -17883      | 324          | -302       | -7836      |
| 393 | 992         | -12547      | 306          | -331       | -12969     |
| 394 | 1142        | -6452       | 266          | -386       | -11854     |
| 395 | 2421        | -1460       | 173          | -476       | -6681      |
| 396 | 2844        | -20         | 112          | -577       | -3322      |
| 397 | 10          | 0           | -1           | -20        | 735        |
| 398 | -44         | -169        | -1           | -15        | 1470       |
| 399 | -198        | -678        | -1           | -10        | 2938       |
| 400 | -455        | -1525       | 0            | -5         | 4405       |
| 401 | -813        | -2710       | 0            | 0          | 5137       |
| 402 | -813        | -2710       | 0            | 0          | 5137       |
| 403 | -813        | -2710       | 0            | 0          | 5137       |
| 404 | -10341      | -34471      | 217          | 0          | -22381     |
| 405 | -7901       | -26410      | 255          | -8         | -19390     |
| 406 | -6220       | -20871      | 259          | -112       | -11050     |
| 407 | -5218       | -17463      | 242          | -120       | -4682      |
| 408 | -4919       | -16449      | 1030         | 561        | 3981       |
| 409 | -6641       | -20704      | 3133         | 5600       | 2734       |
| 410 | -1162       | -18976      | 9629         | 41136      | -8436      |
| 411 | -1535       | -13940      | 3172         | 3921       | -15229     |
| 412 | 1870        | -4911       | 1398         | 28         | -12810     |
| 413 | 3029        | -1208       | 291          | -491       | -6472      |
| 414 | 3345        | 0           | 135          | -459       | -3196      |
| 415 | 19          | 1           | -1           | -30        | 737        |
| 416 | -38         | -170        | 0            | -22        | 1473       |
| 417 | -193        | -678        | 0            | -15        | 2943       |
| 418 | -452        | -1525       | 2            | -8         | 4411       |
| 419 | -814        | -2713       | 2            | 0          | 5144       |
| 420 | -814        | -2713       | 2            | 0          | 5144       |
| 421 | -814        | -2713       | 2            | 0          | 5144       |
| 422 | -10416      | -34721      | 192          | 0          | -22634     |
| 423 | -7844       | -26544      | 244          | -114       | -19606     |
| 424 | -6089       | -20869      | 297          | -307       | -11079     |
| 425 | -5070       | -17094      | 363          | -459       | -4078      |
| 426 | -5149       | -15061      | 411          | -545       | 5393       |
| 427 | -6591       | -12183      | 431          | -571       | 40343      |
| 428 | 359         | -28272      | 422          | -562       | 6100       |
| 429 | 3001        | 8409        | 388          | -540       | -1661      |
| 430 | 3045        | -899        | 326          | -522       | -9926      |
| 431 | 3556        | -613        | 208          | -491       | -5747      |

PROGETTAZIONE ATI:

| In  | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |
|-----|-------------|-------------|--------------|------------|------------|
| 432 | 3750        | 102         | 134          | -76        | -2988      |
| 433 | 34          | 1           | -1           | -41        | 738        |
| 434 | -28         | -170        | 1            | -31        | 1475       |
| 435 | -185        | -678        | 3            | -23        | 2948       |
| 436 | -446        | -1526       | 6            | -13        | 4417       |
| 437 | -814        | -2715       | 7            | 0          | 5151       |
| 438 | -814        | -2715       | 7            | 0          | 5151       |
| 439 | -814        | -2715       | 7            | 0          | 5151       |
| 440 | -10497      | -34991      | 111          | 0          | -22916     |
| 441 | -7702       | -26691      | 183          | -287       | -19864     |
| 442 | -5827       | -21007      | 310          | -581       | -11391     |
| 443 | -4752       | -17502      | 550          | -860       | -5010      |
| 444 | -4458       | -16406      | 1180         | -1591      | 3807       |
| 445 | -6018       | -20609      | 1971         | -5025      | 2681       |
| 446 | -812        | -18841      | 1762         | 9012       | -8404      |
| 447 | 177         | -13832      | -175         | 1701       | -15024     |
| 448 | 2998        | -4845       | 109          | -355       | -11898     |
| 449 | 3765        | -1254       | 175          | -53        | -5990      |
| 450 | 3940        | 0           | 127          | 548        | -2948      |
| 451 | 54          | 0           | -1           | -54        | 738        |
| 452 | -13         | -170        | 1            | -41        | 1476       |
| 453 | -170        | -679        | 7            | -33        | 2950       |
| 454 | -436        | -1525       | 14           | -20        | 4422       |
| 455 | -815        | -2716       | 16           | 0          | 5157       |
| 456 | -815        | -2716       | 16           | 0          | 5157       |
| 457 | -815        | -2716       | 16           | 0          | 5157       |
| 458 | -10572      | -35240      | -69          | 0          | -23169     |
| 459 | -7410       | -26797      | 23           | -544       | -20086     |
| 460 | -5369       | -21131      | 224          | -927       | -11644     |
| 461 | -4211       | -17816      | 436          | -1111      | -5482      |
| 462 | -3852       | -17944      | 576          | -1176      | -696       |
| 463 | -1076       | -18355      | 613          | -1016      | -1435      |
| 464 | -478        | -17623      | 577          | -935       | -7769      |
| 465 | 4201        | -12306      | 477          | -775       | -12567     |
| 466 | 3095        | -6305       | 357          | -365       | -11489     |
| 467 | 3644        | -1398       | 211          | 594        | -6073      |
| 468 | 3742        | -24         | 130          | 1372       | -2931      |
| 469 | 72          | -2          | -2           | -60        | 735        |
| 470 | 9           | -172        | 0            | -49        | 1470       |
| 471 | -144        | -679        | 11           | -46        | 2944       |
| 472 | -414        | -1521       | 28           | -33        | 4420       |
| 473 | -814        | -2715       | 33           | 0          | 5157       |
| 474 | -814        | -2715       | 33           | 0          | 5157       |
| 475 | -814        | -2715       | 33           | 0          | 5157       |
| 476 | -10619      | -35398      | -417         | 0          | -23266     |
| 477 | -6852       | -26795      | -277         | -910       | -20139     |
| 478 | -4592       | -21078      | 93           | -1383      | -11391     |
| 479 | -3536       | -17500      | 354          | -1434      | -4874      |
| 480 | -3443       | -16210      | 1132         | -681       | 3752       |
| 481 | -4012       | -20413      | 4025         | 4049       | 2739       |
| 482 | -324        | -18573      | 11501        | 41205      | -8346      |
| 483 | 1245        | -13625      | 3713         | 2805       | -14752     |
| 484 | 3027        | -4564       | 1855         | -136       | -10802     |
| 485 | 3191        | -1159       | 466          | 1404       | -5513      |
| 486 | 3007        | 5           | 121          | 2422       | -2693      |
| 487 | 75          | -9          | -6           | -50        | 723        |
| 488 | 37          | -176        | -6           | -49        | 1451       |
| 489 | -102        | -680        | 12           | -62        | 2920       |
| 490 | -370        | -1513       | 51           | -52        | 4401       |
| 491 | -813        | -2709       | 67           | 0          | 5143       |
| 492 | -813        | -2709       | 67           | 0          | 5143       |
| 493 | -813        | -2709       | 67           | 0          | 5143       |
| 494 | -10616      | -35385      | -1055        | 0          | -22921     |
| 495 | -5885       | -26671      | -782         | -1338      | -19559     |
| 496 | -3383       | -21024      | -13          | -1875      | -10773     |
| 497 | -2580       | -17116      | 647          | -1900      | -3619      |
| 498 | -3307       | -14910      | 950          | -1833      | 5476       |
| 499 | -5072       | -11149      | 1218         | -519       | 41085      |
| 500 | 6037        | -27804      | 972          | -981       | 7555       |
| 501 | 4174        | 9502        | 1875         | 172        | 1248       |
| 502 | 2610        | -915        | 1056         | 1410       | -8872      |
| 503 | 2185        | -497        | 392          | 2242       | -5218      |
| 504 | 1851        | 158         | 88           | 3439       | -2724      |
| 505 | 51          | -11         | -11          | -18        | 705        |
| 506 | 46          | -178        | -15          | -39        | 1426       |
| 507 | -47         | -678        | 1            | -75        | 2885       |
| 508 | -291        | -1495       | 82           | -78        | 4367       |
| 509 | -810        | -2701       | 116          | 0          | 5111       |
| 510 | -810        | -2701       | 116          | 0          | 5111       |
| 511 | -810        | -2701       | 116          | 0          | 5111       |
| 512 | -10556      | -35187      | -1873        | 0          | -21957     |
| 513 | -4433       | -26398      | -1366        | -1685      | -18215     |
| 514 | -1923       | -21047      | 10           | -2157      | -9991      |
| 515 | -1619       | -17322      | 962          | -2110      | -4019      |
| 516 | -1985       | -15409      | 1881         | -2913      | 4321       |

PROGETTAZIONE ATI:

| In  | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |
|-----|-------------|-------------|--------------|------------|------------|
| 517 | 1532        | -19530      | 2748         | -6103      | 6832       |
| 518 | 333         | -19795      | 2509         | 14258      | -7595      |
| 519 | 587         | -12631      | -290         | 5202       | -17412     |
| 520 | 826         | -3231       | -18          | 3004       | -11318     |
| 521 | 1176        | -749        | 89           | 2571       | -6318      |
| 522 | 884         | 91          | 45           | 3810       | -3211      |
| 523 | 22          | -1          | -10          | 19         | 701        |
| 524 | 39          | -158        | -19          | -19        | 1410       |
| 525 | -19         | -678        | -6           | -59        | 2841       |
| 526 | -117        | -1460       | 89           | -91        | 4297       |
| 527 | -803        | -2677       | 209          | 0          | 5030       |
| 528 | -803        | -2677       | 209          | 0          | 5030       |
| 529 | -803        | -2677       | 209          | 0          | 5030       |
| 530 | -10443      | -34810      | -3211        | 0          | -19622     |
| 531 | -1728       | -25952      | -1409        | -1633      | -15229     |
| 532 | -901        | -21146      | 12           | -1652      | -8340      |
| 533 | -598        | -17367      | 863          | -1496      | -4609      |
| 534 | -135        | -16842      | 1492         | -2217      | -1683      |
| 535 | -665        | -17746      | 1839         | -3012      | -2234      |
| 536 | 57          | -17074      | 704          | 3205       | -9192      |
| 537 | 2254        | -11834      | -222         | 5809       | -14005     |
| 538 | 13          | -5593       | -111         | 2753       | -12328     |
| 539 | 302         | -1306       | 22           | 1800       | -6610      |
| 540 | 186         | -57         | 29           | 2819       | -3304      |
| 541 | 2           | -4          | -16          | 33         | 778        |
| 542 | 30          | -146        | -30          | -7         | 1502       |
| 543 | 11          | -577        | -50          | -38        | 2869       |
| 544 | 28          | -1404       | 91           | -91        | 4126       |
| 545 | -832        | -2774       | 401          | 0          | 4738       |
| 546 | -832        | -2774       | 401          | 0          | 4738       |
| 547 | -832        | -2774       | 401          | 0          | 4738       |
| 548 | -11208      | -37361      | -5587        | 0          | -11043     |
| 549 | 190         | -25709      | -1504        | -1447      | -7857      |
| 550 | -33         | -19039      | 353          | -1096      | -4667      |
| 551 | 1254        | -16727      | 618          | -883       | -4921      |
| 552 | 573         | -16774      | 944          | -1702      | -5517      |
| 553 | 216         | -17526      | 1007         | -1829      | -6327      |
| 554 | 563         | -16551      | 1102         | 1289       | -10715     |
| 555 | 337         | -12081      | 846          | 3183       | -14452     |
| 556 | -180        | -6157       | 180          | 2137       | -12821     |
| 557 | 1           | -1645       | 151          | 1056       | -7202      |
| 558 | -2          | -59         | 81           | 1892       | -3822      |

Combinazione n° 15 - SLER

| In | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |
|----|-------------|-------------|--------------|------------|------------|
| 1  | 2           | -4          | 21           | -25        | 778        |
| 2  | 22          | -1          | 12           | -14        | 701        |
| 3  | 39          | -158        | 25           | 24         | 1410       |
| 4  | 30          | -146        | 38           | 9          | 1502       |
| 5  | 51          | -11         | 14           | 24         | 705        |
| 6  | 46          | -178        | 19           | 50         | 1426       |
| 7  | -19         | -678        | 7            | 76         | 2841       |
| 8  | 11          | -577        | 65           | 49         | 2869       |
| 9  | -47         | -678        | -1           | 97         | 2885       |
| 10 | 75          | -9          | 8            | 66         | 723        |
| 11 | 37          | -176        | 8            | 64         | 1451       |
| 12 | -102        | -680        | -9           | 80         | 2920       |
| 13 | -117        | -1460       | -69          | 119        | 4297       |
| 14 | 28          | -1404       | -70          | 118        | 4126       |
| 15 | -291        | -1495       | -63          | 101        | 4367       |
| 16 | -370        | -1513       | -40          | 68         | 4401       |
| 17 | 72          | -2          | 3            | 78         | 735        |
| 18 | 9           | -172        | 0            | 64         | 1470       |
| 19 | -144        | -679        | -8           | 60         | 2944       |
| 20 | -414        | -1521       | -21          | 43         | 4420       |
| 21 | -803        | -2677       | -161         | 0          | 5030       |
| 22 | -832        | -2774       | -309         | 0          | 4738       |
| 23 | -810        | -2701       | -89          | 0          | 5111       |
| 24 | -813        | -2709       | -52          | 0          | 5143       |
| 25 | -814        | -2715       | -26          | 0          | 5157       |
| 26 | 54          | 0           | 1            | 70         | 738        |
| 27 | -13         | -170        | -1           | 54         | 1476       |
| 28 | -170        | -679        | -5           | 43         | 2950       |
| 29 | -436        | -1525       | -11          | 26         | 4422       |
| 30 | -815        | -2716       | -12          | 0          | 5157       |
| 31 | -815        | -2716       | -12          | 0          | 5157       |
| 32 | -815        | -2716       | -12          | 0          | 5157       |
| 33 | -815        | -2716       | -12          | 0          | 5157       |
| 34 | -815        | -2716       | -12          | 0          | 5157       |
| 35 | -815        | -2716       | -12          | 0          | 5157       |
| 36 | -815        | -2716       | -12          | 0          | 5157       |
| 37 | 34          | 1           | 1            | 54         | 738        |

PROGETTAZIONE ATI:

| In  | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |
|-----|-------------|-------------|--------------|------------|------------|
| 38  | -28         | -170        | -1           | 41         | 1475       |
| 39  | -185        | -678        | -2           | 30         | 2948       |
| 40  | -446        | -1526       | -5           | 16         | 4417       |
| 41  | -814        | -2715       | -5           | 0          | 5151       |
| 42  | -814        | -2715       | -5           | 0          | 5151       |
| 43  | -814        | -2715       | -5           | 0          | 5151       |
| 44  | -814        | -2715       | -5           | 0          | 5151       |
| 45  | -814        | -2715       | -5           | 0          | 5151       |
| 46  | -814        | -2715       | -5           | 0          | 5151       |
| 47  | -814        | -2715       | -5           | 0          | 5151       |
| 48  | -814        | -2715       | -5           | 0          | 5151       |
| 49  | -814        | -2715       | -5           | 0          | 5151       |
| 50  | 19          | 1           | 1            | 39         | 737        |
| 51  | -38         | -170        | 0            | 29         | 1473       |
| 52  | -193        | -678        | 0            | 20         | 2943       |
| 53  | -452        | -1525       | -1           | 10         | 4411       |
| 54  | -814        | -2713       | -2           | 0          | 5144       |
| 55  | -814        | -2713       | -2           | 0          | 5144       |
| 56  | -814        | -2713       | -2           | 0          | 5144       |
| 57  | -7778       | -25925      | 20144        | 0          | -17646     |
| 58  | -8349       | -27829      | 31569        | 0          | -11043     |
| 59  | -7860       | -26201      | 13836        | 0          | -18749     |
| 60  | -7903       | -26343      | 9784         | 0          | -19071     |
| 61  | -7903       | -26342      | 6296         | 0          | -19007     |
| 62  | -7864       | -26213      | 4092         | 0          | -18742     |
| 63  | -7805       | -26017      | 2674         | 0          | -18433     |
| 64  | -7742       | -25806      | 1740         | 0          | -18147     |
| 65  | 10          | 0           | 1            | 27         | 735        |
| 66  | -44         | -169        | 1            | 19         | 1470       |
| 67  | -198        | -678        | 1            | 13         | 2938       |
| 68  | -455        | -1525       | 1            | 6          | 4405       |
| 69  | -813        | -2710       | 0            | 0          | 5137       |
| 70  | -813        | -2710       | 0            | 0          | 5137       |
| 71  | -813        | -2710       | 0            | 0          | 5137       |
| 72  | -7683       | -25611      | 1127         | 0          | -17909     |
| 73  | -1283       | -19334      | 10659        | 7741       | -14873     |
| 74  | 190         | -19158      | 9880         | 6608       | -7857      |
| 75  | -3296       | -19664      | 11994        | 8741       | -15732     |
| 76  | -4377       | -19864      | 9180         | 7961       | -15986     |
| 77  | -5098       | -19950      | 6210         | 6464       | -15938     |
| 78  | -5514       | -19945      | 4169         | 4884       | -15710     |
| 79  | -5732       | -19859      | 2798         | 3585       | -15427     |
| 80  | -5836       | -19743      | 1843         | 2585       | -15158     |
| 81  | -5878       | -19637      | 1198         | 1846       | -14943     |
| 82  | 5           | 0           | 1            | 18         | 734        |
| 83  | -48         | -169        | 1            | 12         | 1468       |
| 84  | -201        | -677        | 1            | 8          | 2934       |
| 85  | -456        | -1523       | 2            | 3          | 4399       |
| 86  | -812        | -2708       | 1            | 0          | 5131       |
| 87  | -812        | -2708       | 1            | 0          | 5131       |
| 88  | -812        | -2708       | 1            | 0          | 5131       |
| 89  | -7630       | -25434      | 734          | 0          | -17715     |
| 90  | -5885       | -19531      | 804          | 1321       | -14767     |
| 91  | -670        | -15883      | 4221         | 8421       | -8340      |
| 92  | -26         | -14333      | 1110         | 5555       | -4667      |
| 93  | -1433       | -15826      | 5909         | 11311      | -9699      |
| 94  | -2525       | -15815      | 5751         | 10633      | -9764      |
| 95  | -3435       | -15835      | 4364         | 8898       | -9740      |
| 96  | -4027       | -15853      | 3278         | 6947       | -9636      |
| 97  | -4380       | -15760      | 2448         | 5262       | -9369      |
| 98  | -4581       | -15658      | 1647         | 3880       | -9123      |
| 99  | -4677       | -15635      | 1038         | 2823       | -8988      |
| 100 | -4721       | -15613      | 793          | 2079       | -8895      |
| 101 | 1           | 0           | 1            | 11         | 733        |
| 102 | -50         | -169        | 1            | 8          | 1466       |
| 103 | -203        | -677        | 1            | 4          | 2931       |
| 104 | -457        | -1522       | 2            | 2          | 4395       |
| 105 | -812        | -2706       | 2            | 0          | 5127       |
| 106 | -812        | -2706       | 2            | 0          | 5127       |
| 107 | -812        | -2706       | 2            | 0          | 5127       |
| 108 | -7582       | -25272      | 477          | 0          | -17558     |
| 109 | -5878       | -19417      | 546          | 940        | -14612     |
| 110 | -4747       | -15500      | 650          | 1527       | -8708      |
| 111 | -501        | -13508      | 1321         | 6915       | -4485      |
| 112 | 1254        | -12959      | 100          | 4328       | -4921      |
| 113 | -1261       | -13554      | 2444         | 10103      | -3740      |
| 114 | -2028       | -13435      | 2559         | 10169      | -3181      |
| 115 | -2784       | -13671      | 2159         | 8800       | -3571      |
| 116 | -3309       | -13853      | 2313         | 7210       | -3690      |
| 117 | -3739       | -13666      | 2387         | 5724       | -3311      |
| 118 | -3994       | -13418      | 1459         | 4284       | -2737      |
| 119 | -4098       | -13627      | 591          | 3121       | -3055      |
| 120 | -4119       | -13784      | 811          | 2422       | -3200      |
| 121 | -4212       | -13563      | 1092         | 1906       | -2843      |
| 122 | 0           | 0           | 1            | 7          | 733        |

PROGETTAZIONE ATI:



| In  | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |
|-----|-------------|-------------|--------------|------------|------------|
| 123 | -51         | -169        | 1            | 5          | 1465       |
| 124 | -203        | -676        | 1            | 2          | 2929       |
| 125 | -457        | -1521       | 2            | 1          | 4392       |
| 126 | -811        | -2704       | 1            | 0          | 5124       |
| 127 | -811        | -2704       | 1            | 0          | 5124       |
| 128 | -811        | -2704       | 1            | 0          | 5124       |
| 129 | -7541       | -25138      | 295          | 0          | -17437     |
| 130 | -5865       | -19316      | 333          | 648        | -14490     |
| 131 | -4758       | -15397      | 356          | 1061       | -8563      |
| 132 | -4260       | -13297      | 401          | 1291       | -2318      |
| 133 | -135        | -13606      | 989          | 5702       | -875       |
| 134 | 573         | -13412      | -43          | 3496       | -3810      |
| 135 | -1934       | -12754      | 1872         | 8148       | 4321       |
| 136 | -2797       | -12665      | 285          | 8053       | 5476       |
| 137 | -2886       | -13312      | 52           | 7093       | 3752       |
| 138 | -3221       | -14465      | 1391         | 6346       | -100       |
| 139 | -3708       | -13462      | 3451         | 5587       | 3807       |
| 140 | -4321       | -12807      | 1250         | 4093       | 5393       |
| 141 | -4065       | -13494      | 419          | 2764       | 3981       |
| 142 | -3981       | -14533      | 816          | 2467       | 158        |
| 143 | -4203       | -13483      | 2672         | 2305       | 4165       |
| 144 | -4627       | -12792      | 444          | 1379       | 5748       |
| 145 | -1          | 0           | 0            | 4          | 732        |
| 146 | -52         | -169        | 1            | 3          | 1464       |
| 147 | -204        | -676        | 1            | 1          | 2928       |
| 148 | -457        | -1521       | 1            | 0          | 4391       |
| 149 | -811        | -2703       | 1            | 0          | 5122       |
| 150 | -811        | -2703       | 1            | 0          | 5122       |
| 151 | -811        | -2703       | 1            | 0          | 5122       |
| 152 | -7512       | -25040      | 173          | 0          | -17352     |
| 153 | -5849       | -19253      | 181          | 426        | -14415     |
| 154 | -4749       | -15392      | 114          | 693        | -8535      |
| 155 | -4238       | -13502      | 30           | 775        | -2702      |
| 156 | -4248       | -13458      | 592          | 534        | 4302       |
| 157 | -665        | -14747      | 1295         | 10342      | -1396      |
| 158 | 216         | -14372      | -481         | 5165       | -4555      |
| 159 | 1532        | -16424      | 2962         | 10264      | 6832       |
| 160 | -4593       | -11149      | -787         | 5869       | 41085      |
| 161 | -4012       | -16942      | 766          | 4495       | 2739       |
| 162 | -1076       | -15262      | 614          | 4897       | -787       |
| 163 | -5274       | -17111      | 5053         | 7938       | 2681       |
| 164 | -5883       | -12183      | 1029         | 3546       | 40343      |
| 165 | -5592       | -17190      | 1164         | 2112       | 2734       |
| 166 | -1930       | -15438      | 791          | 2311       | -712       |
| 167 | -5739       | -17214      | 4699         | 6867       | 2837       |
| 168 | -6198       | -12252      | 467          | 1364       | 40535      |
| 169 | -5797       | -17213      | 1346         | 198        | 2929       |
| 170 | -1          | 0           | 0            | 2          | 732        |
| 171 | -52         | -169        | 0            | 1          | 1463       |
| 172 | -204        | -676        | 1            | 1          | 2927       |
| 173 | -457        | -1520       | 1            | 0          | 4389       |
| 174 | -811        | -2702       | 1            | 0          | 5121       |
| 175 | -811        | -2702       | 1            | 0          | 5121       |
| 176 | -811        | -2702       | 1            | 0          | 5121       |
| 177 | -7491       | -24971      | 101          | 0          | -17296     |
| 178 | -5836       | -19209      | 116          | 265        | -14366     |
| 179 | -4739       | -15402      | 132          | 447        | -8545      |
| 180 | -4188       | -13668      | 160          | 560        | -2918      |
| 181 | -4085       | -14489      | 187          | 616        | 365        |
| 182 | -2059       | -15441      | 206          | 630        | -575       |
| 183 | 57          | -14286      | 364          | 14942      | -6856      |
| 184 | 563         | -13809      | -251         | 6353       | -8222      |
| 185 | 333         | -17162      | 11981        | 56434      | -6474      |
| 186 | 6037        | -27804      | 265          | 7350       | 7555       |
| 187 | -299        | -15755      | 738          | 15685      | -6183      |
| 188 | -424        | -14767      | 197          | 3357       | -5770      |
| 189 | -692        | -16004      | 11080        | 42339      | -6224      |
| 190 | 359         | -28272      | 817          | 2833       | 6100       |
| 191 | -963        | -16106      | 973          | 14623      | -6246      |
| 192 | -955        | -14987      | 729          | 2037       | -5816      |
| 193 | -1110       | -16146      | 11047        | 41785      | -6216      |
| 194 | -2883       | -28928      | 460          | 1281       | 5823       |
| 195 | -1178       | -16159      | 1152         | 13121      | -6175      |
| 196 | -1101       | -15015      | 210          | 613        | -5742      |
| 197 | -1          | 0           | 0            | 1          | 732        |
| 198 | -52         | -169        | 0            | 1          | 1463       |
| 199 | -204        | -676        | 0            | 0          | 2926       |
| 200 | -457        | -1520       | 0            | 0          | 4389       |
| 201 | -810        | -2701       | 0            | 0          | 5120       |
| 202 | -810        | -2701       | 0            | 0          | 5120       |
| 203 | -810        | -2701       | 0            | 0          | 5120       |
| 204 | -7477       | -24923      | 52           | 0          | -17259     |
| 205 | -5829       | -19167      | 76           | 132        | -14325     |
| 206 | -4740       | -15333      | 173          | 241        | -8453      |
| 207 | -4241       | -13466      | 587          | 387        | -2634      |

PROGETTAZIONE ATI:

| In  | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |
|-----|-------------|-------------|--------------|------------|------------|
| 208 | -4260       | -13440      | 2146         | 1273       | 4372       |
| 209 | -5816       | -17208      | 4174         | 6435       | 2980       |
| 210 | -1204       | -16161      | 10551        | 41594      | -6150      |
| 211 | 2254        | -10492      | 1829         | 8714       | -12033     |
| 212 | 337         | -10227      | 162          | 4306       | -11609     |
| 213 | 587         | -11904      | 2689         | 5798       | -17412     |
| 214 | 4174        | 9502        | -358         | 426        | 1248       |
| 215 | 1245        | -12358      | -1046        | 4608       | -14091     |
| 216 | 4201        | -10969      | -115         | 1765       | -10849     |
| 217 | 177         | -12570      | 3367         | 5068       | -14156     |
| 218 | 3001        | 8409        | 613          | 1997       | -1661      |
| 219 | -1535       | -12666      | -896         | 5554       | -14221     |
| 220 | 992         | -11181      | 623          | 1670       | -10971     |
| 221 | -2935       | -12706      | 3503         | 4620       | -14228     |
| 222 | 237         | 8070        | 415          | 1142       | -2934      |
| 223 | -3858       | -12722      | -730         | 4536       | -14212     |
| 224 | 480         | -11217      | 195          | 570        | -10945     |
| 225 | -4307       | -12728      | 3117         | 4403       | -14199     |
| 226 | -1          | 0           | 0            | 0          | 732        |
| 227 | -52         | -169        | 0            | 0          | 1463       |
| 228 | -204        | -676        | 0            | 0          | 2926       |
| 229 | -457        | -1520       | 0            | 0          | 4388       |
| 230 | -810        | -2701       | 0            | 0          | 5120       |
| 231 | -810        | -2701       | 0            | 0          | 5120       |
| 232 | -810        | -2701       | 0            | 0          | 5120       |
| 233 | -7471       | -24904      | 0            | 0          | -17245     |
| 234 | -5827       | -19147      | 0            | 0          | -14305     |
| 235 | -4746       | -15282      | 0            | 0          | -8398      |
| 236 | -4270       | -13228      | 0            | 0          | -2180      |
| 237 | -4655       | -12759      | 0            | 0          | 5887       |
| 238 | -6241       | -12244      | 0            | 0          | 40634      |
| 239 | -3777       | -29197      | 0            | 0          | 5831       |
| 240 | -669        | 7896        | 0            | 0          | -3105      |
| 241 | 13          | -5019       | 1000         | 1256       | -11449     |
| 242 | -180        | -5242       | 385          | 1171       | -11082     |
| 243 | 826         | -3231       | 1162         | 1848       | -11318     |
| 244 | 2610        | -915        | -229         | 1092       | -8872      |
| 245 | 3027        | -4564       | -536         | 317        | -10802     |
| 246 | 3095        | -5641       | -95          | 803        | -11027     |
| 247 | 2998        | -4802       | 1544         | 1170       | -11898     |
| 248 | 3045        | -899        | 433          | 1244       | -9926      |
| 249 | 1870        | -4868       | -493         | 1941       | -12810     |
| 250 | 1142        | -5787       | 475          | 1307       | -11190     |
| 251 | 665         | -4895       | 1716         | 823        | -13268     |
| 252 | 728         | -1011       | 327          | 984        | -10895     |
| 253 | -222        | -4908       | -352         | 1354       | -13461     |
| 254 | -605        | -5814       | 155          | 513        | -11195     |
| 255 | -674        | -4912       | 1389         | 562        | -13529     |
| 256 | -174        | -1099       | 0            | 0          | -11044     |
| 257 | -1          | 0           | 0            | -1         | 732        |
| 258 | -52         | -169        | 0            | 0          | 1463       |
| 259 | -204        | -676        | 0            | 0          | 2926       |
| 260 | -457        | -1520       | 0            | 0          | 4389       |
| 261 | -810        | -2701       | 0            | 0          | 5120       |
| 262 | -810        | -2701       | 0            | 0          | 5120       |
| 263 | -810        | -2701       | 0            | 0          | 5120       |
| 264 | -7477       | -24923      | 44           | 0          | -17259     |
| 265 | -5829       | -19167      | 55           | 22         | -14325     |
| 266 | -4740       | -15333      | 84           | 3          | -8453      |
| 267 | -4241       | -13466      | 229          | -103       | -2634      |
| 268 | -4260       | -13440      | 803          | -720       | 4372       |
| 269 | -5816       | -17208      | 1563         | -1088      | 2980       |
| 270 | -1204       | -16161      | 1369         | 11881      | -6150      |
| 271 | -4307       | -12728      | -522         | 3394       | -14199     |
| 272 | -674        | -4912       | -169         | 337        | -13529     |
| 273 | 302         | -1195       | 353          | 348        | -6270      |
| 274 | 1           | -1416       | 49           | 113        | -6517      |
| 275 | 1176        | -749        | 275          | 547        | -6318      |
| 276 | 2185        | -497        | -88          | 597        | -5218      |
| 277 | 3191        | -1159       | -185         | 654        | -5513      |
| 278 | 3644        | -1274       | -35          | 748        | -6073      |
| 279 | 3765        | -1254       | 378          | 810        | -5990      |
| 280 | 3556        | -613        | 241          | 720        | -5747      |
| 281 | 3029        | -1208       | 38           | 965        | -6472      |
| 282 | 2421        | -1340       | 272          | 966        | -6605      |
| 283 | 1960        | -1202       | 478          | 845        | -6632      |
| 284 | 1550        | -595        | 189          | 810        | -6263      |
| 285 | 1104        | -1220       | -104         | 724        | -6646      |
| 286 | 753         | -1352       | 90           | 441        | -6618      |
| 287 | 652         | -1236       | 286          | 158        | -6646      |
| 288 | 657         | -623        | 0            | 0          | -6351      |
| 289 | 652         | -1236       | 2            | -98        | -6646      |
| 290 | -1          | 0           | 0            | -2         | 732        |
| 291 | -52         | -169        | 0            | -1         | 1463       |
| 292 | -204        | -676        | 0            | 0          | 2927       |

PROGETTAZIONE ATI:

| In  | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |
|-----|-------------|-------------|--------------|------------|------------|
| 293 | -457        | -1520       | -1           | 0          | 4389       |
| 294 | -811        | -2702       | -1           | 0          | 5121       |
| 295 | -811        | -2702       | -1           | 0          | 5121       |
| 296 | -811        | -2702       | -1           | 0          | 5121       |
| 297 | -7491       | -24971      | 84           | 0          | -17296     |
| 298 | -5836       | -19209      | 96           | 47         | -14366     |
| 299 | -4739       | -15402      | 100          | 43         | -8545      |
| 300 | -4188       | -13668      | 109          | 20         | -2918      |
| 301 | -4085       | -14489      | 115          | -4         | 365        |
| 302 | -2059       | -15441      | 119          | -24        | -575       |
| 303 | -1101       | -15015      | 119          | -41        | -5742      |
| 304 | 480         | -11217      | 113          | -59        | -10945     |
| 305 | -605        | -5814       | 99           | -86        | -11195     |
| 306 | 753         | -1352       | 65           | -139       | -6618      |
| 307 | 186         | -57         | 129          | -71        | -3126      |
| 308 | -2          | -59         | 35           | -103       | -3499      |
| 309 | 884         | 91          | 147          | 182        | -3189      |
| 310 | 1851        | 158         | 8            | 535        | -2724      |
| 311 | 3007        | 5           | -91          | 831        | -2693      |
| 312 | 3742        | -24         | 26           | 1065       | -2931      |
| 313 | 3940        | 0           | 140          | 1167       | -2948      |
| 314 | 3750        | 102         | 116          | 1147       | -2988      |
| 315 | 3345        | 0           | 67           | 1062       | -3196      |
| 316 | 2844        | -20         | 120          | 962        | -3304      |
| 317 | 2311        | 12          | 163          | 837        | -3320      |
| 318 | 1838        | 154         | 80           | 680        | -3251      |
| 319 | 1468        | 14          | -4           | 519        | -3378      |
| 320 | 1205        | -21         | 36           | 352        | -3315      |
| 321 | 1024        | 12          | 78           | 184        | -3390      |
| 322 | 959         | 151         | 0            | 0          | -3300      |
| 323 | 1024        | 12          | 15           | -119       | -3390      |
| 324 | 1205        | -21         | 41           | -258       | -3315      |
| 325 | -1          | 0           | 0            | -3         | 732        |
| 326 | -52         | -169        | 0            | -2         | 1464       |
| 327 | -204        | -676        | -1           | -1         | 2928       |
| 328 | -457        | -1521       | -1           | 0          | 4391       |
| 329 | -811        | -2703       | -1           | 0          | 5122       |
| 330 | -811        | -2703       | -1           | 0          | 5122       |
| 331 | -811        | -2703       | -1           | 0          | 5122       |
| 332 | -7512       | -25040      | 122          | 0          | -17352     |
| 333 | -5849       | -19253      | 136          | 68         | -14415     |
| 334 | -4749       | -15392      | 116          | 77         | -8535      |
| 335 | -4238       | -13502      | 290          | 161        | -2702      |
| 336 | -4248       | -13458      | 1754         | 990        | 4302       |
| 337 | -5797       | -17213      | 3748         | 6114       | 2929       |
| 338 | -1178       | -16159      | 10120        | 41475      | -6175      |
| 339 | -3858       | -12722      | 3131         | 4237       | -14212     |
| 340 | -222        | -4908       | 1356         | 329        | -13461     |
| 341 | 1104        | -1220       | 261          | -162       | -6646      |
| 342 | 1468        | 14          | 81           | -375       | -3378      |
| 343 | 0           | 0           | 0            | -5         | 733        |
| 344 | -51         | -169        | -1           | -4         | 1465       |
| 345 | -203        | -676        | -1           | -2         | 2929       |
| 346 | -457        | -1521       | -1           | -1         | 4392       |
| 347 | -811        | -2704       | -1           | 0          | 5124       |
| 348 | -811        | -2704       | -1           | 0          | 5124       |
| 349 | -811        | -2704       | -1           | 0          | 5124       |
| 350 | -7541       | -25138      | 161          | 0          | -17437     |
| 351 | -5865       | -19316      | 185          | 74         | -14490     |
| 352 | -4758       | -15397      | 194          | 52         | -8563      |
| 353 | -4260       | -13297      | 210          | 2          | -2318      |
| 354 | -4627       | -12792      | 223          | -42        | 5748       |
| 355 | -6198       | -12252      | 229          | -79        | 40535      |
| 356 | -2883       | -28928      | 228          | -108       | 5823       |
| 357 | 237         | 8070        | 217          | -139       | -2934      |
| 358 | 728         | -1011       | 190          | -184       | -10895     |
| 359 | 1550        | -595        | 124          | -281       | -6263      |
| 360 | 1838        | 154         | 80           | -510       | -3251      |
| 361 | 1           | 0           | -1           | -9         | 733        |
| 362 | -50         | -169        | -1           | -6         | 1466       |
| 363 | -203        | -677        | -1           | -3         | 2931       |
| 364 | -457        | -1522       | -1           | -1         | 4395       |
| 365 | -812        | -2706       | -1           | 0          | 5127       |
| 366 | -812        | -2706       | -1           | 0          | 5127       |
| 367 | -812        | -2706       | -1           | 0          | 5127       |
| 368 | -7582       | -25272      | 195          | 0          | -17558     |
| 369 | -5878       | -19417      | 229          | 66         | -14612     |
| 370 | -4747       | -15500      | 267          | 7          | -8708      |
| 371 | -4212       | -13563      | 413          | -145       | -2843      |
| 372 | -4203       | -13483      | 998          | -807       | 4165       |
| 373 | -5739       | -17214      | 1765         | -2584      | 2837       |
| 374 | -1110       | -16146      | 1569         | 10536      | -6216      |
| 375 | -2935       | -12706      | -331         | 2260       | -14228     |
| 376 | 665         | -4895       | -2           | -479       | -13268     |
| 377 | 1960        | -1202       | 111          | -399       | -6632      |

| In  | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |
|-----|-------------|-------------|--------------|------------|------------|
| 378 | 2311        | 12          | 87           | -574       | -3320      |
| 379 | 5           | 0           | -1           | -14        | 734        |
| 380 | -48         | -169        | -1           | -10        | 1468       |
| 381 | -201        | -677        | -1           | -6         | 2934       |
| 382 | -456        | -1523       | -1           | -3         | 4399       |
| 383 | -812        | -2708       | -1           | 0          | 5131       |
| 384 | -812        | -2708       | -1           | 0          | 5131       |
| 385 | -812        | -2708       | -1           | 0          | 5131       |
| 386 | -7630       | -25434      | 214          | 0          | -17715     |
| 387 | -5885       | -19531      | 251          | 45         | -14767     |
| 388 | -4721       | -15613      | 268          | -17        | -8895      |
| 389 | -4119       | -13784      | 297          | -93        | -3200      |
| 390 | -3981       | -14533      | 318          | -159       | 158        |
| 391 | -1930       | -15438      | 327          | -204       | -712       |
| 392 | -955        | -14987      | 324          | -232       | -5816      |
| 393 | 992         | -11181      | 306          | -257       | -10971     |
| 394 | 1142        | -5787       | 266          | -301       | -11190     |
| 395 | 2421        | -1340       | 173          | -421       | -6605      |
| 396 | 2844        | -20         | 112          | -577       | -3304      |
| 397 | 10          | 0           | -1           | -20        | 735        |
| 398 | -44         | -169        | -1           | -15        | 1470       |
| 399 | -198        | -678        | -1           | -10        | 2938       |
| 400 | -455        | -1525       | 0            | -5         | 4405       |
| 401 | -813        | -2710       | 0            | 0          | 5137       |
| 402 | -813        | -2710       | 0            | 0          | 5137       |
| 403 | -813        | -2710       | 0            | 0          | 5137       |
| 404 | -7683       | -25611      | 217          | 0          | -17909     |
| 405 | -5878       | -19637      | 255          | -1         | -14943     |
| 406 | -4677       | -15635      | 259          | -78        | -8988      |
| 407 | -4098       | -13627      | 242          | -81        | -3055      |
| 408 | -4065       | -13494      | 1030         | 561        | 3981       |
| 409 | -5592       | -17190      | 3133         | 5600       | 2734       |
| 410 | -963        | -16106      | 9629         | 41136      | -6246      |
| 411 | -1535       | -12666      | 3172         | 3921       | -14221     |
| 412 | 1870        | -4868       | 1398         | 28         | -12810     |
| 413 | 3029        | -1208       | 291          | -436       | -6472      |
| 414 | 3345        | 0           | 135          | -459       | -3196      |
| 415 | 19          | 1           | -1           | -30        | 737        |
| 416 | -38         | -170        | 0            | -22        | 1473       |
| 417 | -193        | -678        | 0            | -15        | 2943       |
| 418 | -452        | -1525       | 2            | -8         | 4411       |
| 419 | -814        | -2713       | 2            | 0          | 5144       |
| 420 | -814        | -2713       | 2            | 0          | 5144       |
| 421 | -814        | -2713       | 2            | 0          | 5144       |
| 422 | -7742       | -25806      | 192          | 0          | -18147     |
| 423 | -5836       | -19743      | 244          | -81        | -15158     |
| 424 | -4581       | -15658      | 297          | -226       | -9123      |
| 425 | -3994       | -13418      | 363          | -349       | -2737      |
| 426 | -4321       | -12807      | 411          | -423       | 5393       |
| 427 | -5883       | -12183      | 431          | -450       | 40343      |
| 428 | 359         | -28272      | 422          | -445       | 6100       |
| 429 | 3001        | 8409        | 388          | -427       | -1661      |
| 430 | 3045        | -899        | 326          | -434       | -9926      |
| 431 | 3556        | -613        | 208          | -491       | -5747      |
| 432 | 3750        | 102         | 134          | -76        | -2988      |
| 433 | 34          | 1           | -1           | -41        | 738        |
| 434 | -28         | -170        | 1            | -31        | 1475       |
| 435 | -185        | -678        | 3            | -23        | 2948       |
| 436 | -446        | -1526       | 6            | -13        | 4417       |
| 437 | -814        | -2715       | 7            | 0          | 5151       |
| 438 | -814        | -2715       | 7            | 0          | 5151       |
| 439 | -814        | -2715       | 7            | 0          | 5151       |
| 440 | -7805       | -26017      | 111          | 0          | -18433     |
| 441 | -5732       | -19859      | 183          | -211       | -15427     |
| 442 | -4380       | -15760      | 310          | -443       | -9369      |
| 443 | -3739       | -13666      | 550          | -689       | -3311      |
| 444 | -3708       | -13462      | 1180         | -1356      | 3807       |
| 445 | -5274       | -17111      | 1971         | -5025      | 2681       |
| 446 | -692        | -16004      | 1762         | 9012       | -6224      |
| 447 | 177         | -12570      | -175         | 1701       | -14156     |
| 448 | 2998        | -4802       | 109          | -355       | -11898     |
| 449 | 3765        | -1254       | 175          | -53        | -5990      |
| 450 | 3940        | 0           | 127          | 548        | -2948      |
| 451 | 54          | 0           | -1           | -54        | 738        |
| 452 | -13         | -170        | 1            | -41        | 1476       |
| 453 | -170        | -679        | 7            | -33        | 2950       |
| 454 | -436        | -1525       | 14           | -20        | 4422       |
| 455 | -815        | -2716       | 16           | 0          | 5157       |
| 456 | -815        | -2716       | 16           | 0          | 5157       |
| 457 | -815        | -2716       | 16           | 0          | 5157       |
| 458 | -7864       | -26213      | -40          | 0          | -18742     |
| 459 | -5514       | -19945      | 30           | -405       | -15710     |
| 460 | -4027       | -15853      | 224          | -712       | -9636      |
| 461 | -3309       | -13853      | 436          | -876       | -3690      |
| 462 | -3221       | -14465      | 576          | -948       | -100       |

PROGETTAZIONE ATI:

| In  | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |
|-----|-------------|-------------|--------------|------------|------------|
| 463 | -1076       | -15262      | 613          | -822       | -787       |
| 464 | -424        | -14767      | 577          | -761       | -5770      |
| 465 | 4201        | -10969      | 477          | -632       | -10849     |
| 466 | 3095        | -5641       | 357          | -365       | -11027     |
| 467 | 3644        | -1274       | 211          | 594        | -6073      |
| 468 | 3742        | -24         | 130          | 1372       | -2931      |
| 469 | 72          | -2          | -2           | -60        | 735        |
| 470 | 9           | -172        | 0            | -49        | 1470       |
| 471 | -144        | -679        | 11           | -46        | 2944       |
| 472 | -414        | -1521       | 28           | -33        | 4420       |
| 473 | -814        | -2715       | 33           | 0          | 5157       |
| 474 | -814        | -2715       | 33           | 0          | 5157       |
| 475 | -814        | -2715       | 33           | 0          | 5157       |
| 476 | -7903       | -26342      | -300         | 0          | -19007     |
| 477 | -5098       | -19950      | -194         | -682       | -15938     |
| 478 | -3435       | -15835      | 93           | -1063      | -9740      |
| 479 | -2784       | -13671      | 354          | -1124      | -3571      |
| 480 | -2886       | -13312      | 1132         | -500       | 3752       |
| 481 | -4012       | -16942      | 4025         | 4049       | 2739       |
| 482 | -299        | -15755      | 11501        | 41205      | -6183      |
| 483 | 1245        | -12358      | 3713         | 2805       | -14091     |
| 484 | 3027        | -4564       | 1855         | -136       | -10802     |
| 485 | 3191        | -1159       | 466          | 1404       | -5513      |
| 486 | 3007        | 5           | 121          | 2422       | -2693      |
| 487 | 75          | -9          | -6           | -50        | 723        |
| 488 | 37          | -176        | -6           | -49        | 1451       |
| 489 | -102        | -680        | 12           | -62        | 2920       |
| 490 | -370        | -1513       | 51           | -52        | 4401       |
| 491 | -813        | -2709       | 67           | 0          | 5143       |
| 492 | -813        | -2709       | 67           | 0          | 5143       |
| 493 | -813        | -2709       | 67           | 0          | 5143       |
| 494 | -7903       | -26343      | -778         | 0          | -19071     |
| 495 | -4377       | -19864      | -573         | -1001      | -15986     |
| 496 | -2525       | -15815      | 1            | -1443      | -9764      |
| 497 | -2028       | -13435      | 647          | -1525      | -3181      |
| 498 | -2797       | -12665      | 950          | -1534      | 5476       |
| 499 | -4593       | -11149      | 1218         | -460       | 41085      |
| 500 | 6037        | -27804      | 972          | -981       | 7555       |
| 501 | 4174        | 9502        | 1875         | 172        | 1248       |
| 502 | 2610        | -915        | 1056         | 1410       | -8872      |
| 503 | 2185        | -497        | 392          | 2242       | -5218      |
| 504 | 1851        | 158         | 88           | 3439       | -2724      |
| 505 | 51          | -11         | -11          | -18        | 705        |
| 506 | 46          | -178        | -15          | -39        | 1426       |
| 507 | -47         | -678        | 1            | -75        | 2885       |
| 508 | -291        | -1495       | 82           | -78        | 4367       |
| 509 | -810        | -2701       | 116          | 0          | 5111       |
| 510 | -810        | -2701       | 116          | 0          | 5111       |
| 511 | -810        | -2701       | 116          | 0          | 5111       |
| 512 | -7860       | -26201      | -1389        | 0          | -18749     |
| 513 | -3296       | -19664      | -1011        | -1257      | -15732     |
| 514 | -1433       | -15826      | 10           | -1653      | -9699      |
| 515 | -1261       | -13554      | 962          | -1730      | -3740      |
| 516 | -1934       | -12754      | 1881         | -2565      | 4321       |
| 517 | 1532        | -16424      | 2748         | -6103      | 6832       |
| 518 | 333         | -17162      | 2509         | 14258      | -6474      |
| 519 | 587         | -11904      | -290         | 5202       | -17412     |
| 520 | 826         | -3231       | -18          | 3004       | -11318     |
| 521 | 1176        | -749        | 89           | 2571       | -6318      |
| 522 | 884         | 91          | 45           | 3810       | -3189      |
| 523 | 22          | -1          | -10          | 19         | 701        |
| 524 | 39          | -158        | -19          | -19        | 1410       |
| 525 | -19         | -678        | -6           | -59        | 2841       |
| 526 | -117        | -1460       | 89           | -91        | 4297       |
| 527 | -803        | -2677       | 209          | 0          | 5030       |
| 528 | -803        | -2677       | 209          | 0          | 5030       |
| 529 | -803        | -2677       | 209          | 0          | 5030       |
| 530 | -7778       | -25925      | -2387        | 0          | -17646     |
| 531 | -1283       | -19334      | -1046        | -1217      | -14873     |
| 532 | -670        | -15883      | 12           | -1257      | -8340      |
| 533 | -501        | -13508      | 863          | -1237      | -4485      |
| 534 | -135        | -13606      | 1492         | -2000      | -875       |
| 535 | -665        | -14747      | 1839         | -3012      | -1396      |
| 536 | 57          | -14286      | 704          | 3205       | -6856      |
| 537 | 2254        | -10492      | -222         | 5809       | -12033     |
| 538 | 13          | -5019       | -111         | 2753       | -11449     |
| 539 | 302         | -1195       | 22           | 1800       | -6270      |
| 540 | 186         | -57         | 29           | 2819       | -3126      |
| 541 | 2           | -4          | -16          | 33         | 778        |
| 542 | 30          | -146        | -30          | -7         | 1502       |
| 543 | 11          | -577        | -50          | -38        | 2869       |
| 544 | 28          | -1404       | 91           | -91        | 4126       |
| 545 | -832        | -2774       | 401          | 0          | 4738       |
| 546 | -832        | -2774       | 401          | 0          | 4738       |
| 547 | -832        | -2774       | 401          | 0          | 4738       |

PROGETTAZIONE ATI:

| In  | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |
|-----|-------------|-------------|--------------|------------|------------|
| 548 | -8349       | -27829      | -4159        | 0          | -11043     |
| 549 | 190         | -19158      | -1120        | -1077      | -7857      |
| 550 | -26         | -14333      | 353          | -830       | -4667      |
| 551 | 1254        | -12959      | 618          | -729       | -4921      |
| 552 | 573         | -13412      | 944          | -1538      | -3810      |
| 553 | 216         | -14372      | 1007         | -1829      | -4555      |
| 554 | 563         | -13809      | 1102         | 1289       | -8222      |
| 555 | 337         | -10227      | 846          | 3183       | -11609     |
| 556 | -180        | -5242       | 180          | 2137       | -11082     |
| 557 | 1           | -1416       | 151          | 1056       | -6517      |
| 558 | -2          | -59         | 81           | 1892       | -3499      |

Combinazione n° 16 - SLEF

| In | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |
|----|-------------|-------------|--------------|------------|------------|
| 1  | 2           | -4          | 21           | -25        | 778        |
| 2  | 22          | -1          | 12           | -14        | 701        |
| 3  | 39          | -158        | 25           | 24         | 1410       |
| 4  | 30          | -146        | 38           | 9          | 1502       |
| 5  | 51          | -11         | 14           | 24         | 705        |
| 6  | 46          | -178        | 19           | 50         | 1426       |
| 7  | -19         | -678        | 7            | 76         | 2841       |
| 8  | 11          | -577        | 65           | 49         | 2869       |
| 9  | -47         | -678        | -1           | 97         | 2885       |
| 10 | 75          | -9          | 8            | 66         | 723        |
| 11 | 37          | -176        | 8            | 64         | 1451       |
| 12 | -102        | -680        | -9           | 80         | 2920       |
| 13 | -117        | -1460       | -69          | 119        | 4297       |
| 14 | 28          | -1404       | -70          | 118        | 4126       |
| 15 | -291        | -1495       | -63          | 101        | 4367       |
| 16 | -370        | -1513       | -40          | 68         | 4401       |
| 17 | 72          | -2          | 3            | 78         | 735        |
| 18 | 9           | -172        | 0            | 64         | 1470       |
| 19 | -144        | -679        | -8           | 60         | 2944       |
| 20 | -414        | -1521       | -21          | 43         | 4420       |
| 21 | -803        | -2677       | -161         | 0          | 5030       |
| 22 | -832        | -2774       | -309         | 0          | 4738       |
| 23 | -810        | -2701       | -89          | 0          | 5111       |
| 24 | -813        | -2709       | -52          | 0          | 5143       |
| 25 | -814        | -2715       | -26          | 0          | 5157       |
| 26 | 54          | 0           | 1            | 70         | 738        |
| 27 | -13         | -170        | -1           | 54         | 1476       |
| 28 | -170        | -679        | -5           | 43         | 2950       |
| 29 | -436        | -1525       | -11          | 26         | 4422       |
| 30 | -815        | -2716       | -12          | 0          | 5157       |
| 31 | -815        | -2716       | -12          | 0          | 5157       |
| 32 | -815        | -2716       | -12          | 0          | 5157       |
| 33 | -815        | -2716       | -12          | 0          | 5157       |
| 34 | -815        | -2716       | -12          | 0          | 5157       |
| 35 | -815        | -2716       | -12          | 0          | 5157       |
| 36 | -815        | -2716       | -12          | 0          | 5157       |
| 37 | 34          | 1           | 1            | 54         | 738        |
| 38 | -28         | -170        | -1           | 41         | 1475       |
| 39 | -185        | -678        | -2           | 30         | 2948       |
| 40 | -446        | -1526       | -5           | 16         | 4417       |
| 41 | -814        | -2715       | -5           | 0          | 5151       |
| 42 | -814        | -2715       | -5           | 0          | 5151       |
| 43 | -814        | -2715       | -5           | 0          | 5151       |
| 44 | -814        | -2715       | -5           | 0          | 5151       |
| 45 | -814        | -2715       | -5           | 0          | 5151       |
| 46 | -814        | -2715       | -5           | 0          | 5151       |
| 47 | -814        | -2715       | -5           | 0          | 5151       |
| 48 | -814        | -2715       | -5           | 0          | 5151       |
| 49 | -814        | -2715       | -5           | 0          | 5151       |
| 50 | 19          | 1           | 1            | 39         | 737        |
| 51 | -38         | -170        | 0            | 29         | 1473       |
| 52 | -193        | -678        | 0            | 20         | 2943       |
| 53 | -452        | -1525       | -1           | 10         | 4411       |
| 54 | -814        | -2713       | -2           | 0          | 5144       |
| 55 | -814        | -2713       | -2           | 0          | 5144       |
| 56 | -814        | -2713       | -2           | 0          | 5144       |
| 57 | -7778       | -25925      | 20144        | 0          | -17646     |
| 58 | -8349       | -27829      | 31569        | 0          | -11043     |
| 59 | -7860       | -26201      | 13836        | 0          | -18749     |
| 60 | -7903       | -26343      | 9784         | 0          | -19071     |
| 61 | -7903       | -26342      | 6296         | 0          | -19007     |
| 62 | -7864       | -26213      | 4092         | 0          | -18742     |
| 63 | -7805       | -26017      | 2674         | 0          | -18433     |
| 64 | -7742       | -25806      | 1740         | 0          | -18147     |
| 65 | 10          | 0           | 1            | 27         | 735        |
| 66 | -44         | -169        | 1            | 19         | 1470       |
| 67 | -198        | -678        | 1            | 13         | 2938       |
| 68 | -455        | -1525       | 1            | 6          | 4405       |

PROGETTAZIONE ATI:

| In  | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |
|-----|-------------|-------------|--------------|------------|------------|
| 69  | -813        | -2710       | 0            | 0          | 5137       |
| 70  | -813        | -2710       | 0            | 0          | 5137       |
| 71  | -813        | -2710       | 0            | 0          | 5137       |
| 72  | -7683       | -25611      | 1127         | 0          | -17909     |
| 73  | -1283       | -19334      | 10659        | 7741       | -14873     |
| 74  | 190         | -19158      | 9880         | 6608       | -7857      |
| 75  | -3296       | -19664      | 11994        | 8741       | -15732     |
| 76  | -4377       | -19864      | 9180         | 7961       | -15986     |
| 77  | -5098       | -19950      | 6210         | 6464       | -15938     |
| 78  | -5514       | -19945      | 4169         | 4884       | -15710     |
| 79  | -5732       | -19859      | 2798         | 3585       | -15427     |
| 80  | -5836       | -19743      | 1843         | 2585       | -15158     |
| 81  | -5878       | -19637      | 1198         | 1846       | -14943     |
| 82  | 5           | 0           | 1            | 18         | 734        |
| 83  | -48         | -169        | 1            | 12         | 1468       |
| 84  | -201        | -677        | 1            | 8          | 2934       |
| 85  | -456        | -1523       | 2            | 3          | 4399       |
| 86  | -812        | -2708       | 1            | 0          | 5131       |
| 87  | -812        | -2708       | 1            | 0          | 5131       |
| 88  | -812        | -2708       | 1            | 0          | 5131       |
| 89  | -7630       | -25434      | 734          | 0          | -17715     |
| 90  | -5885       | -19531      | 804          | 1321       | -14767     |
| 91  | -670        | -15883      | 4221         | 8421       | -8340      |
| 92  | -26         | -14333      | 1110         | 5555       | -4667      |
| 93  | -1433       | -15826      | 5909         | 11311      | -9699      |
| 94  | -2525       | -15815      | 5751         | 10633      | -9764      |
| 95  | -3435       | -15835      | 4364         | 8898       | -9740      |
| 96  | -4027       | -15853      | 3278         | 6947       | -9636      |
| 97  | -4380       | -15760      | 2448         | 5262       | -9369      |
| 98  | -4581       | -15658      | 1647         | 3880       | -9123      |
| 99  | -4677       | -15635      | 1038         | 2823       | -8988      |
| 100 | -4721       | -15613      | 793          | 2079       | -8895      |
| 101 | 1           | 0           | 1            | 11         | 733        |
| 102 | -50         | -169        | 1            | 8          | 1466       |
| 103 | -203        | -677        | 1            | 4          | 2931       |
| 104 | -457        | -1522       | 2            | 2          | 4395       |
| 105 | -812        | -2706       | 2            | 0          | 5127       |
| 106 | -812        | -2706       | 2            | 0          | 5127       |
| 107 | -812        | -2706       | 2            | 0          | 5127       |
| 108 | -7582       | -25272      | 477          | 0          | -17558     |
| 109 | -5878       | -19417      | 546          | 940        | -14612     |
| 110 | -4747       | -15500      | 650          | 1527       | -8708      |
| 111 | -501        | -13508      | 1321         | 6915       | -4485      |
| 112 | 1254        | -12959      | 100          | 4328       | -4921      |
| 113 | -1261       | -13554      | 2444         | 10103      | -3740      |
| 114 | -2028       | -13435      | 2559         | 10169      | -3181      |
| 115 | -2784       | -13671      | 2159         | 8800       | -3571      |
| 116 | -3309       | -13853      | 2313         | 7210       | -3690      |
| 117 | -3739       | -13666      | 2387         | 5724       | -3311      |
| 118 | -3994       | -13418      | 1459         | 4284       | -2737      |
| 119 | -4098       | -13627      | 591          | 3121       | -3055      |
| 120 | -4119       | -13784      | 811          | 2422       | -3200      |
| 121 | -4212       | -13563      | 1092         | 1906       | -2843      |
| 122 | 0           | 0           | 1            | 7          | 733        |
| 123 | -51         | -169        | 1            | 5          | 1465       |
| 124 | -203        | -676        | 1            | 2          | 2929       |
| 125 | -457        | -1521       | 2            | 1          | 4392       |
| 126 | -811        | -2704       | 1            | 0          | 5124       |
| 127 | -811        | -2704       | 1            | 0          | 5124       |
| 128 | -811        | -2704       | 1            | 0          | 5124       |
| 129 | -7541       | -25138      | 295          | 0          | -17437     |
| 130 | -5865       | -19316      | 333          | 648        | -14490     |
| 131 | -4758       | -15397      | 356          | 1061       | -8563      |
| 132 | -4260       | -13297      | 401          | 1291       | -2318      |
| 133 | -135        | -13606      | 989          | 5702       | -875       |
| 134 | 573         | -13412      | -43          | 3496       | -3810      |
| 135 | -1934       | -12754      | 1872         | 8148       | 4321       |
| 136 | -2797       | -12665      | 285          | 8053       | 5476       |
| 137 | -2886       | -13312      | 52           | 7093       | 3752       |
| 138 | -3221       | -14465      | 1391         | 6346       | -100       |
| 139 | -3708       | -13462      | 3451         | 5587       | 3807       |
| 140 | -4321       | -12807      | 1250         | 4093       | 5393       |
| 141 | -4065       | -13494      | 419          | 2764       | 3981       |
| 142 | -3981       | -14533      | 816          | 2467       | 158        |
| 143 | -4203       | -13483      | 2672         | 2305       | 4165       |
| 144 | -4627       | -12792      | 444          | 1379       | 5748       |
| 145 | -1          | 0           | 0            | 4          | 732        |
| 146 | -52         | -169        | 1            | 3          | 1464       |
| 147 | -204        | -676        | 1            | 1          | 2928       |
| 148 | -457        | -1521       | 1            | 0          | 4391       |
| 149 | -811        | -2703       | 1            | 0          | 5122       |
| 150 | -811        | -2703       | 1            | 0          | 5122       |
| 151 | -811        | -2703       | 1            | 0          | 5122       |
| 152 | -7512       | -25040      | 173          | 0          | -17352     |
| 153 | -5849       | -19253      | 181          | 426        | -14415     |

PROGETTAZIONE ATI:

| In  | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |
|-----|-------------|-------------|--------------|------------|------------|
| 154 | -4749       | -15392      | 114          | 693        | -8535      |
| 155 | -4238       | -13502      | 30           | 775        | -2702      |
| 156 | -4248       | -13458      | 592          | 534        | 4302       |
| 157 | -665        | -14747      | 1295         | 10342      | -1396      |
| 158 | 216         | -14372      | -481         | 5165       | -4555      |
| 159 | 1532        | -16424      | 2962         | 10264      | 6832       |
| 160 | -4593       | -11149      | -787         | 5869       | 41085      |
| 161 | -4012       | -16942      | 766          | 4495       | 2739       |
| 162 | -1076       | -15262      | 614          | 4897       | -787       |
| 163 | -5274       | -17111      | 5053         | 7938       | 2681       |
| 164 | -5883       | -12183      | 1029         | 3546       | 40343      |
| 165 | -5592       | -17190      | 1164         | 2112       | 2734       |
| 166 | -1930       | -15438      | 791          | 2311       | -712       |
| 167 | -5739       | -17214      | 4699         | 6867       | 2837       |
| 168 | -6198       | -12252      | 467          | 1364       | 40535      |
| 169 | -5797       | -17213      | 1346         | 198        | 2929       |
| 170 | -1          | 0           | 0            | 2          | 732        |
| 171 | -52         | -169        | 0            | 1          | 1463       |
| 172 | -204        | -676        | 1            | 1          | 2927       |
| 173 | -457        | -1520       | 1            | 0          | 4389       |
| 174 | -811        | -2702       | 1            | 0          | 5121       |
| 175 | -811        | -2702       | 1            | 0          | 5121       |
| 176 | -811        | -2702       | 1            | 0          | 5121       |
| 177 | -7491       | -24971      | 101          | 0          | -17296     |
| 178 | -5836       | -19209      | 116          | 265        | -14366     |
| 179 | -4739       | -15402      | 132          | 447        | -8545      |
| 180 | -4188       | -13668      | 160          | 560        | -2918      |
| 181 | -4085       | -14489      | 187          | 616        | 365        |
| 182 | -2059       | -15441      | 206          | 630        | -575       |
| 183 | 57          | -14286      | 364          | 14942      | -6856      |
| 184 | 563         | -13809      | -251         | 6353       | -8222      |
| 185 | 333         | -17162      | 11981        | 56434      | -6474      |
| 186 | 6037        | -27804      | 265          | 7350       | 7555       |
| 187 | -299        | -15755      | 738          | 15685      | -6183      |
| 188 | -424        | -14767      | 197          | 3357       | -5770      |
| 189 | -692        | -16004      | 11080        | 42339      | -6224      |
| 190 | 359         | -28272      | 817          | 2833       | 6100       |
| 191 | -963        | -16106      | 973          | 14623      | -6246      |
| 192 | -955        | -14987      | 729          | 2037       | -5816      |
| 193 | -1110       | -16146      | 11047        | 41785      | -6216      |
| 194 | -2883       | -28928      | 460          | 1281       | 5823       |
| 195 | -1178       | -16159      | 1152         | 13121      | -6175      |
| 196 | -1101       | -15015      | 210          | 613        | -5742      |
| 197 | -1          | 0           | 0            | 1          | 732        |
| 198 | -52         | -169        | 0            | 1          | 1463       |
| 199 | -204        | -676        | 0            | 0          | 2926       |
| 200 | -457        | -1520       | 0            | 0          | 4389       |
| 201 | -810        | -2701       | 0            | 0          | 5120       |
| 202 | -810        | -2701       | 0            | 0          | 5120       |
| 203 | -810        | -2701       | 0            | 0          | 5120       |
| 204 | -7477       | -24923      | 52           | 0          | -17259     |
| 205 | -5829       | -19167      | 76           | 132        | -14325     |
| 206 | -4740       | -15333      | 173          | 241        | -8453      |
| 207 | -4241       | -13466      | 587          | 387        | -2634      |
| 208 | -4260       | -13440      | 2146         | 1273       | 4372       |
| 209 | -5816       | -17208      | 4174         | 6435       | 2980       |
| 210 | -1204       | -16161      | 10551        | 41594      | -6150      |
| 211 | 2254        | -10492      | 1829         | 8714       | -12033     |
| 212 | 337         | -10227      | 162          | 4306       | -11609     |
| 213 | 587         | -11904      | 2689         | 5798       | -17412     |
| 214 | 4174        | 9502        | -358         | 426        | 1248       |
| 215 | 1245        | -12358      | -1046        | 4608       | -14091     |
| 216 | 4201        | -10969      | -115         | 1765       | -10849     |
| 217 | 177         | -12570      | 3367         | 5068       | -14156     |
| 218 | 3001        | 8409        | 613          | 1997       | -1661      |
| 219 | -1535       | -12666      | -896         | 5554       | -14221     |
| 220 | 992         | -11181      | 623          | 1670       | -10971     |
| 221 | -2935       | -12706      | 3503         | 4620       | -14228     |
| 222 | 237         | 8070        | 415          | 1142       | -2934      |
| 223 | -3858       | -12722      | -730         | 4536       | -14212     |
| 224 | 480         | -11217      | 195          | 570        | -10945     |
| 225 | -4307       | -12728      | 3117         | 4403       | -14199     |
| 226 | -1          | 0           | 0            | 0          | 732        |
| 227 | -52         | -169        | 0            | 0          | 1463       |
| 228 | -204        | -676        | 0            | 0          | 2926       |
| 229 | -457        | -1520       | 0            | 0          | 4388       |
| 230 | -810        | -2701       | 0            | 0          | 5120       |
| 231 | -810        | -2701       | 0            | 0          | 5120       |
| 232 | -810        | -2701       | 0            | 0          | 5120       |
| 233 | -7471       | -24904      | 0            | 0          | -17245     |
| 234 | -5827       | -19147      | 0            | 0          | -14305     |
| 235 | -4746       | -15282      | 0            | 0          | -8398      |
| 236 | -4270       | -13228      | 0            | 0          | -2180      |
| 237 | -4655       | -12759      | 0            | 0          | 5887       |
| 238 | -6241       | -12244      | 0            | 0          | 40634      |

PROGETTAZIONE ATI:



| In  | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |
|-----|-------------|-------------|--------------|------------|------------|
| 239 | -3777       | -29197      | 0            | 0          | 5831       |
| 240 | -669        | 7896        | 0            | 0          | -3105      |
| 241 | 13          | -5019       | 1000         | 1256       | -11449     |
| 242 | -180        | -5242       | 385          | 1171       | -11082     |
| 243 | 826         | -3231       | 1162         | 1848       | -11318     |
| 244 | 2610        | -915        | -229         | 1092       | -8872      |
| 245 | 3027        | -4564       | -536         | 317        | -10802     |
| 246 | 3095        | -5641       | -95          | 803        | -11027     |
| 247 | 2998        | -4802       | 1544         | 1170       | -11898     |
| 248 | 3045        | -899        | 433          | 1244       | -9926      |
| 249 | 1870        | -4868       | -493         | 1941       | -12810     |
| 250 | 1142        | -5787       | 475          | 1307       | -11190     |
| 251 | 665         | -4895       | 1716         | 823        | -13268     |
| 252 | 728         | -1011       | 327          | 984        | -10895     |
| 253 | -222        | -4908       | -352         | 1354       | -13461     |
| 254 | -605        | -5814       | 155          | 513        | -11195     |
| 255 | -674        | -4912       | 1389         | 562        | -13529     |
| 256 | -174        | -1099       | 0            | 0          | -11044     |
| 257 | -1          | 0           | 0            | -1         | 732        |
| 258 | -52         | -169        | 0            | 0          | 1463       |
| 259 | -204        | -676        | 0            | 0          | 2926       |
| 260 | -457        | -1520       | 0            | 0          | 4389       |
| 261 | -810        | -2701       | 0            | 0          | 5120       |
| 262 | -810        | -2701       | 0            | 0          | 5120       |
| 263 | -810        | -2701       | 0            | 0          | 5120       |
| 264 | -7477       | -24923      | 44           | 0          | -17259     |
| 265 | -5829       | -19167      | 55           | 22         | -14325     |
| 266 | -4740       | -15333      | 84           | 3          | -8453      |
| 267 | -4241       | -13466      | 229          | -103       | -2634      |
| 268 | -4260       | -13440      | 803          | -720       | 4372       |
| 269 | -5816       | -17208      | 1563         | -1088      | 2980       |
| 270 | -1204       | -16161      | 1369         | 11881      | -6150      |
| 271 | -4307       | -12728      | -522         | 3394       | -14199     |
| 272 | -674        | -4912       | -169         | 337        | -13529     |
| 273 | 302         | -1195       | 353          | 348        | -6270      |
| 274 | 1           | -1416       | 49           | 113        | -6517      |
| 275 | 1176        | -749        | 275          | 547        | -6318      |
| 276 | 2185        | -497        | -88          | 597        | -5218      |
| 277 | 3191        | -1159       | -185         | 654        | -5513      |
| 278 | 3644        | -1274       | -35          | 748        | -6073      |
| 279 | 3765        | -1254       | 378          | 810        | -5990      |
| 280 | 3556        | -613        | 241          | 720        | -5747      |
| 281 | 3029        | -1208       | 38           | 965        | -6472      |
| 282 | 2421        | -1340       | 272          | 966        | -6605      |
| 283 | 1960        | -1202       | 478          | 845        | -6632      |
| 284 | 1550        | -595        | 189          | 810        | -6263      |
| 285 | 1104        | -1220       | -104         | 724        | -6646      |
| 286 | 753         | -1352       | 90           | 441        | -6618      |
| 287 | 652         | -1236       | 286          | 158        | -6646      |
| 288 | 657         | -623        | 0            | 0          | -6351      |
| 289 | 652         | -1236       | 2            | -98        | -6646      |
| 290 | -1          | 0           | 0            | -2         | 732        |
| 291 | -52         | -169        | 0            | -1         | 1463       |
| 292 | -204        | -676        | 0            | 0          | 2927       |
| 293 | -457        | -1520       | -1           | 0          | 4389       |
| 294 | -811        | -2702       | -1           | 0          | 5121       |
| 295 | -811        | -2702       | -1           | 0          | 5121       |
| 296 | -811        | -2702       | -1           | 0          | 5121       |
| 297 | -7491       | -24971      | 84           | 0          | -17296     |
| 298 | -5836       | -19209      | 96           | 47         | -14366     |
| 299 | -4739       | -15402      | 100          | 43         | -8545      |
| 300 | -4188       | -13668      | 109          | 20         | -2918      |
| 301 | -4085       | -14489      | 115          | -4         | 365        |
| 302 | -2059       | -15441      | 119          | -24        | -575       |
| 303 | -1101       | -15015      | 119          | -41        | -5742      |
| 304 | 480         | -11217      | 113          | -59        | -10945     |
| 305 | -605        | -5814       | 99           | -86        | -11195     |
| 306 | 753         | -1352       | 65           | -139       | -6618      |
| 307 | 186         | -57         | 129          | -71        | -3126      |
| 308 | -2          | -59         | 35           | -103       | -3499      |
| 309 | 884         | 91          | 147          | 182        | -3189      |
| 310 | 1851        | 158         | 8            | 535        | -2724      |
| 311 | 3007        | 5           | -91          | 831        | -2693      |
| 312 | 3742        | -24         | 26           | 1065       | -2931      |
| 313 | 3940        | 0           | 140          | 1167       | -2948      |
| 314 | 3750        | 102         | 116          | 1147       | -2988      |
| 315 | 3345        | 0           | 67           | 1062       | -3196      |
| 316 | 2844        | -20         | 120          | 962        | -3304      |
| 317 | 2311        | 12          | 163          | 837        | -3320      |
| 318 | 1838        | 154         | 80           | 680        | -3251      |
| 319 | 1468        | 14          | -4           | 519        | -3378      |
| 320 | 1205        | -21         | 36           | 352        | -3315      |
| 321 | 1024        | 12          | 78           | 184        | -3390      |
| 322 | 959         | 151         | 0            | 0          | -3300      |
| 323 | 1024        | 12          | 15           | -119       | -3390      |

PROGETTAZIONE ATI:

| In  | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |
|-----|-------------|-------------|--------------|------------|------------|
| 324 | 1205        | -21         | 41           | -258       | -3315      |
| 325 | -1          | 0           | 0            | -3         | 732        |
| 326 | -52         | -169        | 0            | -2         | 1464       |
| 327 | -204        | -676        | -1           | -1         | 2928       |
| 328 | -457        | -1521       | -1           | 0          | 4391       |
| 329 | -811        | -2703       | -1           | 0          | 5122       |
| 330 | -811        | -2703       | -1           | 0          | 5122       |
| 331 | -811        | -2703       | -1           | 0          | 5122       |
| 332 | -7512       | -25040      | 122          | 0          | -17352     |
| 333 | -5849       | -19253      | 136          | 68         | -14415     |
| 334 | -4749       | -15392      | 116          | 77         | -8535      |
| 335 | -4238       | -13502      | 290          | 161        | -2702      |
| 336 | -4248       | -13458      | 1754         | 990        | 4302       |
| 337 | -5797       | -17213      | 3748         | 6114       | 2929       |
| 338 | -1178       | -16159      | 10120        | 41475      | -6175      |
| 339 | -3858       | -12722      | 3131         | 4237       | -14212     |
| 340 | -222        | -4908       | 1356         | 329        | -13461     |
| 341 | 1104        | -1220       | 261          | -162       | -6646      |
| 342 | 1468        | 14          | 81           | -375       | -3378      |
| 343 | 0           | 0           | 0            | -5         | 733        |
| 344 | -51         | -169        | -1           | -4         | 1465       |
| 345 | -203        | -676        | -1           | -2         | 2929       |
| 346 | -457        | -1521       | -1           | -1         | 4392       |
| 347 | -811        | -2704       | -1           | 0          | 5124       |
| 348 | -811        | -2704       | -1           | 0          | 5124       |
| 349 | -811        | -2704       | -1           | 0          | 5124       |
| 350 | -7541       | -25138      | 161          | 0          | -17437     |
| 351 | -5865       | -19316      | 185          | 74         | -14490     |
| 352 | -4758       | -15397      | 194          | 52         | -8563      |
| 353 | -4260       | -13297      | 210          | 2          | -2318      |
| 354 | -4627       | -12792      | 223          | -42        | 5748       |
| 355 | -6198       | -12252      | 229          | -79        | 40535      |
| 356 | -2883       | -28928      | 228          | -108       | 5823       |
| 357 | 237         | 8070        | 217          | -139       | -2934      |
| 358 | 728         | -1011       | 190          | -184       | -10895     |
| 359 | 1550        | -595        | 124          | -281       | -6263      |
| 360 | 1838        | 154         | 80           | -510       | -3251      |
| 361 | 1           | 0           | -1           | -9         | 733        |
| 362 | -50         | -169        | -1           | -6         | 1466       |
| 363 | -203        | -677        | -1           | -3         | 2931       |
| 364 | -457        | -1522       | -1           | -1         | 4395       |
| 365 | -812        | -2706       | -1           | 0          | 5127       |
| 366 | -812        | -2706       | -1           | 0          | 5127       |
| 367 | -812        | -2706       | -1           | 0          | 5127       |
| 368 | -7582       | -25272      | 195          | 0          | -17558     |
| 369 | -5878       | -19417      | 229          | 66         | -14612     |
| 370 | -4747       | -15500      | 267          | 7          | -8708      |
| 371 | -4212       | -13563      | 413          | -145       | -2843      |
| 372 | -4203       | -13483      | 998          | -807       | 4165       |
| 373 | -5739       | -17214      | 1765         | -2584      | 2837       |
| 374 | -1110       | -16146      | 1569         | 10536      | -6216      |
| 375 | -2935       | -12706      | -331         | 2260       | -14228     |
| 376 | 665         | -4895       | -2           | -479       | -13268     |
| 377 | 1960        | -1202       | 111          | -399       | -6632      |
| 378 | 2311        | 12          | 87           | -574       | -3320      |
| 379 | 5           | 0           | -1           | -14        | 734        |
| 380 | -48         | -169        | -1           | -10        | 1468       |
| 381 | -201        | -677        | -1           | -6         | 2934       |
| 382 | -456        | -1523       | -1           | -3         | 4399       |
| 383 | -812        | -2708       | -1           | 0          | 5131       |
| 384 | -812        | -2708       | -1           | 0          | 5131       |
| 385 | -812        | -2708       | -1           | 0          | 5131       |
| 386 | -7630       | -25434      | 214          | 0          | -17715     |
| 387 | -5885       | -19531      | 251          | 45         | -14767     |
| 388 | -4721       | -15613      | 268          | -17        | -8895      |
| 389 | -4119       | -13784      | 297          | -93        | -3200      |
| 390 | -3981       | -14533      | 318          | -159       | 158        |
| 391 | -1930       | -15438      | 327          | -204       | -712       |
| 392 | -955        | -14987      | 324          | -232       | -5816      |
| 393 | 992         | -11181      | 306          | -257       | -10971     |
| 394 | 1142        | -5787       | 266          | -301       | -11190     |
| 395 | 2421        | -1340       | 173          | -421       | -6605      |
| 396 | 2844        | -20         | 112          | -577       | -3304      |
| 397 | 10          | 0           | -1           | -20        | 735        |
| 398 | -44         | -169        | -1           | -15        | 1470       |
| 399 | -198        | -678        | -1           | -10        | 2938       |
| 400 | -455        | -1525       | 0            | -5         | 4405       |
| 401 | -813        | -2710       | 0            | 0          | 5137       |
| 402 | -813        | -2710       | 0            | 0          | 5137       |
| 403 | -813        | -2710       | 0            | 0          | 5137       |
| 404 | -7683       | -25611      | 217          | 0          | -17909     |
| 405 | -5878       | -19637      | 255          | -1         | -14943     |
| 406 | -4677       | -15635      | 259          | -78        | -8988      |
| 407 | -4098       | -13627      | 242          | -81        | -3055      |
| 408 | -4065       | -13494      | 1030         | 561        | 3981       |

PROGETTAZIONE ATI:

| In  | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |
|-----|-------------|-------------|--------------|------------|------------|
| 409 | -5592       | -17190      | 3133         | 5600       | 2734       |
| 410 | -963        | -16106      | 9629         | 41136      | -6246      |
| 411 | -1535       | -12666      | 3172         | 3921       | -14221     |
| 412 | 1870        | -4868       | 1398         | 28         | -12810     |
| 413 | 3029        | -1208       | 291          | -436       | -6472      |
| 414 | 3345        | 0           | 135          | -459       | -3196      |
| 415 | 19          | 1           | -1           | -30        | 737        |
| 416 | -38         | -170        | 0            | -22        | 1473       |
| 417 | -193        | -678        | 0            | -15        | 2943       |
| 418 | -452        | -1525       | 2            | -8         | 4411       |
| 419 | -814        | -2713       | 2            | 0          | 5144       |
| 420 | -814        | -2713       | 2            | 0          | 5144       |
| 421 | -814        | -2713       | 2            | 0          | 5144       |
| 422 | -7742       | -25806      | 192          | 0          | -18147     |
| 423 | -5836       | -19743      | 244          | -81        | -15158     |
| 424 | -4581       | -15658      | 297          | -226       | -9123      |
| 425 | -3994       | -13418      | 363          | -349       | -2737      |
| 426 | -4321       | -12807      | 411          | -423       | 5393       |
| 427 | -5883       | -12183      | 431          | -450       | 40343      |
| 428 | 359         | -28272      | 422          | -445       | 6100       |
| 429 | 3001        | 8409        | 388          | -427       | -1661      |
| 430 | 3045        | -899        | 326          | -434       | -9926      |
| 431 | 3556        | -613        | 208          | -491       | -5747      |
| 432 | 3750        | 102         | 134          | -76        | -2988      |
| 433 | 34          | 1           | -1           | -41        | 738        |
| 434 | -28         | -170        | 1            | -31        | 1475       |
| 435 | -185        | -678        | 3            | -23        | 2948       |
| 436 | -446        | -1526       | 6            | -13        | 4417       |
| 437 | -814        | -2715       | 7            | 0          | 5151       |
| 438 | -814        | -2715       | 7            | 0          | 5151       |
| 439 | -814        | -2715       | 7            | 0          | 5151       |
| 440 | -7805       | -26017      | 111          | 0          | -18433     |
| 441 | -5732       | -19859      | 183          | -211       | -15427     |
| 442 | -4380       | -15760      | 310          | -443       | -9369      |
| 443 | -3739       | -13666      | 550          | -689       | -3311      |
| 444 | -3708       | -13462      | 1180         | -1356      | 3807       |
| 445 | -5274       | -17111      | 1971         | -5025      | 2681       |
| 446 | -692        | -16004      | 1762         | 9012       | -6224      |
| 447 | 177         | -12570      | -175         | 1701       | -14156     |
| 448 | 2998        | -4802       | 109          | -355       | -18898     |
| 449 | 3765        | -1254       | 175          | -53        | -5990      |
| 450 | 3940        | 0           | 127          | 548        | -2948      |
| 451 | 54          | 0           | -1           | -54        | 738        |
| 452 | -13         | -170        | 1            | -41        | 1476       |
| 453 | -170        | -679        | 7            | -33        | 2950       |
| 454 | -436        | -1525       | 14           | -20        | 4422       |
| 455 | -815        | -2716       | 16           | 0          | 5157       |
| 456 | -815        | -2716       | 16           | 0          | 5157       |
| 457 | -815        | -2716       | 16           | 0          | 5157       |
| 458 | -7864       | -26213      | -40          | 0          | -18742     |
| 459 | -5514       | -19945      | 30           | -405       | -15710     |
| 460 | -4027       | -15853      | 224          | -712       | -9636      |
| 461 | -3309       | -13853      | 436          | -876       | -3690      |
| 462 | -3221       | -14465      | 576          | -948       | -100       |
| 463 | -1076       | -15262      | 613          | -822       | -787       |
| 464 | -424        | -14767      | 577          | -761       | -5770      |
| 465 | 4201        | -10969      | 477          | -632       | -10849     |
| 466 | 3095        | -5641       | 357          | -365       | -11027     |
| 467 | 3644        | -1274       | 211          | 594        | -6073      |
| 468 | 3742        | -24         | 130          | 1372       | -2931      |
| 469 | 72          | -2          | -2           | -60        | 735        |
| 470 | 9           | -172        | 0            | -49        | 1470       |
| 471 | -144        | -679        | 11           | -46        | 2944       |
| 472 | -414        | -1521       | 28           | -33        | 4420       |
| 473 | -814        | -2715       | 33           | 0          | 5157       |
| 474 | -814        | -2715       | 33           | 0          | 5157       |
| 475 | -814        | -2715       | 33           | 0          | 5157       |
| 476 | -7903       | -26342      | -300         | 0          | -19007     |
| 477 | -5098       | -19950      | -194         | -682       | -15938     |
| 478 | -3435       | -15835      | 93           | -1063      | -9740      |
| 479 | -2784       | -13671      | 354          | -1124      | -3571      |
| 480 | -2886       | -13312      | 1132         | -500       | 3752       |
| 481 | -4012       | -16942      | 4025         | 4049       | 2739       |
| 482 | -299        | -15755      | 11501        | 41205      | -6183      |
| 483 | 1245        | -12358      | 3713         | 2805       | -14091     |
| 484 | 3027        | -4564       | 1855         | -136       | -10802     |
| 485 | 3191        | -1159       | 466          | 1404       | -5513      |
| 486 | 3007        | 5           | 121          | 2422       | -2693      |
| 487 | 75          | -9          | -6           | -50        | 723        |
| 488 | 37          | -176        | -6           | -49        | 1451       |
| 489 | -102        | -680        | 12           | -62        | 2920       |
| 490 | -370        | -1513       | 51           | -52        | 4401       |
| 491 | -813        | -2709       | 67           | 0          | 5143       |
| 492 | -813        | -2709       | 67           | 0          | 5143       |
| 493 | -813        | -2709       | 67           | 0          | 5143       |

PROGETTAZIONE ATI:

| In  | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |
|-----|-------------|-------------|--------------|------------|------------|
| 494 | -7903       | -26343      | -778         | 0          | -19071     |
| 495 | -4377       | -19864      | -573         | -1001      | -15986     |
| 496 | -2525       | -15815      | 1            | -1443      | -9764      |
| 497 | -2028       | -13435      | 647          | -1525      | -3181      |
| 498 | -2797       | -12665      | 950          | -1534      | 5476       |
| 499 | -4593       | -11149      | 1218         | -460       | 41085      |
| 500 | 6037        | -27804      | 972          | -981       | 7555       |
| 501 | 4174        | 9502        | 1875         | 172        | 1248       |
| 502 | 2610        | -915        | 1056         | 1410       | -8872      |
| 503 | 2185        | -497        | 392          | 2242       | -5218      |
| 504 | 1851        | 158         | 88           | 3439       | -2724      |
| 505 | 51          | -11         | -11          | -18        | 705        |
| 506 | 46          | -178        | -15          | -39        | 1426       |
| 507 | -47         | -678        | 1            | -75        | 2885       |
| 508 | -291        | -1495       | 82           | -78        | 4367       |
| 509 | -810        | -2701       | 116          | 0          | 5111       |
| 510 | -810        | -2701       | 116          | 0          | 5111       |
| 511 | -810        | -2701       | 116          | 0          | 5111       |
| 512 | -7860       | -26201      | -1389        | 0          | -18749     |
| 513 | -3296       | -19664      | -1011        | -1257      | -15732     |
| 514 | -1433       | -15826      | 10           | -1653      | -9699      |
| 515 | -1261       | -13554      | 962          | -1730      | -3740      |
| 516 | -1934       | -12754      | 1881         | -2565      | 4321       |
| 517 | 1532        | -16424      | 2748         | -6103      | 6832       |
| 518 | 333         | -17162      | 2509         | 14258      | -6474      |
| 519 | 587         | -11904      | -290         | 5202       | -17412     |
| 520 | 826         | -3231       | -18          | 3004       | -11318     |
| 521 | 1176        | -749        | 89           | 2571       | -6318      |
| 522 | 884         | 91          | 45           | 3810       | -3189      |
| 523 | 22          | -1          | -10          | 19         | 701        |
| 524 | 39          | -158        | -19          | -19        | 1410       |
| 525 | -19         | -678        | -6           | -59        | 2841       |
| 526 | -117        | -1460       | 89           | -91        | 4297       |
| 527 | -803        | -2677       | 209          | 0          | 5030       |
| 528 | -803        | -2677       | 209          | 0          | 5030       |
| 529 | -803        | -2677       | 209          | 0          | 5030       |
| 530 | -7778       | -25925      | -2387        | 0          | -17646     |
| 531 | -1283       | -19334      | -1046        | -1217      | -14873     |
| 532 | -670        | -15883      | 12           | -1257      | -8340      |
| 533 | -501        | -13508      | 863          | -1237      | -4485      |
| 534 | -135        | -13606      | 1492         | -2000      | -875       |
| 535 | -665        | -14747      | 1839         | -3012      | -1396      |
| 536 | 57          | -14286      | 704          | 3205       | -6856      |
| 537 | 2254        | -10492      | -222         | 5809       | -12033     |
| 538 | 13          | -5019       | -111         | 2753       | -11449     |
| 539 | 302         | -1195       | 22           | 1800       | -6270      |
| 540 | 186         | -57         | 29           | 2819       | -3126      |
| 541 | 2           | -4          | -16          | 33         | 778        |
| 542 | 30          | -146        | -30          | -7         | 1502       |
| 543 | 11          | -577        | -50          | -38        | 2869       |
| 544 | 28          | -1404       | 91           | -91        | 4126       |
| 545 | -832        | -2774       | 401          | 0          | 4738       |
| 546 | -832        | -2774       | 401          | 0          | 4738       |
| 547 | -832        | -2774       | 401          | 0          | 4738       |
| 548 | -8349       | -27829      | -4159        | 0          | -11043     |
| 549 | 190         | -19158      | -1120        | -1077      | -7857      |
| 550 | -26         | -14333      | 353          | -830       | -4667      |
| 551 | 1254        | -12959      | 618          | -729       | -4921      |
| 552 | 573         | -13412      | 944          | -1538      | -3810      |
| 553 | 216         | -14372      | 1007         | -1829      | -4555      |
| 554 | 563         | -13809      | 1102         | 1289       | -8222      |
| 555 | 337         | -10227      | 846          | 3183       | -11609     |
| 556 | -180        | -5242       | 180          | 2137       | -11082     |
| 557 | 1           | -1416       | 151          | 1056       | -6517      |
| 558 | -2          | -59         | 81           | 1892       | -3499      |

**Combinazione n° 17 - SLEQ**

| In | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |
|----|-------------|-------------|--------------|------------|------------|
| 1  | 2           | -4          | 21           | -25        | 778        |
| 2  | 22          | -1          | 12           | -14        | 701        |
| 3  | 39          | -158        | 25           | 24         | 1410       |
| 4  | 30          | -146        | 38           | 9          | 1502       |
| 5  | 51          | -11         | 14           | 24         | 705        |
| 6  | 46          | -178        | 19           | 50         | 1426       |
| 7  | -19         | -678        | 7            | 76         | 2841       |
| 8  | 11          | -577        | 65           | 49         | 2869       |
| 9  | -47         | -678        | -1           | 97         | 2885       |
| 10 | 75          | -9          | 8            | 66         | 723        |
| 11 | 37          | -176        | 8            | 64         | 1451       |
| 12 | -102        | -680        | -9           | 80         | 2920       |
| 13 | -117        | -1460       | -69          | 119        | 4297       |
| 14 | 28          | -1404       | -70          | 118        | 4126       |

PROGETTAZIONE ATI:

| In | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |
|----|-------------|-------------|--------------|------------|------------|
| 15 | -291        | -1495       | -63          | 101        | 4367       |
| 16 | -370        | -1513       | -40          | 68         | 4401       |
| 17 | 72          | -2          | 3            | 78         | 735        |
| 18 | 9           | -172        | 0            | 64         | 1470       |
| 19 | -144        | -679        | -8           | 60         | 2944       |
| 20 | -414        | -1521       | -21          | 43         | 4420       |
| 21 | -803        | -2677       | -161         | 0          | 5030       |
| 22 | -832        | -2774       | -309         | 0          | 4738       |
| 23 | -810        | -2701       | -89          | 0          | 5111       |
| 24 | -813        | -2709       | -52          | 0          | 5143       |
| 25 | -814        | -2715       | -26          | 0          | 5157       |
| 26 | 54          | 0           | 1            | 70         | 738        |
| 27 | -13         | -170        | -1           | 54         | 1476       |
| 28 | -170        | -679        | -5           | 43         | 2950       |
| 29 | -436        | -1525       | -11          | 26         | 4422       |
| 30 | -815        | -2716       | -12          | 0          | 5157       |
| 31 | -815        | -2716       | -12          | 0          | 5157       |
| 32 | -815        | -2716       | -12          | 0          | 5157       |
| 33 | -815        | -2716       | -12          | 0          | 5157       |
| 34 | -815        | -2716       | -12          | 0          | 5157       |
| 35 | -815        | -2716       | -12          | 0          | 5157       |
| 36 | -815        | -2716       | -12          | 0          | 5157       |
| 37 | 34          | 1           | 1            | 54         | 738        |
| 38 | -28         | -170        | -1           | 41         | 1475       |
| 39 | -185        | -678        | -2           | 30         | 2948       |
| 40 | -446        | -1526       | -5           | 16         | 4417       |
| 41 | -814        | -2715       | -5           | 0          | 5151       |
| 42 | -814        | -2715       | -5           | 0          | 5151       |
| 43 | -814        | -2715       | -5           | 0          | 5151       |
| 44 | -814        | -2715       | -5           | 0          | 5151       |
| 45 | -814        | -2715       | -5           | 0          | 5151       |
| 46 | -814        | -2715       | -5           | 0          | 5151       |
| 47 | -814        | -2715       | -5           | 0          | 5151       |
| 48 | -814        | -2715       | -5           | 0          | 5151       |
| 49 | -814        | -2715       | -5           | 0          | 5151       |
| 50 | 19          | 1           | 1            | 39         | 737        |
| 51 | -38         | -170        | 0            | 29         | 1473       |
| 52 | -193        | -678        | 0            | 20         | 2943       |
| 53 | -452        | -1525       | -1           | 10         | 4411       |
| 54 | -814        | -2713       | -2           | 0          | 5144       |
| 55 | -814        | -2713       | -2           | 0          | 5144       |
| 56 | -814        | -2713       | -2           | 0          | 5144       |
| 57 | -7778       | -25925      | 20144        | 0          | -17646     |
| 58 | -8349       | -27829      | 31569        | 0          | -11043     |
| 59 | -7860       | -26201      | 13836        | 0          | -18749     |
| 60 | -7903       | -26343      | 9784         | 0          | -19071     |
| 61 | -7903       | -26342      | 6296         | 0          | -19007     |
| 62 | -7864       | -26213      | 4092         | 0          | -18742     |
| 63 | -7805       | -26017      | 2674         | 0          | -18433     |
| 64 | -7742       | -25806      | 1740         | 0          | -18147     |
| 65 | 10          | 0           | 1            | 27         | 735        |
| 66 | -44         | -169        | 1            | 19         | 1470       |
| 67 | -198        | -678        | 1            | 13         | 2938       |
| 68 | -455        | -1525       | 1            | 6          | 4405       |
| 69 | -813        | -2710       | 0            | 0          | 5137       |
| 70 | -813        | -2710       | 0            | 0          | 5137       |
| 71 | -813        | -2710       | 0            | 0          | 5137       |
| 72 | -7683       | -25611      | 1127         | 0          | -17909     |
| 73 | -1283       | -19334      | 10659        | 7741       | -14873     |
| 74 | 190         | -19158      | 9880         | 6608       | -7857      |
| 75 | -3296       | -19664      | 11994        | 8741       | -15732     |
| 76 | -4377       | -19864      | 9180         | 7961       | -15986     |
| 77 | -5098       | -19950      | 6210         | 6464       | -15938     |
| 78 | -5514       | -19945      | 4169         | 4884       | -15710     |
| 79 | -5732       | -19859      | 2798         | 3585       | -15427     |
| 80 | -5836       | -19743      | 1843         | 2585       | -15158     |
| 81 | -5878       | -19637      | 1198         | 1846       | -14943     |
| 82 | 5           | 0           | 1            | 18         | 734        |
| 83 | -48         | -169        | 1            | 12         | 1468       |
| 84 | -201        | -677        | 1            | 8          | 2934       |
| 85 | -456        | -1523       | 2            | 3          | 4399       |
| 86 | -812        | -2708       | 1            | 0          | 5131       |
| 87 | -812        | -2708       | 1            | 0          | 5131       |
| 88 | -812        | -2708       | 1            | 0          | 5131       |
| 89 | -7630       | -25434      | 734          | 0          | -17715     |
| 90 | -5885       | -19531      | 804          | 1321       | -14767     |
| 91 | -670        | -15883      | 4221         | 8421       | -8340      |
| 92 | -26         | -14333      | 1110         | 5555       | -4667      |
| 93 | -1433       | -15826      | 5909         | 11311      | -9699      |
| 94 | -2525       | -15815      | 5751         | 10633      | -9764      |
| 95 | -3435       | -15835      | 4364         | 8898       | -9740      |
| 96 | -4027       | -15853      | 3278         | 6947       | -9636      |
| 97 | -4380       | -15760      | 2448         | 5262       | -9369      |
| 98 | -4581       | -15658      | 1647         | 3880       | -9123      |
| 99 | -4677       | -15635      | 1038         | 2823       | -8988      |

PROGETTAZIONE ATI:

| In  | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |
|-----|-------------|-------------|--------------|------------|------------|
| 100 | -4721       | -15613      | 793          | 2079       | -8895      |
| 101 | 1           | 0           | 1            | 11         | 733        |
| 102 | -50         | -169        | 1            | 8          | 1466       |
| 103 | -203        | -677        | 1            | 4          | 2931       |
| 104 | -457        | -1522       | 2            | 2          | 4395       |
| 105 | -812        | -2706       | 2            | 0          | 5127       |
| 106 | -812        | -2706       | 2            | 0          | 5127       |
| 107 | -812        | -2706       | 2            | 0          | 5127       |
| 108 | -7582       | -25272      | 477          | 0          | -17558     |
| 109 | -5878       | -19417      | 546          | 940        | -14612     |
| 110 | -4747       | -15500      | 650          | 1527       | -8708      |
| 111 | -501        | -13508      | 1321         | 6915       | -4485      |
| 112 | 1254        | -12959      | 100          | 4328       | -4921      |
| 113 | -1261       | -13554      | 2444         | 10103      | -3740      |
| 114 | -2028       | -13435      | 2559         | 10169      | -3181      |
| 115 | -2784       | -13671      | 2159         | 8800       | -3571      |
| 116 | -3309       | -13853      | 2313         | 7210       | -3690      |
| 117 | -3739       | -13666      | 2387         | 5724       | -3311      |
| 118 | -3994       | -13418      | 1459         | 4284       | -2737      |
| 119 | -4098       | -13627      | 591          | 3121       | -3055      |
| 120 | -4119       | -13784      | 811          | 2422       | -3200      |
| 121 | -4212       | -13563      | 1092         | 1906       | -2843      |
| 122 | 0           | 0           | 1            | 7          | 733        |
| 123 | -51         | -169        | 1            | 5          | 1465       |
| 124 | -203        | -676        | 1            | 2          | 2929       |
| 125 | -457        | -1521       | 2            | 1          | 4392       |
| 126 | -811        | -2704       | 1            | 0          | 5124       |
| 127 | -811        | -2704       | 1            | 0          | 5124       |
| 128 | -811        | -2704       | 1            | 0          | 5124       |
| 129 | -7541       | -25138      | 295          | 0          | -17437     |
| 130 | -5865       | -19316      | 333          | 648        | -14490     |
| 131 | -4758       | -15397      | 356          | 1061       | -8563      |
| 132 | -4260       | -13297      | 401          | 1291       | -2318      |
| 133 | -135        | -13606      | 989          | 5702       | -875       |
| 134 | 573         | -13412      | -43          | 3496       | -3810      |
| 135 | -1934       | -12754      | 1872         | 8148       | 4321       |
| 136 | -2797       | -12665      | 285          | 8053       | 5476       |
| 137 | -2886       | -13312      | 52           | 7093       | 3752       |
| 138 | -3221       | -14465      | 1391         | 6346       | -100       |
| 139 | -3708       | -13462      | 3451         | 5587       | 3807       |
| 140 | -4321       | -12807      | 1250         | 4093       | 5393       |
| 141 | -4065       | -13494      | 419          | 2764       | 3981       |
| 142 | -3981       | -14533      | 816          | 2467       | 158        |
| 143 | -4203       | -13483      | 2672         | 2305       | 4165       |
| 144 | -4627       | -12792      | 444          | 1379       | 5748       |
| 145 | -1          | 0           | 0            | 4          | 732        |
| 146 | -52         | -169        | 1            | 3          | 1464       |
| 147 | -204        | -676        | 1            | 1          | 2928       |
| 148 | -457        | -1521       | 1            | 0          | 4391       |
| 149 | -811        | -2703       | 1            | 0          | 5122       |
| 150 | -811        | -2703       | 1            | 0          | 5122       |
| 151 | -811        | -2703       | 1            | 0          | 5122       |
| 152 | -7512       | -25040      | 173          | 0          | -17352     |
| 153 | -5849       | -19253      | 181          | 426        | -14415     |
| 154 | -4749       | -15392      | 114          | 693        | -8535      |
| 155 | -4238       | -13502      | 30           | 775        | -2702      |
| 156 | -4248       | -13458      | 592          | 534        | 4302       |
| 157 | -665        | -14747      | 1295         | 10342      | -1396      |
| 158 | 216         | -14372      | -481         | 5165       | -4555      |
| 159 | 1532        | -16424      | 2962         | 10264      | 6832       |
| 160 | -4593       | -11149      | -787         | 5869       | 41085      |
| 161 | -4012       | -16942      | 766          | 4495       | 2739       |
| 162 | -1076       | -15262      | 614          | 4897       | -787       |
| 163 | -5274       | -17111      | 5053         | 7938       | 2681       |
| 164 | -5883       | -12183      | 1029         | 3546       | 40343      |
| 165 | -5592       | -17190      | 1164         | 2112       | 2734       |
| 166 | -1930       | -15438      | 791          | 2311       | -712       |
| 167 | -5739       | -17214      | 4699         | 6867       | 2837       |
| 168 | -6198       | -12252      | 467          | 1364       | 40535      |
| 169 | -5797       | -17213      | 1346         | 198        | 2929       |
| 170 | -1          | 0           | 0            | 2          | 732        |
| 171 | -52         | -169        | 0            | 1          | 1463       |
| 172 | -204        | -676        | 1            | 1          | 2927       |
| 173 | -457        | -1520       | 1            | 0          | 4389       |
| 174 | -811        | -2702       | 1            | 0          | 5121       |
| 175 | -811        | -2702       | 1            | 0          | 5121       |
| 176 | -811        | -2702       | 1            | 0          | 5121       |
| 177 | -7491       | -24971      | 101          | 0          | -17296     |
| 178 | -5836       | -19209      | 116          | 265        | -14366     |
| 179 | -4739       | -15402      | 132          | 447        | -8545      |
| 180 | -4188       | -13668      | 160          | 560        | -2918      |
| 181 | -4085       | -14489      | 187          | 616        | 365        |
| 182 | -2059       | -15441      | 206          | 630        | -575       |
| 183 | 57          | -14286      | 364          | 14942      | -6856      |
| 184 | 563         | -13809      | -251         | 6353       | -8222      |

PROGETTAZIONE ATI:

| In  | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |
|-----|-------------|-------------|--------------|------------|------------|
| 185 | 333         | -17162      | 11981        | 56434      | -6474      |
| 186 | 6037        | -27804      | 265          | 7350       | 7555       |
| 187 | -299        | -15755      | 738          | 15685      | -6183      |
| 188 | -424        | -14767      | 197          | 3357       | -5770      |
| 189 | -692        | -16004      | 11080        | 42339      | -6224      |
| 190 | 359         | -28272      | 817          | 2833       | 6100       |
| 191 | -963        | -16106      | 973          | 14623      | -6246      |
| 192 | -955        | -14987      | 729          | 2037       | -5816      |
| 193 | -1110       | -16146      | 11047        | 41785      | -6216      |
| 194 | -2883       | -28928      | 460          | 1281       | 5823       |
| 195 | -1178       | -16159      | 1152         | 13121      | -6175      |
| 196 | -1101       | -15015      | 210          | 613        | -5742      |
| 197 | -1          | 0           | 0            | 1          | 732        |
| 198 | -52         | -169        | 0            | 1          | 1463       |
| 199 | -204        | -676        | 0            | 0          | 2926       |
| 200 | -457        | -1520       | 0            | 0          | 4389       |
| 201 | -810        | -2701       | 0            | 0          | 5120       |
| 202 | -810        | -2701       | 0            | 0          | 5120       |
| 203 | -810        | -2701       | 0            | 0          | 5120       |
| 204 | -7477       | -24923      | 52           | 0          | -17259     |
| 205 | -5829       | -19167      | 76           | 132        | -14325     |
| 206 | -4740       | -15333      | 173          | 241        | -8453      |
| 207 | -4241       | -13466      | 587          | 387        | -2634      |
| 208 | -4260       | -13440      | 2146         | 1273       | 4372       |
| 209 | -5816       | -17208      | 4174         | 6435       | 2980       |
| 210 | -1204       | -16161      | 10551        | 41594      | -6150      |
| 211 | 2254        | -10492      | 1829         | 8714       | -12033     |
| 212 | 337         | -10227      | 162          | 4306       | -11609     |
| 213 | 587         | -11904      | 2689         | 5798       | -17412     |
| 214 | 4174        | 9502        | -358         | 426        | 1248       |
| 215 | 1245        | -12358      | -1046        | 4608       | -14091     |
| 216 | 4201        | -10969      | -115         | 1765       | -10849     |
| 217 | 177         | -12570      | 3367         | 5068       | -14156     |
| 218 | 3001        | 8409        | 613          | 1997       | -1661      |
| 219 | -1535       | -12666      | -896         | 5554       | -14221     |
| 220 | 992         | -11181      | 623          | 1670       | -10971     |
| 221 | -2935       | -12706      | 3503         | 4620       | -14228     |
| 222 | 237         | 8070        | 415          | 1142       | -2934      |
| 223 | -3858       | -12722      | -730         | 4536       | -14212     |
| 224 | 480         | -11217      | 195          | 570        | -10945     |
| 225 | -4307       | -12728      | 3117         | 4403       | -14199     |
| 226 | -1          | 0           | 0            | 0          | 732        |
| 227 | -52         | -169        | 0            | 0          | 1463       |
| 228 | -204        | -676        | 0            | 0          | 2926       |
| 229 | -457        | -1520       | 0            | 0          | 4388       |
| 230 | -810        | -2701       | 0            | 0          | 5120       |
| 231 | -810        | -2701       | 0            | 0          | 5120       |
| 232 | -810        | -2701       | 0            | 0          | 5120       |
| 233 | -7471       | -24904      | 0            | 0          | -17245     |
| 234 | -5827       | -19147      | 0            | 0          | -14305     |
| 235 | -4746       | -15282      | 0            | 0          | -8398      |
| 236 | -4270       | -13228      | 0            | 0          | -2180      |
| 237 | -4655       | -12759      | 0            | 0          | 5887       |
| 238 | -6241       | -12244      | 0            | 0          | 40634      |
| 239 | -3777       | -29197      | 0            | 0          | 5831       |
| 240 | -669        | 7896        | 0            | 0          | -3105      |
| 241 | 13          | -5019       | 1000         | 1256       | -11449     |
| 242 | -180        | -5242       | 385          | 1171       | -11082     |
| 243 | 826         | -3231       | 1162         | 1848       | -11318     |
| 244 | 2610        | -915        | -229         | 1092       | -8872      |
| 245 | 3027        | -4564       | -536         | 317        | -10802     |
| 246 | 3095        | -5641       | -95          | 803        | -11027     |
| 247 | 2998        | -4802       | 1544         | 1170       | -11898     |
| 248 | 3045        | -899        | 433          | 1244       | -9926      |
| 249 | 1870        | -4868       | -493         | 1941       | -12810     |
| 250 | 1142        | -5787       | 475          | 1307       | -11190     |
| 251 | 665         | -4895       | 1716         | 823        | -13268     |
| 252 | 728         | -1011       | 327          | 984        | -10895     |
| 253 | -222        | -4908       | -352         | 1354       | -13461     |
| 254 | -605        | -5814       | 155          | 513        | -11195     |
| 255 | -674        | -4912       | 1389         | 562        | -13529     |
| 256 | -174        | -1099       | 0            | 0          | -11044     |
| 257 | -1          | 0           | 0            | -1         | 732        |
| 258 | -52         | -169        | 0            | 0          | 1463       |
| 259 | -204        | -676        | 0            | 0          | 2926       |
| 260 | -457        | -1520       | 0            | 0          | 4389       |
| 261 | -810        | -2701       | 0            | 0          | 5120       |
| 262 | -810        | -2701       | 0            | 0          | 5120       |
| 263 | -810        | -2701       | 0            | 0          | 5120       |
| 264 | -7477       | -24923      | 44           | 0          | -17259     |
| 265 | -5829       | -19167      | 55           | 22         | -14325     |
| 266 | -4740       | -15333      | 84           | 3          | -8453      |
| 267 | -4241       | -13466      | 229          | -103       | -2634      |
| 268 | -4260       | -13440      | 803          | -720       | 4372       |
| 269 | -5816       | -17208      | 1563         | -1088      | 2980       |

PROGETTAZIONE ATI:

| In  | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |
|-----|-------------|-------------|--------------|------------|------------|
| 270 | -1204       | -16161      | 1369         | 11881      | -6150      |
| 271 | -4307       | -12728      | -522         | 3394       | -14199     |
| 272 | -674        | -4912       | -169         | 337        | -13529     |
| 273 | 302         | -1195       | 353          | 348        | -6270      |
| 274 | 1           | -1416       | 49           | 113        | -6517      |
| 275 | 1176        | -749        | 275          | 547        | -6318      |
| 276 | 2185        | -497        | -88          | 597        | -5218      |
| 277 | 3191        | -1159       | -185         | 654        | -5513      |
| 278 | 3644        | -1274       | -35          | 748        | -6073      |
| 279 | 3765        | -1254       | 378          | 810        | -5990      |
| 280 | 3556        | -613        | 241          | 720        | -5747      |
| 281 | 3029        | -1208       | 38           | 965        | -6472      |
| 282 | 2421        | -1340       | 272          | 966        | -6605      |
| 283 | 1960        | -1202       | 478          | 845        | -6632      |
| 284 | 1550        | -595        | 189          | 810        | -6263      |
| 285 | 1104        | -1220       | -104         | 724        | -6646      |
| 286 | 753         | -1352       | 90           | 441        | -6618      |
| 287 | 652         | -1236       | 286          | 158        | -6646      |
| 288 | 657         | -623        | 0            | 0          | -6351      |
| 289 | 652         | -1236       | 2            | -98        | -6646      |
| 290 | -1          | 0           | 0            | -2         | 732        |
| 291 | -52         | -169        | 0            | -1         | 1463       |
| 292 | -204        | -676        | 0            | 0          | 2927       |
| 293 | -457        | -1520       | -1           | 0          | 4389       |
| 294 | -811        | -2702       | -1           | 0          | 5121       |
| 295 | -811        | -2702       | -1           | 0          | 5121       |
| 296 | -811        | -2702       | -1           | 0          | 5121       |
| 297 | -7491       | -24971      | 84           | 0          | -17296     |
| 298 | -5836       | -19209      | 96           | 47         | -14366     |
| 299 | -4739       | -15402      | 100          | 43         | -8545      |
| 300 | -4188       | -13668      | 109          | 20         | -2918      |
| 301 | -4085       | -14489      | 115          | -4         | 365        |
| 302 | -2059       | -15441      | 119          | -24        | -575       |
| 303 | -1101       | -15015      | 119          | -41        | -5742      |
| 304 | 480         | -11217      | 113          | -59        | -10945     |
| 305 | -605        | -5814       | 99           | -86        | -11195     |
| 306 | 753         | -1352       | 65           | -139       | -6618      |
| 307 | 186         | -57         | 129          | -71        | -3126      |
| 308 | -2          | -59         | 35           | -103       | -3499      |
| 309 | 884         | 91          | 147          | 182        | -3189      |
| 310 | 1851        | 158         | 8            | 535        | -2724      |
| 311 | 3007        | 5           | -91          | 831        | -2693      |
| 312 | 3742        | -24         | 26           | 1065       | -2931      |
| 313 | 3940        | 0           | 140          | 1167       | -2948      |
| 314 | 3750        | 102         | 116          | 1147       | -2988      |
| 315 | 3345        | 0           | 67           | 1062       | -3196      |
| 316 | 2844        | -20         | 120          | 962        | -3304      |
| 317 | 2311        | 12          | 163          | 837        | -3320      |
| 318 | 1838        | 154         | 80           | 680        | -3251      |
| 319 | 1468        | 14          | -4           | 519        | -3378      |
| 320 | 1205        | -21         | 36           | 352        | -3315      |
| 321 | 1024        | 12          | 78           | 184        | -3390      |
| 322 | 959         | 151         | 0            | 0          | -3300      |
| 323 | 1024        | 12          | 15           | -119       | -3390      |
| 324 | 1205        | -21         | 41           | -258       | -3315      |
| 325 | -1          | 0           | 0            | -3         | 732        |
| 326 | -52         | -169        | 0            | -2         | 1464       |
| 327 | -204        | -676        | -1           | -1         | 2928       |
| 328 | -457        | -1521       | -1           | 0          | 4391       |
| 329 | -811        | -2703       | -1           | 0          | 5122       |
| 330 | -811        | -2703       | -1           | 0          | 5122       |
| 331 | -811        | -2703       | -1           | 0          | 5122       |
| 332 | -7512       | -25040      | 122          | 0          | -17352     |
| 333 | -5849       | -19253      | 136          | 68         | -14415     |
| 334 | -4749       | -15392      | 116          | 77         | -8535      |
| 335 | -4238       | -13502      | 290          | 161        | -2702      |
| 336 | -4248       | -13458      | 1754         | 990        | 4302       |
| 337 | -5797       | -17213      | 3748         | 6114       | 2929       |
| 338 | -1178       | -16159      | 10120        | 41475      | -6175      |
| 339 | -3858       | -12722      | 3131         | 4237       | -14212     |
| 340 | -222        | -4908       | 1356         | 329        | -13461     |
| 341 | 1104        | -1220       | 261          | -162       | -6646      |
| 342 | 1468        | 14          | 81           | -375       | -3378      |
| 343 | 0           | 0           | 0            | -5         | 733        |
| 344 | -51         | -169        | -1           | -4         | 1465       |
| 345 | -203        | -676        | -1           | -2         | 2929       |
| 346 | -457        | -1521       | -1           | -1         | 4392       |
| 347 | -811        | -2704       | -1           | 0          | 5124       |
| 348 | -811        | -2704       | -1           | 0          | 5124       |
| 349 | -811        | -2704       | -1           | 0          | 5124       |
| 350 | -7541       | -25138      | 161          | 0          | -17437     |
| 351 | -5865       | -19316      | 185          | 74         | -14490     |
| 352 | -4758       | -15397      | 194          | 52         | -8563      |
| 353 | -4260       | -13297      | 210          | 2          | -2318      |
| 354 | -4627       | -12792      | 223          | -42        | 5748       |

PROGETTAZIONE ATI:



| In  | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |
|-----|-------------|-------------|--------------|------------|------------|
| 355 | -6198       | -12252      | 229          | -79        | 40535      |
| 356 | -2883       | -28928      | 228          | -108       | 5823       |
| 357 | 237         | 8070        | 217          | -139       | -2934      |
| 358 | 728         | -1011       | 190          | -184       | -10895     |
| 359 | 1550        | -595        | 124          | -281       | -6263      |
| 360 | 1838        | 154         | 80           | -510       | -3251      |
| 361 | 1           | 0           | -1           | -9         | 733        |
| 362 | -50         | -169        | -1           | -6         | 1466       |
| 363 | -203        | -677        | -1           | -3         | 2931       |
| 364 | -457        | -1522       | -1           | -1         | 4395       |
| 365 | -812        | -2706       | -1           | 0          | 5127       |
| 366 | -812        | -2706       | -1           | 0          | 5127       |
| 367 | -812        | -2706       | -1           | 0          | 5127       |
| 368 | -7582       | -25272      | 195          | 0          | -17558     |
| 369 | -5878       | -19417      | 229          | 66         | -14612     |
| 370 | -4747       | -15500      | 267          | 7          | -8708      |
| 371 | -4212       | -13563      | 413          | -145       | -2843      |
| 372 | -4203       | -13483      | 998          | -807       | 4165       |
| 373 | -5739       | -17214      | 1765         | -2584      | 2837       |
| 374 | -1110       | -16146      | 1569         | 10536      | -6216      |
| 375 | -2935       | -12706      | -331         | 2260       | -14228     |
| 376 | 665         | -4895       | -2           | -479       | -13268     |
| 377 | 1960        | -1202       | 111          | -399       | -6632      |
| 378 | 2311        | 12          | 87           | -574       | -3320      |
| 379 | 5           | 0           | -1           | -14        | 734        |
| 380 | -48         | -169        | -1           | -10        | 1468       |
| 381 | -201        | -677        | -1           | -6         | 2934       |
| 382 | -456        | -1523       | -1           | -3         | 4399       |
| 383 | -812        | -2708       | -1           | 0          | 5131       |
| 384 | -812        | -2708       | -1           | 0          | 5131       |
| 385 | -812        | -2708       | -1           | 0          | 5131       |
| 386 | -7630       | -25434      | 214          | 0          | -17715     |
| 387 | -5885       | -19531      | 251          | 45         | -14767     |
| 388 | -4721       | -15613      | 268          | -17        | -8895      |
| 389 | -4119       | -13784      | 297          | -93        | -3200      |
| 390 | -3981       | -14533      | 318          | -159       | 158        |
| 391 | -1930       | -15438      | 327          | -204       | -712       |
| 392 | -955        | -14987      | 324          | -232       | -5816      |
| 393 | 992         | -11181      | 306          | -257       | -10971     |
| 394 | 1142        | -5787       | 266          | -301       | -11190     |
| 395 | 2421        | -1340       | 173          | -421       | -6605      |
| 396 | 2844        | -20         | 112          | -577       | -3304      |
| 397 | 10          | 0           | -1           | -20        | 735        |
| 398 | -44         | -169        | -1           | -15        | 1470       |
| 399 | -198        | -678        | -1           | -10        | 2938       |
| 400 | -455        | -1525       | 0            | -5         | 4405       |
| 401 | -813        | -2710       | 0            | 0          | 5137       |
| 402 | -813        | -2710       | 0            | 0          | 5137       |
| 403 | -813        | -2710       | 0            | 0          | 5137       |
| 404 | -7683       | -25611      | 217          | 0          | -17909     |
| 405 | -5878       | -19637      | 255          | -1         | -14943     |
| 406 | -4677       | -15635      | 259          | -78        | -8988      |
| 407 | -4098       | -13627      | 242          | -81        | -3055      |
| 408 | -4065       | -13494      | 1030         | 561        | 3981       |
| 409 | -5592       | -17190      | 3133         | 5600       | 2734       |
| 410 | -963        | -16106      | 9629         | 41136      | -6246      |
| 411 | -1535       | -12666      | 3172         | 3921       | -14221     |
| 412 | 1870        | -4868       | 1398         | 28         | -12810     |
| 413 | 3029        | -1208       | 291          | -436       | -6472      |
| 414 | 3345        | 0           | 135          | -459       | -3196      |
| 415 | 19          | 1           | -1           | -30        | 737        |
| 416 | -38         | -170        | 0            | -22        | 1473       |
| 417 | -193        | -678        | 0            | -15        | 2943       |
| 418 | -452        | -1525       | 2            | -8         | 4411       |
| 419 | -814        | -2713       | 2            | 0          | 5144       |
| 420 | -814        | -2713       | 2            | 0          | 5144       |
| 421 | -814        | -2713       | 2            | 0          | 5144       |
| 422 | -7742       | -25806      | 192          | 0          | -18147     |
| 423 | -5836       | -19743      | 244          | -81        | -15158     |
| 424 | -4581       | -15658      | 297          | -226       | -9123      |
| 425 | -3994       | -13418      | 363          | -349       | -2737      |
| 426 | -4321       | -12807      | 411          | -423       | 5393       |
| 427 | -5883       | -12183      | 431          | -450       | 40343      |
| 428 | 359         | -28272      | 422          | -445       | 6100       |
| 429 | 3001        | 8409        | 388          | -427       | -1661      |
| 430 | 3045        | -899        | 326          | -434       | -9926      |
| 431 | 3556        | -613        | 208          | -491       | -5747      |
| 432 | 3750        | 102         | 134          | -76        | -2988      |
| 433 | 34          | 1           | -1           | -41        | 738        |
| 434 | -28         | -170        | 1            | -31        | 1475       |
| 435 | -185        | -678        | 3            | -23        | 2948       |
| 436 | -446        | -1526       | 6            | -13        | 4417       |
| 437 | -814        | -2715       | 7            | 0          | 5151       |
| 438 | -814        | -2715       | 7            | 0          | 5151       |
| 439 | -814        | -2715       | 7            | 0          | 5151       |

PROGETTAZIONE ATI:

| In  | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |
|-----|-------------|-------------|--------------|------------|------------|
| 440 | -7805       | -26017      | 111          | 0          | -18433     |
| 441 | -5732       | -19859      | 183          | -211       | -15427     |
| 442 | -4380       | -15760      | 310          | -443       | -9369      |
| 443 | -3739       | -13666      | 550          | -689       | -3311      |
| 444 | -3708       | -13462      | 1180         | -1356      | 3807       |
| 445 | -5274       | -17111      | 1971         | -5025      | 2681       |
| 446 | -692        | -16004      | 1762         | 9012       | -6224      |
| 447 | 177         | -12570      | -175         | 1701       | -14156     |
| 448 | 2998        | -4802       | 109          | -355       | -11898     |
| 449 | 3765        | -1254       | 175          | -53        | -5990      |
| 450 | 3940        | 0           | 127          | 548        | -2948      |
| 451 | 54          | 0           | -1           | -54        | 738        |
| 452 | -13         | -170        | 1            | -41        | 1476       |
| 453 | -170        | -679        | 7            | -33        | 2950       |
| 454 | -436        | -1525       | 14           | -20        | 4422       |
| 455 | -815        | -2716       | 16           | 0          | 5157       |
| 456 | -815        | -2716       | 16           | 0          | 5157       |
| 457 | -815        | -2716       | 16           | 0          | 5157       |
| 458 | -7864       | -26213      | -40          | 0          | -18742     |
| 459 | -5514       | -19945      | 30           | -405       | -15710     |
| 460 | -4027       | -15853      | 224          | -712       | -9636      |
| 461 | -3309       | -13853      | 436          | -876       | -3690      |
| 462 | -3221       | -14465      | 576          | -948       | -100       |
| 463 | -1076       | -15262      | 613          | -822       | -787       |
| 464 | -424        | -14767      | 577          | -761       | -5770      |
| 465 | 4201        | -10969      | 477          | -632       | -10849     |
| 466 | 3095        | -5641       | 357          | -365       | -11027     |
| 467 | 3644        | -1274       | 211          | 594        | -6073      |
| 468 | 3742        | -24         | 130          | 1372       | -2931      |
| 469 | 72          | -2          | -2           | -60        | 735        |
| 470 | 9           | -172        | 0            | -49        | 1470       |
| 471 | -144        | -679        | 11           | -46        | 2944       |
| 472 | -414        | -1521       | 28           | -33        | 4420       |
| 473 | -814        | -2715       | 33           | 0          | 5157       |
| 474 | -814        | -2715       | 33           | 0          | 5157       |
| 475 | -814        | -2715       | 33           | 0          | 5157       |
| 476 | -7903       | -26342      | -300         | 0          | -19007     |
| 477 | -5098       | -19950      | -194         | -682       | -15938     |
| 478 | -3435       | -15835      | 93           | -1063      | -9740      |
| 479 | -2784       | -13671      | 354          | -1124      | -3571      |
| 480 | -2886       | -13312      | 1132         | -500       | 3752       |
| 481 | -4012       | -16942      | 4025         | 4049       | 2739       |
| 482 | -299        | -15755      | 11501        | 41205      | -6183      |
| 483 | 1245        | -12358      | 3713         | 2805       | -14091     |
| 484 | 3027        | -4564       | 1855         | -136       | -10802     |
| 485 | 3191        | -1159       | 466          | 1404       | -5513      |
| 486 | 3007        | 5           | 121          | 2422       | -2693      |
| 487 | 75          | -9          | -6           | -50        | 723        |
| 488 | 37          | -176        | -6           | -49        | 1451       |
| 489 | -102        | -680        | 12           | -62        | 2920       |
| 490 | -370        | -1513       | 51           | -52        | 4401       |
| 491 | -813        | -2709       | 67           | 0          | 5143       |
| 492 | -813        | -2709       | 67           | 0          | 5143       |
| 493 | -813        | -2709       | 67           | 0          | 5143       |
| 494 | -7903       | -26343      | -778         | 0          | -19071     |
| 495 | -4377       | -19864      | -573         | -1001      | -15986     |
| 496 | -2525       | -15815      | 1            | -1443      | -9764      |
| 497 | -2028       | -13435      | 647          | -1525      | -3181      |
| 498 | -2797       | -12665      | 950          | -1534      | 5476       |
| 499 | -4593       | -11149      | 1218         | -460       | 41085      |
| 500 | 6037        | -27804      | 972          | -981       | 7555       |
| 501 | 4174        | 9502        | 1875         | 172        | 1248       |
| 502 | 2610        | -915        | 1056         | 1410       | -8872      |
| 503 | 2185        | -497        | 392          | 2242       | -5218      |
| 504 | 1851        | 158         | 88           | 3439       | -2724      |
| 505 | 51          | -11         | -11          | -18        | 705        |
| 506 | 46          | -178        | -15          | -39        | 1426       |
| 507 | -47         | -678        | 1            | -75        | 2885       |
| 508 | -291        | -1495       | 82           | -78        | 4367       |
| 509 | -810        | -2701       | 116          | 0          | 5111       |
| 510 | -810        | -2701       | 116          | 0          | 5111       |
| 511 | -810        | -2701       | 116          | 0          | 5111       |
| 512 | -7860       | -26201      | -1389        | 0          | -18749     |
| 513 | -3296       | -19664      | -1011        | -1257      | -15732     |
| 514 | -1433       | -15826      | 10           | -1653      | -9699      |
| 515 | -1261       | -13554      | 962          | -1730      | -3740      |
| 516 | -1934       | -12754      | 1881         | -2565      | 4321       |
| 517 | 1532        | -16424      | 2748         | -6103      | 6832       |
| 518 | 333         | -17162      | 2509         | 14258      | -6474      |
| 519 | 587         | -11904      | -290         | 5202       | -17412     |
| 520 | 826         | -3231       | -18          | 3004       | -11318     |
| 521 | 1176        | -749        | 89           | 2571       | -6318      |
| 522 | 884         | 91          | 45           | 3810       | -3189      |
| 523 | 22          | -1          | -10          | 19         | 701        |
| 524 | 39          | -158        | -19          | -19        | 1410       |

| In  | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |
|-----|-------------|-------------|--------------|------------|------------|
| 525 | -19         | -678        | -6           | -59        | 2841       |
| 526 | -117        | -1460       | 89           | -91        | 4297       |
| 527 | -803        | -2677       | 209          | 0          | 5030       |
| 528 | -803        | -2677       | 209          | 0          | 5030       |
| 529 | -803        | -2677       | 209          | 0          | 5030       |
| 530 | -7778       | -25925      | -2387        | 0          | -17646     |
| 531 | -1283       | -19334      | -1046        | -1217      | -14873     |
| 532 | -670        | -15883      | 12           | -1257      | -8340      |
| 533 | -501        | -13508      | 863          | -1237      | -4485      |
| 534 | -135        | -13606      | 1492         | -2000      | -875       |
| 535 | -665        | -14747      | 1839         | -3012      | -1396      |
| 536 | 57          | -14286      | 704          | 3205       | -6856      |
| 537 | 2254        | -10492      | -222         | 5809       | -12033     |
| 538 | 13          | -5019       | -111         | 2753       | -11449     |
| 539 | 302         | -1195       | 22           | 1800       | -6270      |
| 540 | 186         | -57         | 29           | 2819       | -3126      |
| 541 | 2           | -4          | -16          | 33         | 778        |
| 542 | 30          | -146        | -30          | -7         | 1502       |
| 543 | 11          | -577        | -50          | -38        | 2869       |
| 544 | 28          | -1404       | 91           | -91        | 4126       |
| 545 | -832        | -2774       | 401          | 0          | 4738       |
| 546 | -832        | -2774       | 401          | 0          | 4738       |
| 547 | -832        | -2774       | 401          | 0          | 4738       |
| 548 | -8349       | -27829      | -4159        | 0          | -11043     |
| 549 | 190         | -19158      | -1120        | -1077      | -7857      |
| 550 | -26         | -14333      | 353          | -830       | -4667      |
| 551 | 1254        | -12959      | 618          | -729       | -4921      |
| 552 | 573         | -13412      | 944          | -1538      | -3810      |
| 553 | 216         | -14372      | 1007         | -1829      | -4555      |
| 554 | 563         | -13809      | 1102         | 1289       | -8222      |
| 555 | 337         | -10227      | 846          | 3183       | -11609     |
| 556 | -180        | -5242       | 180          | 2137       | -11082     |
| 557 | 1           | -1416       | 151          | 1056       | -6517      |
| 558 | -2          | -59         | 81           | 1892       | -3499      |

Combinazione n° 18 - SLEQ H + V

| In | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |
|----|-------------|-------------|--------------|------------|------------|
| 1  | 2           | -4          | 21           | -25        | 778        |
| 2  | 22          | -1          | 12           | -14        | 701        |
| 3  | 39          | -158        | 25           | 24         | 1410       |
| 4  | 30          | -146        | 38           | 9          | 1502       |
| 5  | 51          | -11         | 14           | 24         | 705        |
| 6  | 46          | -178        | 19           | 50         | 1426       |
| 7  | -19         | -678        | 7            | 76         | 2841       |
| 8  | 11          | -577        | 65           | 49         | 2869       |
| 9  | -47         | -678        | -1           | 97         | 2885       |
| 10 | 75          | -9          | 8            | 66         | 723        |
| 11 | 37          | -176        | 8            | 64         | 1451       |
| 12 | -102        | -680        | -9           | 80         | 2920       |
| 13 | -117        | -1460       | -69          | 119        | 4297       |
| 14 | 28          | -1404       | -70          | 118        | 4126       |
| 15 | -291        | -1495       | -63          | 101        | 4367       |
| 16 | -370        | -1513       | -40          | 68         | 4401       |
| 17 | 72          | -2          | 3            | 78         | 735        |
| 18 | 9           | -172        | 0            | 64         | 1470       |
| 19 | -144        | -679        | -8           | 60         | 2944       |
| 20 | -414        | -1521       | -21          | 43         | 4420       |
| 21 | -803        | -2677       | -161         | 0          | 5030       |
| 22 | -832        | -2774       | -309         | 0          | 4738       |
| 23 | -810        | -2701       | -89          | 0          | 5111       |
| 24 | -813        | -2709       | -52          | 0          | 5143       |
| 25 | -814        | -2715       | -26          | 0          | 5157       |
| 26 | 54          | 0           | 1            | 70         | 738        |
| 27 | -13         | -170        | -1           | 54         | 1476       |
| 28 | -170        | -679        | -5           | 43         | 2950       |
| 29 | -436        | -1525       | -11          | 26         | 4422       |
| 30 | -815        | -2716       | -12          | 0          | 5157       |
| 31 | -815        | -2716       | -12          | 0          | 5157       |
| 32 | -815        | -2716       | -12          | 0          | 5157       |
| 33 | -815        | -2716       | -12          | 0          | 5157       |
| 34 | -815        | -2716       | -12          | 0          | 5157       |
| 35 | -815        | -2716       | -12          | 0          | 5157       |
| 36 | -815        | -2716       | -12          | 0          | 5157       |
| 37 | 34          | 1           | 1            | 54         | 738        |
| 38 | -28         | -170        | -1           | 41         | 1475       |
| 39 | -185        | -678        | -2           | 30         | 2948       |
| 40 | -446        | -1526       | -5           | 16         | 4417       |
| 41 | -814        | -2715       | -5           | 0          | 5151       |
| 42 | -814        | -2715       | -5           | 0          | 5151       |
| 43 | -814        | -2715       | -5           | 0          | 5151       |
| 44 | -814        | -2715       | -5           | 0          | 5151       |
| 45 | -814        | -2715       | -5           | 0          | 5151       |

PROGETTAZIONE ATI:

| In  | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |
|-----|-------------|-------------|--------------|------------|------------|
| 46  | -814        | -2715       | -5           | 0          | 5151       |
| 47  | -814        | -2715       | -5           | 0          | 5151       |
| 48  | -814        | -2715       | -5           | 0          | 5151       |
| 49  | -814        | -2715       | -5           | 0          | 5151       |
| 50  | 19          | 1           | 1            | 39         | 737        |
| 51  | -38         | -170        | 0            | 29         | 1473       |
| 52  | -193        | -678        | 0            | 20         | 2943       |
| 53  | -452        | -1525       | -1           | 10         | 4411       |
| 54  | -814        | -2713       | -2           | 0          | 5144       |
| 55  | -814        | -2713       | -2           | 0          | 5144       |
| 56  | -814        | -2713       | -2           | 0          | 5144       |
| 57  | -7778       | -25925      | 20144        | 0          | -17646     |
| 58  | -8349       | -27829      | 31569        | 0          | -11043     |
| 59  | -7860       | -26201      | 13836        | 0          | -18749     |
| 60  | -7903       | -26343      | 9784         | 0          | -19071     |
| 61  | -7903       | -26342      | 6296         | 0          | -19007     |
| 62  | -7864       | -26213      | 4092         | 0          | -18742     |
| 63  | -7805       | -26017      | 2674         | 0          | -18433     |
| 64  | -7742       | -25806      | 1740         | 0          | -18147     |
| 65  | 10          | 0           | 1            | 27         | 735        |
| 66  | -44         | -169        | 1            | 19         | 1470       |
| 67  | -198        | -678        | 1            | 13         | 2938       |
| 68  | -455        | -1525       | 1            | 6          | 4405       |
| 69  | -813        | -2710       | 0            | 0          | 5137       |
| 70  | -813        | -2710       | 0            | 0          | 5137       |
| 71  | -813        | -2710       | 0            | 0          | 5137       |
| 72  | -7683       | -25611      | 1127         | 0          | -17909     |
| 73  | -1283       | -19334      | 10659        | 7741       | -14873     |
| 74  | 190         | -19158      | 9880         | 6608       | -7857      |
| 75  | -3296       | -19664      | 11994        | 8741       | -15732     |
| 76  | -4377       | -19864      | 9180         | 7961       | -15986     |
| 77  | -5098       | -19950      | 6210         | 6464       | -15938     |
| 78  | -5514       | -19945      | 4169         | 4884       | -15710     |
| 79  | -5732       | -19859      | 2798         | 3585       | -15427     |
| 80  | -5836       | -19743      | 1843         | 2585       | -15158     |
| 81  | -5878       | -19637      | 1198         | 1846       | -14943     |
| 82  | 5           | 0           | 1            | 18         | 734        |
| 83  | -48         | -169        | 1            | 12         | 1468       |
| 84  | -201        | -677        | 1            | 8          | 2934       |
| 85  | -456        | -1523       | 2            | 3          | 4399       |
| 86  | -812        | -2708       | 1            | 0          | 5131       |
| 87  | -812        | -2708       | 1            | 0          | 5131       |
| 88  | -812        | -2708       | 1            | 0          | 5131       |
| 89  | -7630       | -25434      | 734          | 0          | -17715     |
| 90  | -5885       | -19531      | 804          | 1321       | -14767     |
| 91  | -670        | -15883      | 4221         | 8421       | -8340      |
| 92  | -26         | -14333      | 1110         | 5555       | -4667      |
| 93  | -1433       | -15826      | 5909         | 11311      | -9699      |
| 94  | -2525       | -15815      | 5751         | 10633      | -9764      |
| 95  | -3435       | -15835      | 4364         | 8898       | -9740      |
| 96  | -4027       | -15853      | 3278         | 6947       | -9636      |
| 97  | -4380       | -15760      | 2448         | 5262       | -9369      |
| 98  | -4581       | -15658      | 1647         | 3880       | -9123      |
| 99  | -4677       | -15635      | 1038         | 2823       | -8988      |
| 100 | -4721       | -15613      | 793          | 2079       | -8895      |
| 101 | 1           | 0           | 1            | 11         | 733        |
| 102 | -50         | -169        | 1            | 8          | 1466       |
| 103 | -203        | -677        | 1            | 4          | 2931       |
| 104 | -457        | -1522       | 2            | 2          | 4395       |
| 105 | -812        | -2706       | 2            | 0          | 5127       |
| 106 | -812        | -2706       | 2            | 0          | 5127       |
| 107 | -812        | -2706       | 2            | 0          | 5127       |
| 108 | -7582       | -25272      | 477          | 0          | -17558     |
| 109 | -5878       | -19417      | 546          | 940        | -14612     |
| 110 | -4747       | -15500      | 650          | 1527       | -8708      |
| 111 | -501        | -13508      | 1321         | 6915       | -4485      |
| 112 | 1254        | -12959      | 100          | 4328       | -4921      |
| 113 | -1261       | -13554      | 2444         | 10103      | -3740      |
| 114 | -2028       | -13435      | 2559         | 10169      | -3181      |
| 115 | -2784       | -13671      | 2159         | 8800       | -3571      |
| 116 | -3309       | -13853      | 2313         | 7210       | -3690      |
| 117 | -3739       | -13666      | 2387         | 5724       | -3311      |
| 118 | -3994       | -13418      | 1459         | 4284       | -2737      |
| 119 | -4098       | -13627      | 591          | 3121       | -3055      |
| 120 | -4119       | -13784      | 811          | 2422       | -3200      |
| 121 | -4212       | -13563      | 1092         | 1906       | -2843      |
| 122 | 0           | 0           | 1            | 7          | 733        |
| 123 | -51         | -169        | 1            | 5          | 1465       |
| 124 | -203        | -676        | 1            | 2          | 2929       |
| 125 | -457        | -1521       | 2            | 1          | 4392       |
| 126 | -811        | -2704       | 1            | 0          | 5124       |
| 127 | -811        | -2704       | 1            | 0          | 5124       |
| 128 | -811        | -2704       | 1            | 0          | 5124       |
| 129 | -7541       | -25138      | 295          | 0          | -17437     |
| 130 | -5865       | -19316      | 333          | 648        | -14490     |

PROGETTAZIONE ATI:

| In  | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |
|-----|-------------|-------------|--------------|------------|------------|
| 131 | -4758       | -15397      | 356          | 1061       | -8563      |
| 132 | -4260       | -13297      | 401          | 1291       | -2318      |
| 133 | -135        | -13606      | 989          | 5702       | -875       |
| 134 | 573         | -13412      | -43          | 3496       | -3810      |
| 135 | -1934       | -12754      | 1872         | 8148       | 4321       |
| 136 | -2797       | -12665      | 285          | 8053       | 5476       |
| 137 | -2886       | -13312      | 52           | 7093       | 3752       |
| 138 | -3221       | -14465      | 1391         | 6346       | -100       |
| 139 | -3708       | -13462      | 3451         | 5587       | 3807       |
| 140 | -4321       | -12807      | 1250         | 4093       | 5393       |
| 141 | -4065       | -13494      | 419          | 2764       | 3981       |
| 142 | -3981       | -14533      | 816          | 2467       | 158        |
| 143 | -4203       | -13483      | 2672         | 2305       | 4165       |
| 144 | -4627       | -12792      | 444          | 1379       | 5748       |
| 145 | -1          | 0           | 0            | 4          | 732        |
| 146 | -52         | -169        | 1            | 3          | 1464       |
| 147 | -204        | -676        | 1            | 1          | 2928       |
| 148 | -457        | -1521       | 1            | 0          | 4391       |
| 149 | -811        | -2703       | 1            | 0          | 5122       |
| 150 | -811        | -2703       | 1            | 0          | 5122       |
| 151 | -811        | -2703       | 1            | 0          | 5122       |
| 152 | -7512       | -25040      | 173          | 0          | -17352     |
| 153 | -5849       | -19253      | 181          | 426        | -14415     |
| 154 | -4749       | -15392      | 114          | 693        | -8535      |
| 155 | -4238       | -13502      | 30           | 775        | -2702      |
| 156 | -4248       | -13458      | 592          | 534        | 4302       |
| 157 | -665        | -14747      | 1295         | 10342      | -1396      |
| 158 | 216         | -14372      | -481         | 5165       | -4555      |
| 159 | 1532        | -16424      | 2962         | 10264      | 6832       |
| 160 | -4593       | -11149      | -787         | 5869       | 41085      |
| 161 | -4012       | -16942      | 766          | 4495       | 2739       |
| 162 | -1076       | -15262      | 614          | 4897       | -787       |
| 163 | -5274       | -17111      | 5053         | 7938       | 2681       |
| 164 | -5883       | -12183      | 1029         | 3546       | 40343      |
| 165 | -5592       | -17190      | 1164         | 2112       | 2734       |
| 166 | -1930       | -15438      | 791          | 2311       | -712       |
| 167 | -5739       | -17214      | 4699         | 6867       | 2837       |
| 168 | -6198       | -12252      | 467          | 1364       | 40535      |
| 169 | -5797       | -17213      | 1346         | 198        | 2929       |
| 170 | -1          | 0           | 0            | 2          | 732        |
| 171 | -52         | -169        | 0            | 0          | 1463       |
| 172 | -204        | -676        | 1            | 1          | 2927       |
| 173 | -457        | -1520       | 1            | 0          | 4389       |
| 174 | -811        | -2702       | 1            | 0          | 5121       |
| 175 | -811        | -2702       | 1            | 0          | 5121       |
| 176 | -811        | -2702       | 1            | 0          | 5121       |
| 177 | -7491       | -24971      | 101          | 0          | -17296     |
| 178 | -5836       | -19209      | 116          | 265        | -14366     |
| 179 | -4739       | -15402      | 132          | 447        | -8545      |
| 180 | -4188       | -13668      | 160          | 560        | -2918      |
| 181 | -4085       | -14489      | 187          | 616        | 365        |
| 182 | -2059       | -15441      | 206          | 630        | -575       |
| 183 | 57          | -14286      | 364          | 14942      | -6856      |
| 184 | 563         | -13809      | -251         | 6353       | -8222      |
| 185 | 333         | -17162      | 11981        | 56434      | -6474      |
| 186 | 6037        | -27804      | 265          | 7350       | 7555       |
| 187 | -299        | -15755      | 738          | 15685      | -6183      |
| 188 | -424        | -14767      | 197          | 3357       | -5770      |
| 189 | -692        | -16004      | 11080        | 42339      | -6224      |
| 190 | 359         | -28272      | 817          | 2833       | 6100       |
| 191 | -963        | -16106      | 973          | 14623      | -6246      |
| 192 | -955        | -14987      | 729          | 2037       | -5816      |
| 193 | -1110       | -16146      | 11047        | 41785      | -6216      |
| 194 | -2883       | -28928      | 460          | 1281       | 5823       |
| 195 | -1178       | -16159      | 1152         | 13121      | -6175      |
| 196 | -1101       | -15015      | 210          | 613        | -5742      |
| 197 | -1          | 0           | 0            | 1          | 732        |
| 198 | -52         | -169        | 0            | 1          | 1463       |
| 199 | -204        | -676        | 0            | 0          | 2926       |
| 200 | -457        | -1520       | 0            | 0          | 4389       |
| 201 | -810        | -2701       | 0            | 0          | 5120       |
| 202 | -810        | -2701       | 0            | 0          | 5120       |
| 203 | -810        | -2701       | 0            | 0          | 5120       |
| 204 | -7477       | -24923      | 52           | 0          | -17259     |
| 205 | -5829       | -19167      | 76           | 132        | -14325     |
| 206 | -4740       | -15333      | 173          | 241        | -8453      |
| 207 | -4241       | -13466      | 587          | 387        | -2634      |
| 208 | -4260       | -13440      | 2146         | 1273       | 4372       |
| 209 | -5816       | -17208      | 4174         | 6435       | 2980       |
| 210 | -1204       | -16161      | 10551        | 41594      | -6150      |
| 211 | 2254        | -10492      | 1829         | 8714       | -12033     |
| 212 | 337         | -10227      | 162          | 4306       | -11609     |
| 213 | 587         | -11904      | 2689         | 5798       | -17412     |
| 214 | 4174        | 9502        | -358         | 426        | 1248       |
| 215 | 1245        | -12358      | -1046        | 4608       | -14091     |

PROGETTAZIONE ATI:

| In  | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |
|-----|-------------|-------------|--------------|------------|------------|
| 216 | 4201        | -10969      | -115         | 1765       | -10849     |
| 217 | 177         | -12570      | 3367         | 5068       | -14156     |
| 218 | 3001        | 8409        | 613          | 1997       | -1661      |
| 219 | -1535       | -12666      | -896         | 5554       | -14221     |
| 220 | 992         | -11181      | 623          | 1670       | -10971     |
| 221 | -2935       | -12706      | 3503         | 4620       | -14228     |
| 222 | 237         | 8070        | 415          | 1142       | -2934      |
| 223 | -3858       | -12722      | -730         | 4536       | -14212     |
| 224 | 480         | -11217      | 195          | 570        | -10945     |
| 225 | -4307       | -12728      | 3117         | 4403       | -14199     |
| 226 | -1          | 0           | 0            | 0          | 732        |
| 227 | -52         | -169        | 0            | 0          | 1463       |
| 228 | -204        | -676        | 0            | 0          | 2926       |
| 229 | -457        | -1520       | 0            | 0          | 4388       |
| 230 | -810        | -2701       | 0            | 0          | 5120       |
| 231 | -810        | -2701       | 0            | 0          | 5120       |
| 232 | -810        | -2701       | 0            | 0          | 5120       |
| 233 | -7471       | -24904      | 0            | 0          | -17245     |
| 234 | -5827       | -19147      | 0            | 0          | -14305     |
| 235 | -4746       | -15282      | 0            | 0          | -8398      |
| 236 | -4270       | -13228      | 0            | 0          | -2180      |
| 237 | -4655       | -12759      | 0            | 0          | 5887       |
| 238 | -6241       | -12244      | 0            | 0          | 40634      |
| 239 | -3777       | -29197      | 0            | 0          | 5831       |
| 240 | -669        | 7896        | 0            | 0          | -3105      |
| 241 | 13          | -5019       | 1000         | 1256       | -11449     |
| 242 | -180        | -5242       | 385          | 1171       | -11082     |
| 243 | 826         | -3231       | 1162         | 1848       | -11318     |
| 244 | 2610        | -915        | -229         | 1092       | -8872      |
| 245 | 3027        | -4564       | -536         | 317        | -10802     |
| 246 | 3095        | -5641       | -95          | 803        | -11027     |
| 247 | 2998        | -4802       | 1544         | 1170       | -11898     |
| 248 | 3045        | -899        | 433          | 1244       | -9926      |
| 249 | 1870        | -4868       | -493         | 1941       | -12810     |
| 250 | 1142        | -5787       | 475          | 1307       | -11190     |
| 251 | 665         | -4895       | 1716         | 823        | -13268     |
| 252 | 728         | -1011       | 327          | 984        | -10895     |
| 253 | -222        | -4908       | -352         | 1354       | -13461     |
| 254 | -605        | -5814       | 155          | 513        | -11195     |
| 255 | -674        | -4912       | 1389         | 562        | -13529     |
| 256 | -174        | -1099       | 0            | 0          | -11044     |
| 257 | -1          | 0           | 0            | -1         | 732        |
| 258 | -52         | -169        | 0            | 0          | 1463       |
| 259 | -204        | -676        | 0            | 0          | 2926       |
| 260 | -457        | -1520       | 0            | 0          | 4389       |
| 261 | -810        | -2701       | 0            | 0          | 5120       |
| 262 | -810        | -2701       | 0            | 0          | 5120       |
| 263 | -810        | -2701       | 0            | 0          | 5120       |
| 264 | -7477       | -24923      | 44           | 0          | -17259     |
| 265 | -5829       | -19167      | 55           | 22         | -14325     |
| 266 | -4740       | -15333      | 84           | 3          | -8453      |
| 267 | -4241       | -13466      | 229          | -103       | -2634      |
| 268 | -4260       | -13440      | 803          | -720       | 4372       |
| 269 | -5816       | -17208      | 1563         | -1088      | 2980       |
| 270 | -1204       | -16161      | 1369         | 11881      | -6150      |
| 271 | -4307       | -12728      | -522         | 3394       | -14199     |
| 272 | -674        | -4912       | -169         | 337        | -13529     |
| 273 | 302         | -1195       | 353          | 348        | -6270      |
| 274 | 1           | -1416       | 49           | 113        | -6517      |
| 275 | 1176        | -749        | 275          | 547        | -6318      |
| 276 | 2185        | -497        | -88          | 597        | -5218      |
| 277 | 3191        | -1159       | -185         | 654        | -5513      |
| 278 | 3644        | -1274       | -35          | 748        | -6073      |
| 279 | 3765        | -1254       | 378          | 810        | -5990      |
| 280 | 3556        | -613        | 241          | 720        | -5747      |
| 281 | 3029        | -1208       | 38           | 965        | -6472      |
| 282 | 2421        | -1340       | 272          | 966        | -6605      |
| 283 | 1960        | -1202       | 478          | 845        | -6632      |
| 284 | 1550        | -595        | 189          | 810        | -6263      |
| 285 | 1104        | -1220       | -104         | 724        | -6646      |
| 286 | 753         | -1352       | 90           | 441        | -6618      |
| 287 | 652         | -1236       | 286          | 158        | -6646      |
| 288 | 657         | -623        | 0            | 0          | -6351      |
| 289 | 652         | -1236       | 2            | -98        | -6646      |
| 290 | -1          | 0           | 0            | -2         | 732        |
| 291 | -52         | -169        | 0            | -1         | 1463       |
| 292 | -204        | -676        | 0            | 0          | 2927       |
| 293 | -457        | -1520       | -1           | 0          | 4389       |
| 294 | -811        | -2702       | -1           | 0          | 5121       |
| 295 | -811        | -2702       | -1           | 0          | 5121       |
| 296 | -811        | -2702       | -1           | 0          | 5121       |
| 297 | -7491       | -24971      | 84           | 0          | -17296     |
| 298 | -5836       | -19209      | 96           | 47         | -14366     |
| 299 | -4739       | -15402      | 100          | 43         | -8545      |
| 300 | -4188       | -13668      | 109          | 20         | -2918      |

PROGETTAZIONE ATI:

| In  | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |
|-----|-------------|-------------|--------------|------------|------------|
| 301 | -4085       | -14489      | 115          | -4         | 365        |
| 302 | -2059       | -15441      | 119          | -24        | -575       |
| 303 | -1101       | -15015      | 119          | -41        | -5742      |
| 304 | 480         | -11217      | 113          | -59        | -10945     |
| 305 | -605        | -5814       | 99           | -86        | -11195     |
| 306 | 753         | -1352       | 65           | -139       | -6618      |
| 307 | 186         | -57         | 129          | -71        | -3126      |
| 308 | -2          | -59         | 35           | -103       | -3499      |
| 309 | 884         | 91          | 147          | 182        | -3189      |
| 310 | 1851        | 158         | 8            | 535        | -2724      |
| 311 | 3007        | 5           | -91          | 831        | -2693      |
| 312 | 3742        | -24         | 26           | 1065       | -2931      |
| 313 | 3940        | 0           | 140          | 1167       | -2948      |
| 314 | 3750        | 102         | 116          | 1147       | -2988      |
| 315 | 3345        | 0           | 67           | 1062       | -3196      |
| 316 | 2844        | -20         | 120          | 962        | -3304      |
| 317 | 2311        | 12          | 163          | 837        | -3320      |
| 318 | 1838        | 154         | 80           | 680        | -3251      |
| 319 | 1468        | 14          | -4           | 519        | -3378      |
| 320 | 1205        | -21         | 36           | 352        | -3315      |
| 321 | 1024        | 12          | 78           | 184        | -3390      |
| 322 | 959         | 151         | 0            | 0          | -3300      |
| 323 | 1024        | 12          | 15           | -119       | -3390      |
| 324 | 1205        | -21         | 41           | -258       | -3315      |
| 325 | -1          | 0           | 0            | -3         | 732        |
| 326 | -52         | -169        | 0            | -2         | 1464       |
| 327 | -204        | -676        | -1           | -1         | 2928       |
| 328 | -457        | -1521       | -1           | 0          | 4391       |
| 329 | -811        | -2703       | -1           | 0          | 5122       |
| 330 | -811        | -2703       | -1           | 0          | 5122       |
| 331 | -811        | -2703       | -1           | 0          | 5122       |
| 332 | -7512       | -25040      | 122          | 0          | -17352     |
| 333 | -5849       | -19253      | 136          | 68         | -14415     |
| 334 | -4749       | -15392      | 116          | 77         | -8535      |
| 335 | -4238       | -13502      | 290          | 161        | -2702      |
| 336 | -4248       | -13458      | 1754         | 990        | 4302       |
| 337 | -5797       | -17213      | 3748         | 6114       | 2929       |
| 338 | -1178       | -16159      | 10120        | 41475      | -6175      |
| 339 | -3858       | -12722      | 3131         | 4237       | -14212     |
| 340 | -222        | -4908       | 1356         | 329        | -13461     |
| 341 | 1104        | -1220       | 261          | -162       | -6646      |
| 342 | 1468        | 14          | 81           | -375       | -3378      |
| 343 | 0           | 0           | 0            | -5         | 733        |
| 344 | -51         | -169        | -1           | -4         | 1465       |
| 345 | -203        | -676        | -1           | -2         | 2929       |
| 346 | -457        | -1521       | -1           | -1         | 4392       |
| 347 | -811        | -2704       | -1           | 0          | 5124       |
| 348 | -811        | -2704       | -1           | 0          | 5124       |
| 349 | -811        | -2704       | -1           | 0          | 5124       |
| 350 | -7541       | -25138      | 161          | 0          | -17437     |
| 351 | -5865       | -19316      | 185          | 74         | -14490     |
| 352 | -4758       | -15397      | 194          | 52         | -8563      |
| 353 | -4260       | -13297      | 210          | 2          | -2318      |
| 354 | -4627       | -12792      | 223          | -42        | 5748       |
| 355 | -6198       | -12252      | 229          | -79        | 40535      |
| 356 | -2883       | -28928      | 228          | -108       | 5823       |
| 357 | 237         | 8070        | 217          | -139       | -2934      |
| 358 | 728         | -1011       | 190          | -184       | -10895     |
| 359 | 1550        | -595        | 124          | -281       | -6263      |
| 360 | 1838        | 154         | 80           | -510       | -3251      |
| 361 | 1           | 0           | -1           | -9         | 733        |
| 362 | -50         | -169        | -1           | -6         | 1466       |
| 363 | -203        | -677        | -1           | -3         | 2931       |
| 364 | -457        | -1522       | -1           | -1         | 4395       |
| 365 | -812        | -2706       | -1           | 0          | 5127       |
| 366 | -812        | -2706       | -1           | 0          | 5127       |
| 367 | -812        | -2706       | -1           | 0          | 5127       |
| 368 | -7582       | -25272      | 195          | 0          | -17558     |
| 369 | -5878       | -19417      | 229          | 66         | -14612     |
| 370 | -4747       | -15500      | 267          | 7          | -8708      |
| 371 | -4212       | -13563      | 413          | -145       | -2843      |
| 372 | -4203       | -13483      | 998          | -807       | 4165       |
| 373 | -5739       | -17214      | 1765         | -2584      | 2837       |
| 374 | -1110       | -16146      | 1569         | 10536      | -6216      |
| 375 | -2935       | -12706      | -331         | 2260       | -14228     |
| 376 | 665         | -4895       | -2           | -479       | -13268     |
| 377 | 1960        | -1202       | 111          | -399       | -6632      |
| 378 | 2311        | 12          | 87           | -574       | -3320      |
| 379 | 5           | 0           | -1           | -14        | 734        |
| 380 | -48         | -169        | -1           | -10        | 1468       |
| 381 | -201        | -677        | -1           | -6         | 2934       |
| 382 | -456        | -1523       | -1           | -3         | 4399       |
| 383 | -812        | -2708       | -1           | 0          | 5131       |
| 384 | -812        | -2708       | -1           | 0          | 5131       |
| 385 | -812        | -2708       | -1           | 0          | 5131       |

PROGETTAZIONE ATI:

| In  | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |
|-----|-------------|-------------|--------------|------------|------------|
| 386 | -7630       | -25434      | 214          | 0          | -17715     |
| 387 | -5885       | -19531      | 251          | 45         | -14767     |
| 388 | -4721       | -15613      | 268          | -17        | -8895      |
| 389 | -4119       | -13784      | 297          | -93        | -3200      |
| 390 | -3981       | -14533      | 318          | -159       | 158        |
| 391 | -1930       | -15438      | 327          | -204       | -712       |
| 392 | -955        | -14987      | 324          | -232       | -5816      |
| 393 | 992         | -11181      | 306          | -257       | -10971     |
| 394 | 1142        | -5787       | 266          | -301       | -11190     |
| 395 | 2421        | -1340       | 173          | -421       | -6605      |
| 396 | 2844        | -20         | 112          | -577       | -3304      |
| 397 | 10          | 0           | -1           | -20        | 735        |
| 398 | -44         | -169        | -1           | -15        | 1470       |
| 399 | -198        | -678        | -1           | -10        | 2938       |
| 400 | -455        | -1525       | 0            | -5         | 4405       |
| 401 | -813        | -2710       | 0            | 0          | 5137       |
| 402 | -813        | -2710       | 0            | 0          | 5137       |
| 403 | -813        | -2710       | 0            | 0          | 5137       |
| 404 | -7683       | -25611      | 217          | 0          | -17909     |
| 405 | -5878       | -19637      | 255          | -1         | -14943     |
| 406 | -4677       | -15635      | 259          | -78        | -8988      |
| 407 | -4098       | -13627      | 242          | -81        | -3055      |
| 408 | -4065       | -13494      | 1030         | 561        | 3981       |
| 409 | -5592       | -17190      | 3133         | 5600       | 2734       |
| 410 | -963        | -16106      | 9629         | 41136      | -6246      |
| 411 | -1535       | -12666      | 3172         | 3921       | -14221     |
| 412 | 1870        | -4868       | 1398         | 28         | -12810     |
| 413 | 3029        | -1208       | 291          | -436       | -6472      |
| 414 | 3345        | 0           | 135          | -459       | -3196      |
| 415 | 19          | 1           | -1           | -30        | 737        |
| 416 | -38         | -170        | 0            | -22        | 1473       |
| 417 | -193        | -678        | 0            | -15        | 2943       |
| 418 | -452        | -1525       | 2            | -8         | 4411       |
| 419 | -814        | -2713       | 2            | 0          | 5144       |
| 420 | -814        | -2713       | 2            | 0          | 5144       |
| 421 | -814        | -2713       | 2            | 0          | 5144       |
| 422 | -7742       | -25806      | 192          | 0          | -18147     |
| 423 | -5836       | -19743      | 244          | -81        | -15158     |
| 424 | -4581       | -15658      | 297          | -226       | -9123      |
| 425 | -3994       | -13418      | 363          | -349       | -2737      |
| 426 | -4321       | -12807      | 411          | -423       | 5393       |
| 427 | -5883       | -12183      | 431          | -450       | 40343      |
| 428 | 359         | -28272      | 422          | -445       | 6100       |
| 429 | 3001        | 8409        | 388          | -427       | -1661      |
| 430 | 3045        | -899        | 326          | -434       | -9926      |
| 431 | 3556        | -613        | 208          | -491       | -5747      |
| 432 | 3750        | 102         | 134          | -76        | -2988      |
| 433 | 34          | 1           | -1           | -41        | 738        |
| 434 | -28         | -170        | 1            | -31        | 1475       |
| 435 | -185        | -678        | 3            | -23        | 2948       |
| 436 | -446        | -1526       | 6            | -13        | 4417       |
| 437 | -814        | -2715       | 7            | 0          | 5151       |
| 438 | -814        | -2715       | 7            | 0          | 5151       |
| 439 | -814        | -2715       | 7            | 0          | 5151       |
| 440 | -7805       | -26017      | 111          | 0          | -18433     |
| 441 | -5732       | -19859      | 183          | -211       | -15427     |
| 442 | -4380       | -15760      | 310          | -443       | -9369      |
| 443 | -3739       | -13666      | 550          | -689       | -3311      |
| 444 | -3708       | -13462      | 1180         | -1356      | 3807       |
| 445 | -5274       | -17111      | 1971         | -5025      | 2681       |
| 446 | -692        | -16004      | 1762         | 9012       | -6224      |
| 447 | 177         | -12570      | -175         | 1701       | -14156     |
| 448 | 2998        | -4802       | 109          | -355       | -11898     |
| 449 | 3765        | -1254       | 175          | -53        | -5990      |
| 450 | 3940        | 0           | 127          | 548        | -2948      |
| 451 | 54          | 0           | -1           | -54        | 738        |
| 452 | -13         | -170        | 1            | -41        | 1476       |
| 453 | -170        | -679        | 7            | -33        | 2950       |
| 454 | -436        | -1525       | 14           | -20        | 4422       |
| 455 | -815        | -2716       | 16           | 0          | 5157       |
| 456 | -815        | -2716       | 16           | 0          | 5157       |
| 457 | -815        | -2716       | 16           | 0          | 5157       |
| 458 | -7864       | -26213      | -40          | 0          | -18742     |
| 459 | -5514       | -19945      | 30           | -405       | -15710     |
| 460 | -4027       | -15853      | 224          | -712       | -9636      |
| 461 | -3309       | -13853      | 436          | -876       | -3690      |
| 462 | -3221       | -14465      | 576          | -948       | -100       |
| 463 | -1076       | -15262      | 613          | -822       | -787       |
| 464 | -424        | -14767      | 577          | -761       | -5770      |
| 465 | 4201        | -10969      | 477          | -632       | -10849     |
| 466 | 3095        | -5641       | 357          | -365       | -11027     |
| 467 | 3644        | -1274       | 211          | 594        | -6073      |
| 468 | 3742        | -24         | 130          | 1372       | -2931      |
| 469 | 72          | -2          | -2           | -60        | 735        |
| 470 | 9           | -172        | 0            | -49        | 1470       |

PROGETTAZIONE ATI:



| In  | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |
|-----|-------------|-------------|--------------|------------|------------|
| 471 | -144        | -679        | 11           | -46        | 2944       |
| 472 | -414        | -1521       | 28           | -33        | 4420       |
| 473 | -814        | -2715       | 33           | 0          | 5157       |
| 474 | -814        | -2715       | 33           | 0          | 5157       |
| 475 | -814        | -2715       | 33           | 0          | 5157       |
| 476 | -7903       | -26342      | -300         | 0          | -19007     |
| 477 | -5098       | -19950      | -194         | -682       | -15938     |
| 478 | -3435       | -15835      | 93           | -1063      | -9740      |
| 479 | -2784       | -13671      | 354          | -1124      | -3571      |
| 480 | -2886       | -13312      | 1132         | -500       | 3752       |
| 481 | -4012       | -16942      | 4025         | 4049       | 2739       |
| 482 | -299        | -15755      | 11501        | 41205      | -6183      |
| 483 | 1245        | -12358      | 3713         | 2805       | -14091     |
| 484 | 3027        | -4564       | 1855         | -136       | -10802     |
| 485 | 3191        | -1159       | 466          | 1404       | -5513      |
| 486 | 3007        | 5           | 121          | 2422       | -2693      |
| 487 | 75          | -9          | -6           | -50        | 723        |
| 488 | 37          | -176        | -6           | -49        | 1451       |
| 489 | -102        | -680        | 12           | -62        | 2920       |
| 490 | -370        | -1513       | 51           | -52        | 4401       |
| 491 | -813        | -2709       | 67           | 0          | 5143       |
| 492 | -813        | -2709       | 67           | 0          | 5143       |
| 493 | -813        | -2709       | 67           | 0          | 5143       |
| 494 | -7903       | -26343      | -778         | 0          | -19071     |
| 495 | -4877       | -19864      | -573         | -1001      | -15986     |
| 496 | -2525       | -15815      | 1            | -1443      | -9764      |
| 497 | -2028       | -13435      | 647          | -1525      | -3181      |
| 498 | -2797       | -12665      | 950          | -1534      | 5476       |
| 499 | -4593       | -11149      | 1218         | -460       | 41085      |
| 500 | 6037        | -27804      | 972          | -981       | 7555       |
| 501 | 4174        | 9502        | 1875         | 172        | 1248       |
| 502 | 2610        | -915        | 1056         | 1410       | -8872      |
| 503 | 2185        | -497        | 392          | 2242       | -5218      |
| 504 | 1851        | 158         | 88           | 3439       | -2724      |
| 505 | 51          | -11         | -11          | -18        | 705        |
| 506 | 46          | -178        | -15          | -39        | 1426       |
| 507 | -47         | -678        | 1            | -75        | 2885       |
| 508 | -291        | -1495       | 82           | -78        | 4367       |
| 509 | -810        | -2701       | 116          | 0          | 5111       |
| 510 | -810        | -2701       | 116          | 0          | 5111       |
| 511 | -810        | -2701       | 116          | 0          | 5111       |
| 512 | -7860       | -26201      | -1389        | 0          | -18749     |
| 513 | -3296       | -19664      | -1011        | -1257      | -15732     |
| 514 | -1433       | -15826      | 10           | -1653      | -9699      |
| 515 | -1261       | -13554      | 962          | -1730      | -3740      |
| 516 | -1934       | -12754      | 1881         | -2565      | 4321       |
| 517 | 1532        | -16424      | 2748         | -6103      | 6832       |
| 518 | 333         | -17162      | 2509         | 14258      | -6474      |
| 519 | 587         | -11904      | -290         | 5202       | -17412     |
| 520 | 826         | -3231       | -18          | 3004       | -11318     |
| 521 | 1176        | -749        | 89           | 2571       | -6318      |
| 522 | 884         | 91          | 45           | 3810       | -3189      |
| 523 | 22          | -1          | -10          | 19         | 701        |
| 524 | 39          | -158        | -19          | -19        | 1410       |
| 525 | -19         | -678        | -6           | -59        | 2841       |
| 526 | -117        | -1460       | 89           | -91        | 4297       |
| 527 | -803        | -2677       | 209          | 0          | 5030       |
| 528 | -803        | -2677       | 209          | 0          | 5030       |
| 529 | -803        | -2677       | 209          | 0          | 5030       |
| 530 | -7778       | -25925      | -2387        | 0          | -17646     |
| 531 | -1283       | -19334      | -1046        | -1217      | -14873     |
| 532 | -670        | -15883      | 12           | -1257      | -8340      |
| 533 | -501        | -13508      | 863          | -1237      | -4485      |
| 534 | -135        | -13606      | 1492         | -2000      | -875       |
| 535 | -665        | -14747      | 1839         | -3012      | -1396      |
| 536 | 57          | -14286      | 704          | 3205       | -6856      |
| 537 | 2254        | -10492      | -222         | 5809       | -12033     |
| 538 | 13          | -5019       | -111         | 2753       | -11449     |
| 539 | 302         | -1195       | 22           | 1800       | -6270      |
| 540 | 186         | -57         | 29           | 2819       | -3126      |
| 541 | 2           | -4          | -16          | 33         | 778        |
| 542 | 30          | -146        | -30          | -7         | 1502       |
| 543 | 11          | -577        | -50          | -38        | 2869       |
| 544 | 28          | -1404       | 91           | -91        | 4126       |
| 545 | -832        | -2774       | 401          | 0          | 4738       |
| 546 | -832        | -2774       | 401          | 0          | 4738       |
| 547 | -832        | -2774       | 401          | 0          | 4738       |
| 548 | -8349       | -27829      | -4159        | 0          | -11043     |
| 549 | 190         | -19158      | -1120        | -1077      | -7857      |
| 550 | -26         | -14333      | 353          | -830       | -4667      |
| 551 | 1254        | -12959      | 618          | -729       | -4921      |
| 552 | 573         | -13412      | 944          | -1538      | -3810      |
| 553 | 216         | -14372      | 1007         | -1829      | -4555      |
| 554 | 563         | -13809      | 1102         | 1289       | -8222      |
| 555 | 337         | -10227      | 846          | 3183       | -11609     |

PROGETTAZIONE ATI:

| In  | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |
|-----|-------------|-------------|--------------|------------|------------|
| 556 | -180        | -5242       | 180          | 2137       | -11082     |
| 557 | 1           | -1416       | 151          | 1056       | -6517      |
| 558 | -2          | -59         | 81           | 1892       | -3499      |

Combinazione n° 19 - SLEQ H - V

| In | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |
|----|-------------|-------------|--------------|------------|------------|
| 1  | 2           | -4          | 21           | -25        | 778        |
| 2  | 22          | -1          | 12           | -14        | 701        |
| 3  | 39          | -158        | 25           | 24         | 1410       |
| 4  | 30          | -146        | 38           | 9          | 1502       |
| 5  | 51          | -11         | 14           | 24         | 705        |
| 6  | 46          | -178        | 19           | 50         | 1426       |
| 7  | -19         | -678        | 7            | 76         | 2841       |
| 8  | 11          | -577        | 65           | 49         | 2869       |
| 9  | -47         | -678        | -1           | 97         | 2885       |
| 10 | 75          | -9          | 8            | 66         | 723        |
| 11 | 37          | -176        | 8            | 64         | 1451       |
| 12 | -102        | -680        | -9           | 80         | 2920       |
| 13 | -117        | -1460       | -69          | 119        | 4297       |
| 14 | 28          | -1404       | -70          | 118        | 4126       |
| 15 | -291        | -1495       | -63          | 101        | 4367       |
| 16 | -370        | -1513       | -40          | 68         | 4401       |
| 17 | 72          | -2          | 3            | 78         | 735        |
| 18 | 9           | -172        | 0            | 64         | 1470       |
| 19 | -144        | -679        | -8           | 60         | 2944       |
| 20 | -414        | -1521       | -21          | 43         | 4420       |
| 21 | -803        | -2677       | -161         | 0          | 5030       |
| 22 | -832        | -2774       | -309         | 0          | 4738       |
| 23 | -810        | -2701       | -89          | 0          | 5111       |
| 24 | -813        | -2709       | -52          | 0          | 5143       |
| 25 | -814        | -2715       | -26          | 0          | 5157       |
| 26 | 54          | 0           | 1            | 70         | 738        |
| 27 | -13         | -170        | -1           | 54         | 1476       |
| 28 | -170        | -679        | -5           | 43         | 2950       |
| 29 | -436        | -1525       | -11          | 26         | 4422       |
| 30 | -815        | -2716       | -12          | 0          | 5157       |
| 31 | -815        | -2716       | -12          | 0          | 5157       |
| 32 | -815        | -2716       | -12          | 0          | 5157       |
| 33 | -815        | -2716       | -12          | 0          | 5157       |
| 34 | -815        | -2716       | -12          | 0          | 5157       |
| 35 | -815        | -2716       | -12          | 0          | 5157       |
| 36 | -815        | -2716       | -12          | 0          | 5157       |
| 37 | 34          | 1           | 1            | 54         | 738        |
| 38 | -28         | -170        | -1           | 41         | 1475       |
| 39 | -185        | -678        | -2           | 30         | 2948       |
| 40 | -446        | -1526       | -5           | 16         | 4417       |
| 41 | -814        | -2715       | -5           | 0          | 5151       |
| 42 | -814        | -2715       | -5           | 0          | 5151       |
| 43 | -814        | -2715       | -5           | 0          | 5151       |
| 44 | -814        | -2715       | -5           | 0          | 5151       |
| 45 | -814        | -2715       | -5           | 0          | 5151       |
| 46 | -814        | -2715       | -5           | 0          | 5151       |
| 47 | -814        | -2715       | -5           | 0          | 5151       |
| 48 | -814        | -2715       | -5           | 0          | 5151       |
| 49 | -814        | -2715       | -5           | 0          | 5151       |
| 50 | 19          | 1           | 1            | 39         | 737        |
| 51 | -38         | -170        | 0            | 29         | 1473       |
| 52 | -193        | -678        | 0            | 20         | 2943       |
| 53 | -452        | -1525       | -1           | 10         | 4411       |
| 54 | -814        | -2713       | -2           | 0          | 5144       |
| 55 | -814        | -2713       | -2           | 0          | 5144       |
| 56 | -814        | -2713       | -2           | 0          | 5144       |
| 57 | -7778       | -25925      | 20144        | 0          | -17646     |
| 58 | -8349       | -27829      | 31569        | 0          | -11043     |
| 59 | -7860       | -26201      | 13836        | 0          | -18749     |
| 60 | -7903       | -26343      | 9784         | 0          | -19071     |
| 61 | -7903       | -26342      | 6296         | 0          | -19007     |
| 62 | -7864       | -26213      | 4092         | 0          | -18742     |
| 63 | -7805       | -26017      | 2674         | 0          | -18433     |
| 64 | -7742       | -25806      | 1740         | 0          | -18147     |
| 65 | 10          | 0           | 1            | 27         | 735        |
| 66 | -44         | -169        | 1            | 19         | 1470       |
| 67 | -198        | -678        | 1            | 13         | 2938       |
| 68 | -455        | -1525       | 1            | 6          | 4405       |
| 69 | -813        | -2710       | 0            | 0          | 5137       |
| 70 | -813        | -2710       | 0            | 0          | 5137       |
| 71 | -813        | -2710       | 0            | 0          | 5137       |
| 72 | -7683       | -25611      | 1127         | 0          | -17909     |
| 73 | -1283       | -19334      | 10659        | 7741       | -14873     |
| 74 | 190         | -19158      | 9880         | 6608       | -7857      |
| 75 | -3296       | -19664      | 11994        | 8741       | -15732     |
| 76 | -4377       | -19864      | 9180         | 7961       | -15986     |

PROGETTAZIONE ATI:

| In  | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |
|-----|-------------|-------------|--------------|------------|------------|
| 77  | -5098       | -19950      | 6210         | 6464       | -15938     |
| 78  | -5514       | -19945      | 4169         | 4884       | -15710     |
| 79  | -5732       | -19859      | 2798         | 3585       | -15427     |
| 80  | -5836       | -19743      | 1843         | 2585       | -15158     |
| 81  | -5878       | -19637      | 1198         | 1846       | -14943     |
| 82  | 5           | 0           | 1            | 18         | 734        |
| 83  | -48         | -169        | 1            | 12         | 1468       |
| 84  | -201        | -677        | 1            | 8          | 2934       |
| 85  | -456        | -1523       | 2            | 3          | 4399       |
| 86  | -812        | -2708       | 1            | 0          | 5131       |
| 87  | -812        | -2708       | 1            | 0          | 5131       |
| 88  | -812        | -2708       | 1            | 0          | 5131       |
| 89  | -7630       | -25434      | 734          | 0          | -17715     |
| 90  | -5885       | -19531      | 804          | 1321       | -14767     |
| 91  | -670        | -15883      | 4221         | 8421       | -8340      |
| 92  | -26         | -14333      | 1110         | 5555       | -4667      |
| 93  | -1433       | -15826      | 5909         | 11311      | -9699      |
| 94  | -2525       | -15815      | 5751         | 10633      | -9764      |
| 95  | -3435       | -15835      | 4364         | 8898       | -9740      |
| 96  | -4027       | -15853      | 3278         | 6947       | -9636      |
| 97  | -4380       | -15760      | 2448         | 5262       | -9369      |
| 98  | -4581       | -15658      | 1647         | 3880       | -9123      |
| 99  | -4677       | -15635      | 1038         | 2823       | -8988      |
| 100 | -4721       | -15613      | 793          | 2079       | -8895      |
| 101 | 1           | 0           | 1            | 11         | 733        |
| 102 | -50         | -169        | 1            | 8          | 1466       |
| 103 | -203        | -677        | 1            | 4          | 2931       |
| 104 | -457        | -1522       | 2            | 2          | 4395       |
| 105 | -812        | -2706       | 2            | 0          | 5127       |
| 106 | -812        | -2706       | 2            | 0          | 5127       |
| 107 | -812        | -2706       | 2            | 0          | 5127       |
| 108 | -7582       | -25272      | 477          | 0          | -17558     |
| 109 | -5878       | -19417      | 546          | 940        | -14612     |
| 110 | -4747       | -15500      | 650          | 1527       | -8708      |
| 111 | -501        | -13508      | 1321         | 6915       | -4485      |
| 112 | 1254        | -12959      | 100          | 4328       | -4921      |
| 113 | -1261       | -13554      | 2444         | 10103      | -3740      |
| 114 | -2028       | -13435      | 2559         | 10169      | -3181      |
| 115 | -2784       | -13671      | 2159         | 8800       | -3571      |
| 116 | -3309       | -13853      | 2313         | 7210       | -3690      |
| 117 | -3739       | -13666      | 2387         | 5724       | -3311      |
| 118 | -3994       | -13418      | 1459         | 4284       | -2737      |
| 119 | -4098       | -13627      | 591          | 3121       | -3055      |
| 120 | -4119       | -13784      | 811          | 2422       | -3200      |
| 121 | -4212       | -13563      | 1092         | 1906       | -2843      |
| 122 | 0           | 0           | 1            | 7          | 733        |
| 123 | -51         | -169        | 1            | 5          | 1465       |
| 124 | -203        | -676        | 1            | 2          | 2929       |
| 125 | -457        | -1521       | 2            | 1          | 4392       |
| 126 | -811        | -2704       | 1            | 0          | 5124       |
| 127 | -811        | -2704       | 1            | 0          | 5124       |
| 128 | -811        | -2704       | 1            | 0          | 5124       |
| 129 | -7541       | -25138      | 295          | 0          | -17437     |
| 130 | -5865       | -19316      | 333          | 648        | -14490     |
| 131 | -4758       | -15397      | 356          | 1061       | -8563      |
| 132 | -4260       | -13297      | 401          | 1291       | -2318      |
| 133 | -135        | -13606      | 989          | 5702       | -875       |
| 134 | 573         | -13412      | -43          | 3496       | -3810      |
| 135 | -1934       | -12754      | 1872         | 8148       | 4321       |
| 136 | -2797       | -12665      | 285          | 8053       | 5476       |
| 137 | -2886       | -13312      | 52           | 7093       | 3752       |
| 138 | -3221       | -14465      | 1391         | 6346       | -100       |
| 139 | -3708       | -13462      | 3451         | 5587       | 3807       |
| 140 | -4321       | -12807      | 1250         | 4093       | 5393       |
| 141 | -4065       | -13494      | 419          | 2764       | 3981       |
| 142 | -3981       | -14533      | 816          | 2467       | 158        |
| 143 | -4203       | -13483      | 2672         | 2305       | 4165       |
| 144 | -4627       | -12792      | 444          | 1379       | 5748       |
| 145 | -1          | 0           | 0            | 4          | 732        |
| 146 | -52         | -169        | 1            | 3          | 1464       |
| 147 | -204        | -676        | 1            | 1          | 2928       |
| 148 | -457        | -1521       | 1            | 0          | 4391       |
| 149 | -811        | -2703       | 1            | 0          | 5122       |
| 150 | -811        | -2703       | 1            | 0          | 5122       |
| 151 | -811        | -2703       | 1            | 0          | 5122       |
| 152 | -7512       | -25040      | 173          | 0          | -17352     |
| 153 | -5849       | -19253      | 181          | 426        | -14415     |
| 154 | -4749       | -15392      | 114          | 693        | -8535      |
| 155 | -4238       | -13502      | 30           | 775        | -2702      |
| 156 | -4248       | -13458      | 592          | 534        | 4302       |
| 157 | -665        | -14747      | 1295         | 10342      | -1396      |
| 158 | 216         | -14372      | -481         | 5165       | -4555      |
| 159 | 1532        | -16424      | 2962         | 10264      | 6832       |
| 160 | -4593       | -11149      | -787         | 5869       | 41085      |
| 161 | -4012       | -16942      | 766          | 4495       | 2739       |

PROGETTAZIONE ATI:

| In  | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |
|-----|-------------|-------------|--------------|------------|------------|
| 162 | -1076       | -15262      | 614          | 4897       | -787       |
| 163 | -5274       | -17111      | 5053         | 7938       | 2681       |
| 164 | -5883       | -12183      | 1029         | 3546       | 40343      |
| 165 | -5592       | -17190      | 1164         | 2112       | 2734       |
| 166 | -1930       | -15438      | 791          | 2311       | -712       |
| 167 | -5739       | -17214      | 4699         | 6867       | 2837       |
| 168 | -6198       | -12252      | 467          | 1364       | 40535      |
| 169 | -5797       | -17213      | 1346         | 198        | 2929       |
| 170 | -1          | 0           | 0            | 2          | 732        |
| 171 | -52         | -169        | 0            | 1          | 1463       |
| 172 | -204        | -676        | 1            | 1          | 2927       |
| 173 | -457        | -1520       | 1            | 0          | 4389       |
| 174 | -811        | -2702       | 1            | 0          | 5121       |
| 175 | -811        | -2702       | 1            | 0          | 5121       |
| 176 | -811        | -2702       | 1            | 0          | 5121       |
| 177 | -7491       | -24971      | 101          | 0          | -17296     |
| 178 | -5836       | -19209      | 116          | 265        | -14366     |
| 179 | -4739       | -15402      | 132          | 447        | -8545      |
| 180 | -4188       | -13668      | 160          | 560        | -2918      |
| 181 | -4085       | -14489      | 187          | 616        | 365        |
| 182 | -2059       | -15441      | 206          | 630        | -575       |
| 183 | 57          | -14286      | 364          | 14942      | -6856      |
| 184 | 563         | -13809      | -251         | 6353       | -8222      |
| 185 | 333         | -17162      | 11981        | 56434      | -6474      |
| 186 | 6037        | -27804      | 265          | 7350       | 7555       |
| 187 | -299        | -15755      | 738          | 15685      | -6183      |
| 188 | -424        | -14767      | 197          | 3357       | -5770      |
| 189 | -692        | -16004      | 11080        | 42339      | -6224      |
| 190 | 359         | -28272      | 817          | 2833       | 6100       |
| 191 | -963        | -16106      | 973          | 14623      | -6246      |
| 192 | -955        | -14987      | 729          | 2037       | -5816      |
| 193 | -1110       | -16146      | 11047        | 41785      | -6216      |
| 194 | -2883       | -28928      | 460          | 1281       | 5823       |
| 195 | -1178       | -16159      | 1152         | 13121      | -6175      |
| 196 | -1101       | -15015      | 210          | 613        | -5742      |
| 197 | -1          | 0           | 0            | 1          | 732        |
| 198 | -52         | -169        | 0            | 1          | 1463       |
| 199 | -204        | -676        | 0            | 0          | 2926       |
| 200 | -457        | -1520       | 0            | 0          | 4389       |
| 201 | -810        | -2701       | 0            | 0          | 5120       |
| 202 | -810        | -2701       | 0            | 0          | 5120       |
| 203 | -810        | -2701       | 0            | 0          | 5120       |
| 204 | -7477       | -24923      | 52           | 0          | -17259     |
| 205 | -5829       | -19167      | 76           | 132        | -14325     |
| 206 | -4740       | -15333      | 173          | 241        | -8453      |
| 207 | -4241       | -13466      | 587          | 387        | -2634      |
| 208 | -4260       | -13440      | 2146         | 1273       | 4372       |
| 209 | -5816       | -17208      | 4174         | 6435       | 2980       |
| 210 | -1204       | -16161      | 10551        | 41594      | -6150      |
| 211 | 2254        | -10492      | 1829         | 8714       | -12033     |
| 212 | 337         | -10227      | 162          | 4306       | -11609     |
| 213 | 587         | -11904      | 2689         | 5798       | -17412     |
| 214 | 4174        | 9502        | -358         | 426        | 1248       |
| 215 | 1245        | -12358      | -1046        | 4608       | -14091     |
| 216 | 4201        | -10969      | -115         | 1765       | -10849     |
| 217 | 177         | -12570      | 3367         | 5068       | -14156     |
| 218 | 3001        | 8409        | 613          | 1997       | -1661      |
| 219 | -1535       | -12666      | -896         | 5554       | -14221     |
| 220 | 992         | -11181      | 623          | 1670       | -10971     |
| 221 | -2935       | -12706      | 3503         | 4620       | -14228     |
| 222 | 237         | 8070        | 415          | 1142       | -2934      |
| 223 | -3858       | -12722      | -730         | 4536       | -14212     |
| 224 | 480         | -11217      | 195          | 570        | -10945     |
| 225 | -4307       | -12728      | 3117         | 4403       | -14199     |
| 226 | -1          | 0           | 0            | 0          | 732        |
| 227 | -52         | -169        | 0            | 0          | 1463       |
| 228 | -204        | -676        | 0            | 0          | 2926       |
| 229 | -457        | -1520       | 0            | 0          | 4388       |
| 230 | -810        | -2701       | 0            | 0          | 5120       |
| 231 | -810        | -2701       | 0            | 0          | 5120       |
| 232 | -810        | -2701       | 0            | 0          | 5120       |
| 233 | -7471       | -24904      | 0            | 0          | -17245     |
| 234 | -5827       | -19147      | 0            | 0          | -14305     |
| 235 | -4746       | -15282      | 0            | 0          | -8398      |
| 236 | -4270       | -13228      | 0            | 0          | -2180      |
| 237 | -4655       | -12759      | 0            | 0          | 5887       |
| 238 | -6241       | -12244      | 0            | 0          | 40634      |
| 239 | -3777       | -29197      | 0            | 0          | 5831       |
| 240 | -669        | 7896        | 0            | 0          | -3105      |
| 241 | 13          | -5019       | 1000         | 1256       | -11449     |
| 242 | -180        | -5242       | 385          | 1171       | -11082     |
| 243 | 826         | -3231       | 1162         | 1848       | -11318     |
| 244 | 2610        | -915        | -229         | 1092       | -8872      |
| 245 | 3027        | -4564       | -536         | 317        | -10802     |
| 246 | 3095        | -5641       | -95          | 803        | -11027     |

PROGETTAZIONE ATI:

| In  | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |
|-----|-------------|-------------|--------------|------------|------------|
| 247 | 2998        | -4802       | 1544         | 1170       | -11898     |
| 248 | 3045        | -899        | 433          | 1244       | -9926      |
| 249 | 1870        | -4868       | -493         | 1941       | -12810     |
| 250 | 1142        | -5787       | 475          | 1307       | -11190     |
| 251 | 665         | -4895       | 1716         | 823        | -13268     |
| 252 | 728         | -1011       | 327          | 984        | -10895     |
| 253 | -222        | -4908       | -352         | 1354       | -13461     |
| 254 | -605        | -5814       | 155          | 513        | -11195     |
| 255 | -674        | -4912       | 1389         | 562        | -13529     |
| 256 | -174        | -1099       | 0            | 0          | -11044     |
| 257 | -1          | 0           | 0            | -1         | 732        |
| 258 | -52         | -169        | 0            | 0          | 1463       |
| 259 | -204        | -676        | 0            | 0          | 2926       |
| 260 | -457        | -1520       | 0            | 0          | 4389       |
| 261 | -810        | -2701       | 0            | 0          | 5120       |
| 262 | -810        | -2701       | 0            | 0          | 5120       |
| 263 | -810        | -2701       | 0            | 0          | 5120       |
| 264 | -7477       | -24923      | 44           | 0          | -17259     |
| 265 | -5829       | -19167      | 55           | 22         | -14325     |
| 266 | -4740       | -15333      | 84           | 3          | -8453      |
| 267 | -4241       | -13466      | 229          | -103       | -2634      |
| 268 | -4260       | -13440      | 803          | -720       | 4372       |
| 269 | -5816       | -17208      | 1563         | -1088      | 2980       |
| 270 | -1204       | -16161      | 1369         | 11881      | -6150      |
| 271 | -4307       | -12728      | -522         | 3394       | -14199     |
| 272 | -674        | -4912       | -169         | 337        | -13529     |
| 273 | 302         | -1195       | 353          | 348        | -6270      |
| 274 | 1           | -1416       | 49           | 113        | -6517      |
| 275 | 1176        | -749        | 275          | 547        | -6318      |
| 276 | 2185        | -497        | -88          | 597        | -5218      |
| 277 | 3191        | -1159       | -185         | 654        | -5513      |
| 278 | 3644        | -1274       | -35          | 748        | -6073      |
| 279 | 3765        | -1254       | 378          | 810        | -5990      |
| 280 | 3556        | -613        | 241          | 720        | -5747      |
| 281 | 3029        | -1208       | 38           | 965        | -6472      |
| 282 | 2421        | -1340       | 272          | 966        | -6605      |
| 283 | 1960        | -1202       | 478          | 845        | -6632      |
| 284 | 1550        | -595        | 189          | 810        | -6263      |
| 285 | 1104        | -1220       | -104         | 724        | -6646      |
| 286 | 753         | -1352       | 90           | 441        | -6618      |
| 287 | 652         | -1236       | 286          | 158        | -6646      |
| 288 | 657         | -623        | 0            | 0          | -6351      |
| 289 | 652         | -1236       | 2            | -98        | -6646      |
| 290 | -1          | 0           | 0            | -2         | 732        |
| 291 | -52         | -169        | 0            | -1         | 1463       |
| 292 | -204        | -676        | 0            | 0          | 2927       |
| 293 | -457        | -1520       | -1           | 0          | 4389       |
| 294 | -811        | -2702       | -1           | 0          | 5121       |
| 295 | -811        | -2702       | -1           | 0          | 5121       |
| 296 | -811        | -2702       | -1           | 0          | 5121       |
| 297 | -7491       | -24971      | 84           | 0          | -17296     |
| 298 | -5836       | -19209      | 96           | 47         | -14366     |
| 299 | -4739       | -15402      | 100          | 43         | -8545      |
| 300 | -4188       | -13668      | 109          | 20         | -2918      |
| 301 | -4085       | -14489      | 115          | -4         | 365        |
| 302 | -2059       | -15441      | 119          | -24        | -575       |
| 303 | -1101       | -15015      | 119          | -41        | -5742      |
| 304 | 480         | -11217      | 113          | -59        | -10945     |
| 305 | -605        | -5814       | 99           | -86        | -11195     |
| 306 | 753         | -1352       | 65           | -139       | -6618      |
| 307 | 186         | -57         | 129          | -71        | -3126      |
| 308 | -2          | -59         | 35           | -103       | -3499      |
| 309 | 884         | 91          | 147          | 182        | -3189      |
| 310 | 1851        | 158         | 8            | 535        | -2724      |
| 311 | 3007        | 5           | -91          | 831        | -2693      |
| 312 | 3742        | -24         | 26           | 1065       | -2931      |
| 313 | 3940        | 0           | 140          | 1167       | -2948      |
| 314 | 3750        | 102         | 116          | 1147       | -2988      |
| 315 | 3345        | 0           | 67           | 1062       | -3196      |
| 316 | 2844        | -20         | 120          | 962        | -3304      |
| 317 | 2311        | 12          | 163          | 837        | -3320      |
| 318 | 1838        | 154         | 80           | 680        | -3251      |
| 319 | 1468        | 14          | -4           | 519        | -3378      |
| 320 | 1205        | -21         | 36           | 352        | -3315      |
| 321 | 1024        | 12          | 78           | 184        | -3390      |
| 322 | 959         | 151         | 0            | 0          | -3300      |
| 323 | 1024        | 12          | 15           | -119       | -3390      |
| 324 | 1205        | -21         | 41           | -258       | -3315      |
| 325 | -1          | 0           | 0            | -3         | 732        |
| 326 | -52         | -169        | 0            | -2         | 1464       |
| 327 | -204        | -676        | -1           | -1         | 2928       |
| 328 | -457        | -1521       | -1           | 0          | 4391       |
| 329 | -811        | -2703       | -1           | 0          | 5122       |
| 330 | -811        | -2703       | -1           | 0          | 5122       |
| 331 | -811        | -2703       | -1           | 0          | 5122       |

| In  | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |
|-----|-------------|-------------|--------------|------------|------------|
| 332 | -7512       | -25040      | 122          | 0          | -17352     |
| 333 | -5849       | -19253      | 136          | 68         | -14415     |
| 334 | -4749       | -15392      | 116          | 77         | -8535      |
| 335 | -4238       | -13502      | 290          | 161        | -2702      |
| 336 | -4248       | -13458      | 1754         | 990        | 4302       |
| 337 | -5797       | -17213      | 3748         | 6114       | 2929       |
| 338 | -1178       | -16159      | 10120        | 41475      | -6175      |
| 339 | -3858       | -12722      | 3131         | 4237       | -14212     |
| 340 | -222        | -4908       | 1356         | 329        | -13461     |
| 341 | 1104        | -1220       | 261          | -162       | -6646      |
| 342 | 1468        | 14          | 81           | -375       | -3378      |
| 343 | 0           | 0           | 0            | -5         | 733        |
| 344 | -51         | -169        | -1           | -4         | 1465       |
| 345 | -203        | -676        | -1           | -2         | 2929       |
| 346 | -457        | -1521       | -1           | -1         | 4392       |
| 347 | -811        | -2704       | -1           | 0          | 5124       |
| 348 | -811        | -2704       | -1           | 0          | 5124       |
| 349 | -811        | -2704       | -1           | 0          | 5124       |
| 350 | -7541       | -25138      | 161          | 0          | -17437     |
| 351 | -5865       | -19316      | 185          | 74         | -14490     |
| 352 | -4758       | -15397      | 194          | 52         | -8563      |
| 353 | -4260       | -13297      | 210          | 2          | -2318      |
| 354 | -4627       | -12792      | 223          | -42        | 5748       |
| 355 | -6198       | -12252      | 229          | -79        | 40535      |
| 356 | -2883       | -28928      | 228          | -108       | 5823       |
| 357 | 237         | 8070        | 217          | -139       | -2934      |
| 358 | 728         | -1011       | 190          | -184       | -10895     |
| 359 | 1550        | -595        | 124          | -281       | -6263      |
| 360 | 1838        | 154         | 80           | -510       | -3251      |
| 361 | 1           | 0           | -1           | -9         | 733        |
| 362 | -50         | -169        | -1           | -6         | 1466       |
| 363 | -203        | -677        | -1           | -3         | 2931       |
| 364 | -457        | -1522       | -1           | -1         | 4395       |
| 365 | -812        | -2706       | -1           | 0          | 5127       |
| 366 | -812        | -2706       | -1           | 0          | 5127       |
| 367 | -812        | -2706       | -1           | 0          | 5127       |
| 368 | -7582       | -25272      | 195          | 0          | -17558     |
| 369 | -5878       | -19417      | 229          | 66         | -14612     |
| 370 | -4747       | -15500      | 267          | 7          | -8708      |
| 371 | -4212       | -13563      | 413          | -145       | -2843      |
| 372 | -4203       | -13483      | 998          | -807       | 4165       |
| 373 | -5739       | -17214      | 1765         | -2584      | 2837       |
| 374 | -1110       | -16146      | 1569         | 10536      | -6216      |
| 375 | -2935       | -12706      | -331         | 2260       | -14228     |
| 376 | 665         | -4895       | -2           | -479       | -13268     |
| 377 | 1960        | -1202       | 111          | -399       | -6632      |
| 378 | 2311        | 12          | 87           | -574       | -3320      |
| 379 | 5           | 0           | -1           | -14        | 734        |
| 380 | -48         | -169        | -1           | -10        | 1468       |
| 381 | -201        | -677        | -1           | -6         | 2934       |
| 382 | -456        | -1523       | -1           | -3         | 4399       |
| 383 | -812        | -2708       | -1           | 0          | 5131       |
| 384 | -812        | -2708       | -1           | 0          | 5131       |
| 385 | -812        | -2708       | -1           | 0          | 5131       |
| 386 | -7630       | -25434      | 214          | 0          | -17715     |
| 387 | -5885       | -19531      | 251          | 45         | -14767     |
| 388 | -4721       | -15613      | 268          | -17        | -8895      |
| 389 | -4119       | -13784      | 297          | -93        | -3200      |
| 390 | -3981       | -14533      | 318          | -159       | 158        |
| 391 | -1930       | -15438      | 327          | -204       | -712       |
| 392 | -955        | -14987      | 324          | -232       | -5816      |
| 393 | 992         | -11181      | 306          | -257       | -10971     |
| 394 | 1142        | -5787       | 266          | -301       | -11190     |
| 395 | 2421        | -1340       | 173          | -421       | -6605      |
| 396 | 2844        | -20         | 112          | -577       | -3304      |
| 397 | 10          | 0           | -1           | -20        | 735        |
| 398 | -44         | -169        | -1           | -15        | 1470       |
| 399 | -198        | -678        | -1           | -10        | 2938       |
| 400 | -455        | -1525       | 0            | -5         | 4405       |
| 401 | -813        | -2710       | 0            | 0          | 5137       |
| 402 | -813        | -2710       | 0            | 0          | 5137       |
| 403 | -813        | -2710       | 0            | 0          | 5137       |
| 404 | -7683       | -25611      | 217          | 0          | -17909     |
| 405 | -5878       | -19637      | 255          | -1         | -14943     |
| 406 | -4677       | -15635      | 259          | -78        | -8988      |
| 407 | -4098       | -13627      | 242          | -81        | -3055      |
| 408 | -4065       | -13494      | 1030         | 561        | 3981       |
| 409 | -5592       | -17190      | 3133         | 5600       | 2734       |
| 410 | -963        | -16106      | 9629         | 41136      | -6246      |
| 411 | -1535       | -12666      | 3172         | 3921       | -14221     |
| 412 | 1870        | -4868       | 1398         | 28         | -12810     |
| 413 | 3029        | -1208       | 291          | -436       | -6472      |
| 414 | 3345        | 0           | 135          | -459       | -3196      |
| 415 | 19          | 1           | -1           | -30        | 737        |
| 416 | -38         | -170        | 0            | -22        | 1473       |

PROGETTAZIONE ATI:

| In  | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |
|-----|-------------|-------------|--------------|------------|------------|
| 417 | -193        | -678        | 0            | -15        | 2943       |
| 418 | -452        | -1525       | 2            | -8         | 4411       |
| 419 | -814        | -2713       | 2            | 0          | 5144       |
| 420 | -814        | -2713       | 2            | 0          | 5144       |
| 421 | -814        | -2713       | 2            | 0          | 5144       |
| 422 | -7742       | -25806      | 192          | 0          | -18147     |
| 423 | -5836       | -19743      | 244          | -81        | -15158     |
| 424 | -4581       | -15658      | 297          | -226       | -9123      |
| 425 | -3994       | -13418      | 363          | -349       | -2737      |
| 426 | -4321       | -12807      | 411          | -423       | 5393       |
| 427 | -5883       | -12183      | 431          | -450       | 40343      |
| 428 | 359         | -28272      | 422          | -445       | 6100       |
| 429 | 3001        | 8409        | 388          | -427       | -1661      |
| 430 | 3045        | -899        | 326          | -434       | -9926      |
| 431 | 3556        | -613        | 208          | -491       | -5747      |
| 432 | 3750        | 102         | 134          | -76        | -2988      |
| 433 | 34          | 1           | -1           | -41        | 738        |
| 434 | -28         | -170        | 1            | -31        | 1475       |
| 435 | -185        | -678        | 3            | -23        | 2948       |
| 436 | -446        | -1526       | 6            | -13        | 4417       |
| 437 | -814        | -2715       | 7            | 0          | 5151       |
| 438 | -814        | -2715       | 7            | 0          | 5151       |
| 439 | -814        | -2715       | 7            | 0          | 5151       |
| 440 | -7805       | -26017      | 111          | 0          | -18433     |
| 441 | -5732       | -19859      | 183          | -211       | -15427     |
| 442 | -4380       | -15760      | 310          | -443       | -9369      |
| 443 | -3739       | -13666      | 550          | -689       | -3311      |
| 444 | -3708       | -13462      | 1180         | -1356      | 3807       |
| 445 | -5274       | -17111      | 1971         | -5025      | 2681       |
| 446 | -692        | -16004      | 1762         | 9012       | -6224      |
| 447 | 177         | -12570      | -175         | 1701       | -14156     |
| 448 | 2998        | -4802       | 109          | -355       | -18898     |
| 449 | 3765        | -1254       | 175          | -53        | -5990      |
| 450 | 3940        | 0           | 127          | 548        | -2948      |
| 451 | 54          | 0           | -1           | -54        | 738        |
| 452 | -13         | -170        | 1            | -41        | 1476       |
| 453 | -170        | -679        | 7            | -33        | 2950       |
| 454 | -436        | -1525       | 14           | -20        | 4422       |
| 455 | -815        | -2716       | 16           | 0          | 5157       |
| 456 | -815        | -2716       | 16           | 0          | 5157       |
| 457 | -815        | -2716       | 16           | 0          | 5157       |
| 458 | -7864       | -26213      | -40          | 0          | -18742     |
| 459 | -5514       | -19945      | 30           | -405       | -15710     |
| 460 | -4027       | -15853      | 224          | -712       | -9636      |
| 461 | -3309       | -13853      | 436          | -876       | -3690      |
| 462 | -3221       | -14465      | 576          | -948       | -100       |
| 463 | -1076       | -15262      | 613          | -822       | -787       |
| 464 | -424        | -14767      | 577          | -761       | -5770      |
| 465 | 4201        | -10969      | 477          | -632       | -10849     |
| 466 | 3095        | -5641       | 357          | -365       | -11027     |
| 467 | 3644        | -1274       | 211          | 594        | -6073      |
| 468 | 3742        | -24         | 130          | 1372       | -2931      |
| 469 | 72          | -2          | -2           | -60        | 735        |
| 470 | 9           | -172        | 0            | -49        | 1470       |
| 471 | -144        | -679        | 11           | -46        | 2944       |
| 472 | -414        | -1521       | 28           | -33        | 4420       |
| 473 | -814        | -2715       | 33           | 0          | 5157       |
| 474 | -814        | -2715       | 33           | 0          | 5157       |
| 475 | -814        | -2715       | 33           | 0          | 5157       |
| 476 | -7903       | -26342      | -300         | 0          | -19007     |
| 477 | -5098       | -19950      | -194         | -682       | -15938     |
| 478 | -3435       | -15835      | 93           | -1063      | -9740      |
| 479 | -2784       | -13671      | 354          | -1124      | -3571      |
| 480 | -2886       | -13312      | 1132         | -500       | 3752       |
| 481 | -4012       | -16942      | 4025         | 4049       | 2739       |
| 482 | -299        | -15755      | 11501        | 41205      | -6183      |
| 483 | 1245        | -12358      | 3713         | 2805       | -14091     |
| 484 | 3027        | -4564       | 1855         | -136       | -10802     |
| 485 | 3191        | -1159       | 466          | 1404       | -5513      |
| 486 | 3007        | 5           | 121          | 2422       | -2693      |
| 487 | 75          | -9          | -6           | -50        | 723        |
| 488 | 37          | -176        | -6           | -49        | 1451       |
| 489 | -102        | -680        | 12           | -62        | 2920       |
| 490 | -370        | -1513       | 51           | -52        | 4401       |
| 491 | -813        | -2709       | 67           | 0          | 5143       |
| 492 | -813        | -2709       | 67           | 0          | 5143       |
| 493 | -813        | -2709       | 67           | 0          | 5143       |
| 494 | -7903       | -26343      | -778         | 0          | -19071     |
| 495 | -4377       | -19864      | -573         | -1001      | -15986     |
| 496 | -2525       | -15815      | 1            | -1443      | -9764      |
| 497 | -2028       | -13435      | 647          | -1525      | -3181      |
| 498 | -2797       | -12665      | 950          | -1534      | 5476       |
| 499 | -4593       | -11149      | 1218         | -460       | 41085      |
| 500 | 6037        | -27804      | 972          | -981       | 7555       |
| 501 | 4174        | 9502        | 1875         | 172        | 1248       |

PROGETTAZIONE ATI:

| In  | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |
|-----|-------------|-------------|--------------|------------|------------|
| 502 | 2610        | -915        | 1056         | 1410       | -8872      |
| 503 | 2185        | -497        | 392          | 2242       | -5218      |
| 504 | 1851        | 158         | 88           | 3439       | -2724      |
| 505 | 51          | -11         | -11          | -18        | 705        |
| 506 | 46          | -178        | -15          | -39        | 1426       |
| 507 | -47         | -678        | 1            | -75        | 2885       |
| 508 | -291        | -1495       | 82           | -78        | 4367       |
| 509 | -810        | -2701       | 116          | 0          | 5111       |
| 510 | -810        | -2701       | 116          | 0          | 5111       |
| 511 | -810        | -2701       | 116          | 0          | 5111       |
| 512 | -7860       | -26201      | -1389        | 0          | -18749     |
| 513 | -3296       | -19664      | -1011        | -1257      | -15732     |
| 514 | -1433       | -15826      | 10           | -1653      | -9699      |
| 515 | -1261       | -13554      | 962          | -1730      | -3740      |
| 516 | -1934       | -12754      | 1881         | -2565      | 4321       |
| 517 | 1532        | -16424      | 2748         | -6103      | 6832       |
| 518 | 333         | -17162      | 2509         | 14258      | -6474      |
| 519 | 587         | -11904      | -290         | 5202       | -17412     |
| 520 | 826         | -3231       | -18          | 3004       | -11318     |
| 521 | 1176        | -749        | 89           | 2571       | -6318      |
| 522 | 884         | 91          | 45           | 3810       | -3189      |
| 523 | 22          | -1          | -10          | 19         | 701        |
| 524 | 39          | -158        | -19          | -19        | 1410       |
| 525 | -19         | -678        | -6           | -59        | 2841       |
| 526 | -117        | -1460       | 89           | -91        | 4297       |
| 527 | -803        | -2677       | 209          | 0          | 5030       |
| 528 | -803        | -2677       | 209          | 0          | 5030       |
| 529 | -803        | -2677       | 209          | 0          | 5030       |
| 530 | -7778       | -25925      | -2387        | 0          | -17646     |
| 531 | -1283       | -19334      | -1046        | -1217      | -14873     |
| 532 | -670        | -15883      | 12           | -1257      | -8340      |
| 533 | -501        | -13508      | 863          | -1237      | -4485      |
| 534 | -135        | -13606      | 1492         | -2000      | -875       |
| 535 | -665        | -14747      | 1839         | -3012      | -1396      |
| 536 | 57          | -14286      | 704          | 3205       | -6856      |
| 537 | 2254        | -10492      | -222         | 5809       | -12033     |
| 538 | 13          | -5019       | -111         | 2753       | -11449     |
| 539 | 302         | -1195       | 22           | 1800       | -6270      |
| 540 | 186         | -57         | 29           | 2819       | -3126      |
| 541 | 2           | -4          | -16          | 33         | 778        |
| 542 | 30          | -146        | -30          | -7         | 1502       |
| 543 | 11          | -577        | -50          | -38        | 2869       |
| 544 | 28          | -1404       | 91           | -91        | 4126       |
| 545 | -832        | -2774       | 401          | 0          | 4738       |
| 546 | -832        | -2774       | 401          | 0          | 4738       |
| 547 | -832        | -2774       | 401          | 0          | 4738       |
| 548 | -8349       | -27829      | -4159        | 0          | -11043     |
| 549 | 190         | -19158      | -1120        | -1077      | -7857      |
| 550 | -26         | -14333      | 353          | -830       | -4667      |
| 551 | 1254        | -12959      | 618          | -729       | -4921      |
| 552 | 573         | -13412      | 944          | -1538      | -3810      |
| 553 | 216         | -14372      | 1007         | -1829      | -4555      |
| 554 | 563         | -13809      | 1102         | 1289       | -8222      |
| 555 | 337         | -10227      | 846          | 3183       | -11609     |
| 556 | -180        | -5242       | 180          | 2137       | -11082     |
| 557 | 1           | -1416       | 151          | 1056       | -6517      |
| 558 | -2          | -59         | 81           | 1892       | -3499      |



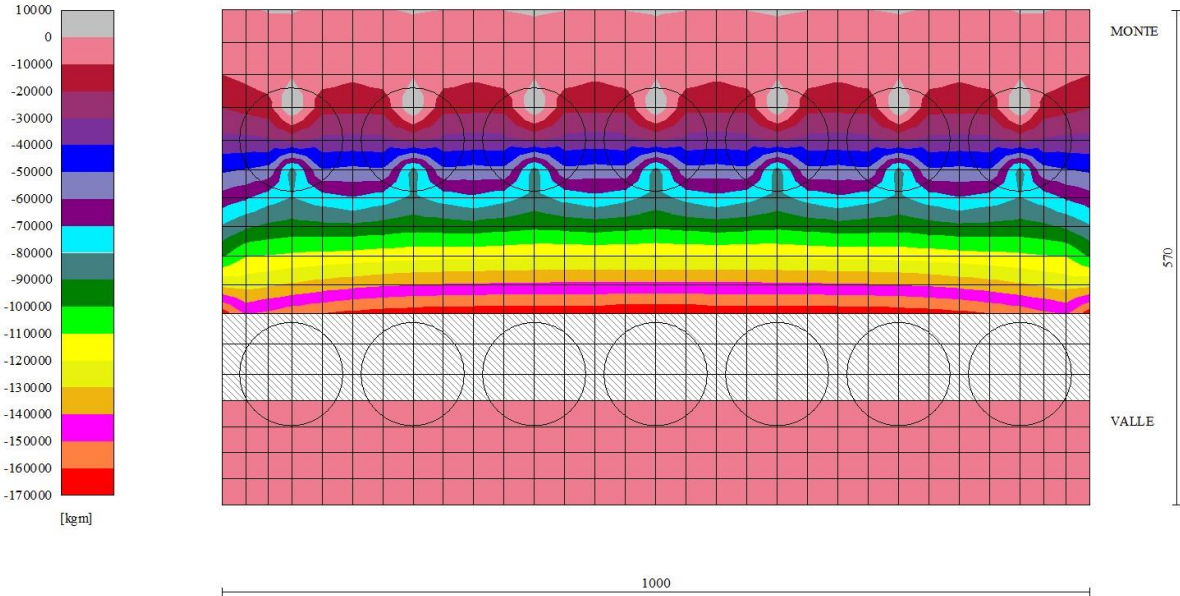


Fig. 14 - Piastra fondazione - Momenti  $M_y$  (Combinazione n° 3)

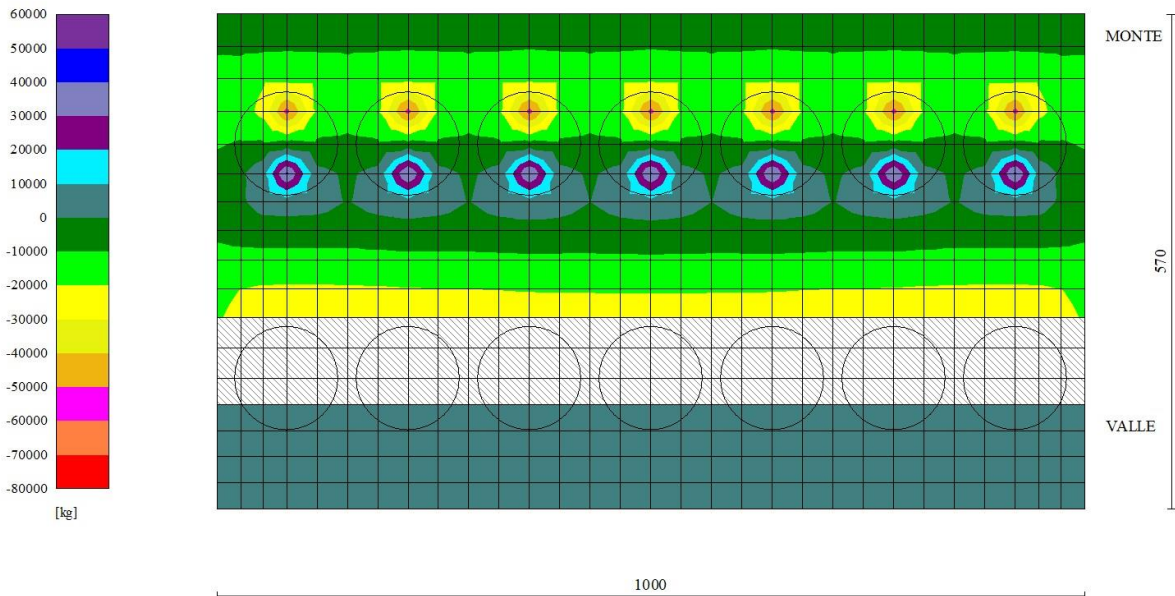


Fig. 15 - Piastra fondazione - Taglio  $T_{yMAX}$  (Combinazione n° 4)

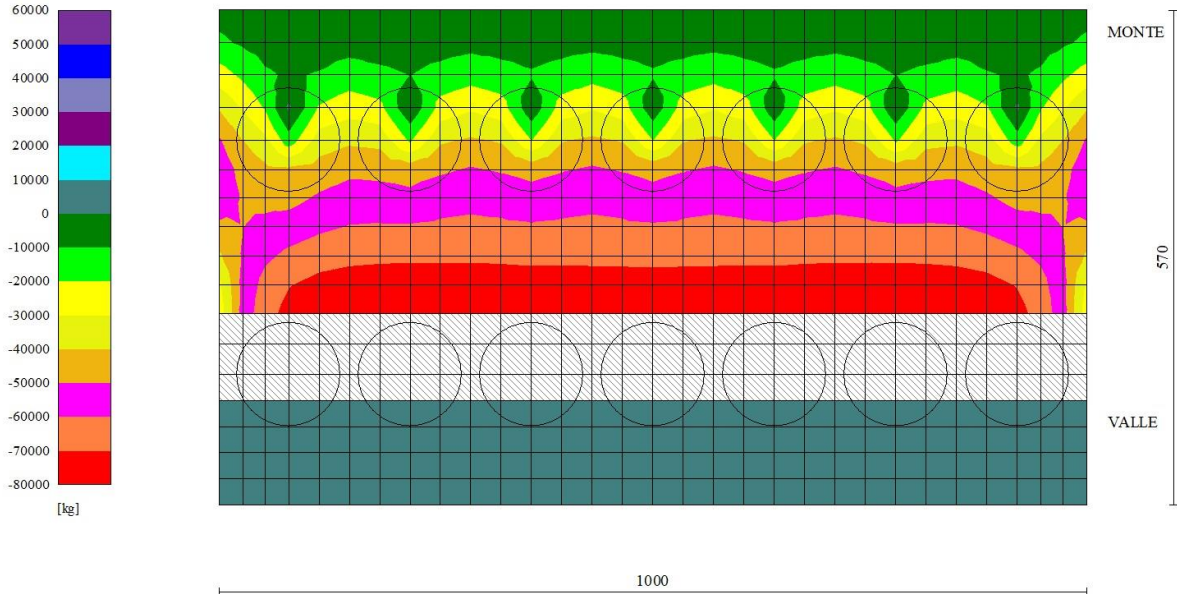


Fig. 16 - Piastra fondazione - Taglio  $Ty_{MIN}$  (Combinazione n° 3)

### Sollecitazioni pali

#### Simbologia adottata

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

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

##### Palo n° 1

| n°  | Y<br>[m] | Ne<br>[kg] | Nr<br>[kg] | Te<br>[kg] | Tr<br>[kg] | Me<br>[kgm] | Mr<br>[kgm] |
|-----|----------|------------|------------|------------|------------|-------------|-------------|
| 1   | 0.00     | 55374      | 552982     | -19848     | -80633     | 1132        | 4598        |
| 12  | 2.31     | 61002      | 548627     | 231        | -33467     | 21820       | 150567      |
| 23  | 4.62     | 67108      | 546648     | 4834       | 33594      | 14636       | 149363      |
| 56  | 11.55    | 86702      | 546648     | -15        | 1794       | -849        | -5952       |
| 101 | 21.00    | 109042     | 526064     | 1          | -5         | 0           | 0           |

##### Palo n° 2

| n°  | Y<br>[m] | Ne<br>[kg] | Nr<br>[kg] | Te<br>[kg] | Tr<br>[kg] | Me<br>[kgm] | Mr<br>[kgm] |
|-----|----------|------------|------------|------------|------------|-------------|-------------|
| 1   | 0.00     | 91858      | 552961     | -19848     | -80633     | 1132        | 4598        |
| 12  | 2.31     | 97199      | 548606     | 231        | -33467     | 21820       | 150567      |
| 23  | 4.62     | 103169     | 546627     | 4834       | 33594      | 14636       | 149363      |
| 56  | 11.55    | 122763     | 546627     | -15        | 1794       | -849        | -5952       |
| 101 | 21.00    | 143711     | 526041     | 1          | -5         | 0           | 0           |

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

##### Palo n° 1

| n°  | Y<br>[m] | Ne<br>[kg] | Nr<br>[kg] | Te<br>[kg] | Tr<br>[kg] | Me<br>[kgm] | Mr<br>[kgm] |
|-----|----------|------------|------------|------------|------------|-------------|-------------|
| 1   | 0.00     | -9620      | -240292    | -49773     | -67815     | 33966       | 46278       |
| 13  | 2.52     | 6094       | -235542    | 1695       | -14058     | 109303      | 166789      |
| 24  | 4.83     | 15624      | -233958    | 24339      | 37647      | 72487       | 131089      |
| 57  | 11.76    | 35218      | -233958    | -125       | 562        | -4274       | -6631       |
| 101 | 21.00    | 99513      | -216351    | 2          | -1         | 0           | 0           |

##### Palo n° 2

PROGETTAZIONE ATI:

| n°  | Y<br>[m] | Ne<br>[kg] | Nr<br>[kg] | Te<br>[kg] | Tr<br>[kg] | Me<br>[kgm] | Mr<br>[kgm] |
|-----|----------|------------|------------|------------|------------|-------------|-------------|
| 1   | 0.00     | 181944     | 552955     | -49773     | -67815     | 33966       | 46278       |
| 13  | 2.52     | 186997     | 548205     | 1695       | -14058     | 109303      | 166789      |
| 24  | 4.83     | 192805     | 546621     | 24339      | 37647      | 72487       | 131089      |
| 57  | 11.76    | 212399     | 546621     | -125       | 562        | -4274       | -6631       |
| 101 | 21.00    | 229315     | 526037     | 2          | -1         | 0           | 0           |

Combinazione n° 3 - STR (A1-M1-R3) H - V

Palo n° 1

| n°  | Y<br>[m] | Ne<br>[kg] | Nr<br>[kg] | Te<br>[kg] | Tr<br>[kg] | Me<br>[kgm] | Mr<br>[kgm] |
|-----|----------|------------|------------|------------|------------|-------------|-------------|
| 1   | 0.00     | -22004     | -549910    | -45101     | -66102     | 35159       | 51531       |
| 13  | 2.52     | -8429      | -545158    | 4080       | -12339     | 99172       | 167715      |
| 23  | 4.62     | -239       | -543574    | 22002      | 36629      | 67665       | 137185      |
| 56  | 11.55    | 19356      | -543574    | -28        | 932        | -3865       | -6462       |
| 101 | 21.00    | 74744      | -522982    | 2          | 0          | 0           | 0           |

Palo n° 2

| n°  | Y<br>[m] | Ne<br>[kg] | Nr<br>[kg] | Te<br>[kg] | Tr<br>[kg] | Me<br>[kgm] | Mr<br>[kgm] |
|-----|----------|------------|------------|------------|------------|-------------|-------------|
| 1   | 0.00     | 150155     | 552971     | -45101     | -66102     | 35159       | 51531       |
| 13  | 2.52     | 155481     | 548221     | 4080       | -12339     | 99172       | 167715      |
| 23  | 4.62     | 160790     | 546638     | 22002      | 36629      | 67665       | 137185      |
| 56  | 11.55    | 180384     | 546638     | -28        | 932        | -3865       | -6462       |
| 101 | 21.00    | 199107     | 526053     | 2          | 0          | 0           | 0           |

Combinazione n° 4 - STR (A1-M1-R3)

Palo n° 1

| n°  | Y<br>[m] | Ne<br>[kg] | Nr<br>[kg] | Te<br>[kg] | Tr<br>[kg] | Me<br>[kgm] | Mr<br>[kgm] |
|-----|----------|------------|------------|------------|------------|-------------|-------------|
| 1   | 0.00     | 75766      | 552981     | -19848     | -84230     | -1869       | -7933       |
| 13  | 2.52     | 81731      | 548231     | 461        | -30596     | 19589       | 154114      |
| 24  | 4.83     | 87857      | 546648     | 4356       | 35087      | 12822       | 144835      |
| 101 | 21.00    | 128419     | 526064     | 0          | -6         | 0           | 0           |

Palo n° 2

| n°  | Y<br>[m] | Ne<br>[kg] | Nr<br>[kg] | Te<br>[kg] | Tr<br>[kg] | Me<br>[kgm] | Mr<br>[kgm] |
|-----|----------|------------|------------|------------|------------|-------------|-------------|
| 1   | 0.00     | 108447     | 552968     | -19848     | -84230     | -1869       | -7933       |
| 13  | 2.52     | 114131     | 548217     | 461        | -30596     | 19589       | 154114      |
| 24  | 4.83     | 120159     | 546634     | 4356       | 35087      | 12822       | 144835      |
| 101 | 21.00    | 159474     | 526050     | 0          | -6         | 0           | 0           |

Combinazione n° 5 - STR (A1-M1-R3)

Palo n° 1

| n°  | Y<br>[m] | Ne<br>[kg] | Nr<br>[kg] | Te<br>[kg] | Tr<br>[kg] | Me<br>[kgm] | Mr<br>[kgm] |
|-----|----------|------------|------------|------------|------------|-------------|-------------|
| 1   | 0.00     | 69155      | 552962     | -19848     | -87340     | -4334       | -19071      |
| 14  | 2.73     | 75678      | 547816     | 668        | -27011     | 17860       | 157923      |
| 24  | 4.83     | 81323      | 546629     | 3986       | 34242      | 12202       | 147412      |
| 101 | 21.00    | 122137     | 526045     | 0          | -7         | 0           | 0           |

Palo n° 2

| n°  | Y<br>[m] | Ne<br>[kg] | Nr<br>[kg] | Te<br>[kg] | Tr<br>[kg] | Me<br>[kgm] | Mr<br>[kgm] |
|-----|----------|------------|------------|------------|------------|-------------|-------------|
| 1   | 0.00     | 98798      | 552954     | -19848     | -87340     | -4334       | -19071      |
| 14  | 2.73     | 105045     | 547808     | 668        | -27011     | 17860       | 157923      |
| 24  | 4.83     | 110622     | 546621     | 3986       | 34242      | 12202       | 147412      |
| 101 | 21.00    | 150305     | 526037     | 0          | -7         | 0           | 0           |

Combinazione n° 6 - STR (A1-M1-R3)

Palo n° 1

| n° | Y<br>[m] | Ne<br>[kg] | Nr<br>[kg] | Te<br>[kg] | Tr<br>[kg] | Me<br>[kgm] | Mr<br>[kgm] |
|----|----------|------------|------------|------------|------------|-------------|-------------|
| 1  | 0.00     | 61962      | 552960     | -19848     | -77842     | 3566        | 13985       |
| 12 | 2.31     | 67538      | 548605     | 737        | -30659     | 23696       | 153485      |

PROGETTAZIONE ATI:

| n°  | Y<br>[m] | Ne<br>[kg] | Nr<br>[kg] | Te<br>[kg] | Tr<br>[kg] | Me<br>[kgm] | Mr<br>[kgm] |
|-----|----------|------------|------------|------------|------------|-------------|-------------|
| 23  | 4.62     | 73619      | 546626     | 5236       | 34283      | 15369       | 147235      |
| 56  | 11.55    | 93213      | 546626     | -36        | 1624       | -919        | -6068       |
| 101 | 21.00    | 115302     | 526042     | 1          | -4         | 0           | 0           |

**Palo n° 2**

| n°  | Y<br>[m] | Ne<br>[kg] | Nr<br>[kg] | Te<br>[kg] | Tr<br>[kg] | Me<br>[kgm] | Mr<br>[kgm] |
|-----|----------|------------|------------|------------|------------|-------------|-------------|
| 1   | 0.00     | 101530     | 552984     | -19848     | -77842     | 3566        | 13985       |
| 12  | 2.31     | 106795     | 548629     | 737        | -30659     | 23696       | 153485      |
| 23  | 4.62     | 112729     | 546650     | 5236       | 34283      | 15369       | 147235      |
| 56  | 11.55    | 132323     | 546650     | -36        | 1624       | -919        | -6068       |
| 101 | 21.00    | 152902     | 526065     | 1          | -4         | 0           | 0           |

**Combinazione n° 13 - ECC**

**Palo n° 1**

| n°  | Y<br>[m] | Ne<br>[kg] | Nr<br>[kg] | Te<br>[kg] | Tr<br>[kg] | Me<br>[kgm] | Mr<br>[kgm] |
|-----|----------|------------|------------|------------|------------|-------------|-------------|
| 1   | 0.00     | 52718      | 552972     | -16065     | -73045     | 6566        | 29853       |
| 11  | 2.10     | 57854      | 549013     | 621        | -32038     | 21194       | 151514      |
| 22  | 4.41     | 63888      | 546638     | 4659       | 33062      | 13810       | 150310      |
| 55  | 11.34    | 83483      | 546638     | -27        | 1898       | -818        | -5860       |
| 101 | 21.00    | 106518     | 526054     | 1          | -2         | 0           | 0           |

**Palo n° 2**

| n°  | Y<br>[m] | Ne<br>[kg] | Nr<br>[kg] | Te<br>[kg] | Tr<br>[kg] | Me<br>[kgm] | Mr<br>[kgm] |
|-----|----------|------------|------------|------------|------------|-------------|-------------|
| 1   | 0.00     | 87789      | 552977     | -16065     | -73045     | 6566        | 29853       |
| 11  | 2.10     | 92674      | 549019     | 621        | -32038     | 21194       | 151514      |
| 22  | 4.41     | 98553      | 546644     | 4659       | 33062      | 13810       | 150310      |
| 55  | 11.34    | 118147     | 546644     | -27        | 1898       | -818        | -5860       |
| 101 | 21.00    | 139844     | 526060     | 1          | -2         | 0           | 0           |

**Combinazione n° 14 - ECC**

**Palo n° 1**

| n°  | Y<br>[m] | Ne<br>[kg] | Nr<br>[kg] | Te<br>[kg] | Tr<br>[kg] | Me<br>[kgm] | Mr<br>[kgm] |
|-----|----------|------------|------------|------------|------------|-------------|-------------|
| 1   | 0.00     | 56386      | 552979     | -18005     | -57054     | 24481       | 77573       |
| 9   | 1.68     | 60473      | 549812     | 1248       | -27532     | 39246       | 155110      |
| 20  | 3.99     | 66326      | 546645     | 8543       | 32335      | 25472       | 149911      |
| 53  | 10.92    | 85920      | 546645     | -43        | 1972       | -1500       | -5733       |
| 101 | 21.00    | 110003     | 526061     | 2          | 2          | 0           | 0           |

**Palo n° 2**

| n°  | Y<br>[m] | Ne<br>[kg] | Nr<br>[kg] | Te<br>[kg] | Tr<br>[kg] | Me<br>[kgm] | Mr<br>[kgm] |
|-----|----------|------------|------------|------------|------------|-------------|-------------|
| 1   | 0.00     | 118701     | 552967     | -18005     | -57054     | 24481       | 77573       |
| 9   | 1.68     | 122432     | 549800     | 1248       | -27532     | 39246       | 155110      |
| 20  | 3.99     | 127919     | 546633     | 8543       | 32335      | 25472       | 149911      |
| 53  | 10.92    | 147513     | 546633     | -43        | 1972       | -1500       | -5733       |
| 101 | 21.00    | 169218     | 526049     | 2          | 2          | 0           | 0           |

**Combinazione n° 15 - SLER**

**Palo n° 1**

| n°  | Y<br>[m] | Ne<br>[kg] | Nr<br>[kg] | Te<br>[kg] | Tr<br>[kg] | Me<br>[kgm] | Mr<br>[kgm] |
|-----|----------|------------|------------|------------|------------|-------------|-------------|
| 1   | 0.00     | 58497      | 552969     | -14636     | -83491     | -935        | -5336       |
| 13  | 2.52     | 64610      | 548218     | 429        | -29882     | 13995       | 154881      |
| 24  | 4.83     | 70788      | 546635     | 3109       | 35256      | 9054        | 144364      |
| 101 | 21.00    | 112010     | 526048     | 0          | -5         | 0           | 0           |

**Palo n° 2**

| n°  | Y<br>[m] | Ne<br>[kg] | Nr<br>[kg] | Te<br>[kg] | Tr<br>[kg] | Me<br>[kgm] | Mr<br>[kgm] |
|-----|----------|------------|------------|------------|------------|-------------|-------------|
| 1   | 0.00     | 81867      | 552980     | -14636     | -83491     | -935        | -5336       |
| 13  | 2.52     | 87779      | 548230     | 429        | -29882     | 13995       | 154881      |
| 24  | 4.83     | 93887      | 546647     | 3109       | 35256      | 9054        | 144364      |
| 101 | 21.00    | 134217     | 526062     | 0          | -5         | 0           | 0           |

PROGETTAZIONE ATI:

Combinazione n° 16 - SLEF

Palo n° 1

| n°  | Y<br>[m] | Ne<br>[kg] | Nr<br>[kg] | Te<br>[kg] | Tr<br>[kg] | Me<br>[kgm] | Mr<br>[kgm] |
|-----|----------|------------|------------|------------|------------|-------------|-------------|
| 1   | 0.00     | 58497      | 552969     | -14636     | -83491     | -935        | -5336       |
| 13  | 2.52     | 64610      | 548218     | 429        | -29882     | 13995       | 154881      |
| 24  | 4.83     | 70788      | 546635     | 3109       | 35256      | 9054        | 144364      |
| 101 | 21.00    | 112010     | 526048     | 0          | -5         | 0           | 0           |

Palo n° 2

| n°  | Y<br>[m] | Ne<br>[kg] | Nr<br>[kg] | Te<br>[kg] | Tr<br>[kg] | Me<br>[kgm] | Mr<br>[kgm] |
|-----|----------|------------|------------|------------|------------|-------------|-------------|
| 1   | 0.00     | 81867      | 552980     | -14636     | -83491     | -935        | -5336       |
| 13  | 2.52     | 87779      | 548230     | 429        | -29882     | 13995       | 154881      |
| 24  | 4.83     | 93887      | 546647     | 3109       | 35256      | 9054        | 144364      |
| 101 | 21.00    | 134217     | 526062     | 0          | -5         | 0           | 0           |

Combinazione n° 17 - SLEQ

Palo n° 1

| n°  | Y<br>[m] | Ne<br>[kg] | Nr<br>[kg] | Te<br>[kg] | Tr<br>[kg] | Me<br>[kgm] | Mr<br>[kgm] |
|-----|----------|------------|------------|------------|------------|-------------|-------------|
| 1   | 0.00     | 58497      | 552969     | -14636     | -83491     | -935        | -5336       |
| 13  | 2.52     | 64610      | 548218     | 429        | -29882     | 13995       | 154881      |
| 24  | 4.83     | 70788      | 546635     | 3109       | 35256      | 9054        | 144364      |
| 101 | 21.00    | 112010     | 526048     | 0          | -5         | 0           | 0           |

Palo n° 2

| n°  | Y<br>[m] | Ne<br>[kg] | Nr<br>[kg] | Te<br>[kg] | Tr<br>[kg] | Me<br>[kgm] | Mr<br>[kgm] |
|-----|----------|------------|------------|------------|------------|-------------|-------------|
| 1   | 0.00     | 81867      | 552980     | -14636     | -83491     | -935        | -5336       |
| 13  | 2.52     | 87779      | 548230     | 429        | -29882     | 13995       | 154881      |
| 24  | 4.83     | 93887      | 546647     | 3109       | 35256      | 9054        | 144364      |
| 101 | 21.00    | 134217     | 526062     | 0          | -5         | 0           | 0           |

Combinazione n° 18 - SLEQ H + V

Palo n° 1

| n°  | Y<br>[m] | Ne<br>[kg] | Nr<br>[kg] | Te<br>[kg] | Tr<br>[kg] | Me<br>[kgm] | Mr<br>[kgm] |
|-----|----------|------------|------------|------------|------------|-------------|-------------|
| 1   | 0.00     | 26101      | 552979     | -33305     | -67755     | 22878       | 46543       |
| 11  | 2.10     | 31427      | 549020     | 448        | -26669     | 62461       | 157006      |
| 22  | 4.41     | 37580      | 546645     | 13760      | 34443      | 42205       | 145969      |
| 55  | 11.34    | 57174      | 546645     | -22        | 1554       | -2417       | -6094       |
| 101 | 21.00    | 81225      | 526061     | 2          | -1         | 0           | 0           |

Palo n° 2

| n°  | Y<br>[m] | Ne<br>[kg] | Nr<br>[kg] | Te<br>[kg] | Tr<br>[kg] | Me<br>[kgm] | Mr<br>[kgm] |
|-----|----------|------------|------------|------------|------------|-------------|-------------|
| 1   | 0.00     | 131234     | 552934     | -33305     | -67755     | 22878       | 46543       |
| 11  | 2.10     | 135808     | 548975     | 448        | -26669     | 62461       | 157006      |
| 22  | 4.41     | 141495     | 546600     | 13760      | 34443      | 42205       | 145969      |
| 55  | 11.34    | 161089     | 546600     | -22        | 1554       | -2417       | -6094       |
| 101 | 21.00    | 181128     | 526016     | 2          | -1         | 0           | 0           |

Combinazione n° 19 - SLEQ H - V

Palo n° 1

| n°  | Y<br>[m] | Ne<br>[kg] | Nr<br>[kg] | Te<br>[kg] | Tr<br>[kg] | Me<br>[kgm] | Mr<br>[kgm] |
|-----|----------|------------|------------|------------|------------|-------------|-------------|
| 1   | 0.00     | 19016      | 475196     | -30611     | -66962     | 22385       | 48968       |
| 11  | 2.10     | 24392      | 471236     | 1243       | -25880     | 57056       | 157770      |
| 22  | 4.41     | 30577      | 468860     | 12551      | 34633      | 37645       | 145312      |
| 55  | 11.34    | 50171      | 468860     | -54        | 1504       | -2204       | -6126       |
| 101 | 21.00    | 74492      | 448269     | 2          | -1         | 0           | 0           |

Palo n° 2

| n° | Y<br>[m] | Ne<br>[kg] | Nr<br>[kg] | Te<br>[kg] | Tr<br>[kg] | Me<br>[kgm] | Mr<br>[kgm] |
|----|----------|------------|------------|------------|------------|-------------|-------------|
|----|----------|------------|------------|------------|------------|-------------|-------------|

PROGETTAZIONE ATI:

|     | [m]   | [kg]   | [kg]   | [kg]   | [kg]   | [kgm] | [kgm]  |
|-----|-------|--------|--------|--------|--------|-------|--------|
| 1   | 0.00  | 114357 | 552961 | -30611 | -66962 | 22385 | 48968  |
| 11  | 2.10  | 119052 | 549002 | 1243   | -25880 | 57056 | 157770 |
| 22  | 4.41  | 124813 | 546627 | 12551  | 34633  | 37645 | 145312 |
| 55  | 11.34 | 144408 | 546627 | -54    | 1504   | -2204 | -6126  |
| 101 | 21.00 | 165090 | 526043 | 2      | -1     | 0     | 0      |

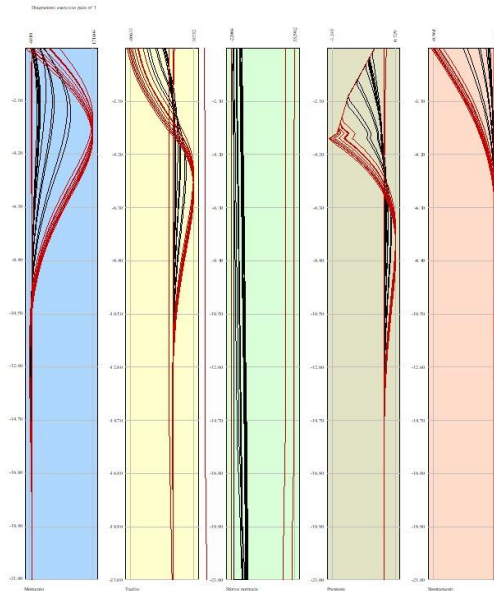


Fig. 17 - Sollecitazioni palo (Palo n° 1) (Inviluppo)

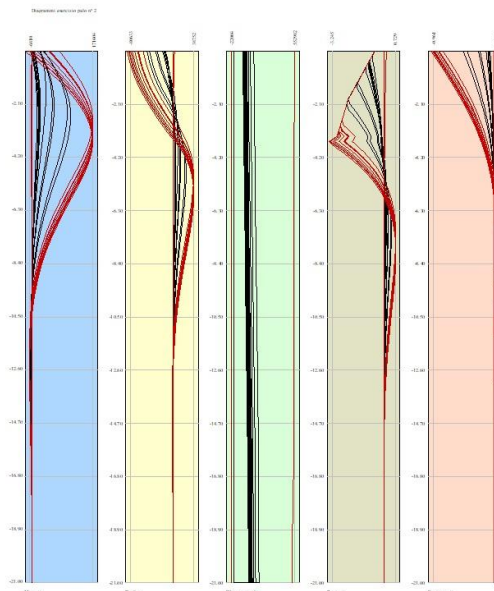


Fig. 18 - Sollecitazioni palo (Palo n° 2) (Inviluppo)

**Verifiche strutturali**

PROGETTAZIONE ATI:



*Verifiche a flessione*

**Elementi calcolati a trave**

**Simbologia adottata**

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

**Elementi calcolati a piastra**

**Simbologia adottata**

|          |   |
|----------|---|
| n°       | indice sezione  |
| Y        | ordinata sezione espressa in [m]  |
| B        | larghezza sezione espresso in [cm]  |
| H        | altezza sezione espressa in [cm]  |
| Afi, Afs | area ferri inferiori e superiori, espresso in [cmq]                               |
| Mp, Mn   | momento positivo e negativo agente espressa in [kgm]                              |
| Mu       | momento ultimi espresso in [kgm]  |
| FS       | fattore di sicurezza (rapporto tra sollecitazione ultima e sollecitazione agente) |

**Pali in c.a.**

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

| Ip | Is  | Ar<br>[cmq] | M<br>[kgm] | N<br>[kg] | Mu<br>[kgm] | Nu<br>[kg] | FS     |
|----|-----|-------------|------------|-----------|-------------|------------|--------|
| 1  | 12  | 91.23       | 21820      | 61002     | 333609      | 932688     | 15.289 |
| 2  | 101 | 91.23       | 0          | 143711    | 0           | 1873066    | 13.034 |

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

| Ip | Is | Ar<br>[cmq] | M<br>[kgm] | N<br>[kg] | Mu<br>[kgm] | Nu<br>[kg] | FS    |
|----|----|-------------|------------|-----------|-------------|------------|-------|
| 1  | 13 | 91.23       | 109303     | 6094      | 173498      | 9673       | 1.587 |
| 2  | 13 | 91.23       | 109303     | 186997    | 312653      | 534893     | 2.860 |

**Combinazione n° 3 - STR (A1-M1-R3) H - V**

| Ip | Is | Ar<br>[cmq] | M<br>[kgm] | N<br>[kg] | Mu<br>[kgm] | Nu<br>[kg] | FS    |
|----|----|-------------|------------|-----------|-------------|------------|-------|
| 1  | 12 | 91.23       | 99172      | -9560     | 163009      | -15714     | 1.644 |
| 2  | 12 | 91.23       | 99172      | 155037    | 302678      | 473184     | 3.052 |

**Combinazione n° 4 - STR (A1-M1-R3)**

| Ip | Is  | Ar<br>[cmq] | M<br>[kgm] | N<br>[kg] | Mu<br>[kgm] | Nu<br>[kg] | FS     |
|----|-----|-------------|------------|-----------|-------------|------------|--------|
| 1  | 101 | 91.23       | 0          | 128419    | 0           | 1873066    | 14.586 |
| 2  | 101 | 91.23       | 0          | 159474    | 0           | 1873066    | 11.745 |

**Combinazione n° 5 - STR (A1-M1-R3)**

| Ip | Is  | Ar<br>[cmq] | M<br>[kgm] | N<br>[kg] | Mu<br>[kgm] | Nu<br>[kg] | FS     |
|----|-----|-------------|------------|-----------|-------------|------------|--------|
| 1  | 101 | 91.23       | 0          | 122137    | 0           | 1873066    | 15.336 |
| 2  | 101 | 91.23       | 0          | 150305    | 0           | 1873066    | 12.462 |

**Combinazione n° 6 - STR (A1-M1-R3)**

| Ip | Is | Ar<br>[cmq] | M<br>[kgm] | N<br>[kg] | Mu<br>[kgm] | Nu<br>[kg] | FS     |
|----|----|-------------|------------|-----------|-------------|------------|--------|
| 1  | 12 | 91.23       | 23696      | 67538     | 332435      | 947511     | 14.029 |
| 2  | 12 | 91.23       | 23696      | 106795    | 290101      | 1307457    | 12.243 |

**Combinazione n° 13 - ECC**

| Ip | Is  | Ar<br>[cmq] | M<br>[kgm] | N<br>[kg] | Mu<br>[kgm] | Nu<br>[kg] | FS     |
|----|-----|-------------|------------|-----------|-------------|------------|--------|
| 1  | 11  | 91.23       | 21194      | 57854     | 459246      | 1253607    | 21.669 |
| 2  | 101 | 91.23       | 0          | 139844    | 0           | 2682190    | 19.180 |

PROGETTAZIONE ATI:

Combinazione n° 14 - ECC

| <b>Ip</b> | <b>Is</b> | <b>Ar</b><br>[cmq] | <b>M</b><br>[kgm] | <b>N</b><br>[kg] | <b>Mu</b><br>[kgm] | <b>Nu</b><br>[kg] | <b>FS</b> |
|-----------|-----------|--------------------|-------------------|------------------|--------------------|-------------------|-----------|
| 1         | 8         | 91.23              | 39147             | 59962            | 387545             | 593608            | 9.900     |
| 2         | 9         | 91.23              | 39246             | 122432           | 455221             | 1420100           | 11.599    |

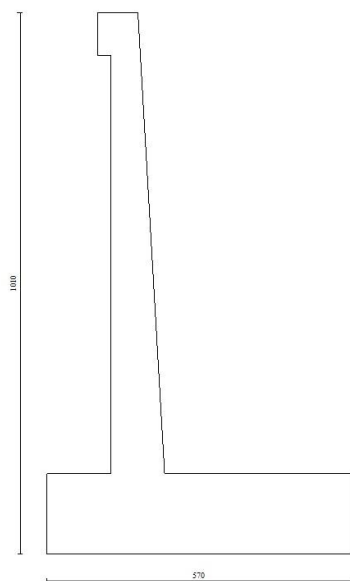


Fig. 19 - Paramento (Inviluppo)

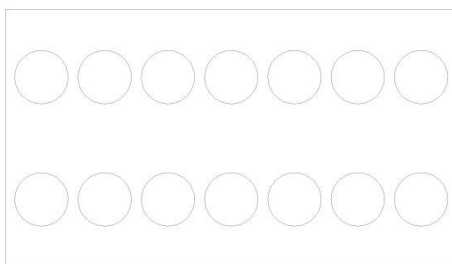


Fig. 20 - Piastra fondazione dir. X (Inviluppo)

PROGETTAZIONE ATI:



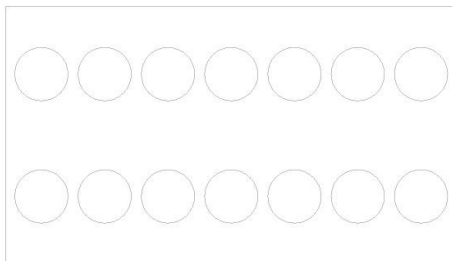


Fig. 21 - Piastra fondazione dir. Y (Inviluppo)

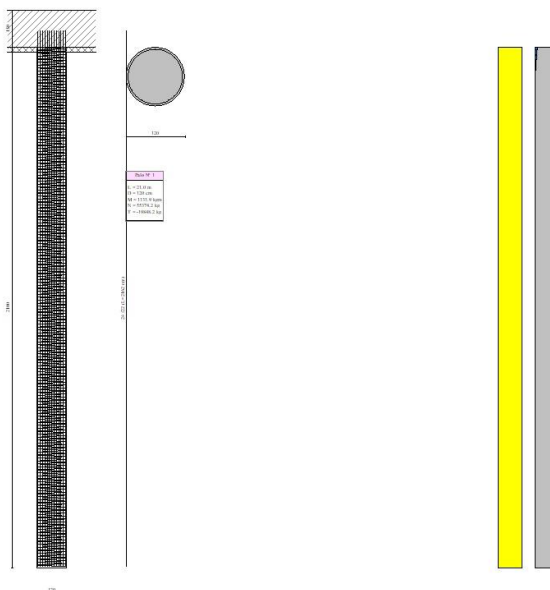


Fig. 22 - Pali (Palo n° 1) (Inviluppo)

PROGETTAZIONE ATI:

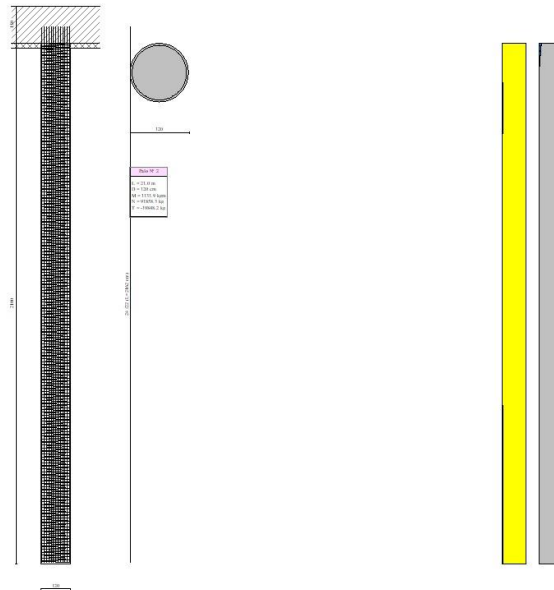


Fig. 23 - Pali (Palo n° 2) (Inviluppo)

### Verifiche a taglio

#### Simbologia adottata

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

#### Pali in c.a.

La verifica a taglio sui pali circolari in c.a. viene eseguita considerando una sezione quadrata inscritta nella circonferenza. Se D è il diametro del palo, il lato della sezione quadrata sulla quale si esegue la verifica è  $L = 2^{0.5}/2 D$ .

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

| Ip | Is | L<br>[cm] | A <sub>sw</sub><br>[cmq] | s<br>[cm] | cotgθ | V <sub>Rcd</sub><br>[kg] | V <sub>Rsd</sub><br>[kg] | V <sub>Rd</sub><br>[kg] | T<br>[kg] | FS    |
|----|----|-----------|--------------------------|-----------|-------|--------------------------|--------------------------|-------------------------|-----------|-------|
| 1  | 1  | 84.85     | 2.26                     | 12        | 2.500 | 185853                   | 135978                   | 135978                  | 19848     | 6.851 |
| 2  | 1  | 84.85     | 2.26                     | 12        | 2.500 | 191214                   | 135978                   | 135978                  | 19848     | 6.851 |

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

| Ip | Is | L<br>[cm] | A <sub>sw</sub><br>[cmq] | s<br>[cm] | cotgθ | V <sub>Rcd</sub><br>[kg] | V <sub>Rsd</sub><br>[kg] | V <sub>Rd</sub><br>[kg] | T<br>[kg] | FS    |
|----|----|-----------|--------------------------|-----------|-------|--------------------------|--------------------------|-------------------------|-----------|-------|
| 1  | 1  | 84.85     | 2.26                     | 12        | 2.500 | 177716                   | 135978                   | 135978                  | 49773     | 2.732 |
| 2  | 1  | 84.85     | 2.26                     | 12        | 2.500 | 204452                   | 135978                   | 135978                  | 49773     | 2.732 |

#### Combinazione n° 3 - STR (A1-M1-R3) H - V

| Ip | Is | L<br>[cm] | A <sub>sw</sub><br>[cmq] | s<br>[cm] | cotgθ | V <sub>Rcd</sub><br>[kg] | V <sub>Rsd</sub><br>[kg] | V <sub>Rd</sub><br>[kg] | T<br>[kg] | FS    |
|----|----|-----------|--------------------------|-----------|-------|--------------------------|--------------------------|-------------------------|-----------|-------|
| 1  | 1  | 84.85     | 2.26                     | 12        | 2.500 | 177716                   | 135978                   | 135978                  | 45101     | 3.015 |
| 2  | 1  | 84.85     | 2.26                     | 12        | 2.500 | 199780                   | 135978                   | 135978                  | 45101     | 3.015 |

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

PROGETTAZIONE ATI:

| Ip | Is | L<br>[cm] | A <sub>sw</sub><br>[cmq] | s<br>[cm] | cotgθ | V <sub>Rcd</sub><br>[kg] | V <sub>Rsd</sub><br>[kg] | V <sub>Rd</sub><br>[kg] | T<br>[kg] | FS    |
|----|----|-----------|--------------------------|-----------|-------|--------------------------|--------------------------|-------------------------|-----------|-------|
| 1  | 1  | 84.85     | 2.26                     | 12        | 2.500 | 188849                   | 135978                   | 135978                  | 19848     | 6.851 |
| 2  | 1  | 84.85     | 2.26                     | 12        | 2.500 | 193652                   | 135978                   | 135978                  | 19848     | 6.851 |

Combinazione n° 5 - STR (A1-M1-R3)

| Ip | Is | L<br>[cm] | A <sub>sw</sub><br>[cmq] | s<br>[cm] | cotgθ | V <sub>Rcd</sub><br>[kg] | V <sub>Rsd</sub><br>[kg] | V <sub>Rd</sub><br>[kg] | T<br>[kg] | FS    |
|----|----|-----------|--------------------------|-----------|-------|--------------------------|--------------------------|-------------------------|-----------|-------|
| 1  | 1  | 84.85     | 2.26                     | 12        | 2.500 | 187878                   | 135978                   | 135978                  | 19848     | 6.851 |
| 2  | 1  | 84.85     | 2.26                     | 12        | 2.500 | 192234                   | 135978                   | 135978                  | 19848     | 6.851 |

Combinazione n° 6 - STR (A1-M1-R3)

| Ip | Is | L<br>[cm] | A <sub>sw</sub><br>[cmq] | s<br>[cm] | cotgθ | V <sub>Rcd</sub><br>[kg] | V <sub>Rsd</sub><br>[kg] | V <sub>Rd</sub><br>[kg] | T<br>[kg] | FS    |
|----|----|-----------|--------------------------|-----------|-------|--------------------------|--------------------------|-------------------------|-----------|-------|
| 1  | 1  | 84.85     | 2.26                     | 12        | 2.500 | 186821                   | 135978                   | 135978                  | 19848     | 6.851 |
| 2  | 1  | 84.85     | 2.26                     | 12        | 2.500 | 192635                   | 135978                   | 135978                  | 19848     | 6.851 |

Combinazione n° 13 - ECC

| Ip | Is | L<br>[cm] | A <sub>sw</sub><br>[cmq] | s<br>[cm] | cotgθ | V <sub>Rcd</sub><br>[kg] | V <sub>Rsd</sub><br>[kg] | V <sub>Rd</sub><br>[kg] | T<br>[kg] | FS    |
|----|----|-----------|--------------------------|-----------|-------|--------------------------|--------------------------|-------------------------|-----------|-------|
| 1  | 1  | 84.85     | 2.26                     | 12        | 2.500 | 185463                   | 135978                   | 135978                  | 16065     | 8.464 |
| 2  | 1  | 84.85     | 2.26                     | 12        | 2.500 | 190616                   | 135978                   | 135978                  | 16065     | 8.464 |

Combinazione n° 14 - ECC

| Ip | Is | L<br>[cm] | A <sub>sw</sub><br>[cmq] | s<br>[cm] | cotgθ | V <sub>Rcd</sub><br>[kg] | V <sub>Rsd</sub><br>[kg] | V <sub>Rd</sub><br>[kg] | T<br>[kg] | FS    |
|----|----|-----------|--------------------------|-----------|-------|--------------------------|--------------------------|-------------------------|-----------|-------|
| 1  | 1  | 84.85     | 2.26                     | 12        | 2.500 | 186002                   | 135978                   | 135978                  | 18005     | 7.552 |
| 2  | 1  | 84.85     | 2.26                     | 12        | 2.500 | 195159                   | 135978                   | 135978                  | 18005     | 7.552 |

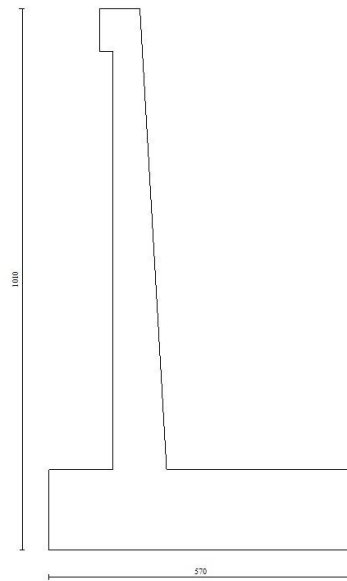


Fig. 24 - Paramento (Inviluppo)

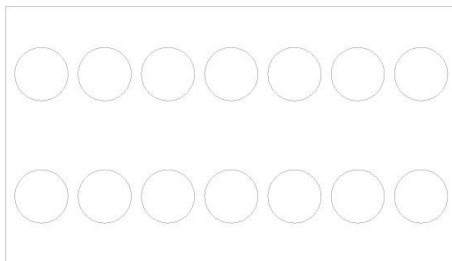


Fig. 25 - Piastra fondazione dir. X (Inviluppo)

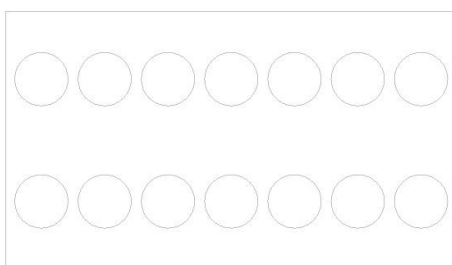


Fig. 26 - Piastra fondazione dir. Y (Inviluppo)

PROGETTAZIONE ATI:

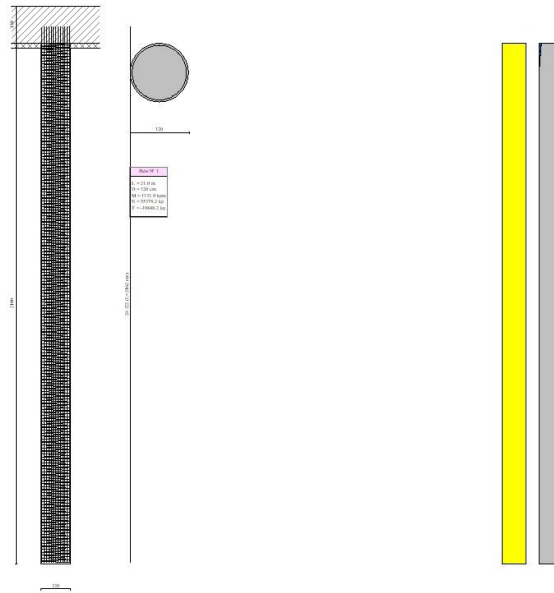


Fig. 27 - Pali (Palo n° 1) (Inviluppo)

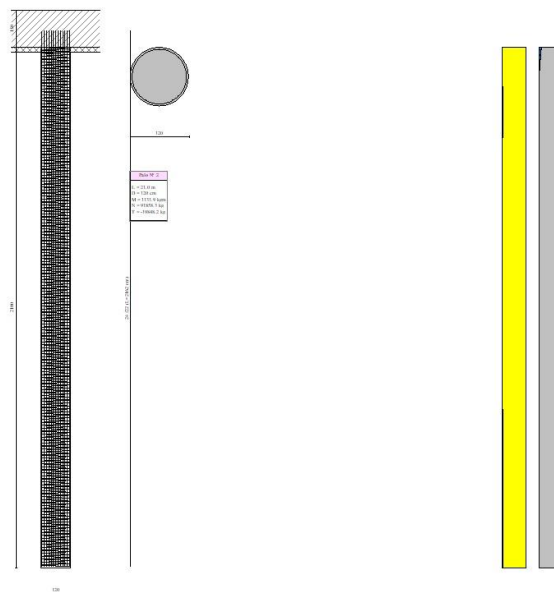


Fig. 28 - Pali (Palo n° 2) (Inviluppo)

### Verifica a punzonamento

#### Simbologia adottata

|                                 |  |
|---------------------------------|--|
| OP                              | Oggetto che viene punzonato  |
| P                               | Oggetto che punzona  |
| c <sub>1</sub> , c <sub>2</sub> | Dimensioni pilastro nelle due direzioni, espressa in [mm]                      |
| d                               | Altezza utile della fondazione, espressa in [mm]                               |
| u <sub>0</sub>                  | Lunghezza perimetro di verifica a faccia pilastro, espresso in [mm]            |
| u <sub>1</sub>                  | Lunghezza perimetro di verifica per effetto della diffusione, espresso in [mm] |

PROGETTAZIONE ATI:

|                  |   |
|------------------|---|
| $\rho_y, \rho_z$ | Percentuali di armatura piastra in zona tesa  |
| dpc, duc         | distanza della prima e dell'ultima cucitura dalla faccia del pilastro   |
| $V_{Ed,i}$       | Tensione di taglio sul perimetro del pilastro, espressa in [kg/cmq]   |
| $V_{Rd,max}$     | Valore di progetto del massimo taglio-punzonamento resistente, espressa in [kg/cmq]                                     |
| $V_{Ed,f}$       | Tensione di taglio sul perimetro di verifica u1, espresso in [kg/cmq]   |
| $V_{Rd,cf}$      | Valore di progetto del taglio-punzonamento resistente senza armature sul perimetro di verifica u1, espresso in [kg/cmq] |
| $V_{Rd,cs}$      | Valore di progetto del taglio-punzonamento resistente con armature, espresso in [kg/cmq]                                |
| nsc              | Numero di serie di cuciture   |
| nc               | Numero di cuciture  |
| FS               | Fattore di sicurezza (minore tra i rapporti $V_{Rd,max}/V_{Ed,i}$ , $V_{Rd,cf}/V_{Ed,f}$ e $V_{Rd,cs}/V_{Ed,f}$ )       |

### Verifica delle tensioni

#### Simbologia adottata

|               |  |
|---------------|--|
| $n^\circ$     | indice sezione   |
| Y             | ordinata sezione, espressa in [m]                      |
| B             | larghezza sezione, espresso in [cm]                    |
| H             | altezza sezione, espressa in [cm]                      |
| $A_{fi}$      | area ferri inferiori, espresso in [cmq]                |
| $A_{fs}$      | area ferri superiori, espressa in [cmq]                |
| M             | momento agente, espressa in [kgm]                      |
| N             | sforzo normale agente, espressa in [kg]                |
| $\sigma_c$    | tensione di compressione nel cls, espressa in [kg/cmq] |
| $\sigma_{fi}$ | tensione nei ferri inferiori, espressa in [kg/cmq]     |
| $\sigma_{fs}$ | tensione nei ferri superiori, espressa in [kg/cmq]     |

### Combinazioni SLER

#### Pali in c.a.

##### Combinazione n° 15 - SLER

| Y    | $A_f$ | $\sigma_c$ | $\sigma_f$ | $\tau_c$ | $\sigma_{stf}$ |
|------|-------|------------|------------|----------|----------------|
| [m]  | [cmq] | [kg/cmq]   | [kg/cmq]   | [kg/cmq] | [kg/cmq]       |
| 2.52 | 91.23 | 12.30      | 172.21     |          |                |
| 2.52 | 91.23 | 13.97      | 197.63     |          |                |

### Combinazioni SLEF

#### Pali in c.a.

##### Combinazione n° 16 - SLEF

| Y    | $A_f$ | $\sigma_c$ | $\sigma_f$ | $\tau_c$ | $\sigma_{stf}$ |
|------|-------|------------|------------|----------|----------------|
| [m]  | [cmq] | [kg/cmq]   | [kg/cmq]   | [kg/cmq] | [kg/cmq]       |
| 2.52 | 91.23 | 12.30      | 172.21     |          |                |
| 2.52 | 91.23 | 13.97      | 197.63     |          |                |

### Combinazioni SLEQ

#### Pali in c.a.

##### Combinazione n° 17 - SLEQ

| Y    | $A_f$ | $\sigma_c$ | $\sigma_f$ | $\tau_c$ | $\sigma_{stf}$ |
|------|-------|------------|------------|----------|----------------|
| [m]  | [cmq] | [kg/cmq]   | [kg/cmq]   | [kg/cmq] | [kg/cmq]       |
| 2.52 | 91.23 | 12.30      | 172.21     |          |                |
| 2.52 | 91.23 | 13.97      | 197.63     |          |                |

##### Combinazione n° 18 - SLEQ H + V

| Y    | $A_f$ | $\sigma_c$ | $\sigma_f$ | $\tau_c$ | $\sigma_{stf}$ |
|------|-------|------------|------------|----------|----------------|
| [m]  | [cmq] | [kg/cmq]   | [kg/cmq]   | [kg/cmq] | [kg/cmq]       |
| 0.00 | 91.23 | 0.00       | 0.00       |          |                |
| 0.00 | 91.23 | 0.00       | 0.00       |          |                |

##### Combinazione n° 19 - SLEQ H - V

PROGETTAZIONE ATI:

| Y    | A <sub>f</sub> | σ <sub>c</sub> | σ <sub>f</sub> | τ <sub>c</sub> | σ <sub>stf</sub> |
|------|----------------|----------------|----------------|----------------|------------------|
| [m]  | [cmq]          | [kg/cmq]       | [kg/cmq]       | [kg/cmq]       | [kg/cmq]         |
| 0.00 | 91.23          | 0.00           | 0.00           |                |                  |
| 0.00 | 91.23          | 0.00           | 0.00           |                |                  |

### Verifica a fessurazione

#### Simbologia adottata

|                  |  |
|------------------|--|
| n°               | indice sezione   |
| Y                | ordinata sezione espressa in [m]                         |
| B                | larghezza sezione espressa in [cm]                       |
| H                | altezza sezione espressa in [cm]                         |
| A <sub>f</sub>   | area ferri zona tesa espressa in [cmq]                   |
| A <sub>eff</sub> | area efficace espressa in [cmq]                          |
| M                | momento agente espressa in [kgm]                         |
| M <sub>pf</sub>  | momento di formazione/apertura fessure espressa in [kgm] |
| ε                | deformazione espressa in %                               |
| S <sub>m</sub>   | spaziatura tra le fessure espressa in [mm]               |
| w                | apertura delle fessure espressa in [mm]                  |

### Combinazioni SLEF

#### Pali in c.a.

##### Combinazione n° 16 - SLEF

Apertura limite fessure  $w_{lim}=0.400$  mm

| Ip | Is | A <sub>f</sub> | A <sub>eff</sub> | M <sub>pf</sub> | M     | N     | ε        | S <sub>m</sub> | w <sub>m</sub> |
|----|----|----------------|------------------|-----------------|-------|-------|----------|----------------|----------------|
|    |    | [cmq]          | [cmq]            | [kgm]           | [kgm] | [kg]  | [%]      | [mm]           | [mm]           |
| 1  | 1  | 26.61          | 1754.51          | 67014           | -935  | 58497 | 0.000000 | 0.00           | 0.000          |
| 2  | 1  | 26.61          | 1638.80          | 70721           | -935  | 81867 | 0.000000 | 0.00           | 0.000          |

### Combinazioni SLEQ

#### Pali in c.a.

##### Combinazione n° 17 - SLEQ

Apertura limite fessure  $w_{lim}=0.300$  mm

| Ip | Is | A <sub>f</sub> | A <sub>eff</sub> | M <sub>pf</sub> | M     | N     | ε        | S <sub>m</sub> | w <sub>m</sub> |
|----|----|----------------|------------------|-----------------|-------|-------|----------|----------------|----------------|
|    |    | [cmq]          | [cmq]            | [kgm]           | [kgm] | [kg]  | [%]      | [mm]           | [mm]           |
| 1  | 1  | 26.61          | 1754.51          | 67014           | -935  | 58497 | 0.000000 | 0.00           | 0.000          |
| 2  | 1  | 26.61          | 1638.80          | 70721           | -935  | 81867 | 0.000000 | 0.00           | 0.000          |

##### Combinazione n° 18 - SLEQ H + V

Apertura limite fessure  $w_{lim}=0.300$  mm

| Ip | Is | A <sub>f</sub> | A <sub>eff</sub> | M <sub>pf</sub> | M     | N      | ε        | S <sub>m</sub> | w <sub>m</sub> |
|----|----|----------------|------------------|-----------------|-------|--------|----------|----------------|----------------|
|    |    | [cmq]          | [cmq]            | [kgm]           | [kgm] | [kg]   | [%]      | [mm]           | [mm]           |
| 1  | 1  | 0.00           | 0.00             | 0               | 22878 | 26101  | 0.000000 | 0.00           | -100.000       |
| 2  | 1  | 0.00           | 0.00             | 0               | 22878 | 131234 | 0.000000 | 0.00           | -100.000       |

##### Combinazione n° 19 - SLEQ H - V

Apertura limite fessure  $w_{lim}=0.300$  mm

| Ip | Is | A <sub>f</sub> | A <sub>eff</sub> | M <sub>pf</sub> | M     | N      | ε        | S <sub>m</sub> | w <sub>m</sub> |
|----|----|----------------|------------------|-----------------|-------|--------|----------|----------------|----------------|
|    |    | [cmq]          | [cmq]            | [kgm]           | [kgm] | [kg]   | [%]      | [mm]           | [mm]           |
| 1  | 1  | 0.00           | 0.00             | 0               | 22385 | 19016  | 0.000000 | 0.00           | -100.000       |
| 2  | 1  | 0.00           | 0.00             | 0               | 22385 | 114357 | 0.000000 | 0.00           | -100.000       |

PROGETTAZIONE ATI:

**Risultati per inviluppo**

Spinta e forze

Simbologia adottata

- Ic Indice della combinazione
- A Tipo azione
- I Inclinazione della spinta, espressa in [°]
- V Valore dell'azione, espressa in [kg]
- Cx, Cy Componente in direzione X ed Y dell'azione, espressa in [kg]
- Px, Py Coordinata X ed Y del punto di applicazione dell'azione, espressa in [m]

| Ic | A   | V<br>[kg] | I<br>[°] | Cx<br>[kg] | Cy<br>[kg] | Px<br>[m] | Py<br>[m] |
|----|---|-----------|----------|------------|------------|-----------|-----------|
| 2  | Spinta statica                            | 21987     | 21.35    | 20478      | 8005       | 4.00      | -6.54     |
|    | Incremento di spinta sismica              |           | 22296    | 20766      | 8117       | 4.00      | -5.05     |
|    | Peso/Inerzia muro                         |           |          | 11952      | 37940/5976 | 0.59      | -7.29     |
|    | Peso/Inerzia terrapieno                   |           |          | 16489      | 52344/8245 | 2.11      | -4.20     |
|    | Peso dell'acqua sulla fondazione di valle |           |          |            | 0          | 0.00      | 0.00      |
|    | Resistenza pali                           |           |          | -73032     |            |           |           |

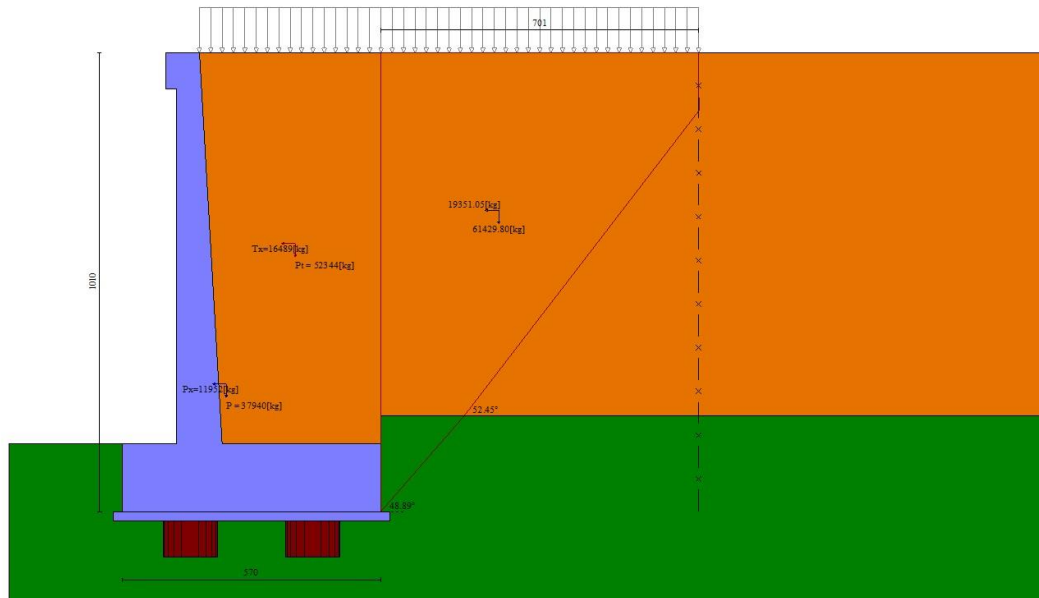


Fig. 29 - Cuneo di spinta (combinazione sismica) (Combinazione n° 2)



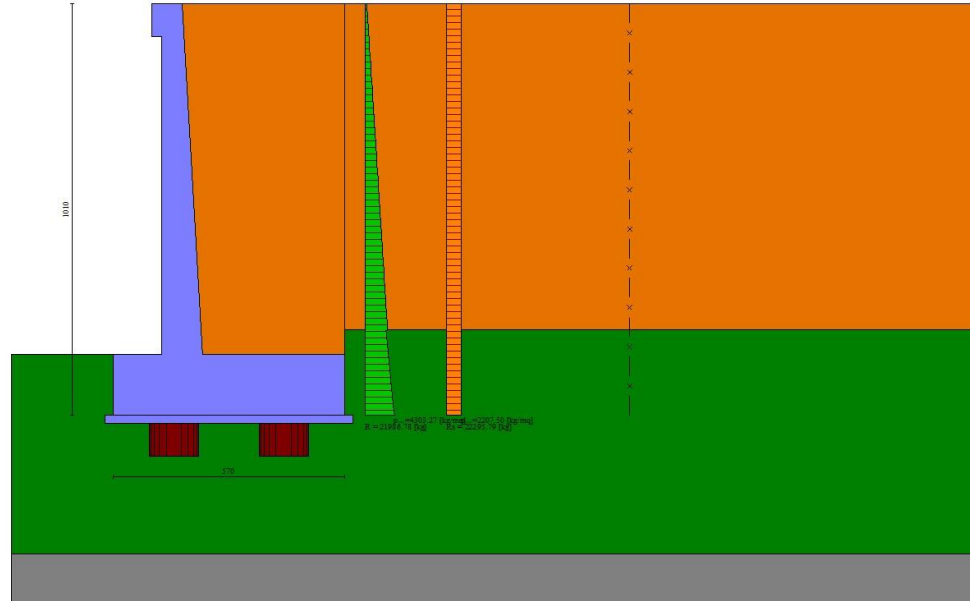


Fig. 30 - Diagramma delle pressioni (combinazione sismica) (Combinazione n° 2)

## Risultanti globali

### Simbologia adottata

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

| Ic                  | N<br>[kg] | T<br>[kg] | M <sub>r</sub><br>[kgm] | M <sub>s</sub><br>[kgm] | ecc<br>[m] |
|---------------------|-----------|-----------|-------------------------|-------------------------|------------|
| 1 - STR (A1-M1-R3)  | 103063    | 27788     | 97938                   | 355180                  | 0.352      |
| 2 - STR (A1-M1-R3)  | 120627    | 69684     | 308592                  | 423303                  | 1.897      |
| 3 - STR (A1-M1-R3)  | 89706     | 63143     | 320689                  | 364067                  | 2.364      |
| 4 - STR (A1-M1-R3)  | 128949    | 27788     | 97938                   | 436644                  | 0.221      |
| 5 - STR (A1-M1-R3)  | 117567    | 27788     | 97938                   | 410575                  | 0.189      |
| 6 - STR (A1-M1-R3)  | 114445    | 27788     | 97938                   | 381249                  | 0.372      |
| 7 - GEO (A2-M2-R2)  | 100068    | 27614     | 98420                   | 339711                  | 0.437      |
| 8 - GEO (A2-M2-R2)  | 120627    | 69684     | 308592                  | 423303                  | 1.897      |
| 9 - GEO (A2-M2-R2)  | 89706     | 63143     | 320689                  | 364067                  | 2.364      |
| 10 - EQU (A1-M1-R3) | 103063    | 27788     | 97938                   | 2048246                 | -16.076    |
| 11 - EQU (A1-M1-R3) | 120627    | 69684     | 308592                  | 2116369                 | -12.139    |
| 12 - EQU (A1-M1-R3) | 89706     | 63143     | 320689                  | 2057133                 | -16.509    |
| 13 - ECC            | 98355     | 22491     | 94366                   | 331938                  | 0.432      |
| 14 - ECC            | 122561    | 25208     | 179578                  | 435209                  | 0.762      |
| 15 - SLER           | 98255     | 20491     | 72921                   | 331768                  | 0.213      |
| 16 - SLEF           | 98255     | 20491     | 72921                   | 331768                  | 0.213      |
| 17 - SLEQ           | 98255     | 20491     | 72921                   | 331768                  | 0.213      |
| 18 - SLEQ           | 110135    | 46628     | 198025                  | 380075                  | 1.195      |
| 19 - SLEQ           | 93361     | 42856     | 203320                  | 347577                  | 1.303      |
| 20 - HYD            | 98255     | 20491     | 72921                   | 331768                  | 0.213      |
| 21 - UPL            | 93220     | 30791     | 109560                  | 321111                  | 0.579      |

## Scarichi in testa ai pali

### Simbologia adottata

|     |                                  |
|-----|----------------------------------|
| Cmb | Indice/Tipo combinazione         |
| Ip  | Indice palo                      |
| N   | Sforzo normale, espresso in [kg] |
| M   | Momento, espresso in [kgm]       |
| T   | Taglio, espresso in [kg]         |

| Cmb | Ip | N | M | T |
|-----|----|---|---|---|
|-----|----|---|---|---|

PROGETTAZIONE ATI:

|                          |   | [kg]   | [kgm] | [kg]   |
|--------------------------|---|--------|-------|--------|
| 2 - STR (A1-M1-R3) H + V | 1 | -9620  | 33966 | -49773 |
|                          | 2 | 181944 | 33966 | -49773 |

## Verifiche geotecniche

### Quadro riassuntivo coeff. di sicurezza calcolati

#### Simbologia adottata

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

| Cmb                 | Sismica | FS <sub>SCO</sub> | FS <sub>RIB</sub> | FS <sub>QLIM</sub> | FS <sub>STAB</sub> | FS <sub>HYD</sub> | FS <sub>UPL</sub> |
|---------------------|---------|-------------------|-------------------|--------------------|--------------------|-------------------|-------------------|
| 1 - STR (A1-M1-R3)  |         | 3.125             |                   |                    |                    |                   |                   |
| 2 - STR (A1-M1-R3)  | H + V   | 1.048             |                   |                    |                    |                   |                   |
| 3 - STR (A1-M1-R3)  | H - V   | 1.127             |                   |                    |                    |                   |                   |
| 4 - STR (A1-M1-R3)  |         | 3.264             |                   |                    |                    |                   |                   |
| 5 - STR (A1-M1-R3)  |         | 3.385             |                   |                    |                    |                   |                   |
| 6 - STR (A1-M1-R3)  |         | 3.017             |                   |                    |                    |                   |                   |
| 7 - GEO (A2-M2-R2)  |         |                   |                   |                    | 3.223              |                   |                   |
| 8 - GEO (A2-M2-R2)  | H + V   |                   |                   |                    | 1.894              |                   |                   |
| 9 - GEO (A2-M2-R2)  | H - V   |                   |                   |                    | 1.449              |                   |                   |
| 10 - EQU (A1-M1-R3) |         |                   | 20.914            |                    |                    |                   |                   |
| 11 - EQU (A1-M1-R3) | H + V   |                   | 6.858             |                    |                    |                   |                   |
| 12 - EQU (A1-M1-R3) | H - V   |                   | 6.415             |                    |                    |                   |                   |
| 20 - HYD            |         |                   |                   |                    |                    | 100.000           |                   |
| 21 - UPL            |         |                   |                   |                    |                    |                   | 100.000           |

### Verifiche portanza trasversale (scorrimento)

#### Simbologia adottata

|                 |   |
|-----------------|---|
| Ic              | Indice/Tipo combinazione  |
| Ip              | Indice palo   |
| T               | Carico orizzontale agente alla testa del palo, espresso in [kg] |
| Td              | Portanza trasversale di progetto, espresso in [kg]              |
| FS <sub>o</sub> | Fattore di sicurezza (Td/T)                                     |

| Ic                       | Ip | T<br>[kg] | Td<br>[kg] | FS <sub>o</sub> |
|--------------------------|----|-----------|------------|-----------------|
| 2 - STR (A1-M1-R3) H + V | 1  | -49773    | 52166      | 1.048           |
|                          | 2  | -49773    | 52166      | 1.048           |

### Verifiche portanza verticale

#### Simbologia adottata

|                 |   |
|-----------------|---|
| Ic              | Indice/Tipo combinazione                                      |
| Ip              | Indice palo   |
| N               | Carico verticale agente alla testa del palo, espresso in [kg] |
| Pd              | Portanza di progetto, espresso in [kg]                        |
| FS <sub>v</sub> | Fattore di sicurezza (Pd/N)                                   |

| Ic                       | Ip | N<br>[kg] | Pd<br>[kg] | FS <sub>v</sub> |
|--------------------------|----|-----------|------------|-----------------|
| 2 - STR (A1-M1-R3) H + V | 1  | -9620     | 182624     | 18.985          |
|                          | 2  | 181944    | 183750     | 1.010           |
| 4 - STR (A1-M1-R3)       | 1  | 75766     | 183750     | 2.425           |
|                          | 2  | 108447    | 183750     | 1.694           |

### Dettagli calcolo portanza verticale

#### Simbologia adottata

|          |  |
|----------|--|
| n°       | Indice palo  |
| Nc, Nq   | Coeff. di capacità portante  |
| N'c, N'q | Coeff. di capacità portante corretti                               |
| Zc       | Massima profondità andamento pressione geostatica, espressa in [m] |
| Pp, Pl   | Portanza di punta e laterale caratteristica, espresse in [kg]      |
| A        | Attrito negativo, espresso in [kg]                                 |

PROGETTAZIONE ATI:

Wp Peso palo, espresso in [kg]

| n° | Nc     | N'c    | Nq     | N'q    | Zc<br>[m] | Pp<br>[kg] | Pl<br>[kg] | A<br>[kg] | Wp<br>[kg] |
|----|--------|--------|--------|--------|-----------|------------|------------|-----------|------------|
| 1  | 36.657 | 36.657 | 16.560 | 16.560 | --        | 525668     | 27520      | 0         | 59376      |
| 2  | 36.657 | 36.657 | 16.560 | 16.560 | --        | 525668     | 27520      | 0         | 59376      |

### Verifica a ribaltamento

#### Simbologia adottata

n° Indice combinazione  
 Ms Momento stabilizzante, espresso in [kgm]  
 Mr Momento ribaltante, espresso in [kgm]  
 FS Fattore di sicurezza (rapporto tra momento stabilizzante e momento ribaltante)  
 La verifica viene eseguita rispetto allo spigolo inferiore esterno della fondazione

| n°                        | Ms<br>[kgm] | Mr<br>[kgm] | FS    |
|---------------------------|-------------|-------------|-------|
| 12 - EQU (A1-M1-R3) H - V | 2057133     | 320689      | 6.415 |

### Verifica stabilità globale muro + terreno

#### Simbologia adottata

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

| Ic                       | C<br>[m]    | R<br>[m] | FS    |
|--------------------------|-------------|----------|-------|
| 9 - GEO (A2-M2-R2) H - V | -4.00; 4.50 | 36.19    | 1.449 |

### Dettagli strisce verifiche stabilità

#### Simbologia adottata

Le ascisse X sono considerate positive verso monte  
 Le ordinate Y sono considerate positive verso l'alto  
 Origine in testa al muro (spigolo contro terra)  
 W peso della striscia espresso in [kg]  
 Qy carico sulla striscia espresso in [kg]  
 Qf carico acqua sulla striscia espresso in [kg]  
 α angolo fra la base della striscia e l'orizzontale espresso in [°] (positivo antiorario)  
 φ angolo d'attrito del terreno lungo la base della striscia  
 c coesione del terreno lungo la base della striscia espressa in [kg/cmq]  
 b larghezza della striscia espressa in [m]  
 u pressione neutra lungo la base della striscia espressa in [kg/cmq]  
 Tx; Ty Resistenza al taglio fornita dai tiranti in direzione X ed Y espressa in [kg/cmq]

| n° | W<br>[kg] | Qy<br>[kg] | Qf<br>[kg] | b<br>[m]      | α<br>[°] | φ<br>[°] | c<br>[kg/cmq] | u<br>[kg/cmq] | Tx; Ty<br>[kg] |
|----|-----------|------------|------------|---------------|----------|----------|---------------|---------------|----------------|
| 1  | 21194     | 0          | 0          | 31.92 - 2.79  | 74.515   | 34.000   | 0.00          | 0.000         |                |
| 2  | 57255     | 0          | 0          | 2.79          | 61.632   | 28.000   | 0.10          | 0.064         |                |
| 3  | 81843     | 0          | 0          | 2.79          | 53.291   | 36.000   | 0.00          | 0.509         |                |
| 4  | 100408    | 0          | 0          | 2.79          | 46.398   | 36.000   | 0.00          | 0.842         |                |
| 5  | 115146    | 0          | 0          | 2.79          | 40.305   | 36.000   | 0.00          | 1.106         |                |
| 6  | 127179    | 0          | 0          | 2.79          | 34.726   | 36.000   | 0.00          | 1.321         |                |
| 7  | 137703    | 0          | 0          | 2.79          | 29.506   | 26.000   | 0.20          | 1.496         |                |
| 8  | 146437    | 1374       | 0          | 2.79          | 24.545   | 26.000   | 0.20          | 1.639         |                |
| 9  | 153407    | 2786       | 0          | 2.79          | 19.774   | 26.000   | 0.20          | 1.753         |                |
| 10 | 158789    | 2786       | 0          | 2.79          | 15.144   | 26.000   | 0.20          | 1.840         |                |
| 11 | 165075    | 2786       | 0          | 2.79          | 10.613   | 26.000   | 0.20          | 1.904         |                |
| 12 | 140257    | 1267       | 0          | 2.79          | 6.149    | 26.000   | 0.20          | 1.945         |                |
| 13 | 107535    | 0          | 0          | 2.79          | 1.723    | 26.000   | 0.20          | 1.964         |                |
| 14 | 107152    | 0          | 0          | 2.79          | -2.693   | 26.000   | 0.20          | 1.962         |                |
| 15 | 106017    | 0          | 0          | 2.79          | -7.126   | 26.000   | 0.20          | 1.938         |                |
| 16 | 103837    | 0          | 0          | 2.79          | -11.602  | 26.000   | 0.20          | 1.892         |                |
| 17 | 100571    | 0          | 0          | 2.79          | -16.151  | 26.000   | 0.20          | 1.823         |                |
| 18 | 96152     | 0          | 0          | 2.79          | -20.809  | 26.000   | 0.20          | 1.730         |                |
| 19 | 90479     | 0          | 0          | 2.79          | -25.616  | 26.000   | 0.20          | 1.610         |                |
| 20 | 83408     | 0          | 0          | 2.79          | -30.628  | 26.000   | 0.20          | 1.461         |                |
| 21 | 74721     | 0          | 0          | 2.79          | -35.917  | 36.000   | 0.00          | 1.277         |                |
| 22 | 64083     | 0          | 0          | 2.79          | -41.592  | 36.000   | 0.00          | 1.053         |                |
| 23 | 50940     | 0          | 0          | 2.79          | -47.830  | 36.000   | 0.00          | 0.775         |                |
| 24 | 34242     | 0          | 0          | 2.79          | -54.963  | 36.000   | 0.00          | 0.423         |                |
| 25 | 11987     | 0          | 0          | -37.74 - 2.79 | -63.716  | 28.000   | 0.10          | 0.000         |                |

PROGETTAZIONE ATI:

Resistenza al taglio pali 0 [kg]

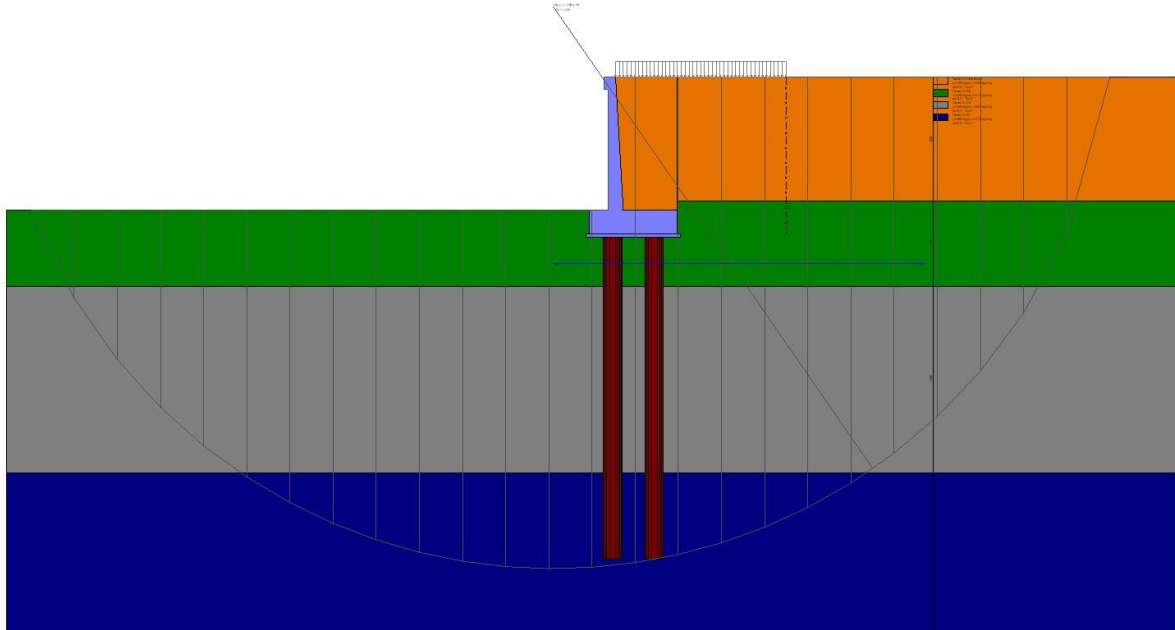


Fig. 31 - Stabilità fronte di scavo - Cerchio critico (Combinazione n° 9)

### Verifica a sifonamento

#### Simbologia adottata

|            |   |
|------------|---|
| Ic         | Indice della combinazione                               |
| $\Delta H$ | perdita di carico, espressa in [m]                      |
| L          | Lunghezza di filtrazione, espressa in [m]               |
| $\gamma m$ | Peso galleggiamento medio, espressa in [kg/mc]          |
| ic         | gradiente idraulico critico                             |
| ie         | gradiente idraulico di efflusso                         |
| FS         | Fattore di sicurezza a sifonamento (rapporto tra ic/ie) |

| Ic | $\Delta H$<br>[m] | L<br>[m] | $\gamma m$<br>[kg/mc] | ic    | ie    | FS      |
|----|-------------------|----------|-----------------------|-------|-------|---------|
| 20 | 99998.10          | 0.00     | 0.00                  | 0.000 | 0.000 | 100.000 |

### Verifica a sollevamento

#### Simbologia adottata

|    |  |
|----|--|
| As | Azione stabilizzante, espressa in [kg]                   |
| Ai | Azione instabilizzante, espressa in [kg]                 |
| Rp | Resistenza di progetto, espressa in [kg]                 |
| FS | Fattore di sicurezza a sollevamento (rapporto tra As/Ai) |

| Ic | As<br>[kg] | Ai<br>[kg] | FS      |
|----|------------|------------|---------|
| 21 | 93220      | 0          | 100.000 |

### Sollecitazioni

#### Elementi calcolati a trave

#### Simbologia adottata

|    |   |
|----|---|
| n° | Indice della sezione  |
| X  | Posizione della sezione, espresso in [m]                                      |
| N  | Sforzo normale, espresso in [kg]. Positivo se di compressione.                |
| T  | Taglio, espresso in [kg]. Positivo se diretto da monte verso valle            |
| M  | Momento, espresso in [kgm]. Positivo se tende le fibre contro terra (a monte) |

La posizione delle sezioni di verifica fanno riferimento al sistema di riferimento globale la cui origine è nello spigolo in alto a destra del paramento.

PROGETTAZIONE ATI:

Elementi calcolati a piastra

Simbologia adottata

Mx, My Momenti flettenti, espresso in [kgm]  
Mxy Momento torcente, espresso in [kgm]. Positivo se diretto da monte verso valle  
Tx, Ty Tagli, espresso in [kg]. Positivo se tende le fibre contro terra (a monte)  
I momenti flettenti sono positivi se tendono le fibre inferiori (intradosso fondazione, paramento esterno)

*Paramento*

| n° | X<br>[m] | Nmin<br>[kg] | Nmax<br>[kg] | Tmin<br>[kg] | Tmax<br>[kg] | Mmin<br>[kgm] | Mmax<br>[kgm] |
|----|----------|--------------|--------------|--------------|--------------|---------------|---------------|
| 1  | 0.00     | 500          | 650          | 0            | 2000         | 63            | 1283          |
| 2  | -0.10    | 606          | 813          | 27           | 2027         | 64            | 1484          |
| 3  | -0.20    | 713          | 979          | 58           | 2058         | 69            | 1689          |
| 4  | -0.30    | 821          | 1146         | 92           | 2092         | 77            | 1898          |
| 5  | -0.40    | 931          | 1315         | 130          | 2479         | 89            | 2111          |
| 6  | -0.50    | 1042         | 1486         | 172          | 3959         | 106           | 2328          |
| 7  | -0.60    | 1154         | 1659         | 218          | 5494         | 128           | 2549          |
| 8  | -0.70    | 1267         | 1833         | 267          | 6927         | 154           | 2776          |
| 9  | -0.80    | 1381         | 2010         | 320          | 8098         | 186           | 3009          |
| 10 | -0.90    | 1497         | 2188         | 377          | 9065         | 224           | 3410          |
| 11 | -1.00    | 1614         | 2369         | 438          | 9886         | 269           | 4362          |
| 12 | -1.10    | 1732         | 2551         | 502          | 10588        | 320           | 5390          |
| 13 | -1.20    | 1851         | 2735         | 570          | 11200        | 378           | 6485          |
| 14 | -1.30    | 1972         | 2921         | 642          | 11737        | 443           | 7637          |
| 15 | -1.40    | 2093         | 3109         | 717          | 12214        | 516           | 8840          |
| 16 | -1.50    | 2216         | 3298         | 797          | 12641        | 598           | 10089         |
| 17 | -1.60    | 2340         | 3490         | 880          | 13026        | 687           | 11379         |
| 18 | -1.70    | 2466         | 3683         | 967          | 13374        | 786           | 12706         |
| 19 | -1.80    | 2592         | 3879         | 1057         | 13693        | 894           | 14066         |
| 20 | -1.90    | 2720         | 4076         | 1152         | 13985        | 1012          | 15458         |
| 21 | -2.00    | 2849         | 4275         | 1250         | 14255        | 1140          | 16878         |
| 22 | -2.10    | 2979         | 4476         | 1352         | 14505        | 1278          | 18324         |
| 23 | -2.20    | 3111         | 4678         | 1457         | 14738        | 1427          | 19795         |
| 24 | -2.30    | 3243         | 4883         | 1566         | 14955        | 1588          | 21289         |
| 25 | -2.40    | 3377         | 5090         | 1680         | 15158        | 1760          | 22804         |
| 26 | -2.50    | 3512         | 5298         | 1796         | 15349        | 1943          | 24340         |
| 27 | -2.60    | 3649         | 5508         | 1917         | 15530        | 2140          | 25895         |
| 28 | -2.70    | 3786         | 5721         | 2041         | 15701        | 2349          | 27467         |
| 29 | -2.80    | 3925         | 5935         | 2169         | 15863        | 2571          | 29057         |
| 30 | -2.90    | 4065         | 6150         | 2301         | 16017        | 2806          | 30663         |
| 31 | -3.00    | 4206         | 6368         | 2437         | 16164        | 3055          | 32285         |
| 32 | -3.10    | 4348         | 6588         | 2576         | 16303        | 3319          | 33921         |
| 33 | -3.20    | 4492         | 6809         | 2719         | 16437        | 3597          | 35572         |
| 34 | -3.30    | 4637         | 7033         | 2866         | 16565        | 3890          | 37236         |
| 35 | -3.40    | 4783         | 7258         | 3016         | 16689        | 4199          | 38913         |
| 36 | -3.50    | 4930         | 7485         | 3171         | 16805        | 4523          | 40602         |
| 37 | -3.60    | 5078         | 7714         | 3329         | 16911        | 4863          | 42304         |
| 38 | -3.70    | 5228         | 7945         | 3491         | 17006        | 5220          | 44016         |
| 39 | -3.80    | 5379         | 8178         | 3656         | 17090        | 5594          | 45737         |
| 40 | -3.90    | 5531         | 8413         | 3826         | 17167        | 5985          | 47467         |
| 41 | -4.00    | 5684         | 8649         | 3999         | 17243        | 6393          | 49205         |
| 42 | -4.10    | 5839         | 8888         | 4175         | 17318        | 6820          | 50951         |
| 43 | -4.20    | 5994         | 9128         | 4356         | 17394        | 7265          | 52705         |
| 44 | -4.30    | 6151         | 9370         | 4540         | 17473        | 7729          | 54467         |
| 45 | -4.40    | 6309         | 9614         | 4728         | 17552        | 8212          | 56238         |
| 46 | -4.50    | 6469         | 9860         | 4920         | 17634        | 8715          | 58018         |
| 47 | -4.60    | 6629         | 10108        | 5116         | 17717        | 9237          | 59806         |
| 48 | -4.70    | 6791         | 10357        | 5315         | 17801        | 9780          | 61603         |
| 49 | -4.80    | 6954         | 10609        | 5518         | 17887        | 10343         | 63409         |
| 50 | -4.90    | 7118         | 10862        | 5725         | 18147        | 10928         | 65225         |
| 51 | -5.00    | 7284         | 11117        | 5935         | 18623        | 11534         | 67049         |
| 52 | -5.10    | 7450         | 11375        | 6150         | 19102        | 12161         | 68884         |
| 53 | -5.20    | 7618         | 11634        | 6368         | 19586        | 12811         | 70728         |
| 54 | -5.30    | 7787         | 11894        | 6589         | 20074        | 13484         | 72582         |
| 55 | -5.40    | 7958         | 12157        | 6815         | 20567        | 14179         | 74446         |
| 56 | -5.50    | 8129         | 12422        | 7044         | 21063        | 14898         | 76321         |
| 57 | -5.60    | 8302         | 12688        | 7277         | 21564        | 15640         | 78206         |
| 58 | -5.70    | 8476         | 12957        | 7514         | 22068        | 16407         | 80101         |
| 59 | -5.80    | 8651         | 13227        | 7755         | 22578        | 17198         | 82008         |
| 60 | -5.90    | 8827         | 13499        | 7999         | 23091        | 18014         | 83926         |
| 61 | -6.00    | 9005         | 13773        | 8247         | 23608        | 18855         | 85857         |
| 62 | -6.10    | 9184         | 14049        | 8499         | 24130        | 19721         | 87802         |
| 63 | -6.20    | 9364         | 14327        | 8754         | 24656        | 20614         | 89762         |
| 64 | -6.30    | 9545         | 14606        | 9013         | 25186        | 21533         | 91737         |
| 65 | -6.40    | 9727         | 14888        | 9277         | 25720        | 22479         | 93730         |
| 66 | -6.50    | 9911         | 15171        | 9543         | 26258        | 23452         | 95740         |
| 67 | -6.60    | 10096        | 15456        | 9814         | 26801        | 24452         | 97768         |
| 68 | -6.70    | 10282        | 15744        | 10088        | 27348        | 25480         | 99816         |
| 69 | -6.80    | 10469        | 16033        | 10366        | 27899        | 26537         | 101885        |
| 70 | -6.90    | 10658        | 16323        | 10648        | 28454        | 27622         | 103974        |
| 71 | -7.00    | 10847        | 16616        | 10933        | 29014        | 28736         | 106085        |
| 72 | -7.10    | 11038        | 16911        | 11223        | 29577        | 29879         | 108219        |

PROGETTAZIONE ATI:

| n° | X<br>[m] | Nmin<br>[kg] | Nmax<br>[kg] | Tmin<br>[kg] | Tmax<br>[kg] | Mmin<br>[kgm] | Mmax<br>[kgm] |
|----|----------|--------------|--------------|--------------|--------------|---------------|---------------|
| 73 | -7.20    | 11230        | 17207        | 11516        | 30145        | 31053         | 110376        |
| 74 | -7.30    | 11424        | 17506        | 11812        | 30717        | 32256         | 112557        |
| 75 | -7.40    | 11618        | 17806        | 12113        | 31294        | 33490         | 114762        |
| 76 | -7.50    | 11814        | 18108        | 12417        | 31874        | 34755         | 116993        |
| 77 | -7.60    | 12011        | 18412        | 12725        | 32459        | 36051         | 119250        |
| 78 | -7.70    | 12209        | 18718        | 13037        | 33048        | 37379         | 121533        |
| 79 | -7.80    | 12409        | 19026        | 13352        | 33641        | 38739         | 123843        |
| 80 | -7.90    | 12609        | 19335        | 13672        | 34238        | 40131         | 126181        |
| 81 | -8.00    | 12811        | 19647        | 13995        | 34840        | 41556         | 128547        |
| 82 | -8.10    | 13014        | 19960        | 14321        | 35445        | 43014         | 130941        |
| 83 | -8.20    | 13219        | 20275        | 14652        | 36055        | 44506         | 133366        |
| 84 | -8.30    | 13424        | 20592        | 14986        | 36669        | 46032         | 135820        |
| 85 | -8.40    | 13631        | 20911        | 15324        | 37288        | 47592         | 138304        |
| 86 | -8.50    | 13839        | 21232        | 15666        | 37910        | 49187         | 141683        |
| 87 | -8.60    | 14048        | 21555        | 16011        | 38537        | 50816         | 145558        |

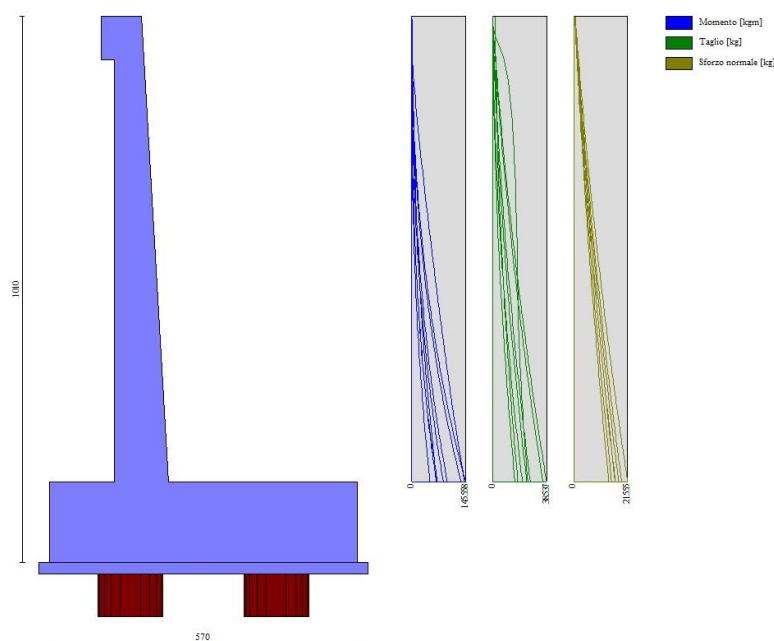


Fig. 32 - Paramento

*Mensola valle*

| n° | X<br>[m] | Nmin<br>[kg] | Nmax<br>[kg] | Tmin<br>[kg] | Tmax<br>[kg] | Mmin<br>[kgm] | Mmax<br>[kgm] |
|----|----------|--------------|--------------|--------------|--------------|---------------|---------------|
| 1  | -0.75    | 0            | 0            | 0            | 0            | 0             | 0             |
| 2  | -0.67    | 0            | 0            | 167          | 217          | 7             | 9             |
| 3  | -0.58    | 0            | 0            | 333          | 433          | 28            | 36            |
| 4  | -0.50    | 0            | 0            | 500          | 650          | 63            | 81            |

PROGETTAZIONE ATI:

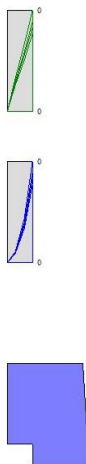


Fig. 33 - Mensola valle

*Piastra fondazione*

| In | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |  |     |
|----|-------------|-------------|--------------|------------|------------|--|-----|
| 1  | 2           | -4          | 21           | -25        | 778        |  | MAX |
|    | 2           | -5          | 16           | -33        | 599        |  | MIN |
| 2  | 22          | -1          | 12           | -14        | 701        |  | MAX |
|    | 17          | -2          | 10           | -19        | 539        |  | MIN |
| 3  | 39          | -158        | 25           | 24         | 1410       |  | MAX |
|    | 30          | -205        | 19           | 19         | 1085       |  | MIN |
| 4  | 30          | -146        | 38           | 9          | 1502       |  | MAX |
|    | 23          | -190        | 30           | 7          | 1155       |  | MIN |
| 5  | 51          | -11         | 14           | 24         | 705        |  | MAX |
|    | 39          | -15         | 11           | 18         | 542        |  | MIN |
| 6  | 46          | -178        | 19           | 50         | 1426       |  | MAX |
|    | 35          | -231        | 15           | 39         | 1097       |  | MIN |
| 7  | -19         | -678        | 7            | 76         | 2841       |  | MAX |
|    | -25         | -882        | 6            | 59         | 2185       |  | MIN |
| 8  | 11          | -577        | 65           | 49         | 2869       |  | MAX |
|    | 8           | -750        | 50           | 38         | 2207       |  | MIN |
| 9  | -47         | -678        | -1           | 97         | 2885       |  | MAX |
|    | -61         | -881        | -1           | 75         | 2219       |  | MIN |
| 10 | 75          | -9          | 8            | 66         | 723        |  | MAX |
|    | 58          | -11         | 6            | 50         | 556        |  | MIN |
| 11 | 37          | -176        | 8            | 64         | 1451       |  | MAX |
|    | 29          | -228        | 6            | 49         | 1117       |  | MIN |
| 12 | -102        | -680        | -9           | 80         | 2920       |  | MAX |
|    | -132        | -884        | -12          | 62         | 2246       |  | MIN |
| 13 | -117        | -1460       | -69          | 119        | 4297       |  | MAX |
|    | -153        | -1898       | -89          | 91         | 3305       |  | MIN |
| 14 | 28          | -1404       | -70          | 118        | 4126       |  | MAX |
|    | 21          | -1825       | -91          | 91         | 3174       |  | MIN |
| 15 | -291        | -1495       | -63          | 101        | 4367       |  | MAX |
|    | -378        | -1944       | -82          | 78         | 3359       |  | MIN |
| 16 | -370        | -1513       | -40          | 68         | 4401       |  | MAX |
|    | -482        | -1967       | -51          | 52         | 3386       |  | MIN |
| 17 | 72          | -2          | 3            | 78         | 735        |  | MAX |
|    | 56          | -3          | 2            | 60         | 565        |  | MIN |
| 18 | 9           | -172        | 0            | 64         | 1470       |  | MAX |
|    | 7           | -223        | 0            | 49         | 1131       |  | MIN |
| 19 | -144        | -679        | -8           | 60         | 2944       |  | MAX |
|    | -187        | -882        | -11          | 46         | 2264       |  | MIN |
| 20 | -414        | -1521       | -21          | 43         | 4420       |  | MAX |
|    | -538        | -1977       | -28          | 33         | 3400       |  | MIN |
| 21 | -803        | -2677       | -161         | 0          | 5030       |  | MAX |
|    | -1044       | -3481       | -209         | 0          | 3869       |  | MIN |
| 22 | -832        | -2774       | -309         | 0          | 4738       |  | MAX |
|    | -1082       | -3607       | -401         | 0          | 3644       |  | MIN |

PROGETTAZIONE ATI:

| In | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |     |
|----|-------------|-------------|--------------|------------|------------|-----|
| 23 | -810        | -2701       | -89          | 0          | 5111       | MAX |
|    | -1053       | -3511       | -116         | 0          | 3931       | MIN |
| 24 | -813        | -2709       | -52          | 0          | 5143       | MAX |
|    | -1057       | -3522       | -67          | 0          | 3956       | MIN |
| 25 | -814        | -2715       | -26          | 0          | 5157       | MAX |
|    | -1059       | -3529       | -33          | 0          | 3967       | MIN |
| 26 | 54          | 0           | 1            | 70         | 738        | MAX |
|    | 41          | 0           | 1            | 54         | 568        | MIN |
| 27 | -13         | -170        | -1           | 54         | 1476       | MAX |
|    | -17         | -221        | -1           | 41         | 1135       | MIN |
| 28 | -170        | -679        | -5           | 43         | 2950       | MAX |
|    | -220        | -882        | -7           | 33         | 2269       | MIN |
| 29 | -436        | -1525       | -11          | 26         | 4422       | MAX |
|    | -566        | -1982       | -14          | 20         | 3401       | MIN |
| 30 | -815        | -2716       | -12          | 0          | 5157       | MAX |
|    | -1059       | -3531       | -16          | 0          | 3967       | MIN |
| 31 | -815        | -2716       | -12          | 0          | 5157       | MAX |
|    | -1059       | -3531       | -16          | 0          | 3967       | MIN |
| 32 | -815        | -2716       | -12          | 0          | 5157       | MAX |
|    | -1059       | -3531       | -16          | 0          | 3967       | MIN |
| 33 | -815        | -2716       | -12          | 0          | 5157       | MAX |
|    | -1059       | -3531       | -16          | 0          | 3967       | MIN |
| 34 | -815        | -2716       | -12          | 0          | 5157       | MAX |
|    | -1059       | -3531       | -16          | 0          | 3967       | MIN |
| 35 | -815        | -2716       | -12          | 0          | 5157       | MAX |
|    | -1059       | -3531       | -16          | 0          | 3967       | MIN |
| 36 | -815        | -2716       | -12          | 0          | 5157       | MAX |
|    | -1059       | -3531       | -16          | 0          | 3967       | MIN |
| 37 | 34          | 1           | 1            | 54         | 738        | MAX |
|    | 26          | 1           | 1            | 41         | 568        | MIN |
| 38 | -28         | -170        | -1           | 41         | 1475       | MAX |
|    | -36         | -220        | -1           | 31         | 1135       | MIN |
| 39 | -185        | -678        | -2           | 30         | 2948       | MAX |
|    | -240        | -882        | -3           | 23         | 2267       | MIN |
| 40 | -446        | -1526       | -5           | 16         | 4417       | MAX |
|    | -580        | -1983       | -6           | 13         | 3398       | MIN |
| 41 | -814        | -2715       | -5           | 0          | 5151       | MAX |
|    | -1059       | -3529       | -7           | 0          | 3963       | MIN |
| 42 | -814        | -2715       | -5           | 0          | 5151       | MAX |
|    | -1059       | -3529       | -7           | 0          | 3963       | MIN |
| 43 | -814        | -2715       | -5           | 0          | 5151       | MAX |
|    | -1059       | -3529       | -7           | 0          | 3963       | MIN |
| 44 | -814        | -2715       | -5           | 0          | 5151       | MAX |
|    | -1059       | -3529       | -7           | 0          | 3963       | MIN |
| 45 | -814        | -2715       | -5           | 0          | 5151       | MAX |
|    | -1059       | -3529       | -7           | 0          | 3963       | MIN |
| 46 | -814        | -2715       | -5           | 0          | 5151       | MAX |
|    | -1059       | -3529       | -7           | 0          | 3963       | MIN |
| 47 | -814        | -2715       | -5           | 0          | 5151       | MAX |
|    | -1059       | -3529       | -7           | 0          | 3963       | MIN |
| 48 | -814        | -2715       | -5           | 0          | 5151       | MAX |
|    | -1059       | -3529       | -7           | 0          | 3963       | MIN |
| 49 | -814        | -2715       | -5           | 0          | 5151       | MAX |
|    | -1059       | -3529       | -7           | 0          | 3963       | MIN |
| 50 | 19          | 1           | 1            | 39         | 737        | MAX |
|    | 15          | 0           | 1            | 30         | 567        | MIN |
| 51 | -38         | -170        | 0            | 29         | 1473       | MAX |
|    | -49         | -220        | 0            | 22         | 1133       | MIN |
| 52 | -193        | -678        | 0            | 20         | 2943       | MAX |
|    | -251        | -882        | 0            | 15         | 2264       | MIN |
| 53 | -452        | -1525       | -1           | 10         | 4411       | MAX |
|    | -587        | -1983       | -2           | 8          | 3393       | MIN |
| 54 | -814        | -2713       | -2           | 0          | 5144       | MAX |
|    | -1058       | -3527       | -2           | 0          | 3957       | MIN |
| 55 | -814        | -2713       | -2           | 0          | 5144       | MAX |
|    | -1058       | -3527       | -2           | 0          | 3957       | MIN |
| 56 | -814        | -2713       | -2           | 0          | 5144       | MAX |
|    | -1058       | -3527       | -2           | 0          | 3957       | MIN |
| 57 | -7778       | -25925      | 20144        | 0          | -17646     | MAX |
|    | -44889      | -149630     | 2387         | 0          | -54417     | MIN |
| 58 | -8349       | -27829      | 31569        | 0          | -11043     | MAX |
|    | -50122      | -167073     | 4159         | 0          | -23700     | MIN |
| 59 | -7860       | -26201      | 13836        | 0          | -18749     | MAX |
|    | -45903      | -153010     | 1389         | 0          | -66871     | MIN |
| 60 | -7903       | -26343      | 9784         | 0          | -19071     | MAX |
|    | -47040      | -156801     | 778          | 0          | -73117     | MIN |
| 61 | -7903       | -26342      | 6296         | 0          | -19007     | MAX |
|    | -48221      | -160735     | 300          | 0          | -76911     | MIN |
| 62 | -7864       | -26213      | 4092         | 0          | -18742     | MAX |
|    | -49032      | -163438     | 40           | 0          | -78344     | MIN |
| 63 | -7805       | -26017      | 2674         | 0          | -18433     | MAX |
|    | -49579      | -165264     | -111         | 0          | -78711     | MIN |
| 64 | -7742       | -25806      | 1740         | 0          | -18147     | MAX |
|    | -49940      | -166468     | -192         | 0          | -78613     | MIN |
| 65 | 10          | 0           | 1            | 27         | 735        | MAX |
|    | 8           | 0           | 1            | 20         | 566        | MIN |
| 66 | -44         | -169        | 1            | 19         | 1470       | MAX |

PROGETTAZIONE ATI:



| In  | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |     |
|-----|-------------|-------------|--------------|------------|------------|-----|
|     | -58         | -220        | 1            | 15         | 1131       | MIN |
|     | -198        | -678        | 1            | 13         | 2938       | MAX |
|     | -258        | -881        | 1            | 10         | 2260       | MIN |
| 67  | -455        | -1525       | 1            | 6          | 4405       | MAX |
|     | -591        | -1982       | 0            | 5          | 3388       | MIN |
|     | -813        | -2710       | 0            | 0          | 5137       | MAX |
|     | -1057       | -3523       | 0            | 0          | 3952       | MIN |
| 68  | -813        | -2710       | 0            | 0          | 5137       | MAX |
|     | -1057       | -3523       | 0            | 0          | 3952       | MIN |
| 69  | -813        | -2710       | 0            | 0          | 5137       | MAX |
|     | -1057       | -3523       | 0            | 0          | 3952       | MIN |
| 70  | -7683       | -25611      | 1127         | 0          | -17909     | MAX |
|     | -50163      | -167211     | -217         | 0          | -78345     | MIN |
| 71  | -1283       | -19334      | 10659        | 7741       | -14873     | MAX |
|     | -8948       | -126334     | 1046         | 1217       | -53022     | MIN |
| 72  | 190         | -19158      | 9880         | 6608       | -7857      | MAX |
|     | -583        | -128386     | 1120         | 1077       | -27945     | MIN |
| 73  | -3296       | -19664      | 11994        | 8741       | -15732     | MAX |
|     | -21863      | -128937     | 1011         | 1257       | -63920     | MIN |
| 74  | -4377       | -19864      | 9180         | 7961       | -15986     | MAX |
|     | -28593      | -131855     | 573          | 1001       | -69608     | MIN |
| 75  | -5098       | -19950      | 6210         | 6464       | -15938     | MAX |
|     | -33547      | -134863     | 194          | 682        | -73292     | MIN |
| 76  | -5514       | -19945      | 4169         | 4884       | -15710     | MAX |
|     | -36790      | -137198     | -30          | 405        | -74828     | MIN |
| 77  | -5732       | -19859      | 2798         | 3585       | -15427     | MAX |
|     | -38876      | -138990     | -183         | 211        | -75304     | MIN |
| 78  | -5836       | -19743      | 1843         | 2585       | -15158     | MAX |
|     | -40239      | -140286     | -244         | 81         | -75305     | MIN |
| 79  | -5878       | -19637      | 1198         | 1846       | -14943     | MAX |
|     | -41133      | -141097     | -255         | 1          | -75146     | MIN |
| 80  | 5           | 0           | 1            | 18         | 734        | MAX |
|     | 3           | 0           | 1            | 14         | 565        | MIN |
| 81  | -48         | -169        | 1            | 12         | 1468       | MAX |
|     | -63         | -220        | 1            | 10         | 1129       | MIN |
| 82  | -201        | -677        | 1            | 8          | 2934       | MAX |
|     | -262        | -881        | 1            | 6          | 2257       | MIN |
| 83  | -456        | -1523       | 2            | 3          | 4399       | MAX |
|     | -593        | -1980       | 1            | 3          | 3384       | MIN |
| 84  | -812        | -2708       | 1            | 0          | 5131       | MAX |
|     | -1056       | -3520       | 1            | 0          | 3947       | MIN |
| 85  | -812        | -2708       | 1            | 0          | 5131       | MAX |
|     | -1056       | -3520       | 1            | 0          | 3947       | MIN |
| 86  | -812        | -2708       | 1            | 0          | 5131       | MAX |
|     | -1056       | -3520       | 1            | 0          | 3947       | MIN |
| 87  | -7630       | -25434      | 734          | 0          | -17715     | MAX |
|     | -50304      | -167681     | -214         | 0          | -78020     | MIN |
| 88  | -5885       | -19531      | 804          | 1321       | -14767     | MAX |
|     | -41724      | -141649     | -251         | -45        | -74908     | MIN |
| 89  | -670        | -15883      | 4221         | 8421       | -8340      | MAX |
|     | -4560       | -109999     | -12          | 1257       | -50757     | MIN |
| 90  | -26         | -14333      | 1110         | 5555       | -4667      | MAX |
|     | -229        | -99256      | -353         | 830        | -38429     | MIN |
| 91  | -1433       | -15826      | 5909         | 11311      | -9699      | MAX |
|     | -9613       | -110922     | -10          | 1653       | -58100     | MIN |
| 92  | -2525       | -15815      | 5751         | 10633      | -9764      | MAX |
|     | -16691      | -112275     | -1           | 1443       | -62413     | MIN |
| 93  | -3435       | -15835      | 4364         | 8898       | -9740      | MAX |
|     | -22884      | -113408     | -93          | 1063       | -65834     | MIN |
| 94  | -4027       | -15853      | 3278         | 6947       | -9636      | MAX |
|     | -27195      | -114500     | -224         | 712        | -67621     | MIN |
| 95  | -4380       | -15760      | 2448         | 5262       | -9369      | MAX |
|     | -30052      | -115904     | -310         | 443        | -68286     | MIN |
| 96  | -4581       | -15658      | 1647         | 3880       | -9123      | MAX |
|     | -31956      | -117099     | -297         | 226        | -68451     | MIN |
| 97  | -4677       | -15635      | 1038         | 2823       | -8988      | MAX |
|     | -33207      | -117537     | -259         | 78         | -68616     | MIN |
| 98  | -4721       | -15613      | 793          | 2079       | -8895      | MAX |
|     | -34049      | -117817     | -268         | 17         | -68638     | MIN |
| 99  | 1           | 0           | 1            | 11         | 733        | MAX |
|     | 1           | 0           | 1            | 9          | 564        | MIN |
| 100 | -50         | -169        | 1            | 8          | 1466       | MAX |
|     | -65         | -220        | 1            | 6          | 1128       | MIN |
| 101 | -203        | -677        | 1            | 4          | 2931       | MAX |
|     | -264        | -880        | 1            | 3          | 2255       | MIN |
| 102 | -457        | -1522       | 2            | 2          | 4395       | MAX |
|     | -594        | -1979       | 1            | 1          | 3381       | MIN |
| 103 | -812        | -2706       | 2            | 0          | 5127       | MAX |
|     | -1055       | -3517       | 1            | 0          | 3944       | MIN |
| 104 | -812        | -2706       | 2            | 0          | 5127       | MAX |
|     | -1055       | -3517       | 1            | 0          | 3944       | MIN |
| 105 | -812        | -2706       | 2            | 0          | 5127       | MAX |
|     | -1055       | -3517       | 1            | 0          | 3944       | MIN |
| 106 | -7582       | -25272      | 477          | 0          | -17558     | MAX |
|     | -50406      | -168019     | -195         | 0          | -77688     | MIN |
| 107 | -5878       | -19417      | 546          | 940        | -14612     | MAX |
|     | -42122      | -142131     | -229         | -66        | -74606     | MIN |

PROGETTAZIONE ATI:

| In  | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |  |     |
|-----|-------------|-------------|--------------|------------|------------|--|-----|
| 110 | -4747       | -15500      | 650          | 1527       | -8708      |  | MAX |
|     | -34638      | -118492     | -267         | -7         | -68362     |  | MIN |
| 111 | -501        | -13508      | 1321         | 6915       | -4485      |  | MAX |
|     | -1628       | -88864      | -863         | 1237       | -49876     |  | MIN |
| 112 | 1254        | -12959      | 100          | 4328       | -4921      |  | MAX |
|     | -90         | -81758      | -618         | 729        | -48651     |  | MIN |
| 113 | -1261       | -13554      | 2444         | 10103      | -3740      |  | MAX |
|     | -5153       | -92875      | -962         | 1730       | -52472     |  | MIN |
| 114 | -2028       | -13435      | 2559         | 10169      | -3181      |  | MAX |
|     | -9804       | -94246      | -647         | 1525       | -55047     |  | MIN |
| 115 | -2784       | -13671      | 2159         | 8800       | -3571      |  | MAX |
|     | -15331      | -93564      | -354         | 1124       | -58244     |  | MIN |
| 116 | -3309       | -13853      | 2313         | 7210       | -3690      |  | MAX |
|     | -19595      | -93066      | -436         | 876        | -60558     |  | MIN |
| 117 | -3739       | -13666      | 2387         | 5724       | -3311      |  | MAX |
|     | -22626      | -94875      | -550         | 689        | -61067     |  | MIN |
| 118 | -3994       | -13418      | 1459         | 4284       | -2737      |  | MAX |
|     | -24798      | -96873      | -363         | 349        | -61103     |  | MIN |
| 119 | -4098       | -13627      | 591          | 3121       | -3055      |  | MAX |
|     | -26150      | -96074      | -242         | 81         | -61918     |  | MIN |
| 120 | -4119       | -13784      | 811          | 2422       | -3200      |  | MAX |
|     | -27127      | -95380      | -297         | 93         | -62564     |  | MIN |
| 121 | -4212       | -13563      | 1092         | 1906       | -2843      |  | MAX |
|     | -27835      | -96907      | -413         | 145        | -61993     |  | MIN |
| 122 | 0           | 0           | 1            | 7          | 733        |  | MAX |
|     | 0           | 0           | 0            | 5          | 564        |  | MIN |
| 123 | -51         | -169        | 1            | 5          | 1465       |  | MAX |
|     | -67         | -220        | 1            | 4          | 1127       |  | MIN |
| 124 | -203        | -676        | 1            | 2          | 2929       |  | MAX |
|     | -265        | -879        | 1            | 2          | 2253       |  | MIN |
| 125 | -457        | -1521       | 2            | 1          | 4392       |  | MAX |
|     | -594        | -1978       | 1            | 1          | 3379       |  | MIN |
| 126 | -811        | -2704       | 1            | 0          | 5124       |  | MAX |
|     | -1055       | -3515       | 1            | 0          | 3942       |  | MIN |
| 127 | -811        | -2704       | 1            | 0          | 5124       |  | MAX |
|     | -1055       | -3515       | 1            | 0          | 3942       |  | MIN |
| 128 | -811        | -2704       | 1            | 0          | 5124       |  | MAX |
|     | -1055       | -3515       | 1            | 0          | 3942       |  | MIN |
| 129 | -7541       | -25138      | 295          | 0          | -17437     |  | MAX |
|     | -50471      | -168237     | -161         | 0          | -77396     |  | MIN |
| 130 | -5865       | -19316      | 333          | 648        | -14490     |  | MAX |
|     | -42387      | -142478     | -185         | -74        | -74331     |  | MIN |
| 131 | -4758       | -15397      | 356          | 1061       | -8563      |  | MAX |
|     | -35044      | -119068     | -194         | -52        | -68066     |  | MIN |
| 132 | -4260       | -13297      | 401          | 1291       | -2318      |  | MAX |
|     | -28396      | -98547      | -210         | -2         | -61390     |  | MIN |
| 133 | -135        | -13606      | 989          | 5702       | -875       |  | MAX |
|     | -1281       | -69076      | -1492        | 2000       | -49563     |  | MIN |
| 134 | 573         | -13412      | -43          | 3496       | -3810      |  | MAX |
|     | -224        | -64628      | -944         | 1538       | -54722     |  | MIN |
| 135 | -1934       | -12754      | 1872         | 8148       | 4321       |  | MAX |
|     | -2533       | -75665      | -1881        | 2565       | -47591     |  | MIN |
| 136 | -2797       | -12665      | 285          | 8053       | 5476       |  | MAX |
|     | -6037       | -80736      | -950         | 1534       | -46668     |  | MIN |
| 137 | -2886       | -13312      | 52           | 7093       | 3752       |  | MAX |
|     | -10112      | -75018      | -1132        | 500        | -51450     |  | MIN |
| 138 | -3221       | -14465      | 1391         | 6346       | -100       |  | MAX |
|     | -13820      | -70899      | -576         | 948        | -54363     |  | MIN |
| 139 | -3708       | -13462      | 3451         | 5587       | 3807       |  | MAX |
|     | -16406      | -75487      | -1180        | 1356       | -54418     |  | MIN |
| 140 | -4321       | -12807      | 1250         | 4093       | 5393       |  | MAX |
|     | -18821      | -82336      | -411         | 423        | -52388     |  | MIN |
| 141 | -4065       | -13494      | 419          | 2764       | 3981       |  | MAX |
|     | -19816      | -76303      | -1030        | -561       | -55662     |  | MIN |
| 142 | -3981       | -14533      | 816          | 2467       | 158        |  | MAX |
|     | -21037      | -72468      | -318         | 159        | -57079     |  | MIN |
| 143 | -4203       | -13483      | 2672         | 2305       | 4165       |  | MAX |
|     | -21589      | -76978      | -998         | 807        | -56021     |  | MIN |
| 144 | -4627       | -12792      | 444          | 1379       | 5748       |  | MAX |
|     | -22556      | -83664      | -223         | 42         | -53243     |  | MIN |
| 145 | -1          | 0           | 0            | 4          | 732        |  | MAX |
|     | -1          | 0           | 0            | 3          | 563        |  | MIN |
| 146 | -52         | -169        | 1            | 3          | 1464       |  | MAX |
|     | -67         | -220        | 0            | 2          | 1126       |  | MIN |
| 147 | -204        | -676        | 1            | 1          | 2928       |  | MAX |
|     | -265        | -879        | 1            | 1          | 2252       |  | MIN |
| 148 | -457        | -1521       | 1            | 0          | 4391       |  | MAX |
|     | -594        | -1977       | 1            | 0          | 3377       |  | MIN |
| 149 | -811        | -2703       | 1            | 0          | 5122       |  | MAX |
|     | -1054       | -3513       | 1            | 0          | 3940       |  | MIN |
| 150 | -811        | -2703       | 1            | 0          | 5122       |  | MAX |
|     | -1054       | -3513       | 1            | 0          | 3940       |  | MIN |
| 151 | -811        | -2703       | 1            | 0          | 5122       |  | MAX |
|     | -1054       | -3513       | 1            | 0          | 3940       |  | MIN |
| 152 | -7512       | -25040      | 173          | 0          | -17352     |  | MAX |
|     | -50498      | -168326     | -122         | 0          | -77177     |  | MIN |
| 153 | -5849       | -19253      | 181          | 426        | -14415     |  | MAX |

PROGETTAZIONE ATI:

| In  | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |     |
|-----|-------------|-------------|--------------|------------|------------|-----|
|     | -42556      | -142607     | -136         | -68        | -74154     | MIN |
| 154 | -4749       | -15392      | 114          | 693        | -8535      | MAX |
|     | -35291      | -118994     | -116         | -77        | -68054     | MIN |
| 155 | -4238       | -13502      | 30           | 775        | -2702      | MAX |
|     | -28640      | -97395      | -290         | -161       | -61862     | MIN |
| 156 | -4248       | -13458      | 592          | 534        | 4302       | MAX |
|     | -22488      | -77413      | -1754        | -990       | -56050     | MIN |
| 157 | -665        | -14747      | 1295         | 10342      | -1396      | MAX |
|     | -2272       | -50640      | -1839        | 3012       | -47202     | MIN |
| 158 | 216         | -14372      | -481         | 5165       | -4555      | MAX |
|     | -358        | -47808      | -1007        | 1829       | -56277     | MIN |
| 159 | 1532        | -16424      | 2962         | 10264      | 6832       | MAX |
|     | -6369       | -52803      | -2748        | 6103       | -42455     | MIN |
| 160 | -4593       | -11149      | -787         | 5869       | 41085      | MAX |
|     | -7774       | -83753      | -1218        | 460        | -41533     | MIN |
| 161 | -4012       | -16942      | 766          | 4495       | 2739       | MAX |
|     | -6189       | -50426      | -4025        | -4049      | -44419     | MIN |
| 162 | -1076       | -15262      | 614          | 4897       | -787       | MAX |
|     | -13042      | -52019      | -613         | 822        | -47890     | MIN |
| 163 | -5274       | -17111      | 5053         | 7938       | 2681       | MAX |
|     | -8955       | -50827      | -1971        | 5025       | -47213     | MIN |
| 164 | -5883       | -12183      | 1029         | 3546       | 40343      | MAX |
|     | -15067      | -83227      | -431         | 450        | -46394     | MIN |
| 165 | -5592       | -17190      | 1164         | 2112       | 2734       | MAX |
|     | -11936      | -51350      | -3133        | -5600      | -48655     | MIN |
| 166 | -1930       | -15438      | 791          | 2311       | -712       | MAX |
|     | -19089      | -52973      | -327         | 204        | -50910     | MIN |
| 167 | -5739       | -17214      | 4699         | 6867       | 2837       | MAX |
|     | -13666      | -51852      | -1765        | 2584       | -49205     | MIN |
| 168 | -6198       | -12252      | 467          | 1364       | 40535      | MAX |
|     | -18645      | -84200      | -229         | 79         | -47620     | MIN |
| 169 | -5797       | -17213      | 1346         | 198        | 2929       | MAX |
|     | -14609      | -52205      | -3748        | -6114      | -49357     | MIN |
| 170 | -1          | 0           | 0            | 2          | 732        | MAX |
|     | -1          | 0           | 0            | 2          | 563        | MIN |
| 171 | -52         | -169        | 0            | 1          | 1463       | MAX |
|     | -67         | -220        | 0            | 1          | 1126       | MIN |
| 172 | -204        | -676        | 1            | 1          | 2927       | MAX |
|     | -265        | -878        | 0            | 0          | 2251       | MIN |
| 173 | -457        | -1520       | 1            | 0          | 4389       | MAX |
|     | -594        | -1976       | 1            | 0          | 3376       | MIN |
| 174 | -811        | -2702       | 1            | 0          | 5121       | MAX |
|     | -1054       | -3512       | 1            | 0          | 3939       | MIN |
| 175 | -811        | -2702       | 1            | 0          | 5121       | MAX |
|     | -1054       | -3512       | 1            | 0          | 3939       | MIN |
| 176 | -811        | -2702       | 1            | 0          | 5121       | MAX |
|     | -1054       | -3512       | 1            | 0          | 3939       | MIN |
| 177 | -7491       | -24971      | 101          | 0          | -17296     | MAX |
|     | -50510      | -168365     | -84          | 0          | -77020     | MIN |
| 178 | -5836       | -19209      | 116          | 265        | -14366     | MAX |
|     | -42661      | -142666     | -96          | -47        | -74031     | MIN |
| 179 | -4739       | -15402      | 132          | 447        | -8545      | MAX |
|     | -35446      | -118862     | -100         | -43        | -68065     | MIN |
| 180 | -4188       | -13668      | 160          | 560        | -2918      | MAX |
|     | -28833      | -96376      | -109         | -20        | -62356     | MIN |
| 181 | -4085       | -14489      | 187          | 616        | 365        | MAX |
|     | -22921      | -73341      | -115         | 4          | -57203     | MIN |
| 182 | -2059       | -15441      | 206          | 630        | -575       | MAX |
|     | -21039      | -53675      | -119         | 24         | -51279     | MIN |
| 183 | 57          | -14286      | 364          | 14942      | -6856      | MAX |
|     | -118        | -32906      | -704         | -3205      | -40263     | MIN |
| 184 | 563         | -13809      | -251         | 6353       | -8222      | MAX |
|     | -124        | -33392      | -1102        | -1289      | -51188     | MIN |
| 185 | 333         | -17162      | 11981        | 56434      | -6474      | MAX |
|     | -2679       | -31535      | -2509        | -14258     | -32279     | MIN |
| 186 | 6037        | -27804      | 265          | 7350       | 7555       | MAX |
|     | -27139      | -41499      | -972         | 981        | -14285     | MIN |
| 187 | -299        | -15755      | 738          | 15685      | -6183      | MAX |
|     | -2568       | -32460      | -11501       | -41205     | -34736     | MIN |
| 188 | -424        | -14767      | 197          | 3357       | -5770      | MAX |
|     | -4157       | -33520      | -577         | 761        | -38442     | MIN |
| 189 | -692        | -16004      | 11080        | 42339      | -6224      | MAX |
|     | -5580       | -32706      | -1762        | -9012      | -37044     | MIN |
| 190 | 359         | -28272      | 817          | 2833       | 6100       | MAX |
|     | -27830      | -41724      | -422         | 445        | -18643     | MIN |
| 191 | -963        | -16106      | 973          | 14623      | -6246      | MAX |
|     | -7982       | -33028      | -9629        | -41136     | -38479     | MIN |
| 192 | -955        | -14987      | 729          | 2037       | -5816      | MAX |
|     | -8930       | -34133      | -324         | 232        | -41369     | MIN |
| 193 | -1110       | -16146      | 11047        | 41785      | -6216      | MAX |
|     | -9582       | -33369      | -1569        | -10536     | -39111     | MIN |
| 194 | -2883       | -28928      | 460          | 1281       | 5823       | MAX |
|     | -28242      | -41840      | -228         | 108        | -20010     | MIN |
| 195 | -1178       | -16159      | 1152         | 13121      | -6175      | MAX |
|     | -10530      | -33629      | -10120       | -41475     | -39333     | MIN |
| 196 | -1101       | -15015      | 210          | 613        | -5742      | MAX |
|     | -10862      | -34643      | -119         | 41         | -41875     | MIN |

PROGETTAZIONE ATI:

| In  | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |     |
|-----|-------------|-------------|--------------|------------|------------|-----|
| 197 | -1          | 0           | 0            | 1          | 732        | MAX |
|     | -1          | 0           | 0            | 1          | 563        | MIN |
| 198 | -52         | -169        | 0            | 1          | 1463       | MAX |
|     | -67         | -220        | 0            | 0          | 1126       | MIN |
| 199 | -204        | -676        | 0            | 0          | 2926       | MAX |
|     | -265        | -878        | 0            | 0          | 2251       | MIN |
| 200 | -457        | -1520       | 0            | 0          | 4389       | MAX |
|     | -594        | -1976       | 0            | 0          | 3376       | MIN |
| 201 | -810        | -2701       | 0            | 0          | 5120       | MAX |
|     | -1054       | -3512       | 0            | 0          | 3938       | MIN |
| 202 | -810        | -2701       | 0            | 0          | 5120       | MAX |
|     | -1054       | -3512       | 0            | 0          | 3938       | MIN |
| 203 | -810        | -2701       | 0            | 0          | 5120       | MAX |
|     | -1054       | -3512       | 0            | 0          | 3938       | MIN |
| 204 | -7477       | -24923      | 52           | 0          | -17259     | MAX |
|     | -50526      | -168421     | -44          | 0          | -76911     | MIN |
| 205 | -5829       | -19167      | 76           | 132        | -14325     | MAX |
|     | -42722      | -142789     | -55          | -22        | -73912     | MIN |
| 206 | -4740       | -15333      | 173          | 241        | -8453      | MAX |
|     | -35549      | -119205     | -84          | -3         | -67873     | MIN |
| 207 | -4241       | -13466      | 587          | 387        | -2634      | MAX |
|     | -28969      | -97614      | -229         | 103        | -61755     | MIN |
| 208 | -4260       | -13440      | 2146         | 1273       | 4372       | MAX |
|     | -22869      | -77619      | -803         | 720        | -56015     | MIN |
| 209 | -5816       | -17208      | 4174         | 6435       | 2980       | MAX |
|     | -15026      | -52382      | -1563        | 1088       | -49379     | MIN |
| 210 | -1204       | -16161      | 10551        | 41594      | -6150      | MAX |
|     | -10968      | -33765      | -1369        | -11881     | -39393     | MIN |
| 211 | 2254        | -10492      | 1829         | 8714       | -12033     | MAX |
|     | -1043       | -17256      | 222          | -5809      | -29248     | MIN |
| 212 | 337         | -10227      | 162          | 4306       | -11609     | MAX |
|     | 66          | -20217      | -846         | -3183      | -39188     | MIN |
| 213 | 587         | -11904      | 2689         | 5798       | -17412     | MAX |
|     | -5589       | -15862      | 290          | -5202      | -23426     | MIN |
| 214 | 4174        | 9502        | -358         | 426        | 1248       | MAX |
|     | -4507       | -12318      | -1875        | -172       | -54126     | MIN |
| 215 | 1245        | -12358      | -1046        | 4608       | -14091     | MAX |
|     | -5136       | -17177      | -3713        | -2805      | -21156     | MIN |
| 216 | 4201        | -10969      | -115         | 1765       | -10849     | MAX |
|     | -1332       | -17329      | -477         | 632        | -26200     | MIN |
| 217 | 177         | -12570      | 3367         | 5068       | -14156     | MAX |
|     | -5466       | -17341      | 175          | -1701      | -22902     | MIN |
| 218 | 3001        | 8409        | 613          | 1997       | -1661      | MAX |
|     | -5536       | -13129      | -388         | 427        | -53497     | MIN |
| 219 | -1535       | -12666      | -896         | 5554       | -14221     | MAX |
|     | -5770       | -17484      | -3172        | -3921      | -24147     | MIN |
| 220 | 992         | -11181      | 623          | 1670       | -10971     | MAX |
|     | -1918       | -17621      | -306         | 257        | -28683     | MIN |
| 221 | -2935       | -12706      | 3503         | 4620       | -14228     | MAX |
|     | -5965       | -17573      | 331          | -2260      | -24745     | MIN |
| 222 | 237         | 8070        | 415          | 1142       | -2934      | MAX |
|     | -5931       | -13233      | -217         | 139        | -53530     | MIN |
| 223 | -3858       | -12722      | -730         | 4536       | -14212     | MAX |
|     | -6068       | -17713      | -3131        | -4237      | -24981     | MIN |
| 224 | 480         | -11217      | 195          | 570        | -10945     | MAX |
|     | -2135       | -17926      | -113         | 59         | -29204     | MIN |
| 225 | -4307       | -12728      | 3117         | 4403       | -14199     | MAX |
|     | -6111       | -17793      | 522          | -3394      | -25056     | MIN |
| 226 | -1          | 0           | 0            | 0          | 732        | MAX |
|     | -1          | 0           | 0            | 0          | 563        | MIN |
| 227 | -52         | -169        | 0            | 0          | 1463       | MAX |
|     | -67         | -220        | 0            | 0          | 1125       | MIN |
| 228 | -204        | -676        | 0            | 0          | 2926       | MAX |
|     | -265        | -878        | 0            | 0          | 2251       | MIN |
| 229 | -457        | -1520       | 0            | 0          | 4388       | MAX |
|     | -594        | -1976       | 0            | 0          | 3376       | MIN |
| 230 | -810        | -2701       | 0            | 0          | 5120       | MAX |
|     | -1053       | -3512       | 0            | 0          | 3938       | MIN |
| 231 | -810        | -2701       | 0            | 0          | 5120       | MAX |
|     | -1053       | -3512       | 0            | 0          | 3938       | MIN |
| 232 | -810        | -2701       | 0            | 0          | 5120       | MAX |
|     | -1053       | -3512       | 0            | 0          | 3938       | MIN |
| 233 | -7471       | -24904      | 0            | 0          | -17245     | MAX |
|     | -50537      | -168456     | 0            | 0          | -76869     | MIN |
| 234 | -5827       | -19147      | 0            | 0          | -14305     | MAX |
|     | -42744      | -142870     | 0            | 0          | -73854     | MIN |
| 235 | -4746       | -15282      | 0            | 0          | -8398      | MAX |
|     | -35593      | -119510     | 0            | 0          | -67717     | MIN |
| 236 | -4270       | -13228      | 0            | 0          | -2180      | MAX |
|     | -29089      | -98998      | 0            | 0          | -61196     | MIN |
| 237 | -4655       | -12759      | 0            | 0          | 5887       | MAX |
|     | -23351      | -84082      | 0            | 0          | -53197     | MIN |
| 238 | -6241       | -12244      | 0            | 0          | 40634      | MAX |
|     | -19505      | -84553      | 0            | 0          | -47689     | MIN |
| 239 | -3777       | -29197      | 0            | 0          | 5831       | MAX |
|     | -28318      | -41849      | 0            | 0          | -20154     | MIN |
| 240 | -669        | 7896        | 0            | 0          | -3105      | MAX |

PROGETTAZIONE ATI:

| In  | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |     |
|-----|-------------|-------------|--------------|------------|------------|-----|
|     | -6021       | -13248      | 0            | 0          | -53499     | MIN |
| 241 | 13          | -5019       | 1000         | 1256       | -11449     | MAX |
|     | -1127       | -7599       | 111          | -2753      | -18087     | MIN |
| 242 | -180        | -5242       | 385          | 1171       | -11082     | MAX |
|     | -459        | -10151      | -180         | -2137      | -24777     | MIN |
| 243 | 826         | -3231       | 1162         | 1848       | -11318     | MAX |
|     | -1298       | -5495       | 18           | -3004      | -18914     | MIN |
| 244 | 2610        | -915        | -229         | 1092       | -8872      | MAX |
|     | -1847       | -5931       | -1056        | -1410      | -17952     | MIN |
| 245 | 3027        | -4564       | -536         | 317        | -10802     | MAX |
|     | -1503       | -6108       | -1855        | 136        | -18136     | MIN |
| 246 | 3095        | -5641       | -95          | 803        | -11027     | MAX |
|     | -1847       | -8165       | -357         | 365        | -15014     | MIN |
| 247 | 2998        | -4802       | 1544         | 1170       | -11898     | MAX |
|     | -1870       | -6351       | -109         | 355        | -18286     | MIN |
| 248 | 3045        | -899        | 433          | 1244       | -9926      | MAX |
|     | -2447       | -6242       | -326         | 434        | -18722     | MIN |
| 249 | 1870        | -4868       | -493         | 1941       | -12810     | MAX |
|     | -2141       | -6427       | -1398        | -28        | -18394     | MIN |
| 250 | 1142        | -5787       | 475          | 1307       | -11190     | MAX |
|     | -2375       | -8311       | -266         | 301        | -16277     | MIN |
| 251 | 665         | -4895       | 1716         | 823        | -13268     | MAX |
|     | -2331       | -6468       | 2            | 479        | -18428     | MIN |
| 252 | 728         | -1011       | 327          | 984        | -10895     | MAX |
|     | -2829       | -6313       | -190         | 184        | -18802     | MIN |
| 253 | -222        | -4908       | -352         | 1354       | -13461     | MAX |
|     | -2442       | -6495       | -1356        | -329       | -18428     | MIN |
| 254 | -605        | -5814       | 155          | 513        | -11195     | MAX |
|     | -2600       | -8372       | -99          | 86         | -16698     | MIN |
| 255 | -674        | -4912       | 1389         | 562        | -13529     | MAX |
|     | -2490       | -6508       | 169          | -337       | -18423     | MIN |
| 256 | -174        | -1099       | 0            | 0          | -11044     | MAX |
|     | -2929       | -6326       | 0            | 0          | -18793     | MIN |
| 257 | -1          | 0           | 0            | -1         | 732        | MAX |
|     | -1          | 0           | 0            | -1         | 563        | MIN |
| 258 | -52         | -169        | 0            | 0          | 1463       | MAX |
|     | -67         | -220        | 0            | -1         | 1126       | MIN |
| 259 | -204        | -676        | 0            | 0          | 2926       | MAX |
|     | -265        | -878        | 0            | 0          | 2251       | MIN |
| 260 | -457        | -1520       | 0            | 0          | 4389       | MAX |
|     | -594        | -1976       | 0            | 0          | 3376       | MIN |
| 261 | -810        | -2701       | 0            | 0          | 5120       | MAX |
|     | -1054       | -3512       | 0            | 0          | 3938       | MIN |
| 262 | -810        | -2701       | 0            | 0          | 5120       | MAX |
|     | -1054       | -3512       | 0            | 0          | 3938       | MIN |
| 263 | -810        | -2701       | 0            | 0          | 5120       | MAX |
|     | -1054       | -3512       | 0            | 0          | 3938       | MIN |
| 264 | -7477       | -24923      | 44           | 0          | -17259     | MAX |
|     | -50526      | -168421     | -52          | 0          | -76911     | MIN |
| 265 | -5829       | -19167      | 55           | 22         | -14325     | MAX |
|     | -42722      | -142789     | -76          | -132       | -73912     | MIN |
| 266 | -4740       | -15333      | 84           | 3          | -8453      | MAX |
|     | -35549      | -119205     | -173         | -241       | -67873     | MIN |
| 267 | -4241       | -13466      | 229          | -103       | -2634      | MAX |
|     | -28969      | -97614      | -587         | -387       | -61755     | MIN |
| 268 | -4260       | -13440      | 803          | -720       | 4372       | MAX |
|     | -22869      | -77619      | -2146        | -1273      | -56015     | MIN |
| 269 | -5816       | -17208      | 1563         | -1088      | 2980       | MAX |
|     | -15026      | -52382      | -4174        | -6435      | -49379     | MIN |
| 270 | -1204       | -16161      | 1369         | 11881      | -6150      | MAX |
|     | -10968      | -33765      | -10551       | -41594     | -39393     | MIN |
| 271 | -4307       | -12728      | -522         | 3394       | -14199     | MAX |
|     | -6111       | -17793      | -3117        | -4403      | -25056     | MIN |
| 272 | -674        | -4912       | -169         | 337        | -13529     | MAX |
|     | -2490       | -6508       | -1389        | -562       | -18423     | MIN |
| 273 | 302         | -1195       | 353          | 348        | -6270      | MAX |
|     | -207        | -1690       | -22          | -1800      | -8744      | MIN |
| 274 | 1           | -1416       | 49           | 113        | -6517      | MAX |
|     | -395        | -3151       | -151         | -1056      | -12018     | MIN |
| 275 | 1176        | -749        | 275          | 547        | -6318      | MAX |
|     | -172        | -1452       | -89          | -2571      | -8302      | MIN |
| 276 | 2185        | -497        | -88          | 597        | -5218      | MAX |
|     | -172        | -1345       | -392         | -2242      | -8804      | MIN |
| 277 | 3191        | -1159       | -185         | 654        | -5513      | MAX |
|     | -328        | -1584       | -466         | -1404      | -8402      | MIN |
| 278 | 3644        | -1274       | -35          | 748        | -6073      | MAX |
|     | -407        | -1856       | -211         | -594       | -8486      | MIN |
| 279 | 3765        | -1254       | 378          | 810        | -5990      | MAX |
|     | -593        | -1656       | -175         | 53         | -8599      | MIN |
| 280 | 3556        | -613        | 241          | 720        | -5747      | MAX |
|     | -705        | -1533       | -208         | 491        | -9073      | MIN |
| 281 | 3029        | -1208       | 38           | 965        | -6472      | MAX |
|     | -838        | -1692       | -291         | 436        | -8680      | MIN |
| 282 | 2421        | -1340       | 272          | 966        | -6605      | MAX |
|     | -893        | -1815       | -173         | 421        | -8718      | MIN |
| 283 | 1960        | -1202       | 478          | 845        | -6632      | MAX |
|     | -1021       | -1707       | -111         | 399        | -8724      | MIN |

PROGETTAZIONE ATI:

| In  | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |     |
|-----|-------------|-------------|--------------|------------|------------|-----|
| 284 | 1550        | -595        | 189          | 810        | -6263      | MAX |
|     | -1070       | -1566       | -124         | 281        | -9141      | MIN |
| 285 | 1104        | -1220       | -104         | 724        | -6646      | MAX |
|     | -1133       | -1715       | -261         | 162        | -8747      | MIN |
| 286 | 753         | -1352       | 90           | 441        | -6618      | MAX |
|     | -1120       | -1843       | -65          | 139        | -8771      | MIN |
| 287 | 652         | -1236       | 286          | 158        | -6646      | MAX |
|     | -1184       | -1718       | -2           | 98         | -8754      | MIN |
| 288 | 657         | -623        | 0            | 0          | -6351      | MAX |
|     | -1174       | -1572       | 0            | 0          | -9142      | MIN |
| 289 | 652         | -1236       | 2            | -98        | -6646      | MAX |
|     | -1184       | -1718       | -286         | -158       | -8754      | MIN |
| 290 | -1          | 0           | 0            | -2         | 732        | MAX |
|     | -1          | 0           | 0            | -2         | 563        | MIN |
| 291 | -52         | -169        | 0            | -1         | 1463       | MAX |
|     | -67         | -220        | 0            | -1         | 1126       | MIN |
| 292 | -204        | -676        | 0            | 0          | 2927       | MAX |
|     | -265        | -878        | -1           | -1         | 2251       | MIN |
| 293 | -457        | -1520       | -1           | 0          | 4389       | MAX |
|     | -594        | -1976       | -1           | 0          | 3376       | MIN |
| 294 | -811        | -2702       | -1           | 0          | 5121       | MAX |
|     | -1054       | -3512       | -1           | 0          | 3939       | MIN |
| 295 | -811        | -2702       | -1           | 0          | 5121       | MAX |
|     | -1054       | -3512       | -1           | 0          | 3939       | MIN |
| 296 | -811        | -2702       | -1           | 0          | 5121       | MAX |
|     | -1054       | -3512       | -1           | 0          | 3939       | MIN |
| 297 | -7491       | -24971      | 84           | 0          | -17296     | MAX |
|     | -50510      | -168365     | -101         | 0          | -77020     | MIN |
| 298 | -5836       | -19209      | 96           | 47         | -14366     | MAX |
|     | -42661      | -142666     | -116         | -265       | -74031     | MIN |
| 299 | -4739       | -15402      | 100          | 43         | -8545      | MAX |
|     | -35446      | -118862     | -132         | -447       | -68065     | MIN |
| 300 | -4188       | -13668      | 109          | 20         | -2918      | MAX |
|     | -28833      | -96376      | -160         | -560       | -62356     | MIN |
| 301 | -4085       | -14489      | 115          | -4         | 365        | MAX |
|     | -22921      | -73341      | -187         | -616       | -57203     | MIN |
| 302 | -2059       | -15441      | 119          | -24        | -575       | MAX |
|     | -21039      | -53675      | -206         | -630       | -51279     | MIN |
| 303 | -1101       | -15015      | 119          | -41        | -5742      | MAX |
|     | -10862      | -34643      | -210         | -613       | -41875     | MIN |
| 304 | 480         | -11217      | 113          | -59        | -10945     | MAX |
|     | -2135       | -17926      | -195         | -570       | -29204     | MIN |
| 305 | -605        | -5814       | 99           | -86        | -11195     | MAX |
|     | -2600       | -8372       | -155         | -513       | -16698     | MIN |
| 306 | 753         | -1352       | 65           | -139       | -6618      | MAX |
|     | -1120       | -1843       | -90          | -441       | -8771      | MIN |
| 307 | 186         | -57         | 129          | -71        | -3126      | MAX |
|     | -59         | -148        | -29          | -2819      | -4429      | MIN |
| 308 | -2          | -59         | 35           | -103       | -3499      | MAX |
|     | -173        | -383        | -81          | -1892      | -6226      | MIN |
| 309 | 884         | 91          | 147          | 182        | -3189      | MAX |
|     | 7           | -21         | -45          | -3810      | -4190      | MIN |
| 310 | 1851        | 158         | 8            | 535        | -2724      | MAX |
|     | 36          | -5          | -88          | -3439      | -4151      | MIN |
| 311 | 3007        | 5           | -91          | 831        | -2693      | MAX |
|     | 10          | -143        | -121         | -2422      | -4263      | MIN |
| 312 | 3742        | -24         | 26           | 1065       | -2931      | MAX |
|     | -47         | -246        | -130         | -1372      | -4211      | MIN |
| 313 | 3940        | 0           | 140          | 1167       | -2948      | MAX |
|     | -121        | -75         | -127         | -548       | -4365      | MIN |
| 314 | 3750        | 102         | 116          | 1147       | -2988      | MAX |
|     | -230        | -2          | -134         | 76         | -4386      | MIN |
| 315 | 3345        | 0           | 67           | 1062       | -3196      | MAX |
|     | -314        | -11         | -135         | 459        | -4418      | MIN |
| 316 | 2844        | -20         | 120          | 962        | -3304      | MAX |
|     | -403        | -128        | -112         | 577        | -4348      | MIN |
| 317 | 2311        | 12          | 163          | 837        | -3320      | MAX |
|     | -476        | 0           | -87          | 574        | -4439      | MIN |
| 318 | 1838        | 154         | 80           | 680        | -3251      | MAX |
|     | -547        | -2          | -80          | 510        | -4432      | MIN |
| 319 | 1468        | 14          | -4           | 519        | -3378      | MAX |
|     | -579        | -1          | -81          | 375        | -4444      | MIN |
| 320 | 1205        | -21         | 36           | 352        | -3315      | MAX |
|     | -612        | -127        | -41          | 258        | -4380      | MIN |
| 321 | 1024        | 12          | 78           | 184        | -3390      | MAX |
|     | -627        | -2          | -15          | 119        | -4447      | MIN |
| 322 | 959         | 151         | 0            | 0          | -3300      | MAX |
|     | -645        | -3          | 0            | 0          | -4435      | MIN |
| 323 | 1024        | 12          | 15           | -119       | -3390      | MAX |
|     | -627        | -2          | -78          | -184       | -4447      | MIN |
| 324 | 1205        | -21         | 41           | -258       | -3315      | MAX |
|     | -612        | -127        | -36          | -352       | -4380      | MIN |
| 325 | -1          | 0           | 0            | -3         | 732        | MAX |
|     | -1          | 0           | 0            | -4         | 563        | MIN |
| 326 | -52         | -169        | 0            | -2         | 1464       | MAX |
|     | -67         | -220        | -1           | -3         | 1126       | MIN |
| 327 | -204        | -676        | -1           | -1         | 2928       | MAX |

PROGETTAZIONE ATI:

| In  | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |     |  |
|-----|-------------|-------------|--------------|------------|------------|-----|--|
|     | -265        | -879        | -1           | -1         | 2252       | MIN |  |
| 328 | -457        | -1521       | -1           | 0          | 4391       | MAX |  |
|     | -594        | -1977       | -1           | 0          | 3377       | MIN |  |
| 329 | -811        | -2703       | -1           | 0          | 5122       | MAX |  |
|     | -1054       | -3513       | -1           | 0          | 3940       | MIN |  |
| 330 | -811        | -2703       | -1           | 0          | 5122       | MAX |  |
|     | -1054       | -3513       | -1           | 0          | 3940       | MIN |  |
| 331 | -811        | -2703       | -1           | 0          | 5122       | MAX |  |
|     | -1054       | -3513       | -1           | 0          | 3940       | MIN |  |
| 332 | -7512       | -25040      | 122          | 0          | -17352     | MAX |  |
|     | -50498      | -168326     | -173         | 0          | -77177     | MIN |  |
| 333 | -5849       | -19253      | 136          | 68         | -14415     | MAX |  |
|     | -42556      | -142607     | -181         | -426       | -74154     | MIN |  |
| 334 | -4749       | -15392      | 116          | 77         | -8535      | MAX |  |
|     | -35291      | -118994     | -114         | -693       | -68054     | MIN |  |
| 335 | -4238       | -13502      | 290          | 161        | -2702      | MAX |  |
|     | -28640      | -97395      | -30          | -775       | -61862     | MIN |  |
| 336 | -4248       | -13458      | 1754         | 990        | 4302       | MAX |  |
|     | -22488      | -77413      | -592         | -534       | -56050     | MIN |  |
| 337 | -5797       | -17213      | 3748         | 6114       | 2929       | MAX |  |
|     | -14609      | -52205      | -1346        | -198       | -49357     | MIN |  |
| 338 | -1178       | -16159      | 10120        | 41475      | -6175      | MAX |  |
|     | -10530      | -33629      | -1152        | -13121     | -39333     | MIN |  |
| 339 | -3858       | -12722      | 3131         | 4237       | -14212     | MAX |  |
|     | -6068       | -17713      | 730          | -4536      | -24981     | MIN |  |
| 340 | -222        | -4908       | 1356         | 329        | -13461     | MAX |  |
|     | -2442       | -6495       | 352          | -1354      | -18428     | MIN |  |
| 341 | 1104        | -1220       | 261          | -162       | -6646      | MAX |  |
|     | -1133       | -1715       | 104          | -724       | -8747      | MIN |  |
| 342 | 1468        | 14          | 81           | -375       | -3378      | MAX |  |
|     | -579        | -1          | 4            | -519       | -4444      | MIN |  |
| 343 | 0           | 0           | 0            | -5         | 733        | MAX |  |
|     | 0           | 0           | -1           | -7         | 564        | MIN |  |
| 344 | -51         | -169        | -1           | -4         | 1465       | MAX |  |
|     | -67         | -220        | -1           | -5         | 1127       | MIN |  |
| 345 | -203        | -676        | -1           | -2         | 2929       | MAX |  |
|     | -265        | -879        | -1           | -2         | 2253       | MIN |  |
| 346 | -457        | -1521       | -1           | -1         | 4392       | MAX |  |
|     | -594        | -1978       | -2           | -1         | 3379       | MIN |  |
| 347 | -811        | -2704       | -1           | 0          | 5124       | MAX |  |
|     | -1055       | -3515       | -1           | 0          | 3942       | MIN |  |
| 348 | -811        | -2704       | -1           | 0          | 5124       | MAX |  |
|     | -1055       | -3515       | -1           | 0          | 3942       | MIN |  |
| 349 | -811        | -2704       | -1           | 0          | 5124       | MAX |  |
|     | -1055       | -3515       | -1           | 0          | 3942       | MIN |  |
| 350 | -7541       | -25138      | 161          | 0          | -17437     | MAX |  |
|     | -50471      | -168237     | -295         | 0          | -77396     | MIN |  |
| 351 | -5865       | -19316      | 185          | 74         | -14490     | MAX |  |
|     | -42387      | -142478     | -333         | -648       | -74331     | MIN |  |
| 352 | -4758       | -15397      | 194          | 52         | -8563      | MAX |  |
|     | -35044      | -119068     | -356         | -1061      | -68066     | MIN |  |
| 353 | -4260       | -13297      | 210          | 2          | -2318      | MAX |  |
|     | -28396      | -98547      | -401         | -1291      | -61390     | MIN |  |
| 354 | -4627       | -12792      | 223          | -42        | 5748       | MAX |  |
|     | -22556      | -83664      | -444         | -1379      | -53243     | MIN |  |
| 355 | -6198       | -12252      | 229          | -79        | 40535      | MAX |  |
|     | -18645      | -84200      | -467         | -1364      | -47620     | MIN |  |
| 356 | -2883       | -28928      | 228          | -108       | 5823       | MAX |  |
|     | -28242      | -41840      | -460         | -1281      | -20010     | MIN |  |
| 357 | 237         | 8070        | 217          | -139       | -2934      | MAX |  |
|     | -5931       | -13233      | -415         | -1142      | -53530     | MIN |  |
| 358 | 728         | -1011       | 190          | -184       | -10895     | MAX |  |
|     | -2829       | -6313       | -327         | -984       | -18802     | MIN |  |
| 359 | 1550        | -595        | 124          | -281       | -6263      | MAX |  |
|     | -1070       | -1566       | -189         | -810       | -9141      | MIN |  |
| 360 | 1838        | 154         | 80           | -510       | -3251      | MAX |  |
|     | -547        | -2          | -80          | -680       | -4432      | MIN |  |
| 361 | 1           | 0           | -1           | -9         | 733        | MAX |  |
|     | 1           | 0           | -1           | -11        | 564        | MIN |  |
| 362 | -50         | -169        | -1           | -6         | 1466       | MAX |  |
|     | -65         | -220        | -1           | -8         | 1128       | MIN |  |
| 363 | -203        | -677        | -1           | -3         | 2931       | MAX |  |
|     | -264        | -880        | -1           | -4         | 2255       | MIN |  |
| 364 | -457        | -1522       | -1           | -1         | 4395       | MAX |  |
|     | -594        | -1979       | -2           | -2         | 3381       | MIN |  |
| 365 | -812        | -2706       | -1           | 0          | 5127       | MAX |  |
|     | -1055       | -3517       | -2           | 0          | 3944       | MIN |  |
| 366 | -812        | -2706       | -1           | 0          | 5127       | MAX |  |
|     | -1055       | -3517       | -2           | 0          | 3944       | MIN |  |
| 367 | -812        | -2706       | -1           | 0          | 5127       | MAX |  |
|     | -1055       | -3517       | -2           | 0          | 3944       | MIN |  |
| 368 | -7582       | -25272      | 195          | 0          | -17558     | MAX |  |
|     | -50406      | -168019     | -477         | 0          | -77688     | MIN |  |
| 369 | -5878       | -19417      | 229          | 66         | -14612     | MAX |  |
|     | -42122      | -142131     | -546         | -940       | -74606     | MIN |  |
| 370 | -4747       | -15500      | 267          | 7          | -8708      | MAX |  |
|     | -34638      | -118492     | -650         | -1527      | -68362     | MIN |  |

PROGETTAZIONE ATI:



| In  | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |     |
|-----|-------------|-------------|--------------|------------|------------|-----|
| 371 | -4212       | -13563      | 413          | -145       | -2843      | MAX |
|     | -27835      | -96907      | -1092        | -1906      | -61993     | MIN |
| 372 | -4203       | -13483      | 998          | -807       | 4165       | MAX |
|     | -21589      | -76978      | -2672        | -2305      | -56021     | MIN |
| 373 | -5739       | -17214      | 1765         | -2584      | 2837       | MAX |
|     | -13666      | -51852      | -4699        | -6867      | -49205     | MIN |
| 374 | -1110       | -16146      | 1569         | 10536      | -6216      | MAX |
|     | -9582       | -33369      | -11047       | -41785     | -39111     | MIN |
| 375 | -2935       | -12706      | -331         | 2260       | -14228     | MAX |
|     | -5965       | -17573      | -3503        | -4620      | -24745     | MIN |
| 376 | 665         | -4895       | -2           | -479       | -13268     | MAX |
|     | -2331       | -6468       | -1716        | -823       | -18428     | MIN |
| 377 | 1960        | -1202       | 111          | -399       | -6632      | MAX |
|     | -1021       | -1707       | -478         | -845       | -8724      | MIN |
| 378 | 2311        | 12          | 87           | -574       | -3320      | MAX |
|     | -476        | 0           | -163         | -837       | -4439      | MIN |
| 379 | 5           | 0           | -1           | -14        | 734        | MAX |
|     | 3           | 0           | -1           | -18        | 565        | MIN |
| 380 | -48         | -169        | -1           | -10        | 1468       | MAX |
|     | -63         | -220        | -1           | -12        | 1129       | MIN |
| 381 | -201        | -677        | -1           | -6         | 2934       | MAX |
|     | -262        | -881        | -1           | -8         | 2257       | MIN |
| 382 | -456        | -1523       | -1           | -3         | 4399       | MAX |
|     | -593        | -1980       | -2           | -3         | 3384       | MIN |
| 383 | -812        | -2708       | -1           | 0          | 5131       | MAX |
|     | -1056       | -3520       | -1           | 0          | 3947       | MIN |
| 384 | -812        | -2708       | -1           | 0          | 5131       | MAX |
|     | -1056       | -3520       | -1           | 0          | 3947       | MIN |
| 385 | -812        | -2708       | -1           | 0          | 5131       | MAX |
|     | -1056       | -3520       | -1           | 0          | 3947       | MIN |
| 386 | -7630       | -25434      | 214          | 0          | -17715     | MAX |
|     | -50304      | -167681     | -734         | 0          | -78020     | MIN |
| 387 | -5885       | -19531      | 251          | 45         | -14767     | MAX |
|     | -41724      | -141649     | -804         | -1321      | -74908     | MIN |
| 388 | -4721       | -15613      | 268          | -17        | -8895      | MAX |
|     | -34049      | -117817     | -793         | -2079      | -68638     | MIN |
| 389 | -4119       | -13784      | 297          | -93        | -3200      | MAX |
|     | -27127      | -95380      | -811         | -2422      | -62564     | MIN |
| 390 | -3981       | -14533      | 318          | -159       | 158        | MAX |
|     | -21037      | -72468      | -816         | -2467      | -57079     | MIN |
| 391 | -1930       | -15438      | 327          | -204       | -712       | MAX |
|     | -19089      | -52973      | -791         | -2311      | -50910     | MIN |
| 392 | -955        | -14987      | 324          | -232       | -5816      | MAX |
|     | -8930       | -34133      | -729         | -2037      | -41369     | MIN |
| 393 | 992         | -11181      | 306          | -257       | -10971     | MAX |
|     | -1918       | -17621      | -623         | -1670      | -28683     | MIN |
| 394 | 1142        | -5787       | 266          | -301       | -11190     | MAX |
|     | -2375       | -8311       | -475         | -1307      | -16277     | MIN |
| 395 | 2421        | -1340       | 173          | -421       | -6605      | MAX |
|     | -893        | -1815       | -272         | -966       | -8718      | MIN |
| 396 | 2844        | -20         | 112          | -577       | -3304      | MAX |
|     | -403        | -128        | -120         | -962       | -4348      | MIN |
| 397 | 10          | 0           | -1           | -20        | 735        | MAX |
|     | 8           | 0           | -1           | -27        | 566        | MIN |
| 398 | -44         | -169        | -1           | -15        | 1470       | MAX |
|     | -58         | -220        | -1           | -19        | 1131       | MIN |
| 399 | -198        | -678        | -1           | -10        | 2938       | MAX |
|     | -258        | -881        | -1           | -13        | 2260       | MIN |
| 400 | -455        | -1525       | 0            | -5         | 4405       | MAX |
|     | -591        | -1982       | -1           | -6         | 3388       | MIN |
| 401 | -813        | -2710       | 0            | 0          | 5137       | MAX |
|     | -1057       | -3523       | 0            | 0          | 3952       | MIN |
| 402 | -813        | -2710       | 0            | 0          | 5137       | MAX |
|     | -1057       | -3523       | 0            | 0          | 3952       | MIN |
| 403 | -813        | -2710       | 0            | 0          | 5137       | MAX |
|     | -1057       | -3523       | 0            | 0          | 3952       | MIN |
| 404 | -7683       | -25611      | 217          | 0          | -17909     | MAX |
|     | -50163      | -167211     | -1127        | 0          | -78345     | MIN |
| 405 | -5878       | -19637      | 255          | -1         | -14943     | MAX |
|     | -41133      | -141097     | -1198        | -1846      | -75146     | MIN |
| 406 | -4677       | -15635      | 259          | -78        | -8988      | MAX |
|     | -33207      | -117537     | -1038        | -2823      | -68616     | MIN |
| 407 | -4098       | -13627      | 242          | -81        | -3055      | MAX |
|     | -26150      | -96074      | -591         | -3121      | -61918     | MIN |
| 408 | -4065       | -13494      | 1030         | 561        | 3981       | MAX |
|     | -19816      | -76303      | -419         | -2764      | -55662     | MIN |
| 409 | -5592       | -17190      | 3133         | 5600       | 2734       | MAX |
|     | -11936      | -51350      | -1164        | -2112      | -48655     | MIN |
| 410 | -963        | -16106      | 9629         | 41136      | -6246      | MAX |
|     | -7982       | -33028      | -973         | -14623     | -38479     | MIN |
| 411 | -1535       | -12666      | 3172         | 3921       | -14221     | MAX |
|     | -5770       | -17484      | 896          | -5554      | -24147     | MIN |
| 412 | 1870        | -4868       | 1398         | 28         | -12810     | MAX |
|     | -2141       | -6427       | 493          | -1941      | -18394     | MIN |
| 413 | 3029        | -1208       | 291          | -436       | -6472      | MAX |
|     | -838        | -1692       | -38          | -965       | -8680      | MIN |
| 414 | 3345        | 0           | 135          | -459       | -3196      | MAX |

PROGETTAZIONE ATI:



| In  | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |     |
|-----|-------------|-------------|--------------|------------|------------|-----|
|     | -314        | -11         | -67          | -1062      | -4418      | MIN |
| 415 | 19          | 1           | -1           | -30        | 737        | MAX |
|     | 15          | 0           | -1           | -39        | 567        | MIN |
| 416 | -38         | -170        | 0            | -22        | 1473       | MAX |
|     | -49         | -220        | 0            | -29        | 1133       | MIN |
| 417 | -193        | -678        | 0            | -15        | 2943       | MAX |
|     | -251        | -882        | 0            | -20        | 2264       | MIN |
| 418 | -452        | -1525       | 2            | -8         | 4411       | MAX |
|     | -587        | -1983       | 1            | -10        | 3393       | MIN |
| 419 | -814        | -2713       | 2            | 0          | 5144       | MAX |
|     | -1058       | -3527       | 2            | 0          | 3957       | MIN |
| 420 | -814        | -2713       | 2            | 0          | 5144       | MAX |
|     | -1058       | -3527       | 2            | 0          | 3957       | MIN |
| 421 | -814        | -2713       | 2            | 0          | 5144       | MAX |
|     | -1058       | -3527       | 2            | 0          | 3957       | MIN |
| 422 | -7742       | -25806      | 192          | 0          | -18147     | MAX |
|     | -49940      | -166468     | -1740        | 0          | -78613     | MIN |
| 423 | -5836       | -19743      | 244          | -81        | -15158     | MAX |
|     | -40239      | -140286     | -1843        | -2585      | -75305     | MIN |
| 424 | -4581       | -15658      | 297          | -226       | -9123      | MAX |
|     | -31956      | -117099     | -1647        | -3880      | -68451     | MIN |
| 425 | -3994       | -13418      | 363          | -349       | -2737      | MAX |
|     | -24798      | -96873      | -1459        | -4284      | -61103     | MIN |
| 426 | -4321       | -12807      | 411          | -423       | 5393       | MAX |
|     | -18821      | -82336      | -1250        | -4093      | -52388     | MIN |
| 427 | -5883       | -12183      | 431          | -450       | 40343      | MAX |
|     | -15067      | -83227      | -1029        | -3546      | -46394     | MIN |
| 428 | 359         | -28272      | 422          | -445       | 6100       | MAX |
|     | -27830      | -41724      | -817         | -2833      | -18643     | MIN |
| 429 | 3001        | 8409        | 388          | -427       | -1661      | MAX |
|     | -5536       | -13129      | -613         | -1997      | -53497     | MIN |
| 430 | 3045        | -899        | 326          | -434       | -9926      | MAX |
|     | -2447       | -6242       | -433         | -1244      | -18722     | MIN |
| 431 | 3556        | -613        | 208          | -491       | -5747      | MAX |
|     | -705        | -1533       | -241         | -720       | -9073      | MIN |
| 432 | 3750        | 102         | 134          | -76        | -2988      | MAX |
|     | -230        | -2          | -116         | -1147      | -4386      | MIN |
| 433 | 34          | 1           | -1           | -41        | 738        | MAX |
|     | 26          | 1           | -1           | -54        | 568        | MIN |
| 434 | -28         | -170        | 1            | -31        | 1475       | MAX |
|     | -36         | -220        | 1            | -41        | 1135       | MIN |
| 435 | -185        | -678        | 3            | -23        | 2948       | MAX |
|     | -240        | -882        | 2            | -30        | 2267       | MIN |
| 436 | -446        | -1526       | 6            | -13        | 4417       | MAX |
|     | -580        | -1983       | 5            | -16        | 3398       | MIN |
| 437 | -814        | -2715       | 7            | 0          | 5151       | MAX |
|     | -1059       | -3529       | 5            | 0          | 3963       | MIN |
| 438 | -814        | -2715       | 7            | 0          | 5151       | MAX |
|     | -1059       | -3529       | 5            | 0          | 3963       | MIN |
| 439 | -814        | -2715       | 7            | 0          | 5151       | MAX |
|     | -1059       | -3529       | 5            | 0          | 3963       | MIN |
| 440 | -7805       | -26017      | 111          | 0          | -18433     | MAX |
|     | -49579      | -165264     | -2674        | 0          | -78711     | MIN |
| 441 | -5732       | -19859      | 183          | -211       | -15427     | MAX |
|     | -38876      | -138990     | -2798        | -3585      | -75304     | MIN |
| 442 | -4380       | -15760      | 310          | -443       | -9369      | MAX |
|     | -30052      | -115904     | -2448        | -5262      | -68286     | MIN |
| 443 | -3739       | -13666      | 550          | -689       | -3311      | MAX |
|     | -22626      | -94875      | -2387        | -5724      | -61067     | MIN |
| 444 | -3708       | -13462      | 1180         | -1356      | 3807       | MAX |
|     | -16406      | -75487      | -3451        | -5587      | -54418     | MIN |
| 445 | -5274       | -17111      | 1971         | -5025      | 2681       | MAX |
|     | -8955       | -50827      | -5053        | -7938      | -47213     | MIN |
| 446 | -692        | -16004      | 1762         | 9012       | -6224      | MAX |
|     | -5580       | -32706      | -11080       | -42339     | -37044     | MIN |
| 447 | 177         | -12570      | -175         | 1701       | -14156     | MAX |
|     | -5466       | -17341      | -3367        | -5068      | -22902     | MIN |
| 448 | 2998        | -4802       | 109          | -355       | -11898     | MAX |
|     | -1870       | -6351       | -1544        | -1170      | -18286     | MIN |
| 449 | 3765        | -1254       | 175          | -53        | -5990      | MAX |
|     | -593        | -1656       | -378         | -810       | -8599      | MIN |
| 450 | 3940        | 0           | 127          | 548        | -2948      | MAX |
|     | -121        | -75         | -140         | -1167      | -4365      | MIN |
| 451 | 54          | 0           | -1           | -54        | 738        | MAX |
|     | 41          | 0           | -1           | -70        | 568        | MIN |
| 452 | -13         | -170        | 1            | -41        | 1476       | MAX |
|     | -17         | -221        | 1            | -54        | 1135       | MIN |
| 453 | -170        | -679        | 7            | -33        | 2950       | MAX |
|     | -220        | -882        | 5            | -43        | 2269       | MIN |
| 454 | -436        | -1525       | 14           | -20        | 4422       | MAX |
|     | -566        | -1982       | 11           | -26        | 3401       | MIN |
| 455 | -815        | -2716       | 16           | 0          | 5157       | MAX |
|     | -1059       | -3531       | 12           | 0          | 3967       | MIN |
| 456 | -815        | -2716       | 16           | 0          | 5157       | MAX |
|     | -1059       | -3531       | 12           | 0          | 3967       | MIN |
| 457 | -815        | -2716       | 16           | 0          | 5157       | MAX |
|     | -1059       | -3531       | 12           | 0          | 3967       | MIN |

PROGETTAZIONE ATI:

| In  | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |     |
|-----|-------------|-------------|--------------|------------|------------|-----|
| 458 | -7864       | -26213      | -40          | 0          | -18742     | MAX |
|     | -49032      | -163438     | -4092        | 0          | -78344     | MIN |
| 459 | -5514       | -19945      | 30           | -405       | -15710     | MAX |
|     | -36790      | -137198     | -4169        | -4884      | -74828     | MIN |
| 460 | -4027       | -15853      | 224          | -712       | -9636      | MAX |
|     | -27195      | -114500     | -3278        | -6947      | -67621     | MIN |
| 461 | -3309       | -13853      | 436          | -876       | -3690      | MAX |
|     | -19595      | -93066      | -2313        | -7210      | -60558     | MIN |
| 462 | -3221       | -14465      | 576          | -948       | -100       | MAX |
|     | -13820      | -70899      | -1391        | -6346      | -54363     | MIN |
| 463 | -1076       | -15262      | 613          | -822       | -787       | MAX |
|     | -13042      | -52019      | -614         | -4897      | -47890     | MIN |
| 464 | -424        | -14767      | 577          | -761       | -5770      | MAX |
|     | -4157       | -33520      | -197         | -3357      | -38442     | MIN |
| 465 | 4201        | -10969      | 477          | -632       | -10849     | MAX |
|     | -1332       | -17329      | 115          | -1765      | -26200     | MIN |
| 466 | 3095        | -5641       | 357          | -365       | -11027     | MAX |
|     | -1847       | -8165       | 95           | -803       | -15014     | MIN |
| 467 | 3644        | -1274       | 211          | 594        | -6073      | MAX |
|     | -407        | -1856       | 35           | -748       | -8486      | MIN |
| 468 | 3742        | -24         | 130          | 1372       | -2931      | MAX |
|     | -47         | -246        | -26          | -1065      | -4211      | MIN |
| 469 | 72          | -2          | -2           | -60        | 735        | MAX |
|     | 56          | -3          | -3           | -78        | 565        | MIN |
| 470 | 9           | -172        | 0            | -49        | 1470       | MAX |
|     | 7           | -223        | 0            | -64        | 1131       | MIN |
| 471 | -144        | -679        | 11           | -46        | 2944       | MAX |
|     | -187        | -882        | 8            | -60        | 2264       | MIN |
| 472 | -414        | -1521       | 28           | -33        | 4420       | MAX |
|     | -538        | -1977       | 21           | -43        | 3400       | MIN |
| 473 | -814        | -2715       | 33           | 0          | 5157       | MAX |
|     | -1059       | -3529       | 26           | 0          | 3967       | MIN |
| 474 | -814        | -2715       | 33           | 0          | 5157       | MAX |
|     | -1059       | -3529       | 26           | 0          | 3967       | MIN |
| 475 | -814        | -2715       | 33           | 0          | 5157       | MAX |
|     | -1059       | -3529       | 26           | 0          | 3967       | MIN |
| 476 | -7903       | -26342      | -300         | 0          | -19007     | MAX |
|     | -48221      | -160735     | -6296        | 0          | -76911     | MIN |
| 477 | -5098       | -19950      | -194         | -682       | -15938     | MAX |
|     | -33547      | -134863     | -6210        | -6464      | -73292     | MIN |
| 478 | -3435       | -15835      | 93           | -1063      | -9740      | MAX |
|     | -22884      | -113408     | -4364        | -8898      | -65834     | MIN |
| 479 | -2784       | -13671      | 354          | -1124      | -3571      | MAX |
|     | -15331      | -93564      | -2159        | -8800      | -58244     | MIN |
| 480 | -2886       | -13312      | 1132         | -500       | 3752       | MAX |
|     | -10112      | -75018      | -52          | -7093      | -51450     | MIN |
| 481 | -4012       | -16942      | 4025         | 4049       | 2739       | MAX |
|     | -6189       | -50426      | -766         | -4495      | -44419     | MIN |
| 482 | -299        | -15755      | 11501        | 41205      | -6183      | MAX |
|     | -2568       | -32460      | -738         | -15685     | -34736     | MIN |
| 483 | 1245        | -12358      | 3713         | 2805       | -14091     | MAX |
|     | -5136       | -17177      | 1046         | -4608      | -21156     | MIN |
| 484 | 3027        | -4564       | 1855         | -136       | -10802     | MAX |
|     | -1503       | -6108       | 536          | -317       | -18136     | MIN |
| 485 | 3191        | -1159       | 466          | 1404       | -5513      | MAX |
|     | -328        | -1584       | 185          | -654       | -8402      | MIN |
| 486 | 3007        | 5           | 121          | 2422       | -2693      | MAX |
|     | 10          | -143        | 91           | -831       | -4263      | MIN |
| 487 | 75          | -9          | -6           | -50        | 723        | MAX |
|     | 58          | -11         | -8           | -66        | 556        | MIN |
| 488 | 37          | -176        | -6           | -49        | 1451       | MAX |
|     | 29          | -228        | -8           | -64        | 1117       | MIN |
| 489 | -102        | -680        | 12           | -62        | 2920       | MAX |
|     | -132        | -884        | 9            | -80        | 2246       | MIN |
| 490 | -370        | -1513       | 51           | -52        | 4401       | MAX |
|     | -482        | -1967       | 40           | -68        | 3386       | MIN |
| 491 | -813        | -2709       | 67           | 0          | 5143       | MAX |
|     | -1057       | -3522       | 52           | 0          | 3956       | MIN |
| 492 | -813        | -2709       | 67           | 0          | 5143       | MAX |
|     | -1057       | -3522       | 52           | 0          | 3956       | MIN |
| 493 | -813        | -2709       | 67           | 0          | 5143       | MAX |
|     | -1057       | -3522       | 52           | 0          | 3956       | MIN |
| 494 | -7903       | -26343      | -778         | 0          | -19071     | MAX |
|     | -47040      | -156801     | -9784        | 0          | -73117     | MIN |
| 495 | -4377       | -19864      | -573         | -1001      | -15986     | MAX |
|     | -28593      | -131855     | -9180        | -7961      | -69608     | MIN |
| 496 | -2525       | -15815      | 1            | -1443      | -9764      | MAX |
|     | -16691      | -112275     | -5751        | -10633     | -62413     | MIN |
| 497 | -2028       | -13435      | 647          | -1525      | -3181      | MAX |
|     | -9804       | -94246      | -2559        | -10169     | -55047     | MIN |
| 498 | -2797       | -12665      | 950          | -1534      | 5476       | MAX |
|     | -6037       | -80736      | -285         | -8053      | -46668     | MIN |
| 499 | -4593       | -11149      | 1218         | -460       | 41085      | MAX |
|     | -7774       | -83753      | 787          | -5869      | -41533     | MIN |
| 500 | 6037        | -27804      | 972          | -981       | 7555       | MAX |
|     | -27139      | -41499      | -265         | -7350      | -14285     | MIN |
| 501 | 4174        | 9502        | 1875         | 172        | 1248       | MAX |

PROGETTAZIONE ATI:

| In  | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |     |
|-----|-------------|-------------|--------------|------------|------------|-----|
|     | -4507       | -12318      | 358          | -426       | -54126     | MIN |
| 502 | 2610        | -915        | 1056         | 1410       | -8872      | MAX |
|     | -1847       | -5931       | 229          | -1092      | -17952     | MIN |
| 503 | 2185        | -497        | 392          | 2242       | -5218      | MAX |
|     | -172        | -1345       | 88           | -597       | -8804      | MIN |
| 504 | 1851        | 158         | 88           | 3439       | -2724      | MAX |
|     | 36          | -5          | -8           | -535       | -4151      | MIN |
| 505 | 51          | -11         | -11          | -18        | 705        | MAX |
|     | 39          | -15         | -14          | -24        | 542        | MIN |
| 506 | 46          | -178        | -15          | -39        | 1426       | MAX |
|     | 35          | -231        | -19          | -50        | 1097       | MIN |
| 507 | -47         | -678        | 1            | -75        | 2885       | MAX |
|     | -61         | -881        | 1            | -97        | 2219       | MIN |
| 508 | -291        | -1495       | 82           | -78        | 4367       | MAX |
|     | -378        | -1944       | 63           | -101       | 3359       | MIN |
| 509 | -810        | -2701       | 116          | 0          | 5111       | MAX |
|     | -1053       | -3511       | 89           | 0          | 3931       | MIN |
| 510 | -810        | -2701       | 116          | 0          | 5111       | MAX |
|     | -1053       | -3511       | 89           | 0          | 3931       | MIN |
| 511 | -810        | -2701       | 116          | 0          | 5111       | MAX |
|     | -1053       | -3511       | 89           | 0          | 3931       | MIN |
| 512 | -7860       | -26201      | -1389        | 0          | -18749     | MAX |
|     | -45903      | -153010     | -13836       | 0          | -66871     | MIN |
| 513 | -3296       | -19664      | -1011        | -1257      | -15732     | MAX |
|     | -21863      | -128937     | -11994       | -8741      | -63920     | MIN |
| 514 | -1433       | -15826      | 10           | -1653      | -9699      | MAX |
|     | -9613       | -110922     | -5909        | -11311     | -58100     | MIN |
| 515 | -1261       | -13554      | 962          | -1730      | -3740      | MAX |
|     | -5153       | -92875      | -2444        | -10103     | -52472     | MIN |
| 516 | -1934       | -12754      | 1881         | -2565      | 4321       | MAX |
|     | -2533       | -75665      | -1872        | -8148      | -47591     | MIN |
| 517 | 1532        | -16424      | 2748         | -6103      | 6832       | MAX |
|     | -6369       | -52803      | -2962        | -10264     | -42455     | MIN |
| 518 | 333         | -17162      | 2509         | 14258      | -6474      | MAX |
|     | -2679       | -31535      | -11981       | -56434     | -32279     | MIN |
| 519 | 587         | -11904      | -290         | 5202       | -17412     | MAX |
|     | -5589       | -15862      | -2689        | -5798      | -23426     | MIN |
| 520 | 826         | -3231       | -18          | 3004       | -11318     | MAX |
|     | -1298       | -5495       | -1162        | -1848      | -18914     | MIN |
| 521 | 1176        | -749        | 89           | 2571       | -6318      | MAX |
|     | -172        | -1452       | -275         | -547       | -8302      | MIN |
| 522 | 884         | 91          | 45           | 3810       | -3189      | MAX |
|     | 7           | -21         | -147         | -182       | -4190      | MIN |
| 523 | 22          | -1          | -10          | 19         | 701        | MAX |
|     | 17          | -2          | -12          | 14         | 539        | MIN |
| 524 | 39          | -158        | -19          | -19        | 1410       | MAX |
|     | 30          | -205        | -25          | -24        | 1085       | MIN |
| 525 | -19         | -678        | -6           | -59        | 2841       | MAX |
|     | -25         | -882        | -7           | -76        | 2185       | MIN |
| 526 | -117        | -1460       | 89           | -91        | 4297       | MAX |
|     | -153        | -1898       | 69           | -119       | 3305       | MIN |
| 527 | -803        | -2677       | 209          | 0          | 5030       | MAX |
|     | -1044       | -3481       | 161          | 0          | 3869       | MIN |
| 528 | -803        | -2677       | 209          | 0          | 5030       | MAX |
|     | -1044       | -3481       | 161          | 0          | 3869       | MIN |
| 529 | -803        | -2677       | 209          | 0          | 5030       | MAX |
|     | -1044       | -3481       | 161          | 0          | 3869       | MIN |
| 530 | -7778       | -25925      | -2387        | 0          | -17646     | MAX |
|     | -44889      | -149630     | -20144       | 0          | -54417     | MIN |
| 531 | -1283       | -19334      | -1046        | -1217      | -14873     | MAX |
|     | -8948       | -126334     | -10659       | -7741      | -53022     | MIN |
| 532 | -670        | -15883      | 12           | -1257      | -8340      | MAX |
|     | -4560       | -109999     | -4221        | -8421      | -50757     | MIN |
| 533 | -501        | -13508      | 863          | -1237      | -4485      | MAX |
|     | -1628       | -88864      | -1321        | -6915      | -49876     | MIN |
| 534 | -135        | -13606      | 1492         | -2000      | -875       | MAX |
|     | -1281       | -69076      | -989         | -5702      | -49563     | MIN |
| 535 | -665        | -14747      | 1839         | -3012      | -1396      | MAX |
|     | -2272       | -50640      | -1295        | -10342     | -47202     | MIN |
| 536 | 57          | -14286      | 704          | 3205       | -6856      | MAX |
|     | -118        | -32906      | -364         | -14942     | -40263     | MIN |
| 537 | 2254        | -10492      | -222         | 5809       | -12033     | MAX |
|     | -1043       | -17256      | -1829        | -8714      | -29248     | MIN |
| 538 | 13          | -5019       | -111         | 2753       | -11449     | MAX |
|     | -1127       | -7599       | -1000        | -1256      | -18087     | MIN |
| 539 | 302         | -1195       | 22           | 1800       | -6270      | MAX |
|     | -207        | -1690       | -353         | -348       | -8744      | MIN |
| 540 | 186         | -57         | 29           | 2819       | -3126      | MAX |
|     | -59         | -148        | -129         | 71         | -4429      | MIN |
| 541 | 2           | -4          | -16          | 33         | 778        | MAX |
|     | 2           | -5          | -21          | 25         | 599        | MIN |
| 542 | 30          | -146        | -30          | -7         | 1502       | MAX |
|     | 23          | -190        | -38          | -9         | 1155       | MIN |
| 543 | 11          | -577        | -50          | -38        | 2869       | MAX |
|     | 8           | -750        | -65          | -49        | 2207       | MIN |
| 544 | 28          | -1404       | 91           | -91        | 4126       | MAX |
|     | 21          | -1825       | 70           | -118       | 3174       | MIN |

PROGETTAZIONE ATI:

| In  | Mx<br>[kgm] | My<br>[kgm] | Mxy<br>[kgm] | Tx<br>[kg] | Ty<br>[kg] |     |
|-----|-------------|-------------|--------------|------------|------------|-----|
| 545 | -832        | -2774       | 401          | 0          | 4738       | MAX |
|     | -1082       | -3607       | 309          | 0          | 3644       | MIN |
| 546 | -832        | -2774       | 401          | 0          | 4738       | MAX |
|     | -1082       | -3607       | 309          | 0          | 3644       | MIN |
| 547 | -832        | -2774       | 401          | 0          | 4738       | MAX |
|     | -1082       | -3607       | 309          | 0          | 3644       | MIN |
| 548 | -8349       | -27829      | -4159        | 0          | -11043     | MAX |
|     | -50122      | -167073     | -31569       | 0          | -23700     | MIN |
|     | 190         | -19158      | -1120        | -1077      | -7857      | MAX |
| 549 | -583        | -128386     | -9880        | -6608      | -27945     | MIN |
|     | -26         | -14333      | 353          | -830       | -4667      | MAX |
| 550 | -229        | -99256      | -1110        | -5555      | -38429     | MIN |
|     | 1254        | -12959      | 618          | -729       | -4921      | MAX |
| 551 | -90         | -81758      | -100         | -4328      | -48651     | MIN |
|     | 573         | -13412      | 944          | -1538      | -3810      | MAX |
| 552 | -224        | -64628      | 43           | -3496      | -54722     | MIN |
|     | 216         | -14372      | 1007         | -1829      | -4555      | MAX |
| 553 | -358        | -47808      | 481          | -5165      | -56277     | MIN |
|     | 563         | -13809      | 1102         | 1289       | -8222      | MAX |
| 554 | -124        | -33392      | 251          | -6353      | -51188     | MIN |
|     | 337         | -10227      | 846          | 3183       | -11609     | MAX |
| 555 | 66          | -20217      | -162         | -4306      | -39188     | MIN |
|     | -180        | -5242       | 180          | 2137       | -11082     | MAX |
| 556 | -459        | -10151      | -385         | -1171      | -24777     | MIN |
|     | 1           | -1416       | 151          | 1056       | -6517      | MAX |
| 557 | -395        | -3151       | -49          | -113       | -12018     | MIN |
|     | -2          | -59         | 81           | 1892       | -3499      | MAX |
| 558 | -173        | -383        | -35          | 103        | -6226      | MIN |

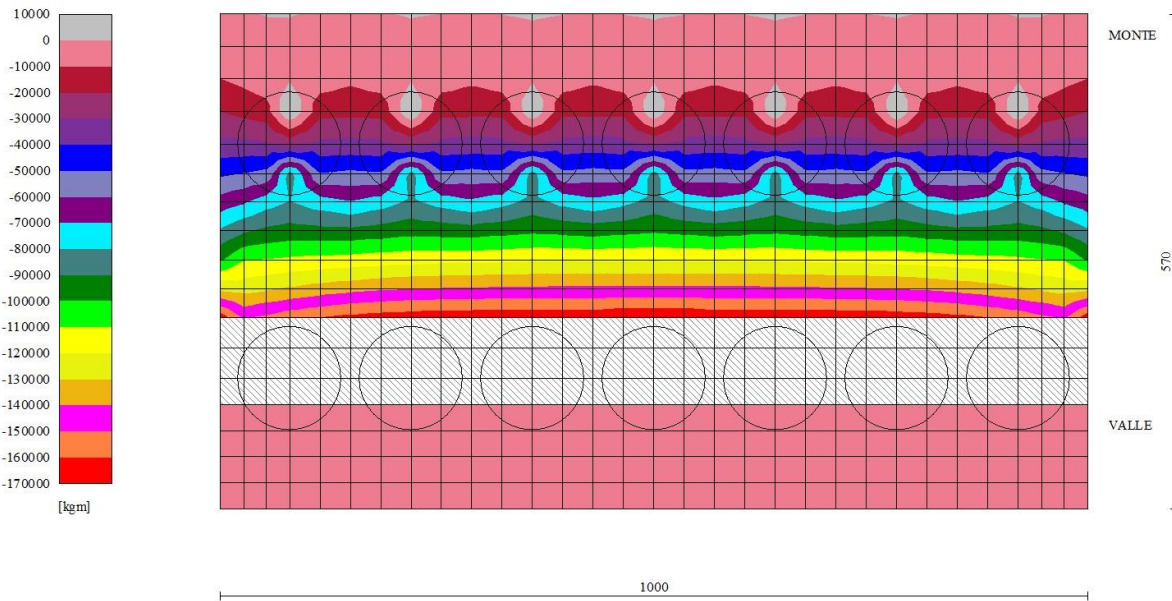


Fig. 34 - Piastra fondazione - Momento My (Combinazione n° 3)

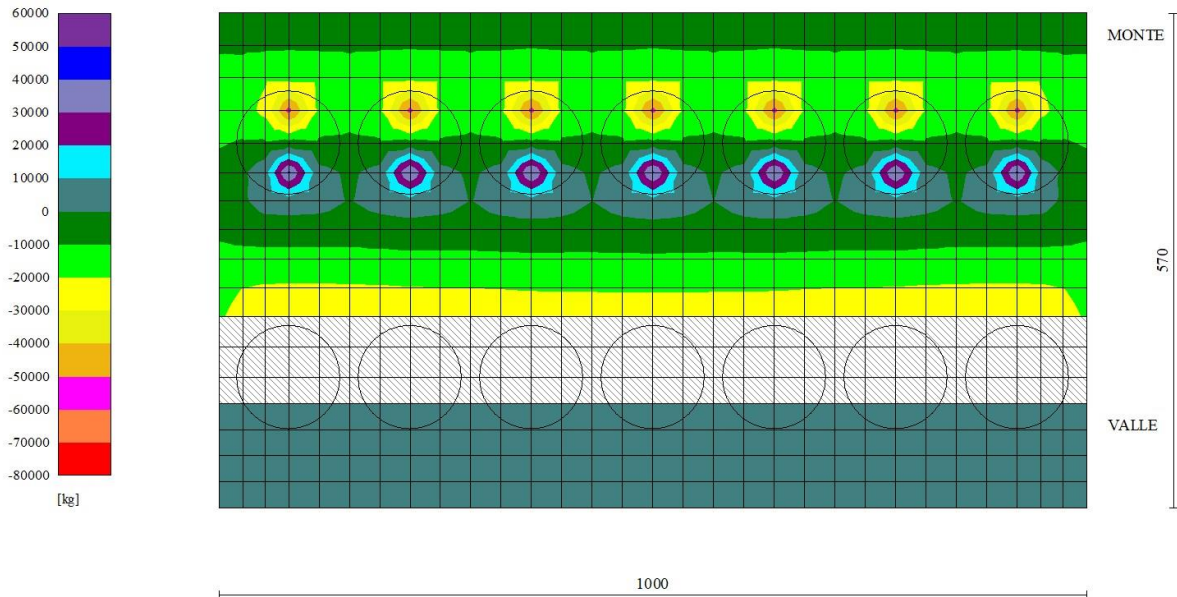


Fig. 35 - Piastra fondazione - Taglio  $T_{yMAX}$  (Combinazione n° 4)

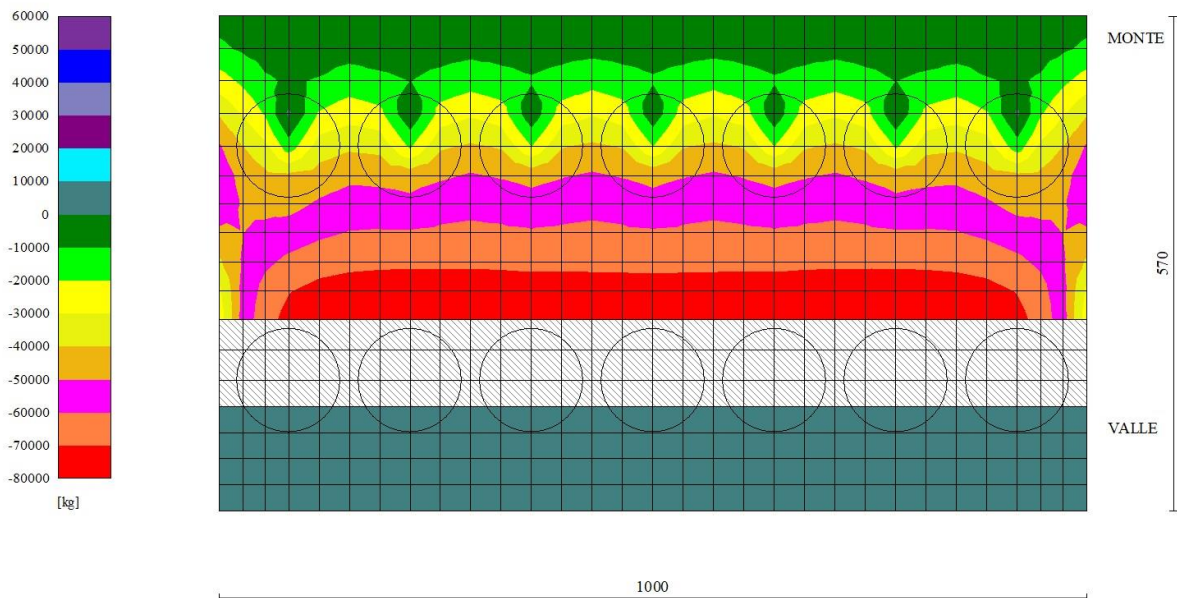


Fig. 36 - Piastra fondazione - Taglio  $T_{yMIN}$  (Combinazione n° 3)

### Sollecitazioni pali

#### Simbologia adottata

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

#### Palo n° 1

PROGETTAZIONE ATI:



| n°  | Y<br>[m] | Ne<br>[kg] | Nr<br>[kg] | Te<br>[kg] | Tr<br>[kg] | Me<br>[kgm] | Mr<br>[kgm] |
|-----|----------|------------|------------|------------|------------|-------------|-------------|
| 1   | 0.00     | 55374      | 552982     | -19848     | -80633     | 1132        | 4598        |
| 12  | 2.31     | 61002      | 548627     | 231        | -33467     | 21820       | 150567      |
| 23  | 4.62     | 67108      | 546648     | 4834       | 33594      | 14636       | 149363      |
| 56  | 11.55    | 86702      | 546648     | -15        | 1794       | -849        | -5952       |
| 101 | 21.00    | 109042     | 526064     | 1          | -5         | 0           | 0           |

Palo n° 2

| n°  | Y<br>[m] | Ne<br>[kg] | Nr<br>[kg] | Te<br>[kg] | Tr<br>[kg] | Me<br>[kgm] | Mr<br>[kgm] |
|-----|----------|------------|------------|------------|------------|-------------|-------------|
| 1   | 0.00     | 91858      | 552961     | -19848     | -80633     | 1132        | 4598        |
| 12  | 2.31     | 97199      | 548606     | 231        | -33467     | 21820       | 150567      |
| 23  | 4.62     | 103169     | 546627     | 4834       | 33594      | 14636       | 149363      |
| 56  | 11.55    | 122763     | 546627     | -15        | 1794       | -849        | -5952       |
| 101 | 21.00    | 143711     | 526041     | 1          | -5         | 0           | 0           |

Palo n° 1

| n°  | Y<br>[m] | Ne<br>[kg] | Nr<br>[kg] | Te<br>[kg] | Tr<br>[kg] | Me<br>[kgm] | Mr<br>[kgm] |
|-----|----------|------------|------------|------------|------------|-------------|-------------|
| 1   | 0.00     | -9620      | -240292    | -49773     | -67815     | 33966       | 46278       |
| 13  | 2.52     | 6094       | -235542    | 1695       | -14058     | 109303      | 166789      |
| 24  | 4.83     | 15624      | -233958    | 24339      | 37647      | 72487       | 131089      |
| 57  | 11.76    | 35218      | -233958    | -125       | 562        | -4274       | -6631       |
| 101 | 21.00    | 99513      | -216351    | 2          | -1         | 0           | 0           |

Palo n° 2

| n°  | Y<br>[m] | Ne<br>[kg] | Nr<br>[kg] | Te<br>[kg] | Tr<br>[kg] | Me<br>[kgm] | Mr<br>[kgm] |
|-----|----------|------------|------------|------------|------------|-------------|-------------|
| 1   | 0.00     | 181944     | 552955     | -49773     | -67815     | 33966       | 46278       |
| 13  | 2.52     | 186997     | 548205     | 1695       | -14058     | 109303      | 166789      |
| 24  | 4.83     | 192805     | 546621     | 24339      | 37647      | 72487       | 131089      |
| 57  | 11.76    | 212399     | 546621     | -125       | 562        | -4274       | -6631       |
| 101 | 21.00    | 229315     | 526037     | 2          | -1         | 0           | 0           |

Palo n° 1

| n°  | Y<br>[m] | Ne<br>[kg] | Nr<br>[kg] | Te<br>[kg] | Tr<br>[kg] | Me<br>[kgm] | Mr<br>[kgm] |
|-----|----------|------------|------------|------------|------------|-------------|-------------|
| 1   | 0.00     | -22004     | -549910    | -45101     | -66102     | 35159       | 51531       |
| 13  | 2.52     | -8429      | -545158    | 4080       | -12339     | 99172       | 167715      |
| 23  | 4.62     | -239       | -543574    | 22002      | 36629      | 67665       | 137185      |
| 56  | 11.55    | 19356      | -543574    | -28        | 932        | -3865       | -6462       |
| 101 | 21.00    | 74744      | -522982    | 2          | 0          | 0           | 0           |

Palo n° 2

| n°  | Y<br>[m] | Ne<br>[kg] | Nr<br>[kg] | Te<br>[kg] | Tr<br>[kg] | Me<br>[kgm] | Mr<br>[kgm] |
|-----|----------|------------|------------|------------|------------|-------------|-------------|
| 1   | 0.00     | 150155     | 552971     | -45101     | -66102     | 35159       | 51531       |
| 13  | 2.52     | 155481     | 548221     | 4080       | -12339     | 99172       | 167715      |
| 23  | 4.62     | 160790     | 546638     | 22002      | 36629      | 67665       | 137185      |
| 56  | 11.55    | 180384     | 546638     | -28        | 932        | -3865       | -6462       |
| 101 | 21.00    | 199107     | 526053     | 2          | 0          | 0           | 0           |

Palo n° 1

| n°  | Y<br>[m] | Ne<br>[kg] | Nr<br>[kg] | Te<br>[kg] | Tr<br>[kg] | Me<br>[kgm] | Mr<br>[kgm] |
|-----|----------|------------|------------|------------|------------|-------------|-------------|
| 1   | 0.00     | 75766      | 552981     | -19848     | -84230     | -1869       | -7933       |
| 13  | 2.52     | 81731      | 548231     | 461        | -30596     | 19589       | 154114      |
| 24  | 4.83     | 87857      | 546648     | 4356       | 35087      | 12822       | 144835      |
| 101 | 21.00    | 128419     | 526064     | 0          | -6         | 0           | 0           |

Palo n° 2

| n°  | Y<br>[m] | Ne<br>[kg] | Nr<br>[kg] | Te<br>[kg] | Tr<br>[kg] | Me<br>[kgm] | Mr<br>[kgm] |
|-----|----------|------------|------------|------------|------------|-------------|-------------|
| 1   | 0.00     | 108447     | 552968     | -19848     | -84230     | -1869       | -7933       |
| 13  | 2.52     | 114131     | 548217     | 461        | -30596     | 19589       | 154114      |
| 24  | 4.83     | 120159     | 546634     | 4356       | 35087      | 12822       | 144835      |
| 101 | 21.00    | 159474     | 526050     | 0          | -6         | 0           | 0           |

Palo n° 1

| n° | Y | Ne | Nr | Te | Tr | Me | Mr |
|----|---|----|----|----|----|----|----|
|----|---|----|----|----|----|----|----|

PROGETTAZIONE ATI:

|     | [m]   | [kg]   | [kg]   | [kg]   | [kg]   | [kgm] | [kgm]  |
|-----|-------|--------|--------|--------|--------|-------|--------|
| 1   | 0.00  | 69155  | 552962 | -19848 | -87340 | -4334 | -19071 |
| 14  | 2.73  | 75678  | 547816 | 668    | -27011 | 17860 | 157923 |
| 24  | 4.83  | 81323  | 546629 | 3986   | 34242  | 12202 | 147412 |
| 101 | 21.00 | 122137 | 526045 | 0      | -7     | 0     | 0      |

**Palo n° 2**

| n°  | Y [m] | Ne [kg] | Nr [kg] | Te [kg] | Tr [kg] | Me [kgm] | Mr [kgm] |
|-----|-------|---------|---------|---------|---------|----------|----------|
| 1   | 0.00  | 98798   | 552954  | -19848  | -87340  | -4334    | -19071   |
| 14  | 2.73  | 105045  | 547808  | 668     | -27011  | 17860    | 157923   |
| 24  | 4.83  | 110622  | 546621  | 3986    | 34242   | 12202    | 147412   |
| 101 | 21.00 | 150305  | 526037  | 0       | -7      | 0        | 0        |

**Palo n° 1**

| n°  | Y [m] | Ne [kg] | Nr [kg] | Te [kg] | Tr [kg] | Me [kgm] | Mr [kgm] |
|-----|-------|---------|---------|---------|---------|----------|----------|
| 1   | 0.00  | 61962   | 552960  | -19848  | -77842  | 3566     | 13985    |
| 12  | 2.31  | 67538   | 548605  | 737     | -30659  | 23696    | 153485   |
| 23  | 4.62  | 73619   | 546626  | 5236    | 34283   | 15369    | 147235   |
| 56  | 11.55 | 93213   | 546626  | -36     | 1624    | -919     | -6068    |
| 101 | 21.00 | 115302  | 526042  | 1       | -4      | 0        | 0        |

**Palo n° 2**

| n°  | Y [m] | Ne [kg] | Nr [kg] | Te [kg] | Tr [kg] | Me [kgm] | Mr [kgm] |
|-----|-------|---------|---------|---------|---------|----------|----------|
| 1   | 0.00  | 101530  | 552984  | -19848  | -77842  | 3566     | 13985    |
| 12  | 2.31  | 106795  | 548629  | 737     | -30659  | 23696    | 153485   |
| 23  | 4.62  | 112729  | 546650  | 5236    | 34283   | 15369    | 147235   |
| 56  | 11.55 | 132323  | 546650  | -36     | 1624    | -919     | -6068    |
| 101 | 21.00 | 152902  | 526065  | 1       | -4      | 0        | 0        |

**Palo n° 1**

| n°  | Y [m] | Ne [kg] | Nr [kg] | Te [kg] | Tr [kg] | Me [kgm] | Mr [kgm] |
|-----|-------|---------|---------|---------|---------|----------|----------|
| 1   | 0.00  | 52718   | 552972  | -16065  | -73045  | 6566     | 29853    |
| 11  | 2.10  | 57854   | 549013  | 621     | -32038  | 21194    | 151514   |
| 22  | 4.41  | 63888   | 546638  | 4659    | 33062   | 13810    | 150310   |
| 55  | 11.34 | 83483   | 546638  | -27     | 1898    | -818     | -5860    |
| 101 | 21.00 | 106518  | 526054  | 1       | -2      | 0        | 0        |

**Palo n° 2**

| n°  | Y [m] | Ne [kg] | Nr [kg] | Te [kg] | Tr [kg] | Me [kgm] | Mr [kgm] |
|-----|-------|---------|---------|---------|---------|----------|----------|
| 1   | 0.00  | 87789   | 552977  | -16065  | -73045  | 6566     | 29853    |
| 11  | 2.10  | 92674   | 549019  | 621     | -32038  | 21194    | 151514   |
| 22  | 4.41  | 98553   | 546644  | 4659    | 33062   | 13810    | 150310   |
| 55  | 11.34 | 118147  | 546644  | -27     | 1898    | -818     | -5860    |
| 101 | 21.00 | 139844  | 526060  | 1       | -2      | 0        | 0        |

**Palo n° 1**

| n°  | Y [m] | Ne [kg] | Nr [kg] | Te [kg] | Tr [kg] | Me [kgm] | Mr [kgm] |
|-----|-------|---------|---------|---------|---------|----------|----------|
| 1   | 0.00  | 56386   | 552979  | -18005  | -57054  | 24481    | 77573    |
| 9   | 1.68  | 60473   | 549812  | 1248    | -27532  | 39246    | 155110   |
| 20  | 3.99  | 66326   | 546645  | 8543    | 32335   | 25472    | 149911   |
| 53  | 10.92 | 85920   | 546645  | -43     | 1972    | -1500    | -5733    |
| 101 | 21.00 | 110003  | 526061  | 2       | 2       | 0        | 0        |

**Palo n° 2**

| n°  | Y [m] | Ne [kg] | Nr [kg] | Te [kg] | Tr [kg] | Me [kgm] | Mr [kgm] |
|-----|-------|---------|---------|---------|---------|----------|----------|
| 1   | 0.00  | 118701  | 552967  | -18005  | -57054  | 24481    | 77573    |
| 9   | 1.68  | 122432  | 549800  | 1248    | -27532  | 39246    | 155110   |
| 20  | 3.99  | 127919  | 546633  | 8543    | 32335   | 25472    | 149911   |
| 53  | 10.92 | 147513  | 546633  | -43     | 1972    | -1500    | -5733    |
| 101 | 21.00 | 169218  | 526049  | 2       | 2       | 0        | 0        |

**Palo n° 1**

| n° | Y [m] | Ne [kg] | Nr [kg] | Te [kg] | Tr [kg] | Me [kgm] | Mr [kgm] |
|----|-------|---------|---------|---------|---------|----------|----------|
| 1  | 0.00  | 58497   | 552969  | -14636  | -83491  | -935     | -5336    |

PROGETTAZIONE ATI:

| n°  | Y<br>[m] | Ne<br>[kg] | Nr<br>[kg] | Te<br>[kg] | Tr<br>[kg] | Me<br>[kgm] | Mr<br>[kgm] |
|-----|----------|------------|------------|------------|------------|-------------|-------------|
| 13  | 2.52     | 64610      | 548218     | 429        | -29882     | 13995       | 154881      |
| 24  | 4.83     | 70788      | 546635     | 3109       | 35256      | 9054        | 144364      |
| 101 | 21.00    | 112010     | 526048     | 0          | -5         | 0           | 0           |

**Palo n° 2**

| n°  | Y<br>[m] | Ne<br>[kg] | Nr<br>[kg] | Te<br>[kg] | Tr<br>[kg] | Me<br>[kgm] | Mr<br>[kgm] |
|-----|----------|------------|------------|------------|------------|-------------|-------------|
| 1   | 0.00     | 81867      | 552980     | -14636     | -83491     | -935        | -5336       |
| 13  | 2.52     | 87779      | 548230     | 429        | -29882     | 13995       | 154881      |
| 24  | 4.83     | 93887      | 546647     | 3109       | 35256      | 9054        | 144364      |
| 101 | 21.00    | 134217     | 526062     | 0          | -5         | 0           | 0           |

**Palo n° 1**

| n°  | Y<br>[m] | Ne<br>[kg] | Nr<br>[kg] | Te<br>[kg] | Tr<br>[kg] | Me<br>[kgm] | Mr<br>[kgm] |
|-----|----------|------------|------------|------------|------------|-------------|-------------|
| 1   | 0.00     | 58497      | 552969     | -14636     | -83491     | -935        | -5336       |
| 13  | 2.52     | 64610      | 548218     | 429        | -29882     | 13995       | 154881      |
| 24  | 4.83     | 70788      | 546635     | 3109       | 35256      | 9054        | 144364      |
| 101 | 21.00    | 112010     | 526048     | 0          | -5         | 0           | 0           |

**Palo n° 2**

| n°  | Y<br>[m] | Ne<br>[kg] | Nr<br>[kg] | Te<br>[kg] | Tr<br>[kg] | Me<br>[kgm] | Mr<br>[kgm] |
|-----|----------|------------|------------|------------|------------|-------------|-------------|
| 1   | 0.00     | 81867      | 552980     | -14636     | -83491     | -935        | -5336       |
| 13  | 2.52     | 87779      | 548230     | 429        | -29882     | 13995       | 154881      |
| 24  | 4.83     | 93887      | 546647     | 3109       | 35256      | 9054        | 144364      |
| 101 | 21.00    | 134217     | 526062     | 0          | -5         | 0           | 0           |

**Palo n° 1**

| n°  | Y<br>[m] | Ne<br>[kg] | Nr<br>[kg] | Te<br>[kg] | Tr<br>[kg] | Me<br>[kgm] | Mr<br>[kgm] |
|-----|----------|------------|------------|------------|------------|-------------|-------------|
| 1   | 0.00     | 58497      | 552969     | -14636     | -83491     | -935        | -5336       |
| 13  | 2.52     | 64610      | 548218     | 429        | -29882     | 13995       | 154881      |
| 24  | 4.83     | 70788      | 546635     | 3109       | 35256      | 9054        | 144364      |
| 101 | 21.00    | 112010     | 526048     | 0          | -5         | 0           | 0           |

**Palo n° 2**

| n°  | Y<br>[m] | Ne<br>[kg] | Nr<br>[kg] | Te<br>[kg] | Tr<br>[kg] | Me<br>[kgm] | Mr<br>[kgm] |
|-----|----------|------------|------------|------------|------------|-------------|-------------|
| 1   | 0.00     | 81867      | 552980     | -14636     | -83491     | -935        | -5336       |
| 13  | 2.52     | 87779      | 548230     | 429        | -29882     | 13995       | 154881      |
| 24  | 4.83     | 93887      | 546647     | 3109       | 35256      | 9054        | 144364      |
| 101 | 21.00    | 134217     | 526062     | 0          | -5         | 0           | 0           |

**Palo n° 1**

| n°  | Y<br>[m] | Ne<br>[kg] | Nr<br>[kg] | Te<br>[kg] | Tr<br>[kg] | Me<br>[kgm] | Mr<br>[kgm] |
|-----|----------|------------|------------|------------|------------|-------------|-------------|
| 1   | 0.00     | 26101      | 552979     | -33305     | -67755     | 22878       | 46543       |
| 11  | 2.10     | 31427      | 549020     | 448        | -26669     | 62461       | 157006      |
| 22  | 4.41     | 37580      | 546645     | 13760      | 34443      | 42205       | 145969      |
| 55  | 11.34    | 57174      | 546645     | -22        | 1554       | -2417       | -6094       |
| 101 | 21.00    | 81225      | 526061     | 2          | -1         | 0           | 0           |

**Palo n° 2**

| n°  | Y<br>[m] | Ne<br>[kg] | Nr<br>[kg] | Te<br>[kg] | Tr<br>[kg] | Me<br>[kgm] | Mr<br>[kgm] |
|-----|----------|------------|------------|------------|------------|-------------|-------------|
| 1   | 0.00     | 131234     | 552934     | -33305     | -67755     | 22878       | 46543       |
| 11  | 2.10     | 135808     | 548975     | 448        | -26669     | 62461       | 157006      |
| 22  | 4.41     | 141495     | 546600     | 13760      | 34443      | 42205       | 145969      |
| 55  | 11.34    | 161089     | 546600     | -22        | 1554       | -2417       | -6094       |
| 101 | 21.00    | 181128     | 526016     | 2          | -1         | 0           | 0           |

**Palo n° 1**

| n°  | Y<br>[m] | Ne<br>[kg] | Nr<br>[kg] | Te<br>[kg] | Tr<br>[kg] | Me<br>[kgm] | Mr<br>[kgm] |
|-----|----------|------------|------------|------------|------------|-------------|-------------|
| 1   | 0.00     | 19016      | 475196     | -30611     | -66962     | 22385       | 48968       |
| 11  | 2.10     | 24392      | 471236     | 1243       | -25880     | 57056       | 157770      |
| 22  | 4.41     | 30577      | 468860     | 12551      | 34633      | 37645       | 145312      |
| 55  | 11.34    | 50171      | 468860     | -54        | 1504       | -2204       | -6126       |
| 101 | 21.00    | 74492      | 448269     | 2          | -1         | 0           | 0           |

PROGETTAZIONE ATI:



Palo n° 2

| n°  | Y<br>[m] | Ne<br>[kg] | Nr<br>[kg] | Te<br>[kg] | Tr<br>[kg] | Me<br>[kgm] | Mr<br>[kgm] |
|-----|----------|------------|------------|------------|------------|-------------|-------------|
| 1   | 0.00     | 114357     | 552961     | -30611     | -66962     | 22385       | 48968       |
| 11  | 2.10     | 119052     | 549002     | 1243       | -25880     | 57056       | 157770      |
| 22  | 4.41     | 124813     | 546627     | 12551      | 34633      | 37645       | 145312      |
| 55  | 11.34    | 144408     | 546627     | -54        | 1504       | -2204       | -6126       |
| 101 | 21.00    | 165090     | 526043     | 2          | -1         | 0           | 0           |

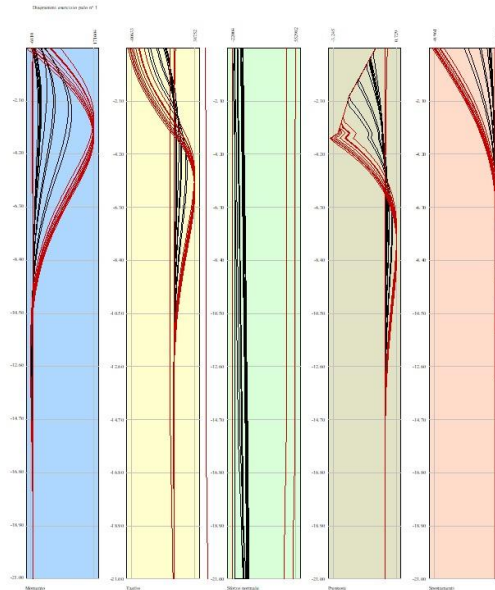
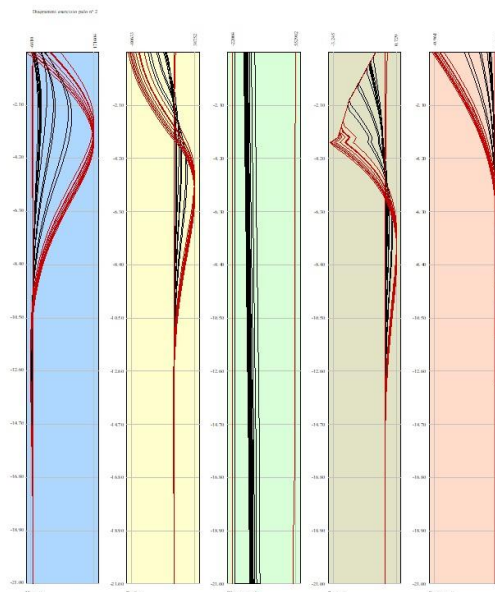


Fig. 37 - Sollecitazioni palo (Palo n° 1) (Inviluppo)



PROGETTAZIONE ATI:

Fig. 38 - Sollecitazioni palo (Palo n° 2) (Inviluppo)

Verifiche strutturali

*Verifiche a flessione*

Elementi calcolati a trave

**Simbologia adottata**

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

Elementi calcolati a piastra

**Simbologia adottata**

|          |   |
|----------|---|
| n°       | indice sezione  |
| Y        | ordinata sezione espressa in [m]  |
| B        | larghezza sezione espresso in [cm]  |
| H        | altezza sezione espressa in [cm]  |
| Afi, Afs | area ferri inferiori e superiori, espresso in [cmq]                               |
| Mp, Mn   | momento positivo e negativo agente espressa in [kgm]                              |
| Mu       | momento ultimi espresso in [kgm]  |
| FS       | fattore di sicurezza (rapporto tra sollecitazione ultima e sollecitazione agente) |

**Pali in c.a.**

| <b>Ip</b> | <b>Is</b> | <b>Ar</b><br>[cmq] | <b>M</b><br>[kgm] | <b>N</b><br>[kg] | <b>Mu</b><br>[kgm] | <b>Nu</b><br>[kg] | <b>FS</b> |
|-----------|-----------|--------------------|-------------------|------------------|--------------------|-------------------|-----------|
| 1         | 13        | 91.23              | 109303            | 6094             | 173498             | 9673              | 1.587     |
| 2         | 13        | 91.23              | 109303            | 186997           | 312653             | 534893            | 2.860     |

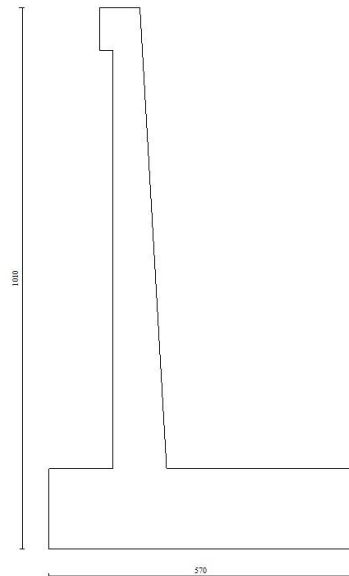


Fig. 39 - Paramento (Inviluppo)

PROGETTAZIONE ATI:

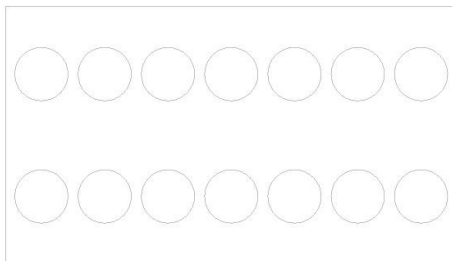


Fig. 40 - Piastra fondazione dir. X (Inviluppo)

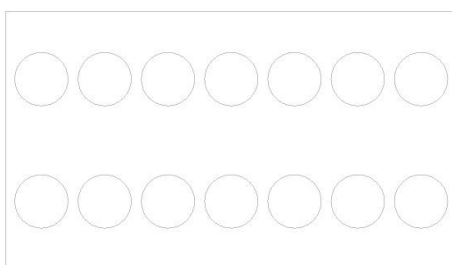


Fig. 41 - Piastra fondazione dir. Y (Inviluppo)

PROGETTAZIONE ATI:

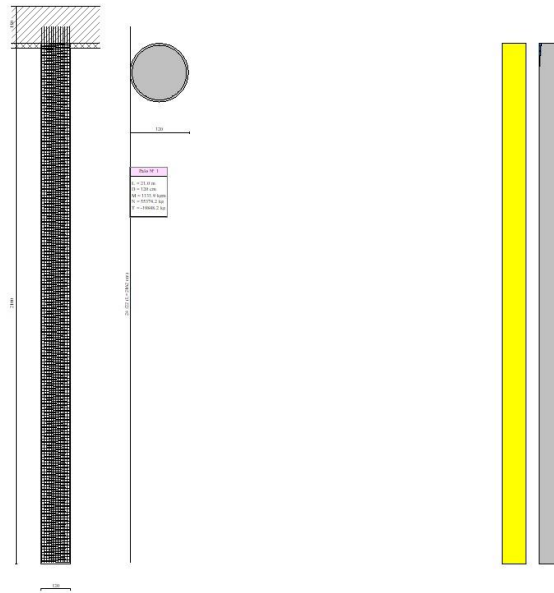


Fig. 42 - Pali (Palo n° 1) (Inviluppo)

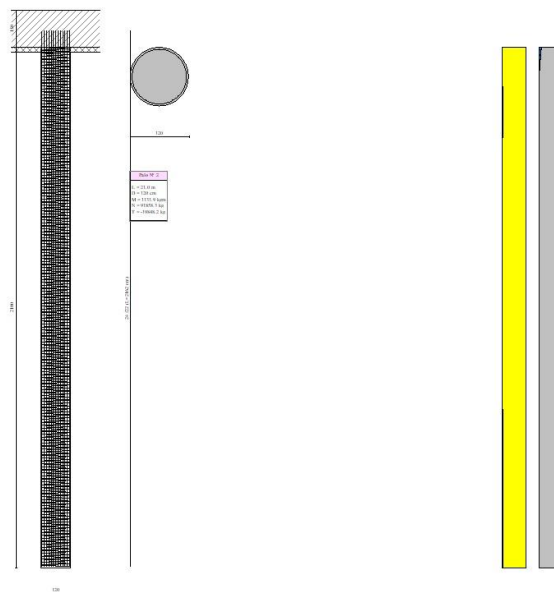


Fig. 43 - Pali (Palo n° 2) (Inviluppo)

*Verifiche a taglio*

**Simbologia adottata**

- n° (o Is)      indice sezione
- Y              ordinata sezione espressa in [m]
- B              larghezza sezione espressa in [cm]
- H              altezza sezione espressa in [cm]
- A<sub>sw</sub>          area ferri a taglio espresso in [cm<sup>2</sup>]
- cotgθ        inclinazione delle bielle compresse, θ inclinazione dei puntoni di calcestruzzo

PROGETTAZIONE ATI:

$V_{Rcd}$  resistenza di progetto a 'taglio compressione' espressa in [kg]  
 $V_{Rsd}$  resistenza di progetto a 'taglio trazione' espressa in [kg]  
 $V_{Rd}$  resistenza di progetto a taglio espresso in [kg]. Per elementi con armature trasversali resistenti al taglio ( $A_{sw}>0.0$ )  $V_{Rd}=\min(V_{Rcd}, V_{Rsd})$ .  
 $T$  taglio agente espressa in [kg]  
 $FS$  fattore di sicurezza (rapporto tra sollecitazione resistente e sollecitazione agente)

**Pali in c.a.**

La verifica a taglio sui pali circolari in c.a. viene eseguita considerando una sezione quadrata inscritta nella circonferenza. Se  $D$  è il diametro del palo, il lato della sezione quadrata sulla quale si esegue la verifica è  $L = 2^{0.5}/2 D$ .

| Ip | Is | L<br>[cm] | $A_{sw}$<br>[cm <sup>2</sup> ] | s<br>[cm] | cotg $\theta$ | $V_{Rcd}$<br>[kg] | $V_{Rsd}$<br>[kg] | $V_{Rd}$<br>[kg] | T<br>[kg] | FS    |
|----|----|-----------|--------------------------------|-----------|---------------|-------------------|-------------------|------------------|-----------|-------|
| 1  | 1  | 84.85     | 2.26                           | 12        | 2.500         | 186002            | 135978            | 135978           | 49773     | 2.732 |
| 2  | 1  | 84.85     | 2.26                           | 12        | 2.500         | 195159            | 135978            | 135978           | 49773     | 2.732 |

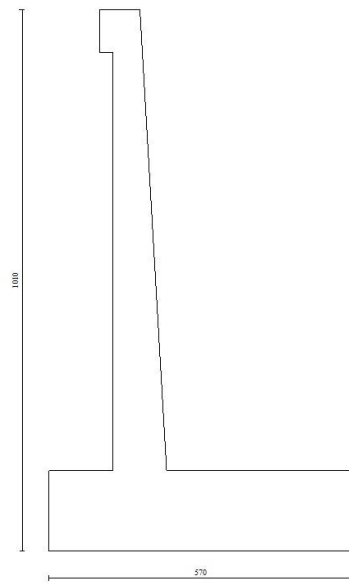


Fig. 44 - Paramento (Inviluppo)

PROGETTAZIONE ATI:

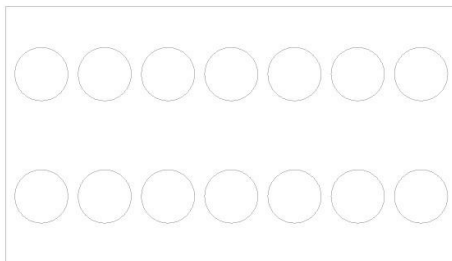


Fig. 45 - Piastra fondazione dir. X (Inviluppo)

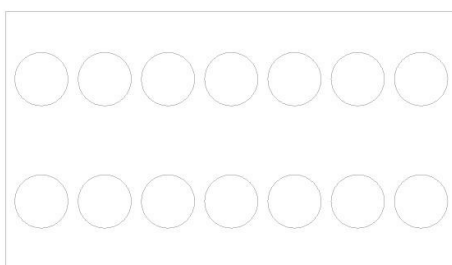


Fig. 46 - Piastra fondazione dir. Y (Inviluppo)

PROGETTAZIONE ATI:

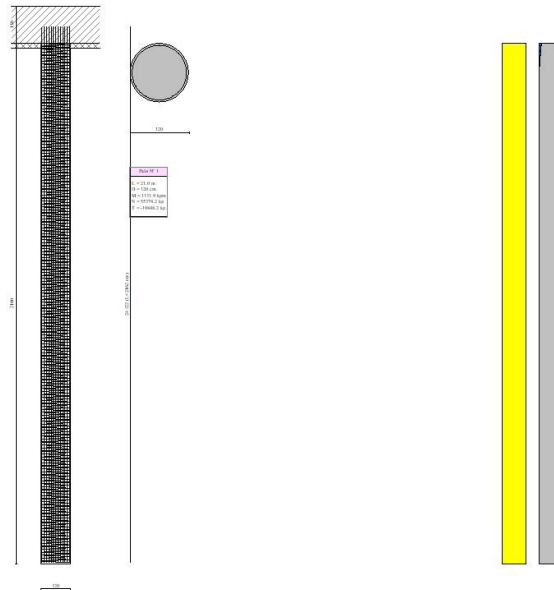


Fig. 47 - Pali (Palo n° 1) (Inviluppo)

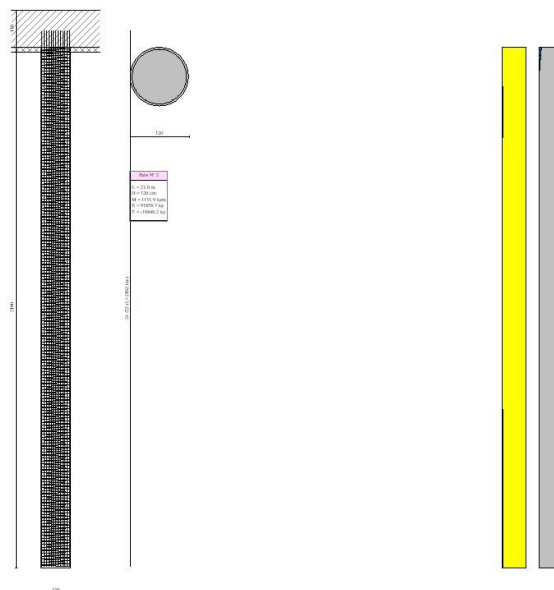


Fig. 48 - Pali (Palo n° 2) (Inviluppo)

### Verifica a punzonamento

#### Simbologia adottata

|                                 |  |
|---------------------------------|--|
| OP                              | Oggetto che viene punzonato  |
| P                               | Oggetto che punzona  |
| c <sub>1</sub> , c <sub>2</sub> | Dimensioni pilastro nelle due direzioni, espressa in [mm]                      |
| d                               | Altezza utile della fondazione, espressa in [mm]                               |
| u <sub>0</sub>                  | Lunghezza perimetro di verifica a faccia pilastro, espresso in [mm]            |
| u <sub>1</sub>                  | Lunghezza perimetro di verifica per effetto della diffusione, espresso in [mm] |

PROGETTAZIONE ATI:

|                  |   |
|------------------|---|
| $\rho_y, \rho_z$ | Percentuali di armatura piastra in zona tesa  |
| dpc, duc         | distanza della prima e dell'ultima cucitura dalla faccia del pilastro   |
| $V_{Ed,i}$       | Tensione di taglio sul perimetro del pilastro, espressa in [kg/cmq]   |
| $V_{Rd,max}$     | Valore di progetto del massimo taglio-punzonamento resistente, espressa in [kg/cmq]                                     |
| $V_{Ed,f}$       | Tensione di taglio sul perimetro di verifica u1, espresso in [kg/cmq]   |
| $V_{Rd,cf}$      | Valore di progetto del taglio-punzonamento resistente senza armature sul perimetro di verifica u1, espresso in [kg/cmq] |
| $V_{Rd,cs}$      | Valore di progetto del taglio-punzonamento resistente con armature, espresso in [kg/cmq]                                |
| nsc              | Numero di serie di cuciture   |
| nc               | Numero di cuciture  |
| FS               | Fattore di sicurezza (minore tra i rapporti $V_{Rd,max}/V_{Ed,i}$ , $V_{Rd,cf}/V_{Ed,f}$ e $V_{Rd,cs}/V_{Ed,f}$ )       |

### Verifica delle tensioni

#### Simbologia adottata

|               |  |
|---------------|--|
| n°            | indice sezione   |
| Y             | ordinata sezione, espressa in [m]                      |
| B             | larghezza sezione, espresso in [cm]                    |
| H             | altezza sezione, espressa in [cm]                      |
| Afi           | area ferri inferiori, espresso in [cmq]                |
| Afs           | area ferri superiori, espressa in [cmq]                |
| M             | momento agente, espressa in [kgm]                      |
| N             | sforzo normale agente, espressa in [kg]                |
| $\sigma_c$    | tensione di compressione nel cls, espressa in [kg/cmq] |
| $\sigma_{fi}$ | tensione nei ferri inferiori, espressa in [kg/cmq]     |
| $\sigma_{fs}$ | tensione nei ferri superiori, espressa in [kg/cmq]     |

### Combinazioni SLER

#### Pali in c.a.

| Ip | Is | Ar<br>[cmq] | $\sigma_c$<br>[kg/cmq] | $\sigma_f$<br>[kg/cmq] | $\tau_c$<br>[kg/cmq] | $\sigma_{stf}$<br>[kg/cmq] |
|----|----|-------------|------------------------|------------------------|----------------------|----------------------------|
| 1  | 1  | 91.23       | 5.11                   | 75.84                  |                      |                            |
| 1  | 2  | 91.23       | 5.67                   | 83.42                  |                      |                            |
| 1  | 3  | 91.23       | 6.98                   | 100.81                 |                      |                            |
| 1  | 4  | 91.23       | 8.10                   | 115.77                 |                      |                            |
| 1  | 5  | 91.23       | 9.05                   | 128.47                 |                      |                            |
| 1  | 6  | 91.23       | 9.84                   | 139.11                 |                      |                            |
| 1  | 7  | 91.23       | 10.51                  | 148.10                 |                      |                            |
| 1  | 8  | 91.23       | 11.08                  | 155.66                 |                      |                            |
| 1  | 9  | 91.23       | 11.53                  | 161.74                 |                      |                            |
| 1  | 10 | 91.23       | 11.88                  | 166.34                 |                      |                            |
| 1  | 11 | 91.23       | 12.11                  | 169.54                 |                      |                            |
| 1  | 12 | 91.23       | 12.25                  | 171.45                 |                      |                            |
| 1  | 13 | 91.23       | 12.30                  | 172.21                 |                      |                            |
| 1  | 14 | 91.23       | 12.28                  | 171.98                 |                      |                            |
| 1  | 15 | 91.23       | 12.19                  | 170.92                 |                      |                            |
| 1  | 16 | 91.23       | 12.06                  | 169.21                 |                      |                            |
| 1  | 17 | 91.23       | 11.88                  | 166.98                 |                      |                            |
| 1  | 18 | 91.23       | 11.69                  | 164.46                 |                      |                            |
| 1  | 19 | 91.23       | 11.46                  | 161.58                 |                      |                            |
| 1  | 20 | 91.23       | 11.22                  | 158.45                 |                      |                            |
| 1  | 21 | 91.23       | 10.97                  | 155.16                 |                      |                            |
| 1  | 22 | 91.23       | 10.70                  | 151.72                 |                      |                            |
| 1  | 23 | 91.23       | 10.43                  | 148.15                 |                      |                            |
| 1  | 24 | 91.23       | 10.15                  | 144.52                 |                      |                            |
| 1  | 25 | 91.23       | 9.87                   | 140.88                 |                      |                            |
| 1  | 26 | 91.23       | 9.59                   | 137.27                 |                      |                            |
| 1  | 27 | 91.23       | 9.32                   | 133.74                 |                      |                            |
| 1  | 28 | 91.23       | 9.06                   | 130.32                 |                      |                            |
| 1  | 29 | 91.23       | 8.80                   | 127.03                 |                      |                            |
| 1  | 30 | 91.23       | 8.56                   | 123.90                 |                      |                            |
| 1  | 31 | 91.23       | 8.33                   | 120.95                 |                      |                            |
| 1  | 32 | 91.23       | 8.12                   | 118.18                 |                      |                            |
| 1  | 33 | 91.23       | 7.92                   | 115.60                 |                      |                            |
| 1  | 34 | 91.23       | 7.74                   | 113.23                 |                      |                            |
| 1  | 35 | 91.23       | 7.57                   | 111.07                 |                      |                            |
| 1  | 36 | 91.23       | 7.41                   | 109.11                 |                      |                            |
| 1  | 37 | 91.23       | 7.28                   | 107.36                 |                      |                            |
| 1  | 38 | 91.23       | 7.15                   | 105.80                 |                      |                            |
| 1  | 39 | 91.23       | 7.05                   | 104.45                 |                      |                            |
| 1  | 40 | 91.23       | 6.95                   | 103.28                 |                      |                            |
| 1  | 41 | 91.23       | 6.87                   | 102.30                 |                      |                            |
| 1  | 42 | 91.23       | 6.80                   | 101.49                 |                      |                            |
| 1  | 43 | 91.23       | 6.75                   | 100.84                 |                      |                            |
| 1  | 44 | 91.23       | 6.71                   | 100.35                 |                      |                            |
| 1  | 45 | 91.23       | 6.68                   | 100.01                 |                      |                            |
| 1  | 46 | 91.23       | 6.65                   | 99.80                  |                      |                            |
| 1  | 47 | 91.23       | 6.76                   | 101.24                 |                      |                            |
| 1  | 48 | 91.23       | 6.85                   | 102.62                 |                      |                            |
| 1  | 49 | 91.23       | 6.94                   | 103.88                 |                      |                            |

PROGETTAZIONE ATI:



| Ip | Is  | Ar<br>[cmq] | $\sigma_c$<br>[kg/cmq] | $\sigma_f$<br>[kg/cmq] | $\tau_c$<br>[kg/cmq] | $\sigma_{sf}$<br>[kg/cmq] |
|----|-----|-------------|------------------------|------------------------|----------------------|---------------------------|
| 1  | 50  | 91.23       | 7.02                   | 105.05                 |                      |                           |
| 1  | 51  | 91.23       | 7.10                   | 106.13                 |                      |                           |
| 1  | 52  | 91.23       | 7.17                   | 107.13                 |                      |                           |
| 1  | 53  | 91.23       | 7.23                   | 108.05                 |                      |                           |
| 1  | 54  | 91.23       | 7.29                   | 108.91                 |                      |                           |
| 1  | 55  | 91.23       | 7.35                   | 109.72                 |                      |                           |
| 1  | 56  | 91.23       | 7.40                   | 110.47                 |                      |                           |
| 1  | 57  | 91.23       | 7.44                   | 111.18                 |                      |                           |
| 1  | 58  | 91.23       | 7.49                   | 111.86                 |                      |                           |
| 1  | 59  | 91.23       | 7.53                   | 112.50                 |                      |                           |
| 1  | 60  | 91.23       | 7.57                   | 113.11                 |                      |                           |
| 1  | 61  | 91.23       | 7.61                   | 113.70                 |                      |                           |
| 1  | 62  | 91.23       | 7.65                   | 114.28                 |                      |                           |
| 1  | 63  | 91.23       | 7.68                   | 114.84                 |                      |                           |
| 1  | 64  | 91.23       | 7.72                   | 115.39                 |                      |                           |
| 1  | 65  | 91.23       | 7.75                   | 115.93                 |                      |                           |
| 1  | 66  | 91.23       | 7.79                   | 116.46                 |                      |                           |
| 1  | 67  | 91.23       | 7.82                   | 117.00                 |                      |                           |
| 1  | 68  | 91.23       | 7.85                   | 117.53                 |                      |                           |
| 1  | 69  | 91.23       | 7.89                   | 118.07                 |                      |                           |
| 1  | 70  | 91.23       | 7.92                   | 118.61                 |                      |                           |
| 1  | 71  | 91.23       | 7.96                   | 119.15                 |                      |                           |
| 1  | 72  | 91.23       | 7.99                   | 119.70                 |                      |                           |
| 1  | 73  | 91.23       | 8.03                   | 120.26                 |                      |                           |
| 1  | 74  | 91.23       | 8.07                   | 120.82                 |                      |                           |
| 1  | 75  | 91.23       | 8.09                   | 121.26                 |                      |                           |
| 1  | 76  | 91.23       | 8.12                   | 121.63                 |                      |                           |
| 1  | 77  | 91.23       | 8.14                   | 122.02                 |                      |                           |
| 1  | 78  | 91.23       | 8.17                   | 122.42                 |                      |                           |
| 1  | 79  | 91.23       | 8.19                   | 122.82                 |                      |                           |
| 1  | 80  | 91.23       | 8.22                   | 123.23                 |                      |                           |
| 1  | 81  | 91.23       | 8.25                   | 123.65                 |                      |                           |
| 1  | 82  | 91.23       | 8.28                   | 124.08                 |                      |                           |
| 1  | 83  | 91.23       | 8.30                   | 124.52                 |                      |                           |
| 1  | 84  | 91.23       | 8.33                   | 124.97                 |                      |                           |
| 1  | 85  | 91.23       | 8.36                   | 125.42                 |                      |                           |
| 1  | 86  | 91.23       | 8.39                   | 125.88                 |                      |                           |
| 1  | 87  | 91.23       | 8.42                   | 126.34                 |                      |                           |
| 1  | 88  | 91.23       | 8.46                   | 126.82                 |                      |                           |
| 1  | 89  | 91.23       | 8.49                   | 127.29                 |                      |                           |
| 1  | 90  | 91.23       | 8.52                   | 127.78                 |                      |                           |
| 1  | 91  | 91.23       | 8.55                   | 128.27                 |                      |                           |
| 1  | 92  | 91.23       | 8.58                   | 128.76                 |                      |                           |
| 1  | 93  | 91.23       | 8.62                   | 129.25                 |                      |                           |
| 1  | 94  | 91.23       | 8.65                   | 129.75                 |                      |                           |
| 1  | 95  | 91.23       | 8.68                   | 130.25                 |                      |                           |
| 1  | 96  | 91.23       | 8.72                   | 130.76                 |                      |                           |
| 1  | 97  | 91.23       | 8.75                   | 131.26                 |                      |                           |
| 1  | 98  | 91.23       | 8.78                   | 131.77                 |                      |                           |
| 1  | 99  | 91.23       | 8.82                   | 132.27                 |                      |                           |
| 1  | 100 | 91.23       | 8.85                   | 132.78                 |                      |                           |
| 1  | 101 | 91.23       | 8.89                   | 133.28                 |                      |                           |
| 2  | 1   | 91.23       | 6.96                   | 103.65                 |                      |                           |
| 2  | 2   | 91.23       | 7.53                   | 111.20                 |                      |                           |
| 2  | 3   | 91.23       | 8.83                   | 128.58                 |                      |                           |
| 2  | 4   | 91.23       | 9.95                   | 143.51                 |                      |                           |
| 2  | 5   | 91.23       | 10.89                  | 156.20                 |                      |                           |
| 2  | 6   | 91.23       | 11.69                  | 166.81                 |                      |                           |
| 2  | 7   | 91.23       | 12.34                  | 175.55                 |                      |                           |
| 2  | 8   | 91.23       | 12.86                  | 182.58                 |                      |                           |
| 2  | 9   | 91.23       | 13.27                  | 188.06                 |                      |                           |
| 2  | 10  | 91.23       | 13.57                  | 192.16                 |                      |                           |
| 2  | 11  | 91.23       | 13.78                  | 195.03                 |                      |                           |
| 2  | 12  | 91.23       | 13.91                  | 196.81                 |                      |                           |
| 2  | 13  | 91.23       | 13.97                  | 197.63                 |                      |                           |
| 2  | 14  | 91.23       | 13.96                  | 197.62                 |                      |                           |
| 2  | 15  | 91.23       | 13.90                  | 196.89                 |                      |                           |
| 2  | 16  | 91.23       | 13.80                  | 195.54                 |                      |                           |
| 2  | 17  | 91.23       | 13.65                  | 193.68                 |                      |                           |
| 2  | 18  | 91.23       | 13.48                  | 191.50                 |                      |                           |
| 2  | 19  | 91.23       | 13.28                  | 188.88                 |                      |                           |
| 2  | 20  | 91.23       | 13.05                  | 185.90                 |                      |                           |
| 2  | 21  | 91.23       | 12.80                  | 182.65                 |                      |                           |
| 2  | 22  | 91.23       | 12.53                  | 179.20                 |                      |                           |
| 2  | 23  | 91.23       | 12.26                  | 175.64                 |                      |                           |
| 2  | 24  | 91.23       | 11.98                  | 172.00                 |                      |                           |
| 2  | 25  | 91.23       | 11.70                  | 168.36                 |                      |                           |
| 2  | 26  | 91.23       | 11.42                  | 164.76                 |                      |                           |
| 2  | 27  | 91.23       | 11.15                  | 161.23                 |                      |                           |
| 2  | 28  | 91.23       | 10.89                  | 157.81                 |                      |                           |
| 2  | 29  | 91.23       | 10.64                  | 154.52                 |                      |                           |
| 2  | 30  | 91.23       | 10.39                  | 151.39                 |                      |                           |
| 2  | 31  | 91.23       | 10.17                  | 148.43                 |                      |                           |
| 2  | 32  | 91.23       | 9.95                   | 145.66                 |                      |                           |
| 2  | 33  | 91.23       | 9.75                   | 143.09                 |                      |                           |

PROGETTAZIONE ATI:

| Ip | Is  | Ar<br>[cmq] | $\sigma_c$<br>[kg/cmq] | $\sigma_f$<br>[kg/cmq] | $\tau_c$<br>[kg/cmq] | $\sigma_{stf}$<br>[kg/cmq] |
|----|-----|-------------|------------------------|------------------------|----------------------|----------------------------|
| 2  | 34  | 91.23       | 9.57                   | 140.72                 |                      |                            |
| 2  | 35  | 91.23       | 9.40                   | 138.56                 |                      |                            |
| 2  | 36  | 91.23       | 9.25                   | 136.60                 |                      |                            |
| 2  | 37  | 91.23       | 9.11                   | 134.84                 |                      |                            |
| 2  | 38  | 91.23       | 8.99                   | 133.29                 |                      |                            |
| 2  | 39  | 91.23       | 8.88                   | 131.93                 |                      |                            |
| 2  | 40  | 91.23       | 8.78                   | 130.77                 |                      |                            |
| 2  | 41  | 91.23       | 8.70                   | 129.78                 |                      |                            |
| 2  | 42  | 91.23       | 8.64                   | 128.97                 |                      |                            |
| 2  | 43  | 91.23       | 8.58                   | 128.33                 |                      |                            |
| 2  | 44  | 91.23       | 8.54                   | 127.84                 |                      |                            |
| 2  | 45  | 91.23       | 8.51                   | 127.50                 |                      |                            |
| 2  | 46  | 91.23       | 8.49                   | 127.29                 |                      |                            |
| 2  | 47  | 91.23       | 8.59                   | 128.73                 |                      |                            |
| 2  | 48  | 91.23       | 8.69                   | 130.10                 |                      |                            |
| 2  | 49  | 91.23       | 8.77                   | 131.37                 |                      |                            |
| 2  | 50  | 91.23       | 8.86                   | 132.54                 |                      |                            |
| 2  | 51  | 91.23       | 8.93                   | 133.62                 |                      |                            |
| 2  | 52  | 91.23       | 9.00                   | 134.61                 |                      |                            |
| 2  | 53  | 91.23       | 9.06                   | 135.54                 |                      |                            |
| 2  | 54  | 91.23       | 9.12                   | 136.40                 |                      |                            |
| 2  | 55  | 91.23       | 9.18                   | 137.21                 |                      |                            |
| 2  | 56  | 91.23       | 9.23                   | 137.96                 |                      |                            |
| 2  | 57  | 91.23       | 9.28                   | 138.67                 |                      |                            |
| 2  | 58  | 91.23       | 9.32                   | 139.34                 |                      |                            |
| 2  | 59  | 91.23       | 9.36                   | 139.98                 |                      |                            |
| 2  | 60  | 91.23       | 9.40                   | 140.60                 |                      |                            |
| 2  | 61  | 91.23       | 9.44                   | 141.19                 |                      |                            |
| 2  | 62  | 91.23       | 9.48                   | 141.76                 |                      |                            |
| 2  | 63  | 91.23       | 9.51                   | 142.32                 |                      |                            |
| 2  | 64  | 91.23       | 9.55                   | 142.87                 |                      |                            |
| 2  | 65  | 91.23       | 9.58                   | 143.41                 |                      |                            |
| 2  | 66  | 91.23       | 9.62                   | 143.95                 |                      |                            |
| 2  | 67  | 91.23       | 9.65                   | 144.49                 |                      |                            |
| 2  | 68  | 91.23       | 9.69                   | 145.02                 |                      |                            |
| 2  | 69  | 91.23       | 9.72                   | 145.56                 |                      |                            |
| 2  | 70  | 91.23       | 9.76                   | 146.10                 |                      |                            |
| 2  | 71  | 91.23       | 9.79                   | 146.64                 |                      |                            |
| 2  | 72  | 91.23       | 9.83                   | 147.19                 |                      |                            |
| 2  | 73  | 91.23       | 9.86                   | 147.74                 |                      |                            |
| 2  | 74  | 91.23       | 9.90                   | 148.31                 |                      |                            |
| 2  | 75  | 91.23       | 9.92                   | 148.72                 |                      |                            |
| 2  | 76  | 91.23       | 9.95                   | 149.05                 |                      |                            |
| 2  | 77  | 91.23       | 9.97                   | 149.40                 |                      |                            |
| 2  | 78  | 91.23       | 9.99                   | 149.76                 |                      |                            |
| 2  | 79  | 91.23       | 10.01                  | 150.12                 |                      |                            |
| 2  | 80  | 91.23       | 10.04                  | 150.49                 |                      |                            |
| 2  | 81  | 91.23       | 10.06                  | 150.87                 |                      |                            |
| 2  | 82  | 91.23       | 10.09                  | 151.26                 |                      |                            |
| 2  | 83  | 91.23       | 10.11                  | 151.66                 |                      |                            |
| 2  | 84  | 91.23       | 10.14                  | 152.07                 |                      |                            |
| 2  | 85  | 91.23       | 10.17                  | 152.48                 |                      |                            |
| 2  | 86  | 91.23       | 10.19                  | 152.90                 |                      |                            |
| 2  | 87  | 91.23       | 10.22                  | 153.33                 |                      |                            |
| 2  | 88  | 91.23       | 10.25                  | 153.76                 |                      |                            |
| 2  | 89  | 91.23       | 10.28                  | 154.20                 |                      |                            |
| 2  | 90  | 91.23       | 10.31                  | 154.64                 |                      |                            |
| 2  | 91  | 91.23       | 10.34                  | 155.09                 |                      |                            |
| 2  | 92  | 91.23       | 10.37                  | 155.54                 |                      |                            |
| 2  | 93  | 91.23       | 10.40                  | 156.00                 |                      |                            |
| 2  | 94  | 91.23       | 10.43                  | 156.45                 |                      |                            |
| 2  | 95  | 91.23       | 10.46                  | 156.92                 |                      |                            |
| 2  | 96  | 91.23       | 10.49                  | 157.38                 |                      |                            |
| 2  | 97  | 91.23       | 10.52                  | 157.85                 |                      |                            |
| 2  | 98  | 91.23       | 10.55                  | 158.31                 |                      |                            |
| 2  | 99  | 91.23       | 10.59                  | 158.78                 |                      |                            |
| 2  | 100 | 91.23       | 10.62                  | 159.24                 |                      |                            |
| 2  | 101 | 91.23       | 10.65                  | 159.71                 |                      |                            |

### Combinazioni SLEF

Pali in c.a.

| Ip | Is | Ar<br>[cmq] | $\sigma_c$<br>[kg/cmq] | $\sigma_f$<br>[kg/cmq] | $\tau_c$<br>[kg/cmq] | $\sigma_{stf}$<br>[kg/cmq] |
|----|----|-------------|------------------------|------------------------|----------------------|----------------------------|
| 1  | 1  | 91.23       | 5.11                   | 75.84                  |                      |                            |
| 1  | 2  | 91.23       | 5.67                   | 83.42                  |                      |                            |
| 1  | 3  | 91.23       | 6.98                   | 100.81                 |                      |                            |
| 1  | 4  | 91.23       | 8.10                   | 115.77                 |                      |                            |
| 1  | 5  | 91.23       | 9.05                   | 128.47                 |                      |                            |
| 1  | 6  | 91.23       | 9.84                   | 139.11                 |                      |                            |

PROGETTAZIONE ATI:

| Ip | Is | Ar<br>[cmq] | $\sigma_c$<br>[kg/cmq] | $\sigma_f$<br>[kg/cmq] | $\tau_c$<br>[kg/cmq] | $\sigma_{sf}$<br>[kg/cmq] |
|----|----|-------------|------------------------|------------------------|----------------------|---------------------------|
| 1  | 7  | 91.23       | 10.51                  | 148.10                 |                      |                           |
| 1  | 8  | 91.23       | 11.08                  | 155.66                 |                      |                           |
| 1  | 9  | 91.23       | 11.53                  | 161.74                 |                      |                           |
| 1  | 10 | 91.23       | 11.88                  | 166.34                 |                      |                           |
| 1  | 11 | 91.23       | 12.11                  | 169.54                 |                      |                           |
| 1  | 12 | 91.23       | 12.25                  | 171.45                 |                      |                           |
| 1  | 13 | 91.23       | 12.30                  | 172.21                 |                      |                           |
| 1  | 14 | 91.23       | 12.28                  | 171.98                 |                      |                           |
| 1  | 15 | 91.23       | 12.19                  | 170.92                 |                      |                           |
| 1  | 16 | 91.23       | 12.06                  | 169.21                 |                      |                           |
| 1  | 17 | 91.23       | 11.88                  | 166.98                 |                      |                           |
| 1  | 18 | 91.23       | 11.69                  | 164.46                 |                      |                           |
| 1  | 19 | 91.23       | 11.46                  | 161.58                 |                      |                           |
| 1  | 20 | 91.23       | 11.22                  | 158.45                 |                      |                           |
| 1  | 21 | 91.23       | 10.97                  | 155.16                 |                      |                           |
| 1  | 22 | 91.23       | 10.70                  | 151.72                 |                      |                           |
| 1  | 23 | 91.23       | 10.43                  | 148.15                 |                      |                           |
| 1  | 24 | 91.23       | 10.15                  | 144.52                 |                      |                           |
| 1  | 25 | 91.23       | 9.87                   | 140.88                 |                      |                           |
| 1  | 26 | 91.23       | 9.59                   | 137.27                 |                      |                           |
| 1  | 27 | 91.23       | 9.32                   | 133.74                 |                      |                           |
| 1  | 28 | 91.23       | 9.06                   | 130.32                 |                      |                           |
| 1  | 29 | 91.23       | 8.80                   | 127.03                 |                      |                           |
| 1  | 30 | 91.23       | 8.56                   | 123.90                 |                      |                           |
| 1  | 31 | 91.23       | 8.33                   | 120.95                 |                      |                           |
| 1  | 32 | 91.23       | 8.12                   | 118.18                 |                      |                           |
| 1  | 33 | 91.23       | 7.92                   | 115.60                 |                      |                           |
| 1  | 34 | 91.23       | 7.74                   | 113.23                 |                      |                           |
| 1  | 35 | 91.23       | 7.57                   | 111.07                 |                      |                           |
| 1  | 36 | 91.23       | 7.41                   | 109.11                 |                      |                           |
| 1  | 37 | 91.23       | 7.28                   | 107.36                 |                      |                           |
| 1  | 38 | 91.23       | 7.15                   | 105.80                 |                      |                           |
| 1  | 39 | 91.23       | 7.05                   | 104.45                 |                      |                           |
| 1  | 40 | 91.23       | 6.95                   | 103.28                 |                      |                           |
| 1  | 41 | 91.23       | 6.87                   | 102.30                 |                      |                           |
| 1  | 42 | 91.23       | 6.80                   | 101.49                 |                      |                           |
| 1  | 43 | 91.23       | 6.75                   | 100.84                 |                      |                           |
| 1  | 44 | 91.23       | 6.71                   | 100.35                 |                      |                           |
| 1  | 45 | 91.23       | 6.68                   | 100.01                 |                      |                           |
| 1  | 46 | 91.23       | 6.65                   | 99.80                  |                      |                           |
| 1  | 47 | 91.23       | 6.76                   | 101.24                 |                      |                           |
| 1  | 48 | 91.23       | 6.85                   | 102.62                 |                      |                           |
| 1  | 49 | 91.23       | 6.94                   | 103.88                 |                      |                           |
| 1  | 50 | 91.23       | 7.02                   | 105.05                 |                      |                           |
| 1  | 51 | 91.23       | 7.10                   | 106.13                 |                      |                           |
| 1  | 52 | 91.23       | 7.17                   | 107.13                 |                      |                           |
| 1  | 53 | 91.23       | 7.23                   | 108.05                 |                      |                           |
| 1  | 54 | 91.23       | 7.29                   | 108.91                 |                      |                           |
| 1  | 55 | 91.23       | 7.35                   | 109.72                 |                      |                           |
| 1  | 56 | 91.23       | 7.40                   | 110.47                 |                      |                           |
| 1  | 57 | 91.23       | 7.44                   | 111.18                 |                      |                           |
| 1  | 58 | 91.23       | 7.49                   | 111.86                 |                      |                           |
| 1  | 59 | 91.23       | 7.53                   | 112.50                 |                      |                           |
| 1  | 60 | 91.23       | 7.57                   | 113.11                 |                      |                           |
| 1  | 61 | 91.23       | 7.61                   | 113.70                 |                      |                           |
| 1  | 62 | 91.23       | 7.65                   | 114.28                 |                      |                           |
| 1  | 63 | 91.23       | 7.68                   | 114.84                 |                      |                           |
| 1  | 64 | 91.23       | 7.72                   | 115.39                 |                      |                           |
| 1  | 65 | 91.23       | 7.75                   | 115.93                 |                      |                           |
| 1  | 66 | 91.23       | 7.79                   | 116.46                 |                      |                           |
| 1  | 67 | 91.23       | 7.82                   | 117.00                 |                      |                           |
| 1  | 68 | 91.23       | 7.85                   | 117.53                 |                      |                           |
| 1  | 69 | 91.23       | 7.89                   | 118.07                 |                      |                           |
| 1  | 70 | 91.23       | 7.92                   | 118.61                 |                      |                           |
| 1  | 71 | 91.23       | 7.96                   | 119.15                 |                      |                           |
| 1  | 72 | 91.23       | 7.99                   | 119.70                 |                      |                           |
| 1  | 73 | 91.23       | 8.03                   | 120.26                 |                      |                           |
| 1  | 74 | 91.23       | 8.07                   | 120.82                 |                      |                           |
| 1  | 75 | 91.23       | 8.09                   | 121.26                 |                      |                           |
| 1  | 76 | 91.23       | 8.12                   | 121.63                 |                      |                           |
| 1  | 77 | 91.23       | 8.14                   | 122.02                 |                      |                           |
| 1  | 78 | 91.23       | 8.17                   | 122.42                 |                      |                           |
| 1  | 79 | 91.23       | 8.19                   | 122.82                 |                      |                           |
| 1  | 80 | 91.23       | 8.22                   | 123.23                 |                      |                           |
| 1  | 81 | 91.23       | 8.25                   | 123.65                 |                      |                           |
| 1  | 82 | 91.23       | 8.28                   | 124.08                 |                      |                           |
| 1  | 83 | 91.23       | 8.30                   | 124.52                 |                      |                           |
| 1  | 84 | 91.23       | 8.33                   | 124.97                 |                      |                           |
| 1  | 85 | 91.23       | 8.36                   | 125.42                 |                      |                           |
| 1  | 86 | 91.23       | 8.39                   | 125.88                 |                      |                           |
| 1  | 87 | 91.23       | 8.42                   | 126.34                 |                      |                           |
| 1  | 88 | 91.23       | 8.46                   | 126.82                 |                      |                           |
| 1  | 89 | 91.23       | 8.49                   | 127.29                 |                      |                           |
| 1  | 90 | 91.23       | 8.52                   | 127.78                 |                      |                           |
| 1  | 91 | 91.23       | 8.55                   | 128.27                 |                      |                           |

PROGETTAZIONE ATI:

| Ip | Is  | Ar<br>[cmq] | $\sigma_c$<br>[kg/cmq] | $\sigma_f$<br>[kg/cmq] | $\tau_c$<br>[kg/cmq] | $\sigma_{stf}$<br>[kg/cmq] |
|----|-----|-------------|------------------------|------------------------|----------------------|----------------------------|
| 1  | 92  | 91.23       | 8.58                   | 128.76                 |                      |                            |
| 1  | 93  | 91.23       | 8.62                   | 129.25                 |                      |                            |
| 1  | 94  | 91.23       | 8.65                   | 129.75                 |                      |                            |
| 1  | 95  | 91.23       | 8.68                   | 130.25                 |                      |                            |
| 1  | 96  | 91.23       | 8.72                   | 130.76                 |                      |                            |
| 1  | 97  | 91.23       | 8.75                   | 131.26                 |                      |                            |
| 1  | 98  | 91.23       | 8.78                   | 131.77                 |                      |                            |
| 1  | 99  | 91.23       | 8.82                   | 132.27                 |                      |                            |
| 1  | 100 | 91.23       | 8.85                   | 132.78                 |                      |                            |
| 1  | 101 | 91.23       | 8.89                   | 133.28                 |                      |                            |
| 2  | 1   | 91.23       | 6.96                   | 103.65                 |                      |                            |
| 2  | 2   | 91.23       | 7.53                   | 111.20                 |                      |                            |
| 2  | 3   | 91.23       | 8.83                   | 128.58                 |                      |                            |
| 2  | 4   | 91.23       | 9.95                   | 143.51                 |                      |                            |
| 2  | 5   | 91.23       | 10.89                  | 156.20                 |                      |                            |
| 2  | 6   | 91.23       | 11.69                  | 166.81                 |                      |                            |
| 2  | 7   | 91.23       | 12.34                  | 175.55                 |                      |                            |
| 2  | 8   | 91.23       | 12.86                  | 182.58                 |                      |                            |
| 2  | 9   | 91.23       | 13.27                  | 188.06                 |                      |                            |
| 2  | 10  | 91.23       | 13.57                  | 192.16                 |                      |                            |
| 2  | 11  | 91.23       | 13.78                  | 195.03                 |                      |                            |
| 2  | 12  | 91.23       | 13.91                  | 196.81                 |                      |                            |
| 2  | 13  | 91.23       | 13.97                  | 197.63                 |                      |                            |
| 2  | 14  | 91.23       | 13.96                  | 197.62                 |                      |                            |
| 2  | 15  | 91.23       | 13.90                  | 196.89                 |                      |                            |
| 2  | 16  | 91.23       | 13.80                  | 195.54                 |                      |                            |
| 2  | 17  | 91.23       | 13.65                  | 193.68                 |                      |                            |
| 2  | 18  | 91.23       | 13.48                  | 191.50                 |                      |                            |
| 2  | 19  | 91.23       | 13.28                  | 188.88                 |                      |                            |
| 2  | 20  | 91.23       | 13.05                  | 185.90                 |                      |                            |
| 2  | 21  | 91.23       | 12.80                  | 182.65                 |                      |                            |
| 2  | 22  | 91.23       | 12.53                  | 179.20                 |                      |                            |
| 2  | 23  | 91.23       | 12.26                  | 175.64                 |                      |                            |
| 2  | 24  | 91.23       | 11.98                  | 172.00                 |                      |                            |
| 2  | 25  | 91.23       | 11.70                  | 168.36                 |                      |                            |
| 2  | 26  | 91.23       | 11.42                  | 164.76                 |                      |                            |
| 2  | 27  | 91.23       | 11.15                  | 161.23                 |                      |                            |
| 2  | 28  | 91.23       | 10.89                  | 157.81                 |                      |                            |
| 2  | 29  | 91.23       | 10.64                  | 154.52                 |                      |                            |
| 2  | 30  | 91.23       | 10.39                  | 151.39                 |                      |                            |
| 2  | 31  | 91.23       | 10.17                  | 148.43                 |                      |                            |
| 2  | 32  | 91.23       | 9.95                   | 145.66                 |                      |                            |
| 2  | 33  | 91.23       | 9.75                   | 143.09                 |                      |                            |
| 2  | 34  | 91.23       | 9.57                   | 140.72                 |                      |                            |
| 2  | 35  | 91.23       | 9.40                   | 138.56                 |                      |                            |
| 2  | 36  | 91.23       | 9.25                   | 136.60                 |                      |                            |
| 2  | 37  | 91.23       | 9.11                   | 134.84                 |                      |                            |
| 2  | 38  | 91.23       | 8.99                   | 133.29                 |                      |                            |
| 2  | 39  | 91.23       | 8.88                   | 131.93                 |                      |                            |
| 2  | 40  | 91.23       | 8.78                   | 130.77                 |                      |                            |
| 2  | 41  | 91.23       | 8.70                   | 129.78                 |                      |                            |
| 2  | 42  | 91.23       | 8.64                   | 128.97                 |                      |                            |
| 2  | 43  | 91.23       | 8.58                   | 128.33                 |                      |                            |
| 2  | 44  | 91.23       | 8.54                   | 127.84                 |                      |                            |
| 2  | 45  | 91.23       | 8.51                   | 127.50                 |                      |                            |
| 2  | 46  | 91.23       | 8.49                   | 127.29                 |                      |                            |
| 2  | 47  | 91.23       | 8.59                   | 128.73                 |                      |                            |
| 2  | 48  | 91.23       | 8.69                   | 130.10                 |                      |                            |
| 2  | 49  | 91.23       | 8.77                   | 131.37                 |                      |                            |
| 2  | 50  | 91.23       | 8.86                   | 132.54                 |                      |                            |
| 2  | 51  | 91.23       | 8.93                   | 133.62                 |                      |                            |
| 2  | 52  | 91.23       | 9.00                   | 134.61                 |                      |                            |
| 2  | 53  | 91.23       | 9.06                   | 135.54                 |                      |                            |
| 2  | 54  | 91.23       | 9.12                   | 136.40                 |                      |                            |
| 2  | 55  | 91.23       | 9.18                   | 137.21                 |                      |                            |
| 2  | 56  | 91.23       | 9.23                   | 137.96                 |                      |                            |
| 2  | 57  | 91.23       | 9.28                   | 138.67                 |                      |                            |
| 2  | 58  | 91.23       | 9.32                   | 139.34                 |                      |                            |
| 2  | 59  | 91.23       | 9.36                   | 139.98                 |                      |                            |
| 2  | 60  | 91.23       | 9.40                   | 140.60                 |                      |                            |
| 2  | 61  | 91.23       | 9.44                   | 141.19                 |                      |                            |
| 2  | 62  | 91.23       | 9.48                   | 141.76                 |                      |                            |
| 2  | 63  | 91.23       | 9.51                   | 142.32                 |                      |                            |
| 2  | 64  | 91.23       | 9.55                   | 142.87                 |                      |                            |
| 2  | 65  | 91.23       | 9.58                   | 143.41                 |                      |                            |
| 2  | 66  | 91.23       | 9.62                   | 143.95                 |                      |                            |
| 2  | 67  | 91.23       | 9.65                   | 144.49                 |                      |                            |
| 2  | 68  | 91.23       | 9.69                   | 145.02                 |                      |                            |
| 2  | 69  | 91.23       | 9.72                   | 145.56                 |                      |                            |
| 2  | 70  | 91.23       | 9.76                   | 146.10                 |                      |                            |
| 2  | 71  | 91.23       | 9.79                   | 146.64                 |                      |                            |
| 2  | 72  | 91.23       | 9.83                   | 147.19                 |                      |                            |
| 2  | 73  | 91.23       | 9.86                   | 147.74                 |                      |                            |
| 2  | 74  | 91.23       | 9.90                   | 148.31                 |                      |                            |
| 2  | 75  | 91.23       | 9.92                   | 148.72                 |                      |                            |

PROGETTAZIONE ATI:

| Ip | Is  | Ar<br>[cmq] | $\sigma_c$<br>[kg/cmq] | $\sigma_f$<br>[kg/cmq] | $\tau_c$<br>[kg/cmq] | $\sigma_{stf}$<br>[kg/cmq] |
|----|-----|-------------|------------------------|------------------------|----------------------|----------------------------|
| 2  | 76  | 91.23       | 9.95                   | 149.05                 |                      |                            |
| 2  | 77  | 91.23       | 9.97                   | 149.40                 |                      |                            |
| 2  | 78  | 91.23       | 9.99                   | 149.76                 |                      |                            |
| 2  | 79  | 91.23       | 10.01                  | 150.12                 |                      |                            |
| 2  | 80  | 91.23       | 10.04                  | 150.49                 |                      |                            |
| 2  | 81  | 91.23       | 10.06                  | 150.87                 |                      |                            |
| 2  | 82  | 91.23       | 10.09                  | 151.26                 |                      |                            |
| 2  | 83  | 91.23       | 10.11                  | 151.66                 |                      |                            |
| 2  | 84  | 91.23       | 10.14                  | 152.07                 |                      |                            |
| 2  | 85  | 91.23       | 10.17                  | 152.48                 |                      |                            |
| 2  | 86  | 91.23       | 10.19                  | 152.90                 |                      |                            |
| 2  | 87  | 91.23       | 10.22                  | 153.33                 |                      |                            |
| 2  | 88  | 91.23       | 10.25                  | 153.76                 |                      |                            |
| 2  | 89  | 91.23       | 10.28                  | 154.20                 |                      |                            |
| 2  | 90  | 91.23       | 10.31                  | 154.64                 |                      |                            |
| 2  | 91  | 91.23       | 10.34                  | 155.09                 |                      |                            |
| 2  | 92  | 91.23       | 10.37                  | 155.54                 |                      |                            |
| 2  | 93  | 91.23       | 10.40                  | 156.00                 |                      |                            |
| 2  | 94  | 91.23       | 10.43                  | 156.45                 |                      |                            |
| 2  | 95  | 91.23       | 10.46                  | 156.92                 |                      |                            |
| 2  | 96  | 91.23       | 10.49                  | 157.38                 |                      |                            |
| 2  | 97  | 91.23       | 10.52                  | 157.85                 |                      |                            |
| 2  | 98  | 91.23       | 10.55                  | 158.31                 |                      |                            |
| 2  | 99  | 91.23       | 10.59                  | 158.78                 |                      |                            |
| 2  | 100 | 91.23       | 10.62                  | 159.24                 |                      |                            |
| 2  | 101 | 91.23       | 10.65                  | 159.71                 |                      |                            |

### Combinazioni SLEQ

#### Pali in c.a.

| Ip | Is | Ar<br>[cmq] | $\sigma_c$<br>[kg/cmq] | $\sigma_f$<br>[kg/cmq] | $\tau_c$<br>[kg/cmq] | $\sigma_{stf}$<br>[kg/cmq] |
|----|----|-------------|------------------------|------------------------|----------------------|----------------------------|
| 1  | 1  | 91.23       | 5.11                   | 75.84                  |                      |                            |
| 1  | 2  | 91.23       | 5.67                   | 83.42                  |                      |                            |
| 1  | 3  | 91.23       | 6.98                   | 100.81                 |                      |                            |
| 1  | 4  | 91.23       | 8.10                   | 115.77                 |                      |                            |
| 1  | 5  | 91.23       | 9.05                   | 128.47                 |                      |                            |
| 1  | 6  | 91.23       | 9.84                   | 139.11                 |                      |                            |
| 1  | 7  | 91.23       | 10.51                  | 148.10                 |                      |                            |
| 1  | 8  | 91.23       | 11.08                  | 155.66                 |                      |                            |
| 1  | 9  | 91.23       | 11.53                  | 161.74                 |                      |                            |
| 1  | 10 | 91.23       | 11.88                  | 166.34                 |                      |                            |
| 1  | 11 | 91.23       | 12.11                  | 169.54                 |                      |                            |
| 1  | 12 | 91.23       | 12.25                  | 171.45                 |                      |                            |
| 1  | 13 | 91.23       | 12.30                  | 172.21                 |                      |                            |
| 1  | 14 | 91.23       | 12.28                  | 171.98                 |                      |                            |
| 1  | 15 | 91.23       | 12.19                  | 170.92                 |                      |                            |
| 1  | 16 | 91.23       | 12.06                  | 169.21                 |                      |                            |
| 1  | 17 | 91.23       | 11.88                  | 166.98                 |                      |                            |
| 1  | 18 | 91.23       | 11.69                  | 164.46                 |                      |                            |
| 1  | 19 | 91.23       | 11.46                  | 161.58                 |                      |                            |
| 1  | 20 | 91.23       | 11.22                  | 158.45                 |                      |                            |
| 1  | 21 | 91.23       | 10.97                  | 155.16                 |                      |                            |
| 1  | 22 | 91.23       | 10.70                  | 151.72                 |                      |                            |
| 1  | 23 | 91.23       | 10.43                  | 148.15                 |                      |                            |
| 1  | 24 | 91.23       | 10.15                  | 144.52                 |                      |                            |
| 1  | 25 | 91.23       | 9.87                   | 140.88                 |                      |                            |
| 1  | 26 | 91.23       | 9.59                   | 137.27                 |                      |                            |
| 1  | 27 | 91.23       | 9.32                   | 133.74                 |                      |                            |
| 1  | 28 | 91.23       | 9.06                   | 130.32                 |                      |                            |
| 1  | 29 | 91.23       | 8.80                   | 127.03                 |                      |                            |
| 1  | 30 | 91.23       | 8.56                   | 123.90                 |                      |                            |
| 1  | 31 | 91.23       | 8.33                   | 120.95                 |                      |                            |
| 1  | 32 | 91.23       | 8.12                   | 118.18                 |                      |                            |
| 1  | 33 | 91.23       | 7.92                   | 115.60                 |                      |                            |
| 1  | 34 | 91.23       | 7.74                   | 113.23                 |                      |                            |
| 1  | 35 | 91.23       | 7.57                   | 111.07                 |                      |                            |
| 1  | 36 | 91.23       | 7.41                   | 109.11                 |                      |                            |
| 1  | 37 | 91.23       | 7.28                   | 107.36                 |                      |                            |
| 1  | 38 | 91.23       | 7.15                   | 105.80                 |                      |                            |
| 1  | 39 | 91.23       | 7.05                   | 104.45                 |                      |                            |
| 1  | 40 | 91.23       | 6.95                   | 103.28                 |                      |                            |
| 1  | 41 | 91.23       | 6.87                   | 102.30                 |                      |                            |
| 1  | 42 | 91.23       | 6.80                   | 101.49                 |                      |                            |
| 1  | 43 | 91.23       | 6.75                   | 100.84                 |                      |                            |
| 1  | 44 | 91.23       | 6.71                   | 100.35                 |                      |                            |
| 1  | 45 | 91.23       | 6.68                   | 100.01                 |                      |                            |
| 1  | 46 | 91.23       | 6.65                   | 99.80                  |                      |                            |
| 1  | 47 | 91.23       | 6.76                   | 101.24                 |                      |                            |
| 1  | 48 | 91.23       | 6.85                   | 102.62                 |                      |                            |

PROGETTAZIONE ATI:

| Ip | Is  | Ar<br>[cmq] | $\sigma_c$<br>[kg/cmq] | $\sigma_f$<br>[kg/cmq] | $\tau_c$<br>[kg/cmq] | $\sigma_{sf}$<br>[kg/cmq] |
|----|-----|-------------|------------------------|------------------------|----------------------|---------------------------|
| 1  | 49  | 91.23       | 6.94                   | 103.88                 |                      |                           |
| 1  | 50  | 91.23       | 7.02                   | 105.05                 |                      |                           |
| 1  | 51  | 91.23       | 7.10                   | 106.13                 |                      |                           |
| 1  | 52  | 91.23       | 7.17                   | 107.13                 |                      |                           |
| 1  | 53  | 91.23       | 7.23                   | 108.05                 |                      |                           |
| 1  | 54  | 91.23       | 7.29                   | 108.91                 |                      |                           |
| 1  | 55  | 91.23       | 7.35                   | 109.72                 |                      |                           |
| 1  | 56  | 91.23       | 7.40                   | 110.47                 |                      |                           |
| 1  | 57  | 91.23       | 7.44                   | 111.18                 |                      |                           |
| 1  | 58  | 91.23       | 7.49                   | 111.86                 |                      |                           |
| 1  | 59  | 91.23       | 7.53                   | 112.50                 |                      |                           |
| 1  | 60  | 91.23       | 7.57                   | 113.11                 |                      |                           |
| 1  | 61  | 91.23       | 7.61                   | 113.70                 |                      |                           |
| 1  | 62  | 91.23       | 7.65                   | 114.28                 |                      |                           |
| 1  | 63  | 91.23       | 7.68                   | 114.84                 |                      |                           |
| 1  | 64  | 91.23       | 7.72                   | 115.39                 |                      |                           |
| 1  | 65  | 91.23       | 7.75                   | 115.93                 |                      |                           |
| 1  | 66  | 91.23       | 7.79                   | 116.46                 |                      |                           |
| 1  | 67  | 91.23       | 7.82                   | 117.00                 |                      |                           |
| 1  | 68  | 91.23       | 7.85                   | 117.53                 |                      |                           |
| 1  | 69  | 91.23       | 7.89                   | 118.07                 |                      |                           |
| 1  | 70  | 91.23       | 7.92                   | 118.61                 |                      |                           |
| 1  | 71  | 91.23       | 7.96                   | 119.15                 |                      |                           |
| 1  | 72  | 91.23       | 7.99                   | 119.70                 |                      |                           |
| 1  | 73  | 91.23       | 8.03                   | 120.26                 |                      |                           |
| 1  | 74  | 91.23       | 8.07                   | 120.82                 |                      |                           |
| 1  | 75  | 91.23       | 8.09                   | 121.26                 |                      |                           |
| 1  | 76  | 91.23       | 8.12                   | 121.63                 |                      |                           |
| 1  | 77  | 91.23       | 8.14                   | 122.02                 |                      |                           |
| 1  | 78  | 91.23       | 8.17                   | 122.42                 |                      |                           |
| 1  | 79  | 91.23       | 8.19                   | 122.82                 |                      |                           |
| 1  | 80  | 91.23       | 8.22                   | 123.23                 |                      |                           |
| 1  | 81  | 91.23       | 8.25                   | 123.65                 |                      |                           |
| 1  | 82  | 91.23       | 8.28                   | 124.08                 |                      |                           |
| 1  | 83  | 91.23       | 8.30                   | 124.52                 |                      |                           |
| 1  | 84  | 91.23       | 8.33                   | 124.97                 |                      |                           |
| 1  | 85  | 91.23       | 8.36                   | 125.42                 |                      |                           |
| 1  | 86  | 91.23       | 8.39                   | 125.88                 |                      |                           |
| 1  | 87  | 91.23       | 8.42                   | 126.34                 |                      |                           |
| 1  | 88  | 91.23       | 8.46                   | 126.82                 |                      |                           |
| 1  | 89  | 91.23       | 8.49                   | 127.29                 |                      |                           |
| 1  | 90  | 91.23       | 8.52                   | 127.78                 |                      |                           |
| 1  | 91  | 91.23       | 8.55                   | 128.27                 |                      |                           |
| 1  | 92  | 91.23       | 8.58                   | 128.76                 |                      |                           |
| 1  | 93  | 91.23       | 8.62                   | 129.25                 |                      |                           |
| 1  | 94  | 91.23       | 8.65                   | 129.75                 |                      |                           |
| 1  | 95  | 91.23       | 8.68                   | 130.25                 |                      |                           |
| 1  | 96  | 91.23       | 8.72                   | 130.76                 |                      |                           |
| 1  | 97  | 91.23       | 8.75                   | 131.26                 |                      |                           |
| 1  | 98  | 91.23       | 8.78                   | 131.77                 |                      |                           |
| 1  | 99  | 91.23       | 8.82                   | 132.27                 |                      |                           |
| 1  | 100 | 91.23       | 8.85                   | 132.78                 |                      |                           |
| 1  | 101 | 91.23       | 8.89                   | 133.28                 |                      |                           |
| 2  | 1   | 91.23       | 6.96                   | 103.65                 |                      |                           |
| 2  | 2   | 91.23       | 7.53                   | 111.20                 |                      |                           |
| 2  | 3   | 91.23       | 8.83                   | 128.58                 |                      |                           |
| 2  | 4   | 91.23       | 9.95                   | 143.51                 |                      |                           |
| 2  | 5   | 91.23       | 10.89                  | 156.20                 |                      |                           |
| 2  | 6   | 91.23       | 11.69                  | 166.81                 |                      |                           |
| 2  | 7   | 91.23       | 12.34                  | 175.55                 |                      |                           |
| 2  | 8   | 91.23       | 12.86                  | 182.58                 |                      |                           |
| 2  | 9   | 91.23       | 13.27                  | 188.06                 |                      |                           |
| 2  | 10  | 91.23       | 13.57                  | 192.16                 |                      |                           |
| 2  | 11  | 91.23       | 13.78                  | 195.03                 |                      |                           |
| 2  | 12  | 91.23       | 13.91                  | 196.81                 |                      |                           |
| 2  | 13  | 91.23       | 13.97                  | 197.63                 |                      |                           |
| 2  | 14  | 91.23       | 13.96                  | 197.62                 |                      |                           |
| 2  | 15  | 91.23       | 13.90                  | 196.89                 |                      |                           |
| 2  | 16  | 91.23       | 13.80                  | 195.54                 |                      |                           |
| 2  | 17  | 91.23       | 13.65                  | 193.68                 |                      |                           |
| 2  | 18  | 91.23       | 13.48                  | 191.50                 |                      |                           |
| 2  | 19  | 91.23       | 13.28                  | 188.88                 |                      |                           |
| 2  | 20  | 91.23       | 13.05                  | 185.90                 |                      |                           |
| 2  | 21  | 91.23       | 12.80                  | 182.65                 |                      |                           |
| 2  | 22  | 91.23       | 12.53                  | 179.20                 |                      |                           |
| 2  | 23  | 91.23       | 12.26                  | 175.64                 |                      |                           |
| 2  | 24  | 91.23       | 11.98                  | 172.00                 |                      |                           |
| 2  | 25  | 91.23       | 11.70                  | 168.36                 |                      |                           |
| 2  | 26  | 91.23       | 11.42                  | 164.76                 |                      |                           |
| 2  | 27  | 91.23       | 11.15                  | 161.23                 |                      |                           |
| 2  | 28  | 91.23       | 10.89                  | 157.81                 |                      |                           |
| 2  | 29  | 91.23       | 10.64                  | 154.52                 |                      |                           |
| 2  | 30  | 91.23       | 10.39                  | 151.39                 |                      |                           |
| 2  | 31  | 91.23       | 10.17                  | 148.43                 |                      |                           |
| 2  | 32  | 91.23       | 9.95                   | 145.66                 |                      |                           |

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| Ip | Is  | Af<br>[cmq] | $\sigma_c$<br>[kg/cmq] | $\sigma_f$<br>[kg/cmq] | $\tau_c$<br>[kg/cmq] | $\sigma_{sf}$<br>[kg/cmq] |
|----|-----|-------------|------------------------|------------------------|----------------------|---------------------------|
| 2  | 33  | 91.23       | 9.75                   | 143.09                 |                      |                           |
| 2  | 34  | 91.23       | 9.57                   | 140.72                 |                      |                           |
| 2  | 35  | 91.23       | 9.40                   | 138.56                 |                      |                           |
| 2  | 36  | 91.23       | 9.25                   | 136.60                 |                      |                           |
| 2  | 37  | 91.23       | 9.11                   | 134.84                 |                      |                           |
| 2  | 38  | 91.23       | 8.99                   | 133.29                 |                      |                           |
| 2  | 39  | 91.23       | 8.88                   | 131.93                 |                      |                           |
| 2  | 40  | 91.23       | 8.78                   | 130.77                 |                      |                           |
| 2  | 41  | 91.23       | 8.70                   | 129.78                 |                      |                           |
| 2  | 42  | 91.23       | 8.64                   | 128.97                 |                      |                           |
| 2  | 43  | 91.23       | 8.58                   | 128.33                 |                      |                           |
| 2  | 44  | 91.23       | 8.54                   | 127.84                 |                      |                           |
| 2  | 45  | 91.23       | 8.51                   | 127.50                 |                      |                           |
| 2  | 46  | 91.23       | 8.49                   | 127.29                 |                      |                           |
| 2  | 47  | 91.23       | 8.59                   | 128.73                 |                      |                           |
| 2  | 48  | 91.23       | 8.69                   | 130.10                 |                      |                           |
| 2  | 49  | 91.23       | 8.77                   | 131.37                 |                      |                           |
| 2  | 50  | 91.23       | 8.86                   | 132.54                 |                      |                           |
| 2  | 51  | 91.23       | 8.93                   | 133.62                 |                      |                           |
| 2  | 52  | 91.23       | 9.00                   | 134.61                 |                      |                           |
| 2  | 53  | 91.23       | 9.06                   | 135.54                 |                      |                           |
| 2  | 54  | 91.23       | 9.12                   | 136.40                 |                      |                           |
| 2  | 55  | 91.23       | 9.18                   | 137.21                 |                      |                           |
| 2  | 56  | 91.23       | 9.23                   | 137.96                 |                      |                           |
| 2  | 57  | 91.23       | 9.28                   | 138.67                 |                      |                           |
| 2  | 58  | 91.23       | 9.32                   | 139.34                 |                      |                           |
| 2  | 59  | 91.23       | 9.36                   | 139.98                 |                      |                           |
| 2  | 60  | 91.23       | 9.40                   | 140.60                 |                      |                           |
| 2  | 61  | 91.23       | 9.44                   | 141.19                 |                      |                           |
| 2  | 62  | 91.23       | 9.48                   | 141.76                 |                      |                           |
| 2  | 63  | 91.23       | 9.51                   | 142.32                 |                      |                           |
| 2  | 64  | 91.23       | 9.55                   | 142.87                 |                      |                           |
| 2  | 65  | 91.23       | 9.58                   | 143.41                 |                      |                           |
| 2  | 66  | 91.23       | 9.62                   | 143.95                 |                      |                           |
| 2  | 67  | 91.23       | 9.65                   | 144.49                 |                      |                           |
| 2  | 68  | 91.23       | 9.69                   | 145.02                 |                      |                           |
| 2  | 69  | 91.23       | 9.72                   | 145.56                 |                      |                           |
| 2  | 70  | 91.23       | 9.76                   | 146.10                 |                      |                           |
| 2  | 71  | 91.23       | 9.79                   | 146.64                 |                      |                           |
| 2  | 72  | 91.23       | 9.83                   | 147.19                 |                      |                           |
| 2  | 73  | 91.23       | 9.86                   | 147.74                 |                      |                           |
| 2  | 74  | 91.23       | 9.90                   | 148.31                 |                      |                           |
| 2  | 75  | 91.23       | 9.92                   | 148.72                 |                      |                           |
| 2  | 76  | 91.23       | 9.95                   | 149.05                 |                      |                           |
| 2  | 77  | 91.23       | 9.97                   | 149.40                 |                      |                           |
| 2  | 78  | 91.23       | 9.99                   | 149.76                 |                      |                           |
| 2  | 79  | 91.23       | 10.01                  | 150.12                 |                      |                           |
| 2  | 80  | 91.23       | 10.04                  | 150.49                 |                      |                           |
| 2  | 81  | 91.23       | 10.06                  | 150.87                 |                      |                           |
| 2  | 82  | 91.23       | 10.09                  | 151.26                 |                      |                           |
| 2  | 83  | 91.23       | 10.11                  | 151.66                 |                      |                           |
| 2  | 84  | 91.23       | 10.14                  | 152.07                 |                      |                           |
| 2  | 85  | 91.23       | 10.17                  | 152.48                 |                      |                           |
| 2  | 86  | 91.23       | 10.19                  | 152.90                 |                      |                           |
| 2  | 87  | 91.23       | 10.22                  | 153.33                 |                      |                           |
| 2  | 88  | 91.23       | 10.25                  | 153.76                 |                      |                           |
| 2  | 89  | 91.23       | 10.28                  | 154.20                 |                      |                           |
| 2  | 90  | 91.23       | 10.31                  | 154.64                 |                      |                           |
| 2  | 91  | 91.23       | 10.34                  | 155.09                 |                      |                           |
| 2  | 92  | 91.23       | 10.37                  | 155.54                 |                      |                           |
| 2  | 93  | 91.23       | 10.40                  | 156.00                 |                      |                           |
| 2  | 94  | 91.23       | 10.43                  | 156.45                 |                      |                           |
| 2  | 95  | 91.23       | 10.46                  | 156.92                 |                      |                           |
| 2  | 96  | 91.23       | 10.49                  | 157.38                 |                      |                           |
| 2  | 97  | 91.23       | 10.52                  | 157.85                 |                      |                           |
| 2  | 98  | 91.23       | 10.55                  | 158.31                 |                      |                           |
| 2  | 99  | 91.23       | 10.59                  | 158.78                 |                      |                           |
| 2  | 100 | 91.23       | 10.62                  | 159.24                 |                      |                           |
| 2  | 101 | 91.23       | 10.65                  | 159.71                 |                      |                           |

### Verifica a fessurazione

#### Simbologia adottata

|            |  |
|------------|--|
| n°         | indice sezione   |
| Y          | ordinata sezione espressa in [m]                         |
| B          | larghezza sezione espressa in [cm]                       |
| H          | altezza sezione espressa in [cm]                         |
| Af         | area ferri zona tesa espresso in [cmq]                   |
| Aeff       | area efficace espressa in [cmq]                          |
| M          | momento agente espressa in [kgm]                         |
| Mpf        | momento di formazione/apertura fessure espressa in [kgm] |
| $\epsilon$ | deformazione espresso in %                               |
| Sm         | spaziatura tra le fessure espressa in [mm]               |

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w apertura delle fessure espressa in [mm]

### Combinazioni SLEF

Pali in c.a.

Apertura limite fessure  $w_{lim}=0.400$  mm

| Ip | Is | Af<br>[cmq] | Aeff<br>[cmq] | Mpf<br>[kgm] | M<br>[kgm] | N<br>[kg] | $\epsilon$<br>[%] | Sm<br>[mm] | wm<br>[mm] |
|----|----|-------------|---------------|--------------|------------|-----------|-------------------|------------|------------|
| 1  | 1  | 26.61       | 1754.51       | 67014        | 1132       | 55374     | 0.000000          | 0.00       | 0.00       |
| 2  | 1  | 26.61       | 1638.80       | 70721        | 1132       | 91858     | 0.000000          | 0.00       | 0.00       |

### Combinazioni SLEQ

Pali in c.a.

Apertura limite fessure  $w_{lim}=0.300$  mm

| Ip | Is | Af<br>[cmq] | Aeff<br>[cmq] | Mpf<br>[kgm] | M<br>[kgm] | N<br>[kg] | $\epsilon$<br>[%] | Sm<br>[mm] | wm<br>[mm] |
|----|----|-------------|---------------|--------------|------------|-----------|-------------------|------------|------------|
| 1  | 1  | 26.61       | 1754.51       | 67014        | 1132       | 55374     | 0.000000          | 0.00       | 0.00       |
| 2  | 1  | 26.61       | 1638.80       | 70721        | 1132       | 91858     | 0.000000          | 0.00       | 0.00       |

PROGETTAZIONE ATI:



#### **4. DICHIARAZIONI SECONDO N.T.C. 2018 (PUNTO 10.2)**

##### **Analisi e verifiche svolte con l'ausilio di codici di calcolo**

Il sottoscritto, in qualità di calcolatore delle opere in progetto, dichiara quanto segue.

##### **Tipo di analisi svolta**

L'analisi strutturale e le verifiche sono condotte con l'ausilio di un codice di calcolo automatico. La verifica della sicurezza degli elementi strutturali è stata valutata con i metodi della scienza delle costruzioni.

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

- Calcolo della spinta del terreno
- Verifica a ribaltamento
- Verifica a scorrimento del muro sul piano di posa
- Verifica della stabilità complesso fondazione terreno (carico limite)
- Verifica della stabilità globale
- Calcolo delle sollecitazioni sia del muro che della fondazione, progetto delle armature e relative verifiche dei materiali.
- Calcolo della portanza assiale e trasversale dei pali. Progetto e verifica delle armature dei pali inseriti.

L'analisi strutturale sotto le azioni sismiche è condotta con il metodo dell'analisi statica equivalente secondo le disposizioni del capitolo 7 del D.M. 17/01/2018.

La verifica delle sezioni degli elementi strutturali è eseguita con il metodo degli Stati Limite. Le combinazioni di carico adottate sono esaustive relativamente agli scenari di carico più gravosi cui l'opera sarà soggetta.

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

|            |   |
|------------|---|
| Titolo     | MAX - Analisi e Calcolo Muri di Sostegno                          |
| Versione   | 16.0  |
| Produttore | Aztec Informatica srl, Casali del Manco - loc. Casole Bruzio (CS) |
| Utente     | STUDIO SURACI INGEGNERIA S.R.L.                                   |
| Licenza    | AIU6456Y8   |

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

Un attento esame preliminare della documentazione a corredo del software ha consentito di valutarne l'affidabilità. La documentazione fornita dal produttore del software contiene un'esauriente descrizione delle basi teoriche, degli algoritmi impiegati e l'individuazione dei campi d'impiego. La società produttrice Aztec Informatica srl ha verificato l'affidabilità e la robustezza del codice di calcolo attraverso un numero significativo di casi prova in cui i risultati dell'analisi numerica sono stati confrontati con soluzioni teoriche.

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

La relazione di calcolo strutturale presenta i dati di calcolo tale da garantirne la leggibilità, la corretta interpretazione e la riproducibilità. La relazione di calcolo illustra in modo esaustivo i dati in ingresso ed i risultati delle analisi in forma tabellare.

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

Il software prevede una serie di controlli automatici che consentono l'individuazione di errori di modellazione, di non rispetto di limitazioni geometriche e di armatura e di presenza di elementi non verificati. Il codice di calcolo consente di visualizzare e controllare, sia in forma grafica che tabellare, i dati del modello strutturale, in modo da avere una visione consapevole del comportamento corretto del modello strutturale.

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

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

In base a quanto sopra, io sottoscritto asserisco che l'elaborazione è corretta ed idonea al caso specifico, pertanto i risultati di calcolo sono da ritenersi validi ed accettabili.

Luogo e data

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Il progettista  
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