RELAZIONI

1) RELAZIONE DI CALCOLO STRUTTURALE

2) RELAZIONE GEOTECNICA E DELLE FONDAZIONI

COSTRUZIONE DI CENTRALINA IDROELETTRICA NONCHÉ DELLE OPERE CONNESSE

COMMITTENTE

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LOCALITA'CANTIERE:

Comune di Molini di Triora- loc. Torrente Gavano

DATA cuneo, 20/04/2017

PROGETTISTA STRUTTURALE

F&M Ingegneri associati di Nebiolo e Raviolo
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1. PREMESSA

La presente relazione ha per oggetto il progetto di nuova centrale idroelettrica composta da centrale più opera di presa nel comune di Molini di Triora, località Gavano.

Entrambe le strutture sono composte da solette, elementi verticali, e orizzontamenti in cemento armato di spessore variabile da 30 cm a 20 cm.

2. NORMATIVE

Il calcolo strutturale é condotto nell' osservanza della normativa che attualmente regola l' esecuzione delle opere strutturali e più precisamente:

- Ordinanza n° 3242/03 – Primi elementi in materia di criteri generali per la classificazione sismica del territorio nazionale e di normative tecniche per le costruzioni in zona sismica;
- Norme tecniche per le costruzioni" di cui al D.M. 14/01/2008
- Circolare ministeriale 2 febbraio 2009 n° 617 – Istruzioni per l'applicazione delle "Nuove norme tecniche per le costruzioni" di cui al D.M. 14/01/2008
- Eurocodice 2
- Eurocodice 8

3. MATERIALI

Essendo il sistema strutturale primario di nuova realizzazione, vengono fatte prescrizioni sulla base delle indicazioni del capitolo 8 delle NTC 2008.

3.1 Calcestruzzo

CLASSE C33/40 (OPERA DI PRESA)

Resistenza caratteristica cubica a compressione:	$R_{ck} = 40$	[Mpa]
Resistenza caratteristica cilindrica a compressione:	$f_{ck} = 33.2$	[Mpa]
Resistenza di calcolo:	$f_{cd} = 18.81$	[Mpa]

CLASSE C25/30 (FONDAZIONI, SETTI E SOLETTE CENTRALE)

Resistenza caratteristica cubica a compressione:	$R_{ck} = 30$	[Mpa]
Resistenza caratteristica cilindrica a compressione:	$f_{ck} = 25$	[Mpa]
Resistenza di calcolo:	$f_{cd} = 14$	[Mpa]

3.2 ACCIAIO B450C

Resistenza caratteristica a trazione delle armature:	$f_{yk} = 450$	[Mpa]
Resistenza di calcolo a trazione delle armature:	$f_{yd} = 391$	[Mpa]

4. CARICHI

4.1PESI PROPRI

I pesi propri strutturali sono presi in conto in automatico dal programma di calcolo sulla base delle sezioni con i seguenti pesi propri:

- Calcestruzzo armato: 25.00 kN/m^3
- Peso rivestimento in pietra 5.00 kN/m^2

4.2 CARICHI PERMANENTI

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Carico permanente copertura (allettamento+copertura ardesia): 3.75 kN/m^2

Carico permanente solaio intermedio: 1.00 kN/m^2

Carico permanente Turbina: 40 kN

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Carico permanente pietre: 2.5 kN/m^2

4.3 CARICHI VARIABILI

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Carico neve: 2.70 kN/m^2

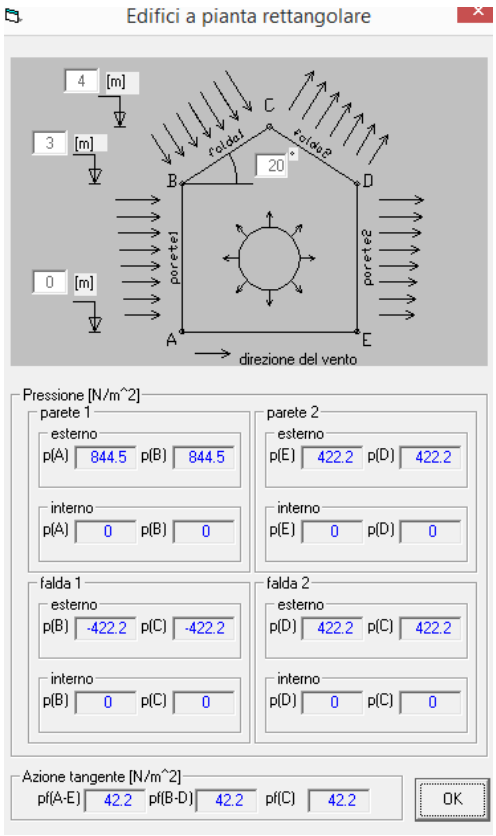
Carico su solaio intermedio: 2.00 kN/m^2

Opera di presa

Carico neve: 2.70 kN/m^2

Carico su soletta ipotizzata carrabile: 20.00 kN/m^2

4.4 CARICO VENTO



Sono stati assunti nel calcolo:

- Vento pressione: 0.85 kN/m^2
- Vento depressione: 0.422 kN/m^2

Entrambe i valori sono stati applicati sulle superfici direttamente investite.

5. ANALISI SISMICA

5.1 Vita nominale

Con riferiemento ai tipi di costruzione indicati nel prospetto 2.4.1 – TUC, l'edificio in oggetto è definibile come opera strategica essendo la palestra a servizio di una scuola, pertanto si assume una vita nominale **Vn = 100 anni.**

5.2 Classe d'uso

Con riferimento alle conseguenze di una interruzione di operatività o di un eventuale collasso, in presenza di azioni sismiche le NTC suddividono gli edifici in 4 classi d'uso. L'edificio in esame risulta in **Classe IV**

5.3 Vita di riferimento

La vita di riferimento definita come prodotto tra la vita nominale e il coefficiente legato alla classe d'uso (2 per la classe IV) risulta pari a **Vr = 200 anni.**

5.4 Periodo di ritorno azione sismica

La valutazione delle forze sismiche viene eseguita con riferimento allo stato limite di salvaguardia della vita (SLV) che associa una probabilità di superametno (PVR) pari al 10% per un periodo di ritorno dell'azione sismica pari a **Tr = 9.5 Vr = 9.5 x 200 = 1900 anni.**

5.5 Accelerazione del sito

L'edificio è sito nel comune di Fossano in Via Matteotti n° 33 ed è ricadente in una zona sismica 3. Le coordinate geografiche,acquisite mediante il sistema webgis dell'arpa sono : **long. 7.7949 lat. 43.9736**

Note la latitudine e la longitudine del sito dall'allegato al TUC si ottengono i seguenti parametri spettrali: ag=1.6013 [g/10], Fo = 2.444, TC*= 0.290

5.6 Tipologia di terreno

Le NTC 2008 definiscono al punto 3.2.2 le categorie di sottosuolo e le condizioni tipografiche. La caratterizzazione del sottosuolo per l'individuazione della categoria va effettuata misurando la propagazione delle onde di taglio entro i primi 30 metri di profondità mediante una o più prove MASW Vs 30. Nei casi un cui tale misurazione diretta non sia disponibile, la classificazione può essere effettuata in base al numero equivalente di colpi della prova penetrometrica dinamica per terreni a grana grossa.

Il terreno di tipo A e il sito è di tipo pianeggiante e dunque di classe topografica è T2.

5.7 Fattore di struttura

A favore di sicurezza non viene considerata alcuna dissipazione energetica per deformazione utilizzando **un fattore di struttura q=1 (strutture a pendolo inverso)**

Il suddeto valore è tipico delle strutture non dissipative per le quali la duttilità è legata alle sole sovraresistenze dei materiali (EC8 2.2.2). Saranno comunque applicati i dettagli costruttivi minimi per le strutture in classe di duttilità bassa.

5.8 Analisi statica lineare

E' stata effettuata un'analisi statica lineare in quanto impossibile riuscire a mobilitare sotto azione sismica come minimo l'85% delle masse della struttura, essendo questa una struttura scatolare in cemento armato.

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------------------------------------------------------------------------------
Analisi sismica - Statica lineare - ( NTC 2008 )
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DATI PROGETTO

Edificio  sito in località   ( long. 7.795   lat. 43.973600 )

Categoria del suolo di fondazione  = A

Coeff. di amplificazione stratigrafica Ss = 1.000

Coeff. di amplificazione topografica   ST = 1.200

S   =  1.200

Vita nominale dell'opera VN     = 100  anni

Coefficiente d'uso CU           = 2.0

Periodo di riferimento VR       = 200.0

PVR : probabilità di superamento  in VR   = 10 %

Tempo di ritorno                = 1898

Coeff. di smorzamento viscoso   = 5.0

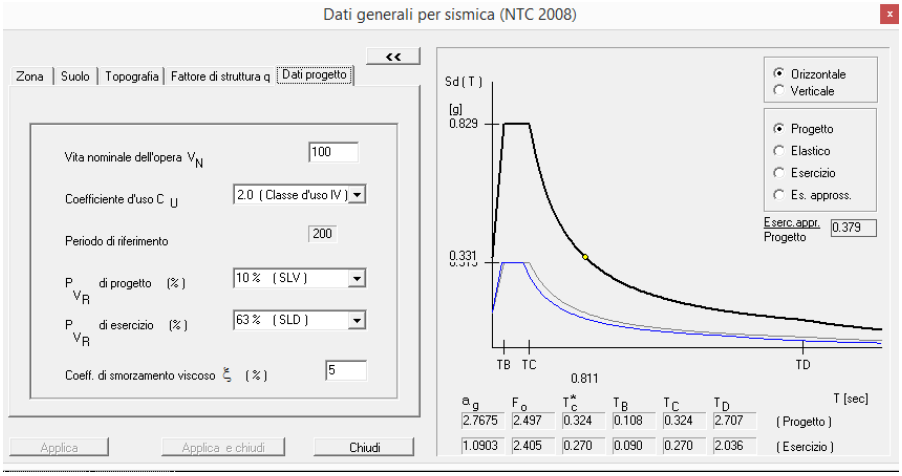

Valori risultanti per :
ag  2.768  [g/10]
Fo  2.497
TC* 0.324


Fattore di struttura q            = 1.000
```

```
Rapporto spettro di esercizio / spettro di progetto   = 0.379


Coeff. lambda     =   1.0000
Sd                =    0.829
```

Lo spettro di risposta è qui rappresentato:



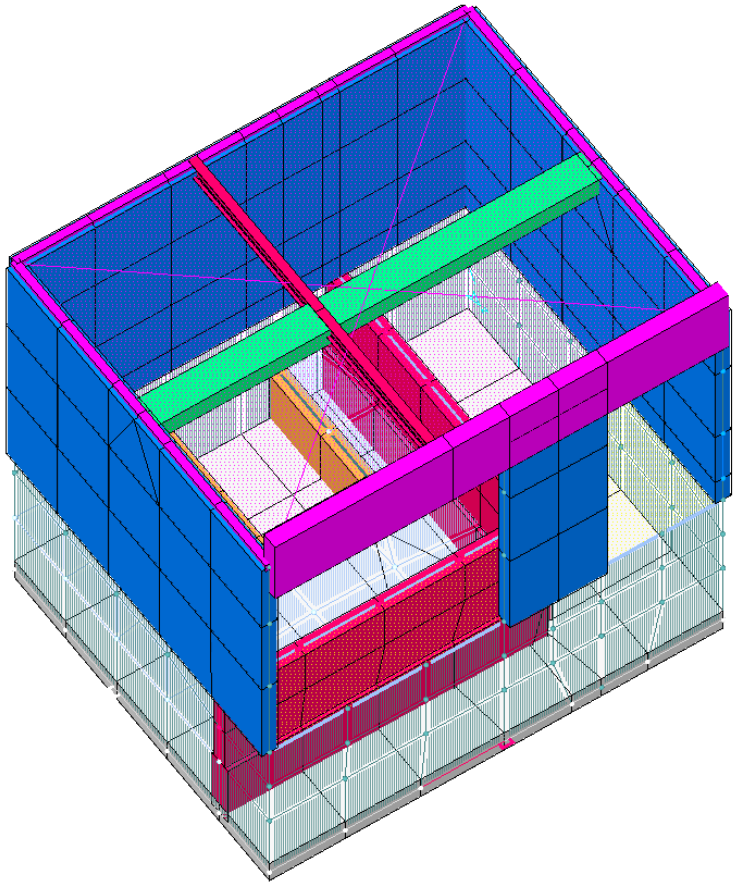
6. MODELLAZIONE STRUTTURALE

E' stata effettuata una modellazione strutturale con il software Dolmen rel. 16. La struttura è stata schematizzata come telaio spaziale, considerando gli elementi strutturali principali L'analisi sismica effettuata è di tipo statica lineare.

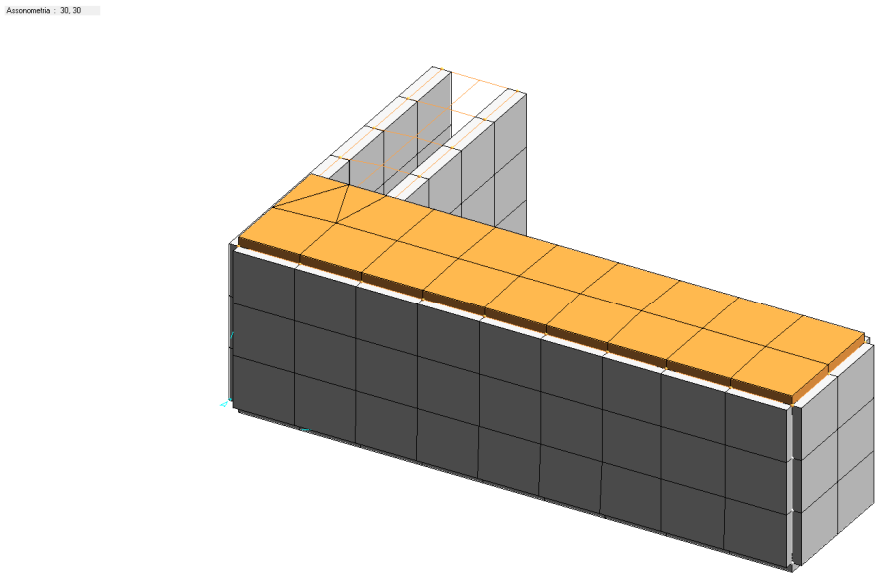
I vincoli adottati sono stati i seguenti:

- Fondazione – setti = incastro
- setti – solette = incastro
- setti- copertura=incastro

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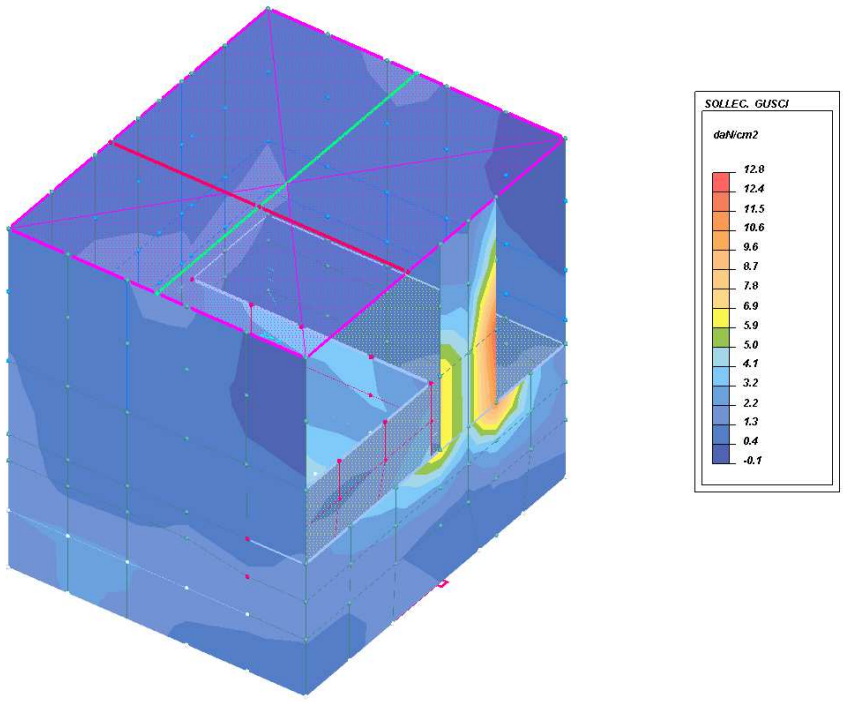
7. SINTESI DEI RISULTATI DI CALCOLO

In questo paragrafo si riportano i diagrammi di sollecitazione dei principali elementi strutturali in condizione di SLU e SLV (inviluppo).

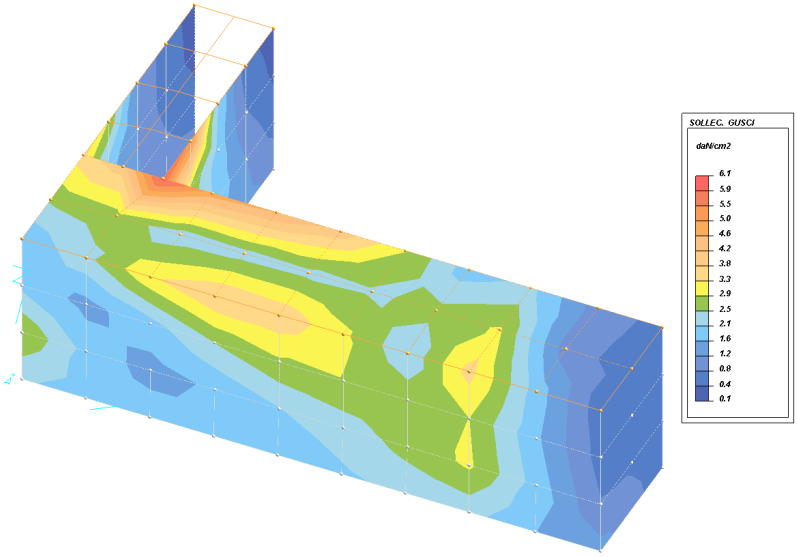
Un elenco più dettagliato delle sollecitazioni di tutti gli elementi modellati è riportato in allegato.

7.1 Sigma principale [daN/cmq]

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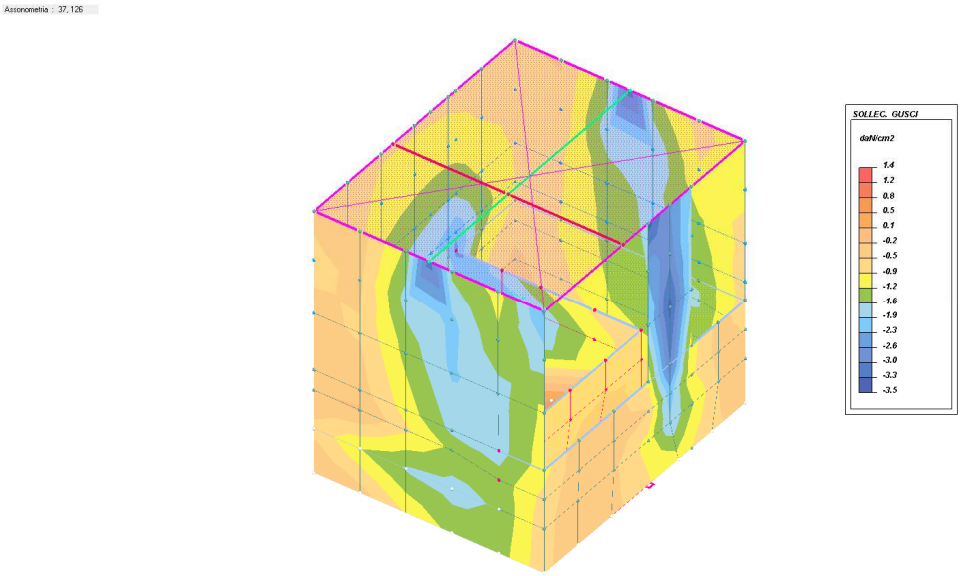


Opera di presa

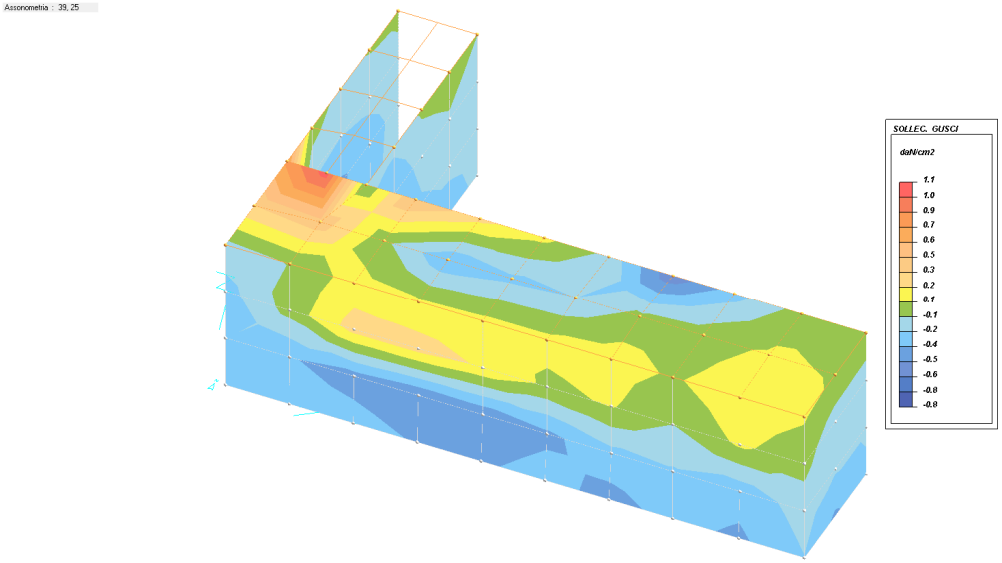


7.2 Sigma secondaria [daN/cmq]

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Opera di presa



8. RIASSUNTO DELLE VERIFICHE EFFETTUATE

Utilizzando come traccia la tabella C7.1 riportata nella circolare esplicativa delle NTC 2008 si elencano brevemente le verifiche effettuate con il relativo paragrafo di riferimento:

- SLO – Contenimento del danno elementi non strutturali ➔ cap 9
- SLO – Funzionalità degli impianti ➔ cap 9
- SLD – Resistenza degli elementi strutturali ➔ cap 10
- SLV – Assenza di martellamento tra strutture continue ➔ cap 11
- SLV – Resistenza delle strutture ➔ cap 12

9. VERIFICHE DI CONTENIMENTO DEL DANNO

Per le costruzioni ricadenti in classe d'uso III e IV si deve verificare che l'azione sismica di progetto non produca danni agli elementi costruttivi senza funzione strutturale tali da non rendere temporaneamente non operativa la costruzione.

Per edifici con tamponamenti collegati rigidamente alla struttura tale requisito si può ritenere soddisfatto quando gli spostamenti di interpiano ottenuti allo SLO sono inferiori ai 2/3 del seguente limite:

$$d_r < 0.005\ h$$

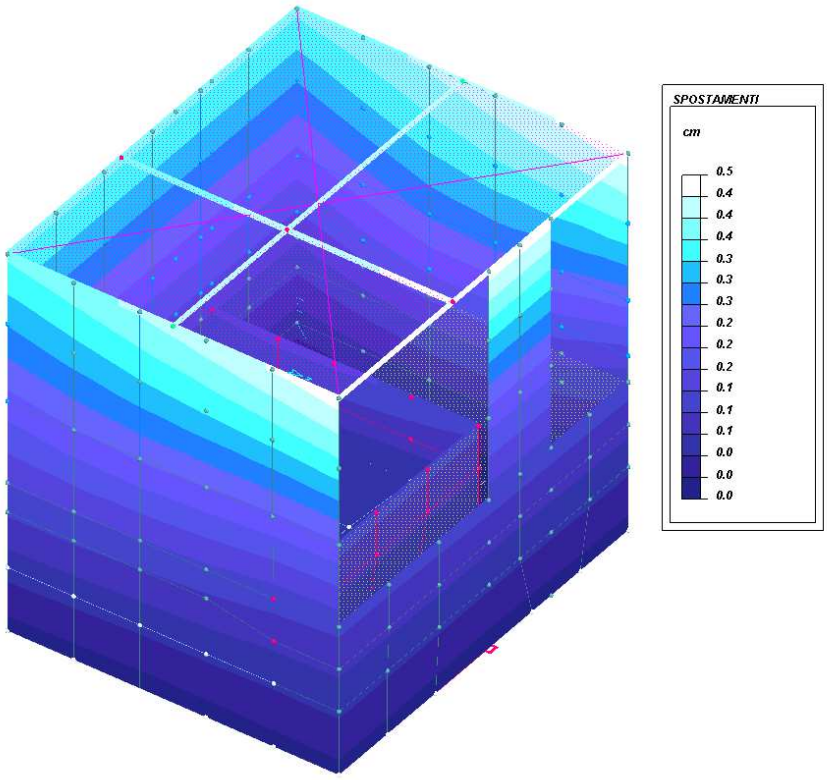
Il valore ammissibile di spostamento ad SLO diventa:

$$d_r = 0.005 \times h \times 2/3 = 0.005 \times 400 \times 2/3 = 1.3\ cm.$$

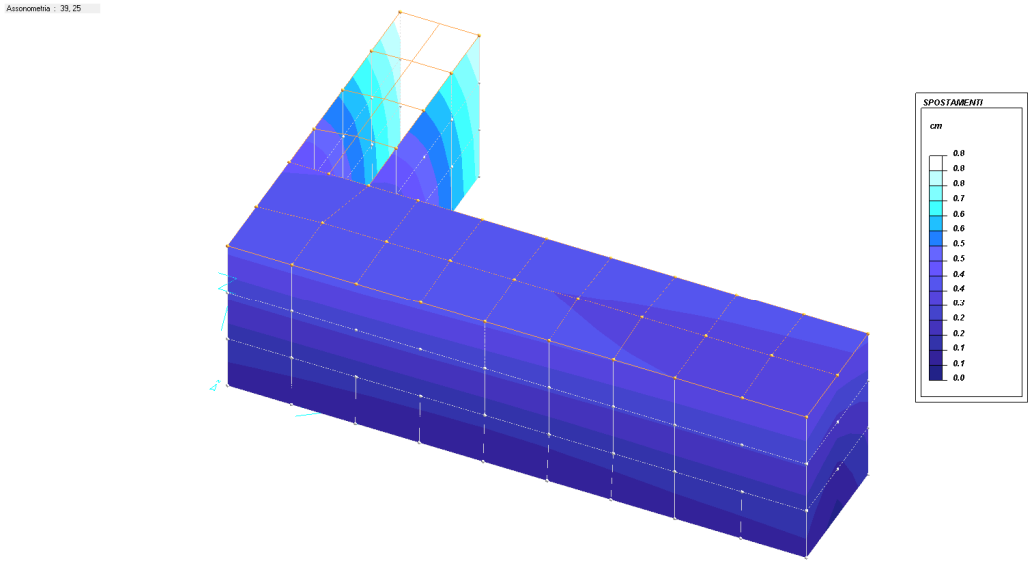
Le immagini seguenti mostrano i massimi spostamenti riscontrati nelle due direzioni in condizioni di SLO.

Spostamenti in direzione X e Y [cm]:

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In entrambe le direzioni il valore massimo di spostamento in condizioni di SLO risulta inferiore al limite imposto dalla normativa. Le verifiche di contenimento del danno risultano verificate.

Per quanto riguarda la verifica degli impianti si precisa che gli spostamenti sono trascurabili.

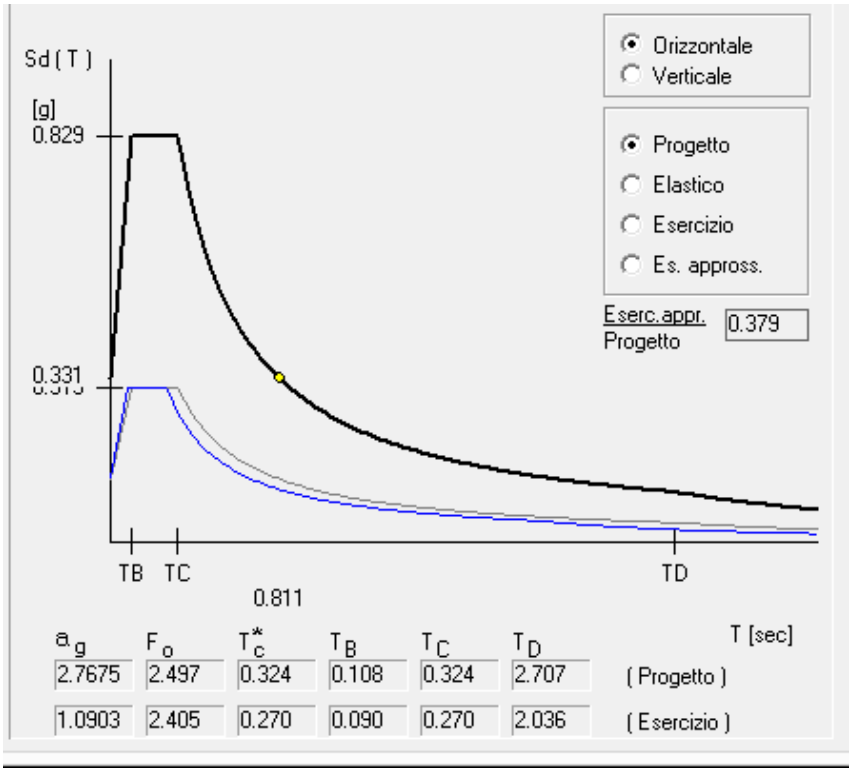
La verifica degli impianti in termini di mantenimento della funzionalità è dunque rispettata.

10. VERIFICHE DI RESISTENZA ELEMENTI STRUTTURALI S.L.D.

Essendo la struttura ricadente in classe IV è necessario verificare la capacita' portante degli elementi strutturali in condizioni di sisma SLD attribuendo un fattore $\eta = 0.67$.

Si dimostra in seguito che per la struttura in oggetto, le sollecitazioni derivanti dalla suddetta analisi, risultano superflue in quanto le azioni risultano inferiori a quelle di S.L.V.

Analizzando infatti gli spettri di riposta si nota come l'accelerazione per qualunque periodo strutturale dello spettro di SLD sia inferiore di quella allo SLV.



Per quel che riguarda le verifiche di resistenza degli elementi strutturali a SLD si rimanda alle verifiche fatte a SLV.

11. VERIFICHE DI MARTELLAMENTO

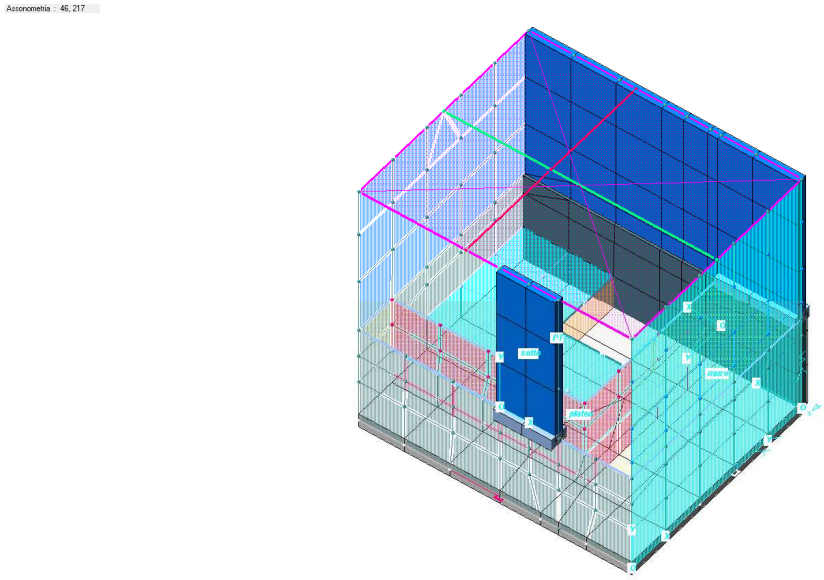
Non sono presenti costruzioni adiacenti al presente edificio

12. VERIFICHE DI RESISTENZA ELEMENTI STRUTTURALI S.L.U.-S.L.V.

12.1 Centrale

12.1.1 Setti e muri

Si riporta nell'immagine seguente la numerazione dei diversi macrogusci:



Nel seguito le verifiche di dettaglio:

```
MACROGUSCIO muro__

VERIFICA ARMATURE EFFETTIVE (EFFETTO MEMBRANA + PIASTRA)

CASI DI CARICO:
    Nome  Descrizione
    1     SLU SENZA SISMA
    4     SLU con SISMAX PRINC
    5     SLU con SISMAY PRINC

DATI:
   tensione di snervamento acciaio (fyk): 4500    daN/cm2
   coefficiente sicurezza acciaio       : 1.15
   deformazione ultima acciaio          : 67.5    per mille
   deformazione ultima cls              :  3.5    per mille
   rapporto rottura/snervamento      (k): 1.15
   resistenza cilindrica cls       (fck): 332     daN/cm2
   coefficiente sicurezza cls           : 1.5
   coefficiente riduttivo         (alfa): 0.85
   copriferro inferiore  (asse armatura):  4      cm
   copriferro superiore  (asse armatura):  4      cm
   moltiplicatore sollecitazioni        :  1

LEGENDA:
   spess = spessore guscio. Verifica effettuata su sezione BxH, con B=1 cm e H="spess" cm
   Af    = area disposta al lembo teso, in cm2 al metro
   Afc   = area disposta al lembo compresso, in cm2 al metro
   Mom   = momento flettente [daNcm/cm]
   Nor   = sforzo normale [daN]
   epsC  = deformazione cls [per mille]
   epsF  = deformazione acciaio [per mille]

   L'armatura è sufficiente se le deformazioni dei materiali sono ovunque minori delle
corrispondenti deformazioni ultime.
```

		INFERIORE ORIZZONTALE						INFERIORE VERTICALE					
GUSCI	spess	Af	Afc	Mom	Nor	epsC	epsF	Af	Afc	Mom	Nor	epsC	epsF
1	30	4.65	4.65	604.	55.	0.00	0.53	4.67	4.67	0.	56.	0.00	0.29
2	30	4.65	4.65	940.	25.	0.00	0.51	4.67	4.67	558.	74.	0.00	0.60
3	30	4.65	4.65	1087.	69.	0.00	0.79	4.67	4.67	713.	60.	0.00	0.62
4	20	4.65	4.65	782.	25.	0.07	0.65	4.67	4.67	301.	52.	0.00	0.48
5	20	4.65	4.65	317.	36.	0.00	0.39	4.67	4.67	278.	43.	0.00	0.40
6	20	4.65	4.65	269.	65.	0.00	0.51	4.67	4.67	166.	38.	0.00	0.30

7	20	4.65	4.65	170.	58.	0.00	0.41	4.67	4.67	222.	27.	0.00	0.30
8	30	4.65	4.65	0.	196.	0.00	1.00	4.67	4.67	0.	42.	0.00	0.21
9	30	4.65	4.65	667.	63.	0.00	0.59	4.67	4.67	256.	56.	0.00	0.39
10	30	4.65	4.65	893.	45.	0.00	0.59	4.67	4.67	542.	46.	0.03	0.45
11	20	4.65	4.65	842.	27.	0.08	0.69	4.67	4.67	332.	44.	0.00	0.44
12	20	4.65	4.65	425.	37.	0.00	0.47	4.67	4.67	341.	35.	0.07	0.40
13	20	4.65	4.65	128.	69.	0.00	0.44	4.67	4.67	396.	-4.	0.08	0.29
14	20	4.65	4.65	80.	57.	0.00	0.34	4.67	4.67	146.	34.	0.00	0.27
15	20	4.65	4.65	134.	50.	0.00	0.34	4.67	4.67	63.	11.	0.00	0.10
16	30	4.65	4.65	0.	232.	0.00	1.19	4.67	4.67	0.	32.	0.00	0.16
17	30	4.65	4.65	0.	84.	0.00	0.43	4.67	4.67	0.	29.	0.00	0.15
18	30	4.65	4.65	0.	101.	0.00	0.52	4.67	4.67	23.	22.	0.01	0.12
19	20	4.65	4.65	257.	39.	0.00	0.37	4.67	4.67	200.	6.	0.01	0.16
20	20	4.65	4.65	408.	-1.	0.08	0.32	4.67	4.67	398.	-7.	0.08	0.25
21	20	4.65	4.65	592.	16.	0.06	0.47	4.67	4.67	634.	0.	0.13	0.42
22	20	4.65	4.65	322.	10.	0.02	0.27	4.67	4.67	54.	-28.	0.02	0.02
23	20	4.65	4.65	250.	55.	0.00	0.45	4.67	4.67	238.	-24.	0.06	0.14
24	30	4.65	4.65	0.	165.	0.00	0.84	4.67	4.67	228.	78.	0.00	0.49
25	30	4.65	4.65	702.	65.	0.00	0.67	4.67	4.67	278.	78.	0.00	0.51
26	30	4.65	4.65	853.	12.	0.05	0.41	4.67	4.67	993.	59.	0.00	0.70
27	20	4.65	4.65	571.	27.	0.05	0.52	4.67	4.67	340.	45.	0.00	0.45
28	20	4.65	4.65	418.	-5.	0.09	0.27	4.67	4.67	133.	35.	0.04	0.26
29	20	4.65	4.65	593.	19.	0.04	0.49	4.67	4.67	737.	-17.	0.16	0.46
30	20	4.65	4.65	432.	27.	0.00	0.42	4.67	4.67	586.	13.	0.08	0.45
31	30	4.65	4.65	965.	54.	0.01	0.67	4.67	4.67	618.	95.	0.00	0.74
32	30	4.65	4.65	1356.	62.	0.00	0.87	4.67	4.67	1073.	75.	0.00	0.89
33	30	4.65	4.65	1413.	29.	0.04	0.73	4.67	4.67	2469.	81.	0.10	1.41
34	20	4.65	4.65	1067.	38.	0.13	0.90	4.67	4.67	1812.	120.	0.33	1.83
35	20	4.65	4.65	481.	35.	0.00	0.50	4.67	4.67	729.	62.	0.00	0.80
36	20	4.65	4.65	311.	-4.	0.07	0.27	4.67	4.67	650.	-33.	0.14	0.38
37	20	4.65	4.65	236.	-3.	0.05	0.15	4.67	4.67	701.	-19.	0.15	0.43

		SUPERIORE ORIZZONTALE						SUPERIORE VERTICALE					
GUSCI	spess	Af	Afc	Mom	Nor	epsC	epsF	Af	Afc	Mom	Nor	epsC	epsF
1	30	4.65	4.65	93.	77.	0.00	0.43	4.67	4.67	712.	56.	0.01	0.57
2	30	4.65	4.65	451.	25.	0.00	0.35	4.67	4.67	766.	70.	0.00	0.67
3	30	4.65	4.65	494.	69.	0.00	0.55	4.67	4.67	726.	60.	0.00	0.63
4	20	4.65	4.65	410.	25.	0.00	0.47	4.67	4.67	178.	62.	0.00	0.43
5	20	4.65	4.65	158.	43.	0.00	0.33	4.67	4.67	94.	51.	0.00	0.32
6	20	4.65	4.65	0.	71.	0.00	0.36	4.67	4.67	0.	44.	0.00	0.22
7	20	4.65	4.65	186.	49.	0.00	0.37	4.67	4.67	82.	36.	0.00	0.24
8	30	4.65	4.65	468.	196.	0.00	1.20	4.67	4.67	1161.	42.	0.11	0.68
9	30	4.65	4.65	771.	70.	0.01	0.67	4.67	4.67	715.	56.	0.05	0.58
10	30	4.65	4.65	842.	41.	0.00	0.55	4.67	4.67	493.	46.	0.02	0.43
11	20	4.65	4.65	738.	27.	0.05	0.62	4.67	4.67	75.	44.	0.00	0.27
12	20	4.65	4.65	143.	59.	0.00	0.40	4.67	4.67	0.	35.	0.00	0.18
13	20	4.65	4.65	152.	61.	0.00	0.43	4.67	4.67	0.	32.	0.01	0.16
14	20	4.65	4.65	200.	57.	0.00	0.42	4.67	4.67	108.	34.	0.00	0.25
15	20	4.65	4.65	94.	50.	0.00	0.32	4.67	4.67	92.	11.	0.00	0.12
16	30	4.65	4.65	716.	232.	0.00	1.49	4.67	4.67	1981.	32.	0.17	0.97
17	30	4.65	4.65	768.	84.	0.00	0.74	4.67	4.67	623.	1.	0.06	0.32
18	30	4.65	4.65	795.	101.	0.00	0.84	4.67	4.67	166.	22.	0.02	0.18
19	20	4.65	4.65	867.	70.	0.01	0.94	4.67	4.67	137.	24.	0.00	0.21
20	20	4.65	4.65	611.	43.	0.14	0.62	4.67	4.67	151.	-15.	0.04	0.17
21	20	4.65	4.65	597.	16.	0.06	0.47	4.67	4.67	549.	0.	0.11	0.36
22	20	4.65	4.65	256.	10.	0.01	0.22	4.67	4.67	89.	-28.	0.03	0.05
23	20	4.65	4.65	79.	55.	0.00	0.33	4.67	4.67	147.	-24.	0.04	0.08
24	30	4.65	4.65	668.	165.	0.00	1.12	4.67	4.67	2068.	80.	0.06	1.25
25	30	4.65	4.65	1094.	65.	0.00	0.89	4.67	4.67	884.	78.	0.00	0.76
26	30	4.65	4.65	1059.	17.	0.08	0.52	4.67	4.67	1101.	59.	0.00	0.74
27	20	4.65	4.65	865.	27.	0.13	0.71	4.67	4.67	466.	45.	0.00	0.54
28	20	4.65	4.65	561.	42.	0.14	0.60	4.67	4.67	143.	35.	0.03	0.27
29	20	4.65	4.65	652.	19.	0.06	0.53	4.67	4.67	767.	-17.	0.16	0.48
30	20	4.65	4.65	342.	27.	0.00	0.36	4.67	4.67	561.	13.	0.07	0.44
31	30	4.65	4.65	431.	66.	0.00	0.51	4.67	4.67	1747.	87.	0.00	1.15
32	30	4.65	4.65	1292.	62.	0.00	0.84	4.67	4.67	502.	116.	0.00	0.80
33	30	4.65	4.65	1170.	29.	0.00	0.63	4.67	4.67	1797.	78.	0.00	1.13
34	20	4.65	4.65	604.	38.	0.02	0.59	4.67	4.67	1260.	90.	0.06	1.30
35	20	4.65	4.65	428.	37.	0.00	0.47	4.67	4.67	412.	73.	0.00	0.65
36	20	4.65	4.65	427.	21.	0.09	0.39	4.67	4.67	853.	-33.	0.18	0.62
37	20	4.65	4.65	349.	-3.	0.07	0.23	4.67	4.67	701.	-19.	0.15	0.43

L'ARMATURA È OVUNQUE > DELLA QUANTITÀ RICHIESTA: IL PUNTO 2.3 DELLE NTC È VERIFICATO (Rd > Ed)

MACROGUSCIO muro__

VERIFICHE A FESSURAZIONE (EFFETTO MEMBRANA + PIASTRA)

CASI DI CARICO:

Nome	Descrizione
10	Rara (RARA)
11	Frequente (FREQUENTE)
12	Quasi Perm (QUASI PERMANENTE)

DATI:

copriferro inferiore (asse armatura):	4	cm
copriferro superiore (asse armatura):	4	cm

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   Af    = area effettiva tesa (cm2 al metro)
   Afc   = area effettiva compressa (cm2 al metro)
   Mom   = momento flettente [daNcm/cm]
   Nor   = sforzo normale [daN]
    σc   = tensione calcestruzzo [daN/cm2]
           valore max per combinazione rara            = 199  daN/cm2
             ''    ''  ''       ''      frequente       = 199 daN/cm2
             ''    ''  ''       ''      quasi permanente = 149 daN/cm2
    σf   = tensione acciaio [daN/cm2]
           valore max per combinazione rara            = 3600 daN/cm2
             ''    ''  ''       ''      frequente       = 3600 daN/cm2
             ''    ''  ''       ''      quasi permanente = 3600 daN/cm2
   wkR   = apertura caratteristica per combinazione rara (mm)            - valore max = 0.6 mm
   wkF   =     ''          ''      ''      ''       frequente (mm)       -   ''    '' = 0.4 mm
   wkP   =     ''          ''      ''      ''       quasi permanente (mm) -   ''    '' = 0.3 mm
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ARMATURA INFERIORE ORIZZONTALE

		COMBINAZIONE RARA					COMBINAZIONE FREQUENTE					COMBINAZIONE QUASI PERMANENTE				
GUSCI	Af	Afc	Mom	Nor	σc	σf	wkR	Mom	Nor	σc	σf	wkF	Mom	Nor	σc	σf	wkP
1	4.65	4.65	226	9	2.66	295.	0.037	214	9	2.49	283.	0.035	210	9	2.44	280.	0.035
2	4.65	4.65	381	16	4.50	497.	0.062	355	15	4.16	466.	0.058	347	15	4.05	458.	0.057
3	4.65	4.65	384	12	4.77	465.	0.056	358	12	4.42	436.	0.053	350	12	4.31	429.	0.052
4	4.65	4.65	301	8	8.59	503.	0.040	280	7	7.99	471.	0.038	274	7	7.81	462.	0.037
5	4.65	4.65	163	8	4.49	312.	0.027	151	7	4.17	292.	0.026	148	7	4.07	287.	0.025
6	4.65	4.65	103	5	2.85	197.	0.017	96	5	2.64	185.	0.016	93	5	2.57	181.	0.016
7	4.65	4.65	36	2	0.96	74.	0.007	33	3	0.86	75.	0.007	33	3	0.83	75.	0.007
8	4.65	4.65	0.	11	0.00	120.	0.023	0.	11	0.00	120.	0.023	0.	11	0.00	121.	0.023
9	4.65	4.65	0.	13	0.00	143.	0.027	0.	12	0.00	133.	0.025	0.	12	0.00	130.	0.025
10	4.65	4.65	0.	11	0.00	123.	0.024	0.	10	0.00	111.	0.021	0.	10	0.00	107.	0.020
11	4.65	4.65	0.	7	0.00	71.	0.009	0.	6	0.00	62.	0.008	0.	6	0.00	59.	0.008
12	4.65	4.65	29	6	0.00	112.	0.012	26	5	0.01	97.	0.011	25	5	0.09	92.	0.010
13	4.65	4.65	44	5	0.99	114.	0.011	40	4	0.97	98.	0.010	39	3	0.96	93.	0.009
14	4.65	4.65	36	9	0.00	149.	0.017	34	7	0.00	127.	0.014	33	6	0.12	120.	0.013
15	4.65	4.65	27	33	0.00	400.	0.050	24	27	0.00	328.	0.041	23	25	0.00	308.	0.039
16	4.65	4.65	0.	2	0.00	26.	0.005	0.	3	0.00	32.	0.006	0.	3	0.00	36.	0.007
17	4.65	4.65	0.	12	0.00	132.	0.025	0.	11	0.00	122.	0.023	0.	11	0.00	118.	0.023
18	4.65	4.65	0.	12	0.00	127.	0.024	0.	10	0.00	111.	0.021	0.	10	0.00	105.	0.020
19	4.65	4.65	0.	7	0.00	76.	0.010	0.	6	0.00	64.	0.008	0.	6	0.00	59.	0.008
20	4.65	4.65	0.	5	0.00	57.	0.007	0.	4	0.00	45.	0.006	0.	4	0.00	40.	0.005
21	4.65	4.65	0.	10	0.00	103.	0.013	0.	8	0.00	83.	0.011	0.	7	0.00	78.	0.010
22	4.65	4.65	15	9	0.00	120.	0.015	13	7	0.00	99.	0.012	12	7	0.00	93.	0.011
23	4.65	4.65	20	32	0.00	378.	0.048	18	28	0.00	324.	0.041	17	27	0.00	311.	0.040
24	4.65	4.65	0.	5	0.00	56.	0.011	0.	6	0.00	63.	0.012	0.	6	0.00	66.	0.013
25	4.65	4.65	0.	17	0.00	179.	0.034	0.	15	0.00	164.	0.031	0.	15	0.00	159.	0.030
26	4.65	4.65	0.	12	0.00	125.	0.024	0.	10	0.00	106.	0.020	0.	9	0.00	99.	0.019
27	4.65	4.65	0.	5	0.00	51.	0.007	0.	3	0.00	37.	0.005	0.	3	0.00	32.	0.004
28	4.65	4.65	0.	2	0.00	26.	0.003	0.	1	0.00	16.	0.002	0.	1	0.00	12.	0.002
29	4.65	4.65	0.	0.	0.02	0.	0.000	0.	-1	0.03	0.	0.000	0.	-1	0.03	0.	0.000
30	4.65	4.65	10	4	0.00	61.	0.007	7	4	0.00	53.	0.006	6	4	0.00	51.	0.006
31	4.65	4.65	278	10	3.36	350.	0.043	257	10	3.04	335.	0.042	251	11	2.93	331.	0.041
32	4.65	4.65	469	19	5.53	614.	0.076	393	18	4.49	535.	0.068	365	18	4.09	507.	0.065
33	4.65	4.65	422	10	5.45	467.	0.054	353	8	4.56	391.	0.045	328	8	4.23	363.	0.042
34	4.65	4.65	257	2	7.45	382.	0.028	212	1	6.15	308.	0.022	195	1	5.66	280.	0.019
35	4.65	4.65	39	0.	1.14	52.	0.004	30	0.	0.86	36.	0.002	26	-1	0.76	30.	0.002
36	4.65	4.65	6	-2	0.17	-1.	0.000	1	-2	0.10	-1.	0.000	0.	-2	0.08	-1.	0.000
37	4.65	4.65	10	-2	0.25	0.	0.000	7	-2	0.18	0.	0.000	5	-2	0.16	-1.	0.000

ARMATURA INFERIORE VERTICALE

		COMBINAZIONE RARA					COMBINAZIONE FREQUENTE					COMBINAZIONE QUASI PERMANENTE				
GUSCI	Af	Afc	Mom	Nor	σc	σf	wkR	Mom	Nor	σc	σf	wkF	Mom	Nor	σc	σf	wkP
1	4.67	4.67	0.	-37	1.19	-18.	0.000	0.	-34	1.07	-16.	0.000	0.	-32	1.03	-15.	0.000
2	4.67	4.67	21	-37	1.32	-16.	0.000	17	-33	1.16	-15.	0.000	15	-32	1.11	-14.	0.000
3	4.67	4.67	115	-39	1.93	-10.	0.000	104	-34	1.73	-9.	0.000	100	-33	1.66	-8.	0.000
4	4.67	4.67	59	-21	1.80	-7.	0.000	53	-18	1.59	-5.	0.000	51	-18	1.52	-5.	0.000
5	4.67	4.67	47	-19	1.54	-7.	0.000	43	-17	1.37	-6.	0.000	41	-16	1.31	-5.	0.000
6	4.67	4.67	29	-13	1.00	-5.	0.000	27	-11	0.90	-4.	0.000	26	-11	0.86	-4.	0.000
7	4.67	4.67	10	-4	0.30	-1.	0.000	10	-3	0.26	-1.	0.000	9	-3	0.25	0.	0.000
8	4.67	4.67	0.	-63	1.99	-30.	0.000	0.	-58	1.83	-27.	0.000	0.	-56	1.78	-27.	0.000
9	4.67	4.67	0.	-59	1.89	-28.	0.000	0.	-54	1.73	-26.	0.000	0.	-53	1.68	-25.	0.000
10	4.67	4.67	0.	-56	1.77	-27.	0.000	0.	-51	1.62	-24.	0.000	0.	-49	1.57	-24.	0.000
11	4.67	4.67	0.	-37	1.72	-26.	0.000	0.	-33	1.56	-23.	0.000	0.	-32	1.51	-23.	0.000
12	4.67	4.67	34	-32	1.97	-18.	0.000	30	-29	1.77	-16.	0.000	29	-28	1.71	-16.	0.000
13	4.67	4.67	44	-23	1.68	-10.	0.000	40	-21	1.52	-9.	0.000	39	-20	1.47	-9.	0.000
14	4.67	4.67	31	-4	0.74	5.	0.000	29	-4	0.69	5.	0.000	28	-4	0.67	4.	0.000
15	4.67	4.67	31	-31	1.89	-18.	0.000	28	-27	1.66	-15.	0.000	28	-26	1.61	-15.	0.000
16	4.67	4.67	0.	-73	2.31	-35.	0.000	0.	-68	2.15	-32.	0.000	0.	-66	2.10	-31.	0.000
17	4.67	4.67	0.	-71	2.26	-34.	0.000	0.	-66	2.09	-31.	0.000	0.	-64	2.04	-31.	0.000
18	4.67	4.67	0.	-65	2.06	-31.	0.000	0.	-60	1.90	-29.	0.000	0.	-58	1.85	-28.	0.000
19	4.67	4.67	0.	-47	2.18	-33.	0.000	0.	-43	2.01	-30.	0.000	0.	-42	1.96	-29.	0.000
20	4.67	4.67	0.	-43	2.00	-30.	0.000	0.	-39	1.82	-27.	0.000	0.	-38	1.78	-27.	0.000
21	4.67	4.67	21	-42	2.25	-26.	0.000	18	-38	2.00	-24.	0.000	16	-37	1.93	-23.	0.000
22	4.67	4.67	28	-69	3.59	-44.	0.000	26	-58	3.07	-37.	0.000	25	-55	2.93	-35.	0.000
23	4.67	4.67	25	-33	1.88	-19.	0.000	23	-28	1.61	-16.	0.000	22	-26	1.53	-15.	0.000
24	4.67	4.67	0.	-78	2.50	-37.	0.000	0.	-73	2.34	-35.	0.000	0.	-72	2.29	-34.	0.000
25	4.67	4.67	0.	-71	2.26	-34.	0.000	0.	-67	2.12	-32.	0.000	0.	-65	2.08	-31.	0.000
26	4.67	4.67	3	-66	2.12	-31.	0.000	0.	-62	1.97	-30.	0.000	0.	-61	1.93	-29.	0.000
27	4.67	4.67	0.	-46	2.15	-32.	0.000	0.	-43	2.01	-30.	0.000	0.	-42	1.98	-30.	0.000
28	4.67	4.67	0.	-46	2.16	-32.	0.000	0.	-42	1.97	-30.	0.000	0.	-41	1.92	-29.	0.000
29	4.67	4.67	0.	-34	1.60	-24.	0.000	0.	-31	1.44	-22.	0.000	0.	-30	1.40	-21.	0.000
30	4.67	4.67	16	-8	0.60	-4.	0.000	13	-7	0.52	-3.	0.000	12	-7	0.49	-3.	0.000
31	4.67	4.67	0.	-44	1.41	-21.	0.000	0.	-41	1.32	-20.	0.000	0.	-41	1.29	-19.	0.000
32	4.67	4.67	97	-45	2.04	-15.	0.000	71	-44	1.83	-16.	0.000	62	-43	1.76	-16.	0.000
33	4.67	4.67	131	-58	2.64	-18.	0.000	105	-55	2.39	-19.	0.000	95	-54	2.30	-19.	0.000
34	4.67	4.67	0.	-56	2.61	-39.	0.000	0.	-53	2.47	-37.	0.000	0.	-52	2.44	-37.	0.000
35	4.67	4.67	0.	-48	2.27	-34.	0.000	0.	-46	2.14	-32.	0.000	0.	-45	2.12	-32.	0.000
36	4.67	4.67	0.	-36	1.67	-25.	0.000	0.	-33	1.56	-23.	0.000	0.	-33	1.53	-23.	0.000
37	4.67	4.67	8	-19	0.99	-12.	0.000	5	-18	0.89	-12.	0.000	4	-17	0.86	-12.	0.000

ARMATURA SUPERIORE ORIZZONTALE

	COMBINAZIONE RARA	COMBINAZIONE FREQUENTE	COMBINAZIONE QUASI PERMANENTE

GUSCI	Af	Afc	Mom	Nor	σc	σf	WkR	Mom	Nor	σc	σf	WkF	Mom	Nor	σc	σf	WkP
1	4.65	4.65	0.	9	0.00	101.	0.019	0.	9	0.00	98.	0.019	0.	9	0.00	98.	0.019
2	4.65	4.65	0.	16	0.00	168.	0.032	0.	15	0.00	160.	0.031	0.	15	0.00	158.	0.030
3	4.65	4.65	0.	12	0.00	134.	0.026	0.	12	0.00	128.	0.025	0.	12	0.00	128.	0.024
4	4.65	4.65	0.	8	0.00	83.	0.011	0.	7	0.00	79.	0.010	0.	7	0.00	79.	0.010
5	4.65	4.65	0.	8	0.00	83.	0.011	0.	7	0.00	79.	0.010	0.	7	0.00	78.	0.010
6	4.65	4.65	0.	5	0.00	52.	0.007	0.	5	0.00	50.	0.006	0.	5	0.00	49.	0.006
7	4.65	4.65	0.	2	0.00	23.	0.003	0.	3	0.00	27.	0.004	0.	3	0.00	28.	0.004
8	4.65	4.65	398	11	5.04	461.	0.054	374	11	4.70	442.	0.052	367	11	4.59	437.	0.052
9	4.65	4.65	200	13	1.84	318.	0.043	190	12	1.78	299.	0.040	187	12	1.76	293.	0.039
10	4.65	4.65	90	11	0.00	204.	0.031	83	10	0.00	185.	0.028	80	10	0.00	178.	0.027
11	4.65	4.65	59	7	1.31	158.	0.016	54	6	1.24	141.	0.014	53	6	1.21	136.	0.014
12	4.65	4.65	30	6	0.00	114.	0.013	28	5	0.19	100.	0.011	27	5	0.25	96.	0.010
13	4.65	4.65	21	5	0.00	83.	0.009	20	4	0.19	71.	0.008	20	3	0.26	67.	0.007
14	4.65	4.65	25	9	0.00	132.	0.015	24	7	0.00	112.	0.013	24	6	0.00	106.	0.012
15	4.65	4.65	27	33	0.00	401.	0.050	26	27	0.00	330.	0.041	25	25	0.00	311.	0.039
16	4.65	4.65	379	2	5.13	350.	0.036	358	3	4.82	338.	0.035	352	3	4.73	336.	0.035
17	4.65	4.65	347	12	4.23	431.	0.052	330	11	4.05	405.	0.049	325	11	4.00	398.	0.048
18	4.65	4.65	229	12	2.49	326.	0.042	218	10	2.47	300.	0.038	216	10	2.47	292.	0.037
19	4.65	4.65	140	7	3.85	274.	0.024	134	6	3.73	253.	0.022	133	6	3.71	246.	0.021
20	4.65	4.65	56	5	1.34	137.	0.013	54	4	1.38	122.	0.012	53	4	1.40	116.	0.011
21	4.65	4.65	40	10	0.00	165.	0.018	39	8	0.09	143.	0.016	38	7	0.28	136.	0.015
22	4.65	4.65	33	9	0.00	148.	0.017	32	7	0.00	128.	0.014	31	7	0.00	122.	0.014
23	4.65	4.65	27	32	0.00	388.	0.049	25	28	0.00	334.	0.042	24	27	0.00	322.	0.040
24	4.65	4.65	425	5	5.68	419.	0.045	403	6	5.36	408.	0.044	397	6	5.26	406.	0.045
25	4.65	4.65	237	17	2.07	387.	0.052	234	15	2.21	369.	0.049	235	15	2.27	364.	0.049
26	4.65	4.65	158	12	1.29	264.	0.036	160	10	1.57	245.	0.033	162	9	1.68	239.	0.031
27	4.65	4.65	108	5	2.99	202.	0.017	110	3	3.12	191.	0.016	112	3	3.19	188.	0.015
28	4.65	4.65	48	2	1.31	94.	0.008	49	1	1.40	85.	0.007	50	1	1.44	82.	0.006
29	4.65	4.65	16	0.	0.47	19.	0.001	17	-1	0.49	18.	0.001	18	-1	0.53	19.	0.001
30	4.65	4.65	20	4	0.00	76.	0.008	18	4	0.00	69.	0.008	17	4	0.00	68.	0.008
31	4.65	4.65	0.	10	0.00	111.	0.021	0.	10	0.00	113.	0.022	0.	11	0.00	115.	0.022
32	4.65	4.65	0.	19	0.00	209.	0.040	0.	18	0.00	194.	0.037	0.	18	0.00	190.	0.036
33	4.65	4.65	0.	10	0.00	106.	0.020	0.	8	0.00	88.	0.017	0.	8	0.00	82.	0.016
34	4.65	4.65	0.	2	0.00	25.	0.003	0.	1	0.00	14.	0.002	0.	1	0.00	9.	0.001
35	4.65	4.65	0.	0.	0.01	0.	0.000	0.	0.	0.02	0.	0.000	0.	-1	0.03	0.	0.000
36	4.65	4.65	6	-2	0.01	-2.	0.000	4	-2	0.03	-2.	0.000	3	-2	0.04	-2.	0.000
37	4.65	4.65	14	-2	0.34	2.	0.000	11	-2	0.26	1.	0.000	10	-2	0.23	0.	0.000

ARMATURA SUPERIORE VERTICALE

			COMBINAZIONE RARA					COMBINAZIONE FREQUENTE					COMBINAZIONE QUASI PERMANENTE				
GUSCI	Af	Afc	Mom	Nor	σc	σf	WkR	Mom	Nor	σc	σf	WkF	Mom	Nor	σc	σf	WkP
1	4.67	4.67	614	-37	7.65	172.	0.017	573	-34	7.19	168.	0.016	559	-32	7.04	168.	0.016
2	4.67	4.67	58	-37	0.83	-22.	0.000	53	-33	0.74	-20.	0.000	52	-32	0.70	-19.	0.000
3	4.67	4.67	0.	-39	1.23	-18.	0.000	0.	-34	1.10	-16.	0.000	0.	-33	1.05	-16.	0.000
4	4.67	4.67	0.	-21	1.00	-15.	0.000	0.	-18	0.86	-13.	0.000	0.	-18	0.82	-12.	0.000
5	4.67	4.67	0.	-19	0.90	-14.	0.000	0.	-17	0.79	-12.	0.000	0.	-16	0.75	-11.	0.000
6	4.67	4.67	0.	-13	0.60	-9.	0.000	0.	-11	0.53	-8.	0.000	0.	-11	0.51	-8.	0.000
7	4.67	4.67	0.	-4	0.17	-2.	0.000	0.	-3	0.13	-2.	0.000	0.	-3	0.12	-2.	0.000
8	4.67	4.67	997	-63	12.32	263.	0.025	930	-58	11.53	252.	0.024	909	-56	11.29	249.	0.024
9	4.67	4.67	234	-59	0.46	-46.	0.000	222	-54	0.37	-42.	0.000	218	-53	0.34	-41.	0.000
10	4.67	4.67	96	-56	1.19	-34.	0.000	88	-51	1.08	-31.	0.000	86	-49	1.05	-30.	0.000
11	4.67	4.67	46	-37	1.10	-32.	0.000	43	-33	0.97	-29.	0.000	42	-32	0.93	-29.	0.000
12	4.67	4.67	21	-32	1.22	-26.	0.000	20	-29	1.09	-23.	0.000	20	-28	1.05	-23.	0.000
13	4.67	4.67	15	-23	0.88	-18.	0.000	14	-21	0.78	-17.	0.000	14	-20	0.75	-16.	0.000
14	4.67	4.67	21	-4	0.51	0.	0.000	20	-4	0.48	0.	0.000	20	-4	0.47	0.	0.000
15	4.67	4.67	23	-31	1.15	-25.	0.000	21	-27	0.98	-22.	0.000	21	-26	0.95	-21.	0.000
16	4.67	4.67	1094	-73	13.30	261.	0.025	1019	-68	12.41	244.	0.024	996	-66	12.13	239.	0.023
17	4.67	4.67	358	-71	0.07	-60.	0.000	338	-66	0.02	-56.	0.000	332	-64	0.01	-55.	0.000
18	4.67	4.67	135	-65	1.23	-41.	0.000	131	-60	1.10	-38.	0.000	130	-58	1.06	-37.	0.000
19	4.67	4.67	69	-47	1.25	-43.	0.000	67	-43	1.10	-40.	0.000	67	-42	1.05	-39.	0.000
20	4.67	4.67	21	-43	1.71	-33.	0.000	21	-39	1.54	-30.	0.000	22	-38	1.49	-30.	0.000
21	4.67	4.67	14	-42	1.77	-31.	0.000	13	-38	1.58	-28.	0.000	13	-37	1.53	-28.	0.000
22	4.67	4.67	22	-69	2.91	-51.	0.000	20	-58	2.45	-44.	0.000	19	-55	2.33	-42.	0.000
23	4.67	4.67	19	-33	1.28	-26.	0.000	17	-28	1.07	-22.	0.000	16	-26	1.01	-21.	0.000
24	4.67	4.67	1159	-78	14.03	267.	0.026	1078	-73	13.03	245.	0.024	1053	-72	12.72	239.	0.023
25	4.67	4.67	275	-71	0.58	-54.	0.000	258	-67	0.54	-51.	0.000	253	-65	0.53	-50.	0.000
26	4.67	4.67	140	-66	1.24	-42.	0.000	136	-62	1.14	-39.	0.000	135	-61	1.10	-39.	0.000
27	4.67	4.67	76	-46	1.11	-43.	0.000	76	-43	0.98	-41.	0.000	76	-42	0.95	-41.	0.000
28	4.67	4.67	51	-46	1.47	-40.	0.000	49	-42	1.30	-37.	0.000	49	-41	1.25	-36.	0.000
29	4.67	4.67	18	-34	1.36	-26.	0.000	15	-31	1.23	-24.	0.000	15	-30	1.20	-23.	0.000
30	4.67	4.67	17	-8	0.16	-8.	0.000	15	-7	0.14	-7.	0.000	14	-7	0.14	-7.	0.000
31	4.67	4.67	759	-44	9.54	225.	0.022	715	-41	9.00	214.	0.021	702	-41	8.84	211.	0.020
32	4.67	4.67	26	-45	1.28	-24.	0.000	23	-44	1.25	-23.	0.000	22	-43	1.24	-22.	0.000
33	4.67	4.67	39	-58	1.60	-30.	0.000	39	-55	1.51	-29.	0.000	40	-54	1.48	-29.	0.000
34	4.67	4.67	64	-56	1.74	-48.	0.000	58	-53	1.69	-45.	0.000	56	-52	1.68	-45.	0.000
35	4.67	4.67	48	-48	1.61	-41.	0.000	44	-46	1.55	-38.	0.000	43	-45	1.54	-38.	0.000
36	4.67	4.67	30	-36	1.26	-29.	0.000	26	-33	1.21	-27.	0.000	24	-33	1.21	-26.	0.000
37	4.67	4.67	19	-19	0.62	-16.	0.000	16	-18	0.61	-15.	0.000	15	-17	0.61	-14.	0.000

MACROGUSCIO platea

VERIFICA ARMATURE EFFETTIVE (EFFETTO MEMBRANA + PIASTRA)

CASI DI CARICO:

Nome	Descrizione
1	SLU SENZA SISMA
4	SLU con SISMAX PRINC
5	SLU con SISMAY PRINC

DATI:

```
   tensione di snervamento acciaio (fyk): 4500    daN/cm2
   coefficiente sicurezza acciaio       : 1.15
   deformazione ultima acciaio          : 67.5    per mille
   deformazione ultima cls              :  3.5    per mille
   rapporto rottura/snervamento      (k): 1.15
```

```
   resistenza cilindrica cls       (fck): 332     daN/cm2
   coefficiente sicurezza cls           : 1.5
   coefficiente riduttivo         (alfa): 0.85
   copriferro inferiore  (asse armatura):  4      cm
   copriferro superiore  (asse armatura):  4      cm
   moltiplicatore sollecitazioni        :  1

LEGENDA:
   spess = spessore guscio. Verifica effettuata su sezione BxH, con B=1 cm e H="spess" cm
   Af    = area disposta al lembo teso, in cm2 al metro
   Afc   = area disposta al lembo compresso, in cm2 al metro
   Mom   = momento flettente [daNcm/cm]
   Nor   = sforzo normale [daN]
   epsC  = deformazione cls [per mille]
   epsF  = deformazione acciaio [per mille]

   L'armatura è sufficiente se le deformazioni dei materiali sono ovunque minori delle
corrispondenti deformazioni ultime.
```

		INFERIORE ORIZZONTALE						INFERIORE VERTICALE					
GUSCI	spess	Af	Afc	Mom	Nor	epsC	epsF	Af	Afc	Mom	Nor	epsC	epsF
48	30	4.67	4.67	974.	-7.	0.10	0.39	4.65	4.65	725.	-4.	0.07	0.29
49	30	4.67	4.67	1194.	0.	0.12	0.48	4.65	4.65	399.	37.	0.00	0.35
50	30	4.67	4.67	1425.	-9.	0.14	0.56	4.65	4.65	490.	53.	0.00	0.47
51	30	4.67	4.67	1144.	-16.	0.11	0.44	4.65	4.65	0.	20.	0.00	0.10
52	30	4.67	4.67	1484.	-21.	0.15	0.57	4.65	4.65	1425.	-12.	0.14	0.56
56	30	4.67	4.67	0.	14.	0.00	0.07	4.65	4.65	1223.	-3.	0.12	0.49
64	30	4.67	4.67	0.	12.	0.00	0.06	4.65	4.65	354.	0.	0.03	0.14
65	30	4.67	4.67	80.	0.	0.01	0.03	4.65	4.65	219.	-5.	0.02	0.09
66	30	4.67	4.67	0.	3.	0.00	0.02	4.65	4.65	65.	8.	0.00	0.07
67	30	4.67	4.67	0.	12.	0.00	0.06	4.65	4.65	0.	-14.	0.00	0.00
80	30	4.67	4.67	0.	23.	0.00	0.12	4.65	4.65	1068.	14.	0.05	0.51
91	30	4.67	4.67	899.	-5.	0.09	0.36	4.65	4.65	185.	0.	0.02	0.08
92	30	4.67	4.67	1306.	-2.	0.13	0.53	4.65	4.65	76.	-23.	0.01	0.02
93	30	4.67	4.67	1352.	-11.	0.13	0.53	4.65	4.65	0.	-8.	0.00	0.00
94	30	4.67	4.67	196.	16.	0.00	0.16	4.65	4.65	0.	-13.	0.00	0.00
101	30	4.67	4.67	0.	-4.	0.00	0.00	4.65	4.65	0.	-10.	0.00	0.00
111	30	4.67	4.67	165.	3.	0.00	0.08	4.65	4.65	184.	7.	0.01	0.11
112	30	4.67	4.67	244.	-4.	0.02	0.10	4.65	4.65	91.	-28.	0.02	0.03
117	30	4.67	4.67	164.	48.	0.00	0.31	4.65	4.65	1163.	18.	0.04	0.57
118	30	4.67	4.67	76.	23.	0.00	0.16	4.65	4.65	49.	-2.	0.01	0.02
119	30	4.67	4.67	0.	8.	0.00	0.04	4.65	4.65	0.	-9.	0.00	0.00
135	30	4.67	4.67	142.	33.	0.00	0.25	4.65	4.65	291.	-6.	0.03	0.12
136	30	4.67	4.67	86.	16.	0.00	0.12	4.65	4.65	16.	-34.	0.01	-0.01
139	30	4.67	4.67	0.	-1.	0.00	0.00	4.65	4.65	0.	-12.	0.00	0.00
145	30	4.67	4.67	258.	36.	0.00	0.29	4.65	4.65	988.	-3.	0.10	0.40
153	30	4.67	4.67	0.	16.	0.00	0.08	4.65	4.65	461.	-1.	0.04	0.19
156	30	4.67	4.67	0.	-6.	0.00	0.00	4.65	4.65	0.	-10.	0.00	0.00
158	30	4.67	4.67	171.	26.	0.00	0.20	4.65	4.65	379.	-4.	0.04	0.15
159	30	4.67	4.67	0.	12.	0.00	0.06	4.65	4.65	0.	-32.	0.01	-0.01
173	30	4.67	4.67	145.	0.	0.01	0.06	4.65	4.65	814.	-2.	0.08	0.33
175	30	4.67	4.67	342.	31.	0.00	0.30	4.65	4.65	800.	6.	0.05	0.36
177	30	4.67	4.67	0.	6.	0.00	0.03	4.65	4.65	0.	9.	0.00	0.04
181	30	4.67	4.67	0.	28.	0.00	0.14	4.65	4.65	299.	-13.	0.03	0.11
182	30	4.67	4.67	0.	5.	0.00	0.03	4.65	4.65	0.	-36.	0.01	-0.01
198	30	4.67	4.67	902.	-4.	0.09	0.36	4.65	4.65	611.	-3.	0.06	0.25
199	30	4.67	4.67	1051.	-8.	0.10	0.42	4.65	4.65	65.	47.	0.00	0.27
200	30	4.67	4.67	1094.	-1.	0.11	0.44	4.65	4.65	99.	35.	0.00	0.22
201	30	4.67	4.67	1034.	-5.	0.10	0.41	4.65	4.65	841.	0.	0.08	0.34
203	30	4.67	4.67	598.	-3.	0.06	0.24	4.65	4.65	652.	2.	0.05	0.28

		SUPERIORE ORIZZONTALE						SUPERIORE VERTICALE					
GUSCI	spess	Af	Afc	Mom	Nor	epsC	epsF	Af	Afc	Mom	Nor	epsC	epsF
48	30	4.67	4.67	1335.	3.	0.12	0.56	4.65	4.65	770.	8.	0.06	0.35
49	30	4.67	4.67	1806.	6.	0.16	0.76	4.65	4.65	639.	37.	0.00	0.45
50	30	4.67	4.67	1926.	6.	0.17	0.81	4.65	4.65	656.	53.	0.00	0.54
51	30	4.67	4.67	1489.	-4.	0.15	0.60	4.65	4.65	1241.	9.	0.09	0.55
52	30	4.67	4.67	1548.	-7.	0.15	0.61	4.65	4.65	1914.	-4.	0.19	0.77
56	30	4.67	4.67	1944.	13.	0.15	0.86	4.65	4.65	2509.	-2.	0.24	1.02
64	30	4.67	4.67	704.	4.	0.05	0.31	4.65	4.65	487.	4.	0.05	0.22
65	30	4.67	4.67	1409.	-4.	0.14	0.56	4.65	4.65	560.	0.	0.05	0.23
66	30	4.67	4.67	1932.	0.	0.19	0.78	4.65	4.65	580.	12.	0.04	0.30
67	30	4.67	4.67	2028.	12.	0.18	0.88	4.65	4.65	1639.	-13.	0.16	0.64
80	30	4.67	4.67	1113.	22.	0.06	0.56	4.65	4.65	3148.	13.	0.29	1.35
91	30	4.67	4.67	0.	-11.	0.00	0.00	4.65	4.65	411.	2.	0.04	0.18
92	30	4.67	4.67	0.	-6.	0.00	0.00	4.65	4.65	214.	-28.	0.03	0.09
93	30	4.67	4.67	0.	-11.	0.00	0.02	4.65	4.65	384.	-6.	0.04	0.15
94	30	4.67	4.67	1146.	24.	0.02	0.58	4.65	4.65	1499.	-11.	0.15	0.59
101	30	4.67	4.67	345.	-4.	0.03	0.14	4.65	4.65	391.	-10.	0.04	0.15
111	30	4.67	4.67	318.	2.	0.03	0.14	4.65	4.65	470.	6.	0.04	0.22
112	30	4.67	4.67	451.	-3.	0.04	0.18	4.65	4.65	256.	-22.	0.03	0.09
117	30	4.67	4.67	475.	55.	0.00	0.47	4.65	4.65	2723.	28.	0.21	1.25
118	30	4.67	4.67	574.	23.	0.00	0.35	4.65	4.65	1546.	-1.	0.15	0.63
119	30	4.67	4.67	560.	8.	0.02	0.27	4.65	4.65	449.	-9.	0.05	0.18
135	30	4.67	4.67	269.	43.	0.00	0.33	4.65	4.65	541.	-1.	0.05	0.22
136	30	4.67	4.67	488.	0.	0.05	0.22	4.65	4.65	361.	-30.	0.04	0.13
139	30	4.67	4.67	560.	-1.	0.05	0.23	4.65	4.65	567.	-12.	0.06	0.22
145	30	4.67	4.67	473.	44.	0.00	0.41	4.65	4.65	1894.	15.	0.16	0.85
153	30	4.67	4.67	739.	3.	0.06	0.31	4.65	4.65	1580.	-1.	0.15	0.64
156	30	4.67	4.67	834.	-1.	0.08	0.34	4.65	4.65	1266.	-9.	0.13	0.50
158	30	4.67	4.67	358.	31.	0.00	0.30	4.65	4.65	483.	-7.	0.05	0.19
159	30	4.67	4.67	455.	7.	0.05	0.22	4.65	4.65	407.	-28.	0.05	0.15
173	30	4.67	4.67	776.	-1.	0.08	0.31	4.65	4.65	1033.	15.	0.04	0.50

175	30	4.67	4.67	459.	31.	0.01	0.34	4.65	4.65	1259.	6.	0.10	0.55
177	30	4.67	4.67	1290.	1.	0.12	0.53	4.65	4.65	1237.	-4.	0.12	0.50
181	30	4.67	4.67	650.	14.	0.00	0.35	4.65	4.65	436.	-7.	0.04	0.17
182	30	4.67	4.67	1368.	5.	0.12	0.58	4.65	4.65	617.	-17.	0.06	0.24
198	30	4.67	4.67	1088.	-2.	0.11	0.44	4.65	4.65	812.	5.	0.07	0.35
199	30	4.67	4.67	1179.	7.	0.09	0.52	4.65	4.65	581.	47.	0.01	0.48
200	30	4.67	4.67	913.	11.	0.04	0.43	4.65	4.65	841.	26.	0.00	0.48
201	30	4.67	4.67	835.	0.	0.08	0.34	4.65	4.65	497.	25.	0.02	0.33
203	30	4.67	4.67	655.	16.	0.06	0.35	4.65	4.65	818.	5.	0.08	0.36

L'ARMATURA È OVUNQUE > DELLA QUANTITÀ RICHIESTA: IL PUNTO 2.3 DELLE NTC È VERIFICATO (Rd > Ed)

MACROGUSCIO platea

VERIFICHE A FESSURAZIONE (EFFETTO MEMBRANA + PIASTRA)

CASI DI CARICO:

Nome	Descrizione
10	Rara (RARA)
11	Frequente (FREQUENTE)
12	Quasi Perm (QUASI PERMANENTE)

DATI:

copriferro inferiore (asse armatura): 4 cm
copriferro superiore (asse armatura): 4 cm

Af = area effettiva tesa (cm2 al metro)
Afc = area effettiva compressa (cm2 al metro)
Mom = momento flettente [daNcm/cm]
Nor = sforzo normale [daN]
σc = tensione calcestruzzo [daN/cm2]
valore max per combinazione rara = 199 daN/cm2
'' '' '' '' frequente = 199 daN/cm2
'' '' '' '' quasi permanente = 149 daN/cm2
σf = tensione acciaio [daN/cm2]
valore max per combinazione rara = 3600 daN/cm2
'' '' '' '' frequente = 3600 daN/cm2
'' '' '' '' quasi permanente = 3600 daN/cm2
wkR = apertura caratteristica per combinazione rara (mm) - valore max = 0.6 mm
wkF = '' '' '' '' frequente (mm) - '' '' = 0.4 mm
wkP = '' '' '' '' quasi permanente (mm) - '' '' = 0.3 mm

ARMATURA INFERIORE ORIZZONTALE

			COMBINAZIONE RARA					COMBINAZIONE FREQUENTE					COMBINAZIONE QUASI PERMANENTE				
GUSCI	Af	Afc	Mom	Nor	σc	σf	wkR	Mom	Nor	σc	σf	wkF	Mom	Nor	σc	σf	wkP
48	4.67	4.67	235	-11	3.09	94.	0.009	228	-10	3.02	97.	0.009	228	-10	3.02	99.	0.010
49	4.67	4.67	20	-4	0.24	0.	0.000	28	-3	0.30	1.	0.000	32	-3	0.36	4.	0.000
50	4.67	4.67	0.	-3	0.09	-1.	0.000	0.	-2	0.07	-1.	0.000	0.	-2	0.07	-1.	0.000
51	4.67	4.67	0.	-10	0.32	-5.	0.000	0.	-9	0.30	-4.	0.000	0.	-9	0.29	-4.	0.000
52	4.67	4.67	697	-16	9.55	426.	0.041	652	-16	8.93	393.	0.038	639	-16	8.74	381.	0.037
56	4.67	4.67	0.	-24	0.75	-11.	0.000	0.	-24	0.76	-11.	0.000	0.	-24	0.77	-12.	0.000
64	4.67	4.67	0.	-15	0.47	-7.	0.000	0.	-14	0.46	-7.	0.000	0.	-14	0.46	-7.	0.000
65	4.67	4.67	0.	-5	0.16	-2.	0.000	0.	-4	0.14	-2.	0.000	0.	-4	0.13	-2.	0.000
66	4.67	4.67	0.	-1	0.03	0.	0.000	0.	0.	0.01	0.	0.000	0.	0.	0.01	0.	0.000
67	4.67	4.67	0.	-3	0.11	-2.	0.000	0.	-3	0.10	-2.	0.000	0.	-3	0.10	-1.	0.000
80	4.67	4.67	0.	-14	0.43	-6.	0.000	0.	-14	0.43	-6.	0.000	0.	-14	0.44	-7.	0.000
91	4.67	4.67	462	-6	6.36	327.	0.032	484	-7	6.67	335.	0.032	495	-8	6.82	339.	0.033
92	4.67	4.67	748	-6	10.29	578.	0.056	778	-6	10.70	598.	0.058	793	-6	10.90	608.	0.059
93	4.67	4.67	820	-6	11.26	639.	0.062	810	-6	11.12	632.	0.061	808	-5	11.11	631.	0.061
94	4.67	4.67	0.	2	0.00	21.	0.004	0.	2	0.00	23.	0.004	0.	2	0.00	23.	0.004
101	4.67	4.67	0.	-3	0.11	-2.	0.000	0.	-3	0.11	-2.	0.000	0.	-3	0.11	-2.	0.000
111	4.67	4.67	93	-15	1.05	0.	0.000	86	-16	1.04	-1.	0.000	84	-17	1.05	-2.	0.000
112	4.67	4.67	78	-6	0.89	12.	0.001	61	-7	0.66	4.	0.000	55	-7	0.59	2.	0.000
117	4.67	4.67	0.	-2	0.06	-1.	0.000	0.	-2	0.07	-1.	0.000	0.	-2	0.07	-1.	0.000
118	4.67	4.67	0.	-2	0.05	-1.	0.000	0.	-1	0.04	-1.	0.000	0.	-1	0.04	-1.	0.000
119	4.67	4.67	0.	-3	0.08	-1.	0.000	0.	-2	0.08	-1.	0.000	0.	-2	0.08	-1.	0.000
135	4.67	4.67	60	12	0.00	183.	0.029	44	11	0.00	160.	0.026	38	11	0.00	152.	0.025
136	4.67	4.67	0.	4	0.00	44.	0.008	0.	4	0.00	43.	0.008	0.	4	0.00	43.	0.008
139	4.67	4.67	0.	-6	0.20	-3.	0.000	0.	-6	0.20	-3.	0.000	0.	-6	0.20	-3.	0.000
145	4.67	4.67	74	-24	1.22	-6.	0.000	75	-24	1.21	-6.	0.000	76	-24	1.22	-6.	0.000
153	4.67	4.67	0.	-20	0.62	-9.	0.000	0.	-19	0.60	-9.	0.000	0.	-19	0.59	-9.	0.000
156	4.67	4.67	0.	-6	0.18	-3.	0.000	0.	-6	0.18	-3.	0.000	0.	-6	0.18	-3.	0.000
158	4.67	4.67	0.	12	0.00	124.	0.023	0.	11	0.00	115.	0.022	0.	11	0.00	112.	0.021
159	4.67	4.67	0.	-3	0.08	-1.	0.000	0.	-3	0.08	-1.	0.000	0.	-3	0.09	-1.	0.000
173	4.67	4.67	0.	-13	0.41	-6.	0.000	0.	-12	0.39	-6.	0.000	0.	-12	0.38	-6.	0.000
175	4.67	4.67	276	-28	2.98	22.	0.002	262	-27	2.83	20.	0.002	258	-26	2.79	20.	0.002
177	4.67	4.67	0.	-6	0.18	-3.	0.000	0.	-5	0.17	-3.	0.000	0.	-5	0.17	-3.	0.000
181	4.67	4.67	0.	-5	0.15	-2.	0.000	0.	-5	0.17	-2.	0.000	0.	-5	0.17	-3.	0.000
182	4.67	4.67	0.	-3	0.08	-1.	0.000	0.	-3	0.09	-1.	0.000	0.	-3	0.09	-1.	0.000
198	4.67	4.67	325	-7	4.47	208.	0.020	335	-7	4.60	216.	0.021	340	-7	4.68	220.	0.021
199	4.67	4.67	166	-4	2.27	97.	0.009	192	-4	2.64	120.	0.012	204	-4	2.80	130.	0.013
200	4.67	4.67	72	-3	0.95	31.	0.003	103	-3	1.40	60.	0.006	116	-2	1.60	73.	0.007
201	4.67	4.67	476	-4	6.55	359.	0.035	460	-4	6.32	351.	0.034	456	-4	6.26	350.	0.034
203	4.67	4.67	402	-8	5.52	256.	0.025	377	-9	5.17	232.	0.022	369	-9	5.06	224.	0.022

ARMATURA INFERIORE VERTICALE

			COMBINAZIONE RARA					COMBINAZIONE FREQUENTE					COMBINAZIONE QUASI PERMANENTE				
GUSCI	Af	Afc	Mom	Nor	σc	σf	wkR	Mom	Nor	σc	σf	wkF	Mom	Nor	σc	σf	wkP
48	4.65	4.65	339	-8	4.65	207.	0.020	320	-7	4.40	203.	0.020	314	-6	4.33	204.	0.020
49	4.65	4.65	12	-4	0.20	-1.	0.000	25	-3	0.27	2.	0.000	32	-2	0.38	8.	0.001
50	4.65	4.65	0.	-10	0.31	-5.	0.000	0.	-9	0.28	-4.	0.000	0.	-9	0.28	-4.	0.000
51	4.65	4.65	0.	-10	0.32	-5.	0.000	0.	-9	0.28	-4.	0.000	0.	-8	0.26	-4.	0.000

52	4.65	4.65	557	-12	7.67	355.	0.034	532	-11	7.32	340.	0.033	525	-11	7.22	335.	0.033
56	4.65	4.65	0.	-2	0.07	-1.	0.000	0.	-2	0.05	-1.	0.000	0.	-1	0.04	-1.	0.000
64	4.65	4.65	110	-14	1.18	4.	0.000	114	-13	1.22	6.	0.001	116	-12	1.25	7.	0.001
65	4.65	4.65	0.	-27	0.86	-13.	0.000	0.	-26	0.82	-12.	0.000	0.	-25	0.80	-12.	0.000
66	4.65	4.65	0.	-23	0.72	-11.	0.000	0.	-22	0.70	-10.	0.000	0.	-22	0.69	-10.	0.000
67	4.65	4.65	0.	-20	0.63	-9.	0.000	0.	-19	0.60	-9.	0.000	0.	-19	0.60	-9.	0.000
80	4.65	4.65	0.	5	0.00	52.	0.010	0.	5	0.00	51.	0.010	0.	5	0.00	51.	0.010
91	4.65	4.65	42	-9	0.53	-1.	0.000	55	-8	0.61	0.	0.000	61	-8	0.66	1.	0.000
92	4.65	4.65	0.	-33	1.06	-16.	0.000	0.	-32	1.03	-15.	0.000	0.	-32	1.02	-15.	0.000
93	4.65	4.65	0.	-17	0.55	-8.	0.000	0.	-17	0.53	-8.	0.000	0.	-17	0.53	-8.	0.000
94	4.65	4.65	0.	-13	0.41	-6.	0.000	0.	-12	0.39	-6.	0.000	0.	-12	0.39	-6.	0.000
101	4.65	4.65	0.	-14	0.46	-7.	0.000	0.	-14	0.45	-7.	0.000	0.	-14	0.45	-7.	0.000
111	4.65	4.65	46	0.	0.64	37.	0.004	62	0.	0.85	50.	0.005	68	0.	0.94	56.	0.005
112	4.65	4.65	11	-27	0.94	-12.	0.000	0.	-27	0.85	-13.	0.000	0.	-27	0.85	-13.	0.000
117	4.65	4.65	0.	8	0.00	90.	0.017	0.	8	0.00	84.	0.016	0.	8	0.00	82.	0.016
118	4.65	4.65	0.	-3	0.09	-1.	0.000	0.	-3	0.08	-1.	0.000	0.	-3	0.08	-1.	0.000
119	4.65	4.65	0.	-7	0.24	-4.	0.000	0.	-7	0.23	-3.	0.000	0.	-7	0.23	-3.	0.000
135	4.65	4.65	25	-6	0.33	-1.	0.000	39	-6	0.43	0.	0.000	45	-6	0.49	1.	0.000
136	4.65	4.65	0.	-22	0.69	-10.	0.000	0.	-22	0.69	-10.	0.000	0.	-22	0.70	-10.	0.000
139	4.65	4.65	0.	-9	0.30	-4.	0.000	0.	-9	0.29	-4.	0.000	0.	-9	0.29	-4.	0.000
145	4.65	4.65	0.	1	0.00	16.	0.003	0.	1	0.00	12.	0.002	0.	1	0.00	11.	0.002
153	4.65	4.65	0.	-1	0.04	-1.	0.000	0.	-1	0.04	-1.	0.000	0.	-1	0.05	-1.	0.000
156	4.65	4.65	0.	-5	0.15	-2.	0.000	0.	-5	0.14	-2.	0.000	0.	-5	0.14	-2.	0.000
158	4.65	4.65	0.	-5	0.16	-2.	0.000	0.	-5	0.15	-2.	0.000	0.	-5	0.15	-2.	0.000
159	4.65	4.65	0.	-29	0.91	-14.	0.000	0.	-29	0.91	-14.	0.000	0.	-29	0.92	-14.	0.000
173	4.65	4.65	0.	-4	0.14	-2.	0.000	28	-4	0.31	0.	0.000	40	-4	0.43	2.	0.000
175	4.65	4.65	177	-1	2.44	140.	0.014	180	-1	2.48	140.	0.014	182	-1	2.51	141.	0.014
177	4.65	4.65	0.	-11	0.35	-5.	0.000	0.	-11	0.34	-5.	0.000	0.	-10	0.33	-5.	0.000
181	4.65	4.65	0.	-18	0.59	-9.	0.000	0.	-18	0.58	-9.	0.000	0.	-18	0.58	-9.	0.000
182	4.65	4.65	0.	-38	1.21	-18.	0.000	0.	-38	1.20	-18.	0.000	0.	-38	1.20	-18.	0.000
198	4.65	4.65	275	-4	3.79	190.	0.018	273	-4	3.77	195.	0.019	274	-4	3.79	197.	0.019
199	4.65	4.65	0.	-4	0.14	-2.	0.000	0.	-3	0.09	-1.	0.000	0.	-2	0.07	-1.	0.000
200	4.65	4.65	0.	-8	0.26	-4.	0.000	0.	-8	0.25	-4.	0.000	0.	-8	0.25	-4.	0.000
201	4.65	4.65	465	-11	6.39	288.	0.028	451	-10	6.21	287.	0.028	447	-9	6.16	287.	0.028
203	4.65	4.65	366	-6	5.05	252.	0.024	345	-6	4.76	234.	0.023	338	-6	4.66	228.	0.022

ARMATURA SUPERIORE ORIZZONTALE

			COMBINAZIONE RARA					COMBINAZIONE FREQUENTE					COMBINAZIONE QUASI PERMANENTE				
GUSCI	Af	Afc	Mom	Nor	σc	σf	WkR	Mom	Nor	σc	σf	WkF	Mom	Nor	σc	σf	WkP
48	4.67	4.67	831	-11	11.44	595.	0.057	776	-10	10.69	559.	0.054	758	-10	10.43	546.	0.053
49	4.67	4.67	829	-4	11.37	667.	0.064	776	-3	10.64	628.	0.061	758	-3	10.39	614.	0.059
50	4.67	4.67	655	-3	8.99	529.	0.051	619	-2	8.48	502.	0.048	606	-2	8.30	494.	0.048
51	4.67	4.67	318	-10	4.31	169.	0.016	307	-9	4.17	166.	0.016	303	-9	4.12	165.	0.016
52	4.67	4.67	713	-16	9.78	441.	0.043	681	-16	9.33	416.	0.040	670	-16	9.19	408.	0.039
56	4.67	4.67	1173	-24	16.12	755.	0.073	1109	-24	15.23	698.	0.067	1090	-24	14.95	679.	0.065
64	4.67	4.67	403	-15	5.41	195.	0.019	377	-14	5.04	176.	0.017	369	-14	4.93	170.	0.016
65	4.67	4.67	781	-5	10.72	613.	0.059	721	-4	9.90	569.	0.055	701	-4	9.63	554.	0.053
66	4.67	4.67	1203	-1	16.44	1015.	0.098	1120	0.	15.30	950.	0.092	1093	0.	14.93	929.	0.090
67	4.67	4.67	1588	-3	21.73	1318.	0.127	1497	-3	20.49	1242.	0.120	1470	-3	20.11	1219.	0.118
80	4.67	4.67	860	-14	11.84	592.	0.057	817	-14	11.24	555.	0.054	804	-14	11.07	543.	0.052
91	4.67	4.67	0.	-6	0.20	-3.	0.000	0.	-7	0.24	-4.	0.000	0.	-8	0.25	-4.	0.000
92	4.67	4.67	0.	-6	0.18	-3.	0.000	0.	-6	0.20	-3.	0.000	0.	-6	0.20	-3.	0.000
93	4.67	4.67	0.	-6	0.18	-3.	0.000	0.	-6	0.18	-3.	0.000	0.	-5	0.17	-3.	0.000
94	4.67	4.67	549	2	7.45	488.	0.049	510	2	6.92	457.	0.046	499	2	6.76	448.	0.045
101	4.67	4.67	256	-3	3.52	183.	0.018	233	-3	3.21	163.	0.016	225	-3	3.10	157.	0.015
111	4.67	4.67	187	-15	2.16	31.	0.003	217	-16	2.56	41.	0.004	231	-17	2.73	46.	0.004
112	4.67	4.67	239	-6	3.26	138.	0.013	251	-7	3.43	146.	0.014	258	-7	3.52	150.	0.014
117	4.67	4.67	384	-2	5.27	309.	0.030	358	-2	4.92	283.	0.027	350	-2	4.81	274.	0.026
118	4.67	4.67	419	-2	5.74	341.	0.033	412	-1	5.65	337.	0.032	411	-1	5.64	336.	0.032
119	4.67	4.67	355	-3	4.87	275.	0.027	375	-2	5.15	294.	0.028	385	-2	5.29	303.	0.029
135	4.67	4.67	200	12	1.99	303.	0.040	220	11	2.39	311.	0.040	229	11	2.56	316.	0.040
136	4.67	4.67	294	4	3.91	294.	0.032	318	4	4.23	314.	0.034	329	4	4.38	323.	0.034
139	4.67	4.67	428	-6	5.89	300.	0.029	420	-6	5.78	293.	0.028	419	-6	5.77	292.	0.028
145	4.67	4.67	425	-24	5.38	132.	0.013	400	-24	5.01	116.	0.011	392	-24	4.89	110.	0.011
153	4.67	4.67	445	-20	5.87	185.	0.018	422	-19	5.55	173.	0.017	414	-19	5.45	169.	0.016
156	4.67	4.67	492	-6	6.77	359.	0.035	498	-6	6.85	366.	0.035	502	-6	6.92	370.	0.036
158	4.67	4.67	186	12	1.81	285.	0.038	195	11	2.05	284.	0.037	200	11	2.15	285.	0.037
159	4.67	4.67	252	-3	3.46	187.	0.018	270	-3	3.71	202.	0.019	278	-3	3.83	209.	0.020
173	4.67	4.67	580	-13	7.95	363.	0.035	554	-12	7.61	347.	0.033	547	-12	7.50	343.	0.033
175	4.67	4.67	446	-28	5.51	119.	0.011	416	-27	5.10	106.	0.010	406	-26	4.97	101.	0.010
177	4.67	4.67	884	-6	12.14	695.	0.067	819	-5	11.26	641.	0.062	797	-5	10.95	622.	0.060
181	4.67	4.67	384	-5	5.29	278.	0.027	369	-5	5.09	260.	0.025	377	-5	5.20	264.	0.026
182	4.67	4.67	766	-3	10.49	624.	0.060	744	-3	10.19	605.	0.058	738	-3	10.12	600.	0.058
198	4.67	4.67	597	-7	8.21	438.	0.042	543	-7	7.47	393.	0.038	524	-7	7.21	376.	0.036
199	4.67	4.67	387	-4	5.33	284.	0.027	331	-4	4.56	237.	0.023	310	-4	4.27	219.	0.021
200	4.67	4.67	125	-3	1.71	75.	0.007	95	-3	1.29	53.	0.005	82	-2	1.12	45.	0.004
201	4.67	4.67	414	-4	5.69	306.	0.030	382	-4	5.25	285.	0.027	370	-4	5.09	277.	0.027
203	4.67	4.67	460	-8	6.33	305.	0.029	429	-9	5.90	276.	0.027	419	-9	5.75	266.	0.026

ARMATURA SUPERIORE VERTICALE

			COMBINAZIONE RARA					COMBINAZIONE FREQUENTE					COMBINAZIONE QUASI PERMANENTE				
GUSCI	Af	Afc	Mom	Nor	σc	σf	WkR	Mom	Nor	σc	σf	WkF	Mom	Nor	σc	σf	WkP
48	4.65	4.65	547	-8	7.55	384.	0.037	513	-7	7.08	368.	0.036	501	-6	6.92	363.	0.035
49	4.65	4.65	578	-4	7.97	453.	0.044	542	-3	7.45	436.	0.042	530	-2	7.28	432.	0.042
50	4.65	4.65	474	-10	6.53	306.	0.030	447	-9	6.16	290.	0.028	439	-9	6.04	286.	0.028
51	4.65	4.65	717	-10	9.90	510.	0.049	678	-9	9.35	490.	0.048	665	-8	9.19	484.	0.047
52	4.65	4.65	1210	-12	16.70	913.	0.089	1143	-11	15.76	861.	0.084	1121	-11	15.47	845.	0.082
56	4.65	4.65	1288	-2	17.67	1081.	0.105	1201	-2	16.47	1013.	0.098	1173	-1	16.08	991.	0.096
64	4.65	4.65	290	-14	3.80	114.	0.011	278	-13	3.65	112.	0.011	275	-12	3.62	112.	0.011
65	4.65	4.65	435	-27	5.39	117.	0.011	417	-26	5.18	115.	0.011	412	-25	5.13	114.	0.011
66	4.65	4.65	476	-23	6.23	185.	0.018	442	-22	5.74	163.	0.016	430	-22	5.57	155.	0.015
67	4.65	4.65	1049	-20	14.47	693.	0.067	982	-19	13.53	643.	0.062	960	-19	13.22	627.	0.061
80	4.65	4.65	1020	5	13.86	925.	0.094	939	5	12.76	855.	0.087	912	5	12.39	832.	0.085
91	4.65	4.65	212	-9	2.82	95.	0.009	210	-8	2.81	96.	0.009	211	-8	2.82	98.	0.009
92	4.65	4.65	253	-33	2.73	6.	0.001	264	-32	2.83	10.	0.001	270	-32	2.89	11.	0.001
93	4.65	4.65	401	-17	5.32	172.	0.017	369	-17	4.86	150.	0.015	358	-17	4.70	141.	0.014
94	4.65	4.65	1062	-13	14.66	774.	0.075	1002	-12	13.83	729.	0.071	983	-12	13.57	715.	0.069
101	4.65	4.65	393	-14	5.29	191.	0.019	367	-14	4.91	172.	0.017	358	-14	4.78	165.	0.016
111	4.65	4.65	219	0.	3.01	185.	0.018	218	0.	2.99	185.	0.018	219	0.	3.00	185.	0.018
112	4.65	4.65	134	-27	0.05	-23.	0.000	178	-27	1.97	1.	0.000	190	-27	2.07	3.	0.000
117	4.65	4.65	1333	8	18.07	1232.	0.126	1233	8	16.71	1140.	0.117	1200	8	16.26	1110.	0.114
118	4.65	4.65	1191	-3	16.35	991.	0.096	1110	-3	15.24	923.	0.090	1083	-3	14.87	901.	0.087
119	4.65	4.65	424	-7	5.84	286.	0.028	400	-7	5.52	268.	0.026	393	-7	5.41	262.	0.025
135	4.65	4.65	238	-6	3.27	146.	0.014	232	-6	3.18	138.	0.013	230	-6	3.16	136.	0.013
136	4.65	4.65	142	-22	1.58	1.	0.000	179	-22	1.92	7.	0.001	196	-22	2.09	11.	0.001

139	4.65	4.65	412	-9	5.66	255.	0.025	408	-9	5.60	254.	0.025	408	-9	5.61	255.	0.025
145	4.65	4.65	1007	1	13.76	879.	0.086	923	1	12.61	802.	0.079	894	1	12.22	776.	0.076
153	4.65	4.65	703	-1	9.65	588.	0.057	627	-1	8.61	523.	0.051	600	-1	8.24	499.	0.048
156	4.65	4.65	725	-5	9.99	572.	0.056	715	-5	9.85	565.	0.055	715	-5	9.85	565.	0.055
158	4.65	4.65	196	-5	2.69	117.	0.011	177	-5	2.42	102.	0.010	170	-5	2.32	96.	0.009
159	4.65	4.65	144	-29	0.03	-24.	0.000	181	-29	2.04	0.	0.000	196	-29	2.16	2.	0.000
173	4.65	4.65	398	-4	5.49	294.	0.029	357	-4	4.93	260.	0.025	343	-4	4.74	248.	0.024
175	4.65	4.65	672	-1	9.22	564.	0.055	618	-1	8.48	516.	0.050	600	-1	8.24	499.	0.048
177	4.65	4.65	964	-11	13.31	712.	0.069	904	-11	12.47	663.	0.064	883	-10	12.19	647.	0.063
181	4.65	4.65	185	-18	2.01	15.	0.001	190	-18	2.08	18.	0.002	193	-18	2.12	19.	0.002
182	4.65	4.65	414	-38	4.58	45.	0.004	426	-38	4.77	52.	0.005	434	-38	4.88	55.	0.005
198	4.65	4.65	442	-4	6.10	334.	0.032	424	-4	5.85	323.	0.031	418	-4	5.77	320.	0.031
199	4.65	4.65	509	-4	7.02	391.	0.038	483	-3	6.66	384.	0.037	475	-2	6.54	383.	0.037
200	4.65	4.65	494	-8	6.81	338.	0.033	448	-8	6.18	302.	0.029	432	-8	5.95	289.	0.028
201	4.65	4.65	515	-11	7.09	331.	0.032	477	-10	6.57	308.	0.030	463	-9	6.38	301.	0.029
203	4.65	4.65	524	-6	7.24	387.	0.038	490	-6	6.76	358.	0.035	479	-6	6.61	348.	0.034

MACROGUSCIO PT

VERIFICA ARMATURE EFFETTIVE (EFFETTO MEMBRANA + PIASTRA)

CASI DI CARICO:

Nome	Descrizione
1	SLU SENZA SISMA
4	SLU con SISMAX PRINC
5	SLU con SISMAY PRINC

DATI:

tensione di snervamento acciaio (fyk)	4500	daN/cm2
coefficiente sicurezza acciaio	1.15	
deformazione ultima acciaio	67.5	per mille
deformazione ultima cls	3.5	per mille
rapporto rottura/snervamento (k)	1.15	
resistenza cilindrica cls (fck)	332	daN/cm2
coefficiente sicurezza cls	1.5	
coefficiente riduttivo (alfa)	0.85	
copriferro inferiore (asse armatura)	4	cm
copriferro superiore (asse armatura)	4	cm
moltiplicatore sollecitazioni	1	

LEGENDA:

- spess = spessore guscio. Verifica effettuata su sezione BxH, con B=1 cm e H="spess" cm
- Af = area disposta al lembo teso, in cm2 al metro
- Afc = area disposta al lembo compresso, in cm2 al metro
- Mom = momento flettente [daNcm/cm]
- Nor = sforzo normale [daN]
- epsC = deformazione cls [per mille]
- epsF = deformazione acciaio [per mille]

L'armatura è sufficiente se le deformazioni dei materiali sono ovunque minori delle corrispondenti deformazioni ultime.

		INFERIORE ORIZZONTALE						INFERIORE VERTICALE					
GUSCI	spess	Af	Afc	Mom	Nor	epsC	epsF	Af	Afc	Mom	Nor	epsC	epsF
81	20	4.59	4.59	324.	126.	0.00	0.87	4.58	4.58	133.	45.	0.00	0.33
100	20	4.59	4.59	592.	77.	0.00	0.80	4.58	4.58	0.	171.	0.00	0.89
102	20	4.59	4.59	443.	139.	0.00	1.03	4.58	4.58	242.	123.	0.00	0.81
103	20	4.59	4.59	549.	34.	0.00	0.63	4.58	4.58	129.	171.	0.00	0.98
115	20	4.59	4.59	249.	93.	0.00	0.65	4.58	4.58	376.	84.	0.00	0.72
138	20	4.59	4.59	111.	208.	0.00	1.16	4.58	4.58	116.	183.	0.00	1.03
146	20	4.59	4.59	50.	112.	0.00	0.63	4.58	4.58	510.	129.	0.00	1.02
147	20	4.59	4.59	0.	131.	0.00	0.68	4.58	4.58	22.	155.	0.00	0.82
178	20	4.59	4.59	0.	130.	0.00	0.67	4.58	4.58	0.	159.	0.00	0.83
180	20	4.59	4.59	104.	129.	0.00	0.74	4.58	4.58	220.	139.	0.00	0.87
183	20	4.59	4.59	118.	78.	0.00	0.48	4.58	4.58	486.	120.	0.00	0.96
184	20	4.59	4.59	259.	105.	0.00	0.76	4.58	4.58	232.	93.	0.00	0.65
191	20	4.59	4.59	415.	83.	0.00	0.71	4.58	4.58	131.	121.	0.00	0.72
197	20	4.59	4.59	338.	81.	0.00	0.65	4.58	4.58	108.	89.	0.00	0.54
205	20	4.59	4.59	372.	83.	0.00	0.68	4.58	4.58	176.	107.	0.00	0.68
206	20	4.59	4.59	143.	58.	0.00	0.41	4.58	4.58	283.	46.	0.00	0.56

		SUPERIORE ORIZZONTALE						SUPERIORE VERTICALE					
GUSCI	spess	Af	Afc	Mom	Nor	epsC	epsF	Af	Afc	Mom	Nor	epsC	epsF
81	20	4.59	4.59	91.	126.	0.00	0.71	4.58	4.58	85.	45.	0.00	0.29
100	20	4.59	4.59	404.	87.	0.00	0.72	4.58	4.58	323.	160.	0.00	1.06
102	20	4.59	4.59	422.	140.	0.00	1.05	4.58	4.58	152.	123.	0.00	0.74
103	20	4.59	4.59	324.	107.	0.00	0.78	4.58	4.58	134.	171.	0.00	0.98
115	20	4.59	4.59	62.	93.	0.00	0.52	4.58	4.58	68.	109.	0.00	0.61
138	20	4.59	4.59	157.	208.	0.00	1.19	4.58	4.58	133.	183.	0.00	1.05
146	20	4.59	4.59	145.	114.	0.00	0.69	4.58	4.58	206.	129.	0.00	0.81
147	20	4.59	4.59	424.	112.	0.00	0.92	4.58	4.58	460.	130.	0.00	0.99
178	20	4.59	4.59	284.	130.	0.00	0.87	4.58	4.58	448.	159.	0.00	1.14
180	20	4.59	4.59	290.	126.	0.00	0.87	4.58	4.58	272.	124.	0.00	0.85
183	20	4.59	4.59	179.	78.	0.00	0.52	4.58	4.58	144.	101.	0.00	0.62
184	20	4.59	4.59	517.	109.	0.00	1.03	4.58	4.58	560.	99.	0.00	0.93
191	20	4.59	4.59	0.	86.	0.00	0.44	4.58	4.58	10.	121.	0.00	0.64
197	20	4.59	4.59	0.	92.	0.00	0.48	4.58	4.58	162.	79.	0.00	0.52
205	20	4.59	4.59	55.	79.	0.00	0.46	4.58	4.58	183.	88.	0.00	0.58
206	20	4.59	4.59	130.	67.	0.00	0.44	4.58	4.58	146.	91.	0.00	0.57

L'ARMATURA È OVUNQUE > DELLA QUANTITÀ RICHIESTA: IL PUNTO 2.3 DELLE NTC È VERIFICATO (Rd > Ed)

MACROGUSCIO PT

VERIFICHE A FESSURAZIONE (EFFETTO MEMBRANA + PIASTRA)

CASI DI CARICO:

Nome	Descrizione
10	Rara (RARA)
11	Frequente (FREQUENTE)
12	Quasi Perm (QUASI PERMANENTE)

DATI:

copriferro inferiore (asse armatura): 4 cm
copriferro superiore (asse armatura): 4 cm

Af = area effettiva tesa (cm2 al metro)
Afc = area effettiva compressa (cm2 al metro)
Mom = momento flettente [daNcm/cm]
Nor = sforzo normale [daN]
σc = tensione calcestruzzo [daN/cm2]
valore max per combinazione rara = 199 daN/cm2
'' '' '' '' frequente = 199 daN/cm2
'' '' '' '' quasi permanente = 149 daN/cm2
σf = tensione acciaio [daN/cm2]
valore max per combinazione rara = 3600 daN/cm2
'' '' '' '' frequente = 3600 daN/cm2
'' '' '' '' quasi permanente = 3600 daN/cm2
wkR = apertura caratteristica per combinazione rara (mm) - valore max = 0.6 mm
wkF = '' '' '' '' frequente (mm) - '' '' = 0.4 mm
wkP = '' '' '' '' quasi permanente (mm) - '' '' = 0.3 mm

ARMATURA INFERIORE ORIZZONTALE

			COMBINAZIONE RARA					COMBINAZIONE FREQUENTE					COMBINAZIONE QUASI PERMANENTE				
GUSCI	Af	Afc	Mom	Nor	σc	σf	WkR	Mom	Nor	σc	σf	WkF	Mom	Nor	σc	σf	WkP
81	4.59	4.59	44	28	0.00	377.	0.047	52	28	0.00	390.	0.048	56	29	0.00	398.	0.049
100	4.59	4.59	64	10	0.94	209.	0.022	68	11	0.93	228.	0.025	71	12	0.94	238.	0.026
102	4.59	4.59	63	23	0.00	352.	0.042	68	25	0.00	374.	0.044	71	25	0.00	385.	0.046
103	4.59	4.59	187	18	4.45	475.	0.048	184	18	4.39	468.	0.047	184	18	4.39	469.	0.047
115	4.59	4.59	72	26	0.00	395.	0.047	71	25	0.00	380.	0.045	71	24	0.00	378.	0.045
138	4.59	4.59	101	67	0.00	889.	0.110	82	66	0.00	845.	0.106	70	66	0.00	827.	0.104
146	4.59	4.59	7	34	0.00	379.	0.050	7	33	0.00	367.	0.048	6	33	0.00	364.	0.048
147	4.59	4.59	0.	40	0.00	431.	0.057	0.	38	0.00	419.	0.056	0.	38	0.00	417.	0.055
178	4.59	4.59	0.	55	0.00	604.	0.080	0.	54	0.00	587.	0.078	0.	54	0.00	584.	0.077
180	4.59	4.59	92	71	0.00	920.	0.115	85	69	0.00	885.	0.111	82	69	0.00	877.	0.110
183	4.59	4.59	36	36	0.00	447.	0.057	35	35	0.00	437.	0.055	35	35	0.00	436.	0.055
184	4.59	4.59	68	52	0.00	676.	0.085	56	51	0.00	642.	0.081	51	51	0.00	632.	0.080
191	4.59	4.59	184	62	0.00	964.	0.114	184	60	0.00	943.	0.111	186	60	0.00	940.	0.110
197	4.59	4.59	130	51	0.00	757.	0.090	134	49	0.00	743.	0.088	137	49	0.00	742.	0.088
205	4.59	4.59	136	68	0.00	949.	0.115	139	65	0.00	926.	0.112	141	65	0.00	924.	0.112
206	4.59	4.59	79	43	0.00	590.	0.072	72	42	0.00	569.	0.070	69	42	0.00	565.	0.070

ARMATURA INFERIORE VERTICALE

			COMBINAZIONE RARA					COMBINAZIONE FREQUENTE					COMBINAZIONE QUASI PERMANENTE				
GUSCI	Af	Afc	Mom	Nor	σc	σf	WkR	Mom	Nor	σc	σf	WkF	Mom	Nor	σc	σf	WkP
81	4.58	4.58	105	43	0.00	637.	0.076	106	44	0.00	640.	0.077	107	44	0.00	646.	0.077
100	4.58	4.58	0.	65	0.00	705.	0.094	0.	63	0.00	692.	0.092	0.	63	0.00	691.	0.092
102	4.58	4.58	95	44	0.00	630.	0.076	96	44	0.00	634.	0.077	97	45	0.00	639.	0.077
103	4.58	4.58	76	70	0.00	885.	0.112	72	68	0.00	853.	0.108	71	67	0.00	846.	0.107
115	4.58	4.58	223	52	0.00	919.	0.104	211	50	0.00	875.	0.099	213	49	0.00	871.	0.099
138	4.58	4.58	31	72	0.00	837.	0.109	19	70	0.00	794.	0.104	15	69	0.00	781.	0.103
146	4.58	4.58	192	56	0.00	906.	0.105	190	54	0.00	884.	0.102	190	54	0.00	882.	0.102
147	4.58	4.58	0.	54	0.00	592.	0.079	0.	53	0.00	576.	0.076	0.	52	0.00	573.	0.076
178	4.58	4.58	0.	85	0.00	930.	0.123	0.	83	0.00	906.	0.120	0.	83	0.00	902.	0.120
180	4.58	4.58	196	81	0.00	1194.	0.143	193	79	0.00	1162.	0.139	193	78	0.00	1157.	0.139
183	4.58	4.58	140	47	0.00	728.	0.086	142	46	0.00	724.	0.085	144	46	0.00	727.	0.085
184	4.58	4.58	65	63	0.00	790.	0.100	54	62	0.00	760.	0.097	49	62	0.00	752.	0.096
191	4.58	4.58	23	63	0.00	723.	0.094	23	61	0.00	699.	0.091	23	60	0.00	694.	0.090
197	4.58	4.58	69	53	0.00	686.	0.086	72	51	0.00	671.	0.084	75	51	0.00	670.	0.083
205	4.58	4.58	50	60	0.00	730.	0.093	48	58	0.00	708.	0.090	47	58	0.00	704.	0.090
206	4.58	4.58	95	45	0.00	636.	0.077	88	44	0.00	618.	0.075	86	44	0.00	615.	0.075

ARMATURA SUPERIORE ORIZZONTALE

			COMBINAZIONE RARA					COMBINAZIONE FREQUENTE					COMBINAZIONE QUASI PERMANENTE				
GUSCI	Af	Afc	Mom	Nor	σc	σf	WkR	Mom	Nor	σc	σf	WkF	Mom	Nor	σc	σf	WkP
81	4.59	4.59	0.	28	0.00	308.	0.041	0.	28	0.00	309.	0.041	0.	29	0.00	311.	0.041
100	4.59	4.59	0.	10	0.00	111.	0.015	0.	11	0.00	123.	0.016	0.	12	0.00	129.	0.017
102	4.59	4.59	8	23	0.00	267.	0.035	15	25	0.00	291.	0.038	18	25	0.00	303.	0.039
103	4.59	4.59	95	18	0.47	348.	0.039	87	18	0.00	334.	0.037	85	18	0.00	331.	0.037
115	4.59	4.59	0.	26	0.00	282.	0.037	0.	25	0.00	269.	0.036	0.	24	0.00	266.	0.035
138	4.59	4.59	89	67	0.00	870.	0.109	96	66	0.00	868.	0.108	100	66	0.00	873.	0.108
146	4.59	4.59	0.	34	0.00	368.	0.049	0.	33	0.00	357.	0.047	0.	33	0.00	355.	0.047
147	4.59	4.59	134	40	0.00	640.	0.074	131	38	0.00	624.	0.072	131	38	0.00	622.	0.072
178	4.59	4.59	105	55	0.00	768.	0.094	110	54	0.00	759.	0.092	113	54	0.00	760.	0.092
180	4.59	4.59	148	71	0.00	1008.	0.122	148	69	0.00	984.	0.119	149	69	0.00	980.	0.119
183	4.59	4.59	0.	36	0.00	391.	0.052	0.	35	0.00	382.	0.051	0.	35	0.00	382.	0.051
184	4.59	4.59	110	52	0.00	742.	0.090	114	51	0.00	733.	0.088	117	51	0.00	735.	0.088
191	4.59	4.59	0.	62	0.00	678.	0.090	0.	60	0.00	655.	0.087	0.	60	0.00	650.	0.086
197	4.59	4.59	0.	51	0.00	554.	0.074	0.	49	0.00	534.	0.071	0.	49	0.00	529.	0.070
205	4.59	4.59	0.	68	0.00	736.	0.098	0.	65	0.00	710.	0.094	0.	65	0.00	704.	0.093
206	4.59	4.59	0.	43	0.00	466.	0.062	0.	42	0.00	457.	0.061	0.	42	0.00	457.	0.061

ARMATURA SUPERIORE VERTICALE

		COMBINAZIONE RARA					COMBINAZIONE FREQUENTE					COMBINAZIONE QUASI PERMANENTE				
GUSCI	Af	Afc	Mom	Nor	σc	σf	WkR	Mom	Nor	σc	σf	WkF	Mom	Nor	σc	σf	WkP
81	4.58	4.58	0.	43	0.00	472.	0.063	0.	44	0.00	475.	0.063	0.	44	0.00	479.	0.064
100	4.58	4.58	134	65	0.00	913.	0.111	129	63	0.00	893.	0.109	128	63	0.00	890.	0.108
102	4.58	4.58	0.	44	0.00	481.	0.064	0.	44	0.00	484.	0.064	0.	45	0.00	488.	0.065
103	4.58	4.58	162	70	0.00	1021.	0.123	162	68	0.00	994.	0.119	163	67	0.00	989.	0.119
115	4.58	4.58	0.	52	0.00	571.	0.076	0.	50	0.00	546.	0.072	0.	49	0.00	540.	0.072
138	4.58	4.58	162	72	0.00	1043.	0.126	162	70	0.00	1017.	0.122	163	69	0.00	1013.	0.122
146	4.58	4.58	0.	56	0.00	606.	0.080	0.	54	0.00	589.	0.078	0.	54	0.00	586.	0.078
147	4.58	4.58	85	54	0.00	726.	0.090	90	53	0.00	716.	0.088	92	52	0.00	717.	0.088
178	4.58	4.58	261	85	0.00	1337.	0.157	257	83	0.00	1307.	0.153	258	83	0.00	1304.	0.153
180	4.58	4.58	57	81	0.00	976.	0.125	53	79	0.00	943.	0.121	52	78	0.00	936.	0.120
183	4.58	4.58	0.	47	0.00	510.	0.068	0.	46	0.00	502.	0.067	0.	46	0.00	502.	0.067
184	4.58	4.58	108	63	0.00	858.	0.106	113	62	0.00	853.	0.105	116	62	0.00	856.	0.105
191	4.58	4.58	13	63	0.00	707.	0.093	15	61	0.00	687.	0.090	16	60	0.00	684.	0.090
197	4.58	4.58	0.	53	0.00	579.	0.077	0.	51	0.00	558.	0.074	0.	51	0.00	553.	0.073
205	4.58	4.58	0.	60	0.00	653.	0.087	0.	58	0.00	634.	0.084	0.	58	0.00	630.	0.084
206	4.58	4.58	0.	45	0.00	488.	0.065	0.	44	0.00	481.	0.064	0.	44	0.00	481.	0.064

MACROGUSCIO setto_

VERIFICA ARMATURE EFFETTIVE (EFFETTO MEMBRANA + PIASTRA)

CASI DI CARICO:

Nome	Descrizione
1	SLU SENZA SISMA
4	SLU con SISMAX PRINC
5	SLU con SISMAY PRINC

DATI:

tensione di snervamento acciaio	(fyk):	4500	daN/cm2
coefficiente sicurezza acciaio	:	1.15	
deformazione ultima acciaio	:	67.5	per mille
deformazione ultima cls	:	3.5	per mille
rapporto rottura/snervamento	(k):	1.15	
resistenza cilindrica cls	(fck):	332	daN/cm2
coefficiente sicurezza cls	:	1.5	
coefficiente riduttivo	(alfa):	0.85	
copriferro inferiore (asse armatura)	:	4	cm
copriferro superiore (asse armatura)	:	4	cm
moltiplicatore sollecitazioni	:	1	

LEGENDA:
- spess = spessore guscio. Verifica effettuata su sezione BxH, con B=1 cm e H="spess" cm
- Af = area disposta al lembo teso, in cm2 al metro
- Afc = area disposta al lembo compresso, in cm2 al metro
- Mom = momento flettente [daNcm/cm]
- Nor = sforzo normale [daN]
- epsC = deformazione cls [per mille]
- epsF = deformazione acciaio [per mille]

L'armatura è sufficiente se le deformazioni dei materiali sono ovunque minori delle corrispondenti deformazioni ultime.

		INFERIORE ORIZZONTALE						INFERIORE VERTICALE					
GUSCI	spess	Af	Afc	Mom	Nor	epsC	epsF	Af	Afc	Mom	Nor	epsC	epsF
97	20	5.92	5.92	0.	478.	0.00	1.92	6.60	6.60	0.	583.	0.00	2.10
98	20	5.92	5.92	13.	196.	0.00	0.80	6.60	6.60	0.	363.	0.00	1.31
99	20	5.92	5.92	54.	143.	0.00	0.60	6.60	6.60	0.	183.	0.00	0.66
125	20	5.92	5.92	0.	452.	0.00	1.82	6.60	6.60	276.	479.	0.00	1.91
126	20	5.92	5.92	0.	269.	0.00	1.08	6.60	6.60	130.	287.	0.00	1.10
127	20	5.92	5.92	1091.	-8.	0.20	0.56	6.60	6.60	0.	129.	0.00	0.47

		SUPERIORE ORIZZONTALE						SUPERIORE VERTICALE						
GUSCI	spess	Af	Afc	Mom	Nor	epsC	epsF	Af	Afc	Mom	Nor	epsC	epsF	
97	20	5.92	5.92	328.	478.	0.00	1.92	6.60	6.60	351.	574.99	8.50	998.50	@
98	20	5.92	5.92	39.	196.	0.00	0.81	6.60	6.60	521.	363.	0.00	1.58	
99	20	5.92	5.92	115.	143.	0.00	0.64	6.60	6.60	1158.	183.	0.02	1.22	
125	20	5.92	5.92	266.	452.	0.00	8.84	6.60	6.60	0.	484.	0.00	1.75	
126	20	5.92	5.92	36.	269.	0.00	1.10	6.60	6.60	461.	287.	0.00	1.27	
127	20	5.92	5.92	1240.	-8.	0.23	0.64	6.60	6.60	3167.	59.	0.53	1.71	

@ = ARMATURA INSUFFICIENTE!

MACROGUSCIO setto_

VERIFICHE A FESSURAZIONE (EFFETTO MEMBRANA + PIASTRA)

CASI DI CARICO:

Nome	Descrizione
10	Rara (RARA)
11	Frequente (FREQUENTE)

12 Quasi Perm (QUASI PERMANENTE)

DATI:
copriferro inferiore (asse armatura): 4 cm
copriferro superiore (asse armatura): 4 cm

Af = area effettiva tesa (cm2 al metro)
Afc = area effettiva compressa (cm2 al metro)
Mom = momento flettente [daNcm/cm]
Nor = sforzo normale [daN]
σc = tensione calcestruzzo [daN/cm2]
valore max per combinazione rara = 199 daN/cm2
'' '' '' '' frequente = 199 daN/cm2
'' '' '' '' quasi permanente = 149 daN/cm2
σf = tensione acciaio [daN/cm2]
valore max per combinazione rara = 3600 daN/cm2
'' '' '' '' frequente = 3600 daN/cm2
'' '' '' '' quasi permanente = 3600 daN/cm2
wkR = apertura caratteristica per combinazione rara (mm) - valore max = 0.6 mm
wkF = '' '' '' '' frequente (mm) - '' '' = 0.4 mm
wkP = '' '' '' '' quasi permanente (mm) - '' '' = 0.3 mm

ARMATURA INFERIORE ORIZZONTALE

		COMBINAZIONE RARA					COMBINAZIONE FREQUENTE					COMBINAZIONE QUASI PERMANENTE				
GUSCI	Af	Afc	Mom	Nor	σc	σf	wkR	Mom	Nor	σc	σf	wkF	Mom	Nor	σc	σf	wkP
97	5.92	5.92	0.	8	0.00	66.	0.007	0.	8	0.00	71.	0.007	0.	9	0.00	74.	0.008
98	5.92	5.92	38	-3	0.96	19.	0.001	17	-2	0.40	4.	0.000	9	-2	0.22	0.	0.000
99	5.92	5.92	151	6	3.74	220.	0.015	81	5	1.89	133.	0.010	53	5	1.14	99.	0.008
125	5.92	5.92	32	0.	0.84	35.	0.002	0.	1	0.00	11.	0.001	0.	2	0.00	16.	0.002
126	5.92	5.92	4	-1	0.11	0.	0.000	0.	-1	0.05	-1.	0.000	0.	-1	0.04	-1.	0.000
127	5.92	5.92	363	-1	9.43	393.	0.021	186	-2	4.86	187.	0.010	115	-3	3.02	106.	0.006

ARMATURA INFERIORE VERTICALE

		COMBINAZIONE RARA					COMBINAZIONE FREQUENTE					COMBINAZIONE QUASI PERMANENTE				
GUSCI	Af	Afc	Mom	Nor	σc	σf	wkR	Mom	Nor	σc	σf	wkF	Mom	Nor	σc	σf	wkP
97	6.60	6.60	144	-49	4.12	-14.	0.000	18	-41	2.11	-26.	0.000	0.	-39	1.76	-26.	0.000
98	6.60	6.60	0.	-46	2.09	-31.	0.000	0.	-38	1.74	-26.	0.000	0.	-36	1.64	-25.	0.000
99	6.60	6.60	0.	-29	1.32	-20.	0.000	0.	-25	1.12	-17.	0.000	0.	-23	1.07	-16.	0.000
125	6.60	6.60	250	-119	8.71	-47.	0.000	91	-102	5.84	-57.	0.000	16	-96	4.59	-63.	0.000
126	6.60	6.60	0.	-103	4.70	-71.	0.000	0.	-85	3.87	-58.	0.000	0.	-79	3.59	-54.	0.000
127	6.60	6.60	0.	-87	3.95	-59.	0.000	0.	-69	3.13	-47.	0.000	0.	-63	2.84	-43.	0.000

ARMATURA SUPERIORE ORIZZONTALE

		COMBINAZIONE RARA					COMBINAZIONE FREQUENTE					COMBINAZIONE QUASI PERMANENTE				
GUSCI	Af	Afc	Mom	Nor	σc	σf	wkR	Mom	Nor	σc	σf	wkF	Mom	Nor	σc	σf	wkP
97	5.92	5.92	97	8	2.15	176.	0.013	74	8	1.40	156.	0.013	59	9	0.86	144.	0.012
98	5.92	5.92	0.	-3	0.13	-2.	0.000	0.	-2	0.10	-2.	0.000	0.	-2	0.09	-1.	0.000
99	5.92	5.92	214	6	5.40	289.	0.019	116	5	2.85	172.	0.012	77	5	1.82	126.	0.009
125	5.92	5.92	213	0.	5.54	234.	0.012	139	1	3.60	165.	0.009	110	2	2.83	138.	0.008
126	5.92	5.92	51	-1	1.34	46.	0.002	21	-1	0.55	15.	0.001	9	-1	0.23	4.	0.000
127	5.92	5.92	592	-1	15.38	645.	0.034	304	-2	7.92	317.	0.017	189	-3	4.93	187.	0.010

ARMATURA SUPERIORE VERTICALE

		COMBINAZIONE RARA					COMBINAZIONE FREQUENTE					COMBINAZIONE QUASI PERMANENTE				
GUSCI	Af	Afc	Mom	Nor	σc	σf	wkR	Mom	Nor	σc	σf	wkF	Mom	Nor	σc	σf	wkP
97	6.60	6.60	0.	-49	2.24	-34.	0.000	9	-41	1.76	-29.	0.000	19	-39	1.51	-29.	0.000
98	6.60	6.60	641	-46	15.66	310.	0.015	331	-38	7.69	81.	0.004	205	-36	4.64	13.	0.001
99	6.60	6.60	1036	-29	25.85	813.	0.039	540	-25	13.42	355.	0.017	343	-23	8.41	173.	0.008
125	6.60	6.60	45	-119	4.84	-88.	0.000	58	-102	3.88	-78.	0.000	64	-96	3.54	-75.	0.000
126	6.60	6.60	785	-103	17.97	143.	0.007	404	-85	9.40	4.	0.000	252	-79	0.29	-89.	0.000
127	6.60	6.60	1643	-87	40.72	1000.	0.048	838	-69	20.28	353.	0.017	517	-63	11.95	116.	0.006

12.1.2 Copertura

Soletta

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VERIFICA TRAVATA IN CEMENTO ARMATO

Nome travata       : solaio (travetto)
Metodo di verifica : stati limite (NTC08).
Duttilita'         : bassa senza gerarchia.
Unità di misura    : cm; daN; daN/cm; daNcm; daN/cm2; deform. %.
Unità particolari  : fessure [Wk]:mm - ferri:mm e cm2 - sezioni:cm e derivate.
Copriferri (assi)  : longitudinali= 4 ; staffe= 2.5

              MATERIALI

CLS     : Rck =300. ; fck=249. ; fctk= 17.9; fctm= 25.6; Ec= 314472. ;
          gc =1.5 ; fcd=141.1; fbd= 26.9; fctd= 11.9; Ecud=.35%
ACCIAIO : B450C; ftk=5175. ; fyk=4500. ; Es=2100000. ;
          gs =1.15; fyd=3913. ; ftd(k*fyd)=4500. ; fud=4439.8; Eud=6.75%

              TENSIONI E FESSURE MASSIME IN ESERCIZIO

GRUPPO  : ordinario.
CLS     : Scls(rara)=149.4; Scls(quasi permanente)=112. ; fbd(esercizio)= 26.9
ACCIAIO : Sacc(rara)=3600.; Coeff.Omogein.= 15
FESSURE : Wdmax(fre.)=.4  ; Wdmax(q.p.)=.3  [4.1.2.2.4.5];
          kt=.4 [EN 1992-1 7.3.4].

              SEZIONI UTILIZZATE

 1) Rettangolare: 50X25; A=1250.; Jg=65104.; E=314471.6
 2) Rettangolare: 50X24; A=1200.; Jg=57600.; E=314471.6

              DESCRIZIONE CAMPATE

Cam.| Descriz. |S.ini|Sez. |S.fin|Incl.|L.assi|L.net.|lambda | K |r.Ar.|lam.max|
   1|C1        |    2|    1|    2|    0|  240.|  220.|  9.6  |1. |3.556| 84.231|

              CONDIZIONI DI CARICO
                                          |Molt.|Coeff. per combinazioni    |
Nro|   Descrizione      |    Tipo          |Caric|SLU   |Rare  |Freq. |Q.Per.|
 1 |Perman.strutturali  |senza permutazioni  |1.   | 1.3  | 1.   | 1.   | 1.   |
 2 |Perman.non strutt.  |senza permutazioni  |1.   | 1.5  | 1.   | 1.   | 1.   |
 3 |Variabili           |permutaz. campate   |1.   | 1.5  | 1.   |  .5  |  .3  |

              CARICHI APPLICATI

Nro|Con|Camp.| Tipo             | Sistema  |carico 1|carico 2|dist.1|dist.2|
  1|  1|    1|Forza distribuita  |Globale   |   -5.  |   -    |  -   |  -   |
  2|  3|    1|Forza distribuita  |Globale   |   -1.  |   -    |  -   |  -   |

              VERIFICHE ALLO STATO LIMITE ULTIMO

FLESSIONE:

Progressive|SE|Ar|  Msd     Epscl Epsac|   Mrd    Epscl Epsac Cam x/d |Mr/Ms|VE|
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>   0.|  0.|2.|1.|  -28800.|-.008| .031| -192947.|-.35 |3.588|3.| .089|6.7  |SI|
    0.|  0.|2.|1.|    9112.|-.003| .009|  204807.!-.35 |2.878|3.| .108!22.48!SI|
    5.|  5.|1.|1.|  -28800.|-.008| .03 | -204807.!-.35 |2.878|3.| .108|7.111|SI|
  120.|120.|1.|1.|   57600.!-.016! .06 !  204807.|-.35 |2.878|3.| .108|3.556!SI|
  240.|240.|2.|1.|  -28800.!-.008| .031| -192947.|-.35 |3.588|3.| .089!6.7  |SI|
  240.|240.|2.|1.|    9112.|-.003| .009|  204807.|-.35 |2.878|3.| .108|22.48|SI|

TAGLIO:

Progressive|Se|  Vsd  |  VRd  |Ve|
>   0.|  0.|2.|   960.!  5093.|SI|
    5.|  5.|1.|   920.|  5245.!SI|
  240.|240.|2.|  -960.!  5093.|SI|

              VERIFICHE ALLO STATO LIMITE DI ESERCIZIO

TENSIONI DI ESERCIZIO E FESSURAZIONE - RARE:

Progressive|Se|Ar Momento     Scls   Sacc | As   hc,ef   Eps%  Sr,max   Wd  |Ve|
    5.|  5.|2.|2.|   -18662.|  -7.5| 424. | 2.26| 6.53|  .0121| 25.47|  .031|SI|
  120.|120.|1.|1.|    43200.! -16.7! 939.6! 2.26| 6.79|  .0268| 26.47|  .071!SI|
  240.|240.|2.|2.|   -21600.!  -8.7| 490.8| 2.26| 6.53|  .014 | 25.47|  .036|SI|

TENSIONI DI ESERCIZIO E FESSURAZIONE - FREQUENTI:

Progressive|Se|Ar Momento     Scls   Sacc | As   hc,ef   Eps%  Sr,max   Wd  |Ve|
    5.|  5.|2.|2.|   -16862.|  -6.8| 383.1| 2.26| 6.53|  .0109| 25.47|  .028|SI|
  120.|120.|1.|1.|    39600.! -15.3! 861.3! 2.26| 6.79|  .0246| 26.47|  .065!SI|
  240.|240.|2.|2.|   -19800.!  -8. | 449.9| 2.26| 6.53|  .0129| 25.47|  .033|SI|

TENSIONI DI ESERCIZIO E FESSURAZIONE - QUASI PERMANENTI:

Progressive|Se|Ar Momento     Scls   Sacc | As   hc,ef   Eps%  Sr,max   Wd  |Ve|
    5.|  5.|2.|2.|   -16142.|  -6.5| 366.8| 2.26| 6.53|  .0105| 25.47|  .027|SI|
  120.|120.|1.|1.|    38160.! -14.8! 830. ! 2.26| 6.79|  .0237| 26.47|  .063!SI|
  240.|240.|2.|2.|   -19080.!  -7.7| 433.5| 2.26| 6.53|  .0124| 25.47|  .032|SI|

          ARMATURE LONGITUDINALI (%=100*Af/Acls - Acls=area intera sezione)

Nro|Totale   % |Super.   %        Barre        |Infer.   %        Barre        |
  1| 4.52| .362| 2.26| .181|2d12              | 2.26| .181|2d12              |
  2| 4.52| .377| 2.26| .188|2d12              | 2.26| .188|2d12              |
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Colmo

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Metodo di verifica : stati limite (NTC08).
Duttilita'         : non prevista.
Unità di misura    : cm; daN; daN/cm; daNcm; daN/cm2; deform. %.
Unità particolari  : fessure [wk]:mm - ferri:mm e cm2 - sezioni:cm e derivate.
Copriferri (assi)  : longitudinali= 4 ; staffe= 2.5

              MATERIALI

CLS     : Rck =400. ; fck=332. ; fctk= 17.9; fctm= 25.6; Ec= 314472. ;
          gc =1.5 ; fcd=141.1; fbd= 26.9; fctd= 11.9; Ecud=.35%
ACCIAIO : B450C; ftk=5175. ; fyk=4500. ; Es=2100000. ;
          gs =1.15; fyd=3913. ; ftd(k*fyd)=4500. ; fud=4439.8; Eud=6.75%
```

TENSIONI E FESSURE MASSIME IN ESERCIZIO

GRUPPO : ordinario.
CLS : Scls(rara)=199; Scls(quasi permanente)=149. ; fbd(esercizio)= 26.9
ACCIAIO : Sacc(rara)=3600.; Coeff.Omogein.= 15
FESSURE : Wdmax(fre.)=.4 ; Wdmax(q.p.)=.3 [4.1.2.2.4.5];
kt=.4 [EN 1992-1 7.3.4].

SEZIONI UTILIZZATE

4) Rettangolare: 80X25; A=2000.; Jg=104167.; E=314471.6

CONDIZIONI DI CARICO

			Molt.	Coeff. per combinazioni			
Nro	Descrizione	Tipo	Caric	SLU	Rare	Freq.	Q.Per.
1	Perman.strutturali	senza permutazioni	1.	1.3	1.	1.	1.
2	Perman.non strutt.	senza permutazioni	1.	1.5	1.	1.	1.
3	Variabili	permutaz. campate	1.	1.5	1.	.5	.3

CARICHI APPLICATI

Nro	Con	Camp.	Tipo	Sistema	carico 1	carico 2	dist.1	dist.2
1	1	1	Forza distribuita	Globale	-25.5	-	-	-
2	3	1	Forza distribuita	Globale	-6.21	-	-	-

VERIFICHE ALLO STATO LIMITE ULTIMO

FLESSIONE:

Progressive	SE	Ar	Msd	Epscl	Epsac	Mrd	Epscl	Epsac	Cam	x/d	Mr/Ms	VE
> 0.	0.	4.	1.	-784980.	-.052	.078	-1961100.	-.35	1.381	3.	.202	2.498	SI
0.	0.	4.	1.	97141.	-.006	.01	1961100.	!-.35	1.381	3.	.202	20.19	SI
280.	280.	4.	1.	1569960.	!-.108	.157	! 1961100.	-.35	1.381	3.	.202	1.249	!SI
420.	420.	4.	1.	-79459.	-.005	.008	-1961100.	-.35	1.381	3.	.202	24.68	!SI
560.	560.	4.	1.	-784980.	!-.052	.078	-1961100.	!-.35	1.381	3.	.202	!2.498	SI
560.	560.	4.	1.	97141.	-.006	.01	1961100.	-.35	1.381	3.	.202	20.19	SI

TAGLIO:

Progressive	Se	Vsd	VRd	VRcd	VRsd	Asw	s	ctgT
> 0.	0.	4.	10814. !	8392.	38535.	38945.	1.01	5.	2.5
70.	70.	4.	8410.	13567. !	38535.	38945.	1.01	5.	2.5
105.	105.	4.	7009.	13567.	38535.	19472.	1.01	10.	2.5
140.	140.	4.	5607.	13567.	38535.	19472.	1.01	10.	2.5
175.	175.	4.	4205.	13567.	38535.	19472.	1.01	10.	2.5
210.	210.	4.	2804.	13567.	38535.	19472.	1.01	10.	2.5
245.	245.	4.	1402.	13567.	38535.	19472.	1.01	10.	2.5
280.	280.	4.	0.	13567.	38535.	19472.	1.01	10.	2.5
315.	315.	4.	-1402.	13567.	38535.	19472.	1.01	10.	2.5
350.	350.	4.	-2804.	13567.	38535.	19472.	1.01	10.	2.5
385.	385.	4.	-4205.	13567.	38535.	19472.	1.01	10.	2.5
420.	420.	4.	-5607.	13567.	38535.	19472.	1.01	10.	2.5
455.	455.	4.	-7009.	13567.	38535.	19472.	1.01	10.	2.5
560.	560.	4.	-10814. !	8392.	38535. !	38945. !	1.01	5.	2.5

VERIFICHE ALLO STATO LIMITE DI ESERCIZIO

TENSIONI DI ESERCIZIO E FESSURAZIONE - RARE:

Progressive	Se	Ar	Momento	Scls	Sacc	As	hc,ef	Eps%	Sr,max	Wd	Ve
10.	10.	4.	1.	-516952.	-46.9	1079.	25.13	5.44	.0397	12.69	.05	SI
280.	280.	4.	1.	1179920.!	-107.1!	2462.8!	25.13	5.44	.1056	12.69	.134!	SI
560.	560.	4.	1.	-589960.!	-53.6	1231.4	25.13	5.44	.0469	12.69	.06	SI

TENSIONI DI ESERCIZIO E FESSURAZIONE - FREQUENTI:

Progressive	Se	Ar	Momento	Scls	Sacc	As	hc,ef	Eps%	Sr,max	Wd	Ve
10.	10.	4.	1.	-453750.	-41.2	947.1	25.13	5.44	.0334	12.69	.042	SI
280.	280.	4.	1.	1035664.!	-94. !	2161.7!	25.13	5.44	.0912	12.69	.116!	SI
560.	560.	4.	1.	-517832.!	-47.	1080.8	25.13	5.44	.0398	12.69	.05	SI

TENSIONI DI ESERCIZIO E FESSURAZIONE - QUASI PERMANENTI:

Progressive	Se	Ar	Momento	Scls	Sacc	As	hc,ef	Eps%	Sr,max	Wd	Ve
10.	10.	4.	1.	-437950.	-39.8	914.1	25.13	5.44	.0318	12.69	.04	SI
280.	280.	4.	1.	999600.!	-90.8!	2086.4!	25.13	5.44	.0877	12.69	.111!	SI
560.	560.	4.	1.	-499800.!	-45.4	1043.2	25.13	5.44	.038	12.69	.048	SI

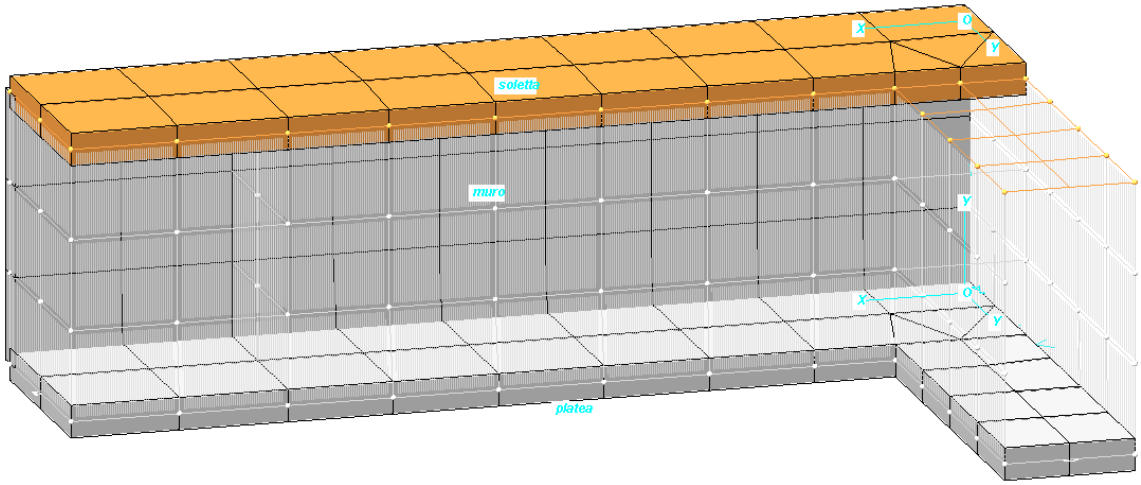
ARMATURE LONGITUDINALI (%=100*Af/Acls - Acls=area intera sezione)

Nro	Totale	%	Super.	%	Barre	Infer.	%	Barre
1	50.27	2.513	25.13	1.257	8d20	25.13	1.257	8d20

12.2 Opera di presa

12.2.1 Setti e muri

Si riporta nell'immagine seguente la numerazione dei diversi macrogusci:



Nel seguito le verifiche di dettaglio:

```
MACROGUSCIO muro

VERIFICA ARMATURE EFFETTIVE (EFFETTO MEMBRANA + PIASTRA)

CASI DI CARICO:
    Nome  Descrizione
    1     SLU SENZA SISMA
    4     SLU con SISMAX PRINC
    5     SLU con SISMAY PRINC

DATI:
   tensione di snervamento acciaio (fyk): 4500    daN/cm2
   coefficiente sicurezza acciaio       : 1.15
   deformazione ultima acciaio          : 67.5    per mille
   deformazione ultima cls              :  3.5    per mille
   rapporto rottura/snervamento      (k): 1.15
   resistenza cilindrica cls       (fck): 332     daN/cm2
   coefficiente sicurezza cls           : 1.5
   coefficiente riduttivo         (alfa): 0.85
   copriferro inferiore  (asse armatura):  4      cm
   copriferro superiore  (asse armatura):  4      cm
   moltiplicatore sollecitazioni        :  1

LEGENDA:
   spess = spessore guscio. Verifica effettuata su sezione BxH, con B=1 cm e H="spess" cm
   Af    = area disposta al lembo teso, in cm2 al metro
   Afc   = area disposta al lembo compresso, in cm2 al metro
   Mom   = momento flettente [daNcm/cm]
   Nor   = sforzo normale [daN]
   epsC  = deformazione cls [per mille]
   epsF  = deformazione acciaio [per mille]

   L'armatura è sufficiente se le deformazioni dei materiali sono ovunque minori delle
corrispondenti deformazioni ultime.

          |           INFERIORE ORIZZONTALE         |           INFERIORE VERTICALE           |
```

GUSCI	spess	Af	Afc	Mom	Nor	epsC	epsF	Af	Afc	Mom	Nor	epsC	epsF
258	30	5.88	5.88	109.	39.	0.00	0.19	5.78	5.78	61.	59.	0.00	0.28
259	30	5.88	5.88	115.	38.	0.00	0.19	5.78	5.78	113.	45.	0.00	0.22
260	30	5.88	5.88	117.	35.	0.00	0.18	5.78	5.78	87.	20.	0.00	0.11
261	30	5.88	5.88	33.	64.	0.00	0.28	5.78	5.78	0.	77.	0.00	0.32
262	30	5.88	5.88	0.	88.	0.00	0.36	5.78	5.78	69.	69.	0.00	0.31
263	30	5.88	5.88	0.	112.	0.00	0.45	5.78	5.78	117.	40.	0.00	0.21
264	30	5.88	5.88	103.	99.	0.00	0.43	5.78	5.78	0.	61.	0.00	0.25
265	30	5.88	5.88	109.	96.	0.00	0.43	5.78	5.78	0.	64.	0.01	0.26
266	30	5.88	5.88	42.	76.	0.00	0.32	5.78	5.78	350.	24.	0.00	0.25
267	30	5.88	5.88	0.	84.	0.00	0.34	5.78	5.78	53.	55.	0.00	0.25
268	30	5.88	5.88	0.	98.	0.00	0.40	5.78	5.78	0.	65.	0.03	0.27
269	30	5.88	5.88	0.	108.	0.00	0.44	5.78	5.78	539.	43.	0.00	0.36
270	30	5.88	5.88	0.	74.	0.00	0.30	5.78	5.78	44.	45.	0.00	0.22
271	30	5.88	5.88	0.	100.	0.00	0.41	5.78	5.78	226.	50.	0.00	0.28
272	30	5.88	5.88	0.	126.	0.00	0.51	5.78	5.78	939.	47.	0.00	0.50
273	30	5.88	5.88	0.	67.	0.00	0.27	5.78	5.78	0.	47.	0.00	0.19
274	30	5.88	5.88	0.	95.	0.00	0.38	5.78	5.78	257.	55.	0.00	0.31
275	30	5.88	5.88	0.	128.	0.00	0.52	5.78	5.78	1270.	47.	0.00	0.61
276	30	5.88	5.88	0.	65.	0.00	0.26	5.78	5.78	0.	44.	0.00	0.18
277	30	5.88	5.88	0.	78.	0.00	0.31	5.78	5.78	346.	45.	0.00	0.30
278	30	5.88	5.88	0.	111.	0.00	0.45	5.78	5.78	1545.	29.	0.05	0.63
279	30	5.88	5.88	0.	70.	0.00	0.28	5.78	5.78	0.	53.	0.00	0.22
280	30	5.88	5.88	0.	45.	0.00	0.18	5.78	5.78	358.	46.	0.00	0.31
281	30	5.88	5.88	0.	71.	0.00	0.29	5.78	5.78	1427.	25.	0.05	0.59
282	30	5.88	5.88	158.	56.	0.00	0.32	5.78	5.78	0.	86.	0.00	0.35
283	30	5.88	5.88	58.	45.	0.00	0.20	5.78	5.78	271.	58.	0.00	0.33
284	30	5.88	5.88	167.	47.	0.00	0.24	5.78	5.78	877.	17.	0.02	0.36

		SUPERIORE ORIZZONTALE						SUPERIORE VERTICALE					
GUSCI	spess	Af	Afc	Mom	Nor	epsC	epsF	Af	Afc	Mom	Nor	epsC	epsF
258	30	5.88	5.88	58.	37.	0.00	0.17	5.78	5.78	106.	66.	0.00	0.31
259	30	5.88	5.88	53.	38.	0.00	0.17	5.78	5.78	55.	45.	0.00	0.20
260	30	5.88	5.88	50.	33.	0.00	0.16	5.78	5.78	12.	23.	0.00	0.10
261	30	5.88	5.88	112.	67.	0.00	0.31	5.78	5.78	144.	77.	0.00	0.37
262	30	5.88	5.88	200.	84.	0.00	0.41	5.78	5.78	50.	69.	0.00	0.30
263	30	5.88	5.88	259.	112.	0.00	0.54	5.78	5.78	19.	44.	0.00	0.19
264	30	5.88	5.88	34.	99.	0.00	0.41	5.78	5.78	652.	34.	0.00	0.40
265	30	5.88	5.88	230.	82.	0.00	0.41	5.78	5.78	60.	64.	0.00	0.28
266	30	5.88	5.88	400.	40.	0.00	0.36	5.78	5.78	88.	47.	0.00	0.23
267	30	5.88	5.88	78.	84.	0.00	0.36	5.78	5.78	1063.	57.	0.00	0.58
268	30	5.88	5.88	98.	98.	0.00	0.43	5.78	5.78	97.	65.	0.01	0.30
269	30	5.88	5.88	111.	106.	0.00	0.47	5.78	5.78	217.	43.	0.00	0.26
270	30	5.88	5.88	104.	74.	0.00	0.33	5.78	5.78	1400.	45.	0.00	0.65
271	30	5.88	5.88	121.	100.	0.00	0.44	5.78	5.78	177.	65.	0.00	0.33
272	30	5.88	5.88	144.	126.	0.00	0.56	5.78	5.78	261.	47.	0.00	0.28
273	30	5.88	5.88	242.	62.	0.00	0.33	5.78	5.78	1725.	36.	0.05	0.72
274	30	5.88	5.88	143.	95.	0.00	0.43	5.78	5.78	279.	59.	0.00	0.34
275	30	5.88	5.88	149.	128.	0.00	0.57	5.78	5.78	256.	52.	0.00	0.30
276	30	5.88	5.88	278.	65.	0.00	0.35	5.78	5.78	1892.	41.	0.06	0.79
277	30	5.88	5.88	149.	78.	0.00	0.36	5.78	5.78	292.	45.	0.00	0.28
278	30	5.88	5.88	140.	111.	0.00	0.50	5.78	5.78	235.	52.	0.00	0.29
279	30	5.88	5.88	329.	70.	0.00	0.39	5.78	5.78	1704.	46.	0.02	0.75
280	30	5.88	5.88	169.	45.	0.00	0.24	5.78	5.78	293.	16.	0.00	0.23
281	30	5.88	5.88	119.	71.	0.00	0.32	5.78	5.78	120.	46.	0.00	0.23
282	30	5.88	5.88	203.	79.	0.00	0.39	5.78	5.78	1059.	72.	0.00	0.64
283	30	5.88	5.88	126.	45.	0.00	0.22	5.78	5.78	239.	46.	0.00	0.30
284	30	5.88	5.88	20.	47.	0.00	0.20	5.78	5.78	51.	24.	0.00	0.12

L'ARMATURA È OVUNQUE > DELLA QUANTITÀ RICHIESTA: IL PUNTO 2.3 DELLE NTC È VERIFICATO (Rd > Ed)
MACROGUSCIO platea

MACROGUSCIO muro__

VERIFICHE A FESSURAZIONE (EFFETTO MEMBRANA + PIASTRA)

CASI DI CARICO:

Nome	Descrizione
10	Rara (RARA)
11	Frequente (FREQUENTE)
12	Quasi Perm (QUASI PERMANENTE)

DATI:
copriferro inferiore (asse armatura): 4 cm
copriferro superiore (asse armatura): 4 cm

Af = area effettiva tesa (cm2 al metro)
Afc = area effettiva compressa (cm2 al metro)
Mom = momento flettente [daNcm/cm]
Nor = sforzo normale [daN]
sigC = tensione calcestruzzo [daN/cm2]
valore max per combinazione rara = 199 daN/cm2
'' '' '' '' frequente = 199 daN/cm2
'' '' '' '' quasi permanente = 149 daN/cm2
sigF = tensione acciaio [daN/cm2]
valore max per combinazione rara = 3600 daN/cm2
'' '' '' '' frequente = 3600 daN/cm2
'' '' '' '' quasi permanente = 3600 daN/cm2
wkR = apertura caratteristica per combinazione rara (mm) - valore max = 0.6 mm
wkF = '' '' '' '' frequente (mm) - '' '' = 0.4 mm
wkP = '' '' '' '' quasi permanente (mm) - '' '' = 0.3 mm

ARMATURA INFERIORE ORIZZONTALE

	COMBINAZIONE RARA					COMBINAZIONE FREQUENTE					COMBINAZIONE QUASI PERMANENTE				
GUSCI	Af	Afc	Mom	Nor	sigC	sigF	WkR	Mom	Nor	sigC	sigF	WkF	Mom	Nor	sigC	sigF	WkP
258	5.88	5.88	21	21	0.00	195.	0.028	25	21	0.00	194.	0.028	27	21	0.00	194.	0.028
259	5.88	5.88	47	21	0.00	216.	0.030	46	21	0.00	210.	0.029	45	21	0.00	208.	0.029
260	5.88	5.88	29	19	0.00	179.	0.025	28	19	0.00	178.	0.025	27	19	0.00	178.	0.025
261	5.88	5.88	0.	27	0.00	227.	0.034	0.	27	0.00	233.	0.035	0.	28	0.00	236.	0.036
262	5.88	5.88	6	36	0.00	307.	0.046	3	36	0.00	304.	0.046	2	35	0.00	303.	0.046
263	5.88	5.88	0.	46	0.00	388.	0.059	0.	45	0.00	382.	0.058	0.	45	0.00	380.	0.058
264	5.88	5.88	18	11	0.00	110.	0.016	19	11	0.00	111.	0.016	20	11	0.00	112.	0.016
265	5.88	5.88	85	19	0.00	225.	0.029	75	20	0.00	221.	0.029	71	20	0.00	219.	0.029
266	5.88	5.88	45	34	0.00	318.	0.045	29	34	0.00	309.	0.045	22	34	0.00	306.	0.045
267	5.88	5.88	0.	18	0.00	157.	0.024	0.	19	0.00	158.	0.024	0.	19	0.00	159.	0.024
268	5.88	5.88	56	26	0.00	263.	0.037	65	26	0.00	270.	0.037	69	26	0.00	272.	0.037
269	5.88	5.88	92	36	0.00	375.	0.051	90	37	0.00	374.	0.051	89	37	0.00	374.	0.051
270	5.88	5.88	0.	20	0.00	167.	0.025	0.	20	0.00	170.	0.026	0.	20	0.00	171.	0.026
271	5.88	5.88	41	27	0.00	257.	0.036	61	27	0.00	271.	0.037	66	27	0.00	275.	0.038
272	5.88	5.88	102	35	0.00	368.	0.050	107	35	0.00	372.	0.050	110	35	0.00	373.	0.050
273	5.88	5.88	0.	19	0.00	159.	0.024	0.	19	0.00	160.	0.024	0.	19	0.00	161.	0.024
274	5.88	5.88	33	24	0.00	227.	0.032	61	24	0.00	248.	0.034	66	24	0.00	252.	0.034
275	5.88	5.88	115	30	0.00	335.	0.044	124	30	0.00	343.	0.044	127	30	0.00	345.	0.045
276	5.88	5.88	0.	16	0.00	139.	0.021	0.	17	0.00	143.	0.022	0.	17	0.00	143.	0.022
277	5.88	5.88	20	20	0.00	182.	0.026	52	20	0.00	204.	0.028	57	20	0.00	207.	0.028
278	5.88	5.88	131	21	0.00	273.	0.034	144	21	0.00	283.	0.034	149	21	0.00	288.	0.035
279	5.88	5.88	0.	10	0.00	81.	0.012	0.	12	0.00	98.	0.015	0.	13	0.00	108.	0.016
280	5.88	5.88	0.	13	0.00	115.	0.017	4	13	0.00	113.	0.017	11	13	0.00	116.	0.017
281	5.88	5.88	128	9	0.99	163.	0.018	144	9	1.23	176.	0.019	151	9	1.33	181.	0.019
282	5.88	5.88	41	15	0.00	153.	0.021	31	14	0.00	145.	0.020	27	14	0.00	142.	0.020
283	5.88	5.88	66	11	0.00	143.	0.018	56	11	0.00	130.	0.016	52	10	0.00	125.	0.016
284	5.88	5.88	48	2	0.48	52.	0.005	52	2	0.56	52.	0.005	54	2	0.59	52.	0.005

ARMATURA INFERIORE VERTICALE

	COMBINAZIONE RARA					COMBINAZIONE FREQUENTE					COMBINAZIONE QUASI PERMANENTE				
GUSCI	Af	Afc	Mom	Nor	sigC	sigF	WkR	Mom	Nor	sigC	sigF	WkF	Mom	Nor	sigC	sigF	WkP
258	5.78	5.78	0.	18	0.00	152.	0.023	0.	20	0.00	174.	0.027	0.	21	0.00	183.	0.028
259	5.78	5.78	36	15	0.00	153.	0.021	35	17	0.00	171.	0.024	35	18	0.00	178.	0.025
260	5.78	5.78	52	3	0.50	60.	0.006	55	5	0.15	85.	0.010	56	6	0.00	95.	0.011
261	5.78	5.78	0.	23	0.00	195.	0.030	0.	26	0.00	221.	0.034	0.	27	0.00	231.	0.036
262	5.78	5.78	37	20	0.00	199.	0.028	36	23	0.00	221.	0.032	36	24	0.00	230.	0.033
263	5.78	5.78	82	10	0.00	147.	0.018	78	12	0.00	162.	0.020	77	13	0.00	169.	0.021
264	5.78	5.78	0.	13	0.00	116.	0.018	0.	16	0.00	138.	0.021	0.	17	0.00	147.	0.023
265	5.78	5.78	65	10	0.00	132.	0.016	71	13	0.00	163.	0.021	74	14	0.00	176.	0.023
266	5.78	5.78	178	7	1.90	183.	0.018	179	10	1.69	209.	0.022	179	11	1.58	219.	0.023
267	5.78	5.78	0.	4	0.00	35.	0.005	0.	8	0.00	73.	0.011	0.	10	0.00	87.	0.013
268	5.78	5.78	45	8	0.00	99.	0.013	69	12	0.00	153.	0.019	79	14	0.00	174.	0.022
269	5.78	5.78	321	12	3.44	327.	0.032	336	16	3.31	376.	0.039	342	18	3.24	396.	0.042
270	5.78	5.78	0.	2	0.00	18.	0.003	0.	7	0.00	60.	0.009	0.	9	0.00	76.	0.012
271	5.78	5.78	2	9	0.00	79.	0.012	41	14	0.00	147.	0.020	56	16	0.00	175.	0.023
272	5.78	5.78	434	17	4.59	452.	0.045	463	22	4.63	513.	0.053	475	24	4.63	538.	0.056
273	5.78	5.78	0.	1	0.00	5.	0.001	0.	5	0.00	45.	0.007	0.	7	0.00	61.	0.009

274	5.78	5.78	0.	9	0.00	75.	0.012	21	13	0.00	131.	0.019	38	15	0.00	160.	0.022
275	5.78	5.78	521	19	5.59	530.	0.052	556	24	5.73	596.	0.060	571	26	5.78	623.	0.064
276	5.78	5.78	0.	-4	0.12	-2.	0.000	0.	1	0.00	7.	0.001	0.	3	0.00	23.	0.004
277	5.78	5.78	0.	5	0.00	45.	0.007	0.	10	0.00	87.	0.013	9	12	0.00	110.	0.016
278	5.78	5.78	577	19	6.37	563.	0.055	616	24	6.56	633.	0.063	631	26	6.63	661.	0.066
279	5.78	5.78	0.	-10	0.30	-4.	0.000	0.	-5	0.16	-2.	0.000	0.	-3	0.11	-2.	0.000
280	5.78	5.78	0.	0.	0.00	0.	0.000	0.	4	0.00	39.	0.006	0.	6	0.00	54.	0.008
281	5.78	5.78	505	15	5.65	481.	0.046	540	20	5.82	547.	0.054	554	22	5.88	573.	0.057
282	5.78	5.78	0.	3	0.00	30.	0.005	0.	6	0.00	53.	0.008	0.	7	0.00	62.	0.010
283	5.78	5.78	11	0.	0.14	8.	0.001	18	3	0.00	38.	0.005	21	4	0.00	49.	0.006
284	5.78	5.78	282	4	3.35	231.	0.020	303	7	3.51	270.	0.025	312	8	3.56	285.	0.027

ARMATURA SUPERIORE ORIZZONTALE

			COMBINAZIONE RARA					COMBINAZIONE FREQUENTE					COMBINAZIONE QUASI PERMANENTE				
GUSCI	Af	Afc	Mom	Nor	sigC	sigF	WkR	Mom	Nor	sigC	sigF	WkF	Mom	Nor	sigC	sigF	WkP
258	5.88	5.88	0.	21	0.00	180.	0.027	0.	21	0.00	176.	0.027	0.	21	0.00	175.	0.026
259	5.88	5.88	11	21	0.00	190.	0.028	10	21	0.00	185.	0.027	10	21	0.00	183.	0.027
260	5.88	5.88	10	19	0.00	165.	0.024	7	19	0.00	164.	0.024	6	19	0.00	163.	0.024
261	5.88	5.88	43	27	0.00	257.	0.036	43	27	0.00	264.	0.037	43	28	0.00	266.	0.038
262	5.88	5.88	47	36	0.00	336.	0.048	51	36	0.00	338.	0.048	52	35	0.00	338.	0.048
263	5.88	5.88	52	46	0.00	425.	0.061	53	45	0.00	420.	0.060	53	45	0.00	418.	0.060
264	5.88	5.88	13	11	0.00	107.	0.015	28	11	0.00	118.	0.016	35	11	0.00	122.	0.016
265	5.88	5.88	85	19	0.00	225.	0.029	94	20	0.00	234.	0.030	97	20	0.00	238.	0.030
266	5.88	5.88	99	34	0.00	356.	0.048	82	34	0.00	347.	0.048	76	34	0.00	344.	0.047
267	5.88	5.88	102	18	0.00	229.	0.029	101	19	0.00	230.	0.029	100	19	0.00	230.	0.029
268	5.88	5.88	114	26	0.00	305.	0.039	103	26	0.00	297.	0.039	99	26	0.00	294.	0.039
269	5.88	5.88	10	36	0.00	317.	0.047	0.	37	0.00	310.	0.047	0.	37	0.00	311.	0.047
270	5.88	5.88	122	20	0.00	253.	0.031	113	20	0.00	250.	0.031	110	20	0.00	249.	0.031
271	5.88	5.88	107	27	0.00	303.	0.040	94	27	0.00	294.	0.039	89	27	0.00	290.	0.039
272	5.88	5.88	0.	35	0.00	296.	0.045	0.	35	0.00	295.	0.045	0.	35	0.00	295.	0.045
273	5.88	5.88	150	19	0.00	265.	0.031	138	19	0.00	258.	0.031	133	19	0.00	255.	0.031
274	5.88	5.88	97	24	0.00	273.	0.036	85	24	0.00	265.	0.035	80	24	0.00	262.	0.035
275	5.88	5.88	0.	30	0.00	254.	0.039	0.	30	0.00	255.	0.039	0.	30	0.00	255.	0.039
276	5.88	5.88	175	16	0.64	263.	0.030	159	17	0.00	256.	0.030	152	17	0.00	251.	0.029
277	5.88	5.88	82	20	0.00	226.	0.029	69	20	0.00	216.	0.029	64	20	0.00	212.	0.028
278	5.88	5.88	0.	21	0.00	180.	0.027	0.	21	0.00	182.	0.028	0.	21	0.00	182.	0.028
279	5.88	5.88	201	10	1.99	219.	0.022	180	12	1.50	223.	0.024	172	13	1.22	227.	0.025
280	5.88	5.88	34	13	0.00	139.	0.019	24	13	0.00	127.	0.018	20	13	0.00	123.	0.017
281	5.88	5.88	0.	9	0.00	75.	0.011	0.	9	0.00	76.	0.012	0.	9	0.00	77.	0.012
282	5.88	5.88	53	15	0.00	161.	0.021	47	14	0.00	156.	0.021	44	14	0.00	154.	0.021
283	5.88	5.88	0.	11	0.00	96.	0.014	1	11	0.00	91.	0.014	5	10	0.00	91.	0.014
284	5.88	5.88	0.	2	0.00	19.	0.003	0.	2	0.00	16.	0.002	0.	2	0.00	15.	0.002

ARMATURA SUPERIORE VERTICALE

			COMBINAZIONE RARA					COMBINAZIONE FREQUENTE					COMBINAZIONE QUASI PERMANENTE				
GUSCI	Af	Afc	Mom	Nor	sigC	sigF	WkR	Mom	Nor	sigC	sigF	WkF	Mom	Nor	sigC	sigF	WkP
258	5.78	5.78	87	18	0.00	215.	0.028	70	20	0.00	225.	0.030	63	21	0.00	229.	0.031
259	5.78	5.78	22	15	0.00	143.	0.021	22	17	0.00	162.	0.024	22	18	0.00	169.	0.025
260	5.78	5.78	0.	3	0.00	24.	0.004	0.	5	0.00	46.	0.007	0.	6	0.00	55.	0.008
261	5.78	5.78	119	23	0.00	281.	0.036	104	26	0.00	296.	0.039	97	27	0.00	301.	0.040
262	5.78	5.78	45	20	0.00	204.	0.029	45	23	0.00	228.	0.032	45	24	0.00	237.	0.034
263	5.78	5.78	0.	10	0.00	88.	0.014	0.	12	0.00	106.	0.016	0.	13	0.00	113.	0.017
264	5.78	5.78	224	13	1.97	274.	0.029	207	16	1.40	285.	0.032	201	17	1.11	290.	0.033
265	5.78	5.78	114	10	0.59	166.	0.019	106	13	0.00	188.	0.023	103	14	0.00	197.	0.024
266	5.78	5.78	0.	7	0.00	59.	0.009	0.	10	0.00	84.	0.013	0.	11	0.00	93.	0.014
267	5.78	5.78	440	4	5.32	340.	0.029	405	8	4.72	353.	0.032	391	10	4.46	358.	0.034
268	5.78	5.78	170	8	1.73	186.	0.019	144	12	0.84	205.	0.023	134	14	0.17	213.	0.025
269	5.78	5.78	0.	12	0.00	104.	0.016	0.	16	0.00	142.	0.022	0.	18	0.00	157.	0.024
270	5.78	5.78	621	2	7.60	448.	0.036	569	7	6.83	453.	0.039	549	9	6.50	456.	0.041
271	5.78	5.78	187	9	1.86	207.	0.021	147	14	0.58	223.	0.026	132	16	0.00	229.	0.027
272	5.78	5.78	0.	17	0.00	150.	0.023	0.	22	0.00	190.	0.029	0.	24	0.00	206.	0.032
273	5.78	5.78	744	1	9.15	520.	0.041	685	5	8.30	519.	0.044	661	7	7.95	519.	0.045
274	5.78	5.78	185	9	1.85	204.	0.021	142	13	0.46	218.	0.025	124	15	0.00	222.	0.027
275	5.78	5.78	0.	19	0.00	168.	0.026	0.	24	0.00	209.	0.032	0.	26	0.00	225.	0.035
276	5.78	5.78	828	-4	10.26	542.	0.043	765	1	9.40	537.	0.043	740	3	9.05	535.	0.043
277	5.78	5.78	149	5	1.62	148.	0.014	110	10	0.46	165.	0.019	94	12	0.00	171.	0.021
278	5.78	5.78	0.	19	0.00	162.	0.025	0.	24	0.00	205.	0.032	0.	26	0.00	222.	0.034
279	5.78	5.78	753	-10	9.39	442.	0.035	695	-5	8.64	438.	0.034	672	-3	8.33	436.	0.034
280	5.78	5.78	74	0.	0.91	52.	0.004	48	4	0.17	73.	0.008	37	6	0.00	81.	0.010
281	5.78	5.78	0.	15	0.00	130.	0.020	0.	20	0.00	172.	0.026	0.	22	0.00	188.	0.029

282	5.78	5.78	450	3	5.46	342.	0.029	411	6	4.89	337.	0.030	395	7	4.65	336.	0.030
283	5.78	5.78	48	0.	0.59	34.	0.003	38	3	0.27	51.	0.006	34	4	0.00	58.	0.007
284	5.78	5.78	0.	4	0.00	36.	0.006	0.	7	0.00	60.	0.009	0.	8	0.00	69.	0.011

13. VERIFICA GEOTECNICA DEL TERRENO E FONDAZIONI

14. RIASSUNTO DELLE VERIFICHE GEOTECNICHE E DELLE FONDAZIONI EFFETTUATE

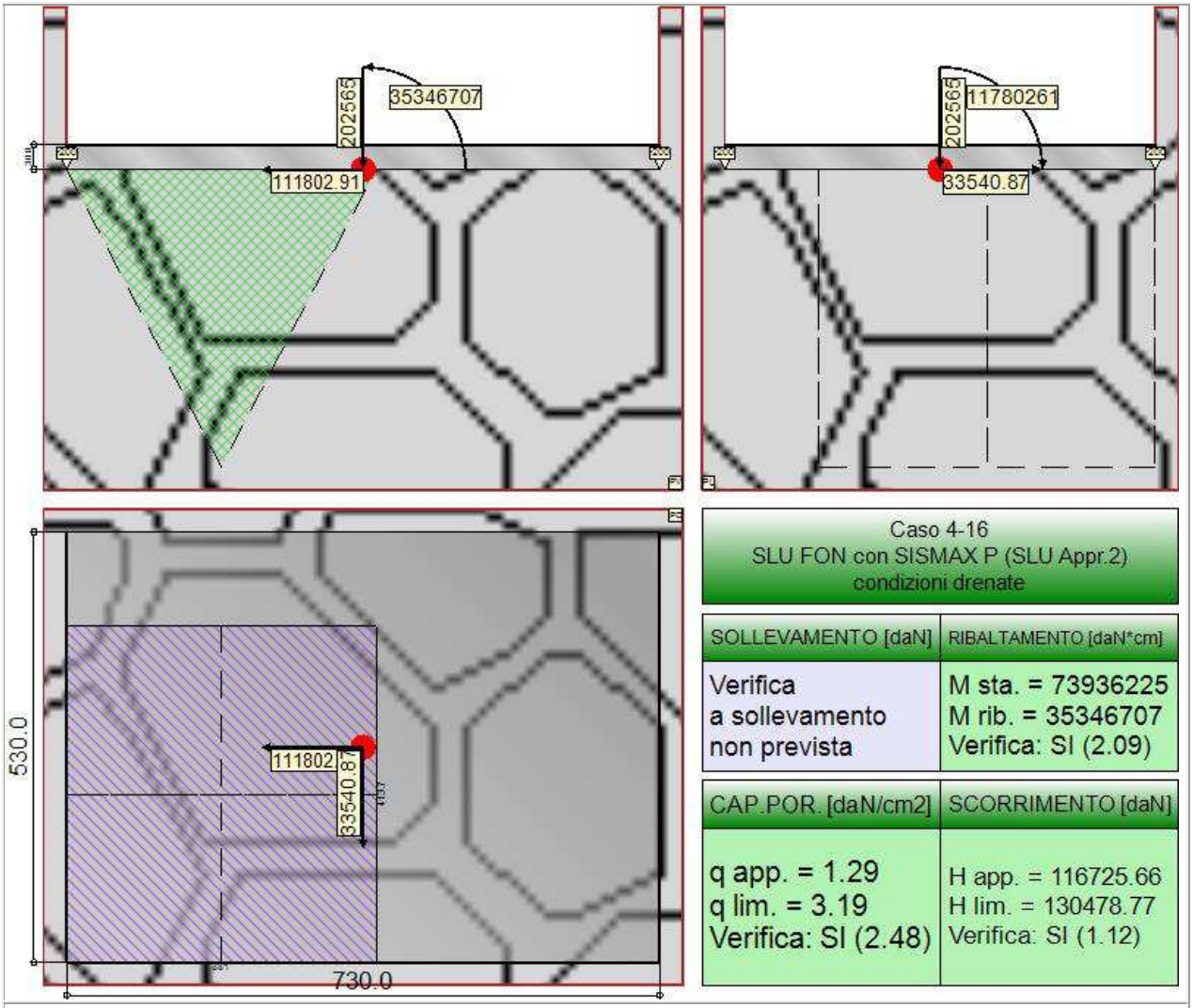
Utilizzando come traccia la tabella C7.1 riportata nella circolare esplicativa delle NTC 2008 si elencano brevemente le verifiche effettuate con il relativo paragrafo di riferimento:

- SLV – Resistenza del sistema fondazione terreno ➔ cap 15
- SLV – Ressitenza delle strutture ➔ cap 16

15. PRESSIONI SUL TERRENO, VERIFICHE DI CAPACITÀ PORTANTE E SPOSTAMENTO

15.1 Centrale

VALUTAZIONE DELLA STABILITÀ, CAPACITÀ PORTANTE E RESISTENZA A SCORRIMENTO DI UNA FONDAZIONE SUPERFICIALE (MACROGUSCIO_ID1).



Rappresentazione della fondazione.

Descrizione dei Casi di calcolo e riassunto dei risultati.

Segue il riassunto dei Casi di calcolo analizzati. I dettagli di ciascun Caso (sollecitazioni, verifiche, ecc.) sono specificati nei paragrafi successivi.

Indici e nomi dei casi di carico			Elenco delle verifiche eseguite per ciascun caso				Sisma
Caso	Nome	Sestetti	Ver. dren.	Ver. non dren.	Ver. equ.	Ver. upl.	Coef. sism.
1	SLU SENZA SISMA (SLU Appr.2)	1-1	Si	No	Si	No	$k_{h,x}$= 0.08, $k_{h,y}$= 0.08
1-1 Caso 1-1							
2	SLU con SISMAX PRINC (SLU Appr.2)	da 2-1 a 2-16	Si	No	Si	No	$k_{h,x}$= 0.69, $k_{h,y}$= 0.00
2-1 Caso 4-1; 2-2 Caso 4-2; 2-3 Caso 4-3; 2-4 Caso 4-4; 2-5 Caso 4-5; 2-6 Caso 4-6; 2-7 Caso 4-7; 2-8 Caso 4-8; 2-9 Caso 4-9; 2-10 Caso 4-10; 2-11 Caso 4-11; 2-12 Caso							

4-12; 2-13 Caso 4-13; 2-14 Caso 4-14; 2-15 Caso 4-15; 2-16 Caso 4-16							
3	SLU con SISMAY PRINC (SLU Appr.2)	da 3-1 a 3-16	Si	No	Si	No	$k_{h,x}$= 0.00, $k_{h,y}$= 0.69
3-1 Caso 5-1; 3-2 Caso 5-2; 3-3 Caso 5-3; 3-4 Caso 5-4; 3-5 Caso 5-5; 3-6 Caso 5-6; 3-7 Caso 5-7; 3-8 Caso 5-8; 3-9 Caso 5-9; 3-10 Caso 5-10; 3-11 Caso 5-11; 3-12 Caso 5-12; 3-13 Caso 5-13; 3-14 Caso 5-14; 3-15 Caso 5-15; 3-16 Caso 5-16							
4	SLU FON con SISMAX P (SLU Appr.2)	da 4-1 a 4-16	Si	No	Si	No	$k_{h,x}$= 0.69, $k_{h,y}$= 0.00
4-1 Caso 8-1; 4-2 Caso 8-2; 4-3 Caso 8-3; 4-4 Caso 8-4; 4-5 Caso 8-5; 4-6 Caso 8-6; 4-7 Caso 8-7; 4-8 Caso 8-8; 4-9 Caso 8-9; 4-10 Caso 8-10; 4-11 Caso 8-11; 4-12 Caso 8-12; 4-13 Caso 8-13; 4-14 Caso 8-14; 4-15 Caso 8-15; 4-16 Caso 8-16							
5	SLU FON con SISMAY P (SLU Appr.2)	da 5-1 a 5-16	Si	No	Si	No	$k_{h,x}$= 0.00, $k_{h,y}$= 0.69
5-1 Caso 9-1; 5-2 Caso 9-2; 5-3 Caso 9-3; 5-4 Caso 9-4; 5-5 Caso 9-5; 5-6 Caso 9-6; 5-7 Caso 9-7; 5-8 Caso 9-8; 5-9 Caso 9-9; 5-10 Caso 9-10; 5-11 Caso 9-11; 5-12 Caso 9-12; 5-13 Caso 9-13; 5-14 Caso 9-14; 5-15 Caso 9-15; 5-16 Caso 9-16							

La seguente tabella elenca i coefficienti di sicurezza parziali, applicati alle caratteristiche meccaniche del terreno, alla capacità portante, alla resistenza a scorrimento e del terreno, per ciascun Caso di calcolo.

Caso	$\gamma_{G1,fav}$	$\gamma_{G1,sfa}$	$\gamma_{G2,fav}$	$\gamma_{G2,sfa}$	$\gamma_{Qi,fav}$	$\gamma_{Qi,sfa}$	γ_{γ}	γ_{φ}	$\gamma_{c'}$	$\gamma_{R;v}$	$\gamma_{R;h}$	$\gamma_{R;e}$	$\gamma_{R;equ}$	$\gamma_{R;upl}$
1	1.00	1.30	0.00	1.50	0.00	1.50	1.00	1.00	1.00	2.30	1.10	1.00	-	-
2	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.30	1.10	1.00	-	-
3	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.30	1.10	1.00	-	-
4	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.30	1.10	1.00	-	-
5	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.30	1.10	1.00	-	-

Segue la tabella riassuntiva di tutte le verifiche a **ribaltamento**.

Caso	$\mathbf{R_d}$ [daN*cm]	$\mathbf{E_d}$ [daN*cm]	Verifica
1-1	80608230	3803580	SI (80608230/3803580 = 21.19 >= 1.0)
2-1	74161060	29300790	SI (74161060/29300790 = 2.53 >= 1.0)
2-2	74226040	29229720	SI (74226040/29229720 = 2.54 >= 1.0)
2-3	74153760	29308970	SI (74153760/29308970 = 2.53 >= 1.0)
2-4	74234800	29223230	SI (74234800/29223230 = 2.54 >= 1.0)
2-5	74258160	32205020	SI (74258160/32205020 = 2.31 >= 1.0)
2-6	74051560	32317640	SI (74051560/32317640 = 2.29 >= 1.0)
2-7	74267640	32197860	SI (74267640/32197860 = 2.31 >= 1.0)
2-8	74042080	32326750	SI (74042080/32326750 = 2.29 >= 1.0)
2-9	74176760	29331680	SI (74176760/29331680 = 2.53 >= 1.0)
2-10	74228590	29271320	SI (74228590/29271320 = 2.54 >= 1.0)
2-11	74169460	29339870	SI (74169460/29339870 = 2.53 >= 1.0)
2-12	74237350	29264830	SI (74237350/29264830 = 2.54 >= 1.0)
2-13	74241000	32171040	SI (74241000/32171040 = 2.31 >= 1.0)
2-14	74047920	32272950	SI (74047920/32272950 = 2.29 >= 1.0)
2-15	74250490	32163870	SI (74250490/32163870 = 2.31 >= 1.0)
2-16	74038790	32282060	SI (74038790/32282060 = 2.29 >= 1.0)
3-1	53917960	28389300	SI (53917960/28389300 = 1.90 >= 1.0)
3-2	53910280	28386640	SI (53910280/28386640 = 1.90 >= 1.0)
3-3	53919020	28388120	SI (53919020/28388120 = 1.90 >= 1.0)
3-4	53908420	28387210	SI (53908420/28387210 = 1.90 >= 1.0)
3-5	53558090	32144040	SI (53558090/32144040 = 1.67 >= 1.0)
3-6	53723980	32075060	SI (53723980/32075060 = 1.67 >= 1.0)
3-7	53715760	32050720	SI (53715760/32050720 = 1.68 >= 1.0)
3-8	53722920	32074700	SI (53722920/32074700 = 1.67 >= 1.0)
3-9	53734050	28486580	SI (53734050/28486580 = 1.89 >= 1.0)
3-10	53683170	28558820	SI (53683170/28558820 = 1.88 >= 1.0)
3-11	53735110	28485370	SI (53735110/28485370 = 1.89 >= 1.0)
3-12	53681580	28559390	SI (53681580/28559390 = 1.88 >= 1.0)

3-13	53584060	32111250	SI (53584060/32111250 = 1.67 >= 1.0)
3-14	53717360	32068720	SI (53717360/32068720 = 1.68 >= 1.0)
3-15	53581140	32112960	SI (53581140/32112960 = 1.67 >= 1.0)
3-16	53716300	32068360	SI (53716300/32068360 = 1.68 >= 1.0)
4-1	74122380	32373030	SI (74122380/32373030 = 2.29 >= 1.0)
4-2	74059600	32418680	SI (74059600/32418680 = 2.28 >= 1.0)
4-3	74115440	32380370	SI (74115440/32380370 = 2.29 >= 1.0)
4-4	74074920	32408760	SI (74074920/32408760 = 2.29 >= 1.0)
4-5	74051200	35425800	SI (74051200/35425800 = 2.09 >= 1.0)
4-6	73950820	35386650	SI (73950820/35386650 = 2.09 >= 1.0)
4-7	74065800	35416390	SI (74065800/35416390 = 2.09 >= 1.0)
4-8	73940600	35396290	SI (73940600/35396290 = 2.09 >= 1.0)
4-9	74134420	32410880	SI (74134420/32410880 = 2.29 >= 1.0)
4-10	74056310	32467010	SI (74056310/32467010 = 2.28 >= 1.0)
4-11	74127850	32417940	SI (74127850/32417940 = 2.29 >= 1.0)
4-12	74071280	32457100	SI (74071280/32457100 = 2.28 >= 1.0)
4-13	74299040	35284540	SI (74299040/35284540 = 2.11 >= 1.0)
4-14	73946080	35337070	SI (73946080/35337070 = 2.09 >= 1.0)
4-15	74312180	35275680	SI (74312180/35275680 = 2.11 >= 1.0)
4-16	73936220	35346710	SI (73936220/35346710 = 2.09 >= 1.0)
5-1	53627260	31570090	SI (53627260/31570090 = 1.70 >= 1.0)
5-2	53655080	31496470	SI (53655080/31496470 = 1.70 >= 1.0)
5-3	53627780	31569220	SI (53627780/31569220 = 1.70 >= 1.0)
5-4	53652700	31497210	SI (53652700/31497210 = 1.70 >= 1.0)
5-5	53757640	35059640	SI (53757640/35059640 = 1.53 >= 1.0)
5-6	53619570	35126390	SI (53619570/35126390 = 1.53 >= 1.0)
5-7	53754190	35061300	SI (53754190/35061300 = 1.53 >= 1.0)
5-8	53618510	35125800	SI (53618510/35125800 = 1.53 >= 1.0)
5-9	53613210	31605550	SI (53613210/31605550 = 1.70 >= 1.0)
5-10	53584320	31555750	SI (53584320/31555750 = 1.70 >= 1.0)
5-11	53614000	31604680	SI (53614000/31604680 = 1.70 >= 1.0)
5-12	53581940	31556490	SI (53581940/31556490 = 1.70 >= 1.0)
5-13	53788640	35025310	SI (53788640/35025310 = 1.54 >= 1.0)
5-14	53610030	35121230	SI (53610030/35121230 = 1.53 >= 1.0)
5-15	53785200	35026960	SI (53785200/35026960 = 1.54 >= 1.0)
5-16	53608970	35120640	SI (53608970/35120640 = 1.53 >= 1.0)

Segue la tabella riassuntiva di tutte le verifiche di **capacità portante**, i dettagli sono riportati nei paragrafi successivi.

	Cond. drenate			Cond. non drenate		
Caso	E_d [daN]	R_d [daN]	Verifica	E_d [daN]	R_d [daN]	Verifica
1-1	304182	7031832.2	SI (7031832.2/304182 = 23.12 >= 1.0)	Verifica non richiesta.		
2-1	203181	816391.2	SI (816391.2/203181 = 4.02 >= 1.0)	Verifica non richiesta.		
2-2	203359	756950.3	SI (756950.3/203359 = 3.72 >= 1.0)	Verifica non richiesta.		
2-3	203161	815943	SI (815943/203161 = 4.02 >= 1.0)	Verifica non richiesta.		
2-4	203383	757274.4	SI (757274.4/203383 = 3.72 >= 1.0)	Verifica non richiesta.		
2-5	203447	741935.7	SI (741935.7/203447 = 3.65 >= 1.0)	Verifica non richiesta.		
2-6	202881	697082.7	SI (697082.7/202881 = 3.44 >= 1.0)	Verifica non richiesta.		
2-7	203473	742279.4	SI (742279.4/203473 = 3.65 >= 1.0)	Verifica non richiesta.		
2-8	202855	696719.3	SI (696719.3/202855 = 3.43 >= 1.0)	Verifica non richiesta.		
2-9	203224	815997.5	SI (815997.5/203224 = 4.02 >= 1.0)	Verifica non richiesta.		
2-10	203366	756439	SI (756439/203366 = 3.72 >= 1.0)	Verifica non richiesta.		
2-11	203204	815549.6	SI (815549.6/203204 = 4.01 >= 1.0)	Verifica non richiesta.		
2-12	203390	756763	SI (756763/203390 = 3.72 >= 1.0)	Verifica non richiesta.		
2-13	203400	742348.1	SI (742348.1/203400 = 3.65 >= 1.0)	Verifica non richiesta.		

2-14	202871	698034.4	SI (698034.4/202871 = 3.44 >= 1.0)	Verifica non richiesta.
2-15	203426	742692	SI (742692/203426 = 3.65 >= 1.0)	Verifica non richiesta.
2-16	202846	697681.8	SI (697681.8/202846 = 3.44 >= 1.0)	Verifica non richiesta.
3-1	203464	491139.2	SI (491139.2/203464 = 2.41 >= 1.0)	Verifica non richiesta.
3-2	203435	473797.1	SI (473797.1/203435 = 2.33 >= 1.0)	Verifica non richiesta.
3-3	203468	491116.6	SI (491116.6/203468 = 2.41 >= 1.0)	Verifica non richiesta.
3-4	203428	473808.3	SI (473808.3/203428 = 2.33 >= 1.0)	Verifica non richiesta.
3-5	202106	398132.8	SI (398132.8/202106 = 1.97 >= 1.0)	Verifica non richiesta.
3-6	202732	390045.8	SI (390045.8/202732 = 1.92 >= 1.0)	Verifica non richiesta.
3-7	202701	403732.2	SI (403732.2/202701 = 1.99 >= 1.0)	Verifica non richiesta.
3-8	202728	390073.9	SI (390073.9/202728 = 1.92 >= 1.0)	Verifica non richiesta.
3-9	202770	482935.1	SI (482935.1/202770 = 2.38 >= 1.0)	Verifica non richiesta.
3-10	202578	464064.8	SI (464064.8/202578 = 2.29 >= 1.0)	Verifica non richiesta.
3-11	202774	482914	SI (482914/202774 = 2.38 >= 1.0)	Verifica non richiesta.
3-12	202572	464083	SI (464083/202572 = 2.29 >= 1.0)	Verifica non richiesta.
3-13	202204	399390.2	SI (399390.2/202204 = 1.98 >= 1.0)	Verifica non richiesta.
3-14	202707	390149.6	SI (390149.6/202707 = 1.92 >= 1.0)	Verifica non richiesta.
3-15	202193	399225.6	SI (399225.6/202193 = 1.97 >= 1.0)	Verifica non richiesta.
3-16	202703	390177.7	SI (390177.7/202703 = 1.92 >= 1.0)	Verifica non richiesta.
4-1	203075	594796.8	SI (594796.8/203075 = 2.93 >= 1.0)	Verifica non richiesta.
4-2	202903	562823	SI (562823/202903 = 2.77 >= 1.0)	Verifica non richiesta.
4-3	203056	594448.5	SI (594448.5/203056 = 2.93 >= 1.0)	Verifica non richiesta.
4-4	202945	563413.8	SI (563413.8/202945 = 2.78 >= 1.0)	Verifica non richiesta.
4-5	202880	531688.2	SI (531688.2/202880 = 2.62 >= 1.0)	Verifica non richiesta.
4-6	202605	502046.7	SI (502046.7/202605 = 2.48 >= 1.0)	Verifica non richiesta.
4-7	202920	532140.6	SI (532140.6/202920 = 2.62 >= 1.0)	Verifica non richiesta.
4-8	202577	501728.6	SI (501728.6/202577 = 2.48 >= 1.0)	Verifica non richiesta.
4-9	203108	594299	SI (594299/203108 = 2.93 >= 1.0)	Verifica non richiesta.
4-10	202894	561774.4	SI (561774.4/202894 = 2.77 >= 1.0)	Verifica non richiesta.
4-11	203090	593967.9	SI (593967.9/203090 = 2.92 >= 1.0)	Verifica non richiesta.
4-12	202935	562354.8	SI (562354.8/202935 = 2.77 >= 1.0)	Verifica non richiesta.
4-13	203559	541304.8	SI (541304.8/203559 = 2.66 >= 1.0)	Verifica non richiesta.
4-14	202592	502821.1	SI (502821.1/202592 = 2.48 >= 1.0)	Verifica non richiesta.
4-15	203595	541709.8	SI (541709.8/203595 = 2.66 >= 1.0)	Verifica non richiesta.
4-16	202565	502512	SI (502512/202565 = 2.48 >= 1.0)	Verifica non richiesta.
5-1	202367	333995.1	SI (333995.1/202367 = 1.65 >= 1.0)	Verifica non richiesta.
5-2	202472	322995.1	SI (322995.1/202472 = 1.60 >= 1.0)	Verifica non richiesta.
5-3	202369	333962.8	SI (333962.8/202369 = 1.65 >= 1.0)	Verifica non richiesta.
5-4	202463	322984.9	SI (322984.9/202463 = 1.60 >= 1.0)	Verifica non richiesta.
5-5	202859	266649.6	SI (266649.6/202859 = 1.31 >= 1.0)	Verifica non richiesta.
5-6	202338	253173.5	SI (253173.5/202338 = 1.25 >= 1.0)	Verifica non richiesta.
5-7	202846	266508.2	SI (266508.2/202846 = 1.31 >= 1.0)	Verifica non richiesta.
5-8	202334	253194	SI (253194/202334 = 1.25 >= 1.0)	Verifica non richiesta.
5-9	202314	333167.5	SI (333167.5/202314 = 1.65 >= 1.0)	Verifica non richiesta.
5-10	202205	320376.4	SI (320376.4/202205 = 1.58 >= 1.0)	Verifica non richiesta.
5-11	202317	333141.9	SI (333141.9/202317 = 1.65 >= 1.0)	Verifica non richiesta.
5-12	202196	320365.9	SI (320365.9/202196 = 1.58 >= 1.0)	Verifica non richiesta.
5-13	202976	267811.8	SI (267811.8/202976 = 1.32 >= 1.0)	Verifica non richiesta.
5-14	202302	253171.9	SI (253171.9/202302 = 1.25 >= 1.0)	Verifica non richiesta.
5-15	202963	267670	SI (267670/202963 = 1.32 >= 1.0)	Verifica non richiesta.
5-16	202298	253192.5	SI (253192.5/202298 = 1.25 >= 1.0)	Verifica non richiesta.

Segue la tabella riassuntiva di tutte le verifiche di **resistenza a scorrimento**, i dettagli sono riportati nei paragrafi successivi.

	Cond. drenate	Cond. non drenate

Caso	E_d [daN]	R_d [daN]	Verifica	E_d [daN]	R_d [daN]	Verifica
1-1	0	169457.2	SI (169457.2/0 = 1.00 >= 1.0)	Verifica non richiesta.		
2-1	106114.2	130821.9	SI (130821.9/106114.2 = 1.23 >= 1.0)	Verifica non richiesta.		
2-2	106114.2	130921.1	SI (130921.1/106114.2 = 1.23 >= 1.0)	Verifica non richiesta.		
2-3	106114.2	130810.8	SI (130810.8/106114.2 = 1.23 >= 1.0)	Verifica non richiesta.		
2-4	106114.2	130934.5	SI (130934.5/106114.2 = 1.23 >= 1.0)	Verifica non richiesta.		
2-5	106114.2	130970.1	SI (130970.1/106114.2 = 1.23 >= 1.0)	Verifica non richiesta.		
2-6	106114.2	130654.8	SI (130654.8/106114.2 = 1.23 >= 1.0)	Verifica non richiesta.		
2-7	106114.2	130984.6	SI (130984.6/106114.2 = 1.23 >= 1.0)	Verifica non richiesta.		
2-8	106114.2	130640.3	SI (130640.3/106114.2 = 1.23 >= 1.0)	Verifica non richiesta.		
2-9	106114.2	130845.9	SI (130845.9/106114.2 = 1.23 >= 1.0)	Verifica non richiesta.		
2-10	106114.2	130925	SI (130925/106114.2 = 1.23 >= 1.0)	Verifica non richiesta.		
2-11	106114.2	130834.8	SI (130834.8/106114.2 = 1.23 >= 1.0)	Verifica non richiesta.		
2-12	106114.2	130938.4	SI (130938.4/106114.2 = 1.23 >= 1.0)	Verifica non richiesta.		
2-13	106114.2	130943.9	SI (130943.9/106114.2 = 1.23 >= 1.0)	Verifica non richiesta.		
2-14	106114.2	130649.2	SI (130649.2/106114.2 = 1.23 >= 1.0)	Verifica non richiesta.		
2-15	106114.2	130958.4	SI (130958.4/106114.2 = 1.23 >= 1.0)	Verifica non richiesta.		
2-16	106114.2	130635.3	SI (130635.3/106114.2 = 1.23 >= 1.0)	Verifica non richiesta.		
3-1	106114.2	134275.2	SI (134275.2/106114.2 = 1.27 >= 1.0)	Verifica non richiesta.		
3-2	106114.2	134259.1	SI (134259.1/106114.2 = 1.27 >= 1.0)	Verifica non richiesta.		
3-3	106114.2	134277.4	SI (134277.4/106114.2 = 1.27 >= 1.0)	Verifica non richiesta.		
3-4	106114.2	134255.2	SI (134255.2/106114.2 = 1.27 >= 1.0)	Verifica non richiesta.		
3-5	106114.2	133518.7	SI (133518.7/106114.2 = 1.26 >= 1.0)	Verifica non richiesta.		
3-6	106114.2	133867.4	SI (133867.4/106114.2 = 1.26 >= 1.0)	Verifica non richiesta.		
3-7	106114.2	133850.1	SI (133850.1/106114.2 = 1.26 >= 1.0)	Verifica non richiesta.		
3-8	106114.2	133865.2	SI (133865.2/106114.2 = 1.26 >= 1.0)	Verifica non richiesta.		
3-9	106114.2	133888.6	SI (133888.6/106114.2 = 1.26 >= 1.0)	Verifica non richiesta.		
3-10	106114.2	133781.6	SI (133781.6/106114.2 = 1.26 >= 1.0)	Verifica non richiesta.		
3-11	106114.2	133890.8	SI (133890.8/106114.2 = 1.26 >= 1.0)	Verifica non richiesta.		
3-12	106114.2	133778.3	SI (133778.3/106114.2 = 1.26 >= 1.0)	Verifica non richiesta.		
3-13	106114.2	133573.3	SI (133573.3/106114.2 = 1.26 >= 1.0)	Verifica non richiesta.		
3-14	106114.2	133853.5	SI (133853.5/106114.2 = 1.26 >= 1.0)	Verifica non richiesta.		
3-15	106114.2	133567.1	SI (133567.1/106114.2 = 1.26 >= 1.0)	Verifica non richiesta.		
3-16	106114.2	133851.3	SI (133851.3/106114.2 = 1.26 >= 1.0)	Verifica non richiesta.		
4-1	116725.7	130762.9	SI (130762.9/116725.7 = 1.12 >= 1.0)	Verifica non richiesta.		
4-2	116725.7	130667.1	SI (130667.1/116725.7 = 1.12 >= 1.0)	Verifica non richiesta.		
4-3	116725.7	130752.3	SI (130752.3/116725.7 = 1.12 >= 1.0)	Verifica non richiesta.		
4-4	116725.7	130690.5	SI (130690.5/116725.7 = 1.12 >= 1.0)	Verifica non richiesta.		
4-5	116725.7	130654.3	SI (130654.3/116725.7 = 1.12 >= 1.0)	Verifica non richiesta.		
4-6	116725.7	130501.1	SI (130501.1/116725.7 = 1.12 >= 1.0)	Verifica non richiesta.		
4-7	116725.7	130676.5	SI (130676.5/116725.7 = 1.12 >= 1.0)	Verifica non richiesta.		
4-8	116725.7	130485.5	SI (130485.5/116725.7 = 1.12 >= 1.0)	Verifica non richiesta.		
4-9	116725.7	130781.3	SI (130781.3/116725.7 = 1.12 >= 1.0)	Verifica non richiesta.		
4-10	116725.7	130662.1	SI (130662.1/116725.7 = 1.12 >= 1.0)	Verifica non richiesta.		
4-11	116725.7	130771.2	SI (130771.2/116725.7 = 1.12 >= 1.0)	Verifica non richiesta.		
4-12	116725.7	130684.9	SI (130684.9/116725.7 = 1.12 >= 1.0)	Verifica non richiesta.		
4-13	116725.7	131032.5	SI (131032.5/116725.7 = 1.12 >= 1.0)	Verifica non richiesta.		
4-14	116725.7	130493.8	SI (130493.8/116725.7 = 1.12 >= 1.0)	Verifica non richiesta.		
4-15	116725.7	131052.6	SI (131052.6/116725.7 = 1.12 >= 1.0)	Verifica non richiesta.		
4-16	116725.7	130478.8	SI (130478.8/116725.7 = 1.12 >= 1.0)	Verifica non richiesta.		
5-1	116725.7	133664.1	SI (133664.1/116725.7 = 1.15 >= 1.0)	Verifica non richiesta.		
5-2	116725.7	133722.6	SI (133722.6/116725.7 = 1.15 >= 1.0)	Verifica non richiesta.		
5-3	116725.7	133665.2	SI (133665.2/116725.7 = 1.15 >= 1.0)	Verifica non richiesta.		
5-4	116725.7	133717.6	SI (133717.6/116725.7 = 1.15 >= 1.0)	Verifica non richiesta.		
5-5	116725.7	133938.2	SI (133938.2/116725.7 = 1.15 >= 1.0)	Verifica non richiesta.		

5-6	116725.7	133647.9	SI (133647.9/116725.7 = 1.14 >= 1.0)	Verifica non richiesta.
5-7	116725.7	133930.9	SI (133930.9/116725.7 = 1.15 >= 1.0)	Verifica non richiesta.
5-8	116725.7	133645.7	SI (133645.7/116725.7 = 1.14 >= 1.0)	Verifica non richiesta.
5-9	116725.7	133634.6	SI (133634.6/116725.7 = 1.14 >= 1.0)	Verifica non richiesta.
5-10	116725.7	133573.8	SI (133573.8/116725.7 = 1.14 >= 1.0)	Verifica non richiesta.
5-11	116725.7	133636.2	SI (133636.2/116725.7 = 1.14 >= 1.0)	Verifica non richiesta.
5-12	116725.7	133568.8	SI (133568.8/116725.7 = 1.14 >= 1.0)	Verifica non richiesta.
5-13	116725.7	134003.3	SI (134003.3/116725.7 = 1.15 >= 1.0)	Verifica non richiesta.
5-14	116725.7	133627.9	SI (133627.9/116725.7 = 1.14 >= 1.0)	Verifica non richiesta.
5-15	116725.7	133996.1	SI (133996.1/116725.7 = 1.15 >= 1.0)	Verifica non richiesta.
5-16	116725.7	133625.6	SI (133625.6/116725.7 = 1.14 >= 1.0)	Verifica non richiesta.

Descrizione del metodo di calcolo.

Il calcolo della capacità portante viene eseguito secondo la formula trinomia, considerando separatamente i contributi dovuti alla coesione, al sovraccarico laterale ed al peso del terreno.

Per le verifiche in condizioni drenate, si utilizzano i coefficienti di capacità portante Nq (Prandtl, 1921), Nc (Reissner, 1924), N_γ (Vesic, 1973), i coefficienti correttivi dovuti alla forma della fondazione (s, Meyerhof, 1951 e 1963), all'approfondimento (d, Brinch Hansen, 1970), all'inclinazione del carico (i, Vesic, 1973), all'inclinazione del piano di posa (b, Vesic, 1973), all'inclinazione del piano campagna (g, Vesic, 1973), e all'azione sismica (h - Maugeri e Novità, 2004 - applicato al solo coefficiente Nγ).

Nel caso di terreno eterogeneo (litologie differenti, presenza di falda), i parametri meccanici utilizzati nel calcolo sono ottenuti come media ponderata dei valori rinvenuti all'interno del cuneo di rottura.

La resistenza a scorrimento, viene ottenuta sommando i contributi del carico normale al piano di posa moltiplicato per il coefficiente d'attrito, e dell'area del piano di posa (eventualmente ridotta per carico verticale eccentrico) per l'adesione fondazione-terreno. In condizioni drenate, l'attrito fondazione terreno è assunto pari all'angolo di resistenza al taglio del terreno moltiplicato per il coefficiente 0.90, l'adesione fondazione terreno è trascurata (assunta pari a 0). Si considera il contributo della pressione del terreno a lato della fondazione. La resistenza laterale del terreno è assunta pari alla resistenza passiva disponibile moltiplicata per 0.50.

Descrizione della fondazione.

La fondazione ha piano di posa rettangolare, con lato X di 730 [cm], lato Y di 530 [cm], e centro alla quota z = -200 [cm]. Il piano di posa è orizzontale.

Descrizione del terreno.

La stratigrafia è omogenea, presenta un solo strato							
n.	nome	z_l [cm]	z_f [cm]	γ_{sl} [daN/cm^3]	γ_t [daN/cm^3]	c' [daN/cm^2]	φ' [°]
1	SubstratoRoccioso	0	-10000	0.0024	0.0024	0	35
La stratigrafia non contiene una falda							

Verifiche in condizioni drenate.

Sollecitazioni al piano di posa.

Si riportano di seguito le componenti della sollecitazione applicata.

Rispetto al sistema di rif. globale:					
Caso	Fx [daN]	Fy [daN]	Fz [daN]	Mx [daN*cm]	My [daN*cm]
1-1	0	0	-304182	3803577	-1466572
2-1	101639.01	30491.7	-203181	-7292596	29300787
2-2	101639.01	-30491.7	-203359	10941019	29229717
2-3	101639.01	30491.7	-203161	-7291045	29308973
2-4	101639.01	-30491.7	-203383	10941907	29223227
2-5	-101639.01	30491.7	-203447	-7273350	-32205023

2-6	-101639.01	-30491.7	-202881	10754615	-32317637
2-7	-101639.01	30491.7	-203473	-7287025	-32197856
2-8	-101639.01	-30491.7	-202855	10739895	-32326753
2-9	101639.01	30491.7	-203224	-7298191	29331684
2-10	101639.01	-30491.7	-203366	10939527	29271320
2-11	101639.01	30491.7	-203204	-7296637	29339867
2-12	101639.01	-30491.7	-203390	10940416	29264830
2-13	-101639.01	30491.7	-203400	-7267273	-32171037
2-14	-101639.01	-30491.7	-202871	10759696	-32272949
2-15	-101639.01	30491.7	-203426	-7280948	-32163869
2-16	-101639.01	-30491.7	-202846	10744976	-32282065
3-1	30491.7	101639.01	-203464	-28389302	7874921
3-2	-30491.7	101639.01	-203435	-28386639	-10810586
3-3	30491.7	101639.01	-203468	-28388120	7888984
3-4	-30491.7	101639.01	-203428	-28387208	-10797044
-5	30491.7	-101639.01	-202106	32144040	7791791
3-6	-30491.7	-101639.01	-202732	32075062	-10643798
3-7	30491.7	-101639.01	-202701	32050720	7944731
3-8	-30491.7	-101639.01	-202728	32074699	-10633840
3-9	30491.7	101639.01	-202770	-28486579	7939548
3-10	-30491.7	101639.01	-202578	-28558820	-10663652
3-11	30491.7	101639.01	-202774	-28485368	7953554
3-12	-30491.7	101639.01	-202572	-28559394	-10650091
3-13	30491.7	-101639.01	-202204	32111252	7823360
3-14	-30491.7	-101639.01	-202707	32068723	-10612912
3-15	30491.7	-101639.01	-202193	32112955	7833060
3-16	-30491.7	-101639.01	-202703	32068361	-10602954
4-1	111802.91	33540.87	-203075	-8207859	32373032
4-2	111802.91	-33540.87	-202903	11786790	32418675
4-3	111802.91	33540.87	-203056	-8207923	32380367
4-4	111802.91	-33540.87	-202945	11789514	32408762
4-5	-111802.91	33540.87	-202880	-8077755	-35425796
4-6	-111802.91	-33540.87	-202605	11790824	-35386653
4-7	-111802.91	33540.87	-202920	-8093454	-35416394
4-8	-111802.91	-33540.87	-202577	11774422	-35396290
4-9	111802.91	33540.87	-203108	-8212901	32410877
4-10	111802.91	-33540.87	-202894	11785434	32467009
4-11	111802.91	33540.87	-203090	-8212811	32417944
4-12	111802.91	-33540.87	-202935	11788158	32457097
4-13	-111802.91	33540.87	-203559	-8041563	-35284543
4-14	-111802.91	-33540.87	-202592	11796663	-35337070
4-15	-111802.91	33540.87	-203595	-8057406	-35275676
4-16	-111802.91	-33540.87	-202565	11780261	-35346707
5-1	33540.87	111802.91	-202367	-31570089	8716424
5-2	-33540.87	111802.91	-202472	-31496469	-11874137
5-3	33540.87	111802.91	-202369	-31569223	8731236
5-4	-33540.87	111802.91	-202463	-31497206	-11859468
5-5	33540.87	-111802.91	-202859	35059645	8843803
5-6	-33540.87	-111802.91	-202338	35126388	-11627745
5-7	33540.87	-111802.91	-202846	35061301	8854433
5-8	-33540.87	-111802.91	-202334	35125800	-11617417
5-9	33540.87	111802.91	-202314	-31605546	8682588
5-10	-33540.87	111802.91	-202205	-31555752	-11849840
5-11	33540.87	111802.91	-202317	-31604680	8697401
5-12	-33540.87	111802.91	-202196	-31556493	-11835164

5-13	33540.87	-111802.91	-202976	35025306	8878528
5-14	-33540.87	-111802.91	-202302	35121226	-11590276
5-15	33540.87	-111802.91	-202963	35026963	8889157
5-16	-33540.87	-111802.91	-202298	35120637	-11579948
Rispetto al sistema di rif. locale (centro piano di posa):					
Caso	Hx [daN]	Hy [daN]	Vz [daN]	Mx [daN*cm]	My [daN*cm]
1-1	0	0	-304182	3803577	-1466572
2-1	101639.01	30491.7	-203181	-7292596	29300787
2-2	101639.01	-30491.7	-203359	10941019	29229717
2-3	101639.01	30491.7	-203161	-7291045	29308973
2-4	101639.01	-30491.7	-203383	10941907	29223227
2-5	-101639.01	30491.7	-203447	-7273350	-32205023
2-6	-101639.01	-30491.7	-202881	10754615	-32317637
2-7	-101639.01	30491.7	-203473	-7287025	-32197856
2-8	-101639.01	-30491.7	-202855	10739895	-32326753
2-9	101639.01	30491.7	-203224	-7298191	29331684
2-10	101639.01	-30491.7	-203366	10939527	29271320
2-11	101639.01	30491.7	-203204	-7296637	29339867
2-12	101639.01	-30491.7	-203390	10940416	29264830
2-13	-101639.01	30491.7	-203400	-7267273	-32171037
2-14	-101639.01	-30491.7	-202871	10759696	-32272949
2-15	-101639.01	30491.7	-203426	-7280948	-32163869
2-16	-101639.01	-30491.7	-202846	10744976	-32282065
3-1	30491.7	101639.01	-203464	-28389302	7874921
3-2	-30491.7	101639.01	-203435	-28386639	-10810586
3-3	30491.7	101639.01	-203468	-28388120	7888984
3-4	-30491.7	101639.01	-203428	-28387208	-10797044
3-5	30491.7	-101639.01	-202106	32144040	7791791
3-6	-30491.7	-101639.01	-202732	32075062	-10643798
3-7	30491.7	-101639.01	-202701	32050720	7944731
3-8	-30491.7	-101639.01	-202728	32074699	-10633840
3-9	30491.7	101639.01	-202770	-28486579	7939548
3-10	-30491.7	101639.01	-202578	-28558820	-10663652
3-11	30491.7	101639.01	-202774	-28485368	7953554
3-12	-30491.7	101639.01	-202572	-28559394	-10650091
3-13	30491.7	-101639.01	-202204	32111252	7823360
3-14	-30491.7	-101639.01	-202707	32068723	-10612912
3-15	30491.7	-101639.01	-202193	32112955	7833060
3-16	-30491.7	-101639.01	-202703	32068361	-10602954
4-1	111802.91	33540.87	-203075	-8207859	32373032
4-2	111802.91	-33540.87	-202903	11786790	32418675
4-3	111802.91	33540.87	-203056	-8207923	32380367
4-4	111802.91	-33540.87	-202945	11789514	32408762
4-5	-111802.91	33540.87	-202880	-8077755	-35425796
4-6	-111802.91	-33540.87	-202605	11790824	-35386653
4-7	-111802.91	33540.87	-202920	-8093454	-35416394
4-8	-111802.91	-33540.87	-202577	11774422	-35396290
4-9	111802.91	33540.87	-203108	-8212901	32410877
4-10	111802.91	-33540.87	-202894	11785434	32467009
4-11	111802.91	33540.87	-203090	-8212811	32417944
4-12	111802.91	-33540.87	-202935	11788158	32457097
4-13	-111802.91	33540.87	-203559	-8041563	-35284543
4-14	-111802.91	-33540.87	-202592	11796663	-35337070
4-15	-111802.91	33540.87	-203595	-8057406	-35275676
4-16	-111802.91	-33540.87	-202565	11780261	-35346707

5-1	33540.87	111802.91	-202367	-31570089	8716424
5-2	-33540.87	111802.91	-202472	-31496469	-11874137
5-3	33540.87	111802.91	-202369	-31569223	8731236
5-4	-33540.87	111802.91	-202463	-31497206	-11859468
5-5	33540.87	-111802.91	-202859	35059645	8843803
5-6	-33540.87	-111802.91	-202338	35126388	-11627745
5-7	33540.87	-111802.91	-202846	35061301	8854433
5-8	-33540.87	-111802.91	-202334	35125800	-11617417
5-9	33540.87	111802.91	-202314	-31605546	8682588
5-10	-33540.87	111802.91	-202205	-31555752	-11849840
5-11	33540.87	111802.91	-202317	-31604680	8697401
5-12	-33540.87	111802.91	-202196	-31556493	-11835164
5-13	33540.87	-111802.91	-202976	35025306	8878528
5-14	-33540.87	-111802.91	-202302	35121226	-11590276
5-15	33540.87	-111802.91	-202963	35026963	8889157
5-16	-33540.87	-111802.91	-202298	35120637	-11579948

Le sollecitazioni applicate provocano un' eccentricità lungo X (max = 174.73 [cm]) e lungo Y (max = 173.61 [cm]), percio' le verifiche vengono eseguite sulla fondazione ridotta rettangolare.

Caso	ecc. X [cm]	ecc. Y [cm]	Asse B	Asse L
1-1	4.82	12.5	asse Y	asse X
2-1	144.21	35.89	asse X	asse Y
2-2	143.73	53.8	asse Y	asse X
2-3	144.26	35.89	asse X	asse Y
2-4	143.69	53.8	asse Y	asse X
2-5	158.3	35.75	asse X	asse Y
2-6	159.29	53.01	asse X	asse Y
2-7	158.24	35.81	asse X	asse Y
2-8	159.36	52.94	asse X	asse Y
2-9	144.33	35.91	asse X	asse Y
2-10	143.93	53.79	asse Y	asse X
2-11	144.39	35.91	asse X	asse Y
2-12	143.89	53.79	asse Y	asse X
2-13	158.17	35.73	asse X	asse Y
2-14	159.08	53.04	asse X	asse Y
2-15	158.11	35.79	asse X	asse Y
2-16	159.15	52.97	asse X	asse Y
3-1	38.7	139.53	asse Y	asse X
3-2	53.14	139.54	asse Y	asse X
3-3	38.77	139.52	asse Y	asse X
3-4	53.08	139.54	asse Y	asse X
3-5	38.55	159.05	asse Y	asse X
3-6	52.5	158.21	asse Y	asse X
3-7	39.19	158.12	asse Y	asse X
3-8	52.45	158.22	asse Y	asse X
3-9	39.16	140.49	asse Y	asse X
3-10	52.64	140.98	asse Y	asse X
3-11	39.22	140.48	asse Y	asse X
3-12	52.57	140.98	asse Y	asse X
3-13	38.69	158.81	asse Y	asse X
3-14	52.36	158.2	asse Y	asse X
3-15	38.74	158.82	asse Y	asse X
3-16	52.31	158.2	asse Y	asse X
4-1	159.41	40.42	asse X	asse Y

4-2	159.77	58.09	asse X	asse Y
4-3	159.47	40.42	asse X	asse Y
4-4	159.69	58.09	asse X	asse Y
4-5	174.61	39.82	asse X	asse Y
4-6	174.66	58.2	asse X	asse Y
4-7	174.53	39.88	asse X	asse Y
4-8	174.73	58.12	asse X	asse Y
4-9	159.57	40.44	asse X	asse Y
4-10	160.02	58.09	asse X	asse Y
4-11	159.62	40.44	asse X	asse Y
4-12	159.94	58.09	asse X	asse Y
4-13	173.34	39.5	asse X	asse Y
4-14	174.42	58.23	asse X	asse Y
4-15	173.26	39.58	asse X	asse Y
4-16	174.5	58.16	asse X	asse Y
5-1	43.07	156	asse Y	asse X
5-2	58.65	155.56	asse Y	asse X
5-3	43.15	156	asse Y	asse X
5-4	58.58	155.57	asse Y	asse X
5-5	43.6	172.83	asse Y	asse X
5-6	57.47	173.6	asse Y	asse X
5-7	43.65	172.85	asse Y	asse X
5-8	57.42	173.6	asse Y	asse X
5-9	42.92	156.22	asse Y	asse X
5-10	58.6	156.06	asse Y	asse X
5-11	42.99	156.21	asse Y	asse X
5-12	58.53	156.07	asse Y	asse X
5-13	43.74	172.56	asse Y	asse X
5-14	57.29	173.61	asse Y	asse X
5-15	43.8	172.58	asse Y	asse X
5-16	57.24	173.61	asse Y	asse X

Capacità portante.

Le seguenti tabelle elencano il valore dell'angolo di resistenza al taglio, del peso di volume alleggerito, della coesione efficace, del sovraccarico alleggerito, e dei fattori e coefficienti introdotti nel calcolo della capacità portante.

Caso	γ_φ	γ_γ	φ [°]	γ' [daN/cm³]	N_γ	s_γ	d_γ	$i_{b\gamma}$	$i_{i\gamma}$	b_γ	g_γ	h_γ	$q'_{lim,\gamma}$ [daN/cm²]
1-1	1.00	1.00	35	0.0024	48.03	1.26	1.00	1.00	1.00	1.00	1.00	0.59	21.69
2-1	1.00	1.00	35	0.0024	48.03	1.36	1.00	0.18	0.67	1.00	1.00	0.50	2
2-2	1.00	1.00	35	0.0024	48.03	1.35	1.00	0.66	0.18	1.00	1.00	0.50	1.93
2-3	1.00	1.00	35	0.0024	48.03	1.36	1.00	0.18	0.67	1.00	1.00	0.50	2
2-4	1.00	1.00	35	0.0024	48.03	1.35	1.00	0.66	0.18	1.00	1.00	0.50	1.93
2-5	1.00	1.00	35	0.0024	48.03	1.33	1.00	0.17	0.67	1.00	1.00	0.50	1.83
2-6	1.00	1.00	35	0.0024	48.03	1.36	1.00	0.17	0.67	1.00	1.00	0.50	1.86
2-7	1.00	1.00	35	0.0024	48.03	1.33	1.00	0.17	0.67	1.00	1.00	0.50	1.83
2-8	1.00	1.00	35	0.0024	48.03	1.36	1.00	0.17	0.67	1.00	1.00	0.50	1.86
2-9	1.00	1.00	35	0.0024	48.03	1.36	1.00	0.18	0.67	1.00	1.00	0.50	2
2-10	1.00	1.00	35	0.0024	48.03	1.35	1.00	0.67	0.18	1.00	1.00	0.50	1.93
2-11	1.00	1.00	35	0.0024	48.03	1.36	1.00	0.18	0.67	1.00	1.00	0.50	2
2-12	1.00	1.00	35	0.0024	48.03	1.35	1.00	0.67	0.18	1.00	1.00	0.50	1.93
2-13	1.00	1.00	35	0.0024	48.03	1.33	1.00	0.17	0.67	1.00	1.00	0.50	1.83
2-14	1.00	1.00	35	0.0024	48.03	1.36	1.00	0.18	0.67	1.00	1.00	0.50	1.86
2-15	1.00	1.00	35	0.0024	48.03	1.33	1.00	0.17	0.67	1.00	1.00	0.50	1.83
2-16	1.00	1.00	35	0.0024	48.03	1.36	1.00	0.17	0.67	1.00	1.00	0.50	1.86

3-1	1.00	1.00	35	0.0024	48.03	1.14	1.00	0.15	0.69	1.00	1.00	0.50	0.86
3-2	1.00	1.00	35	0.0024	48.03	1.15	1.00	0.15	0.69	1.00	1.00	0.50	0.87
3-3	1.00	1.00	35	0.0024	48.03	1.14	1.00	0.15	0.69	1.00	1.00	0.50	0.86
3-4	1.00	1.00	35	0.0024	48.03	1.15	1.00	0.15	0.69	1.00	1.00	0.50	0.87
3-5	1.00	1.00	35	0.0024	48.03	1.12	1.00	0.15	0.69	1.00	1.00	0.50	0.68
3-6	1.00	1.00	35	0.0024	48.03	1.13	1.00	0.15	0.69	1.00	1.00	0.50	0.7
3-7	1.00	1.00	35	0.0024	48.03	1.12	1.00	0.15	0.69	1.00	1.00	0.50	0.7
3-8	1.00	1.00	35	0.0024	48.03	1.13	1.00	0.15	0.69	1.00	1.00	0.50	0.7
3-9	1.00	1.00	35	0.0024	48.03	1.14	1.00	0.15	0.69	1.00	1.00	0.50	0.84
3-10	1.00	1.00	35	0.0024	48.03	1.15	1.00	0.15	0.69	1.00	1.00	0.50	0.84
3-11	1.00	1.00	35	0.0024	48.03	1.14	1.00	0.15	0.69	1.00	1.00	0.50	0.84
3-12	1.00	1.00	35	0.0024	48.03	1.15	1.00	0.15	0.69	1.00	1.00	0.50	0.84
3-13	1.00	1.00	35	0.0024	48.03	1.12	1.00	0.15	0.69	1.00	1.00	0.50	0.69
3-14	1.00	1.00	35	0.0024	48.03	1.13	1.00	0.15	0.69	1.00	1.00	0.50	0.7
3-15	1.00	1.00	35	0.0024	48.03	1.12	1.00	0.15	0.69	1.00	1.00	0.50	0.69
3-16	1.00	1.00	35	0.0024	48.03	1.13	1.00	0.15	0.69	1.00	1.00	0.50	0.7
4-1	1.00	1.00	35	0.0024	48.03	1.34	1.00	0.13	0.64	1.00	1.00	0.50	1.34
4-2	1.00	1.00	35	0.0024	48.03	1.37	1.00	0.13	0.64	1.00	1.00	0.50	1.37
4-3	1.00	1.00	35	0.0024	48.03	1.34	1.00	0.13	0.64	1.00	1.00	0.50	1.33
4-4	1.00	1.00	35	0.0024	48.03	1.37	1.00	0.13	0.64	1.00	1.00	0.50	1.38
4-5	1.00	1.00	35	0.0024	48.03	1.31	1.00	0.13	0.64	1.00	1.00	0.50	1.19
4-6	1.00	1.00	35	0.0024	48.03	1.34	1.00	0.13	0.64	1.00	1.00	0.50	1.23
4-7	1.00	1.00	35	0.0024	48.03	1.31	1.00	0.13	0.64	1.00	1.00	0.50	1.2
4-8	1.00	1.00	35	0.0024	48.03	1.34	1.00	0.13	0.64	1.00	1.00	0.50	1.23
4-9	1.00	1.00	35	0.0024	48.03	1.34	1.00	0.13	0.64	1.00	1.00	0.50	1.33
4-10	1.00	1.00	35	0.0024	48.03	1.37	1.00	0.13	0.64	1.00	1.00	0.50	1.37
4-11	1.00	1.00	35	0.0024	48.03	1.34	1.00	0.13	0.64	1.00	1.00	0.50	1.33
4-12	1.00	1.00	35	0.0024	48.03	1.37	1.00	0.13	0.64	1.00	1.00	0.50	1.37
4-13	1.00	1.00	35	0.0024	48.03	1.31	1.00	0.13	0.64	1.00	1.00	0.50	1.22
4-14	1.00	1.00	35	0.0024	48.03	1.34	1.00	0.13	0.64	1.00	1.00	0.50	1.23
4-15	1.00	1.00	35	0.0024	48.03	1.31	1.00	0.13	0.64	1.00	1.00	0.50	1.22
4-16	1.00	1.00	35	0.0024	48.03	1.34	1.00	0.13	0.64	1.00	1.00	0.50	1.23
5-1	1.00	1.00	35	0.0024	48.03	1.12	1.00	0.11	0.66	1.00	1.00	0.50	0.51
5-2	1.00	1.00	35	0.0024	48.03	1.13	1.00	0.11	0.66	1.00	1.00	0.50	0.52
5-3	1.00	1.00	35	0.0024	48.03	1.12	1.00	0.11	0.66	1.00	1.00	0.50	0.51
5-4	1.00	1.00	35	0.0024	48.03	1.13	1.00	0.11	0.66	1.00	1.00	0.50	0.52
5-5	1.00	1.00	35	0.0024	48.03	1.11	1.00	0.11	0.67	1.00	1.00	0.50	0.42
5-6	1.00	1.00	35	0.0024	48.03	1.11	1.00	0.11	0.67	1.00	1.00	0.50	0.42
5-7	1.00	1.00	35	0.0024	48.03	1.11	1.00	0.11	0.67	1.00	1.00	0.50	0.42
5-8	1.00	1.00	35	0.0024	48.03	1.11	1.00	0.11	0.67	1.00	1.00	0.50	0.42
5-9	1.00	1.00	35	0.0024	48.03	1.12	1.00	0.11	0.66	1.00	1.00	0.50	0.51
5-10	1.00	1.00	35	0.0024	48.03	1.13	1.00	0.11	0.66	1.00	1.00	0.50	0.52
5-11	1.00	1.00	35	0.0024	48.03	1.12	1.00	0.11	0.66	1.00	1.00	0.50	0.51
5-12	1.00	1.00	35	0.0024	48.03	1.13	1.00	0.11	0.66	1.00	1.00	0.50	0.51
5-13	1.00	1.00	35	0.0024	48.03	1.11	1.00	0.11	0.67	1.00	1.00	0.50	0.42
5-14	1.00	1.00	35	0.0024	48.03	1.11	1.00	0.11	0.67	1.00	1.00	0.50	0.42
5-15	1.00	1.00	35	0.0024	48.03	1.11	1.00	0.11	0.67	1.00	1.00	0.50	0.42
5-16	1.00	1.00	35	0.0024	48.03	1.11	1.00	0.11	0.67	1.00	1.00	0.50	0.42

Caso	$\gamma_{c'}$	c' [daN/cm^2]	N_c	s_c	d_c	i_{bc}	i_{ic}	b_c	g_c	h_c	$q'_{lim,c}$ [daN/cm^2]
1-1	1.00	0	46.12	1.52	1.10	1.00	1.00	1.00	1.00	1.00	0
2-1	1.00	0	46.12	1.71	1.12	0.33	0.78	1.00	1.00	1.00	0
2-2	1.00	0	46.12	1.70	1.12	0.78	0.34	1.00	1.00	1.00	0
2-3	1.00	0	46.12	1.71	1.12	0.33	0.78	1.00	1.00	1.00	0
2-4	1.00	0	46.12	1.70	1.12	0.78	0.34	1.00	1.00	1.00	0
2-5	1.00	0	46.12	1.67	1.13	0.33	0.78	1.00	1.00	1.00	0

2-6	1.00	0	46.12	1.72	1.13	0.33	0.78	1.00	1.00	1.00	0
2-7	1.00	0	46.12	1.67	1.13	0.33	0.78	1.00	1.00	1.00	0
2-8	1.00	0	46.12	1.72	1.13	0.33	0.78	1.00	1.00	1.00	0
2-9	1.00	0	46.12	1.71	1.12	0.33	0.78	1.00	1.00	1.00	0
2-10	1.00	0	46.12	1.71	1.12	0.78	0.34	1.00	1.00	1.00	0
2-11	1.00	0	46.12	1.71	1.12	0.33	0.78	1.00	1.00	1.00	0
2-12	1.00	0	46.12	1.70	1.12	0.78	0.34	1.00	1.00	1.00	0
2-13	1.00	0	46.12	1.67	1.13	0.33	0.78	1.00	1.00	1.00	0
2-14	1.00	0	46.12	1.72	1.13	0.33	0.78	1.00	1.00	1.00	0
2-15	1.00	0	46.12	1.67	1.13	0.33	0.78	1.00	1.00	1.00	0
2-16	1.00	0	46.12	1.72	1.13	0.33	0.78	1.00	1.00	1.00	0
3-1	1.00	0	46.12	1.28	1.21	0.28	0.81	1.00	1.00	1.00	0
3-2	1.00	0	46.12	1.30	1.21	0.28	0.81	1.00	1.00	1.00	0
3-3	1.00	0	46.12	1.28	1.21	0.28	0.81	1.00	1.00	1.00	0
3-4	1.00	0	46.12	1.30	1.21	0.28	0.81	1.00	1.00	1.00	0
3-5	1.00	0	46.12	1.24	1.25	0.27	0.81	1.00	1.00	1.00	0
3-6	1.00	0	46.12	1.25	1.25	0.28	0.81	1.00	1.00	1.00	0
3-7	1.00	0	46.12	1.24	1.25	0.27	0.81	1.00	1.00	1.00	0
3-8	1.00	0	46.12	1.25	1.25	0.28	0.81	1.00	1.00	1.00	0
3-9	1.00	0	46.12	1.28	1.21	0.28	0.81	1.00	1.00	1.00	0
3-10	1.00	0	46.12	1.29	1.21	0.28	0.81	1.00	1.00	1.00	0
3-11	1.00	0	46.12	1.28	1.21	0.28	0.81	1.00	1.00	1.00	0
3-12	1.00	0	46.12	1.29	1.21	0.28	0.81	1.00	1.00	1.00	0
3-13	1.00	0	46.12	1.24	1.25	0.27	0.81	1.00	1.00	1.00	0
3-14	1.00	0	46.12	1.25	1.25	0.28	0.81	1.00	1.00	1.00	0
3-15	1.00	0	46.12	1.24	1.25	0.27	0.81	1.00	1.00	1.00	0
3-16	1.00	0	46.12	1.25	1.25	0.27	0.81	1.00	1.00	1.00	0
4-1	1.00	0	46.12	1.68	1.13	0.27	0.76	1.00	1.00	1.00	0
4-2	1.00	0	46.12	1.73	1.13	0.28	0.76	1.00	1.00	1.00	0
4-3	1.00	0	46.12	1.68	1.13	0.27	0.76	1.00	1.00	1.00	0
4-4	1.00	0	46.12	1.73	1.13	0.28	0.76	1.00	1.00	1.00	0
4-5	1.00	0	46.12	1.62	1.14	0.27	0.76	1.00	1.00	1.00	0
4-6	1.00	0	46.12	1.68	1.14	0.27	0.76	1.00	1.00	1.00	0
4-7	1.00	0	46.12	1.62	1.14	0.27	0.76	1.00	1.00	1.00	0
4-8	1.00	0	46.12	1.68	1.14	0.27	0.76	1.00	1.00	1.00	0
4-9	1.00	0	46.12	1.68	1.13	0.27	0.76	1.00	1.00	1.00	0
4-10	1.00	0	46.12	1.73	1.13	0.28	0.76	1.00	1.00	1.00	0
4-11	1.00	0	46.12	1.67	1.13	0.27	0.76	1.00	1.00	1.00	0
4-12	1.00	0	46.12	1.73	1.13	0.28	0.76	1.00	1.00	1.00	0
4-13	1.00	0	46.12	1.63	1.14	0.27	0.76	1.00	1.00	1.00	0
4-14	1.00	0	46.12	1.68	1.14	0.27	0.76	1.00	1.00	1.00	0
4-15	1.00	0	46.12	1.63	1.14	0.27	0.76	1.00	1.00	1.00	0
4-16	1.00	0	46.12	1.68	1.14	0.27	0.76	1.00	1.00	1.00	0
5-1	1.00	0	46.12	1.25	1.24	0.22	0.79	1.00	1.00	1.00	0
5-2	1.00	0	46.12	1.26	1.24	0.22	0.79	1.00	1.00	1.00	0
5-3	1.00	0	46.12	1.25	1.24	0.22	0.79	1.00	1.00	1.00	0
5-4	1.00	0	46.12	1.26	1.24	0.22	0.79	1.00	1.00	1.00	0
5-5	1.00	0	46.12	1.21	1.22	0.22	0.80	1.00	1.00	1.00	0
5-6	1.00	0	46.12	1.22	1.22	0.22	0.79	1.00	1.00	1.00	0
5-7	1.00	0	46.12	1.21	1.22	0.22	0.80	1.00	1.00	1.00	0
5-8	1.00	0	46.12	1.22	1.22	0.22	0.79	1.00	1.00	1.00	0
5-9	1.00	0	46.12	1.25	1.24	0.22	0.79	1.00	1.00	1.00	0
5-10	1.00	0	46.12	1.26	1.24	0.22	0.79	1.00	1.00	1.00	0
5-11	1.00	0	46.12	1.25	1.24	0.22	0.79	1.00	1.00	1.00	0
5-12	1.00	0	46.12	1.26	1.24	0.22	0.79	1.00	1.00	1.00	0

5-13	1.00	0	46.12	1.21	1.22	0.22	0.80	1.00	1.00	1.00	0
5-14	1.00	0	46.12	1.22	1.22	0.22	0.79	1.00	1.00	1.00	0
5-15	1.00	0	46.12	1.21	1.22	0.22	0.80	1.00	1.00	1.00	0
5-16	1.00	0	46.12	1.22	1.22	0.22	0.79	1.00	1.00	1.00	0

Caso	q' [daN/cm²]	N_q	s_q	d_q	i_{bq}	i_{iq}	b_q	g_q	h_q	$q'_{lim,q}$ [daN/cm²]
1-1	0.48	33.30	1.26	1.10	1.00	1.00	1.00	1.00	1.00	22.15
2-1	0.48	33.30	1.36	1.12	0.35	0.78	1.00	1.00	1.00	6.66
2-2	0.48	33.30	1.35	1.12	0.78	0.36	1.00	1.00	1.00	6.76
2-3	0.48	33.30	1.36	1.12	0.35	0.78	1.00	1.00	1.00	6.66
2-4	0.48	33.30	1.35	1.12	0.78	0.36	1.00	1.00	1.00	6.76
2-5	0.48	33.30	1.33	1.12	0.35	0.79	1.00	1.00	1.00	6.55
2-6	0.48	33.30	1.36	1.12	0.35	0.78	1.00	1.00	1.00	6.71
2-7	0.48	33.30	1.33	1.12	0.35	0.79	1.00	1.00	1.00	6.55
2-8	0.48	33.30	1.36	1.12	0.35	0.78	1.00	1.00	1.00	6.7
2-9	0.48	33.30	1.36	1.12	0.35	0.78	1.00	1.00	1.00	6.66
2-10	0.48	33.30	1.35	1.12	0.78	0.36	1.00	1.00	1.00	6.76
2-11	0.48	33.30	1.36	1.12	0.35	0.78	1.00	1.00	1.00	6.66
2-12	0.48	33.30	1.35	1.12	0.78	0.36	1.00	1.00	1.00	6.76
2-13	0.48	33.30	1.33	1.12	0.35	0.79	1.00	1.00	1.00	6.55
2-14	0.48	33.30	1.36	1.12	0.35	0.78	1.00	1.00	1.00	6.71
2-15	0.48	33.30	1.33	1.12	0.35	0.79	1.00	1.00	1.00	6.55
2-16	0.48	33.30	1.36	1.12	0.35	0.78	1.00	1.00	1.00	6.71
3-1	0.48	33.30	1.14	1.20	0.30	0.81	1.00	1.00	1.00	5.42
3-2	0.48	33.30	1.15	1.20	0.31	0.81	1.00	1.00	1.00	5.47
3-3	0.48	33.30	1.14	1.20	0.30	0.81	1.00	1.00	1.00	5.42
3-4	0.48	33.30	1.15	1.20	0.31	0.81	1.00	1.00	1.00	5.47
3-5	0.48	33.30	1.12	1.24	0.29	0.82	1.00	1.00	1.00	5.31
3-6	0.48	33.30	1.13	1.24	0.30	0.82	1.00	1.00	1.00	5.39
3-7	0.48	33.30	1.12	1.24	0.30	0.82	1.00	1.00	1.00	5.34
3-8	0.48	33.30	1.13	1.24	0.30	0.82	1.00	1.00	1.00	5.39
3-9	0.48	33.30	1.14	1.20	0.30	0.81	1.00	1.00	1.00	5.38
3-10	0.48	33.30	1.15	1.21	0.30	0.81	1.00	1.00	1.00	5.42
3-11	0.48	33.30	1.14	1.20	0.30	0.81	1.00	1.00	1.00	5.38
3-12	0.48	33.30	1.15	1.21	0.30	0.81	1.00	1.00	1.00	5.42
3-13	0.48	33.30	1.12	1.24	0.29	0.82	1.00	1.00	1.00	5.32
3-14	0.48	33.30	1.13	1.24	0.30	0.82	1.00	1.00	1.00	5.39
3-15	0.48	33.30	1.12	1.24	0.29	0.82	1.00	1.00	1.00	5.32
3-16	0.48	33.30	1.13	1.24	0.30	0.82	1.00	1.00	1.00	5.39
4-1	0.48	33.30	1.34	1.12	0.30	0.77	1.00	1.00	1.00	5.45
4-2	0.48	33.30	1.37	1.12	0.30	0.76	1.00	1.00	1.00	5.62
4-3	0.48	33.30	1.34	1.12	0.30	0.77	1.00	1.00	1.00	5.45
4-4	0.48	33.30	1.37	1.12	0.30	0.76	1.00	1.00	1.00	5.63
4-5	0.48	33.30	1.31	1.13	0.29	0.77	1.00	1.00	1.00	5.31
4-6	0.48	33.30	1.34	1.13	0.30	0.77	1.00	1.00	1.00	5.48
4-7	0.48	33.30	1.31	1.13	0.29	0.77	1.00	1.00	1.00	5.32
4-8	0.48	33.30	1.34	1.13	0.29	0.77	1.00	1.00	1.00	5.48
4-9	0.48	33.30	1.34	1.12	0.30	0.77	1.00	1.00	1.00	5.45
4-10	0.48	33.30	1.37	1.12	0.30	0.76	1.00	1.00	1.00	5.62
4-11	0.48	33.30	1.34	1.12	0.30	0.77	1.00	1.00	1.00	5.45
4-12	0.48	33.30	1.37	1.12	0.30	0.76	1.00	1.00	1.00	5.62
4-13	0.48	33.30	1.31	1.13	0.29	0.77	1.00	1.00	1.00	5.36
4-14	0.48	33.30	1.34	1.13	0.30	0.77	1.00	1.00	1.00	5.48
4-15	0.48	33.30	1.31	1.13	0.29	0.77	1.00	1.00	1.00	5.36
4-16	0.48	33.30	1.34	1.13	0.30	0.77	1.00	1.00	1.00	5.48
5-1	0.48	33.30	1.12	1.23	0.25	0.80	1.00	1.00	1.00	4.34

5-2	0.48	33.30	1.13	1.23	0.25	0.80	1.00	1.00	1.00	4.39
5-3	0.48	33.30	1.12	1.23	0.25	0.80	1.00	1.00	1.00	4.34
5-4	0.48	33.30	1.13	1.23	0.25	0.80	1.00	1.00	1.00	4.39
5-5	0.48	33.30	1.11	1.21	0.24	0.80	1.00	1.00	1.00	4.13
5-6	0.48	33.30	1.11	1.21	0.24	0.80	1.00	1.00	1.00	4.14
5-7	0.48	33.30	1.11	1.21	0.24	0.80	1.00	1.00	1.00	4.13
5-8	0.48	33.30	1.11	1.21	0.24	0.80	1.00	1.00	1.00	4.14
5-9	0.48	33.30	1.12	1.23	0.25	0.80	1.00	1.00	1.00	4.33
5-10	0.48	33.30	1.13	1.23	0.25	0.80	1.00	1.00	1.00	4.38
5-11	0.48	33.30	1.12	1.23	0.25	0.80	1.00	1.00	1.00	4.33
5-12	0.48	33.30	1.13	1.23	0.25	0.80	1.00	1.00	1.00	4.38
5-13	0.48	33.30	1.11	1.21	0.24	0.80	1.00	1.00	1.00	4.14
5-14	0.48	33.30	1.11	1.21	0.24	0.80	1.00	1.00	1.00	4.14
5-15	0.48	33.30	1.11	1.21	0.24	0.80	1.00	1.00	1.00	4.14
5-16	0.48	33.30	1.11	1.21	0.24	0.80	1.00	1.00	1.00	4.14

Segue il confronto fra la pressione limite ed applicata.

Caso	$\gamma_{R;v}$	q'_{lim} [daN/cm²]	A [cm²]	R_d [daN]	E_d [daN]	Verifica
1-1	2.30	19.33	363774.26	7031832.2	304182	SI (7031832.2/304182 = 23.12 >= 1.0)
2-1	2.30	4.03	202338.67	816391.2	203181	SI (816391.2/203181 = 4.02 >= 1.0)
2-2	2.30	4.05	186923.71	756950.3	203359	SI (756950.3/203359 = 3.72 >= 1.0)
2-3	2.30	4.03	202292.36	815943	203161	SI (815943/203161 = 4.02 >= 1.0)
2-4	2.30	4.05	186966.76	757274.4	203383	SI (757274.4/203383 = 3.72 >= 1.0)
2-5	2.30	3.91	189546.28	741935.7	203447	SI (741935.7/203447 = 3.65 >= 1.0)
2-6	2.30	4	174431.26	697082.7	202881	SI (697082.7/202881 = 3.44 >= 1.0)
2-7	2.30	3.92	189545.33	742279.4	203473	SI (742279.4/203473 = 3.65 >= 1.0)
2-8	2.30	3.99	174429.95	696719.3	202855	SI (696719.3/202855 = 3.43 >= 1.0)
2-9	2.30	4.04	202209.71	815997.5	203224	SI (815997.5/203224 = 4.02 >= 1.0)
2-10	2.30	4.05	186763.2	756439	203366	SI (756439/203366 = 3.72 >= 1.0)
2-11	2.30	4.03	202163.42	815549.6	203204	SI (815549.6/203204 = 4.01 >= 1.0)
2-12	2.30	4.05	186806.25	756763	203390	SI (756763/203390 = 3.72 >= 1.0)
2-13	2.30	3.91	189683.85	742348.1	203400	SI (742348.1/203400 = 3.65 >= 1.0)
2-14	2.30	4	174588.61	698034.4	202871	SI (698034.4/202871 = 3.44 >= 1.0)
2-15	2.30	3.92	189682.85	742692	203426	SI (742692/203426 = 3.65 >= 1.0)
2-16	2.30	4	174588.26	697681.8	202846	SI (697681.8/202846 = 3.44 >= 1.0)
3-1	2.30	3	163761.5	491139.2	203464	SI (491139.2/203464 = 2.41 >= 1.0)
3-2	2.30	3.03	156507.87	473797.1	203435	SI (473797.1/203435 = 2.33 >= 1.0)
3-3	2.30	3	163738.36	491116.6	203468	SI (491116.6/203468 = 2.41 >= 1.0)
3-4	2.30	3.03	156530.88	473808.3	203428	SI (473808.3/203428 = 2.33 >= 1.0)
3-5	2.30	2.88	138354.18	398132.8	202106	SI (398132.8/202106 = 1.97 >= 1.0)
3-6	2.30	2.92	133481.59	390045.8	202732	SI (390045.8/202732 = 1.92 >= 1.0)
3-7	2.30	2.9	139290.77	403732.2	202701	SI (403732.2/202701 = 1.99 >= 1.0)
3-8	2.30	2.92	133500.47	390073.9	202728	SI (390073.9/202728 = 1.92 >= 1.0)
3-9	2.30	2.98	162287.34	482935.1	202770	SI (482935.1/202770 = 2.38 >= 1.0)
3-10	2.30	2.99	154959.54	464064.8	202578	SI (464064.8/202578 = 2.29 >= 1.0)
3-11	2.30	2.98	162264.72	482914	202774	SI (482914/202774 = 2.38 >= 1.0)
3-12	2.30	2.99	154983.22	464083	202572	SI (464083/202572 = 2.29 >= 1.0)
3-13	2.30	2.88	138608.19	399390.2	202204	SI (399390.2/202204 = 1.98 >= 1.0)
3-14	2.30	2.92	133558.62	390149.6	202707	SI (390149.6/202707 = 1.92 >= 1.0)
3-15	2.30	2.88	138564.65	399225.6	202193	SI (399225.6/202193 = 1.97 >= 1.0)
3-16	2.30	2.92	133577.49	390177.7	202703	SI (390177.7/202703 = 1.92 >= 1.0)
4-1	2.30	3.22	184683.62	594796.8	203075	SI (594796.8/203075 = 2.93 >= 1.0)
4-2	2.30	3.31	169852.41	562823	202903	SI (562823/202903 = 2.77 >= 1.0)
4-3	2.30	3.22	184634.4	594448.5	203056	SI (594448.5/203056 = 2.93 >= 1.0)

4-4	2.30	3.32	169919.06	563413.8	202945	SI (563413.8/202945 = 2.78 >= 1.0)
4-5	2.30	3.1	171487.48	531688.2	202880	SI (531688.2/202880 = 2.62 >= 1.0)
4-6	2.30	3.19	157453.58	502046.7	202605	SI (502046.7/202605 = 2.48 >= 1.0)
4-7	2.30	3.1	171507.25	532140.6	202920	SI (532140.6/202920 = 2.62 >= 1.0)
4-8	2.30	3.19	157449.76	501728.6	202577	SI (501728.6/202577 = 2.48 >= 1.0)
4-9	2.30	3.22	184524.5	594299	203108	SI (594299/203108 = 2.93 >= 1.0)
4-10	2.30	3.31	169652.75	561774.4	202894	SI (561774.4/202894 = 2.77 >= 1.0)
4-11	2.30	3.22	184477.96	593967.9	203090	SI (593967.9/203090 = 2.92 >= 1.0)
4-12	2.30	3.31	169718.55	562354.8	202935	SI (562354.8/202935 = 2.77 >= 1.0)
4-13	2.30	3.13	172875.28	541304.8	203559	SI (541304.8/203559 = 2.66 >= 1.0)
4-14	2.30	3.19	157621.95	502821.1	202592	SI (502821.1/202592 = 2.48 >= 1.0)
4-15	2.30	3.13	172887.88	541709.8	203595	SI (541709.8/203595 = 2.66 >= 1.0)
4-16	2.30	3.19	157619.16	502512	202565	SI (502512/202565 = 2.48 >= 1.0)
5-1	2.30	2.38	140355.13	333995.1	202367	SI (333995.1/202367 = 1.65 >= 1.0)
5-2	2.30	2.41	134110.06	322995.1	202472	SI (322995.1/202472 = 1.60 >= 1.0)
5-3	2.30	2.38	140330.89	333962.8	202369	SI (333962.8/202369 = 1.65 >= 1.0)
5-4	2.30	2.41	134127.7	322984.9	202463	SI (322984.9/202463 = 1.60 >= 1.0)
5-5	2.30	2.25	118498.31	266649.6	202859	SI (266649.6/202859 = 1.31 >= 1.0)
5-6	2.30	2.25	112430.98	253173.5	202338	SI (253173.5/202338 = 1.25 >= 1.0)
5-7	2.30	2.25	118453.23	266508.2	202846	SI (266508.2/202846 = 1.31 >= 1.0)
5-8	2.30	2.25	112448.58	253194	202334	SI (253194/202334 = 1.25 >= 1.0)
5-9	2.30	2.38	140144.68	333167.5	202314	SI (333167.5/202314 = 1.65 >= 1.0)
5-10	2.30	2.4	133517.7	320376.4	202205	SI (320376.4/202205 = 1.58 >= 1.0)
5-11	2.30	2.38	140121.6	333141.9	202317	SI (333141.9/202317 = 1.65 >= 1.0)
5-12	2.30	2.4	133535.18	320365.9	202196	SI (320365.9/202196 = 1.58 >= 1.0)
5-13	2.30	2.25	118789.92	267811.8	202976	SI (267811.8/202976 = 1.32 >= 1.0)
5-14	2.30	2.25	112488.34	253171.9	202302	SI (253171.9/202302 = 1.25 >= 1.0)
5-15	2.30	2.25	118744.83	267670	202963	SI (267670/202963 = 1.32 >= 1.0)
5-16	2.30	2.25	112505.94	253192.5	202298	SI (253192.5/202298 = 1.25 >= 1.0)

Scorrimento.

Le seguenti tabelle elencano il valore dell'angolo di resistenza al taglio, della coesione efficace, dell'attrito e dell'aderenza fondazione-terreno, e della resistenza disponibile sul piano di posa e sulle pareti laterali.

Caso	γ_{φ}	$\gamma_{c'}$	φ [°]	c' [daN/cm²]	δ [°]	a [daN/cm²]	$\gamma_{R;h}$	$\gamma_{R;e}$	R_h [daN]	R_e [daN]
1-1	1.00	1.00	35	0	31.5	0	1.10	1.00	169457.24	0
2-1	1.00	1.00	35	0	31.5	0	1.10	1.00	113190.43	17631.51
2-2	1.00	1.00	35	0	31.5	0	1.10	1.00	113289.6	17631.51
2-3	1.00	1.00	35	0	31.5	0	1.10	1.00	113179.29	17631.51
2-4	1.00	1.00	35	0	31.5	0	1.10	1.00	113302.97	17631.51
2-5	1.00	1.00	35	0	31.5	0	1.10	1.00	113338.62	17631.51
2-6	1.00	1.00	35	0	31.5	0	1.10	1.00	113023.31	17631.51
2-7	1.00	1.00	35	0	31.5	0	1.10	1.00	113353.1	17631.51
2-8	1.00	1.00	35	0	31.5	0	1.10	1.00	113008.82	17631.51
2-9	1.00	1.00	35	0	31.5	0	1.10	1.00	113214.39	17631.51
2-10	1.00	1.00	35	0	31.5	0	1.10	1.00	113293.5	17631.51
2-11	1.00	1.00	35	0	31.5	0	1.10	1.00	113203.25	17631.51
2-12	1.00	1.00	35	0	31.5	0	1.10	1.00	113306.87	17631.51
2-13	1.00	1.00	35	0	31.5	0	1.10	1.00	113312.44	17631.51
2-14	1.00	1.00	35	0	31.5	0	1.10	1.00	113017.74	17631.51
2-15	1.00	1.00	35	0	31.5	0	1.10	1.00	113326.92	17631.51
2-16	1.00	1.00	35	0	31.5	0	1.10	1.00	113003.81	17631.51
3-1	1.00	1.00	35	0	31.5	0	1.10	1.00	113348.09	20927.12
3-2	1.00	1.00	35	0	31.5	0	1.10	1.00	113331.93	20927.12

3-3	1.00	1.00	35	0	31.5	0	1.10	1.00	113350.32	20927.12
3-4	1.00	1.00	35	0	31.5	0	1.10	1.00	113328.04	20927.12
3-5	1.00	1.00	35	0	31.5	0	1.10	1.00	112591.56	20927.12
3-6	1.00	1.00	35	0	31.5	0	1.10	1.00	112940.3	20927.12
3-7	1.00	1.00	35	0	31.5	0	1.10	1.00	112923.03	20927.12
3-8	1.00	1.00	35	0	31.5	0	1.10	1.00	112938.07	20927.12
3-9	1.00	1.00	35	0	31.5	0	1.10	1.00	112961.47	20927.12
3-10	1.00	1.00	35	0	31.5	0	1.10	1.00	112854.51	20927.12
3-11	1.00	1.00	35	0	31.5	0	1.10	1.00	112963.7	20927.12
3-12	1.00	1.00	35	0	31.5	0	1.10	1.00	112851.16	20927.12
3-13	1.00	1.00	35	0	31.5	0	1.10	1.00	112646.16	20927.12
3-14	1.00	1.00	35	0	31.5	0	1.10	1.00	112926.37	20927.12
3-15	1.00	1.00	35	0	31.5	0	1.10	1.00	112640.03	20927.12
3-16	1.00	1.00	35	0	31.5	0	1.10	1.00	112924.14	20927.12
4-1	1.00	1.00	35	0	31.5	0	1.10	1.00	113131.38	17631.51
4-2	1.00	1.00	35	0	31.5	0	1.10	1.00	113035.56	17631.51
4-3	1.00	1.00	35	0	31.5	0	1.10	1.00	113120.8	17631.51
4-4	1.00	1.00	35	0	31.5	0	1.10	1.00	113058.96	17631.51
4-5	1.00	1.00	35	0	31.5	0	1.10	1.00	113022.75	17631.51
4-6	1.00	1.00	35	0	31.5	0	1.10	1.00	112869.55	17631.51
4-7	1.00	1.00	35	0	31.5	0	1.10	1.00	113045.03	17631.51
4-8	1.00	1.00	35	0	31.5	0	1.10	1.00	112853.95	17631.51
4-9	1.00	1.00	35	0	31.5	0	1.10	1.00	113149.77	17631.51
4-10	1.00	1.00	35	0	31.5	0	1.10	1.00	113030.55	17631.51
4-11	1.00	1.00	35	0	31.5	0	1.10	1.00	113139.74	17631.51
4-12	1.00	1.00	35	0	31.5	0	1.10	1.00	113053.39	17631.51
4-13	1.00	1.00	35	0	31.5	0	1.10	1.00	113401.01	17631.51
4-14	1.00	1.00	35	0	31.5	0	1.10	1.00	112862.31	17631.51
4-15	1.00	1.00	35	0	31.5	0	1.10	1.00	113421.07	17631.51
4-16	1.00	1.00	35	0	31.5	0	1.10	1.00	112847.27	17631.51
5-1	1.00	1.00	35	0	31.5	0	1.10	1.00	112736.96	20927.12
5-2	1.00	1.00	35	0	31.5	0	1.10	1.00	112795.46	20927.12
5-3	1.00	1.00	35	0	31.5	0	1.10	1.00	112738.08	20927.12
5-4	1.00	1.00	35	0	31.5	0	1.10	1.00	112790.44	20927.12
5-5	1.00	1.00	35	0	31.5	0	1.10	1.00	113011.05	20927.12
5-6	1.00	1.00	35	0	31.5	0	1.10	1.00	112720.81	20927.12
5-7	1.00	1.00	35	0	31.5	0	1.10	1.00	113003.81	20927.12
5-8	1.00	1.00	35	0	31.5	0	1.10	1.00	112718.58	20927.12
5-9	1.00	1.00	35	0	31.5	0	1.10	1.00	112707.44	20927.12
5-10	1.00	1.00	35	0	31.5	0	1.10	1.00	112646.71	20927.12
5-11	1.00	1.00	35	0	31.5	0	1.10	1.00	112709.11	20927.12
5-12	1.00	1.00	35	0	31.5	0	1.10	1.00	112641.7	20927.12
5-13	1.00	1.00	35	0	31.5	0	1.10	1.00	113076.23	20927.12
5-14	1.00	1.00	35	0	31.5	0	1.10	1.00	112700.75	20927.12
5-15	1.00	1.00	35	0	31.5	0	1.10	1.00	113068.99	20927.12
5-16	1.00	1.00	35	0	31.5	0	1.10	1.00	112698.52	20927.12

Segue il confronto fra la resistenza a scorrimento e l'azione applicata.

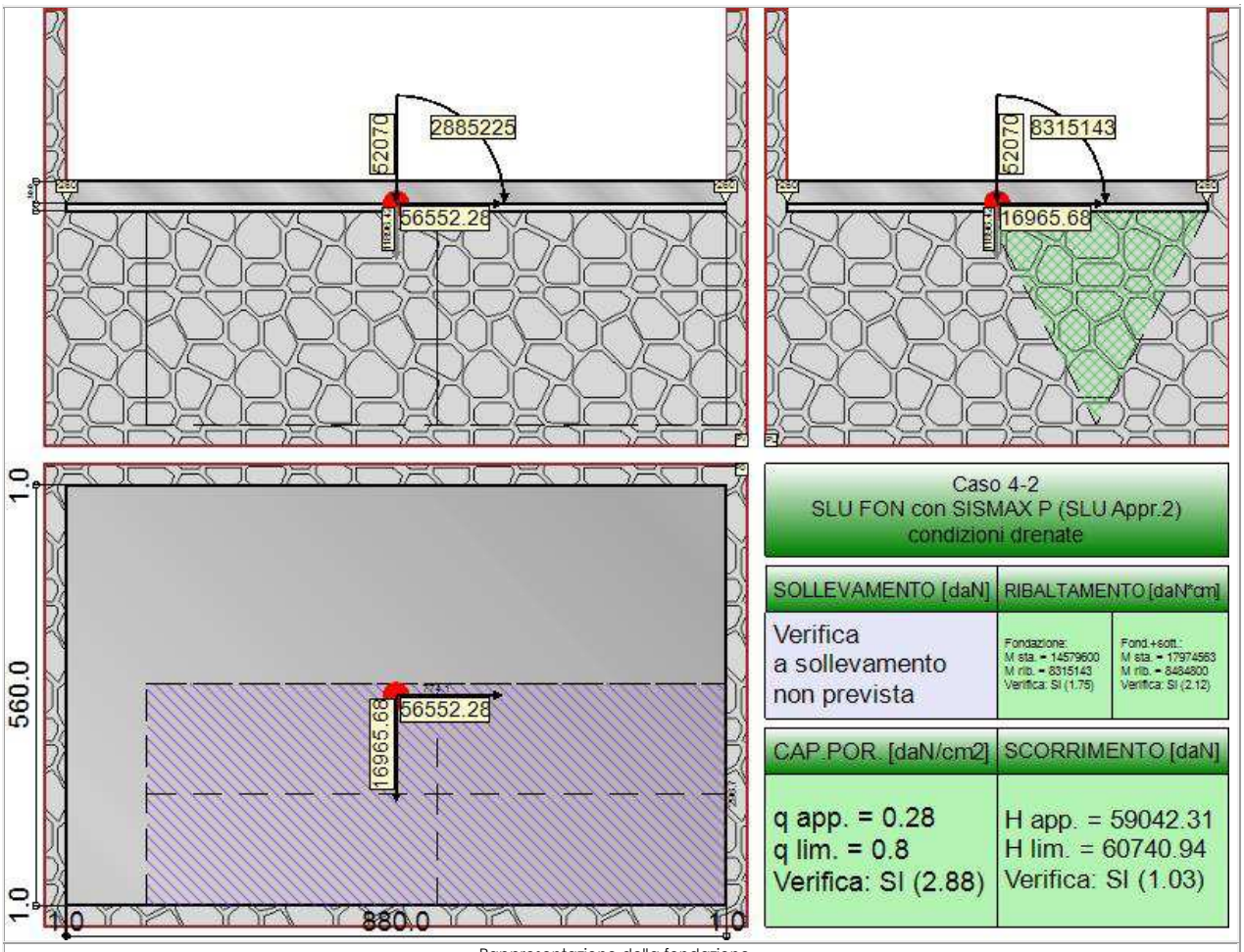
Caso	R_d [daN]	E_d [daN]	Verifica
1-1	169457.2	0	SI (169457.2/0 = 1.00 >= 1.0)
2-1	130821.9	106114.2	SI (130821.9/106114.2 = 1.23 >= 1.0)
2-2	130921.1	106114.2	SI (130921.1/106114.2 = 1.23 >= 1.0)
2-3	130810.8	106114.2	SI (130810.8/106114.2 = 1.23 >= 1.0)
2-4	130934.5	106114.2	SI (130934.5/106114.2 = 1.23 >= 1.0)

2-5	130970.1	106114.2	SI (130970.1/106114.2 = 1.23 >= 1.0)
2-6	130654.8	106114.2	SI (130654.8/106114.2 = 1.23 >= 1.0)
2-7	130984.6	106114.2	SI (130984.6/106114.2 = 1.23 >= 1.0)
2-8	130640.3	106114.2	SI (130640.3/106114.2 = 1.23 >= 1.0)
2-9	130845.9	106114.2	SI (130845.9/106114.2 = 1.23 >= 1.0)
2-10	130925	106114.2	SI (130925/106114.2 = 1.23 >= 1.0)
2-11	130834.8	106114.2	SI (130834.8/106114.2 = 1.23 >= 1.0)
2-12	130938.4	106114.2	SI (130938.4/106114.2 = 1.23 >= 1.0)
2-13	130943.9	106114.2	SI (130943.9/106114.2 = 1.23 >= 1.0)
2-14	130649.2	106114.2	SI (130649.2/106114.2 = 1.23 >= 1.0)
2-15	130958.4	106114.2	SI (130958.4/106114.2 = 1.23 >= 1.0)
2-16	130635.3	106114.2	SI (130635.3/106114.2 = 1.23 >= 1.0)
3-1	134275.2	106114.2	SI (134275.2/106114.2 = 1.27 >= 1.0)
3-2	134259.1	106114.2	SI (134259.1/106114.2 = 1.27 >= 1.0)
3-3	134277.4	106114.2	SI (134277.4/106114.2 = 1.27 >= 1.0)
3-4	134255.2	106114.2	SI (134255.2/106114.2 = 1.27 >= 1.0)
3-5	133518.7	106114.2	SI (133518.7/106114.2 = 1.26 >= 1.0)
3-6	133867.4	106114.2	SI (133867.4/106114.2 = 1.26 >= 1.0)
3-7	133850.1	106114.2	SI (133850.1/106114.2 = 1.26 >= 1.0)
3-8	133865.2	106114.2	SI (133865.2/106114.2 = 1.26 >= 1.0)
3-9	133888.6	106114.2	SI (133888.6/106114.2 = 1.26 >= 1.0)
3-10	133781.6	106114.2	SI (133781.6/106114.2 = 1.26 >= 1.0)
3-11	133890.8	106114.2	SI (133890.8/106114.2 = 1.26 >= 1.0)
3-12	133778.3	106114.2	SI (133778.3/106114.2 = 1.26 >= 1.0)
3-13	133573.3	106114.2	SI (133573.3/106114.2 = 1.26 >= 1.0)
3-14	133853.5	106114.2	SI (133853.5/106114.2 = 1.26 >= 1.0)
3-15	133567.1	106114.2	SI (133567.1/106114.2 = 1.26 >= 1.0)
3-16	133851.3	106114.2	SI (133851.3/106114.2 = 1.26 >= 1.0)
4-1	130762.9	116725.7	SI (130762.9/116725.7 = 1.12 >= 1.0)
4-2	130667.1	116725.7	SI (130667.1/116725.7 = 1.12 >= 1.0)
4-3	130752.3	116725.7	SI (130752.3/116725.7 = 1.12 >= 1.0)
4-4	130690.5	116725.7	SI (130690.5/116725.7 = 1.12 >= 1.0)
4-5	130654.3	116725.7	SI (130654.3/116725.7 = 1.12 >= 1.0)
4-6	130501.1	116725.7	SI (130501.1/116725.7 = 1.12 >= 1.0)
4-7	130676.5	116725.7	SI (130676.5/116725.7 = 1.12 >= 1.0)
4-8	130485.5	116725.7	SI (130485.5/116725.7 = 1.12 >= 1.0)
4-9	130781.3	116725.7	SI (130781.3/116725.7 = 1.12 >= 1.0)
4-10	130662.1	116725.7	SI (130662.1/116725.7 = 1.12 >= 1.0)
4-11	130771.2	116725.7	SI (130771.2/116725.7 = 1.12 >= 1.0)
4-12	130684.9	116725.7	SI (130684.9/116725.7 = 1.12 >= 1.0)
4-13	131032.5	116725.7	SI (131032.5/116725.7 = 1.12 >= 1.0)
4-14	130493.8	116725.7	SI (130493.8/116725.7 = 1.12 >= 1.0)
4-15	131052.6	116725.7	SI (131052.6/116725.7 = 1.12 >= 1.0)
4-16	130478.8	116725.7	SI (130478.8/116725.7 = 1.12 >= 1.0)
5-1	133664.1	116725.7	SI (133664.1/116725.7 = 1.15 >= 1.0)
5-2	133722.6	116725.7	SI (133722.6/116725.7 = 1.15 >= 1.0)
5-3	133665.2	116725.7	SI (133665.2/116725.7 = 1.15 >= 1.0)
5-4	133717.6	116725.7	SI (133717.6/116725.7 = 1.15 >= 1.0)
5-5	133938.2	116725.7	SI (133938.2/116725.7 = 1.15 >= 1.0)
5-6	133647.9	116725.7	SI (133647.9/116725.7 = 1.14 >= 1.0)
5-7	133930.9	116725.7	SI (133930.9/116725.7 = 1.15 >= 1.0)
5-8	133645.7	116725.7	SI (133645.7/116725.7 = 1.14 >= 1.0)
5-9	133634.6	116725.7	SI (133634.6/116725.7 = 1.14 >= 1.0)
5-10	133573.8	116725.7	SI (133573.8/116725.7 = 1.14 >= 1.0)
5-11	133636.2	116725.7	SI (133636.2/116725.7 = 1.14 >= 1.0)

5-12	133568.8	116725.7	SI (133568.8/116725.7 = 1.14 >= 1.0)
5-13	134003.3	116725.7	SI (134003.3/116725.7 = 1.15 >= 1.0)
5-14	133627.9	116725.7	SI (133627.9/116725.7 = 1.14 >= 1.0)
5-15	133996.1	116725.7	SI (133996.1/116725.7 = 1.15 >= 1.0)
5-16	133625.6	116725.7	SI (133625.6/116725.7 = 1.14 >= 1.0)

15.2 Opera di presa

Valutazione della stabilità, capacità portante e resistenza a scorrimento di una fondazione superficiale (MACROGUSCIO_ID2).



Rappresentazione della fondazione.

Descrizione dei Casi di calcolo e riassunto dei risultati.

Segue il riassunto dei Casi di calcolo analizzati. I dettagli di ciascun Caso (sollecitazioni, verifiche, ecc.) sono specificati nei paragrafi successivi.

Indici e nomi dei casi di carico			Elenco delle verifiche eseguite per ciascun caso				Sisma
Caso	Nome	Sestetti	Ver. dren.	Ver. non dren.	Ver. equ.	Ver. upl.	Coef. sism.
1	SLU SENZA SISMA (SLU Appr.2)	1-1	Si	No	Si	No	Non sismico
1-1 Caso 1-1							
2	SLU con SISMAX PRINC (SLU Appr.2)	da 2-1 a 2-16	Si	No	Si	No	$k_{h,x}$= 0.08, $k_{h,y}$= 0.08

2-1 Caso 4-1; 2-2 Caso 4-2; 2-3 Caso 4-3; 2-4 Caso 4-4; 2-5 Caso 4-5; 2-6 Caso 4-6; 2-7 Caso 4-7; 2-8 Caso 4-8; 2-9 Caso 4-9; 2-10 Caso 4-10; 2-11 Caso 4-11; 2-12 Caso 4-12; 2-13 Caso 4-13; 2-14 Caso 4-14; 2-15 Caso 4-15; 2-16 Caso 4-16							
3	SLU con SISMAY PRINC (SLU Appr.2)	da 3-1 a 3-16	Si	No	Si	No	$k_{h,x}$= 0.00, $k_{h,y}$= 0.69
3-1 Caso 5-1; 3-2 Caso 5-2; 3-3 Caso 5-3; 3-4 Caso 5-4; 3-9 Caso 5-9; 3-10 Caso 5-10; 3-11 Caso 5-11; 3-12 Caso 5-12; 3-13 Caso 5-13; 3-14 Caso 5-14; 3-15 Caso 5-15; 3-16 Caso 5-16							
4	SLU FON con SISMAX P (SLU Appr.2)	da 4-1 a 4-16	Si	No	Si	No	$k_{h,x}$= 0.69, $k_{h,y}$= 0.00
4-1 Caso 8-1; 4-2 Caso 8-2; 4-3 Caso 8-3; 4-4 Caso 8-4; 4-5 Caso 8-5; 4-6 Caso 8-6; 4-7 Caso 8-7; 4-8 Caso 8-8; 4-9 Caso 8-9; 4-10 Caso 8-10; 4-11 Caso 8-11; 4-12 Caso 8-12; 4-13 Caso 8-13; 4-14 Caso 8-14; 4-15 Caso 8-15; 4-16 Caso 8-16							
5	SLU FON con SISMAY P (SLU Appr.2)	da 5-1 a 5-16	Si	No	Si	No	$k_{h,x}$= 0.00, $k_{h,y}$= 0.69
5-1 Caso 9-1; 5-2 Caso 9-2; 5-3 Caso 9-3; 5-4 Caso 9-4; 5-5 Caso 9-5; 5-6 Caso 9-6; 5-7 Caso 9-7; 5-8 Caso 9-8; 5-9 Caso 9-9; 5-10 Caso 9-10; 5-11 Caso 9-11; 5-12 Caso 9-12; 5-13 Caso 9-13; 5-14 Caso 9-14; 5-15 Caso 9-15; 5-16 Caso 9-16							

La seguente tabella elenca i coefficienti di sicurezza parziali, applicati alle caratteristiche meccaniche del terreno, alla capacità portante, alla resistenza a scorrimento e del terreno, per ciascun Caso di calcolo.

Caso	$\gamma_{G1,fav}$	$\gamma_{G1,sfa}$	$\gamma_{G2,fav}$	$\gamma_{G2,sfa}$	$\gamma_{Qi,fav}$	$\gamma_{Qi,sfa}$	γ_{γ}	γ_{φ}	$\gamma_{c'}$	$\gamma_{R;v}$	$\gamma_{R;h}$	$\gamma_{R;e}$	$\gamma_{R;equ}$	$\gamma_{R;upl}$
1	1.00	1.30	0.00	1.50	0.00	1.50	1.00	1.00	1.00	2.30	1.10	1.00	-	-
2	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.30	1.10	1.00	-	-
3	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.30	1.10	1.00	-	-
4	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.30	1.10	1.00	-	-
5	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.30	1.10	1.00	-	-

Segue la tabella riassuntiva di tutte le verifiche a **ribaltamento**.

	Fondazione			Fondazione e Sottofondo		
Caso	R_d [daN*cm]	E_d [daN*cm]	Verifica	R_d [daN*cm]	E_d [daN*cm]	Verifica
1-1	26170760	11122050	SI (26170760/11122050 = 2.35 >= 1.0)	30609990	11122050	SI (30609990/11122050 = 2.75 >= 1.0)
2-1	16484720	4116670	SI (16484720/4116670 = 4.00 >= 1.0)	20040720	4116670	SI (20040720/4116670 = 4.87 >= 1.0)
2-2	14703360	8105030	SI (14703360/8105030 = 1.81 >= 1.0)	18098760	8259270	SI (18098760/8259270 = 2.19 >= 1.0)
2-3	16497880	4101810	SI (16497880/4101810 = 4.02 >= 1.0)	20053930	4101810	SI (20053930/4101810 = 4.89 >= 1.0)
2-4	14717080	8090420	SI (14717080/8090420 = 1.82 >= 1.0)	18112530	8244660	SI (18112530/8244660 = 2.20 >= 1.0)
2-5	26964520	12084050	SI (26964520/12084050 = 2.23 >= 1.0)	32272120	12598160	SI (32272120/12598160 = 2.56 >= 1.0)
2-6	15374800	7919120	SI (15374800/7919120 = 1.94 >= 1.0)	18772600	8073360	SI (18772600/8073360 = 2.33 >= 1.0)
2-7	26986080	12104240	SI (26986080/12104240 = 2.23 >= 1.0)	32293730	12618360	SI (32293730/12618360 = 2.56 >= 1.0)
2-8	15393840	7906660	SI (15393840/7906660 = 1.95 >= 1.0)	18791710	8060900	SI (18791710/8060900 = 2.33 >= 1.0)
2-9	16479680	4099310	SI (16479680/4099310 = 4.02 >= 1.0)	20035660	4099310	SI (20035660/4099310 = 4.89 >= 1.0)
2-10	14711200	8095300	SI (14711200/8095300 = 1.82 >= 1.0)	18106630	8249540	SI (18106630/8249540 = 2.19 >= 1.0)
2-11	16492840	4084450	SI (16492840/4084450 = 4.04 >= 1.0)	20048870	4084450	SI (20048870/4084450 = 4.91 >= 1.0)
2-12	14724920	8080700	SI (14724920/8080700 = 1.82 >= 1.0)	18120400	8234930	SI (18120400/8234930 = 2.20 >= 1.0)
2-13	26976840	12103300	SI (26976840/12103300 = 2.23 >= 1.0)	32284470	12617420	SI (32284470/12617420 = 2.56 >= 1.0)
2-14	15375640	7906460	SI (15375640/7906460 = 1.94 >= 1.0)	18773450	8060700	SI (18773450/8060700 = 2.33 >= 1.0)
2-15	26998400	12123500	SI (26998400/12123500 = 2.23 >= 1.0)	32306080	12637610	SI (32306080/12637610 = 2.56 >= 1.0)
2-16	15394680	7894000	SI (15394680/7894000 = 1.95 >= 1.0)	18792550	8048240	SI (18792550/8048240 = 2.33 >= 1.0)
3-1	29640600	7093400	SI (29640600/7093400 = 4.18 >= 1.0)	35108520	7093400	SI (35108520/7093400 = 4.95 >= 1.0)
3-2	29998760	10466380	SI (29998760/10466380 = 2.87 >= 1.0)	35313260	10620610	SI (35313260/10620610 = 3.32 >= 1.0)
3-3	29642800	7096340	SI (29642800/7096340 = 4.18 >= 1.0)	35110720	7096340	SI (35110720/7096340 = 4.95 >= 1.0)
3-4	29999200	10472690	SI (29999200/10472690 = 2.86 >= 1.0)	35313700	10626920	SI (35313700/10626920 = 3.32 >= 1.0)
3-5	0	0	SI (0/0 = 1.00 >= 1.0)	3342890	0	SI (3342890/0 = 1.00 >= 1.0)
3-6	0	0	SI (0/0 = 1.00 >= 1.0)	3342890	0	SI (3342890/0 = 1.00 >= 1.0)
3-7	0	0	SI (0/0 = 1.00 >= 1.0)	3342890	0	SI (3342890/0 = 1.00 >= 1.0)
3-8	0	0	SI (0/0 = 1.00 >= 1.0)	3342890	0	SI (3342890/0 = 1.00 >= 1.0)
3-9	29642800	7197810	SI (29642800/7197810 = 4.12 >= 1.0)	35110720	7197810	SI (35110720/7197810 = 4.88 >= 1.0)
3-10	30083680	10520260	SI (30083680/10520260 = 2.86 >= 1.0)	35398370	10674490	SI (35398370/10674490 = 3.32 >= 1.0)

3-11	29644560	7200750	SI (29644560/7200750 = 4.12 >= 1.0)	35112490	7200750	SI (35112490/7200750 = 4.88 >= 1.0)
3-12	30083680	10526700	SI (30083680/10526700 = 2.86 >= 1.0)	35398370	10680930	SI (35398370/10680930 = 3.31 >= 1.0)
3-13	0	0	SI (0/0 = 1.00 >= 1.0)	3342890	0	SI (3342890/0 = 1.00 >= 1.0)
3-14	0	0	SI (0/0 = 1.00 >= 1.0)	3342890	0	SI (3342890/0 = 1.00 >= 1.0)
3-15	0	0	SI (0/0 = 1.00 >= 1.0)	3342890	0	SI (3342890/0 = 1.00 >= 1.0)
3-16	0	0	SI (0/0 = 1.00 >= 1.0)	3342890	0	SI (3342890/0 = 1.00 >= 1.0)
4-1	16537640	3909890	SI (16537640/3909890 = 4.23 >= 1.0)	20109250	3909890	SI (20109250/3909890 = 5.14 >= 1.0)
4-2	14579600	8315140	SI (14579600/8315140 = 1.75 >= 1.0)	17974560	8484800	SI (17974560/8484800 = 2.12 >= 1.0)
4-3	16552480	3893970	SI (16552480/3893970 = 4.25 >= 1.0)	20124150	3893970	SI (20124150/3893970 = 5.17 >= 1.0)
4-4	14594720	8299080	SI (14594720/8299080 = 1.76 >= 1.0)	17989740	8468730	SI (17989740/8468730 = 2.12 >= 1.0)
4-5	27191560	12761230	SI (27191560/12761230 = 2.13 >= 1.0)	32499680	13326750	SI (32499680/13326750 = 2.44 >= 1.0)
4-6	15396080	8144610	SI (15396080/8144610 = 1.89 >= 1.0)	18793960	8314260	SI (18793960/8314260 = 2.26 >= 1.0)
4-7	27206520	12791390	SI (27206520/12791390 = 2.13 >= 1.0)	32514670	13356910	SI (32514670/13356910 = 2.43 >= 1.0)
4-8	15417360	8131020	SI (15417360/8131020 = 1.90 >= 1.0)	18815310	8300680	SI (18815310/8300680 = 2.27 >= 1.0)
4-9	16535120	3893410	SI (16535120/3893410 = 4.25 >= 1.0)	20106720	3893410	SI (20106720/3893410 = 5.16 >= 1.0)
4-10	14588280	8304440	SI (14588280/8304440 = 1.76 >= 1.0)	17983270	8474100	SI (17983270/8474100 = 2.12 >= 1.0)
4-11	16550240	3877490	SI (16550240/3877490 = 4.27 >= 1.0)	20121900	3877490	SI (20121900/3877490 = 5.19 >= 1.0)
4-12	14603400	8288370	SI (14603400/8288370 = 1.76 >= 1.0)	17998450	8458030	SI (17998450/8458030 = 2.13 >= 1.0)
4-13	27200800	12786160	SI (27200800/12786160 = 2.13 >= 1.0)	32508940	13351690	SI (32508940/13351690 = 2.43 >= 1.0)
4-14	15407000	8121310	SI (15407000/8121310 = 1.90 >= 1.0)	18804920	8290970	SI (18804920/8290970 = 2.27 >= 1.0)
4-15	27216200	12816320	SI (27216200/12816320 = 2.12 >= 1.0)	32524370	13381850	SI (32524370/13381850 = 2.43 >= 1.0)
4-16	15426880	8109080	SI (15426880/8109080 = 1.90 >= 1.0)	18824870	8278740	SI (18824870/8278740 = 2.27 >= 1.0)
5-1	30163320	7443980	SI (30163320/7443980 = 4.05 >= 1.0)	35647850	7443980	SI (35647850/7443980 = 4.79 >= 1.0)
5-2	30383320	11013000	SI (30383320/11013000 = 2.76 >= 1.0)	35698690	11182660	SI (35698690/11182660 = 3.19 >= 1.0)
5-3	30165520	7447100	SI (30165520/7447100 = 4.05 >= 1.0)	35650050	7447100	SI (35650050/7447100 = 4.79 >= 1.0)
5-4	30385960	11020070	SI (30385960/11020070 = 2.76 >= 1.0)	35701340	11189730	SI (35701340/11189730 = 3.19 >= 1.0)
5-5	0	0	SI (0/0 = 1.00 >= 1.0)	3342890	0	SI (3342890/0 = 1.00 >= 1.0)
5-6	0	0	SI (0/0 = 1.00 >= 1.0)	3342890	0	SI (3342890/0 = 1.00 >= 1.0)
5-7	0	0	SI (0/0 = 1.00 >= 1.0)	3342890	0	SI (3342890/0 = 1.00 >= 1.0)
5-8	0	0	SI (0/0 = 1.00 >= 1.0)	3342890	0	SI (3342890/0 = 1.00 >= 1.0)
5-9	0	0	SI (0/0 = 1.00 >= 1.0)	3342890	0	SI (3342890/0 = 1.00 >= 1.0)
5-10	0	0	SI (0/0 = 1.00 >= 1.0)	3342890	0	SI (3342890/0 = 1.00 >= 1.0)
5-11	30341960	7494640	SI (30341960/7494640 = 4.05 >= 1.0)	35826900	7494640	SI (35826900/7494640 = 4.78 >= 1.0)
5-12	30510920	11030240	SI (30510920/11030240 = 2.77 >= 1.0)	35826580	11199900	SI (35826580/11199900 = 3.20 >= 1.0)
5-13	0	0	SI (0/0 = 1.00 >= 1.0)	3342890	0	SI (3342890/0 = 1.00 >= 1.0)
5-14	0	0	SI (0/0 = 1.00 >= 1.0)	3342890	0	SI (3342890/0 = 1.00 >= 1.0)
5-15	0	0	SI (0/0 = 1.00 >= 1.0)	3342890	0	SI (3342890/0 = 1.00 >= 1.0)
5-16	0	0	SI (0/0 = 1.00 >= 1.0)	3342890	0	SI (3342890/0 = 1.00 >= 1.0)

Segue la tabella riassuntiva di tutte le verifiche di **capacità portante**, i dettagli sono riportati nei paragrafi successivi.

	Cond. drenate			Cond. non drenate		
Caso	E_d [daN]	R_d [daN]	Verifica	E_d [daN]	R_d [daN]	Verifica
1-1	108932.3	5980393.3	SI (5980393.3/108932.3 = 54.90 >= 1.0)	Verifica non richiesta.		
2-1	70770.4	747554.7	SI (747554.7/70770.4 = 10.56 >= 1.0)	Verifica non richiesta.		
2-2	64408.4	333457.5	SI (333457.5/64408.4 = 5.18 >= 1.0)	Verifica non richiesta.		
2-3	70817.4	750614.7	SI (750614.7/70817.4 = 10.60 >= 1.0)	Verifica non richiesta.		
2-4	64457.4	335467	SI (335467/64457.4 = 5.20 >= 1.0)	Verifica non richiesta.		
2-5	73179.4	518310.5	SI (518310.5/73179.4 = 7.08 >= 1.0)	Verifica non richiesta.		
2-6	66806.4	283265.4	SI (283265.4/66806.4 = 4.24 >= 1.0)	Verifica non richiesta.		
2-7	73228.4	519759.7	SI (519759.7/73228.4 = 7.10 >= 1.0)	Verifica non richiesta.		
2-8	66874.4	284866.2	SI (284866.2/66874.4 = 4.26 >= 1.0)	Verifica non richiesta.		
2-9	70752.4	747640.8	SI (747640.8/70752.4 = 10.57 >= 1.0)	Verifica non richiesta.		
2-10	64436.4	334753.8	SI (334753.8/64436.4 = 5.20 >= 1.0)	Verifica non richiesta.		
2-11	70799.4	750702.1	SI (750702.1/70799.4 = 10.60 >= 1.0)	Verifica non richiesta.		

2-12	64485.4	336767.5	SI (336767.5/64485.4 = 5.22 >= 1.0)	Verifica non richiesta.
2-13	73207.4	518977.5	SI (518977.5/73207.4 = 7.09 >= 1.0)	Verifica non richiesta.
2-14	66809.4	283161.1	SI (283161.1/66809.4 = 4.24 >= 1.0)	Verifica non richiesta.
2-15	73256.4	520427.1	SI (520427.1/73256.4 = 7.10 >= 1.0)	Verifica non richiesta.
2-16	66877.4	284761.3	SI (284761.3/66877.4 = 4.26 >= 1.0)	Verifica non richiesta.
3-1	79261.4	914785.7	SI (914785.7/79261.4 = 11.54 >= 1.0)	Verifica non richiesta.
3-2	80075.4	865773.3	SI (865773.3/80075.4 = 10.81 >= 1.0)	Verifica non richiesta.
3-3	79266.4	914725.6	SI (914725.6/79266.4 = 11.54 >= 1.0)	Verifica non richiesta.
3-4	80076.4	865401.9	SI (865401.9/80076.4 = 10.81 >= 1.0)	Verifica non richiesta.
3-5	11896.4	9989182.7	SI (9989182.7/11896.4 = 839.68 >= 1.0)	Verifica non richiesta.
3-6	11896.4	9989182.7	SI (9989182.7/11896.4 = 839.68 >= 1.0)	Verifica non richiesta.
3-7	11896.4	9989182.7	SI (9989182.7/11896.4 = 839.68 >= 1.0)	Verifica non richiesta.
3-8	11896.4	9989182.7	SI (9989182.7/11896.4 = 839.68 >= 1.0)	Verifica non richiesta.
3-9	79266.4	907420.9	SI (907420.9/79266.4 = 11.45 >= 1.0)	Verifica non richiesta.
3-10	80268.4	869287.6	SI (869287.6/80268.4 = 10.83 >= 1.0)	Verifica non richiesta.
3-11	79270.4	907323.1	SI (907323.1/79270.4 = 11.45 >= 1.0)	Verifica non richiesta.
3-12	80268.4	868869.7	SI (868869.7/80268.4 = 10.82 >= 1.0)	Verifica non richiesta.
3-13	11896.4	9989182.7	SI (9989182.7/11896.4 = 839.68 >= 1.0)	Verifica non richiesta.
3-14	11896.4	9989182.7	SI (9989182.7/11896.4 = 839.68 >= 1.0)	Verifica non richiesta.
3-15	11896.4	9989182.7	SI (9989182.7/11896.4 = 839.68 >= 1.0)	Verifica non richiesta.
3-16	11896.4	9989182.7	SI (9989182.7/11896.4 = 839.68 >= 1.0)	Verifica non richiesta.
4-1	70959.4	505850.7	SI (505850.7/70959.4 = 7.13 >= 1.0)	Verifica non richiesta.
4-2	63966.4	184108.7	SI (184108.7/63966.4 = 2.88 >= 1.0)	Verifica non richiesta.
4-3	71012.4	508481.9	SI (508481.9/71012.4 = 7.16 >= 1.0)	Verifica non richiesta.
4-4	64020.4	185626	SI (185626/64020.4 = 2.90 >= 1.0)	Verifica non richiesta.
4-5	73695.4	354058.6	SI (354058.6/73695.4 = 4.80 >= 1.0)	Verifica non richiesta.
4-6	66882.4	173197.8	SI (173197.8/66882.4 = 2.59 >= 1.0)	Verifica non richiesta.
4-7	73729.4	354744.4	SI (354744.4/73729.4 = 4.81 >= 1.0)	Verifica non richiesta.
4-8	66958.4	174530	SI (174530/66958.4 = 2.61 >= 1.0)	Verifica non richiesta.
4-9	70950.4	506081.5	SI (506081.5/70950.4 = 7.13 >= 1.0)	Verifica non richiesta.
4-10	63997.4	185072.8	SI (185072.8/63997.4 = 2.89 >= 1.0)	Verifica non richiesta.
4-11	71004.4	508748.1	SI (508748.1/71004.4 = 7.17 >= 1.0)	Verifica non richiesta.
4-12	64051.4	186594.5	SI (186594.5/64051.4 = 2.91 >= 1.0)	Verifica non richiesta.
4-13	73716.4	354362.4	SI (354362.4/73716.4 = 4.81 >= 1.0)	Verifica non richiesta.
4-14	66921.4	173727.3	SI (173727.3/66921.4 = 2.60 >= 1.0)	Verifica non richiesta.
4-15	73751.4	355073.2	SI (355073.2/73751.4 = 4.81 >= 1.0)	Verifica non richiesta.
4-16	66992.4	174974.8	SI (174974.8/66992.4 = 2.61 >= 1.0)	Verifica non richiesta.
5-1	80449.4	665664.3	SI (665664.3/80449.4 = 8.27 >= 1.0)	Verifica non richiesta.
5-2	80949.4	618513	SI (618513/80949.4 = 7.64 >= 1.0)	Verifica non richiesta.
5-3	80454.4	665637.2	SI (665637.2/80454.4 = 8.27 >= 1.0)	Verifica non richiesta.
5-4	80955.4	618415.4	SI (618415.4/80955.4 = 7.64 >= 1.0)	Verifica non richiesta.
5-5	11896.4	9989182.7	SI (9989182.7/11896.4 = 839.68 >= 1.0)	Verifica non richiesta.
5-6	11896.4	9989182.7	SI (9989182.7/11896.4 = 839.68 >= 1.0)	Verifica non richiesta.
5-7	11896.4	9989182.7	SI (9989182.7/11896.4 = 839.68 >= 1.0)	Verifica non richiesta.
5-8	11896.4	9989182.7	SI (9989182.7/11896.4 = 839.68 >= 1.0)	Verifica non richiesta.
5-9	11896.4	9989182.7	SI (9989182.7/11896.4 = 839.68 >= 1.0)	Verifica non richiesta.
5-10	11896.4	9989182.7	SI (9989182.7/11896.4 = 839.68 >= 1.0)	Verifica non richiesta.
5-11	80855.4	678025.7	SI (678025.7/80855.4 = 8.39 >= 1.0)	Verifica non richiesta.
5-12	81239.4	625843	SI (625843/81239.4 = 7.70 >= 1.0)	Verifica non richiesta.
5-13	11896.4	9989182.7	SI (9989182.7/11896.4 = 839.68 >= 1.0)	Verifica non richiesta.
5-14	11896.4	9989182.7	SI (9989182.7/11896.4 = 839.68 >= 1.0)	Verifica non richiesta.
5-15	11896.4	9989182.7	SI (9989182.7/11896.4 = 839.68 >= 1.0)	Verifica non richiesta.
5-16	11896.4	9989182.7	SI (9989182.7/11896.4 = 839.68 >= 1.0)	Verifica non richiesta.

Segue la tabella riassuntiva di tutte le verifiche di **resistenza a scorrimento**, i dettagli sono riportati nei paragrafi successivi.

	Cond. drenate			Cond. non drenate		
Caso	E_d [daN]	R_d [daN]	Verifica	E_d [daN]	R_d [daN]	Verifica
1-1	0	48835.9	SI (48835.9/0 = 1.00 >= 1.0)	Verifica non richiesta.		
2-1	53674.8	63791.3	SI (63791.3/53674.8 = 1.19 >= 1.0)	Verifica non richiesta.		
2-2	53674.8	60939.1	SI (60939.1/53674.8 = 1.14 >= 1.0)	Verifica non richiesta.		
2-3	53674.8	63812.3	SI (63812.3/53674.8 = 1.19 >= 1.0)	Verifica non richiesta.		
2-4	53674.8	60961.1	SI (60961.1/53674.8 = 1.14 >= 1.0)	Verifica non richiesta.		
2-5	53674.8	64871.3	SI (64871.3/53674.8 = 1.21 >= 1.0)	Verifica non richiesta.		
2-6	53674.8	62014.1	SI (62014.1/53674.8 = 1.16 >= 1.0)	Verifica non richiesta.		
2-7	53674.8	64893.2	SI (64893.2/53674.8 = 1.21 >= 1.0)	Verifica non richiesta.		
2-8	53674.8	62044.6	SI (62044.6/53674.8 = 1.16 >= 1.0)	Verifica non richiesta.		
2-9	53674.8	63783.2	SI (63783.2/53674.8 = 1.19 >= 1.0)	Verifica non richiesta.		
2-10	53674.8	60951.6	SI (60951.6/53674.8 = 1.14 >= 1.0)	Verifica non richiesta.		
2-11	53674.8	63804.3	SI (63804.3/53674.8 = 1.19 >= 1.0)	Verifica non richiesta.		
2-12	53674.8	60973.6	SI (60973.6/53674.8 = 1.14 >= 1.0)	Verifica non richiesta.		
2-13	53674.8	64883.8	SI (64883.8/53674.8 = 1.21 >= 1.0)	Verifica non richiesta.		
2-14	53674.8	62015.5	SI (62015.5/53674.8 = 1.16 >= 1.0)	Verifica non richiesta.		
2-15	53674.8	64905.8	SI (64905.8/53674.8 = 1.21 >= 1.0)	Verifica non richiesta.		
2-16	53674.8	62046	SI (62046/53674.8 = 1.16 >= 1.0)	Verifica non richiesta.		
3-1	53674.8	76307	SI (76307/53674.8 = 1.42 >= 1.0)	Verifica non richiesta.		
3-2	53674.8	76671.9	SI (76671.9/53674.8 = 1.43 >= 1.0)	Verifica non richiesta.		
3-3	53674.8	76309.3	SI (76309.3/53674.8 = 1.42 >= 1.0)	Verifica non richiesta.		
3-4	53674.8	76672.4	SI (76672.4/53674.8 = 1.43 >= 1.0)	Verifica non richiesta.		
3-5	0	5333.3	SI (5333.3/0 = 1.00 >= 1.0)	Verifica non richiesta.		
3-6	0	5333.3	SI (5333.3/0 = 1.00 >= 1.0)	Verifica non richiesta.		
3-7	0	5333.3	SI (5333.3/0 = 1.00 >= 1.0)	Verifica non richiesta.		
3-8	0	5333.3	SI (5333.3/0 = 1.00 >= 1.0)	Verifica non richiesta.		
3-9	53674.8	76309.3	SI (76309.3/53674.8 = 1.42 >= 1.0)	Verifica non richiesta.		
3-10	53674.8	76758.5	SI (76758.5/53674.8 = 1.43 >= 1.0)	Verifica non richiesta.		
3-11	53674.8	76311.1	SI (76311.1/53674.8 = 1.42 >= 1.0)	Verifica non richiesta.		
3-12	53674.8	76758.5	SI (76758.5/53674.8 = 1.43 >= 1.0)	Verifica non richiesta.		
3-13	0	5333.3	SI (5333.3/0 = 1.00 >= 1.0)	Verifica non richiesta.		
3-14	0	5333.3	SI (5333.3/0 = 1.00 >= 1.0)	Verifica non richiesta.		
3-15	0	5333.3	SI (5333.3/0 = 1.00 >= 1.0)	Verifica non richiesta.		
3-16	0	5333.3	SI (5333.3/0 = 1.00 >= 1.0)	Verifica non richiesta.		
4-1	59042.3	63876	SI (63876/59042.3 = 1.08 >= 1.0)	Verifica non richiesta.		
4-2	59042.3	60740.9	SI (60740.9/59042.3 = 1.03 >= 1.0)	Verifica non richiesta.		
4-3	59042.3	63899.8	SI (63899.8/59042.3 = 1.08 >= 1.0)	Verifica non richiesta.		
4-4	59042.3	60765.1	SI (60765.1/59042.3 = 1.03 >= 1.0)	Verifica non richiesta.		
4-5	59042.3	65102.6	SI (65102.6/59042.3 = 1.10 >= 1.0)	Verifica non richiesta.		
4-6	59042.3	62048.2	SI (62048.2/59042.3 = 1.05 >= 1.0)	Verifica non richiesta.		
4-7	59042.3	65117.8	SI (65117.8/59042.3 = 1.10 >= 1.0)	Verifica non richiesta.		
4-8	59042.3	62082.3	SI (62082.3/59042.3 = 1.05 >= 1.0)	Verifica non richiesta.		
4-9	59042.3	63872	SI (63872/59042.3 = 1.08 >= 1.0)	Verifica non richiesta.		
4-10	59042.3	60754.8	SI (60754.8/59042.3 = 1.03 >= 1.0)	Verifica non richiesta.		
4-11	59042.3	63896.2	SI (63896.2/59042.3 = 1.08 >= 1.0)	Verifica non richiesta.		
4-12	59042.3	60779	SI (60779/59042.3 = 1.03 >= 1.0)	Verifica non richiesta.		
4-13	59042.3	65112	SI (65112/59042.3 = 1.10 >= 1.0)	Verifica non richiesta.		
4-14	59042.3	62065.7	SI (62065.7/59042.3 = 1.05 >= 1.0)	Verifica non richiesta.		
4-15	59042.3	65127.7	SI (65127.7/59042.3 = 1.10 >= 1.0)	Verifica non richiesta.		
4-16	59042.3	62097.5	SI (62097.5/59042.3 = 1.05 >= 1.0)	Verifica non richiesta.		
5-1	59042.3	76839.6	SI (76839.6/59042.3 = 1.30 >= 1.0)	Verifica non richiesta.		
5-2	59042.3	77063.8	SI (77063.8/59042.3 = 1.31 >= 1.0)	Verifica non richiesta.		
5-3	59042.3	76841.9	SI (76841.9/59042.3 = 1.30 >= 1.0)	Verifica non richiesta.		
5-4	59042.3	77066.5	SI (77066.5/59042.3 = 1.31 >= 1.0)	Verifica non richiesta.		

5-5	0	5333.3	SI (5333.3/0 = 1.00 >= 1.0)	Verifica non richiesta.
5-6	0	5333.3	SI (5333.3/0 = 1.00 >= 1.0)	Verifica non richiesta.
5-7	0	5333.3	SI (5333.3/0 = 1.00 >= 1.0)	Verifica non richiesta.
5-8	0	5333.3	SI (5333.3/0 = 1.00 >= 1.0)	Verifica non richiesta.
5-9	0	5333.3	SI (5333.3/0 = 1.00 >= 1.0)	Verifica non richiesta.
5-10	0	5333.3	SI (5333.3/0 = 1.00 >= 1.0)	Verifica non richiesta.
5-11	59042.3	77021.6	SI (77021.6/59042.3 = 1.30 >= 1.0)	Verifica non richiesta.
5-12	59042.3	77193.8	SI (77193.8/59042.3 = 1.31 >= 1.0)	Verifica non richiesta.
5-13	0	5333.3	SI (5333.3/0 = 1.00 >= 1.0)	Verifica non richiesta.
5-14	0	5333.3	SI (5333.3/0 = 1.00 >= 1.0)	Verifica non richiesta.
5-15	0	5333.3	SI (5333.3/0 = 1.00 >= 1.0)	Verifica non richiesta.
5-16	0	5333.3	SI (5333.3/0 = 1.00 >= 1.0)	Verifica non richiesta.

Descrizione del metodo di calcolo.

Il calcolo della capacità portante viene eseguito secondo la formula trinomia, considerando separatamente i contributi dovuti alla coesione, al sovraccarico laterale ed al peso del terreno.

Per le verifiche in condizioni drenate, si utilizzano i coefficienti di capacità portante Nq (Prandtl, 1921), Nc (Reissner, 1924), N_γ (Vesic, 1973), i coefficienti correttivi dovuti alla forma della fondazione (s, Meyerhof, 1951 e 1963), all'approfondimento (d, Brinch Hansen, 1970), all'inclinazione del carico (i, Vesic, 1973), all'inclinazione del piano di posa (b, Vesic, 1973), all'inclinazione del piano campagna (g, Vesic, 1973), e all'azione sismica (h - Maugeri e Novità, 2004 - applicato al solo coefficiente Nγ).

Nel caso di terreno eterogeneo (litologie differenti, presenza di falda), i parametri meccanici utilizzati nel calcolo sono ottenuti come media ponderata dei valori rinvenuti all'interno del cuneo di rottura.

La resistenza a scorrimento, viene ottenuta sommando i contributi del carico normale al piano di posa moltiplicato per il coefficiente d'attrito, e dell'area del piano di posa (eventualmente ridotta per carico verticale eccentrico) per l'adesione fondazione-terreno. In condizioni drenate, l'attrito fondazione terreno è assunto pari all'angolo di resistenza al taglio del terreno moltiplicato per il coefficiente 0.75, l'adesione fondazione terreno è trascurata (assunta pari a 0). Si considera il contributo della pressione del terreno a lato della fondazione. La resistenza laterale del terreno è assunta pari alla resistenza passiva disponibile moltiplicata per 0.50.

Descrizione **della fondazione.**

La fondazione ha piano di posa rettangolare, con lato X di 882 [cm], lato Y di 562 [cm], e centro alla quota z = -270 [cm]. Il piano di posa è orizzontale.

Descrizione del terreno.

La stratigrafia è omogenea, presenta un solo strato							
n.	nome	z_i [cm]	z_f [cm]	γ_d [daN/cm³]	γ_t [daN/cm³]	c' [daN/cm²]	φ' [°]
1	SubstratoRoccioso	0	-1690	0.0022	0.0022	0	35

La stratigrafia non contiene una falda

Verifiche in condizioni drenate.

Sollecitazioni al piano di posa.

Si riportano di seguito le componenti della sollecitazione applicata e la distanza del punto di applicazione dal centro del piano di posa della fondazione.

Rispetto al sistema di rif. globale:								
Caso	Fx [daN]	Fy [daN]	Fz [daN]	Mx [daN*cm]	My [daN*cm]	dx [cm]	dy [cm]	dz [cm]
1-1	0	0	-108932.34	11122048	-6693622	0	0	10
2-1	51411.16	15423.35	-70770.42	4116672	-252907	0	0	10
2-2	51411.16	-15423.35	-64408.42	8105032	2170524	0	0	10
2-3	51411.16	15423.35	-70817.42	4101813	-272382	0	0	10

2-4	51411.16	-15423.35	-64457.42	8090425	2150327	0	0	10
2-5	-51411.16	15423.35	-73179.42	3927149	-12084048	0	0	10
2-6	-51411.16	-15423.35	-66806.42	7919123	-9688625	0	0	10
2-7	-51411.16	15423.35	-73228.42	3912541	-12104244	0	0	10
2-8	-51411.16	-15423.35	-66874.42	7906662	-9702160	0	0	10
2-9	51411.16	15423.35	-70752.42	4099308	-254922	0	0	10
2-10	51411.16	-15423.35	-64436.42	8095304	2151268	0	0	10
2-11	51411.16	15423.35	-70799.42	4084449	-274398	0	0	10
2-12	51411.16	-15423.35	-64485.42	8080697	2131071	0	0	10
2-13	-51411.16	15423.35	-73207.42	3917421	-12103304	0	0	10
2-14	-51411.16	-15423.35	-66809.42	7906464	-9717109	0	0	10
2-15	-51411.16	15423.35	-73256.42	3902813	-12123500	0	0	10
2-16	-51411.16	-15423.35	-66877.42	7894003	-9730644	0	0	10
3-1	15423.35	51411.16	-79261.42	-523538	-7093404	0	0	10
3-2	-15423.35	51411.16	-80075.42	-545170	-10466379	0	0	10
3-3	15423.35	51411.16	-79266.42	-526646	-7096339	0	0	10
3-4	-15423.35	51411.16	-80076.42	-549851	-10472691	0	0	10
3-5	0	0	-11896.42	0	0	0	0	10
3-6	0	0	-11896.42	0	0	0	0	10
3-7	0	0	-11896.42	0	0	0	0	10
3-8	0	0	-11896.42	0	0	0	0	10
3-9	15423.35	51411.16	-79266.42	-612438	-7197813	0	0	10
3-10	-15423.35	51411.16	-80268.42	-583561	-10520260	0	0	10
3-11	15423.35	51411.16	-79270.42	-615547	-7200748	0	0	10
3-12	-15423.35	51411.16	-80268.42	-588357	-10526696	0	0	10
3-13	0	0	-11896.42	0	0	0	0	10
3-14	0	0	-11896.42	0	0	0	0	10
3-15	0	0	-11896.42	0	0	0	0	10
3-16	0	0	-11896.42	0	0	0	0	10
4-1	56552.28	16965.68	-70959.42	3909893	182676	0	0	10
4-2	56552.28	-16965.68	-63966.42	8315143	2885225	0	0	10
4-3	56552.28	16965.68	-71012.42	3893973	160630	0	0	10
4-4	56552.28	-16965.68	-64020.42	8299075	2863009	0	0	10
4-5	-56552.28	16965.68	-73695.42	3740102	-12761229	0	0	10
4-6	-56552.28	-16965.68	-66882.42	8144607	-10058164	0	0	10
4-7	-56552.28	16965.68	-73729.42	3719152	-12791389	0	0	10
4-8	-56552.28	-16965.68	-66958.42	8131022	-10073174	0	0	10
4-9	56552.28	16965.68	-70950.42	3893409	177725	0	0	10
4-10	56552.28	-16965.68	-63997.42	8304442	2864043	0	0	10
4-11	56552.28	16965.68	-71004.42	3877490	155680	0	0	10
4-12	56552.28	-16965.68	-64051.42	8288374	2841827	0	0	10
4-13	-56552.28	16965.68	-73716.42	3727095	-12786164	0	0	10
4-14	-56552.28	-16965.68	-66921.42	8121313	-10101133	0	0	10
4-15	-56552.28	16965.68	-73751.42	3706145	-12816323	0	0	10
4-16	-56552.28	-16965.68	-66992.42	8109083	-10114381	0	0	10
5-1	16965.68	56552.28	-80449.42	-1167816	-7443982	0	0	10
5-2	-16965.68	56552.28	-80949.42	-1261325	-11013000	0	0	10
5-3	16965.68	56552.28	-80454.42	-1171026	-7447096	0	0	10
5-4	-16965.68	56552.28	-80955.42	-1265413	-11020072	0	0	10
5-5	0	0	-11896.42	0	0	0	0	10
5-6	0	0	-11896.42	0	0	0	0	10
5-7	0	0	-11896.42	0	0	0	0	10
5-8	0	0	-11896.42	0	0	0	0	10
5-9	0	0	-11896.42	0	0	0	0	10
5-10	0	0	-11896.42	0	0	0	0	10

5-11	16965.68	56552.28	-80855.42	-1167786	-7494644	0	0	10
5-12	-16965.68	56552.28	-81239.42	-1289106	-11030243	0	0	10
5-13	0	0	-11896.42	0	0	0	0	10
5-14	0	0	-11896.42	0	0	0	0	10
5-15	0	0	-11896.42	0	0	0	0	10
5-16	0	0	-11896.42	0	0	0	0	10
Rispetto al sistema di rif. locale (centro piano di posa):								
Caso	Hx [daN]	Hy [daN]	Vz [daN]	Mx [daN*cm]	My [daN*cm]	dx [cm]	dy [cm]	dz [cm]
1-1	0	0	-108932.34	11122048	-6693622	-	-	-
2-1	51411.16	15423.35	-70770.42	3962438	261205	-	-	-
2-2	51411.16	-15423.35	-64408.42	8259266	2684636	-	-	-
2-3	51411.16	15423.35	-70817.42	3947580	241730	-	-	-
2-4	51411.16	-15423.35	-64457.42	8244658	2664439	-	-	-
2-5	-51411.16	15423.35	-73179.42	3772916	-12598160	-	-	-
2-6	-51411.16	-15423.35	-66806.42	8073356	-10202737	-	-	-
2-7	-51411.16	15423.35	-73228.42	3758308	-12618356	-	-	-
2-8	-51411.16	-15423.35	-66874.42	8060896	-10216272	-	-	-
2-9	51411.16	15423.35	-70752.42	3945074	259190	-	-	-
2-10	51411.16	-15423.35	-64436.42	8249538	2665380	-	-	-
2-11	51411.16	15423.35	-70799.42	3930216	239714	-	-	-
2-12	51411.16	-15423.35	-64485.42	8234930	2645183	-	-	-
2-13	-51411.16	15423.35	-73207.42	3763188	-12617416	-	-	-
2-14	-51411.16	-15423.35	-66809.42	8060698	-10231221	-	-	-
2-15	-51411.16	15423.35	-73256.42	3748580	-12637612	-	-	-
2-16	-51411.16	-15423.35	-66877.42	8048236	-10244756	-	-	-
3-1	15423.35	51411.16	-79261.42	-1037650	-6939170	-	-	-
3-2	-15423.35	51411.16	-80075.42	-1059282	-10620612	-	-	-
3-3	15423.35	51411.16	-79266.42	-1040758	-6942106	-	-	-
3-4	-15423.35	51411.16	-80076.42	-1063963	-10626924	-	-	-
3-5	0	0	-11896.42	0	0	-	-	-
3-6	0	0	-11896.42	0	0	-	-	-
3-7	0	0	-11896.42	0	0	-	-	-
3-8	0	0	-11896.42	0	0	-	-	-
3-9	15423.35	51411.16	-79266.42	-1126550	-7043580	-	-	-
3-10	-15423.35	51411.16	-80268.42	-1097673	-10674494	-	-	-
3-11	15423.35	51411.16	-79270.42	-1129659	-7046514	-	-	-
3-12	-15423.35	51411.16	-80268.42	-1102469	-10680930	-	-	-
3-13	0	0	-11896.42	0	0	-	-	-
3-14	0	0	-11896.42	0	0	-	-	-
3-15	0	0	-11896.42	0	0	-	-	-
3-16	0	0	-11896.42	0	0	-	-	-
4-1	56552.28	16965.68	-70959.42	3740236	748199	-	-	-
4-2	56552.28	-16965.68	-63966.42	8484800	3450748	-	-	-
4-3	56552.28	16965.68	-71012.42	3724316	726153	-	-	-
4-4	56552.28	-16965.68	-64020.42	8468732	3428532	-	-	-
4-5	-56552.28	16965.68	-73695.42	3570445	-13326752	-	-	-
4-6	-56552.28	-16965.68	-66882.42	8314264	-10623687	-	-	-
4-7	-56552.28	16965.68	-73729.42	3549495	-13356912	-	-	-
4-8	-56552.28	-16965.68	-66958.42	8300679	-10638697	-	-	-
4-9	56552.28	16965.68	-70950.42	3723752	743248	-	-	-
4-10	56552.28	-16965.68	-63997.42	8474099	3429566	-	-	-
4-11	56552.28	16965.68	-71004.42	3707833	721203	-	-	-
4-12	56552.28	-16965.68	-64051.42	8458031	3407350	-	-	-
4-13	-56552.28	16965.68	-73716.42	3557438	-13351687	-	-	-
4-14	-56552.28	-16965.68	-66921.42	8290970	-10666656	-	-	-

4-15	-56552.28	16965.68	-73751.42	3536488	-13381846	-	-	-
4-16	-56552.28	-16965.68	-66992.42	8278740	-10679904	-	-	-
5-1	16965.68	56552.28	-80449.42	-1733339	-7274325	-	-	-
5-2	-16965.68	56552.28	-80949.42	-1826848	-11182657	-	-	-
5-3	16965.68	56552.28	-80454.42	-1736549	-7277439	-	-	-
5-4	-16965.68	56552.28	-80955.42	-1830936	-11189729	-	-	-
5-5	0	0	-11896.42	0	0	-	-	-
5-6	0	0	-11896.42	0	0	-	-	-
5-7	0	0	-11896.42	0	0	-	-	-
5-8	0	0	-11896.42	0	0	-	-	-
5-9	0	0	-11896.42	0	0	-	-	-
5-10	0	0	-11896.42	0	0	-	-	-
5-11	16965.68	56552.28	-80855.42	-1733309	-7324987	-	-	-
5-12	-16965.68	56552.28	-81239.42	-1854629	-11199900	-	-	-
5-13	0	0	-11896.42	0	0	-	-	-
5-14	0	0	-11896.42	0	0	-	-	-
5-15	0	0	-11896.42	0	0	-	-	-
5-16	0	0	-11896.42	0	0	-	-	-

Le sollecitazioni applicate provocano un' eccentricità lungo X (max = 181.45 [cm]) e lungo Y (max = 132.64 [cm]), percio' le verifiche vengono eseguite sulla fondazione ridotta rettangolare.

Caso	ecc. X [cm]	ecc. Y [cm]	Asse B	Asse L
1-1	61.45	102.1	asse Y	asse X
2-1	3.69	55.99	asse Y	asse X
2-2	41.68	128.23	asse Y	asse X
2-3	3.41	55.74	asse Y	asse X
2-4	41.34	127.91	asse Y	asse X
2-5	172.15	51.56	asse Y	asse X
2-6	152.72	120.85	asse Y	asse X
2-7	172.32	51.32	asse Y	asse X
2-8	152.77	120.54	asse Y	asse X
2-9	3.66	55.76	asse Y	asse X
2-10	41.36	128.03	asse Y	asse X
2-11	3.39	55.51	asse Y	asse X
2-12	41.02	127.7	asse Y	asse X
2-13	172.35	51.4	asse Y	asse X
2-14	153.14	120.65	asse Y	asse X
2-15	172.51	51.17	asse Y	asse X
2-16	153.19	120.34	asse Y	asse X
3-1	87.55	13.09	asse Y	asse X
3-2	132.63	13.23	asse Y	asse X
3-3	87.58	13.13	asse Y	asse X
3-4	132.71	13.29	asse Y	asse X
3-5	0	0	asse Y	asse X
3-6	0	0	asse Y	asse X
3-7	0	0	asse Y	asse X
3-8	0	0	asse Y	asse X
3-9	88.86	14.21	asse Y	asse X
3-10	132.98	13.68	asse Y	asse X
3-11	88.89	14.25	asse Y	asse X
3-12	133.07	13.73	asse Y	asse X
3-13	0	0	asse Y	asse X
3-14	0	0	asse Y	asse X
3-15	0	0	asse Y	asse X

3-16	0	0	asse Y	asse X
4-1	10.54	52.71	asse Y	asse X
4-2	53.95	132.64	asse Y	asse X
4-3	10.23	52.45	asse Y	asse X
4-4	53.55	132.28	asse Y	asse X
4-5	180.84	48.45	asse Y	asse X
4-6	158.84	124.31	asse Y	asse X
4-7	181.16	48.14	asse Y	asse X
4-8	158.89	123.97	asse Y	asse X
4-9	10.48	52.48	asse Y	asse X
4-10	53.59	132.41	asse Y	asse X
4-11	10.16	52.22	asse Y	asse X
4-12	53.2	132.05	asse Y	asse X
4-13	181.12	48.26	asse Y	asse X
4-14	159.39	123.89	asse Y	asse X
4-15	181.45	47.95	asse Y	asse X
4-16	159.42	123.58	asse Y	asse X
5-1	90.42	21.55	asse Y	asse X
5-2	138.14	22.57	asse Y	asse X
5-3	90.45	21.58	asse Y	asse X
5-4	138.22	22.62	asse Y	asse X
5-5	0	0	asse Y	asse X
5-6	0	0	asse Y	asse X
5-7	0	0	asse Y	asse X
5-8	0	0	asse Y	asse X
5-9	0	0	asse Y	asse X
5-10	0	0	asse Y	asse X
5-11	90.59	21.44	asse Y	asse X
5-12	137.86	22.83	asse Y	asse X
5-13	0	0	asse Y	asse X
5-14	0	0	asse Y	asse X
5-15	0	0	asse Y	asse X
5-16	0	0	asse Y	asse X

Capacità portante.

Le seguenti tabelle elencano il valore dell'angolo di resistenza al taglio, del peso di volume alleggerito, della coesione efficace, del sovraccarico alleggerito, e dei fattori e coefficienti introdotti nel calcolo della capacità portante.

Caso	γ_φ	γ_γ	φ [°]	γ' [daN/cm³]	N_γ	s_γ	d_γ	$i_{b\gamma}$	$i_{i\gamma}$	b_γ	g_γ	h_γ	$q'_{lim,\gamma}$ [daN/cm²]
1-1	1.00	1.00	35	0.0022	48.03	1.17	1.00	1.00	1.00	1.00	1.00	-	22.19
2-1	1.00	1.00	35	0.0022	48.03	1.19	1.00	0.52	0.05	1.00	1.00	0.59	0.42
2-2	1.00	1.00	35	0.0022	48.03	1.14	1.00	0.47	0.03	1.00	1.00	0.59	0.14
2-3	1.00	1.00	35	0.0022	48.03	1.19	1.00	0.52	0.05	1.00	1.00	0.59	0.42
2-4	1.00	1.00	35	0.0022	48.03	1.14	1.00	0.47	0.03	1.00	1.00	0.59	0.14
2-5	1.00	1.00	35	0.0022	48.03	1.31	1.00	0.55	0.05	1.00	1.00	0.59	0.52
2-6	1.00	1.00	35	0.0022	48.03	1.21	1.00	0.50	0.03	1.00	1.00	0.59	0.19
2-7	1.00	1.00	35	0.0022	48.03	1.32	1.00	0.55	0.05	1.00	1.00	0.59	0.53
2-8	1.00	1.00	35	0.0022	48.03	1.21	1.00	0.50	0.03	1.00	1.00	0.59	0.19
2-9	1.00	1.00	35	0.0022	48.03	1.19	1.00	0.52	0.05	1.00	1.00	0.59	0.42
2-10	1.00	1.00	35	0.0022	48.03	1.14	1.00	0.47	0.03	1.00	1.00	0.59	0.14
2-11	1.00	1.00	35	0.0022	48.03	1.19	1.00	0.52	0.05	1.00	1.00	0.59	0.42
2-12	1.00	1.00	35	0.0022	48.03	1.14	1.00	0.48	0.03	1.00	1.00	0.59	0.14
2-13	1.00	1.00	35	0.0022	48.03	1.32	1.00	0.55	0.05	1.00	1.00	0.59	0.53
2-14	1.00	1.00	35	0.0022	48.03	1.21	1.00	0.50	0.03	1.00	1.00	0.59	0.19
2-15	1.00	1.00	35	0.0022	48.03	1.32	1.00	0.55	0.05	1.00	1.00	0.59	0.53

2-16	1.00	1.00	35	0.0022	48.03	1.21	1.00	0.50	0.03	1.00	1.00	0.59	0.19
3-1	1.00	1.00	35	0.0022	48.03	1.28	1.00	0.07	0.59	1.00	1.00	0.50	0.72
3-2	1.00	1.00	35	0.0022	48.03	1.32	1.00	0.07	0.59	1.00	1.00	0.50	0.81
3-3	1.00	1.00	35	0.0022	48.03	1.28	1.00	0.07	0.59	1.00	1.00	0.50	0.72
3-4	1.00	1.00	35	0.0022	48.03	1.32	1.00	0.07	0.59	1.00	1.00	0.50	0.81
3-5	1.00	1.00	35	0.0022	48.03	1.24	1.00	1.00	1.00	1.00	1.00	0.50	18.16
3-6	1.00	1.00	35	0.0022	48.03	1.24	1.00	1.00	1.00	1.00	1.00	0.50	18.16
3-7	1.00	1.00	35	0.0022	48.03	1.24	1.00	1.00	1.00	1.00	1.00	0.50	18.16
3-8	1.00	1.00	35	0.0022	48.03	1.24	1.00	1.00	1.00	1.00	1.00	0.50	18.16
3-9	1.00	1.00	35	0.0022	48.03	1.28	1.00	0.07	0.59	1.00	1.00	0.50	0.72
3-10	1.00	1.00	35	0.0022	48.03	1.32	1.00	0.07	0.59	1.00	1.00	0.50	0.82
3-11	1.00	1.00	35	0.0022	48.03	1.28	1.00	0.07	0.59	1.00	1.00	0.50	0.72
3-12	1.00	1.00	35	0.0022	48.03	1.32	1.00	0.07	0.59	1.00	1.00	0.50	0.82
3-13	1.00	1.00	35	0.0022	48.03	1.24	1.00	1.00	1.00	1.00	1.00	0.50	18.16
3-14	1.00	1.00	35	0.0022	48.03	1.24	1.00	1.00	1.00	1.00	1.00	0.50	18.16
3-15	1.00	1.00	35	0.0022	48.03	1.24	1.00	1.00	1.00	1.00	1.00	0.50	18.16
3-16	1.00	1.00	35	0.0022	48.03	1.24	1.00	1.00	1.00	1.00	1.00	0.50	18.16
4-1	1.00	1.00	35	0.0022	48.03	1.20	1.00	0.48	0.02	1.00	1.00	0.50	0.16
4-2	1.00	1.00	35	0.0022	48.03	1.14	1.00	0.43	0.01	1.00	1.00	0.50	0.03
4-3	1.00	1.00	35	0.0022	48.03	1.20	1.00	0.48	0.02	1.00	1.00	0.50	0.17
4-4	1.00	1.00	35	0.0022	48.03	1.14	1.00	0.43	0.01	1.00	1.00	0.50	0.03
4-5	1.00	1.00	35	0.0022	48.03	1.33	1.00	0.52	0.03	1.00	1.00	0.50	0.23
4-6	1.00	1.00	35	0.0022	48.03	1.20	1.00	0.46	0.01	1.00	1.00	0.50	0.06
4-7	1.00	1.00	35	0.0022	48.03	1.33	1.00	0.52	0.03	1.00	1.00	0.50	0.23
4-8	1.00	1.00	35	0.0022	48.03	1.21	1.00	0.46	0.01	1.00	1.00	0.50	0.06
4-9	1.00	1.00	35	0.0022	48.03	1.20	1.00	0.48	0.02	1.00	1.00	0.50	0.16
4-10	1.00	1.00	35	0.0022	48.03	1.14	1.00	0.43	0.01	1.00	1.00	0.50	0.03
4-11	1.00	1.00	35	0.0022	48.03	1.20	1.00	0.48	0.02	1.00	1.00	0.50	0.17
4-12	1.00	1.00	35	0.0022	48.03	1.14	1.00	0.43	0.01	1.00	1.00	0.50	0.03
4-13	1.00	1.00	35	0.0022	48.03	1.33	1.00	0.52	0.03	1.00	1.00	0.50	0.23
4-14	1.00	1.00	35	0.0022	48.03	1.21	1.00	0.46	0.01	1.00	1.00	0.50	0.06
4-15	1.00	1.00	35	0.0022	48.03	1.33	1.00	0.52	0.03	1.00	1.00	0.50	0.23
4-16	1.00	1.00	35	0.0022	48.03	1.21	1.00	0.46	0.01	1.00	1.00	0.50	0.06
5-1	1.00	1.00	35	0.0022	48.03	1.27	1.00	0.04	0.56	1.00	1.00	0.50	0.43
5-2	1.00	1.00	35	0.0022	48.03	1.31	1.00	0.05	0.56	1.00	1.00	0.50	0.47
5-3	1.00	1.00	35	0.0022	48.03	1.27	1.00	0.04	0.56	1.00	1.00	0.50	0.43
5-4	1.00	1.00	35	0.0022	48.03	1.31	1.00	0.05	0.56	1.00	1.00	0.50	0.47
5-5	1.00	1.00	35	0.0022	48.03	1.24	1.00	1.00	1.00	1.00	1.00	0.50	18.16
5-6	1.00	1.00	35	0.0022	48.03	1.24	1.00	1.00	1.00	1.00	1.00	0.50	18.16
5-7	1.00	1.00	35	0.0022	48.03	1.24	1.00	1.00	1.00	1.00	1.00	0.50	18.16
5-8	1.00	1.00	35	0.0022	48.03	1.24	1.00	1.00	1.00	1.00	1.00	0.50	18.16
5-9	1.00	1.00	35	0.0022	48.03	1.24	1.00	1.00	1.00	1.00	1.00	0.50	18.16
5-10	1.00	1.00	35	0.0022	48.03	1.24	1.00	1.00	1.00	1.00	1.00	0.50	18.16
5-11	1.00	1.00	35	0.0022	48.03	1.27	1.00	0.05	0.56	1.00	1.00	0.50	0.44
5-12	1.00	1.00	35	0.0022	48.03	1.31	1.00	0.05	0.56	1.00	1.00	0.50	0.48
5-13	1.00	1.00	35	0.0022	48.03	1.24	1.00	1.00	1.00	1.00	1.00	0.50	18.16
5-14	1.00	1.00	35	0.0022	48.03	1.24	1.00	1.00	1.00	1.00	1.00	0.50	18.16
5-15	1.00	1.00	35	0.0022	48.03	1.24	1.00	1.00	1.00	1.00	1.00	0.50	18.16
5-16	1.00	1.00	35	0.0022	48.03	1.24	1.00	1.00	1.00	1.00	1.00	0.50	18.16

Caso	$\gamma_{c'}$	c' [daN/cm²]	N_c	s_c	d_c	i_{bc}	i_{ic}	b_c	g_c	h_c	$q'_{lim,c}$ [daN/cm²]
1-1	1.00	0	46.12	1.35	1.20	1.00	1.00	1.00	1.00	-	0
2-1	1.00	0	46.12	1.38	1.16	0.65	0.15	1.00	1.00	1.00	0
2-2	1.00	0	46.12	1.28	1.23	0.61	0.10	1.00	1.00	1.00	0
2-3	1.00	0	46.12	1.38	1.16	0.65	0.15	1.00	1.00	1.00	0
2-4	1.00	0	46.12	1.28	1.23	0.61	0.10	1.00	1.00	1.00	0

2-5	1.00	0	46.12	1.63	1.15	0.69	0.14	1.00	1.00	1.00	0
2-6	1.00	0	46.12	1.41	1.22	0.64	0.11	1.00	1.00	1.00	0
2-7	1.00	0	46.12	1.63	1.15	0.69	0.14	1.00	1.00	1.00	0
2-8	1.00	0	46.12	1.41	1.22	0.64	0.11	1.00	1.00	1.00	0
2-9	1.00	0	46.12	1.38	1.16	0.65	0.15	1.00	1.00	1.00	0
2-10	1.00	0	46.12	1.28	1.23	0.61	0.10	1.00	1.00	1.00	0
2-11	1.00	0	46.12	1.38	1.16	0.65	0.15	1.00	1.00	1.00	0
2-12	1.00	0	46.12	1.28	1.23	0.61	0.10	1.00	1.00	1.00	0
2-13	1.00	0	46.12	1.63	1.15	0.69	0.14	1.00	1.00	1.00	0
2-14	1.00	0	46.12	1.41	1.22	0.64	0.11	1.00	1.00	1.00	0
2-15	1.00	0	46.12	1.63	1.15	0.69	0.14	1.00	1.00	1.00	0
2-16	1.00	0	46.12	1.41	1.22	0.64	0.11	1.00	1.00	1.00	0
3-1	1.00	0	46.12	1.56	1.13	0.17	0.73	1.00	1.00	1.00	0
3-2	1.00	0	46.12	1.64	1.13	0.18	0.72	1.00	1.00	1.00	0
3-3	1.00	0	46.12	1.56	1.13	0.17	0.73	1.00	1.00	1.00	0
3-4	1.00	0	46.12	1.64	1.13	0.18	0.72	1.00	1.00	1.00	0
3-5	1.00	0	46.12	1.47	1.13	1.00	1.00	1.00	1.00	1.00	0
3-6	1.00	0	46.12	1.47	1.13	1.00	1.00	1.00	1.00	1.00	0
3-7	1.00	0	46.12	1.47	1.13	1.00	1.00	1.00	1.00	1.00	0
3-8	1.00	0	46.12	1.47	1.13	1.00	1.00	1.00	1.00	1.00	0
3-9	1.00	0	46.12	1.56	1.13	0.17	0.73	1.00	1.00	1.00	0
3-10	1.00	0	46.12	1.64	1.13	0.18	0.72	1.00	1.00	1.00	0
3-11	1.00	0	46.12	1.56	1.13	0.17	0.73	1.00	1.00	1.00	0
3-12	1.00	0	46.12	1.64	1.13	0.18	0.72	1.00	1.00	1.00	0
3-13	1.00	0	46.12	1.47	1.13	1.00	1.00	1.00	1.00	1.00	0
3-14	1.00	0	46.12	1.47	1.13	1.00	1.00	1.00	1.00	1.00	0
3-15	1.00	0	46.12	1.47	1.13	1.00	1.00	1.00	1.00	1.00	0
3-16	1.00	0	46.12	1.47	1.13	1.00	1.00	1.00	1.00	1.00	0
4-1	1.00	0	46.12	1.39	1.16	0.63	0.09	1.00	1.00	1.00	0
4-2	1.00	0	46.12	1.28	1.24	0.58	0.03	1.00	1.00	1.00	0
4-3	1.00	0	46.12	1.39	1.16	0.63	0.09	1.00	1.00	1.00	0
4-4	1.00	0	46.12	1.28	1.24	0.58	0.04	1.00	1.00	1.00	0
4-5	1.00	0	46.12	1.66	1.15	0.66	0.09	1.00	1.00	1.00	0
4-6	1.00	0	46.12	1.41	1.23	0.61	0.05	1.00	1.00	1.00	0
4-7	1.00	0	46.12	1.66	1.15	0.66	0.09	1.00	1.00	1.00	0
4-8	1.00	0	46.12	1.41	1.23	0.61	0.05	1.00	1.00	1.00	0
4-9	1.00	0	46.12	1.39	1.16	0.63	0.09	1.00	1.00	1.00	0
4-10	1.00	0	46.12	1.28	1.24	0.58	0.04	1.00	1.00	1.00	0
4-11	1.00	0	46.12	1.39	1.15	0.63	0.09	1.00	1.00	1.00	0
4-12	1.00	0	46.12	1.28	1.24	0.58	0.04	1.00	1.00	1.00	0
4-13	1.00	0	46.12	1.66	1.15	0.66	0.09	1.00	1.00	1.00	0
4-14	1.00	0	46.12	1.41	1.23	0.61	0.05	1.00	1.00	1.00	0
4-15	1.00	0	46.12	1.66	1.15	0.66	0.09	1.00	1.00	1.00	0
4-16	1.00	0	46.12	1.41	1.23	0.61	0.05	1.00	1.00	1.00	0
5-1	1.00	0	46.12	1.55	1.14	0.12	0.70	1.00	1.00	1.00	0
5-2	1.00	0	46.12	1.63	1.14	0.13	0.70	1.00	1.00	1.00	0
5-3	1.00	0	46.12	1.55	1.14	0.12	0.70	1.00	1.00	1.00	0
5-4	1.00	0	46.12	1.63	1.14	0.13	0.70	1.00	1.00	1.00	0
5-5	1.00	0	46.12	1.47	1.13	1.00	1.00	1.00	1.00	1.00	0
5-6	1.00	0	46.12	1.47	1.13	1.00	1.00	1.00	1.00	1.00	0
5-7	1.00	0	46.12	1.47	1.13	1.00	1.00	1.00	1.00	1.00	0
5-8	1.00	0	46.12	1.47	1.13	1.00	1.00	1.00	1.00	1.00	0
5-9	1.00	0	46.12	1.47	1.13	1.00	1.00	1.00	1.00	1.00	0
5-10	1.00	0	46.12	1.47	1.13	1.00	1.00	1.00	1.00	1.00	0
5-11	1.00	0	46.12	1.55	1.14	0.12	0.71	1.00	1.00	1.00	0

5-12	1.00	0	46.12	1.63	1.14	0.13	0.70	1.00	1.00	1.00	0
5-13	1.00	0	46.12	1.47	1.13	1.00	1.00	1.00	1.00	1.00	0
5-14	1.00	0	46.12	1.47	1.13	1.00	1.00	1.00	1.00	1.00	0
5-15	1.00	0	46.12	1.47	1.13	1.00	1.00	1.00	1.00	1.00	0
5-16	1.00	0	46.12	1.47	1.13	1.00	1.00	1.00	1.00	1.00	0

Caso	q' [daN/cm²]	N_q	s_q	d_q	i_{bq}	i_{lq}	b_q	g_q	h_q	$q'_{lim,q}$ [daN/cm²]
1-1	0.59	33.30	1.17	1.19	1.00	1.00	1.00	1.00	-	27.68
2-1	0.59	33.30	1.19	1.15	0.66	0.18	1.00	1.00	1.00	3.18
2-2	0.59	33.30	1.14	1.23	0.62	0.13	1.00	1.00	1.00	2.24
2-3	0.59	33.30	1.19	1.15	0.67	0.18	1.00	1.00	1.00	3.18
2-4	0.59	33.30	1.14	1.22	0.62	0.13	1.00	1.00	1.00	2.24
2-5	0.59	33.30	1.31	1.15	0.69	0.17	1.00	1.00	1.00	3.54
2-6	0.59	33.30	1.21	1.21	0.65	0.14	1.00	1.00	1.00	2.57
2-7	0.59	33.30	1.32	1.15	0.69	0.17	1.00	1.00	1.00	3.54
2-8	0.59	33.30	1.21	1.21	0.65	0.14	1.00	1.00	1.00	2.58
2-9	0.59	33.30	1.19	1.15	0.66	0.18	1.00	1.00	1.00	3.17
2-10	0.59	33.30	1.14	1.22	0.62	0.13	1.00	1.00	1.00	2.24
2-11	0.59	33.30	1.19	1.15	0.67	0.18	1.00	1.00	1.00	3.18
2-12	0.59	33.30	1.14	1.22	0.62	0.13	1.00	1.00	1.00	2.25
2-13	0.59	33.30	1.32	1.15	0.69	0.17	1.00	1.00	1.00	3.54
2-14	0.59	33.30	1.21	1.21	0.65	0.14	1.00	1.00	1.00	2.57
2-15	0.59	33.30	1.32	1.15	0.70	0.17	1.00	1.00	1.00	3.55
2-16	0.59	33.30	1.21	1.21	0.65	0.14	1.00	1.00	1.00	2.58
3-1	0.59	33.30	1.28	1.13	0.19	0.73	1.00	1.00	1.00	4.06
3-2	0.59	33.30	1.32	1.13	0.21	0.73	1.00	1.00	1.00	4.45
3-3	0.59	33.30	1.28	1.13	0.19	0.73	1.00	1.00	1.00	4.06
3-4	0.59	33.30	1.32	1.13	0.21	0.73	1.00	1.00	1.00	4.45
3-5	0.59	33.30	1.24	1.12	1.00	1.00	1.00	1.00	1.00	27.42
3-6	0.59	33.30	1.24	1.12	1.00	1.00	1.00	1.00	1.00	27.42
3-7	0.59	33.30	1.24	1.12	1.00	1.00	1.00	1.00	1.00	27.42
3-8	0.59	33.30	1.24	1.12	1.00	1.00	1.00	1.00	1.00	27.42
3-9	0.59	33.30	1.28	1.13	0.19	0.73	1.00	1.00	1.00	4.06
3-10	0.59	33.30	1.32	1.13	0.21	0.73	1.00	1.00	1.00	4.48
3-11	0.59	33.30	1.28	1.13	0.19	0.73	1.00	1.00	1.00	4.06
3-12	0.59	33.30	1.32	1.13	0.21	0.73	1.00	1.00	1.00	4.48
3-13	0.59	33.30	1.24	1.12	1.00	1.00	1.00	1.00	1.00	27.42
3-14	0.59	33.30	1.24	1.12	1.00	1.00	1.00	1.00	1.00	27.42
3-15	0.59	33.30	1.24	1.12	1.00	1.00	1.00	1.00	1.00	27.42
3-16	0.59	33.30	1.24	1.12	1.00	1.00	1.00	1.00	1.00	27.42
4-1	0.59	33.30	1.20	1.15	0.64	0.12	1.00	1.00	1.00	2.02
4-2	0.59	33.30	1.14	1.23	0.59	0.06	1.00	1.00	1.00	1.04
4-3	0.59	33.30	1.20	1.15	0.64	0.12	1.00	1.00	1.00	2.03
4-4	0.59	33.30	1.14	1.23	0.59	0.06	1.00	1.00	1.00	1.05
4-5	0.59	33.30	1.33	1.15	0.67	0.12	1.00	1.00	1.00	2.37
4-6	0.59	33.30	1.20	1.22	0.62	0.08	1.00	1.00	1.00	1.42
4-7	0.59	33.30	1.33	1.15	0.67	0.12	1.00	1.00	1.00	2.37
4-8	0.59	33.30	1.21	1.22	0.62	0.08	1.00	1.00	1.00	1.44
4-9	0.59	33.30	1.20	1.15	0.64	0.12	1.00	1.00	1.00	2.02
4-10	0.59	33.30	1.14	1.23	0.59	0.06	1.00	1.00	1.00	1.05
4-11	0.59	33.30	1.20	1.15	0.64	0.12	1.00	1.00	1.00	2.03
4-12	0.59	33.30	1.14	1.23	0.59	0.06	1.00	1.00	1.00	1.06
4-13	0.59	33.30	1.33	1.15	0.67	0.12	1.00	1.00	1.00	2.37
4-14	0.59	33.30	1.21	1.22	0.62	0.08	1.00	1.00	1.00	1.43
4-15	0.59	33.30	1.33	1.15	0.67	0.12	1.00	1.00	1.00	2.37
4-16	0.59	33.30	1.21	1.22	0.62	0.08	1.00	1.00	1.00	1.44

5-1	0.59	33.30	1.27	1.13	0.15	0.71	1.00	1.00	1.00	3.01
5-2	0.59	33.30	1.31	1.13	0.16	0.71	1.00	1.00	1.00	3.3
5-3	0.59	33.30	1.27	1.13	0.15	0.71	1.00	1.00	1.00	3.01
5-4	0.59	33.30	1.31	1.13	0.16	0.71	1.00	1.00	1.00	3.3
5-5	0.59	33.30	1.24	1.12	1.00	1.00	1.00	1.00	1.00	27.42
5-6	0.59	33.30	1.24	1.12	1.00	1.00	1.00	1.00	1.00	27.42
5-7	0.59	33.30	1.24	1.12	1.00	1.00	1.00	1.00	1.00	27.42
5-8	0.59	33.30	1.24	1.12	1.00	1.00	1.00	1.00	1.00	27.42
5-9	0.59	33.30	1.24	1.12	1.00	1.00	1.00	1.00	1.00	27.42
5-10	0.59	33.30	1.24	1.12	1.00	1.00	1.00	1.00	1.00	27.42
5-11	0.59	33.30	1.27	1.13	0.15	0.71	1.00	1.00	1.00	3.07
5-12	0.59	33.30	1.31	1.13	0.16	0.71	1.00	1.00	1.00	3.34
5-13	0.59	33.30	1.24	1.12	1.00	1.00	1.00	1.00	1.00	27.42
5-14	0.59	33.30	1.24	1.12	1.00	1.00	1.00	1.00	1.00	27.42
5-15	0.59	33.30	1.24	1.12	1.00	1.00	1.00	1.00	1.00	27.42
5-16	0.59	33.30	1.24	1.12	1.00	1.00	1.00	1.00	1.00	27.42

Segue il confronto fra la pressione limite ed applicata.

Caso	$\gamma_{R;v}$	q'_{lim} [daN/cm^2]	A [cm^2]	R_d [daN]	E_d [daN]	Verifica
1-1	2.30	22.02	271606.98	5980393.3	108932.3	SI (5980393.3/108932.3 = 54.90 >= 1.0)
2-1	2.30	1.9	393595.64	747554.7	70770.4	SI (747554.7/70770.4 = 10.56 >= 1.0)
2-2	2.30	1.37	244011.26	333457.5	64408.4	SI (333457.5/64408.4 = 5.18 >= 1.0)
2-3	2.30	1.9	394277.66	750614.7	70817.4	SI (750614.7/70817.4 = 10.60 >= 1.0)
2-4	2.30	1.37	244740.21	335467	64457.4	SI (335467/64457.4 = 5.20 >= 1.0)
2-5	2.30	2.1	246738.89	518310.5	73179.4	SI (518310.5/73179.4 = 7.08 >= 1.0)
2-6	2.30	1.53	184675.02	283265.4	66806.4	SI (283265.4/66806.4 = 4.24 >= 1.0)
2-7	2.30	2.11	246842.96	519759.7	73228.4	SI (519759.7/73228.4 = 7.10 >= 1.0)
2-8	2.30	1.54	185001.35	284866.2	66874.4	SI (284866.2/66874.4 = 4.26 >= 1.0)
2-9	2.30	1.9	394024.83	747640.8	70752.4	SI (747640.8/70752.4 = 10.57 >= 1.0)
2-10	2.30	1.37	244535.35	334753.8	64436.4	SI (334753.8/64436.4 = 5.20 >= 1.0)
2-11	2.30	1.9	394707.03	750702.1	70799.4	SI (750702.1/70799.4 = 10.60 >= 1.0)
2-12	2.30	1.37	245264.28	336767.5	64485.4	SI (336767.5/64485.4 = 5.22 >= 1.0)
2-13	2.30	2.1	246721.9	518977.5	73207.4	SI (518977.5/73207.4 = 7.09 >= 1.0)
2-14	2.30	1.53	184630.71	283161.1	66809.4	SI (283161.1/66809.4 = 4.24 >= 1.0)
2-15	2.30	2.11	246825.66	520427.1	73256.4	SI (520427.1/73256.4 = 7.10 >= 1.0)
2-16	2.30	1.54	184956.51	284761.3	66877.4	SI (284761.3/66877.4 = 4.26 >= 1.0)
3-1	2.30	2.42	378771.31	914785.7	79261.4	SI (914785.7/79261.4 = 11.54 >= 1.0)
3-2	2.30	2.62	330287.92	865773.3	80075.4	SI (865773.3/80075.4 = 10.81 >= 1.0)
3-3	2.30	2.42	378683.29	914725.6	79266.4	SI (914725.6/79266.4 = 11.54 >= 1.0)
3-4	2.30	2.62	330133.38	865401.9	80076.4	SI (865401.9/80076.4 = 10.81 >= 1.0)
3-5	2.30	20.15	495684	9989182.7	11896.4	SI (9989182.7/11896.4 = 839.68 >= 1.0)
3-6	2.30	20.15	495684	9989182.7	11896.4	SI (9989182.7/11896.4 = 839.68 >= 1.0)
3-7	2.30	20.15	495684	9989182.7	11896.4	SI (9989182.7/11896.4 = 839.68 >= 1.0)
3-8	2.30	20.15	495684	9989182.7	11896.4	SI (9989182.7/11896.4 = 839.68 >= 1.0)
3-9	2.30	2.41	375787.09	907420.9	79266.4	SI (907420.9/79266.4 = 11.45 >= 1.0)
3-10	2.30	2.64	329360.43	869287.6	80268.4	SI (869287.6/80268.4 = 10.83 >= 1.0)
3-11	2.30	2.42	375698.14	907323.1	79270.4	SI (907323.1/79270.4 = 11.45 >= 1.0)
3-12	2.30	2.64	329201.1	868869.7	80268.4	SI (868869.7/80268.4 = 10.82 >= 1.0)
3-13	2.30	20.15	495684	9989182.7	11896.4	SI (9989182.7/11896.4 = 839.68 >= 1.0)
3-14	2.30	20.15	495684	9989182.7	11896.4	SI (9989182.7/11896.4 = 839.68 >= 1.0)
3-15	2.30	20.15	495684	9989182.7	11896.4	SI (9989182.7/11896.4 = 839.68 >= 1.0)
3-16	2.30	20.15	495684	9989182.7	11896.4	SI (9989182.7/11896.4 = 839.68 >= 1.0)
4-1	2.30	1.29	393076.01	505850.7	70959.4	SI (505850.7/70959.4 = 7.13 >= 1.0)
4-2	2.30	0.8	229686.06	184108.7	63966.4	SI (184108.7/63966.4 = 2.88 >= 1.0)

4-3	2.30	1.29	393820.77	508481.9	71012.4	SI (508481.9/71012.4 = 7.16 >= 1.0)
4-4	2.30	0.81	230481.35	185626	64020.4	SI (185626/64020.4 = 2.90 >= 1.0)
4-5	2.30	1.46	242006.34	354058.6	73695.4	SI (354058.6/73695.4 = 4.80 >= 1.0)
4-6	2.30	0.98	176843.95	173197.8	66882.4	SI (173197.8/66882.4 = 2.59 >= 1.0)
4-7	2.30	1.47	242021.95	354744.4	73729.4	SI (354744.4/73729.4 = 4.81 >= 1.0)
4-8	2.30	0.98	177204.62	174530	66958.4	SI (174530/66958.4 = 2.61 >= 1.0)
4-9	2.30	1.29	393527.09	506081.5	70950.4	SI (506081.5/70950.4 = 7.13 >= 1.0)
4-10	2.30	0.8	230256.66	185072.8	63997.4	SI (185072.8/63997.4 = 2.89 >= 1.0)
4-11	2.30	1.29	394273.33	508748.1	71004.4	SI (508748.1/71004.4 = 7.17 >= 1.0)
4-12	2.30	0.81	231051.97	186594.5	64051.4	SI (186594.5/64051.4 = 2.91 >= 1.0)
4-13	2.30	1.46	241937.38	354362.4	73716.4	SI (354362.4/73716.4 = 4.81 >= 1.0)
4-14	2.30	0.98	176973.23	173727.3	66921.4	SI (173727.3/66921.4 = 2.60 >= 1.0)
4-15	2.30	1.47	241955.4	355073.2	73751.4	SI (355073.2/73751.4 = 4.81 >= 1.0)
4-16	2.30	0.99	177308.63	174974.8	66992.4	SI (174974.8/66992.4 = 2.61 >= 1.0)
5-1	2.30	1.83	363836.81	665664.3	80449.4	SI (665664.3/80449.4 = 8.27 >= 1.0)
5-2	2.30	1.98	313071.25	618513	80949.4	SI (618513/80949.4 = 7.64 >= 1.0)
5-3	2.30	1.83	363748.4	665637.2	80454.4	SI (665637.2/80454.4 = 8.27 >= 1.0)
5-4	2.30	1.98	312932.4	618415.4	80955.4	SI (618415.4/80955.4 = 7.64 >= 1.0)
5-5	2.30	20.15	495684	9989182.7	11896.4	SI (9989182.7/11896.4 = 839.68 >= 1.0)
5-6	2.30	20.15	495684	9989182.7	11896.4	SI (9989182.7/11896.4 = 839.68 >= 1.0)
5-7	2.30	20.15	495684	9989182.7	11896.4	SI (9989182.7/11896.4 = 839.68 >= 1.0)
5-8	2.30	20.15	495684	9989182.7	11896.4	SI (9989182.7/11896.4 = 839.68 >= 1.0)
5-9	2.30	20.15	495684	9989182.7	11896.4	SI (9989182.7/11896.4 = 839.68 >= 1.0)
5-10	2.30	20.15	495684	9989182.7	11896.4	SI (9989182.7/11896.4 = 839.68 >= 1.0)
5-11	2.30	1.86	363809.9	678025.7	80855.4	SI (678025.7/80855.4 = 8.39 >= 1.0)
5-12	2.30	2	313044.64	625843	81239.4	SI (625843/81239.4 = 7.70 >= 1.0)
5-13	2.30	20.15	495684	9989182.7	11896.4	SI (9989182.7/11896.4 = 839.68 >= 1.0)
5-14	2.30	20.15	495684	9989182.7	11896.4	SI (9989182.7/11896.4 = 839.68 >= 1.0)
5-15	2.30	20.15	495684	9989182.7	11896.4	SI (9989182.7/11896.4 = 839.68 >= 1.0)
5-16	2.30	20.15	495684	9989182.7	11896.4	SI (9989182.7/11896.4 = 839.68 >= 1.0)

Scorrimento.

Le seguenti tabelle elencano il valore dell'angolo di resistenza al taglio, della coesione efficace, dell'attrito e dell'aderenza fondazione-terreno, e della resistenza disponibile sul piano di posa e sulle pareti laterali.

Caso	γ_{φ}	$\gamma_{c'}$	φ [°]	c' [daN/cm²]	δ [°]	a [daN/cm²]	$\gamma_{R;h}$	$\gamma_{R;e}$	R_h [daN]	R_e [daN]
1-1	1.00	1.00	35	0	26.2	0	1.10	1.00	48835.9	0
2-1	1.00	1.00	35	0	26.2	0	1.10	1.00	31727.37	32063.9
2-2	1.00	1.00	35	0	26.2	0	1.10	1.00	28875.2	32063.9
2-3	1.00	1.00	35	0	26.2	0	1.10	1.00	31748.44	32063.9
2-4	1.00	1.00	35	0	26.2	0	1.10	1.00	28897.16	32063.9
2-5	1.00	1.00	35	0	26.2	0	1.10	1.00	32807.36	32063.9
2-6	1.00	1.00	35	0	26.2	0	1.10	1.00	29950.25	32063.9
2-7	1.00	1.00	35	0	26.2	0	1.10	1.00	32829.33	32063.9
2-8	1.00	1.00	35	0	26.2	0	1.10	1.00	29980.74	32063.9
2-9	1.00	1.00	35	0	26.2	0	1.10	1.00	31719.3	32063.9
2-10	1.00	1.00	35	0	26.2	0	1.10	1.00	28887.75	32063.9
2-11	1.00	1.00	35	0	26.2	0	1.10	1.00	31740.37	32063.9
2-12	1.00	1.00	35	0	26.2	0	1.10	1.00	28909.72	32063.9
2-13	1.00	1.00	35	0	26.2	0	1.10	1.00	32819.91	32063.9
2-14	1.00	1.00	35	0	26.2	0	1.10	1.00	29951.6	32063.9
2-15	1.00	1.00	35	0	26.2	0	1.10	1.00	32841.88	32063.9
2-16	1.00	1.00	35	0	26.2	0	1.10	1.00	29982.08	32063.9
3-1	1.00	1.00	35	0	26.2	0	1.10	1.00	35534	40773.01
3-2	1.00	1.00	35	0	26.2	0	1.10	1.00	35898.93	40773.01

3-3	1.00	1.00	35	0	26.2	0	1.10	1.00	35536.25	40773.01
3-4	1.00	1.00	35	0	26.2	0	1.10	1.00	35899.38	40773.01
3-5	1.00	1.00	35	0	26.2	0	1.10	1.00	5333.33	0
3-6	1.00	1.00	35	0	26.2	0	1.10	1.00	5333.33	0
3-7	1.00	1.00	35	0	26.2	0	1.10	1.00	5333.33	0
3-8	1.00	1.00	35	0	26.2	0	1.10	1.00	5333.33	0
3-9	1.00	1.00	35	0	26.2	0	1.10	1.00	35536.25	40773.01
3-10	1.00	1.00	35	0	26.2	0	1.10	1.00	35985.46	40773.01
3-11	1.00	1.00	35	0	26.2	0	1.10	1.00	35538.04	40773.01
3-12	1.00	1.00	35	0	26.2	0	1.10	1.00	35985.46	40773.01
3-13	1.00	1.00	35	0	26.2	0	1.10	1.00	5333.33	0
3-14	1.00	1.00	35	0	26.2	0	1.10	1.00	5333.33	0
3-15	1.00	1.00	35	0	26.2	0	1.10	1.00	5333.33	0
3-16	1.00	1.00	35	0	26.2	0	1.10	1.00	5333.33	0
4-1	1.00	1.00	35	0	26.2	0	1.10	1.00	31812.1	32063.89
4-2	1.00	1.00	35	0	26.2	0	1.10	1.00	28677.04	32063.89
4-3	1.00	1.00	35	0	26.2	0	1.10	1.00	31835.86	32063.89
4-4	1.00	1.00	35	0	26.2	0	1.10	1.00	28701.25	32063.89
4-5	1.00	1.00	35	0	26.2	0	1.10	1.00	33038.69	32063.89
4-6	1.00	1.00	35	0	26.2	0	1.10	1.00	29984.33	32063.89
4-7	1.00	1.00	35	0	26.2	0	1.10	1.00	33053.93	32063.89
4-8	1.00	1.00	35	0	26.2	0	1.10	1.00	30018.4	32063.89
4-9	1.00	1.00	35	0	26.2	0	1.10	1.00	31808.07	32063.89
4-10	1.00	1.00	35	0	26.2	0	1.10	1.00	28690.94	32063.89
4-11	1.00	1.00	35	0	26.2	0	1.10	1.00	31832.28	32063.89
4-12	1.00	1.00	35	0	26.2	0	1.10	1.00	28715.15	32063.89
4-13	1.00	1.00	35	0	26.2	0	1.10	1.00	33048.1	32063.89
4-14	1.00	1.00	35	0	26.2	0	1.10	1.00	30001.81	32063.89
4-15	1.00	1.00	35	0	26.2	0	1.10	1.00	33063.79	32063.89
4-16	1.00	1.00	35	0	26.2	0	1.10	1.00	30033.64	32063.89
5-1	1.00	1.00	35	0	26.2	0	1.10	1.00	36066.6	40773.01
5-2	1.00	1.00	35	0	26.2	0	1.10	1.00	36290.76	40773.01
5-3	1.00	1.00	35	0	26.2	0	1.10	1.00	36068.84	40773.01
5-4	1.00	1.00	35	0	26.2	0	1.10	1.00	36293.45	40773.01
5-5	1.00	1.00	35	0	26.2	0	1.10	1.00	5333.33	0
5-6	1.00	1.00	35	0	26.2	0	1.10	1.00	5333.33	0
5-7	1.00	1.00	35	0	26.2	0	1.10	1.00	5333.33	0
5-8	1.00	1.00	35	0	26.2	0	1.10	1.00	5333.33	0
5-9	1.00	1.00	35	0	26.2	0	1.10	1.00	5333.33	0
5-10	1.00	1.00	35	0	26.2	0	1.10	1.00	5333.33	0
5-11	1.00	1.00	35	0	26.2	0	1.10	1.00	36248.62	40773.01
5-12	1.00	1.00	35	0	26.2	0	1.10	1.00	36420.77	40773.01
5-13	1.00	1.00	35	0	26.2	0	1.10	1.00	5333.33	0
5-14	1.00	1.00	35	0	26.2	0	1.10	1.00	5333.33	0
5-15	1.00	1.00	35	0	26.2	0	1.10	1.00	5333.33	0
5-16	1.00	1.00	35	0	26.2	0	1.10	1.00	5333.33	0

Segue il confronto fra la resistenza a scorrimento e l'azione applicata.

Caso	R_d [daN]	E_d [daN]	Verifica
1-1	48835.9	0	SI (48835.9/0 = 1.00 >= 1.0)
2-1	63791.3	53674.8	SI (63791.3/53674.8 = 1.19 >= 1.0)
2-2	60939.1	53674.8	SI (60939.1/53674.8 = 1.14 >= 1.0)
2-3	63812.3	53674.8	SI (63812.3/53674.8 = 1.19 >= 1.0)
2-4	60961.1	53674.8	SI (60961.1/53674.8 = 1.14 >= 1.0)

2-5	64871.3	53674.8	SI (64871.3/53674.8 = 1.21 >= 1.0)
2-6	62014.1	53674.8	SI (62014.1/53674.8 = 1.16 >= 1.0)
2-7	64893.2	53674.8	SI (64893.2/53674.8 = 1.21 >= 1.0)
2-8	62044.6	53674.8	SI (62044.6/53674.8 = 1.16 >= 1.0)
2-9	63783.2	53674.8	SI (63783.2/53674.8 = 1.19 >= 1.0)
2-10	60951.6	53674.8	SI (60951.6/53674.8 = 1.14 >= 1.0)
2-11	63804.3	53674.8	SI (63804.3/53674.8 = 1.19 >= 1.0)
2-12	60973.6	53674.8	SI (60973.6/53674.8 = 1.14 >= 1.0)
2-13	64883.8	53674.8	SI (64883.8/53674.8 = 1.21 >= 1.0)
2-14	62015.5	53674.8	SI (62015.5/53674.8 = 1.16 >= 1.0)
2-15	64905.8	53674.8	SI (64905.8/53674.8 = 1.21 >= 1.0)
2-16	62046	53674.8	SI (62046/53674.8 = 1.16 >= 1.0)
3-1	76307	53674.8	SI (76307/53674.8 = 1.42 >= 1.0)
3-2	76671.9	53674.8	SI (76671.9/53674.8 = 1.43 >= 1.0)
3-3	76309.3	53674.8	SI (76309.3/53674.8 = 1.42 >= 1.0)
3-4	76672.4	53674.8	SI (76672.4/53674.8 = 1.43 >= 1.0)
3-5	5333.3	0	SI (5333.3/0 = 1.00 >= 1.0)
3-6	5333.3	0	SI (5333.3/0 = 1.00 >= 1.0)
3-7	5333.3	0	SI (5333.3/0 = 1.00 >= 1.0)
3-8	5333.3	0	SI (5333.3/0 = 1.00 >= 1.0)
3-9	76309.3	53674.8	SI (76309.3/53674.8 = 1.42 >= 1.0)
3-10	76758.5	53674.8	SI (76758.5/53674.8 = 1.43 >= 1.0)
3-11	76311.1	53674.8	SI (76311.1/53674.8 = 1.42 >= 1.0)
3-12	76758.5	53674.8	SI (76758.5/53674.8 = 1.43 >= 1.0)
3-13	5333.3	0	SI (5333.3/0 = 1.00 >= 1.0)
3-14	5333.3	0	SI (5333.3/0 = 1.00 >= 1.0)
3-15	5333.3	0	SI (5333.3/0 = 1.00 >= 1.0)
3-16	5333.3	0	SI (5333.3/0 = 1.00 >= 1.0)
4-1	63876	59042.3	SI (63876/59042.3 = 1.08 >= 1.0)
4-2	60740.9	59042.3	SI (60740.9/59042.3 = 1.03 >= 1.0)
4-3	63899.8	59042.3	SI (63899.8/59042.3 = 1.08 >= 1.0)
4-4	60765.1	59042.3	SI (60765.1/59042.3 = 1.03 >= 1.0)
4-5	65102.6	59042.3	SI (65102.6/59042.3 = 1.10 >= 1.0)
4-6	62048.2	59042.3	SI (62048.2/59042.3 = 1.05 >= 1.0)
4-7	65117.8	59042.3	SI (65117.8/59042.3 = 1.10 >= 1.0)
4-8	62082.3	59042.3	SI (62082.3/59042.3 = 1.05 >= 1.0)
4-9	63872	59042.3	SI (63872/59042.3 = 1.08 >= 1.0)
4-10	60754.8	59042.3	SI (60754.8/59042.3 = 1.03 >= 1.0)
4-11	63896.2	59042.3	SI (63896.2/59042.3 = 1.08 >= 1.0)
4-12	60779	59042.3	SI (60779/59042.3 = 1.03 >= 1.0)
4-13	65112	59042.3	SI (65112/59042.3 = 1.10 >= 1.0)
4-14	62065.7	59042.3	SI (62065.7/59042.3 = 1.05 >= 1.0)
4-15	65127.7	59042.3	SI (65127.7/59042.3 = 1.10 >= 1.0)
4-16	62097.5	59042.3	SI (62097.5/59042.3 = 1.05 >= 1.0)
5-1	76839.6	59042.3	SI (76839.6/59042.3 = 1.30 >= 1.0)
5-2	77063.8	59042.3	SI (77063.8/59042.3 = 1.31 >= 1.0)
5-3	76841.9	59042.3	SI (76841.9/59042.3 = 1.30 >= 1.0)
5-4	77066.5	59042.3	SI (77066.5/59042.3 = 1.31 >= 1.0)
5-5	5333.3	0	SI (5333.3/0 = 1.00 >= 1.0)
5-6	5333.3	0	SI (5333.3/0 = 1.00 >= 1.0)
5-7	5333.3	0	SI (5333.3/0 = 1.00 >= 1.0)
5-8	5333.3	0	SI (5333.3/0 = 1.00 >= 1.0)
5-9	5333.3	0	SI (5333.3/0 = 1.00 >= 1.0)
5-10	5333.3	0	SI (5333.3/0 = 1.00 >= 1.0)
5-11	77021.6	59042.3	SI (77021.6/59042.3 = 1.30 >= 1.0)

5-12	77193.8	59042.3	SI (77193.8/59042.3 = 1.31 >= 1.0)
5-13	5333.3	0	SI (5333.3/0 = 1.00 >= 1.0)
5-14	5333.3	0	SI (5333.3/0 = 1.00 >= 1.0)
5-15	5333.3	0	SI (5333.3/0 = 1.00 >= 1.0)
5-16	5333.3	0	SI (5333.3/0 = 1.00 >= 1.0)

16. VERIFICA STRUTTURALE PLATEA DI FONDAZIONE

16.1 Centrale

MACROGUSCIO platea

VERIFICA ARMATURE EFFETTIVE (EFFETTO MEMBRANA + PIASTRA)

CASI DI CARICO:

Nome	Descrizione
1	SLU SENZA SISMA
4	SLU con SISMAX PRINC
5	SLU con SISMAY PRINC

DATI:

```
   tensione di snervamento acciaio (fyk): 4500    daN/cm2
   coefficiente sicurezza acciaio       : 1.15
   deformazione ultima acciaio          : 67.5    per mille
   deformazione ultima cls              :  3.5    per mille
   rapporto rottura/snervamento      (k): 1.15
   resistenza cilindrica cls       (fck): 332     daN/cm2
   coefficiente sicurezza cls           : 1.5
   coefficiente riduttivo         (alfa): 0.85
   copriferro inferiore  (asse armatura):  4      cm
   copriferro superiore  (asse armatura):  4      cm
   moltiplicatore sollecitazioni        :  1
```

LEGENDA:

```
   spess = spessore guscio. Verifica effettuata su sezione BxH, con B=1 cm e H="spess" cm
   Af    = area disposta al lembo teso, in cm2 al metro
   Afc   = area disposta al lembo compresso, in cm2 al metro
   Mom   = momento flettente [daNcm/cm]
   Nor   = sforzo normale [daN]
   epsC  = deformazione cls [per mille]
   epsF  = deformazione acciaio [per mille]
```

L'armatura è sufficiente se le deformazioni dei materiali sono ovunque minori delle corrispondenti deformazioni ultime.

		INFERIORE ORIZZONTALE						INFERIORE VERTICALE					
GUSCI	spess	Af	Afc	Mom	Nor	epsC	epsF	Af	Afc	Mom	Nor	epsC	epsF
48	30	4.67	4.67	1329.	16.	0.07	0.62	4.65	4.65	743.	41.	0.08	0.51
49	30	4.67	4.67	1769.	10.	0.14	0.77	4.65	4.65	657.	88.	0.00	0.72
50	30	4.67	4.67	2144.	-8.	0.21	0.85	4.65	4.65	781.	151.	0.00	1.10
51	30	4.67	4.67	1865.	-18.	0.18	0.72	4.65	4.65	0.	71.	0.00	0.36
52	30	4.67	4.67	1485.	-14.	0.15	0.58	4.65	4.65	1630.	-14.	0.16	0.64
56	30	4.67	4.67	490.	71.	0.00	0.56	4.65	4.65	1543.	-4.	0.15	0.62
64	30	4.67	4.67	698.	20.	0.04	0.38	4.65	4.65	681.	32.	0.00	0.44
65	30	4.67	4.67	550.	11.	0.06	0.28	4.65	4.65	647.	53.	0.00	0.54
66	30	4.67	4.67	375.	1.	0.03	0.16	4.65	4.65	385.	66.	0.00	0.49
67	30	4.67	4.67	0.	54.	0.00	0.28	4.65	4.65	0.	25.	0.00	0.13
80	30	4.67	4.67	255.	73.	0.00	0.48	4.65	4.65	1469.	14.	0.10	0.67
91	30	4.67	4.67	1109.	9.	0.07	0.49	4.65	4.65	522.	17.	0.00	0.30
92	30	4.67	4.67	1932.	2.	0.18	0.80	4.65	4.65	632.	18.	0.03	0.35
93	30	4.67	4.67	1855.	0.	0.18	0.75	4.65	4.65	217.	29.	0.00	0.23

94	30	4.67	4.67	265.	55.	0.00	0.39	4.65	4.65	0.	21.	0.00	0.11
101	30	4.67	4.67	72.	1.	0.00	0.03	4.65	4.65	78.	25.	0.00	0.16
111	30	4.67	4.67	317.	37.	0.00	0.35	4.65	4.65	398.	27.	0.00	0.30
112	30	4.67	4.67	361.	-2.	0.04	0.14	4.65	4.65	781.	4.	0.06	0.34
117	30	4.67	4.67	303.	139.	0.00	0.83	4.65	4.65	1452.	25.	0.06	0.72
118	30	4.67	4.67	249.	77.	0.00	0.49	4.65	4.65	764.	7.	0.05	0.35
119	30	4.67	4.67	167.	20.	0.00	0.17	4.65	4.65	0.	19.	0.00	0.10
135	30	4.67	4.67	224.	48.	0.00	0.40	4.65	4.65	520.	8.	0.02	0.25
136	30	4.67	4.67	356.	20.	0.01	0.25	4.65	4.65	1060.	-14.	0.11	0.41
139	30	4.67	4.67	0.	1.	0.00	0.01	4.65	4.65	61.	5.	0.00	0.05
145	30	4.67	4.67	390.	146.	0.00	0.92	4.65	4.65	1361.	5.	0.12	0.58
153	30	4.67	4.67	0.	77.	0.00	0.39	4.65	4.65	1189.	-16.	0.12	0.46
156	30	4.67	4.67	69.	-2.	0.01	0.04	4.65	4.65	403.	-1.	0.04	0.16
158	30	4.67	4.67	365.	55.	0.00	0.47	4.65	4.65	648.	-14.	0.07	0.25
159	30	4.67	4.67	295.	15.	0.00	0.21	4.65	4.65	1110.	-17.	0.11	0.43
173	30	4.67	4.67	469.	31.	0.00	0.35	4.65	4.65	1442.	-20.	0.14	0.55
175	30	4.67	4.67	599.	106.	0.00	0.78	4.65	4.65	1175.	16.	0.05	0.56
177	30	4.67	4.67	563.	10.	0.01	0.28	4.65	4.65	854.	28.	0.00	0.49
181	30	4.67	4.67	346.	65.	0.00	0.47	4.65	4.65	522.	18.	0.05	0.32
182	30	4.67	4.67	755.	22.	0.00	0.42	4.65	4.65	1037.	-14.	0.10	0.52
198	30	4.67	4.67	1280.	1.	0.12	0.52	4.65	4.65	927.	19.	0.01	0.47
199	30	4.67	4.67	1544.	-4.	0.15	0.62	4.65	4.65	547.	127.	0.00	0.88
200	30	4.67	4.67	1664.	-5.	0.16	0.67	4.65	4.65	726.	100.	0.00	0.85
201	30	4.67	4.67	1298.	-10.	0.13	0.51	4.65	4.65	1101.	-13.	0.11	0.49
203	30	4.67	4.67	681.	13.	0.01	0.42	4.65	4.65	824.	11.	0.03	0.39

		SUPERIORE ORIZZONTALE						SUPERIORE VERTICALE					
GUSCI	spess	Af	Afc	Mom	Nor	epsC	epsF	Af	Afc	Mom	Nor	epsC	epsF
48	30	4.67	4.67	1676.	17.	0.11	0.77	4.65	4.65	891.	40.	0.08	0.57
49	30	4.67	4.67	2441.	14.	0.20	1.06	4.65	4.65	604.	88.	0.00	0.70
50	30	4.67	4.67	2591.	6.	0.24	1.08	4.65	4.65	723.	151.	0.00	1.07
51	30	4.67	4.67	2519.	-6.	0.25	1.00	4.65	4.65	1388.	45.	0.00	0.80
52	30	4.67	4.67	2029.	11.	0.19	0.88	4.65	4.65	2378.	7.	0.23	1.00
56	30	4.67	4.67	1462.	69.	0.00	0.94	4.65	4.65	2926.	10.	0.27	1.24
64	30	4.67	4.67	1099.	20.	0.07	0.55	4.65	4.65	769.	41.	0.00	0.52
65	30	4.67	4.67	1922.	11.	0.15	0.83	4.65	4.65	560.	53.	0.00	0.50
66	30	4.67	4.67	2218.	5.	0.20	0.93	4.65	4.65	592.	66.	0.00	0.58
67	30	4.67	4.67	2194.	33.	0.13	1.09	4.65	4.65	1738.	15.	0.12	0.78
80	30	4.67	4.67	1111.	63.	0.00	0.77	4.65	4.65	3121.	14.	0.28	1.34
91	30	4.67	4.67	477.	17.	0.01	0.28	4.65	4.65	702.	17.	0.00	0.39
92	30	4.67	4.67	431.	21.	0.03	0.28	4.65	4.65	729.	13.	0.03	0.37
93	30	4.67	4.67	0.	33.	0.01	0.17	4.65	4.65	376.	39.	0.00	0.35
94	30	4.67	4.67	1069.	53.	0.00	0.70	4.65	4.65	1730.	13.	0.13	0.77
101	30	4.67	4.67	518.	1.	0.05	0.21	4.65	4.65	486.	25.	0.00	0.33
111	30	4.67	4.67	283.	46.	0.00	0.35	4.65	4.65	836.	11.	0.04	0.39
112	30	4.67	4.67	655.	0.	0.06	0.27	4.65	4.65	790.	-2.	0.08	0.35
117	30	4.67	4.67	9.	139.	0.00	0.71	4.65	4.65	2721.	40.	0.20	1.31
118	30	4.67	4.67	543.	39.	0.00	0.48	4.65	4.65	1970.	7.	0.17	0.84
119	30	4.67	4.67	728.	20.	0.00	0.40	4.65	4.65	596.	19.	0.00	0.34
135	30	4.67	4.67	448.	61.	0.00	0.50	4.65	4.65	953.	3.	0.08	0.41
136	30	4.67	4.67	649.	13.	0.07	0.33	4.65	4.65	955.	-12.	0.10	0.38
139	30	4.67	4.67	703.	1.	0.06	0.29	4.65	4.65	776.	5.	0.05	0.34
145	30	4.67	4.67	307.	158.	0.00	0.93	4.65	4.65	2324.	20.	0.18	1.05
153	30	4.67	4.67	560.	53.	0.00	0.49	4.65	4.65	2077.	-4.	0.20	0.84
156	30	4.67	4.67	852.	9.	0.07	0.39	4.65	4.65	1596.	2.	0.15	0.66
158	30	4.67	4.67	719.	65.	0.00	0.62	4.65	4.65	1076.	3.	0.09	0.45
159	30	4.67	4.67	658.	22.	0.05	0.38	4.65	4.65	1314.	-21.	0.13	0.50
173	30	4.67	4.67	1183.	20.	0.08	0.58	4.65	4.65	1574.	38.	0.07	0.84
175	30	4.67	4.67	598.	106.	0.00	0.78	4.65	4.65	1607.	14.	0.11	0.74
177	30	4.67	4.67	1951.	10.	0.16	0.84	4.65	4.65	1722.	14.	0.13	0.81
181	30	4.67	4.67	1039.	65.	0.00	0.75	4.65	4.65	851.	18.	0.07	0.45
182	30	4.67	4.67	2071.	22.	0.14	0.95	4.65	4.65	1485.	-14.	0.15	0.67
198	30	4.67	4.67	1689.	29.	0.08	0.83	4.65	4.65	1266.	35.	0.01	0.70
199	30	4.67	4.67	1917.	36.	0.09	0.96	4.65	4.65	949.	113.	0.00	0.97
200	30	4.67	4.67	1700.	38.	0.05	0.88	4.65	4.65	1274.	75.	0.00	1.00
201	30	4.67	4.67	1526.	34.	0.05	0.79	4.65	4.65	644.	76.	0.05	0.65
203	30	4.67	4.67	1034.	47.	0.09	0.66	4.65	4.65	1128.	14.	0.11	0.53

L'ARMATURA È OVUNQUE > DELLA QUANTITÀ RICHIESTA: IL PUNTO 2.3 DELLE NTC È VERIFICATO (Rd > Ed)
MACROGUSCIO platea

VERIFICHE A FESSURAZIONE (EFFETTO MEMBRANA + PIASTRA)

CASI DI CARICO:

Nome	Descrizione
10	Rara (RARA)
11	Frequente (FREQUENTE)
12	Quasi Perm (QUASI PERMANENTE)

DATI:

copriferro inferiore (asse armatura): 4 cm
copriferro superiore (asse armatura): 4 cm

Af = area effettiva tesa (cm2 al metro)
Afc = area effettiva compressa (cm2 al metro)
Mom = momento flettente [daNcm/cm]
Nor = sforzo normale [daN]
sigC = tensione calcestruzzo [daN/cm2]
valore max per combinazione rara = 199 daN/cm2
'' '' '' '' frequente = 199 daN/cm2
'' '' '' '' quasi permanente = 149 daN/cm2
sigF = tensione acciaio [daN/cm2]
valore max per combinazione rara = 3600 daN/cm2
'' '' '' '' frequente = 3600 daN/cm2
'' '' '' '' quasi permanente = 3600 daN/cm2
wkR = apertura caratteristica per combinazione rara (mm) - valore max = 0.6 mm
wkF = '' '' '' '' frequente (mm) - '' '' = 0.4 mm
wkP = '' '' '' '' quasi permanente (mm) - '' '' = 0.3 mm

ARMATURA INFERIORE ORIZZONTALE

			COMBINAZIONE RARA					COMBINAZIONE FREQUENTE					COMBINAZIONE QUASI PERMANENTE				
GUSCI	Af	Afc	Mom	Nor	sigC	sigF	WkR	Mom	Nor	sigC	sigF	WkF	Mom	Nor	sigC	sigF	WkP
48	4.67	4.67	193	-12	2.41	55.	0.005	183	-10	2.30	55.	0.005	181	-10	2.29	57.	0.005
49	4.67	4.67	0.	-4	0.13	-2.	0.000	0.	-4	0.11	-2.	0.000	0.	-3	0.11	-2.	0.000
50	4.67	4.67	0.	-3	0.10	-1.	0.000	0.	-3	0.08	-1.	0.000	0.	-2	0.07	-1.	0.000
51	4.67	4.67	0.	-11	0.34	-5.	0.000	0.	-10	0.31	-5.	0.000	0.	-9	0.30	-4.	0.000
52	4.67	4.67	700	-16	9.59	431.	0.042	641	-16	8.78	387.	0.037	623	-15	8.53	373.	0.036
56	4.67	4.67	0.	-22	0.69	-10.	0.000	0.	-22	0.70	-10.	0.000	0.	-22	0.71	-11.	0.000
64	4.67	4.67	0.	-16	0.51	-8.	0.000	0.	-15	0.49	-7.	0.000	0.	-15	0.49	-7.	0.000
65	4.67	4.67	0.	-5	0.17	-3.	0.000	0.	-5	0.15	-2.	0.000	0.	-5	0.15	-2.	0.000
66	4.67	4.67	0.	-1	0.04	-1.	0.000	0.	-1	0.02	0.	0.000	0.	0.	0.02	0.	0.000
67	4.67	4.67	0.	-4	0.12	-2.	0.000	0.	-4	0.11	-2.	0.000	0.	-3	0.11	-2.	0.000
80	4.67	4.67	0.	-12	0.37	-6.	0.000	0.	-12	0.37	-6.	0.000	0.	-12	0.38	-6.	0.000
91	4.67	4.67	478	-4	6.57	362.	0.035	493	-5	6.79	366.	0.035	502	-6	6.91	368.	0.036
92	4.67	4.67	803	-5	11.02	632.	0.061	821	-5	11.28	644.	0.062	833	-6	11.44	651.	0.063
93	4.67	4.67	868	0.	11.86	737.	0.071	849	0.	11.59	722.	0.070	845	0.	11.54	719.	0.069
94	4.67	4.67	0.	0.	0.00	2.	0.000	0.	1	0.00	6.	0.001	0.	1	0.00	7.	0.001
101	4.67	4.67	0.	-4	0.13	-2.	0.000	0.	-4	0.13	-2.	0.000	0.	-4	0.13	-2.	0.000
111	4.67	4.67	73	-14	0.90	-1.	0.000	67	-15	0.90	-2.	0.000	65	-16	0.90	-3.	0.000
112	4.67	4.67	51	-6	0.55	3.	0.000	26	-6	0.35	-1.	0.000	16	-6	0.28	-2.	0.000
117	4.67	4.67	0.	3	0.00	37.	0.007	0.	3	0.00	31.	0.006	0.	3	0.00	28.	0.005
118	4.67	4.67	0.	0.	0.00	0.	0.000	0.	0.	0.00	2.	0.000	0.	0.	0.00	3.	0.001
119	4.67	4.67	0.	-3	0.09	-1.	0.000	0.	-3	0.08	-1.	0.000	0.	-3	0.08	-1.	0.000
135	4.67	4.67	2	10	0.00	106.	0.020	0.	9	0.00	99.	0.019	0.	9	0.00	97.	0.018
136	4.67	4.67	0.	3	0.00	36.	0.007	0.	3	0.00	36.	0.007	0.	3	0.00	37.	0.007
139	4.67	4.67	0.	-7	0.21	-3.	0.000	0.	-7	0.21	-3.	0.000	0.	-7	0.21	-3.	0.000
145	4.67	4.67	38	-27	1.08	-10.	0.000	41	-26	1.08	-9.	0.000	43	-26	1.09	-9.	0.000
153	4.67	4.67	0.	-23	0.75	-11.	0.000	0.	-22	0.71	-11.	0.000	0.	-22	0.70	-11.	0.000
156	4.67	4.67	0.	-6	0.21	-3.	0.000	0.	-6	0.20	-3.	0.000	0.	-6	0.20	-3.	0.000
158	4.67	4.67	0.	16	0.00	173.	0.033	0.	15	0.00	164.	0.031	0.	15	0.00	161.	0.031
159	4.67	4.67	0.	-2	0.06	-1.	0.000	0.	-2	0.06	-1.	0.000	0.	-2	0.06	-1.	0.000
173	4.67	4.67	0.	-13	0.42	-6.	0.000	0.	-12	0.39	-6.	0.000	0.	-12	0.39	-6.	0.000
175	4.67	4.67	231	-27	2.47	11.	0.001	216	-26	2.31	8.	0.001	212	-26	2.27	7.	0.001
177	4.67	4.67	0.	-5	0.17	-3.	0.000	0.	-5	0.16	-2.	0.000	0.	-5	0.16	-2.	0.000
181	4.67	4.67	0.	-4	0.14	-2.	0.000	0.	-5	0.15	-2.	0.000	0.	-5	0.16	-2.	0.000

182	4.67	4.67	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
198	4.67	4.67	332	-1	4.55	270.	0.026	337	-1	4.62	274.	0.026	341	-1	4.68	277.	0.027
199	4.67	4.67	166	0.	2.26	146.	0.014	189	0.	2.57	165.	0.016	199	0.	2.71	175.	0.017
200	4.67	4.67	19	-1	0.25	7.	0.001	49	-1	0.67	35.	0.003	61	0.	0.84	48.	0.005
201	4.67	4.67	441	0.	6.03	373.	0.036	421	-7	5.80	286.	0.028	416	-7	5.72	284.	0.027
203	4.67	4.67	375	-9	5.15	229.	0.022	345	-9	4.72	202.	0.020	336	-9	4.58	193.	0.019

ARMATURA INFERIORE VERTICALE

			COMBINAZIONE RARA					COMBINAZIONE FREQUENTE					COMBINAZIONE QUASI PERMANENTE				
GUSCI	Af	Afc	Mom	Nor	sigC	sigF	WkR	Mom	Nor	sigC	sigF	WkF	Mom	Nor	sigC	sigF	WkP
48	4.65	4.65	284	-8	3.88	162.	0.016	265	-7	3.63	157.	0.015	259	-6	3.56	156.	0.015
49	4.65	4.65	0.	-3	0.11	-2.	0.000	0.	-2	0.08	-1.	0.000	0.	-2	0.06	-1.	0.000
50	4.65	4.65	0.	-12	0.37	-6.	0.000	0.	-11	0.34	-5.	0.000	0.	-10	0.33	-5.	0.000
51	4.65	4.65	0.	-13	0.40	-6.	0.000	0.	-10	0.33	-5.	0.000	0.	-10	0.31	-5.	0.000
52	4.65	4.65	563	-13	7.74	351.	0.034	535	-12	7.36	337.	0.033	528	-11	7.26	334.	0.032
56	4.65	4.65	0.	-3	0.10	-2.	0.000	0.	-2	0.08	-1.	0.000	0.	-2	0.07	-1.	0.000
64	4.65	4.65	69	-14	0.88	-2.	0.000	73	-13	0.88	-1.	0.000	76	-13	0.89	-1.	0.000
65	4.65	4.65	0.	-31	0.98	-15.	0.000	0.	-29	0.92	-14.	0.000	0.	-29	0.91	-14.	0.000
66	4.65	4.65	0.	-21	0.67	-10.	0.000	0.	-20	0.64	-10.	0.000	0.	-20	0.64	-10.	0.000
67	4.65	4.65	0.	-20	0.63	-10.	0.000	0.	-19	0.60	-9.	0.000	0.	-19	0.59	-9.	0.000
80	4.65	4.65	0.	4	0.00	48.	0.009	0.	4	0.00	47.	0.009	0.	4	0.00	48.	0.009
91	4.65	4.65	6	-8	0.30	-4.	0.000	21	-8	0.38	-2.	0.000	27	-8	0.42	-2.	0.000
92	4.65	4.65	0.	-37	1.17	-18.	0.000	0.	-36	1.13	-17.	0.000	0.	-35	1.12	-17.	0.000
93	4.65	4.65	0.	-16	0.50	-7.	0.000	0.	-15	0.48	-7.	0.000	0.	-15	0.48	-7.	0.000
94	4.65	4.65	0.	-14	0.43	-6.	0.000	0.	-13	0.41	-6.	0.000	0.	-13	0.40	-6.	0.000
101	4.65	4.65	0.	-13	0.41	-6.	0.000	0.	-13	0.40	-6.	0.000	0.	-13	0.40	-6.	0.000
111	4.65	4.65	11	-5	0.22	-2.	0.000	28	-5	0.33	0.	0.000	35	-5	0.39	0.	0.000
112	4.65	4.65	0.	-30	0.96	-14.	0.000	0.	-29	0.93	-14.	0.000	0.	-29	0.92	-14.	0.000
117	4.65	4.65	0.	9	0.00	97.	0.018	0.	8	0.00	89.	0.017	0.	8	0.00	86.	0.017
118	4.65	4.65	0.	-4	0.14	-2.	0.000	0.	-4	0.13	-2.	0.000	0.	-4	0.12	-2.	0.000
119	4.65	4.65	0.	-7	0.22	-3.	0.000	0.	-7	0.22	-3.	0.000	0.	-7	0.21	-3.	0.000
135	4.65	4.65	0.	-4	0.13	-2.	0.000	0.	-4	0.14	-2.	0.000	0.	-5	0.15	-2.	0.000
136	4.65	4.65	0.	-23	0.72	-11.	0.000	0.	-22	0.71	-11.	0.000	0.	-23	0.72	-11.	0.000
139	4.65	4.65	0.	-10	0.31	-5.	0.000	0.	-9	0.30	-4.	0.000	0.	-9	0.29	-4.	0.000
145	4.65	4.65	0.	3	0.00	27.	0.005	0.	2	0.00	21.	0.004	0.	2	0.00	18.	0.004
153	4.65	4.65	0.	-7	0.23	-3.	0.000	0.	-7	0.22	-3.	0.000	0.	-7	0.22	-3.	0.000
156	4.65	4.65	0.	-5	0.14	-2.	0.000	0.	-4	0.14	-2.	0.000	0.	-4	0.14	-2.	0.000
158	4.65	4.65	0.	-6	0.19	-3.	0.000	0.	-6	0.19	-3.	0.000	0.	-6	0.19	-3.	0.000
159	4.65	4.65	0.	-31	0.98	-15.	0.000	0.	-31	0.97	-15.	0.000	0.	-31	0.97	-15.	0.000
173	4.65	4.65	0.	-2	0.07	-1.	0.000	0.	-2	0.07	-1.	0.000	0.	-2	0.07	-1.	0.000
175	4.65	4.65	104	2	1.37	107.	0.012	117	1	1.58	111.	0.012	124	1	1.68	114.	0.012
177	4.65	4.65	0.	-12	0.39	-6.	0.000	0.	-12	0.37	-6.	0.000	0.	-12	0.37	-6.	0.000
181	4.65	4.65	0.	-14	0.45	-7.	0.000	0.	-14	0.44	-7.	0.000	0.	-14	0.44	-7.	0.000
182	4.65	4.65	0.	-38	1.22	-18.	0.000	0.	-38	1.21	-18.	0.000	0.	-38	1.21	-18.	0.000
198	4.65	4.65	282	1	3.84	255.	0.026	279	1	3.79	252.	0.025	279	1	3.80	252.	0.025
199	4.65	4.65	0.	3	0.00	36.	0.007	0.	4	0.00	46.	0.009	0.	5	0.00	51.	0.010
200	4.65	4.65	0.	-14	0.46	-7.	0.000	0.	-14	0.44	-7.	0.000	0.	-13	0.43	-6.	0.000
201	4.65	4.65	432	-11	5.92	254.	0.025	415	-10	5.70	254.	0.025	410	-9	5.64	255.	0.025
203	4.65	4.65	307	-6	4.23	202.	0.020	287	-6	3.95	188.	0.018	281	-6	3.87	183.	0.018

ARMATURA SUPERIORE ORIZZONTALE

			COMBINAZIONE RARA					COMBINAZIONE FREQUENTE					COMBINAZIONE QUASI PERMANENTE				
GUSCI	Af	Afc	Mom	Nor	sigC	sigF	WkR	Mom	Nor	sigC	sigF	WkF	Mom	Nor	sigC	sigF	WkP
48	4.67	4.67	794	-12	10.93	557.	0.054	736	-10	10.13	517.	0.050	716	-10	9.86	504.	0.049
49	4.67	4.67	779	-4	10.70	620.	0.060	724	-4	9.94	579.	0.056	706	-3	9.68	566.	0.055
50	4.67	4.67	595	-3	8.16	474.	0.046	559	-3	7.67	448.	0.043	547	-2	7.50	441.	0.043
51	4.67	4.67	349	-11	4.73	187.	0.018	340	-10	4.64	191.	0.018	338	-9	4.61	192.	0.019
52	4.67	4.67	712	-16	9.77	442.	0.043	675	-16	9.26	416.	0.040	664	-15	9.11	407.	0.039
56	4.67	4.67	1101	-22	15.13	715.	0.069	1021	-22	14.02	644.	0.062	997	-22	13.68	620.	0.060
64	4.67	4.67	363	-16	4.78	151.	0.015	334	-15	4.38	133.	0.013	325	-15	4.25	127.	0.012
65	4.67	4.67	723	-5	9.93	559.	0.054	657	-5	9.02	509.	0.049	635	-5	8.73	493.	0.048
66	4.67	4.67	1101	-1	15.06	923.	0.089	1008	-1	13.78	851.	0.082	979	0.	13.37	828.	0.080
67	4.67	4.67	1454	-4	19.91	1198.	0.116	1349	-4	18.47	1112.	0.107	1317	-3	18.03	1086.	0.105
80	4.67	4.67	811	-12	11.17	569.	0.055	749	-12	10.31	517.	0.050	731	-12	10.06	500.	0.048
91	4.67	4.67	0.	-4	0.14	-2.	0.000	0.	-5	0.17	-2.	0.000	0.	-6	0.18	-3.	0.000
92	4.67	4.67	0.	-5	0.16	-2.	0.000	0.	-5	0.17	-3.	0.000	0.	-6	0.18	-3.	0.000
93	4.67	4.67	0.	0.	0.01	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
94	4.67	4.67	318	0.	4.34	273.	0.027	296	1	4.04	258.	0.025	292	1	3.97	255.	0.025
101	4.67	4.67	231	-4	3.18	154.	0.015	206	-4	2.84	134.	0.013	198	-4	2.72	127.	0.012
111	4.67	4.67	171	-14	1.94	24.	0.002	198	-15	2.30	34.	0.003	210	-16	2.46	38.	0.004

112	4.67	4.67	224	-6	3.07	134.	0.013	233	-6	3.19	140.	0.013	239	-6	3.27	143.	0.014
117	4.67	4.67	338	3	4.53	325.	0.034	307	3	4.12	292.	0.031	297	3	4.00	281.	0.029
118	4.67	4.67	418	0.	5.71	356.	0.034	406	0.	5.55	349.	0.034	404	0.	5.51	347.	0.034
119	4.67	4.67	372	-3	5.11	286.	0.028	385	-3	5.29	301.	0.029	393	-3	5.40	309.	0.030
135	4.67	4.67	187	10	2.03	266.	0.034	203	9	2.32	274.	0.034	211	9	2.45	279.	0.035
136	4.67	4.67	309	3	4.14	299.	0.032	327	3	4.38	315.	0.033	336	3	4.50	323.	0.034
139	4.67	4.67	429	-7	5.90	295.	0.028	415	-7	5.72	285.	0.027	413	-7	5.68	282.	0.027
145	4.67	4.67	388	-27	4.67	87.	0.008	356	-26	4.22	71.	0.007	347	-26	4.08	65.	0.006
153	4.67	4.67	454	-23	5.85	159.	0.015	425	-22	5.47	146.	0.014	417	-22	5.34	142.	0.014
156	4.67	4.67	507	-6	6.99	365.	0.035	507	-6	6.98	367.	0.035	510	-6	7.02	370.	0.036
158	4.67	4.67	167	16	0.57	321.	0.046	174	15	0.98	318.	0.045	178	15	1.12	318.	0.044
159	4.67	4.67	209	-2	2.88	159.	0.015	225	-2	3.09	172.	0.017	233	-2	3.21	179.	0.017
173	4.67	4.67	559	-13	7.66	341.	0.033	528	-12	7.23	322.	0.031	519	-12	7.11	317.	0.031
175	4.67	4.67	407	-27	4.98	100.	0.010	371	-26	4.43	78.	0.008	359	-26	4.25	70.	0.007
177	4.67	4.67	882	-5	12.11	696.	0.067	809	-5	11.12	636.	0.061	785	-5	10.78	615.	0.059
181	4.67	4.67	361	-4	4.96	261.	0.025	366	-5	5.04	262.	0.025	372	-5	5.13	265.	0.026
182	4.67	4.67	769	0.	10.50	655.	0.063	738	0.	10.08	628.	0.061	731	0.	9.98	621.	0.060
198	4.67	4.67	645	-1	8.82	536.	0.052	585	-1	8.01	485.	0.047	564	-1	7.72	467.	0.045
199	4.67	4.67	438	0.	5.97	377.	0.037	379	0.	5.16	327.	0.032	356	0.	4.86	309.	0.030
200	4.67	4.67	116	-1	1.60	89.	0.009	87	-1	1.20	69.	0.007	76	0.	1.04	60.	0.006
201	4.67	4.67	382	0.	5.22	323.	0.031	349	-7	4.79	224.	0.022	337	-7	4.64	218.	0.021
203	4.67	4.67	427	-9	5.87	273.	0.026	392	-9	5.38	242.	0.023	381	-9	5.21	231.	0.022

ARMATURA SUPERIORE VERTICALE

			COMBINAZIONE RARA					COMBINAZIONE FREQUENTE					COMBINAZIONE QUASI PERMANENTE				
GUSCI	Af	Afc	Mom	Nor	sigC	sigF	WkR	Mom	Nor	sigC	sigF	WkF	Mom	Nor	sigC	sigF	WkP
48	4.65	4.65	518	-8	7.15	361.	0.035	479	-7	6.61	339.	0.033	466	-6	6.44	333.	0.032
49	4.65	4.65	542	-3	7.47	427.	0.041	502	-2	6.91	405.	0.039	489	-2	6.73	398.	0.039
50	4.65	4.65	419	-12	5.73	239.	0.023	390	-11	5.34	225.	0.022	381	-10	5.22	221.	0.021
51	4.65	4.65	627	-13	8.64	407.	0.039	583	-10	8.04	390.	0.038	570	-10	7.86	387.	0.038
52	4.65	4.65	1168	-13	16.11	867.	0.084	1083	-12	14.95	805.	0.078	1057	-11	14.59	786.	0.076
56	4.65	4.65	1259	-3	17.29	1045.	0.101	1146	-2	15.73	956.	0.093	1109	-2	15.22	927.	0.090
64	4.65	4.65	278	-14	3.59	98.	0.010	263	-13	3.40	93.	0.009	259	-13	3.34	92.	0.009
65	4.65	4.65	413	-31	4.87	78.	0.008	391	-29	4.62	75.	0.007	385	-29	4.55	74.	0.007
66	4.65	4.65	428	-21	5.57	160.	0.016	391	-20	5.05	138.	0.013	379	-20	4.87	130.	0.013
67	4.65	4.65	947	-20	13.04	605.	0.059	871	-19	11.99	551.	0.053	848	-19	11.66	533.	0.052
80	4.65	4.65	1024	4	13.93	925.	0.093	916	4	12.45	832.	0.084	880	4	11.95	801.	0.081
91	4.65	4.65	208	-8	2.78	94.	0.009	204	-8	2.72	93.	0.009	203	-8	2.72	93.	0.009
92	4.65	4.65	247	-37	2.73	2.	0.000	255	-36	2.77	4.	0.000	260	-35	2.81	5.	0.001
93	4.65	4.65	365	-16	4.84	157.	0.015	331	-15	4.35	133.	0.013	319	-15	4.18	125.	0.012
94	4.65	4.65	1029	-14	14.21	739.	0.072	959	-13	13.24	687.	0.067	938	-13	12.94	671.	0.065
101	4.65	4.65	366	-13	4.94	182.	0.018	337	-13	4.53	161.	0.016	327	-13	4.39	154.	0.015
111	4.65	4.65	220	-5	3.02	137.	0.013	216	-5	2.97	132.	0.013	216	-5	2.96	131.	0.013
112	4.65	4.65	125	-30	0.19	-23.	0.000	159	-29	0.05	-26.	0.000	176	-29	0.16	-27.	0.000
117	4.65	4.65	1238	9	16.74	1156.	0.120	1108	8	14.99	1038.	0.107	1065	8	14.40	998.	0.103
118	4.65	4.65	1166	-4	16.02	953.	0.092	1074	-4	14.76	878.	0.085	1044	-4	14.35	853.	0.083
119	4.65	4.65	406	-7	5.60	275.	0.027	380	-7	5.24	255.	0.025	372	-7	5.13	248.	0.024
135	4.65	4.65	234	-4	3.23	157.	0.015	224	-4	3.09	146.	0.014	221	-5	3.05	143.	0.014
136	4.65	4.65	140	-23	0.14	-21.	0.000	175	-22	1.88	5.	0.000	190	-23	2.03	8.	0.001
139	4.65	4.65	390	-10	5.35	234.	0.023	382	-9	5.24	231.	0.022	381	-9	5.23	231.	0.022
145	4.65	4.65	962	3	13.11	851.	0.085	849	2	11.58	748.	0.074	810	2	11.06	712.	0.070
153	4.65	4.65	732	-7	10.11	552.	0.054	649	-7	8.95	482.	0.047	620	-7	8.55	458.	0.044
156	4.65	4.65	739	-5	10.18	585.	0.057	721	-4	9.93	572.	0.055	719	-4	9.90	570.	0.055
158	4.65	4.65	186	-6	2.53	98.	0.009	165	-6	2.23	81.	0.008	157	-6	2.11	75.	0.007
159	4.65	4.65	120	-31	0.25	-24.	0.000	154	-31	0.03	-26.	0.000	169	-31	0.06	-27.	0.000
173	4.65	4.65	349	-2	4.81	275.	0.027	310	-2	4.27	242.	0.023	296	-2	4.08	231.	0.022
175	4.65	4.65	654	2	8.92	578.	0.057	581	1	7.94	508.	0.050	556	1	7.60	485.	0.048
177	4.65	4.65	981	-12	13.54	711.	0.069	911	-12	12.57	657.	0.064	888	-12	12.26	640.	0.062
181	4.65	4.65	226	-14	2.80	61.	0.006	226	-14	2.81	62.	0.006	228	-14	2.84	63.	0.006
182	4.65	4.65	425	-38	4.72	48.	0.005	434	-38	4.87	55.	0.005	441	-38	4.97	58.	0.006
198	4.65	4.65	488	1	6.66	432.	0.043	463	1	6.32	410.	0.041	456	1	6.22	403.	0.040
199	4.65	4.65	537	3	7.28	496.	0.051	508	4	6.86	482.	0.050	500	5	6.73	479.	0.050
200	4.65	4.65	516	-14	7.05	293.	0.028	465	-14	6.35	258.	0.025	448	-13	6.10	246.	0.024
201	4.65	4.65	484	-11	6.65	298.	0.029	442	-10	6.08	277.	0.027	428	-9	5.89	270.	0.026
203	4.65	4.65	505	-6	6.97	371.	0.036	460	-6	6.35	335.	0.033	445	-6	6.15	323.	0.031

16.2 Opere di presa

MACROGUSCIO platea

VERIFICA ARMATURE EFFETTIVE (EFFETTO MEMBRANA + PIASTRA)

CASI DI CARICO:

Nome	Descrizione
1	SLU SENZA SISMA
4	SLU con SISMAX PRINC
5	SLU con SISMAY PRINC

DATI:

tensione di snervamento acciaio (fyk)	: 4500	daN/cm2
coefficiente sicurezza acciaio	: 1.15	
deformazione ultima acciaio	: 67.5	per mille
deformazione ultima cls	: 3.5	per mille
rapporto rottura/snervamento (k)	: 1.15	
resistenza cilindrica cls (fck)	: 332	daN/cm2
coefficiente sicurezza cls	: 1.5	
coefficiente riduttivo (alfa)	: 0.85	
copriferro inferiore (asse armatura)	: 4	cm
copriferro superiore (asse armatura)	: 3	cm
moltiplicatore sollecitazioni	: 1	

LEGENDA:

- spess = spessore guscio. Verifica effettuata su sezione BxH, con B=1 cm e H="spess" cm
- Af = area disposta al lembo teso, in cm2 al metro
- Afc = area disposta al lembo compresso, in cm2 al metro
- Mom = momento flettente [daNcm/cm]
- Nor = sforzo normale [daN]
- epsC = deformazione cls [per mille]
- epsF = deformazione acciaio [per mille]

L'armatura è sufficiente se le deformazioni dei materiali sono ovunque minori delle corrispondenti deformazioni ultime.

		INFERIORE ORIZZONTALE						INFERIORE VERTICALE					
GUSCI	spess	Af	Afc	Mom	Nor	epsC	epsF	Af	Afc	Mom	Nor	epsC	epsF
240	30	5.86	5.86	210.	44.	0.00	0.30	5.78	5.78	176.	22.	0.00	0.19
241	30	5.86	5.86	84.	54.	0.00	0.24	5.78	5.78	133.	20.	0.00	0.15
242	30	5.86	5.86	56.	31.	0.00	0.14	5.78	5.78	450.	40.	0.00	0.31
243	30	5.86	5.86	67.	26.	0.00	0.13	5.78	5.78	441.	31.	0.00	0.27
244	30	5.86	5.86	15.	24.	0.00	0.10	5.78	5.78	514.	44.	0.00	0.35
245	30	5.86	5.86	54.	47.	0.00	0.21	5.78	5.78	499.	37.	0.00	0.32
246	30	5.86	5.86	102.	56.	0.00	0.26	5.78	5.78	490.	38.	0.00	0.32
247	30	5.86	5.86	59.	49.	0.00	0.22	5.78	5.78	413.	37.	0.00	0.29
248	30	5.86	5.86	81.	50.	0.00	0.23	5.78	5.78	452.	31.	0.00	0.27
249	30	5.86	5.86	0.	52.	0.00	0.21	5.78	5.78	269.	32.	0.00	0.22
250	30	5.86	5.86	79.	40.	0.00	0.19	5.78	5.78	338.	29.	0.00	0.23
251	30	5.86	5.86	0.	55.	0.00	0.22	5.78	5.78	137.	18.	0.00	0.12
252	30	5.86	5.86	266.	20.	0.00	0.19	5.78	5.78	267.	34.	0.00	0.23
254	30	5.86	5.86	0.	68.	0.00	0.28	5.78	5.78	0.	68.	0.00	0.28
255	30	5.86	5.86	13.	39.	0.00	0.16	5.78	5.78	0.	62.	0.00	0.26
256	30	5.86	5.86	52.	52.	0.00	0.23	5.78	5.78	0.	52.	0.00	0.21
257	30	5.86	5.86	25.	31.	0.00	0.13	5.78	5.78	0.	43.	0.00	0.18
324	30	5.86	5.86	368.	18.	0.02	0.19	5.78	5.78	153.	20.	0.00	0.13
325	30	5.86	5.86	0.	60.	0.00	0.24	5.78	5.78	164.	14.	0.00	0.11
326	30	5.86	5.86	592.	-3.	0.05	0.25	5.78	5.78	14.	28.	0.00	0.12
327	30	5.86	5.86	128.	40.	0.00	0.20	5.78	5.78	38.	27.	0.00	0.12
328	30	5.86	5.86	825.	-7.	0.07	0.30	5.78	5.78	127.	6.	0.00	0.08
329	30	5.86	5.86	641.	-6.	0.06	0.28	5.78	5.78	153.	17.	0.00	0.12
330	30	5.86	5.86	1027.	-5.	0.09	0.36	5.78	5.78	221.	3.	0.01	0.10
331	30	5.86	5.86	858.	-11.	0.08	0.33	5.78	5.78	257.	9.	0.00	0.13
332	30	5.86	5.86	266.	4.	0.01	0.10	5.78	5.78	108.	23.	0.00	0.13
333	30	5.86	5.86	257.	8.	0.00	0.12	5.78	5.78	72.	14.	0.00	0.08
334	30	5.86	5.86	0.	58.	0.00	0.23	5.78	5.78	76.	9.	0.00	0.06

		SUPERIORE ORIZZONTALE						SUPERIORE VERTICALE					
GUSCI	spess	Af	Afc	Mom	Nor	epsC	epsF	Af	Afc	Mom	Nor	epsC	epsF
240	30	5.86	5.86	0.	67.	0.00	0.27	5.78	5.78	286.	45.	0.00	0.28
241	30	5.86	5.86	53.	54.	0.00	0.23	5.78	5.78	344.	36.	0.00	0.26
242	30	5.86	5.86	157.	31.	0.01	0.18	5.78	5.78	503.	47.	0.01	0.36
243	30	5.86	5.86	149.	26.	0.02	0.15	5.78	5.78	532.	37.	0.02	0.33
244	30	5.86	5.86	80.	26.	0.00	0.13	5.78	5.78	583.	44.	0.06	0.37
245	30	5.86	5.86	196.	47.	0.00	0.25	5.78	5.78	571.	38.	0.04	0.34
246	30	5.86	5.86	10.	56.	0.00	0.23	5.78	5.78	682.	35.	0.00	0.37
247	30	5.86	5.86	44.	49.	0.00	0.21	5.78	5.78	558.	39.	0.00	0.34
248	30	5.86	5.86	19.	50.	0.00	0.21	5.78	5.78	692.	34.	0.00	0.37
249	30	5.86	5.86	68.	52.	0.00	0.24	5.78	5.78	522.	40.	0.00	0.34
250	30	5.86	5.86	144.	40.	0.00	0.21	5.78	5.78	626.	28.	0.00	0.32
251	30	5.86	5.86	299.	55.	0.00	0.32	5.78	5.78	379.	25.	0.00	0.23
252	30	5.86	5.86	172.	29.	0.00	0.17	5.78	5.78	394.	34.	0.00	0.27
254	30	5.86	5.86	37.	68.	0.00	0.29	5.78	5.78	176.	64.	0.00	0.32
255	30	5.86	5.86	30.	39.	0.00	0.17	5.78	5.78	145.	59.	0.00	0.29
256	30	5.86	5.86	94.	52.	0.00	0.24	5.78	5.78	233.	52.	0.00	0.29
257	30	5.86	5.86	137.	31.	0.00	0.17	5.78	5.78	199.	41.	0.00	0.24
324	30	5.86	5.86	486.	18.	0.03	0.23	5.78	5.78	215.	20.	0.00	0.15
325	30	5.86	5.86	503.	51.	0.00	0.37	5.78	5.78	274.	18.	0.00	0.16
326	30	5.86	5.86	798.	21.	0.05	0.35	5.78	5.78	121.	28.	0.00	0.15
327	30	5.86	5.86	684.	40.	0.04	0.38	5.78	5.78	154.	27.	0.01	0.16

328	30	5.86	5.86	1120.	20.	0.08	0.46	5.78	5.78	121.	12.	0.00	0.09
329	30	5.86	5.86	1094.	38.	0.09	0.51	5.78	5.78	120.	17.	0.00	0.11
330	30	5.86	5.86	1380.	24.	0.10	0.55	5.78	5.78	397.	3.	0.02	0.16
331	30	5.86	5.86	1301.	41.	0.11	0.59	5.78	5.78	450.	9.	0.01	0.19
332	30	5.86	5.86	180.	4.	0.00	0.07	5.78	5.78	220.	23.	0.00	0.17
333	30	5.86	5.86	186.	8.	0.00	0.09	5.78	5.78	213.	14.	0.00	0.13
334	30	5.86	5.86	410.	58.	0.00	0.37	5.78	5.78	259.	9.	0.00	0.12

L'ARMATURA È OVUNQUE > DELLA QUANTITÀ RICHIESTA: IL PUNTO 2.3 DELLE NTC È VERIFICATO (Rd > Ed)
MACROGUSCIO platea

VERIFICHE A FESSURAZIONE (EFFETTO MEMBRANA + PIASTRA)

CASI DI CARICO:

Nome	Descrizione
10	Rara (RARA)
11	Frequente (FREQUENTE)
12	Quasi Perm (QUASI PERMANENTE)

DATI:
copriferro inferiore (asse armatura): 4 cm
copriferro superiore (asse armatura): 4 cm

Af = area effettiva tesa (cm2 al metro)
Afc = area effettiva compressa (cm2 al metro)
Mom = momento flettente [daNcm/cm]
Nor = sforzo normale [daN]
sigC = tensione calcestruzzo [daN/cm2]
valore max per combinazione rara = 199 daN/cm2
'' '' '' '' frequente = 199 daN/cm2
'' '' '' '' quasi permanente = 149 daN/cm2
sigF = tensione acciaio [daN/cm2]
valore max per combinazione rara = 3600 daN/cm2
'' '' '' '' frequente = 3600 daN/cm2
'' '' '' '' quasi permanente = 3600 daN/cm2
wkR = apertura caratteristica per combinazione rara (mm) - valore max = 0.6 mm
wkF = '' '' '' '' frequente (mm) - '' '' = 0.4 mm
wkP = '' '' '' '' quasi permanente (mm) - '' '' = 0.3 mm

ARMATURA INFERIORE ORIZZONTALE

			COMBINAZIONE RARA					COMBINAZIONE FREQUENTE					COMBINAZIONE QUASI PERMANENTE				
GUSCI	Af	Afc	Mom	Nor	sigC	sigF	WkR	Mom	Nor	sigC	sigF	WkF	Mom	Nor	sigC	sigF	WkP
240	5.86	5.86	100	0.	1.22	69.	0.005	100	1	1.20	76.	0.006	94	1	1.12	76.	0.007
241	5.86	5.86	75	0.	0.93	47.	0.004	48	0.	0.59	33.	0.003	39	0.	0.48	26.	0.002
242	5.86	5.86	0.	0.	0.01	0.	0.000	0.	-1	0.02	0.	0.000	0.	0.	0.01	0.	0.000
243	5.86	5.86	0.	-1	0.04	-1.	0.000	0.	-1	0.04	-1.	0.000	0.	-1	0.05	-1.	0.000
244	5.86	5.86	0.	-1	0.04	-1.	0.000	0.	-1	0.03	0.	0.000	0.	-1	0.02	0.	0.000
245	5.86	5.86	0.	-1	0.04	-1.	0.000	0.	-1	0.04	-1.	0.000	0.	-1	0.04	-1.	0.000
246	5.86	5.86	0.	-1	0.04	-1.	0.000	0.	-2	0.05	-1.	0.000	0.	-2	0.05	-1.	0.000
247	5.86	5.86	0.	0.	0.01	0.	0.000	0.	0.	0.01	0.	0.000	0.	0.	0.00	0.	0.000
248	5.86	5.86	0.	0.	0.01	0.	0.000	0.	-1	0.03	0.	0.000	0.	-1	0.03	0.	0.000
249	5.86	5.86	0.	0.	0.00	1.	0.000	0.	1	0.00	5.	0.001	0.	1	0.00	8.	0.001
250	5.86	5.86	0.	0.	0.00	0.	0.000	0.	0.	0.01	0.	0.000	0.	-1	0.02	0.	0.000
251	5.86	5.86	0.	1	0.00	8.	0.001	0.	1	0.00	13.	0.002	0.	2	0.00	16.	0.002
252	5.86	5.86	87	2	1.02	73.	0.006	94	1	1.11	76.	0.007	97	1	1.14	78.	0.007
254	5.86	5.86	0.	0.	0.00	0.	0.000	0.	1	0.00	9.	0.001	0.	2	0.00	15.	0.002
255	5.86	5.86	0.	2	0.00	15.	0.002	0.	2	0.00	21.	0.003	0.	3	0.00	23.	0.004
256	5.86	5.86	3	0.	0.03	0.	0.000	10	0.	0.12	5.	0.000	13	0.	0.17	8.	0.001
257	5.86	5.86	0.	0.	0.01	0.	0.000	0.	0.	0.01	0.	0.000	0.	0.	0.01	0.	0.000
324	5.86	5.86	0.	-1	0.04	-1.	0.000	0.	-1	0.05	-1.	0.000	0.	-2	0.05	-1.	0.000
325	5.86	5.86	0.	3	0.00	29.	0.004	0.	5	0.00	41.	0.006	0.	5	0.00	46.	0.007
326	5.86	5.86	0.	-1	0.02	0.	0.000	0.	-1	0.02	0.	0.000	0.	-1	0.02	0.	0.000
327	5.86	5.86	0.	1	0.00	11.	0.002	0.	2	0.00	21.	0.003	0.	3	0.00	25.	0.004
328	5.86	5.86	0.	-1	0.02	0.	0.000	0.	-1	0.02	0.	0.000	0.	-1	0.02	0.	0.000
329	5.86	5.86	0.	1	0.00	6.	0.001	0.	2	0.00	13.	0.002	0.	2	0.00	16.	0.002
330	5.86	5.86	0.	1	0.00	6.	0.001	0.	1	0.00	6.	0.001	0.	1	0.00	5.	0.001
331	5.86	5.86	0.	0.	0.00	2.	0.000	0.	1	0.00	9.	0.001	0.	1	0.00	11.	0.002
332	5.86	5.86	22	-1	0.26	6.	0.000	42	-1	0.52	18.	0.001	61	-2	0.76	30.	0.002
333	5.86	5.86	0.	1	0.00	4.	0.001	14	0.	0.16	13.	0.001	34	0.	0.41	26.	0.002
334	5.86	5.86	0.	4	0.00	37.	0.006	0.	6	0.00	48.	0.007	0.	6	0.00	52.	0.008

ARMATURA INFERIORE VERTICALE

			COMBINAZIONE RARA					COMBINAZIONE FREQUENTE					COMBINAZIONE QUASI PERMANENTE				
GUSCI	Af	Afc	Mom	Nor	sigC	sigF	WkR	Mom	Nor	sigC	sigF	WkF	Mom	Nor	sigC	sigF	WkP
240	5.78	5.78	0.	-1	0.04	-1.	0.000	0.	0.	0.01	0.	0.000	0.	0.	0.00	2.	0.000
241	5.78	5.78	0.	-2	0.06	-1.	0.000	0.	-1	0.04	-1.	0.000	0.	-1	0.03	0.	0.000
242	5.78	5.78	0.	-1	0.04	-1.	0.000	0.	-1	0.02	0.	0.000	0.	0.	0.01	0.	0.000
243	5.78	5.78	0.	-2	0.06	-1.	0.000	0.	-2	0.06	-1.	0.000	0.	-2	0.05	-1.	0.000
244	5.78	5.78	0.	-3	0.09	-1.	0.000	0.	-2	0.07	-1.	0.000	0.	-2	0.06	-1.	0.000
245	5.78	5.78	0.	-3	0.08	-1.	0.000	0.	-2	0.07	-1.	0.000	0.	-2	0.07	-1.	0.000
246	5.78	5.78	0.	-3	0.08	-1.	0.000	0.	-3	0.10	-1.	0.000	0.	-3	0.10	-2.	0.000
247	5.78	5.78	0.	-1	0.03	0.	0.000	0.	-1	0.02	0.	0.000	0.	0.	0.01	0.	0.000
248	5.78	5.78	0.	-1	0.04	-1.	0.000	0.	-2	0.06	-1.	0.000	0.	-2	0.06	-1.	0.000
249	5.78	5.78	0.	-1	0.02	0.	0.000	0.	0.	0.00	2.	0.000	0.	1	0.00	5.	0.001
250	5.78	5.78	0.	-1	0.02	0.	0.000	0.	-1	0.03	0.	0.000	0.	-1	0.03	0.	0.000
251	5.78	5.78	0.	-2	0.06	-1.	0.000	0.	-1	0.03	0.	0.000	0.	0.	0.01	0.	0.000
252	5.78	5.78	29	1	0.32	28.	0.003	48	1	0.57	40.	0.004	56	1	0.67	45.	0.004
254	5.78	5.78	0.	-1	0.03	0.	0.000	0.	0.	0.00	3.	0.000	0.	1	0.00	8.	0.001
255	5.78	5.78	0.	2	0.00	20.	0.003	0.	4	0.00	32.	0.005	0.	4	0.00	37.	0.006
256	5.78	5.78	0.	-2	0.07	-1.	0.000	0.	-1	0.03	-1.	0.000	0.	-1	0.02	0.	0.000
257	5.78	5.78	0.	-1	0.03	0.	0.000	0.	0.	0.01	0.	0.000	0.	0.	0.00	0.	0.000
324	5.78	5.78	21	1	0.22	23.	0.002	4	1	0.00	10.	0.001	0.	1	0.00	7.	0.001
325	5.78	5.78	32	1	0.33	36.	0.004	10	1	0.00	19.	0.002	1	1	0.00	13.	0.002
326	5.78	5.78	0.	0.	0.00	4.	0.001	0.	1	0.00	8.	0.001	0.	1	0.00	9.	0.001
327	5.78	5.78	0.	1	0.00	8.	0.001	0.	1	0.00	12.	0.002	0.	2	0.00	13.	0.002
328	5.78	5.78	0.	0.	0.00	3.	0.000	0.	1	0.00	6.	0.001	0.	1	0.00	8.	0.001
329	5.78	5.78	0.	1	0.00	5.	0.001	0.	1	0.00	9.	0.001	0.	1	0.00	11.	0.002
330	5.78	5.78	0.	1	0.00	6.	0.001	0.	1	0.00	9.	0.001	0.	1	0.00	10.	0.001
331	5.78	5.78	0.	1	0.00	6.	0.001	0.	1	0.00	9.	0.001	0.	1	0.00	10.	0.002
332	5.78	5.78	0.	-1	0.02	0.	0.000	0.	-1	0.02	0.	0.000	0.	0.	0.01	0.	0.000
333	5.78	5.78	0.	-1	0.03	0.	0.000	0.	-1	0.02	0.	0.000	0.	-1	0.02	0.	0.000
334	5.78	5.78	0.	-2	0.05	-1.	0.000	0.	-1	0.03	0.	0.000	0.	-1	0.03	0.	0.000

ARMATURA SUPERIORE ORIZZONTALE

			COMBINAZIONE RARA					COMBINAZIONE FREQUENTE					COMBINAZIONE QUASI PERMANENTE				
GUSCI	Af	Afc	Mom	Nor	sigC	sigF	WkR	Mom	Nor	sigC	sigF	WkF	Mom	Nor	sigC	sigF	WkP
240	5.86	5.86	6	0.	0.08	5.	0.000	16	1	0.15	19.	0.002	20	1	0.17	26.	0.003
241	5.86	5.86	0.	0.	0.02	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
242	5.86	5.86	151	0.	1.86	101.	0.008	123	-1	1.52	79.	0.006	112	0.	1.38	74.	0.006
243	5.86	5.86	149	-1	1.84	92.	0.007	115	-1	1.42	67.	0.005	101	-1	1.26	57.	0.004
244	5.86	5.86	91	-1	1.13	51.	0.004	72	-1	0.89	41.	0.003	64	-1	0.79	38.	0.003
245	5.86	5.86	89	-1	1.11	50.	0.004	71	-1	0.88	38.	0.003	63	-1	0.79	33.	0.003
246	5.86	5.86	72	-1	0.89	38.	0.003	56	-2	0.70	25.	0.002	50	-2	0.62	22.	0.002
247	5.86	5.86	80	0.	0.98	52.	0.004	65	0.	0.80	43.	0.003	59	0.	0.73	40.	0.003
248	5.86	5.86	84	0.	1.03	55.	0.004	64	-1	0.80	37.	0.003	57	-1	0.70	30.	0.002
249	5.86	5.86	103	0.	1.26	71.	0.006	86	1	1.04	64.	0.005	80	1	0.95	62.	0.005
250	5.86	5.86	168	0.	2.05	114.	0.009	149	0.	1.83	98.	0.008	141	-1	1.74	92.	0.007
251	5.86	5.86	167	1	2.02	121.	0.010	151	1	1.81	116.	0.010	145	2	1.73	115.	0.010
252	5.86	5.86	126	2	1.50	99.	0.008	117	1	1.40	92.	0.008	114	1	1.36	89.	0.008
254	5.86	5.86	34	0.	0.41	23.	0.002	23	1	0.22	25.	0.003	19	2	0.07	28.	0.003
255	5.86	5.86	130	2	1.54	104.	0.009	112	2	1.28	97.	0.009	104	3	1.18	95.	0.009
256	5.86	5.86	44	0.	0.55	27.	0.002	45	0.	0.55	29.	0.002	45	0.	0.56	30.	0.002
257	5.86	5.86	116	0.	1.43	76.	0.006	86	0.	1.06	56.	0.004	74	0.	0.91	48.	0.004
324	5.86	5.86	96	-1	1.19	56.	0.004	59	-1	0.73	28.	0.002	44	-2	0.53	17.	0.001
325	5.86	5.86	295	3	3.52	230.	0.020	287	5	3.37	237.	0.021	284	5	3.31	240.	0.022
326	5.86	5.86	152	-1	1.87	98.	0.008	128	-1	1.57	81.	0.006	118	-1	1.45	74.	0.006
327	5.86	5.86	284	1	3.45	205.	0.017	288	2	3.46	217.	0.018	289	3	3.46	222.	0.019
328	5.86	5.86	211	-1	2.60	139.	0.011	199	-1	2.44	130.	0.010	194	-1	2.38	127.	0.010
329	5.86	5.86	302	1	3.69	212.	0.017	303	2	3.67	220.	0.018	303	2	3.67	223.	0.018
330	5.86	5.86	278	1	3.38	196.	0.016	271	1	3.30	191.	0.015	268	1	3.27	189.	0.015
331	5.86	5.86	342	0.	4.18	236.	0.018	342	1	4.17	243.	0.019	342	1	4.16	245.	0.020
332	5.86	5.86	0.	-1	0.04	-1.	0.000	0.	-1	0.05	-1.	0.000	0.	-2	0.05	-1.	0.000
333	5.86	5.86	29	1	0.34	24.	0.002	40	0.	0.48	31.	0.003	45	0.	0.54	34.	0.003
334	5.86	5.86	310	4	3.67	249.	0.022	270	6	3.13	232.	0.021	254	6	2.90	226.	0.021

ARMATURA SUPERIORE VERTICALE

			COMBINAZIONE RARA					COMBINAZIONE FREQUENTE					COMBINAZIONE QUASI PERMANENTE				
GUSCI	Af	Afc	Mom	Nor	sigC	sigF	WkR	Mom	Nor	sigC	sigF	WkF	Mom	Nor	sigC	sigF	WkP
240	5.78	5.78	195	-1	2.42	125.	0.010	150	0.	1.86	103.	0.008	133	0.	1.63	94.	0.007
241	5.78	5.78	198	-2	2.47	121.	0.009	157	-1	1.95	99.	0.008	141	-1	1.75	90.	0.007
242	5.78	5.78	270	-1	3.35	176.	0.014	203	-1	2.51	136.	0.011	176	0.	2.18	120.	0.009
243	5.78	5.78	287	-2	3.57	182.	0.014	229	-2	2.85	143.	0.011	206	-2	2.56	128.	0.010
244	5.78	5.78	262	-3	3.27	159.	0.012	191	-2	2.39	114.	0.009	163	-2	2.03	96.	0.008
245	5.78	5.78	291	-3	3.63	181.	0.014	232	-2	2.90	142.	0.011	209	-2	2.60	127.	0.010
246	5.78	5.78	237	-3	2.95	143.	0.011	167	-3	2.08	90.	0.007	139	-3	1.73	69.	0.005
247	5.78	5.78	296	-1	3.67	197.	0.015	242	-1	2.99	163.	0.013	220	0.	2.72	149.	0.012
248	5.78	5.78	240	-1	2.98	155.	0.012	169	-2	2.11	102.	0.008	140	-2	1.75	81.	0.006
249	5.78	5.78	304	-1	3.75	204.	0.016	255	0.	3.14	179.	0.014	236	1	2.89	168.	0.014
250	5.78	5.78	260	-1	3.21	174.	0.014	194	-1	2.41	127.	0.010	168	-1	2.08	108.	0.009
251	5.78	5.78	270	-2	3.36	172.	0.013	232	-1	2.87	154.	0.012	217	0.	2.68	147.	0.012
252	5.78	5.78	257	1	3.15	186.	0.015	207	1	2.53	150.	0.012	187	1	2.28	136.	0.011
254	5.78	5.78	133	-1	1.65	85.	0.007	106	0.	1.29	76.	0.006	95	1	1.14	73.	0.006
255	5.78	5.78	153	2	1.81	126.	0.011	122	4	1.37	117.	0.011	110	4	1.17	113.	0.011
256	5.78	5.78	140	-2	1.74	79.	0.006	116	-1	1.44	71.	0.006	106	-1	1.32	68.	0.005
257	5.78	5.78	156	-1	1.94	101.	0.008	129	0.	1.59	87.	0.007	118	0.	1.45	81.	0.006
324	5.78	5.78	0.	1	0.00	8.	0.001	0.	1	0.00	8.	0.001	5	1	0.00	11.	0.001
325	5.78	5.78	0.	1	0.00	13.	0.002	5	1	0.00	15.	0.002	11	1	0.00	20.	0.002
326	5.78	5.78	44	0.	0.53	35.	0.003	41	1	0.47	36.	0.003	39	1	0.45	36.	0.003
327	5.78	5.78	47	1	0.55	40.	0.004	44	1	0.49	43.	0.004	43	2	0.47	43.	0.004
328	5.78	5.78	27	0.	0.32	21.	0.002	23	1	0.26	22.	0.002	22	1	0.23	23.	0.002
329	5.78	5.78	35	1	0.42	29.	0.003	32	1	0.36	32.	0.003	32	1	0.33	33.	0.003
330	5.78	5.78	80	1	0.97	62.	0.005	79	1	0.94	63.	0.005	78	1	0.93	63.	0.006
331	5.78	5.78	81	1	0.98	61.	0.005	79	1	0.95	64.	0.006	79	1	0.94	65.	0.006
332	5.78	5.78	76	-1	0.95	47.	0.004	46	-1	0.57	27.	0.002	46	0.	0.57	28.	0.002
333	5.78	5.78	107	-1	1.34	67.	0.005	76	-1	0.94	47.	0.004	63	-1	0.78	39.	0.003
334	5.78	5.78	123	-2	1.54	72.	0.006	103	-1	1.28	63.	0.005	95	-1	1.18	59.	0.005

17. ALLEGATI

DATI STRUTTURA Centrale:

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*** DATI STRUTTURA

Unita` di misura :
LUNGHEZZE         : cm
SUPERFICI         : cm2
DATI SEZIONALI    : cm
ANGOLI            : gradi
FORZE             : daN
MOMENTI           : daNcm
CARICHI LINEARI   : daN/cm
CARICHI SUPERFIC.: daN/cm2
TENSIONI          : daN/cm2
PESI DI VOLUME    : daN/cm3
COEFF. DI WINKLER: daN/cm3
RIGIDEZZE VINCOL.: daN/cm - daNcm/rad


NODI--|-----------|-----------|-----------|-----
------|-----------|num.=    241
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Nome	Coord. X	Coord. Y	Coord. Z
1	0.000	0.000	0.000
2	0.000	0.000	90.000
3	0.000	0.000	168.800
4	0.000	0.000	210.000
5	0.000	0.000	247.500
6	0.000	0.000	326.300
7	0.000	0.000	435.400
8	0.000	0.000	535.000
9	0.000	92.000	0.000
10	0.000	92.000	90.000
11	0.000	92.000	168.800
12	0.000	92.000	210.000
13	0.000	92.000	247.500
14	0.000	92.000	326.300
15	0.000	92.000	435.400
16	0.000	92.000	535.000
17	0.000	184.000	0.000
18	0.000	184.000	90.000
19	0.000	184.000	168.800
20	0.000	184.000	210.000
21	0.000	184.000	247.500
22	0.000	184.000	326.300
23	0.000	184.000	435.400
24	0.000	184.000	535.000
25	0.000	230.000	535.000
26	0.000	276.000	0.000
27	0.000	276.000	90.000
28	0.000	276.000	168.800
29	0.000	276.000	210.000
30	0.000	276.000	247.500
31	0.000	276.000	326.300
32	0.000	276.000	435.400
33	0.000	276.000	535.000
34	0.000	368.000	0.000
35	0.000	368.000	90.000
36	0.000	368.000	168.800
37	0.000	368.000	210.000
38	0.000	368.000	247.500
39	0.000	368.000	326.300
40	0.000	368.000	435.400
41	0.000	368.000	535.000
42	0.000	460.000	0.000
43	0.000	460.000	90.000
44	0.000	460.000	150.000
45	0.000	460.000	210.000
46	0.000	460.000	247.500
47	0.000	460.000	326.300
48	0.000	460.000	435.400
49	0.000	460.000	535.000
50	75.000	460.000	90.000
51	75.000	460.000	150.000
52	75.000	460.000	210.000
53	93.300	0.000	0.000
54	93.300	0.000	90.000
55	93.300	0.000	168.800
56	93.300	0.000	210.000
57	93.300	0.000	247.500
58	93.300	0.000	326.300
59	93.300	0.000	435.400
60	93.300	0.000	535.000
61	93.300	92.000	0.000
62	93.300	184.000	0.000
63	93.300	276.000	0.000
64	93.300	370.000	0.000
65	93.300	460.000	0.000
66	150.000	460.000	0.000
67	150.000	460.000	90.000
68	150.000	460.000	150.000
69	150.000	460.000	210.000
70	150.000	460.000	326.300
71	150.000	460.000	435.200
72	150.000	460.000	535.000
73	165.000	0.000	0.000
74	165.000	0.000	90.000
75	165.000	0.000	150.000
76	165.000	0.000	210.000
77	165.000	0.000	247.500
78	165.000	0.000	326.300
79	165.000	0.000	435.400
80	165.000	0.000	535.000
81	165.000	92.000	0.000
82	165.000	92.500	90.000
83	165.000	92.500	150.000
84	165.000	92.500	210.000
85	165.000	170.000	90.000
86	165.000	170.000	150.000
87	165.000	170.000	210.000
88	165.000	173.300	0.000
89	165.000	277.500	0.000
90	165.000	277.500	90.000
91	165.000	277.500	150.000
92	165.000	277.500	210.000
93	165.000	370.000	0.000
94	165.000	370.000	90.000
95	165.000	370.000	150.000
96	165.000	370.000	210.000
97	186.700	0.000	0.000
98	186.700	0.000	90.000
99	186.700	0.000	168.800
100	186.700	0.000	210.000
101	186.700	0.000	247.500
102	186.700	0.000	326.300
103	186.700	0.000	435.400
104	186.700	0.000	535.000
105	186.700	92.000	0.000
106	186.700	170.000	0.000
107	186.700	276.000	0.000
108	186.700	370.000	0.000
109	186.700	460.000	0.000
110	210.000	460.000	90.000
111	210.000	460.000	150.000
112	210.000	460.000	210.000
113	210.000	460.000	326.300
114	210.000	460.000	435.900
115	210.000	460.000	535.000
116	235.000	0.000	0.000
117	235.000	0.000	90.000
118	235.000	0.000	168.800
119	235.000	0.000	210.000
120	235.000	0.000	247.500
121	235.000	0.000	326.300
122	235.000	0.000	435.400
123	235.000	0.000	535.000
124	235.000	92.000	0.000
125	235.000	92.000	90.000
126	235.000	170.000	0.000
127	235.000	170.000	90.000
128	263.800	370.000	150.000
129	263.800	370.000	210.000
130	270.000	460.000	0.000
131	270.000	460.000	90.000
132	270.000	460.000	150.000
133	270.000	460.000	210.000
134	270.000	460.000	326.300
135	270.000	460.000	436.600
136	270.000	460.000	535.000
137	275.100	269.900	90.000
138	280.000	0.000	0.000
139	280.000	0.000	90.000
140	280.000	0.000	168.800
141	280.000	0.000	210.000
142	280.000	0.000	247.500
143	280.000	0.000	326.300
144	280.000	0.000	435.400
145	280.000	0.000	535.000
146	280.000	92.000	0.000
147	280.000	170.000	0.000
148	280.000	170.000	90.000
149	280.000	276.000	0.000
150	280.000	370.000	0.000
151	280.000	370.000	90.000
152	362.500	370.000	150.000
153	362.500	370.000	210.000
154	366.700	460.000	90.000
155	366.700	460.000	150.000
156	366.700	460.000	210.000
157	373.300	0.000	168.800

158	373.300	0.000	210.000
159	373.300	0.000	247.500
160	373.300	0.000	326.300
161	373.300	0.000	435.400
162	373.300	0.000	535.000
163	373.300	276.000	0.000
164	373.300	370.000	0.000
165	373.300	370.000	90.000
166	373.300	460.000	0.000
167	375.000	0.000	0.000
168	375.000	0.000	90.000
169	375.000	92.000	0.000
170	375.000	92.000	90.000
171	375.000	170.000	0.000
172	375.000	170.000	90.000
173	375.000	269.900	90.000
174	461.300	370.000	150.000
175	461.300	370.000	210.000
176	463.300	460.000	150.000
177	463.300	460.000	210.000
178	465.200	170.000	90.000
179	466.700	0.000	0.000
180	466.700	0.000	90.000
181	466.700	0.000	168.800
182	466.700	0.000	210.000
183	466.700	0.000	247.500
184	466.700	0.000	326.300
185	466.700	0.000	435.400
186	466.700	0.000	535.000
187	466.700	85.700	90.000
188	466.700	92.000	0.000
189	466.700	184.000	0.000
190	466.700	276.000	0.000
191	466.700	370.000	0.000
192	466.700	370.000	90.000
193	466.700	460.000	0.000
194	466.700	460.000	90.000
195	469.800	276.000	90.000
196	560.000	0.000	0.000
197	560.000	0.000	90.000
198	560.000	0.000	168.800
199	560.000	0.000	210.000
200	560.000	0.000	326.300
201	560.000	0.000	435.400
202	560.000	0.000	535.000
203	560.000	92.000	0.000
204	560.000	92.000	90.000
205	560.000	92.000	168.800
206	560.000	92.000	210.000
207	560.000	92.000	326.300
208	560.000	92.000	435.400
209	560.000	92.000	535.000
210	560.000	184.000	0.000
211	560.000	184.000	90.000
212	560.000	184.000	168.800
213	560.000	184.000	210.000
214	560.000	184.000	326.300
215	560.000	184.000	435.400
216	560.000	184.000	535.000
217	560.000	230.000	535.000
218	560.000	276.000	0.000
219	560.000	276.000	90.000
220	560.000	276.000	168.800
221	560.000	276.000	210.000
222	560.000	276.000	326.300
223	560.000	276.000	435.400
224	560.000	276.000	535.000
225	560.000	368.000	326.300
226	560.000	368.000	435.400
227	560.000	368.000	535.000
228	560.000	370.000	0.000
229	560.000	370.000	90.000
230	560.000	370.000	150.000
231	560.000	370.000	210.000
232	560.000	460.000	0.000
233	560.000	460.000	90.000
234	560.000	460.000	150.000
235	560.000	460.000	210.000
236	560.000	460.000	326.300
237	560.000	460.000	435.400
238	560.000	460.000	535.000
239	340.000	0.000	535.000
240	340.000	460.000	535.000
241	340.000	230.000	535.000

ASTE--|-----------|-----------|-----------|-----------|-----------|num.= 58

Nome	Proprieta`	Nodo iniz.	Nodo fin.	Rilasci in.	Rilasci fin.	Orient.
1	2	4	12	RyRz	RxRyRz	0.0
2	1	8	16	RyRz	RxRyRz	0.0
3	2	12	20	RyRz	RxRyRz	0.0
4	1	16	24	RyRz	RxRyRz	0.0
5	1	24	25	RyRz	RxRyRz	0.0
6	2	20	29	RyRz	RxRyRz	0.0
7	1	25	33	RyRz	RxRyRz	0.0
8	2	29	37	RyRz	RxRyRz	0.0
9	1	33	41	RyRz	RxRyRz	0.0
10	2	37	45	RyRz	RxRyRz	0.0
11	1	41	49	RyRz	RxRyRz	0.0
12	2	45	52	RyRz	RxRyRz	0.0
13	2	4	56	RyRz	RxRyRz	0.0
14	1	8	60	RyRz	RxRyRz	0.0
15	4	49	72	RyRz	RxRyRz	0.0
16	2	52	69	RyRz	RxRyRz	0.0
17	2	56	76	RyRz	RxRyRz	0.0
18	1	60	80	RyRz	RxRyRz	0.0
19	2	76	84	RyRz	RxRyRz	0.0
20	2	84	87	RyRz	RxRyRz	0.0
21	2	87	92	RyRz	RxRyRz	0.0
22	2	92	96	RyRz	RxRyRz	0.0
23	1	80	104	RyRz	RxRyRz	0.0
24	2	69	112	RyRz	RxRyRz	0.0
25	4	72	115	RyRz	RxRyRz	0.0
26	1	104	123	RyRz	RxRyRz	0.0
27	2	96	129	RyRz	RxRyRz	0.0
28	2	112	133	RyRz	RxRyRz	0.0
29	4	115	136	RyRz	RxRyRz	0.0
30	1	123	145	RyRz	RxRyRz	0.0
31	2	25	217	RyRz	RxRyRz	0.0
32	2	129	153	RyRz	RxRyRz	0.0
33	2	133	156	RyRz	RxRyRz	0.0
34	1	145	239	RyRz		0.0
35	2	153	175	RyRz	RxRyRz	0.0
36	2	156	177	RyRz	RxRyRz	0.0
37	4	136	240	RyRz		0.0
38	1	162	186	RyRz	RxRyRz	0.0
39	2	175	231	RyRz	RxRyRz	0.0
40	2	177	235	RyRz	RxRyRz	0.0
41	1	186	202	RyRz	RxRyRz	0.0
42	1	202	209	RyRz	RxRyRz	0.0
43	1	209	216	RyRz	RxRyRz	0.0
44	1	216	217	RyRz	RxRyRz	0.0
45	1	217	224	RyRz	RxRyRz	0.0
46	1	224	227	RyRz	RxRyRz	0.0
47	1	227	238	RyRz	RxRyRz	0.0
48	2	231	235	RyRz	RxRyRz	0.0

49	1	117	125	RyRz	RxRyRz	0.0
50	1	125	127	RyRz	RxRyRz	0.0
51	1	127	148	RyRz	RxRyRz	0.0
52	1	148	172	RyRz	RxRyRz	0.0
53	1	170	172	RyRz	RxRyRz	0.0
54	1	168	170	RyRz	RxRyRz	0.0
55	5	239	241			0.0
56	4	240	238		RxRyRz	0.0
57	1	239	162		RxRyRz	0.0
58	5	241	240			0.0

GUSCI TRIANGOLARI--|----------|----------|----------|----------|num.= 15

Nome	Proprieta`	Nodo 1	Nodo 2	Nodo 3
15	2	23	25	24
22	2	23	32	25
23	2	25	32	33
81	2	74	98	82
82	3	93	108	94
101	1	106	126	107
119	1	107	126	149
138	2	127	148	137
139	1	126	147	149
185	3	181	198	182
186	2	182	199	183
207	3	182	198	199
220	2	215	217	216
226	2	215	223	217
227	2	217	223	224

GUSCI RETTANGOLARI|----------|----------|----------|----------
|num.= 224

Nome	Proprieta`	Nodo 1	Nodo 2	Nodo 3	Nodo 4
1	3	1	9	10	2
2	3	2	10	11	3
3	3	3	11	12	4
4	2	4	12	13	5
5	2	5	13	14	6
6	2	6	14	15	7
7	2	7	15	16	8
8	3	9	17	18	10
9	3	10	18	19	11
10	3	11	19	20	12
11	2	12	20	21	13
12	2	13	21	22	14
13	2	14	22	23	15
14	2	15	23	24	16
16	3	17	26	27	18
17	3	18	27	28	19
18	3	19	28	29	20
19	2	20	29	30	21
20	2	21	30	31	22
21	2	22	31	32	23
24	3	26	34	35	27
25	3	27	35	36	28
26	3	28	36	37	29
27	2	29	37	38	30
28	2	30	38	39	31
29	2	31	39	40	32
30	2	32	40	41	33
31	3	34	42	43	35
32	3	35	43	44	36
33	3	36	44	45	37
34	2	37	45	46	38
35	2	38	46	47	39
36	2	39	47	48	40
37	2	40	48	49	41
38	3	44	51	50	43
39	3	45	52	51	44
40	3	42	65	50	43
41	3	1	53	54	2
42	3	2	54	55	3
43	3	3	55	56	4
44	2	4	56	57	5
45	2	5	57	58	6
46	2	6	58	59	7
47	2	7	59	60	8
48	1	1	53	61	9
49	1	9	61	62	17
50	1	17	62	63	26
51	1	26	63	64	34
52	1	34	64	65	42
53	3	51	68	67	50
54	3	52	69	68	51
55	3	65	66	67	50
56	1	64	93	66	65
57	3	53	73	74	54
58	3	54	74	75	55
59	3	55	75	76	56
60	2	56	76	77	57
61	2	57	77	78	58
62	2	58	78	79	59
63	2	59	79	80	60
64	1	53	73	81	61
65	1	61	81	88	62
66	1	62	88	89	63
67	1	63	89	93	64
68	3	73	81	82	74
69	2	75	83	82	74
70	2	76	84	83	75
71	2	83	86	85	82
72	2	84	87	86	83
73	3	81	88	85	82
74	2	86	91	90	85
75	2	87	92	91	86
76	3	88	89	90	85
77	3	89	93	94	90
78	2	91	95	94	90
79	2	92	96	95	91
80	1	93	108	109	66
83	3	66	109	110	67
84	3	73	97	98	74
85	3	74	98	99	75
86	3	75	99	100	76
87	2	76	100	101	77
88	2	77	101	102	78
89	2	78	102	103	79
90	2	79	103	104	80
91	1	73	97	105	81
92	1	81	105	106	88
93	1	88	106	107	89
94	1	89	107	108	93
95	3	67	110	111	68
96	3	68	111	112	69
97	2	69	112	113	70
98	2	70	113	114	71
99	2	71	114	115	72
100	2	82	125	127	85
102	2	98	117	125	82
103	2	85	127	137	90
104	3	97	116	117	98
105	3	98	117	118	99
106	3	99	118	119	100
107	2	100	119	120	101
108	2	101	120	121	102
109	2	102	121	122	103
110	2	103	122	123	104
111	1	97	116	124	105
112	1	105	124	126	106
113	2	95	128	129	96
114	2	94	151	128	95
115	2	90	137	151	94
116	3	108	150	151	94
117	1	108	150	130	109
118	1	107	149	150	108
120	3	109	130	131	110
121	2	117	125	124	116
122	2	125	127	126	124
123	3	110	131	132	111
124	3	111	132	133	112
125	2	112	133	134	113
126	2	113	134	135	114
127	2	114	135	136	115
128	3	116	138	139	117
129	3	117	139	140	118
130	3	118	140	141	119
131	2	119	141	142	120
132	2	120	142	143	121
133	2	121	143	144	122
134	2	122	144	145	123
135	1	116	138	146	124
136	1	124	146	147	126
137	2	126	147	148	127
140	2	128	152	153	129
141	3	132	155	154	131
142	3	133	156	155	132
143	2	151	165	152	128
144	3	130	166	154	131
145	1	150	164	166	130
146	2	137	173	165	151
147	2	148	172	173	137
148	3	140	157	158	141
149	2	141	158	159	142
150	2	142	159	160	143
151	2	143	160	161	144
152	2	144	161	162	145
153	1	149	163	164	150
154	3	150	164	165	151
155	3	139	168	157	140
156	1	147	171	163	149
157	3	138	167	168	139
158	1	138	167	169	146
159	1	146	169	171	147
160	2	147	171	172	148
161	2	168	170	169	167
162	2	170	172	171	169
163	2	152	174	175	153
164	3	156	177	176	155
165	3	155	176	194	154
166	2	165	192	174	152
167	3	166	193	194	154
168	3	157	181	182	158
169	2	158	182	183	159
170	2	159	183	184	160
171	2	160	184	185	161
172	2	161	185	186	162
173	1	163	190	191	164
174	3	164	191	192	165
175	1	164	191	193	166
176	3	168	180	181	157
177	1	171	189	190	163
178	2	170	187	178	172
179	3	167	179	180	168
180	2	168	180	187	170
181	1	167	179	188	169
182	1	169	188	189	171
183	2	173	195	192	165
184	2	172	178	195	173
187	2	174	230	231	175
188	3	177	235	234	176

189	2	192	229	230	174	214	3	203	210	211	204
190	3	176	234	233	194	215	3	204	211	212	205
191	2	187	204	211	178	216	3	205	212	213	206
192	3	179	196	197	180	217	2	206	213	214	207
193	3	180	197	198	181	218	2	207	214	215	208
194	2	183	199	200	184	219	2	208	215	216	209
195	2	184	200	201	185	221	3	210	218	219	211
196	2	185	201	202	186	222	3	211	219	220	212
197	2	180	197	204	187	223	3	212	220	221	213
198	1	179	196	203	188	224	2	213	221	222	214
199	1	188	203	210	189	225	2	214	222	223	215
200	1	189	210	218	190	228	2	222	225	226	223
201	1	190	218	228	191	229	2	223	226	227	224
202	3	191	228	229	192	230	2	221	231	225	222
203	1	191	228	232	193	231	3	218	228	229	219
204	3	193	232	233	194	232	3	219	229	230	220
205	2	178	211	219	195	233	3	220	230	231	221
206	2	195	219	229	192	234	2	225	236	237	226
208	3	196	203	204	197	235	2	226	237	238	227
209	3	197	204	205	198	236	2	231	235	236	225
210	3	198	205	206	199	237	3	228	232	233	229
211	2	199	206	207	200	238	3	229	233	234	230
212	2	200	207	208	201	239	3	230	234	235	231
213	2	201	208	209	202						

PROPRIETA` ASTE---|-----------|-----------|-----------|-----------|num.= 4

Nome	Materiale	Base Kw vertic.	Altezza Kw orizz.	Area J tors.	Area tag. Y J fless. Y	Area tag. Z J fless. Z
1	1	10.00 0.000000	10.00 0.000000	1.00000E+02 1.40831E+03	8.33333E+01 8.33333E+02	8.33333E+01 8.33333E+02
2	1	40.00 0.000000	25.00 0.000000	1.00000E+03 1.27344E+05	8.33333E+02 1.33333E+05	8.33333E+02 5.20833E+04
4	1	20.00 0.000000	90.00 0.000000	1.80000E+03 2.06405E+05	1.50000E+03 6.00000E+04	1.50000E+03 1.21500E+06
5	2	11.00 0.000000	22.00 0.000000	3.34000E+01 9.10000E+00	1.29800E+01 2.05000E+02	2.02400E+01 2.77200E+03

PROPRIETA` GUSCI--|-----------|-----------|-----------|-----------|num.= 3

Nome	Materiale	Sp.membr.	Sp. piastra	Kw
1	1	30.00	30.00	8.000000
2	1	20.00	20.00	0.000000
3	1	30.00	30.00	0.000000

MATERIALI---------|-----------|-----------|-----------|-----------|num.= 2

Nome	Mod. elast.	Coeff. nu	Mod. tang.	Peso spec.	Dil. te.
1	3.00000E+05	1.50000E-01	1.30000E+05	2.50000E-03	1.00000E-05
2	2.10000E+06	3.00000E-01	8.50000E+05	7.85000E-03	1.00000E-05

VINCOLI-----------|-----------|-----------|-----------|-----------|num.= 14

Nodo	Rigid. X	Rigid. Y	Rigid. Z	Rigid. RX	Rigid. RY	Rigid. RZ
17	bloccato	bloccato	libero	libero	libero	libero
62	bloccato	bloccato	libero	libero	libero	libero
88	bloccato	bloccato	libero	libero	libero	libero
106	bloccato	bloccato	libero	libero	libero	libero
126	bloccato	bloccato	libero	libero	libero	libero
147	bloccato	bloccato	libero	libero	libero	libero
171	bloccato	bloccato	libero	libero	libero	libero
189	bloccato	bloccato	libero	libero	libero	libero
210	bloccato	bloccato	libero	libero	libero	libero
130	bloccato	bloccato	libero	libero	libero	libero
138	bloccato	bloccato	libero	libero	libero	libero
146	bloccato	bloccato	libero	libero	libero	libero
149	bloccato	bloccato	libero	libero	libero	libero
150	bloccato	bloccato	libero	libero	libero	libero

CARICHI NODI------|-----------|-----------|-----------|-----------|num.= 761

Nome	Nodo	Direzione	Intensita`
1 Argano	241	Z	-3000.0
2 - 381 : Forze Sismiche (Analisi Semplificata)			
382 - 761 : Momenti Torcenti Addizionali			

CARICHI DI SOLAIO-|-----------|-----------|-----------|-----------|num.= 6

Nome	Cos X	Cos Y	Cos Z	Cond.	Rifer.	Intens.	Quota
1	1.0000	0.0000	0.0000	3	glob	-0.12500	210.00
2	0.0000	-1.0000	0.0000	3	glob	-0.12500	210.00
3	1.0000	0.0000	0.0000	5	glob	-0.02000	210.00
4	0.0000	-1.0000	0.0000	5	glob	-0.02000	210.00
5	0.0000	-1.0000	0.0000	6	glob	-0.10000	535.00
6	0.0000	-1.0000	0.0000	7	glob	-0.02700	535.00

CARICHI ASTE------|-----------|-----------|-----------|-----------|num.= 126

Nome	Asta	Dir	Tip	RIF	Parametro 1	Parametro 2	Parametro 3	Parametro 4
762 S002-PPsol+pav	1	Z	FT	glo	-10.313	-10.313	0.000	0.000
763 S002-PPsol+pav	3	Z	FT	glo	-10.313	-10.313	0.000	0.000
764 S002-PPsol+pav	6	Z	FT	glo	-10.313	-10.313	0.000	0.000
765 S002-PPsol+pav	8	Z	FT	glo	-10.313	-10.313	0.000	0.000
766 S002-PPsol+pav	10	Z	FT	glo	-20.181	-0.443	0.000	0.000
767 S002-PPsol+pav	19	Z	FT	glo	-10.313	-10.313	0.000	0.000
768 S002-PPsol+pav	20	Z	FT	glo	-10.313	-10.313	0.000	0.000
769 S002-PPsol+pav	21	Z	FT	glo	-10.313	-10.313	0.000	0.000
770 S002-PPsol+pav	22	Z	FT	glo	-10.313	-10.313	0.000	0.000
771 S003-PPsol+pav	12	Z	FT	glo	0.000	-5.114	0.000	0.000
772 S003-PPsol+pav	16	Z	FT	glo	-5.114	-10.227	0.000	0.000
773 S003-PPsol+pav	24	Z	FT	glo	-9.748	-4.059	0.000	0.000
774 S003-PPsol+pav	27	Z	FT	glo	-5.625	-5.625	0.000	0.000
775 S003-PPsol+pav	28	Z	FT	glo	-5.625	-5.625	0.000	0.000
776 S003-PPsol+pav	32	Z	FT	glo	-5.625	-5.625	0.000	0.000
777 S003-PPsol+pav	33	Z	FT	glo	-5.625	-5.625	0.000	0.000
778 S003-PPsol+pav	35	Z	FT	glo	-5.625	-5.625	0.000	0.000
779 S003-PPsol+pav	36	Z	FT	glo	-5.625	-5.625	0.000	0.000
780 S003-PPsol+pav	39	Z	FT	glo	-5.625	-5.625	0.000	0.000
781 S003-PPsol+pav	40	Z	FT	glo	-5.625	-5.625	0.000	0.000
782 Turbina	49	Z	FD	glo	-20.000			
783 Turbina	50	Z	FD	glo	-20.000			
784 Turbina	53	Z	FD	glo	-20.000			

785	Turbina	54	Z	FD	glo	-20.000			
786	Turbina	51	Z	FD	glo	-20.000			
787	Turbina	52	Z	FD	glo	-20.000			
788	S002-Acc	1	Z	FT	glo	-1.650	-1.650	0.000	0.000
789	S002-Acc	3	Z	FT	glo	-1.650	-1.650	0.000	0.000
790	S002-Acc	6	Z	FT	glo	-1.650	-1.650	0.000	0.000
791	S002-Acc	8	Z	FT	glo	-1.650	-1.650	0.000	0.000
792	S002-Acc	10	Z	FT	glo	-3.229	-0.071	0.000	0.000
793	S002-Acc	19	Z	FT	glo	-1.650	-1.650	0.000	0.000
794	S002-Acc	20	Z	FT	glo	-1.650	-1.650	0.000	0.000
795	S002-Acc	21	Z	FT	glo	-1.650	-1.650	0.000	0.000
796	S002-Acc	22	Z	FT	glo	-1.650	-1.650	0.000	0.000
797	S003-Acc	12	Z	FT	glo	0.000	-0.818	0.000	0.000
798	S003-Acc	16	Z	FT	glo	-0.818	-1.636	0.000	0.000
799	S003-Acc	24	Z	FT	glo	-1.560	-0.649	0.000	0.000
800	S003-Acc	27	Z	FT	glo	-0.900	-0.900	0.000	0.000
801	S003-Acc	28	Z	FT	glo	-0.900	-0.900	0.000	0.000
802	S003-Acc	32	Z	FT	glo	-0.900	-0.900	0.000	0.000
803	S003-Acc	33	Z	FT	glo	-0.900	-0.900	0.000	0.000
804	S003-Acc	35	Z	FT	glo	-0.900	-0.900	0.000	0.000
805	S003-Acc	36	Z	FT	glo	-0.900	-0.900	0.000	0.000
806	S003-Acc	39	Z	FT	glo	-0.900	-0.900	0.000	0.000
807	S003-Acc	40	Z	FT	glo	-0.900	-0.900	0.000	0.000
808	S001-PPTetto	14	Z	FT	glo	-11.500	-11.500	0.000	0.000
809	S001-PPTetto	18	Z	FT	glo	-11.500	-11.500	0.000	0.000
810	S001-PPTetto	23	Z	FT	glo	-11.500	-11.500	0.000	0.000
811	S001-PPTetto	26	Z	FT	glo	-11.500	-11.500	0.000	0.000
812	S001-PPTetto	30	Z	FT	glo	-11.500	-11.500	0.000	0.000
813	S001-PPTetto	31	Z	FT	glo	-23.000	-23.000	0.000	0.000
814	S001-PPTetto	38	Z	FT	glo	-11.500	-11.500	0.000	0.000
815	S001-PPTetto	41	Z	FT	glo	-11.500	-11.500	0.000	0.000
816	S001-PPTetto	15	Z	FT	glo	-11.500	-11.500	0.000	0.000
817	S001-PPTetto	25	Z	FT	glo	-11.500	-11.500	0.000	0.000
818	S001-PPTetto	29	Z	FT	glo	-11.500	-11.500	0.000	0.000
819	S001-PPTetto	37	Z	FT	glo	-11.500	-11.500	0.000	0.000
820	S001-PPTetto	56	Z	FT	glo	-11.500	-11.500	0.000	0.000
821	S001-PPTetto	34	Z	FT	glo	-11.500	-11.500	0.000	0.000
822	S001-PPTetto	57	Z	FT	glo	-11.500	-11.500	0.000	0.000
823	S001-Neve470mslmTr19	14	Z	FT	glo	-3.105	-3.105	0.000	0.000
824	S001-Neve470mslmTr19	18	Z	FT	glo	-3.105	-3.105	0.000	0.000
825	S001-Neve470mslmTr19	23	Z	FT	glo	-3.105	-3.105	0.000	0.000
826	S001-Neve470mslmTr19	26	Z	FT	glo	-3.105	-3.105	0.000	0.000
827	S001-Neve470mslmTr19	30	Z	FT	glo	-3.105	-3.105	0.000	0.000
828	S001-Neve470mslmTr19	31	Z	FT	glo	-6.210	-6.210	0.000	0.000
829	S001-Neve470mslmTr19	38	Z	FT	glo	-3.105	-3.105	0.000	0.000
830	S001-Neve470mslmTr19	41	Z	FT	glo	-3.105	-3.105	0.000	0.000
831	S001-Neve470mslmTr19	15	Z	FT	glo	-3.105	-3.105	0.000	0.000
832	S001-Neve470mslmTr19	25	Z	FT	glo	-3.105	-3.105	0.000	0.000
833	S001-Neve470mslmTr19	29	Z	FT	glo	-3.105	-3.105	0.000	0.000
834	S001-Neve470mslmTr19	37	Z	FT	glo	-3.105	-3.105	0.000	0.000
835	S001-Neve470mslmTr19	56	Z	FT	glo	-3.105	-3.105	0.000	0.000
836	S001-Neve470mslmTr19	34	Z	FT	glo	-3.105	-3.105	0.000	0.000
837	S001-Neve470mslmTr19	57	Z	FT	glo	-3.105	-3.105	0.000	0.000

PESI PROPRI ASTE--|-----------|-----------|-----------|-----------|-----------|

Cond.	Nome Carichi	Aste
1	838-887	1-48, 56-57

CARICHI DI LINEA |-----------|-----------|-----------|-----------|num.= 0

Nome	numero coordinata inizio	fine	Cond.	Direz.	Intensità inizio	fine	Descrizione

CARICHI GUSCI-----|-----------|-----------|-----------|-----------|num.= 387

Nome	Guscio	Dir	Tip	RIF	Intensita`
888 Terra	48	Z	FD	glo	-0.10000
889 Terra	49	Z	FD	glo	-0.10000
890 Terra	50	Z	FD	glo	-0.10000
891 Terra	51	Z	FD	glo	-0.10000
892 Terra	52	Z	FD	glo	-0.10000
893 Terra	56	Z	FD	glo	-0.10000
894 Terra	64	Z	FD	glo	-0.10000
895 Terra	65	Z	FD	glo	-0.10000
896 Terra	66	Z	FD	glo	-0.10000
897 Terra	67	Z	FD	glo	-0.10000
898 Terra	80	Z	FD	glo	-0.10000
899 Terra	91	Z	FD	glo	-0.10000
900 Terra	92	Z	FD	glo	-0.10000
901 Terra	93	Z	FD	glo	-0.10000
902 Terra	94	Z	FD	glo	-0.10000
903 Terra	101	Z	FD	glo	-0.10000
904 Terra	111	Z	FD	glo	-0.10000
905 Terra	112	Z	FD	glo	-0.10000
906 Terra	117	Z	FD	glo	-0.10000
907 Terra	118	Z	FD	glo	-0.10000
908 Terra	119	Z	FD	glo	-0.10000
909 Terra	135	Z	FD	glo	-0.10000
910 Terra	136	Z	FD	glo	-0.10000
911 Terra	139	Z	FD	glo	-0.10000
912 Terra	145	Z	FD	glo	-0.10000
913 Terra	153	Z	FD	glo	-0.10000
914 Terra	156	Z	FD	glo	-0.10000
915 Terra	158	Z	FD	glo	-0.10000
916 Terra	159	Z	FD	glo	-0.10000
917 Terra	173	Z	FD	glo	-0.10000
918 Terra	175	Z	FD	glo	-0.10000
919 Terra	177	Z	FD	glo	-0.10000
920 Terra	181	Z	FD	glo	-0.10000
921 Terra	182	Z	FD	glo	-0.10000
922 Terra	198	Z	FD	glo	-0.10000
923 Terra	199	Z	FD	glo	-0.10000

924	Terra	200	Z	FD	glo	-0.10000
925	Terra	201	Z	FD	glo	-0.10000
926	Terra	203	Z	FD	glo	-0.10000
927	PT_perm	81	Z	FD	glo	-0.01000
928	PT_perm	100	Z	FD	glo	-0.01000
929	PT_perm	102	Z	FD	glo	-0.01000
930	PT_perm	103	Z	FD	glo	-0.01000
931	PT_perm	115	Z	FD	glo	-0.01000
932	PT_perm	138	Z	FD	glo	-0.01000
933	PT_perm	146	Z	FD	glo	-0.01000
934	PT_perm	147	Z	FD	glo	-0.01000
935	PT_perm	178	Z	FD	glo	-0.01000
936	PT_perm	180	Z	FD	glo	-0.01000
937	PT_perm	183	Z	FD	glo	-0.01000
938	PT_perm	184	Z	FD	glo	-0.01000
939	PT_perm	191	Z	FD	glo	-0.01000
940	PT_perm	197	Z	FD	glo	-0.01000
941	PT_perm	205	Z	FD	glo	-0.01000
942	PT_perm	206	Z	FD	glo	-0.01000
943	RivestimentoPietra	37	Z	FD	glo	-0.05000
944	RivestimentoPietra	30	Z	FD	glo	-0.05000
945	RivestimentoPietra	22	Z	FD	glo	-0.05000
946	RivestimentoPietra	23	Z	FD	glo	-0.05000
947	RivestimentoPietra	15	Z	FD	glo	-0.05000
948	RivestimentoPietra	14	Z	FD	glo	-0.05000
949	RivestimentoPietra	7	Z	FD	glo	-0.05000
950	RivestimentoPietra	6	Z	FD	glo	-0.05000
951	RivestimentoPietra	13	Z	FD	glo	-0.05000
952	RivestimentoPietra	21	Z	FD	glo	-0.05000
953	RivestimentoPietra	29	Z	FD	glo	-0.05000
954	RivestimentoPietra	36	Z	FD	glo	-0.05000
955	RivestimentoPietra	5	Z	FD	glo	-0.05000
956	RivestimentoPietra	12	Z	FD	glo	-0.05000
957	RivestimentoPietra	20	Z	FD	glo	-0.05000
958	RivestimentoPietra	28	Z	FD	glo	-0.05000
959	RivestimentoPietra	35	Z	FD	glo	-0.05000
960	RivestimentoPietra	34	Z	FD	glo	-0.05000
961	RivestimentoPietra	27	Z	FD	glo	-0.05000
962	RivestimentoPietra	19	Z	FD	glo	-0.05000
963	RivestimentoPietra	11	Z	FD	glo	-0.05000
964	RivestimentoPietra	4	Z	FD	glo	-0.05000
965	RivestimentoPietra	47	Z	FD	glo	-0.05000
966	RivestimentoPietra	45	Z	FD	glo	-0.05000
967	RivestimentoPietra	46	Z	FD	glo	-0.05000
968	RivestimentoPietra	61	Z	FD	glo	-0.05000
969	RivestimentoPietra	62	Z	FD	glo	-0.05000
970	RivestimentoPietra	88	Z	FD	glo	-0.05000
971	RivestimentoPietra	89	Z	FD	glo	-0.05000
972	RivestimentoPietra	108	Z	FD	glo	-0.05000
973	RivestimentoPietra	109	Z	FD	glo	-0.05000
974	RivestimentoPietra	132	Z	FD	glo	-0.05000
975	RivestimentoPietra	133	Z	FD	glo	-0.05000
976	RivestimentoPietra	150	Z	FD	glo	-0.05000
977	RivestimentoPietra	151	Z	FD	glo	-0.05000
978	RivestimentoPietra	170	Z	FD	glo	-0.05000
979	RivestimentoPietra	171	Z	FD	glo	-0.05000
980	RivestimentoPietra	195	Z	FD	glo	-0.05000
981	RivestimentoPietra	194	Z	FD	glo	-0.05000
982	RivestimentoPietra	186	Z	FD	glo	-0.05000
983	RivestimentoPietra	169	Z	FD	glo	-0.05000
984	RivestimentoPietra	149	Z	FD	glo	-0.05000
985	RivestimentoPietra	131	Z	FD	glo	-0.05000
986	RivestimentoPietra	107	Z	FD	glo	-0.05000
987	RivestimentoPietra	44	Z	FD	glo	-0.05000
988	RivestimentoPietra	60	Z	FD	glo	-0.05000
989	RivestimentoPietra	87	Z	FD	glo	-0.05000
990	RivestimentoPietra	63	Z	FD	glo	-0.05000
991	RivestimentoPietra	110	Z	FD	glo	-0.05000
992	RivestimentoPietra	90	Z	FD	glo	-0.05000
993	RivestimentoPietra	134	Z	FD	glo	-0.05000
994	RivestimentoPietra	152	Z	FD	glo	-0.05000
995	RivestimentoPietra	172	Z	FD	glo	-0.05000
996	RivestimentoPietra	196	Z	FD	glo	-0.05000
997	RivestimentoPietra	213	Z	FD	glo	-0.05000
998	RivestimentoPietra	219	Z	FD	glo	-0.05000
999	RivestimentoPietra	226	Z	FD	glo	-0.05000
1000	RivestimentoPietra	220	Z	FD	glo	-0.05000
1001	RivestimentoPietra	227	Z	FD	glo	-0.05000
1002	RivestimentoPietra	229	Z	FD	glo	-0.05000
1003	RivestimentoPietra	235	Z	FD	glo	-0.05000
1004	RivestimentoPietra	234	Z	FD	glo	-0.05000
1005	RivestimentoPietra	228	Z	FD	glo	-0.05000
1006	RivestimentoPietra	225	Z	FD	glo	-0.05000
1007	RivestimentoPietra	218	Z	FD	glo	-0.05000
1008	RivestimentoPietra	212	Z	FD	glo	-0.05000
1009	RivestimentoPietra	211	Z	FD	glo	-0.05000
1010	RivestimentoPietra	217	Z	FD	glo	-0.05000
1011	RivestimentoPietra	224	Z	FD	glo	-0.05000
1012	RivestimentoPietra	230	Z	FD	glo	-0.05000
1013	RivestimentoPietra	236	Z	FD	glo	-0.05000
1014	RivestimentoPietra	127	Z	FD	glo	-0.05000
1015	RivestimentoPietra	99	Z	FD	glo	-0.05000
1016	RivestimentoPietra	126	Z	FD	glo	-0.05000
1017	RivestimentoPietra	98	Z	FD	glo	-0.05000
1018	RivestimentoPietra	125	Z	FD	glo	-0.05000
1019	RivestimentoPietra	97	Z	FD	glo	-0.05000
1020	PT_acc	81	Z	FD	glo	-0.02000
1021	PT_acc	100	Z	FD	glo	-0.02000
1022	PT_acc	102	Z	FD	glo	-0.02000
1023	PT_acc	103	Z	FD	glo	-0.02000

```
  1024 PT_acc                  115  Z   FD glo    -0.02000
  1025 PT_acc                  138  Z   FD glo    -0.02000
  1026 PT_acc                  146  Z   FD glo    -0.02000
  1027 PT_acc                  147  Z   FD glo    -0.02000
  1028 PT_acc                  178  Z   FD glo    -0.02000
  1029 PT_acc                  180  Z   FD glo    -0.02000
  1030 PT_acc                  183  Z   FD glo    -0.02000
  1031 PT_acc                  184  Z   FD glo    -0.02000
  1032 PT_acc                  191  Z   FD glo    -0.02000
  1033 PT_acc                  197  Z   FD glo    -0.02000
  1034 PT_acc                  205  Z   FD glo    -0.02000
  1035 PT_acc                  206  Z   FD glo    -0.02000

PESI PROPRI GUSCI-|-----------|-----------|-----------|-----------|-----------|
  Cond.  Nome Carichi          Gusci
     1   1036-1274              1-239

CONDIZIONI DI CARICO----------|-----------|-----------|-----------|num.=     11
  Nome
     1  Peso_proprio_______   N. carichi:  289
        Lista carichi: 838-887, 1036-1274

     2              Fondaz   N. carichi:   39
        Lista carichi: 888-926

     3               PT_pp   N. carichi:   36
        Lista carichi: 762-781, 927-942

     4             PT_perm   N. carichi:   77
        Lista carichi: 943-1019

     5              PT_acc   N. carichi:   43
        Lista carichi: 1, 782-807, 1020-1035

     6               tetto   N. carichi:   15
        Lista carichi: 808-822

     7                Neve   N. carichi:   15
        Lista carichi: 823-837

     8             Sisma_X   N. carichi:  190
        Lista carichi: 2-191

     9             Sisma_Y   N. carichi:  190
        Lista carichi: 192-381

    10      Torcente_add._X   N. carichi:  190
        Lista carichi: 382-571

    11      Torcente_add._Y   N. carichi:  190
        Lista carichi: 572-761

  RISULTANTI DEI CARICHI (punto di applicazione nell'origine degli assi):
  cond.          FX            FY            FZ            MX            MY            MZ
     1  0.000000E+00  0.000000E+00 -1.048713E+05 -2.346551E+07  2.936217E+07  0.000000E+00
     2  0.000000E+00  0.000000E+00 -2.576000E+04 -5.924800E+06  7.212800E+06  0.000000E+00
     3  0.000000E+00  0.000000E+00 -1.515475E+04 -4.304273E+06  2.799735E+06  0.000000E+00
     4  0.000000E+00  0.000000E+00 -2.600000E+04 -4.335500E+06  7.143500E+06  0.000000E+00
     5  0.000000E+00  0.000000E+00 -1.727600E+04 -2.892955E+06  5.237212E+06  0.000000E+00
     6  0.000000E+00  0.000000E+00 -2.576000E+04 -5.924800E+06  7.212800E+06  0.000000E+00
     7  0.000000E+00  0.000000E+00 -6.955200E+03 -1.599696E+06  1.947456E+06  0.000000E+00
     8  1.016390E+05  0.000000E+00  0.000000E+00  0.000000E+00  3.140152E+07 -2.212536E+07
     9  0.000000E+00  1.016390E+05  0.000000E+00 -3.140152E+07  0.000000E+00  2.744988E+07
    10  0.000000E+00  0.000000E+00  0.000000E+00  0.000000E+00 -2.226636E+04 -2.337695E+06
    11  0.000000E+00  0.000000E+00  0.000000E+00  8.882990E+03  0.000000E+00  2.845922E+06
```

DESCRIZIONE CASI DI CARICO:

NOME	DESCRIZIONE	VERIFICA	TIPO	CONDIZ. INSERITE			CASI INSERITI	
				Num.	Coeff.	Segno	Num.	Coeff.
1	SLU SENZA SISMA	S.L.U.	somma	1	1.300	+		
				2	1.500	+		
				3	1.300	+		
				4	1.500	+		
				5	1.500	+		
				6	1.300	+		
				7	1.500	+		
2	SISMAX SLU	nessuna	somma	8	1.000	±		
				10	1.000	±		
3	SISMAY SLU	nessuna	somma	9	1.000	±		
				11	1.000	±		
4	SLU con SISMAX PRINC	S.L.U.	somma	1	1.000	+	2	1.000
				2	1.000	+	3	0.300
				3	1.000	+		
				4	1.000	+		
				5	0.300	+		
				6	1.000	+		

5	SLU con SISMAY PRINC	S.L.U.	somma	1	1.000	+	3	1.000
				2	1.000	+	2	0.300
				3	1.000	+		
				4	1.000	+		
				5	0.300	+		
				6	1.000	+		
6	SLD con SISMAX PRINC	S.L.Danno	somma	1	1.000	+	2	1.000
				2	1.000	+	3	0.300
				3	1.000	+		
				4	1.000	+		
				5	0.300	+		
				6	1.000	+		
7	SLD con SISMAY PRINC	S.L.Danno	somma	1	1.000	+	3	1.000
				2	1.000	+	2	0.300
				3	1.000	+		
				4	1.000	+		
				5	0.300	+		
				6	1.000	+		
8	SLU FON con SISMAX P	SLU_FON	somma	1	1.000	+	2	1.100
				2	1.000	+	3	0.330
				3	1.000	+		
				4	1.000	+		
				5	0.300	+		
				6	1.000	+		
9	SLU FON con SISMAY P	SLU_FON	somma	1	1.000	+	3	1.100
				2	1.000	+	2	0.330
				3	1.000	+		
				4	1.000	+		
				5	0.300	+		
				6	1.000	+		
10	Rara	Rara	somma	1	1.000	+		
				2	1.000	+		
				3	1.000	+		
				4	1.000	+		
				5	1.000	+		
				6	1.000	+		
				7	1.000	+		
11	Frequente	Freq.	somma	1	1.000	+		
				2	1.000	+		
				3	1.000	+		
				4	1.000	+		
				5	0.500	+		
				6	1.000	+		
				7	0.200	+		
12	Quasi Perm	QuasiPerm.	somma	1	1.000	+		
				2	1.000	+		
				3	1.000	+		
				4	1.000	+		
				5	0.300	+		
				6	1.000	+		

SOLLECITAZIONI ASTE:

SOLLECITAZIONI ASTE

CASO DI CARICO : 1 SLU SENZA SISMA COMBINAZIONE

N. 7 CONDIZIONI ANALISI STATICA

1	Peso_proprio_____	+	1.30
2	Fondaz	+	1.50
3	PT_pp	+	1.30
4	PT_perm	+	1.50
5	PT_acc	+	1.50
6	tetto	+	1.30
7	Neve	+	1.50

1) +1.30*c001 +1.50*c002 +1.30*c003 +1.50*c004 +1.50*c005
) +1.30*c006 +1.50*c007

Unità di misura: Prog e frecce [cm];NORM,TYY,TZZ [daN]
MZZ,MYY,TORS [daNcm]

Asta 31 nodi 25 217

PROGR.	NORM	TYY	TZZ	TORS	MYY	MZZ
0.	0.1	11890.2	0.0	0.0	0.0	0.0
70.	0.1	8917.7	0.0	0.0	0.0	728274.8
140.	0.1	5945.1	0.0	0.0	0.0	1248471.0
210.	0.1	2972.6	0.0	0.0	0.0	1560588.8
280.	0.1	0.0	0.0	0.0	0.0	1664628.0
350.	0.1	-2972.5	0.0	0.0	0.0	1560588.8
420.	0.1	-5945.1	0.0	0.0	0.0	1248471.0
490.	0.1	-8917.6	0.0	0.0	0.0	728274.8
560.	0.1	-11890.2	0.0	0.0	0.0	0.0

SOLLECITAZIONI ASTE

CASO DI CARICO : 4 SLU con SISMAX PRINC COMBINAZIONE

N. 6 CONDIZIONI ANALISI STATICA

1	Peso_proprio_____	+	1.00
2	Fondaz	+	1.00
3	PT_pp	+	1.00
4	PT_perm	+	1.00
5	PT_acc	+	0.30
6	tetto	+	1.00

N. 2 CASI DI CARICO

2	SISMAX SLU	1.00
3	SISMAY SLU	0.30

1)	+1.00*c001	+1.00*c002	+1.00*c003	+1.00*c004	+0.30*c005
)	+1.00*c006	+1.00*c002.001	+0.30*c003.001		
2)	+1.00*c001	+1.00*c002	+1.00*c003	+1.00*c004	+0.30*c005
)	+1.00*c006	+1.00*c002.001	+0.30*c003.002		
3)	+1.00*c001	+1.00*c002	+1.00*c003	+1.00*c004	+0.30*c005
)	+1.00*c006	+1.00*c002.001	+0.30*c003.003		
4)	+1.00*c001	+1.00*c002	+1.00*c003	+1.00*c004	+0.30*c005
)	+1.00*c006	+1.00*c002.001	+0.30*c003.004		
5)	+1.00*c001	+1.00*c002	+1.00*c003	+1.00*c004	+0.30*c005
)	+1.00*c006	+1.00*c002.002	+0.30*c003.001		
6)	+1.00*c001	+1.00*c002	+1.00*c003	+1.00*c004	+0.30*c005
)	+1.00*c006	+1.00*c002.002	+0.30*c003.002		
7)	+1.00*c001	+1.00*c002	+1.00*c003	+1.00*c004	+0.30*c005
)	+1.00*c006	+1.00*c002.002	+0.30*c003.003		
8)	+1.00*c001	+1.00*c002	+1.00*c003	+1.00*c004	+0.30*c005
)	+1.00*c006	+1.00*c002.002	+0.30*c003.004		
9)	+1.00*c001	+1.00*c002	+1.00*c003	+1.00*c004	+0.30*c005
)	+1.00*c006	+1.00*c002.003	+0.30*c003.001		
10)	+1.00*c001	+1.00*c002	+1.00*c003	+1.00*c004	+0.30*c005
)	+1.00*c006	+1.00*c002.003	+0.30*c003.002		
11)	+1.00*c001	+1.00*c002	+1.00*c003	+1.00*c004	+0.30*c005
)	+1.00*c006	+1.00*c002.003	+0.30*c003.003		
12)	+1.00*c001	+1.00*c002	+1.00*c003	+1.00*c004	+0.30*c005
)	+1.00*c006	+1.00*c002.003	+0.30*c003.004		
13)	+1.00*c001	+1.00*c002	+1.00*c003	+1.00*c004	+0.30*c005
)	+1.00*c006	+1.00*c002.004	+0.30*c003.001		
14)	+1.00*c001	+1.00*c002	+1.00*c003	+1.00*c004	+0.30*c005
)	+1.00*c006	+1.00*c002.004	+0.30*c003.002		
15)	+1.00*c001	+1.00*c002	+1.00*c003	+1.00*c004	+0.30*c005
)	+1.00*c006	+1.00*c002.004	+0.30*c003.003		
16)	+1.00*c001	+1.00*c002	+1.00*c003	+1.00*c004	+0.30*c005
)	+1.00*c006	+1.00*c002.004	+0.30*c003.004		

Unità di misura: Prog e frecce [cm];NORM,TYY,TZZ [daN]
MZZ,MYY,TORS [daNcm]

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PROGR.	NORM	TYY	TZZ	TORS	MYY	MZZ
0.	-11.0	7140.0	0.0	0.0	0.0	0.0
	-10.9	7140.0	0.0	0.0	0.0	0.0
	-11.0	7140.0	0.0	0.0	0.0	0.0
	-10.9	7140.0	0.0	0.0	0.0	0.0
	11.1	7140.0	0.0	0.0	0.0	0.0
	11.1	7140.0	0.0	0.0	0.0	0.0
	11.1	7140.0	0.0	0.0	0.0	0.0
	11.1	7140.0	0.0	0.0	0.0	0.0
	-11.0	7140.0	0.0	0.0	0.0	0.0
	-11.0	7140.0	0.0	0.0	0.0	0.0
	-11.0	7140.0	0.0	0.0	0.0	0.0
	-11.0	7140.0	0.0	0.0	0.0	0.0
	11.1	7140.0	0.0	0.0	0.0	0.0
	11.1	7140.0	0.0	0.0	0.0	0.0
	11.0	7140.0	0.0	0.0	0.0	0.0
	11.1	7140.0	0.0	0.0	0.0	0.0
70.	-11.0	5355.0	0.0	0.0	0.0	437325.0
	-10.9	5355.0	0.0	0.0	0.0	437325.0
	-11.0	5355.0	0.0	0.0	0.0	437325.0
	-10.9	5355.0	0.0	0.0	0.0	437325.0
	11.1	5355.0	0.0	0.0	0.0	437325.0
	11.1	5355.0	0.0	0.0	0.0	437325.0
	11.1	5355.0	0.0	0.0	0.0	437325.0
	11.1	5355.0	0.0	0.0	0.0	437325.0
	-11.0	5355.0	0.0	0.0	0.0	437325.0
	-11.0	5355.0	0.0	0.0	0.0	437325.0
	-11.0	5355.0	0.0	0.0	0.0	437325.0
	-11.0	5355.0	0.0	0.0	0.0	437325.0
	11.1	5355.0	0.0	0.0	0.0	437325.0
	11.1	5355.0	0.0	0.0	0.0	437325.0
	11.0	5355.0	0.0	0.0	0.0	437325.0
	11.1	5355.0	0.0	0.0	0.0	437325.0
140.	-11.0	3570.0	0.0	0.0	0.0	749700.0
	-10.9	3570.0	0.0	0.0	0.0	749700.0
	-11.0	3570.0	0.0	0.0	0.0	749700.0

	-10.9	3570.0	0.0	0.0	0.0	749700.0
	11.1	3570.0	0.0	0.0	0.0	749700.0
	11.1	3570.0	0.0	0.0	0.0	749700.0
	11.1	3570.0	0.0	0.0	0.0	749700.0
	11.1	3570.0	0.0	0.0	0.0	749700.0
	-11.0	3570.0	0.0	0.0	0.0	749700.0
	-11.0	3570.0	0.0	0.0	0.0	749700.0
	-11.0	3570.0	0.0	0.0	0.0	749700.0
	-11.0	3570.0	0.0	0.0	0.0	749700.0
	11.1	3570.0	0.0	0.0	0.0	749700.0
	11.1	3570.0	0.0	0.0	0.0	749700.0
	11.0	3570.0	0.0	0.0	0.0	749700.0
	11.1	3570.0	0.0	0.0	0.0	749700.0
210.	-11.0	1785.0	0.0	0.0	0.0	937125.0
	-10.9	1785.0	0.0	0.0	0.0	937125.0
	-11.0	1785.0	0.0	0.0	0.0	937125.0
	-10.9	1785.0	0.0	0.0	0.0	937125.0
	11.1	1785.0	0.0	0.0	0.0	937125.0
	11.1	1785.0	0.0	0.0	0.0	937125.0
	11.1	1785.0	0.0	0.0	0.0	937125.0
	11.1	1785.0	0.0	0.0	0.0	937125.0
	-11.0	1785.0	0.0	0.0	0.0	937125.0
	-11.0	1785.0	0.0	0.0	0.0	937125.0
	-11.0	1785.0	0.0	0.0	0.0	937125.0
	-11.0	1785.0	0.0	0.0	0.0	937125.0
	11.1	1785.0	0.0	0.0	0.0	937125.0
	11.1	1785.0	0.0	0.0	0.0	937125.0
	11.0	1785.0	0.0	0.0	0.0	937125.0
	11.1	1785.0	0.0	0.0	0.0	937125.0
280.	-11.0	0.0	0.0	0.0	0.0	999600.0
	-10.9	0.0	0.0	0.0	0.0	999600.0
	-11.0	0.0	0.0	0.0	0.0	999600.0
	-10.9	0.0	0.0	0.0	0.0	999600.0
	11.1	0.0	0.0	0.0	0.0	999600.0
	11.1	0.0	0.0	0.0	0.0	999600.0
	11.1	0.0	0.0	0.0	0.0	999600.0
	11.1	0.0	0.0	0.0	0.0	999600.0
	-11.0	0.0	0.0	0.0	0.0	999600.0
	-11.0	0.0	0.0	0.0	0.0	999600.0
	-11.0	0.0	0.0	0.0	0.0	999600.0
	-11.0	0.0	0.0	0.0	0.0	999600.0
	11.1	0.0	0.0	0.0	0.0	999600.0
	11.1	0.0	0.0	0.0	0.0	999600.0
	11.0	0.0	0.0	0.0	0.0	999600.0
	11.1	0.0	0.0	0.0	0.0	999600.0
350.	-11.0	-1785.0	0.0	0.0	0.0	937125.0
	-10.9	-1785.0	0.0	0.0	0.0	937125.0
	-11.0	-1785.0	0.0	0.0	0.0	937125.0
	-10.9	-1785.0	0.0	0.0	0.0	937125.0
	11.1	-1785.0	0.0	0.0	0.0	937125.0
	11.1	-1785.0	0.0	0.0	0.0	937125.0
	11.1	-1785.0	0.0	0.0	0.0	937125.0
	11.1	-1785.0	0.0	0.0	0.0	937125.0
	-11.0	-1785.0	0.0	0.0	0.0	937125.0
	-11.0	-1785.0	0.0	0.0	0.0	937125.0
	-11.0	-1785.0	0.0	0.0	0.0	937125.0
	-11.0	-1785.0	0.0	0.0	0.0	937125.0
	11.1	-1785.0	0.0	0.0	0.0	937125.0
	11.1	-1785.0	0.0	0.0	0.0	937125.0
	11.0	-1785.0	0.0	0.0	0.0	937125.0
	11.1	-1785.0	0.0	0.0	0.0	937125.0
420.	-11.0	-3570.0	0.0	0.0	0.0	749700.0
	-10.9	-3570.0	0.0	0.0	0.0	749700.0
	-11.0	-3570.0	0.0	0.0	0.0	749700.0
	-10.9	-3570.0	0.0	0.0	0.0	749700.0
	11.1	-3570.0	0.0	0.0	0.0	749700.0
	11.1	-3570.0	0.0	0.0	0.0	749700.0
	11.1	-3570.0	0.0	0.0	0.0	749700.0
	11.1	-3570.0	0.0	0.0	0.0	749700.0
	-11.0	-3570.0	0.0	0.0	0.0	749700.0
	-11.0	-3570.0	0.0	0.0	0.0	749700.0
	-11.0	-3570.0	0.0	0.0	0.0	749700.0
	-11.0	-3570.0	0.0	0.0	0.0	749700.0
	11.1	-3570.0	0.0	0.0	0.0	749700.0
	11.1	-3570.0	0.0	0.0	0.0	749700.0
	11.0	-3570.0	0.0	0.0	0.0	749700.0
	11.1	-3570.0	0.0	0.0	0.0	749700.0
490.	-11.0	-5355.0	0.0	0.0	0.0	437325.0
	-10.9	-5355.0	0.0	0.0	0.0	437325.0
	-11.0	-5355.0	0.0	0.0	0.0	437325.0
	-10.9	-5355.0	0.0	0.0	0.0	437325.0
	11.1	-5355.0	0.0	0.0	0.0	437325.0
	11.1	-5355.0	0.0	0.0	0.0	437325.0
	11.1	-5355.0	0.0	0.0	0.0	437325.0
	11.1	-5355.0	0.0	0.0	0.0	437325.0
	-11.0	-5355.0	0.0	0.0	0.0	437325.0
	-11.0	-5355.0	0.0	0.0	0.0	437325.0
	-11.0	-5355.0	0.0	0.0	0.0	437325.0
	-11.0	-5355.0	0.0	0.0	0.0	437325.0
	11.1	-5355.0	0.0	0.0	0.0	437325.0
	11.1	-5355.0	0.0	0.0	0.0	437325.0
	11.0	-5355.0	0.0	0.0	0.0	437325.0
	11.1	-5355.0	0.0	0.0	0.0	437325.0

560.	-11.0	-7140.0	0.0	0.0	0.0	0.0
	-10.9	-7140.0	0.0	0.0	0.0	0.0
	-11.0	-7140.0	0.0	0.0	0.0	0.0
	-10.9	-7140.0	0.0	0.0	0.0	0.0
	11.1	-7140.0	0.0	0.0	0.0	0.0
	11.1	-7140.0	0.0	0.0	0.0	0.0
	11.1	-7140.0	0.0	0.0	0.0	0.0
	11.1	-7140.0	0.0	0.0	0.0	0.0
	-11.0	-7140.0	0.0	0.0	0.0	0.0
	-11.0	-7140.0	0.0	0.0	0.0	0.0
	-11.0	-7140.0	0.0	0.0	0.0	0.0
	-11.0	-7140.0	0.0	0.0	0.0	0.0
	11.1	-7140.0	0.0	0.0	0.0	0.0
	11.1	-7140.0	0.0	0.0	0.0	0.0
	11.0	-7140.0	0.0	0.0	0.0	0.0
	11.1	-7140.0	0.0	0.0	0.0	0.0

SOLLECITAZIONI ASTE

CASO DI CARICO : 5 SLU con SISMAY PRINC COMBINAZIONE

N. 6 CONDIZIONI ANALISI STATICA

1	Peso_proprio_____	+	1.00
2	Fondaz	+	1.00
3	PT_pp	+	1.00
4	PT_perm	+	1.00
5	PT_acc	+	0.30
6	tetto	+	1.00

N. 2 CASI DI CARICO

3	SISMAY SLU	1.00
2	SISMAX SLU	0.30

1)	+1.00*c001	+1.00*c002	+1.00*c003	+1.00*c004	+0.30*c005
)	+1.00*c006	+1.00*C003.001	+0.30*C002.001		
2)	+1.00*c001	+1.00*c002	+1.00*c003	+1.00*c004	+0.30*c005
)	+1.00*c006	+1.00*C003.001	+0.30*C002.002		
3)	+1.00*c001	+1.00*c002	+1.00*c003	+1.00*c004	+0.30*c005
)	+1.00*c006	+1.00*C003.001	+0.30*C002.003		
4)	+1.00*c001	+1.00*c002	+1.00*c003	+1.00*c004	+0.30*c005
)	+1.00*c006	+1.00*C003.001	+0.30*C002.004		
5)	+1.00*c001	+1.00*c002	+1.00*c003	+1.00*c004	+0.30*c005
)	+1.00*c006	+1.00*C003.002	+0.30*C002.001		
6)	+1.00*c001	+1.00*c002	+1.00*c003	+1.00*c004	+0.30*c005
)	+1.00*c006	+1.00*C003.002	+0.30*C002.002		
7)	+1.00*c001	+1.00*c002	+1.00*c003	+1.00*c004	+0.30*c005
)	+1.00*c006	+1.00*C003.002	+0.30*C002.003		
8)	+1.00*c001	+1.00*c002	+1.00*c003	+1.00*c004	+0.30*c005
)	+1.00*c006	+1.00*C003.002	+0.30*C002.004		
9)	+1.00*c001	+1.00*c002	+1.00*c003	+1.00*c004	+0.30*c005
)	+1.00*c006	+1.00*C003.003	+0.30*C002.001		
10)	+1.00*c001	+1.00*c002	+1.00*c003	+1.00*c004	+0.30*c005
)	+1.00*c006	+1.00*C003.003	+0.30*C002.002		
11)	+1.00*c001	+1.00*c002	+1.00*c003	+1.00*c004	+0.30*c005
)	+1.00*c006	+1.00*C003.003	+0.30*C002.003		
12)	+1.00*c001	+1.00*c002	+1.00*c003	+1.00*c004	+0.30*c005
)	+1.00*c006	+1.00*C003.003	+0.30*C002.004		
13)	+1.00*c001	+1.00*c002	+1.00*c003	+1.00*c004	+0.30*c005
)	+1.00*c006	+1.00*C003.004	+0.30*C002.001		
14)	+1.00*c001	+1.00*c002	+1.00*c003	+1.00*c004	+0.30*c005
)	+1.00*c006	+1.00*C003.004	+0.30*C002.002		
15)	+1.00*c001	+1.00*c002	+1.00*c003	+1.00*c004	+0.30*c005
)	+1.00*c006	+1.00*C003.004	+0.30*C002.003		
16)	+1.00*c001	+1.00*c002	+1.00*c003	+1.00*c004	+0.30*c005
)	+1.00*c006	+1.00*C003.004	+0.30*C002.004		

Unità di misura: Prog e frecce [cm];NORM,TYY,TZZ [daN]
MZZ,MYY,TORS [daNcm]

Asta 31 nodi 25 217

PROGR.	NORM	TYY	TZZ	TORS	MYY	MZZ
0.	-3.3	7140.0	0.0	0.0	0.0	0.0
	3.3	7140.0	0.0	0.0	0.0	0.0
	-3.3	7140.0	0.0	0.0	0.0	0.0
	3.3	7140.0	0.0	0.0	0.0	0.0
	-3.2	7140.0	0.0	0.0	0.0	0.0
	3.5	7140.0	0.0	0.0	0.0	0.0
	-3.2	7140.0	0.0	0.0	0.0	0.0
	3.5	7140.0	0.0	0.0	0.0	0.0
	-3.3	7140.0	0.0	0.0	0.0	0.0
	3.3	7140.0	0.0	0.0	0.0	0.0
	-3.3	7140.0	0.0	0.0	0.0	0.0
	3.3	7140.0	0.0	0.0	0.0	0.0
	-3.2	7140.0	0.0	0.0	0.0	0.0
	3.5	7140.0	0.0	0.0	0.0	0.0
	-3.2	7140.0	0.0	0.0	0.0	0.0
	3.4	7140.0	0.0	0.0	0.0	0.0
70.	-3.3	5355.0	0.0	0.0	0.0	437325.0
	3.3	5355.0	0.0	0.0	0.0	437325.0

	-3.3	5355.0	0.0	0.0	0.0	437325.0
	3.3	5355.0	0.0	0.0	0.0	437325.0
	-3.2	5355.0	0.0	0.0	0.0	437325.0
	3.5	5355.0	0.0	0.0	0.0	437325.0
	-3.2	5355.0	0.0	0.0	0.0	437325.0
	3.5	5355.0	0.0	0.0	0.0	437325.0
	-3.3	5355.0	0.0	0.0	0.0	437325.0
	3.3	5355.0	0.0	0.0	0.0	437325.0
	-3.3	5355.0	0.0	0.0	0.0	437325.0
	3.3	5355.0	0.0	0.0	0.0	437325.0
	-3.2	5355.0	0.0	0.0	0.0	437325.0
	3.5	5355.0	0.0	0.0	0.0	437325.0
	-3.2	5355.0	0.0	0.0	0.0	437325.0
	3.4	5355.0	0.0	0.0	0.0	437325.0
140.	-3.3	3570.0	0.0	0.0	0.0	749700.0
	3.3	3570.0	0.0	0.0	0.0	749700.0
	-3.3	3570.0	0.0	0.0	0.0	749700.0
	3.3	3570.0	0.0	0.0	0.0	749700.0
	-3.2	3570.0	0.0	0.0	0.0	749700.0
	3.5	3570.0	0.0	0.0	0.0	749700.0
	-3.2	3570.0	0.0	0.0	0.0	749700.0
	3.5	3570.0	0.0	0.0	0.0	749700.0
	-3.3	3570.0	0.0	0.0	0.0	749700.0
	3.3	3570.0	0.0	0.0	0.0	749700.0
	-3.3	3570.0	0.0	0.0	0.0	749700.0
	3.3	3570.0	0.0	0.0	0.0	749700.0
	-3.2	3570.0	0.0	0.0	0.0	749700.0
	3.5	3570.0	0.0	0.0	0.0	749700.0
	-3.2	3570.0	0.0	0.0	0.0	749700.0
	3.4	3570.0	0.0	0.0	0.0	749700.0
210.	-3.3	1785.0	0.0	0.0	0.0	937125.0
	3.3	1785.0	0.0	0.0	0.0	937125.0
	-3.3	1785.0	0.0	0.0	0.0	937125.0
	3.3	1785.0	0.0	0.0	0.0	937125.0
	-3.2	1785.0	0.0	0.0	0.0	937125.0
	3.5	1785.0	0.0	0.0	0.0	937125.0
	-3.2	1785.0	0.0	0.0	0.0	937125.0
	3.5	1785.0	0.0	0.0	0.0	937125.0
	-3.3	1785.0	0.0	0.0	0.0	937125.0
	3.3	1785.0	0.0	0.0	0.0	937125.0
	-3.3	1785.0	0.0	0.0	0.0	937125.0
	3.3	1785.0	0.0	0.0	0.0	937125.0
	-3.2	1785.0	0.0	0.0	0.0	937125.0
	3.5	1785.0	0.0	0.0	0.0	937125.0
	-3.2	1785.0	0.0	0.0	0.0	937125.0
	3.4	1785.0	0.0	0.0	0.0	937125.0
280.	-3.3	0.0	0.0	0.0	0.0	999600.0
	3.3	0.0	0.0	0.0	0.0	999600.0
	-3.3	0.0	0.0	0.0	0.0	999600.0
	3.3	0.0	0.0	0.0	0.0	999600.0
	-3.2	0.0	0.0	0.0	0.0	999600.0
	3.5	0.0	0.0	0.0	0.0	999600.0
	-3.2	0.0	0.0	0.0	0.0	999600.0
	3.5	0.0	0.0	0.0	0.0	999600.0
	-3.3	0.0	0.0	0.0	0.0	999600.0
	3.3	0.0	0.0	0.0	0.0	999600.0
	-3.3	0.0	0.0	0.0	0.0	999600.0
	3.3	0.0	0.0	0.0	0.0	999600.0
	-3.2	0.0	0.0	0.0	0.0	999600.0
	3.5	0.0	0.0	0.0	0.0	999600.0
	-3.2	0.0	0.0	0.0	0.0	999600.0
	3.4	0.0	0.0	0.0	0.0	999600.0
350.	-3.3	-1785.0	0.0	0.0	0.0	937125.0
	3.3	-1785.0	0.0	0.0	0.0	937125.0
	-3.3	-1785.0	0.0	0.0	0.0	937125.0
	3.3	-1785.0	0.0	0.0	0.0	937125.0
	-3.2	-1785.0	0.0	0.0	0.0	937125.0
	3.5	-1785.0	0.0	0.0	0.0	937125.0
	-3.2	-1785.0	0.0	0.0	0.0	937125.0
	3.5	-1785.0	0.0	0.0	0.0	937125.0
	-3.3	-1785.0	0.0	0.0	0.0	937125.0
	3.3	-1785.0	0.0	0.0	0.0	937125.0
	-3.3	-1785.0	0.0	0.0	0.0	937125.0
	3.3	-1785.0	0.0	0.0	0.0	937125.0
	-3.2	-1785.0	0.0	0.0	0.0	937125.0
	3.5	-1785.0	0.0	0.0	0.0	937125.0
	-3.2	-1785.0	0.0	0.0	0.0	937125.0
	3.4	-1785.0	0.0	0.0	0.0	937125.0
420.	-3.3	-3570.0	0.0	0.0	0.0	749700.0
	3.3	-3570.0	0.0	0.0	0.0	749700.0
	-3.3	-3570.0	0.0	0.0	0.0	749700.0
	3.3	-3570.0	0.0	0.0	0.0	749700.0
	-3.2	-3570.0	0.0	0.0	0.0	749700.0
	3.5	-3570.0	0.0	0.0	0.0	749700.0
	-3.2	-3570.0	0.0	0.0	0.0	749700.0
	3.5	-3570.0	0.0	0.0	0.0	749700.0
	-3.3	-3570.0	0.0	0.0	0.0	749700.0
	3.3	-3570.0	0.0	0.0	0.0	749700.0
	-3.3	-3570.0	0.0	0.0	0.0	749700.0
	3.3	-3570.0	0.0	0.0	0.0	749700.0
	-3.2	-3570.0	0.0	0.0	0.0	749700.0
	3.5	-3570.0	0.0	0.0	0.0	749700.0
	-3.2	-3570.0	0.0	0.0	0.0	749700.0

	3.4	-3570.0	0.0	0.0	0.0	749700.0
490.	-3.3	-5355.0	0.0	0.0	0.0	437325.0
	3.3	-5355.0	0.0	0.0	0.0	437325.0
	-3.3	-5355.0	0.0	0.0	0.0	437325.0
	3.3	-5355.0	0.0	0.0	0.0	437325.0
	-3.2	-5355.0	0.0	0.0	0.0	437325.0
	3.5	-5355.0	0.0	0.0	0.0	437325.0
	-3.2	-5355.0	0.0	0.0	0.0	437325.0
	3.5	-5355.0	0.0	0.0	0.0	437325.0
	-3.3	-5355.0	0.0	0.0	0.0	437325.0
	3.3	-5355.0	0.0	0.0	0.0	437325.0
	-3.3	-5355.0	0.0	0.0	0.0	437325.0
	3.3	-5355.0	0.0	0.0	0.0	437325.0
	-3.2	-5355.0	0.0	0.0	0.0	437325.0
	3.5	-5355.0	0.0	0.0	0.0	437325.0
	-3.2	-5355.0	0.0	0.0	0.0	437325.0
	3.4	-5355.0	0.0	0.0	0.0	437325.0
560.	-3.3	-7140.0	0.0	0.0	0.0	0.0
	3.3	-7140.0	0.0	0.0	0.0	0.0
	-3.3	-7140.0	0.0	0.0	0.0	0.0
	3.3	-7140.0	0.0	0.0	0.0	0.0
	-3.2	-7140.0	0.0	0.0	0.0	0.0
	3.5	-7140.0	0.0	0.0	0.0	0.0
	-3.2	-7140.0	0.0	0.0	0.0	0.0
	3.5	-7140.0	0.0	0.0	0.0	0.0
	-3.3	-7140.0	0.0	0.0	0.0	0.0
	3.3	-7140.0	0.0	0.0	0.0	0.0
	-3.3	-7140.0	0.0	0.0	0.0	0.0
	3.3	-7140.0	0.0	0.0	0.0	0.0
	-3.2	-7140.0	0.0	0.0	0.0	0.0
	3.5	-7140.0	0.0	0.0	0.0	0.0
	-3.2	-7140.0	0.0	0.0	0.0	0.0
	3.4	-7140.0	0.0	0.0	0.0	0.0

SOLLECITAZIONI GUSCI:

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SOLLECITAZIONI GUSCI TRIANGOLARI

CASO DI CARICO   :       1  SLU SENZA SISMA                        COMBINAZIONE

N.  7 CONDIZIONI ANALISI STATICA
    1      Peso_proprio_______ +    1.30
    2      Fondaz              +    1.50
    3      PT_pp               +    1.30
    4      PT_perm             +    1.50
    5      PT_acc              +    1.50
    6      tetto               +    1.30
    7      Neve                +    1.50

  1) +1.30*c001     +1.50*c002     +1.30*c003     +1.50*c004     +1.50*c005
   ) +1.30*c006     +1.50*c007
 Unità di misura: SI,SS [daN/cm2]

 tensione max =        0.           guscio =     0




SOLLECITAZIONI GUSCI TRIANGOLARI

CASO DI CARICO   :       4  SLU con SISMAX PRINC                   COMBINAZIONE

N.  6 CONDIZIONI ANALISI STATICA
    1      Peso_proprio_______ +    1.00
    2      Fondaz              +    1.00
    3      PT_pp               +    1.00
    4      PT_perm             +    1.00
    5      PT_acc              +    0.30
    6      tetto               +    1.00
N.  2 CASI DI CARICO
    2     SISMAX SLU__________      1.00
    3     SISMAY SLU__________      0.30

  1) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c002.001 +0.30*c003.001
  2) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c002.001 +0.30*c003.002
  3) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c002.001 +0.30*c003.003
  4) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c002.001 +0.30*c003.004
  5) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c002.002 +0.30*c003.001
  6) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c002.002 +0.30*c003.002
  7) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c002.002 +0.30*c003.003
  8) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c002.002 +0.30*c003.004
  9) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
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   ) +1.00*c006     +1.00*c002.003 +0.30*c003.001
 10) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c002.003 +0.30*c003.002
 11) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c002.003 +0.30*c003.003
 12) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c002.003 +0.30*c003.004
 13) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c002.004 +0.30*c003.001
 14) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c002.004 +0.30*c003.002
 15) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c002.004 +0.30*c003.003
 16) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c002.004 +0.30*c003.004
 Unità di misura: SI,SS [daN/cm2]

 tensione max =        0.           guscio =     0



SOLLECITAZIONI GUSCI TRIANGOLARI

CASO DI CARICO   :       5  SLU con SISMAY PRINC                    COMBINAZIONE

N.  6 CONDIZIONI ANALISI STATICA
    1      Peso_proprio_______ +    1.00
    2      Fondaz              +    1.00
    3      PT_pp               +    1.00
    4      PT_perm             +    1.00
    5      PT_acc              +    0.30
    6      tetto               +    1.00
N.  2 CASI DI CARICO
    3     SISMAY SLU__________      1.00
    2     SISMAX SLU__________      0.30

  1) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c003.001 +0.30*c002.001
  2) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c003.001 +0.30*c002.002
  3) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c003.001 +0.30*c002.003
  4) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c003.001 +0.30*c002.004
  5) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c003.002 +0.30*c002.001
  6) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c003.002 +0.30*c002.002
  7) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c003.002 +0.30*c002.003
  8) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c003.002 +0.30*c002.004
  9) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c003.003 +0.30*c002.001
 10) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c003.003 +0.30*c002.002
 11) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c003.003 +0.30*c002.003
 12) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c003.003 +0.30*c002.004
 13) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c003.004 +0.30*c002.001
 14) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c003.004 +0.30*c002.002
 15) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c003.004 +0.30*c002.003
 16) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c003.004 +0.30*c002.004
 Unità di misura: SI,SS [daN/cm2]

 tensione max =        0.           guscio =     0



SOLLECITAZIONI GUSCI RETTANGOLARI

CASO DI CARICO   :       1  SLU SENZA SISMA                         COMBINAZIONE

N.  7 CONDIZIONI ANALISI STATICA
    1      Peso_proprio_______ +    1.30
    2      Fondaz              +    1.50
    3      PT_pp               +    1.30
    4      PT_perm             +    1.50
    5      PT_acc              +    1.50
    6      tetto               +    1.30
    7      Neve                +    1.50
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  1) +1.30*c001     +1.50*c002     +1.30*c003     +1.50*c004     +1.50*c005
   ) +1.30*c006     +1.50*c007
 Unità di misura: SI,SS [daN/cm2]


GUSCIO          31    SS =      11.6      SI =      10.3
 tensione max =      11.6           guscio =    31




SOLLECITAZIONI GUSCI RETTANGOLARI

CASO DI CARICO   :       4  SLU con SISMAX PRINC                    COMBINAZIONE

N.  6 CONDIZIONI ANALISI STATICA
    1      Peso_proprio_______ +    1.00
    2      Fondaz              +    1.00
    3      PT_pp               +    1.00
    4      PT_perm             +    1.00
    5      PT_acc              +    0.30
    6      tetto               +    1.00
N.  2 CASI DI CARICO
    2     SISMAX SLU__________      1.00
    3     SISMAY SLU__________      0.30

  1) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c002.001 +0.30*c003.001
  2) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c002.001 +0.30*c003.002
  3) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c002.001 +0.30*c003.003
  4) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c002.001 +0.30*c003.004
  5) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c002.002 +0.30*c003.001
  6) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c002.002 +0.30*c003.002
  7) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c002.002 +0.30*c003.003
  8) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c002.002 +0.30*c003.004
  9) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c002.003 +0.30*c003.001
 10) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c002.003 +0.30*c003.002
 11) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c002.003 +0.30*c003.003
 12) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c002.003 +0.30*c003.004
 13) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c002.004 +0.30*c003.001
 14) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c002.004 +0.30*c003.002
 15) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c002.004 +0.30*c003.003
 16) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c002.004 +0.30*c003.004
 Unità di misura: SI,SS [daN/cm2]


GUSCIO          31    SS =      11.4      SI =      13.8
                      SS =       7.9      SI =      10.8
                      SS =      11.5      SI =      14.2
                      SS =       8.0      SI =      11.2
                      SS =      13.5      SI =      15.8
                      SS =      10.2      SI =      16.1
                      SS =      13.7      SI =      15.5
                      SS =      10.3      SI =      15.8
                      SS =      10.9      SI =      12.9
                      SS =       7.5      SI =       9.9
                      SS =      11.0      SI =      13.3
                      SS =       7.6      SI =      10.3
                      SS =      13.1      SI =      16.2
                      SS =      10.3      SI =      16.6
                      SS =      13.3      SI =      15.9
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                    SS =      10.4      SI =      16.3
 tensione max =      16.6           guscio =    31



SOLLECITAZIONI GUSCI RETTANGOLARI

CASO DI CARICO   :       5  SLU con SISMAY PRINC                    COMBINAZIONE

N.  6 CONDIZIONI ANALISI STATICA
    1      Peso_proprio_______ +    1.00
    2      Fondaz              +    1.00
    3      PT_pp               +    1.00
    4      PT_perm             +    1.00
    5      PT_acc              +    0.30
    6      tetto               +    1.00
N.  2 CASI DI CARICO
    3     SISMAY SLU__________       1.00
    2     SISMAX SLU__________       0.30

  1) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c003.001 +0.30*c002.001
  2) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c003.001 +0.30*c002.002
  3) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c003.001 +0.30*c002.003
  4) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c003.001 +0.30*c002.004
  5) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c003.002 +0.30*c002.001
  6) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c003.002 +0.30*c002.002
  7) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c003.002 +0.30*c002.003
  8) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c003.002 +0.30*c002.004
  9) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c003.003 +0.30*c002.001
 10) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c003.003 +0.30*c002.002
 11) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c003.003 +0.30*c002.003
 12) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c003.003 +0.30*c002.004
 13) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c003.004 +0.30*c002.001
 14) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c003.004 +0.30*c002.002
 15) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c003.004 +0.30*c002.003
 16) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c003.004 +0.30*c002.004
 Unità di misura: SI,SS [daN/cm2]

GUSCIO          31    SS =      15.8      SI =      11.5
                      SS =      16.8      SI =      11.1
                      SS =      15.6      SI =      11.3
                      SS =      16.7      SI =      11.2
                      SS =       3.3      SI =       4.3
                      SS =       2.5      SI =      10.5
                      SS =       3.4      SI =       4.5
                      SS =       2.7      SI =      10.6
                      SS =      16.4      SI =      12.4
                      SS =      17.5      SI =      10.8
                      SS =      16.2      SI =      12.2
                      SS =      17.4      SI =      10.9
                      SS =       2.9      SI =       3.4
                      SS =       2.5      SI =       9.5
                      SS =       2.9      SI =       3.6
                      SS =       2.6      SI =       9.7
 tensione max =      17.5           guscio =    31
```

DATI STRUTTURA Opera di presa:

```
*** DATI STRUTTURA

Unita` di misura :
LUNGHEZZE         : cm
SUPERFICI         : cm2
DATI SEZIONALI    : cm
ANGOLI            : gradi
FORZE             : daN
MOMENTI           : daNcm
CARICHI LINEARI   : daN/cm
CARICHI SUPERFIC.: daN/cm2
TENSIONI          : daN/cm2
PESI DI VOLUME    : daN/cm3
COEFF. DI WINKLER: daN/cm3
RIGIDEZZE VINCOL.: daN/cm - daNcm/rad
```

NODI--|----------|----------|----------|----------|----------|num.= 144

Nome	Coord. X	Coord. Y	Coord. Z
1	0.000	0.000	0.000
242	582.900	0.000	0.000
243	680.000	0.000	0.000
244	680.000	100.000	0.000
245	582.900	100.000	0.000
246	680.000	200.000	0.000
247	582.900	200.000	0.000
248	485.700	0.000	0.000
249	485.700	100.000	0.000
250	485.700	200.000	0.000
251	388.600	0.000	0.000
252	388.600	100.000	0.000
253	388.600	200.000	0.000
254	291.400	0.000	0.000
255	291.400	100.000	0.000
256	291.400	200.000	0.000
257	194.300	0.000	0.000
258	194.300	100.000	0.000
259	194.300	200.000	0.000
260	97.100	0.000	0.000
261	97.100	100.000	0.000
263	0.000	100.000	0.000
264	0.000	200.000	0.000
265	780.000	0.000	0.000
266	780.000	100.000	0.000
267	880.000	0.000	0.000
268	880.000	100.000	0.000
269	780.000	200.000	0.000
270	880.000	200.000	0.000
272	880.000	0.000	83.300
273	782.200	0.000	83.300
274	880.000	0.000	166.700
275	782.200	0.000	166.700
276	880.000	0.000	250.000
277	782.200	0.000	250.000
283	586.700	0.000	83.300
284	586.700	0.000	166.700
285	586.700	0.000	250.000
287	488.900	0.000	83.300
288	488.900	0.000	166.700
289	488.900	0.000	250.000
291	391.100	0.000	83.300
292	391.100	0.000	166.700
293	391.100	0.000	250.000
295	293.300	0.000	83.300
296	293.300	0.000	166.700
297	293.300	0.000	250.000
299	195.600	0.000	83.300
300	195.600	0.000	166.700
301	195.600	0.000	250.000
303	97.800	0.000	83.300
304	97.800	0.000	166.700
305	97.800	0.000	250.000
306	0.000	0.000	83.300
307	0.000	0.000	166.700
308	0.000	0.000	250.000
309	880.000	100.000	83.300
310	880.000	200.000	83.300
311	880.000	100.000	166.700
312	880.000	200.000	166.700
313	880.000	100.000	250.000
314	880.000	200.000	250.000
316	782.200	200.000	83.300
317	782.200	200.000	166.700
318	782.200	200.000	250.000
324	586.700	200.000	83.300
325	586.700	200.000	166.700
326	586.700	200.000	250.000
328	488.900	200.000	83.300
329	488.900	200.000	166.700
330	488.900	200.000	250.000

332	391.100	200.000	83.300
333	391.100	200.000	166.700
334	391.100	200.000	250.000
336	293.300	200.000	83.300
337	293.300	200.000	166.700
338	293.300	200.000	250.000
340	195.600	200.000	83.300
341	195.600	200.000	166.700
342	195.600	200.000	250.000
344	120.600	200.000	83.300
345	120.600	200.000	166.700
346	120.600	200.000	250.000
350	680.000	100.000	83.300
351	680.000	0.000	83.300
352	680.000	200.000	83.300
353	680.000	100.000	166.700
354	680.000	0.000	166.700
355	680.000	200.000	166.700
356	680.000	100.000	250.000
357	680.000	0.000	250.000
358	680.000	200.000	250.000
359	60.000	200.000	0.000
360	60.000	290.000	0.000
362	120.000	200.000	0.000
363	120.000	290.000	0.000
364	60.000	380.000	0.000
365	0.000	380.000	0.000
366	120.000	380.000	0.000
367	60.000	470.000	0.000
368	0.000	470.000	0.000
369	120.000	470.000	0.000
370	60.000	560.000	0.000
371	0.000	560.000	0.000
372	120.000	560.000	0.000
373	0.000	93.300	83.300
375	0.000	93.300	166.700
376	0.000	93.300	250.000
377	0.000	200.000	83.300
379	0.000	200.000	166.700
380	0.000	200.000	250.000
381	0.000	280.000	83.300
382	0.000	280.000	0.000
383	0.000	280.000	166.700
384	0.000	280.000	250.000
385	0.000	373.300	83.300
387	0.000	373.300	166.700
388	0.000	373.300	250.000
389	0.000	466.700	83.300
391	0.000	466.700	166.700
392	0.000	466.700	250.000
393	0.000	560.000	83.300
394	0.000	560.000	166.700
395	0.000	560.000	250.000
396	120.000	560.000	83.300
397	120.000	470.000	83.300
398	120.000	560.000	166.700
399	120.000	470.000	166.700
400	120.000	560.000	250.000
401	120.000	470.000	250.000
402	120.000	380.000	83.300
403	120.000	380.000	166.700
404	120.000	380.000	250.000
405	120.000	290.000	83.300
406	120.000	290.000	166.700
407	120.000	290.000	250.000
409	582.900	100.000	250.000
412	485.700	100.000	250.000
415	388.600	100.000	250.000
418	291.400	100.000	250.000
421	194.300	100.000	250.000
424	97.100	100.000	250.000
427	780.000	100.000	250.000
429	60.000	200.000	250.000

GUSCI TRIANGOLARI--|-----------|-----------|-----------|-----------|num.= 6

Nome	Proprieta`	Nodo 1	Nodo 2	Nodo 3
332	1	263	359	264
333	1	263	261	359
334	1	359	261	362
388	1	376	429	380
389	1	376	424	429
390	1	429	424	346

GUSCI RETTANGOLARI|-----------|-----------|-----------|-----------|num.= 135

Nome	Proprieta`	Nodo 1	Nodo 2	Nodo 3	Nodo 4
240	1	242	243	244	245
241	1	245	244	246	247
242	1	248	242	245	249
243	1	249	245	247	250
244	1	251	248	249	252
245	1	252	249	250	253
246	1	254	251	252	255
247	1	255	252	253	256

248	1	257	254	255	258
249	1	258	255	256	259
250	1	260	257	258	261
251	1	261	258	259	362
252	1	1	260	261	263
254	1	243	265	266	244
255	1	265	267	268	266
256	1	244	266	269	246
257	1	266	268	270	269
258	3	265	267	272	273
259	3	273	272	274	275
260	3	275	274	276	277
261	3	243	265	273	351
262	3	351	273	275	354
263	3	354	275	277	357
264	3	242	243	351	283
265	3	283	351	354	284
266	3	284	354	357	285
267	3	248	242	283	287
268	3	287	283	284	288
269	3	288	284	285	289
270	3	251	248	287	291
271	3	291	287	288	292
272	3	292	288	289	293
273	3	254	251	291	295
274	3	295	291	292	296
275	3	296	292	293	297
276	3	257	254	295	299
277	3	299	295	296	300
278	3	300	296	297	301
279	3	260	257	299	303
280	3	303	299	300	304
281	3	304	300	301	305
282	3	1	260	303	306
283	3	306	303	304	307
284	3	307	304	305	308
285	3	267	268	309	272
286	3	268	270	310	309
287	3	272	309	311	274
288	3	309	310	312	311
289	3	274	311	313	276
290	3	311	312	314	313
291	3	269	270	310	316
292	3	316	310	312	317
293	3	317	312	314	318
294	3	246	269	316	352
295	3	352	316	317	355
296	3	355	317	318	358
297	3	247	246	352	324
298	3	324	352	355	325
299	3	325	355	358	326
300	3	250	247	324	328
301	3	328	324	325	329
302	3	329	325	326	330
303	3	253	250	328	332
304	3	332	328	329	333
305	3	333	329	330	334
306	3	256	253	332	336
307	3	336	332	333	337
308	3	337	333	334	338
309	3	259	256	336	340
310	3	340	336	337	341
311	3	341	337	338	342
312	3	362	259	340	344
313	3	344	340	341	345
314	3	345	341	342	346
318	3	243	244	350	351
319	3	244	246	352	350
320	3	351	350	353	354
321	3	350	352	355	353
322	3	354	353	356	357
323	3	353	355	358	356
324	1	264	359	360	382
325	1	359	362	363	360
326	1	382	360	364	365
327	1	360	363	366	364
328	1	365	364	367	368
329	1	364	366	369	367
330	1	368	367	370	371
331	1	367	369	372	370
335	3	306	373	263	1
336	3	307	375	373	306
337	3	308	376	375	307
338	3	373	377	264	263
339	3	375	379	377	373
340	3	376	380	379	375
341	3	377	381	382	264
342	3	379	383	381	377
343	3	380	384	383	379
344	3	381	385	365	382
345	3	383	387	385	381
346	3	384	388	387	383
347	3	385	389	368	365

```
   348           3          387          391          389          385
   349           3          388          392          391          387
   350           3          389          393          371          368
   351           3          391          394          393          389
   352           3          392          395          394          391
   353           3          369          372          396          397
   354           3          397          396          398          399
   355           3          399          398          400          401
   356           3          366          369          397          402
   357           3          402          397          399          403
   358           3          403          399          401          404
   359           3          363          366          402          405
   360           3          405          402          403          406
   361           3          406          403          404          407
   362           3          362          363          405          344
   363           3          344          405          406          345
   364           3          345          406          407          346
   365           1          285          357          356          409
   366           1          409          356          358          326
   367           1          289          285          409          412
   368           1          412          409          326          330
   369           1          293          289          412          415
   370           1          415          412          330          334
   371           1          297          293          415          418
   372           1          418          415          334          338
   373           1          301          297          418          421
   374           1          421          418          338          342
   375           1          305          301          421          424
   376           1          308          305          424          376
   377           1          357          277          427          356
   378           1          277          276          313          427
   379           1          356          427          318          358
   380           1          427          313          314          318
   387           1          424          421          342          346

PROPRIETA` GUSCI--|-----------|-----------|-----------|-----------|num.=      2
  Nome   Materiale   Sp.membr. Sp. piastra          Kw
     1           1       30.00       30.00    8.000000
     3           1       30.00       30.00    0.000000

MATERIALI---------|-----------|-----------|-----------|-----------|num.=      1
  Nome Mod. elast.   Coeff. nu  Mod. tang.  Peso spec.    Dil. te.
     1 3.00000E+05 1.50000E-01 1.30000E+05 2.50000E-03  1.00000E-05

VINCOLI-----------|-----------|-----------|-----------|-----------|num.=     15
  Nodo    Rigid. X    Rigid. Y    Rigid. Z   Rigid. RX   Rigid. RY   Rigid. RZ
   359    bloccato    bloccato      libero      libero      libero      libero
   360    bloccato    bloccato      libero      libero      libero      libero
   364    bloccato    bloccato      libero      libero      libero      libero
   367    bloccato    bloccato      libero      libero      libero      libero
   370    bloccato    bloccato      libero      libero      libero      libero
   244    bloccato    bloccato      libero      libero      libero      libero
   245    bloccato    bloccato      libero      libero      libero      libero
   249    bloccato    bloccato      libero      libero      libero      libero
   252    bloccato    bloccato      libero      libero      libero      libero
   255    bloccato    bloccato      libero      libero      libero      libero
   258    bloccato    bloccato      libero      libero      libero      libero
   261    bloccato    bloccato      libero      libero      libero      libero
   263    bloccato    bloccato      libero      libero      libero      libero
   266    bloccato    bloccato      libero      libero      libero      libero
   268    bloccato    bloccato      libero      libero      libero      libero

CARICHI NODI------|-----------|-----------|-----------|-----------|num.=    404
  Nome                        Nodo   Direzione  Intensita`
    1 -   202 : Forze Sismiche  (Analisi Semplificata)
  203 -   404 : Momenti Torcenti Addizionali

CARICHI DI LINEA   |-----------|-----------|-----------|-----------|num.=      0
          numero coordinata                        Intensità
  Nome     inizio       fine   Cond. Direz.   inizio        fine  Descrizione

CARICHI GUSCI-----|-----------|-----------|-----------|-----------|num.=    181
  Nome                      Guscio Dir Tip RIF  Intensita`
   405 Pietre                  365  Z   FD glo    -0.02500
   406 Pietre                  366  Z   FD glo    -0.02500
   407 Pietre                  367  Z   FD glo    -0.02500
   408 Pietre                  368  Z   FD glo    -0.02500
   409 Pietre                  369  Z   FD glo    -0.02500
   410 Pietre                  370  Z   FD glo    -0.02500
   411 Pietre                  371  Z   FD glo    -0.02500
   412 Pietre                  372  Z   FD glo    -0.02500
   413 Pietre                  373  Z   FD glo    -0.02500
   414 Pietre                  374  Z   FD glo    -0.02500
   415 Pietre                  375  Z   FD glo    -0.02500
   416 Pietre                  376  Z   FD glo    -0.02500
   417 Pietre                  377  Z   FD glo    -0.02500
   418 Pietre                  378  Z   FD glo    -0.02500
   419 Pietre                  379  Z   FD glo    -0.02500
   420 Pietre                  380  Z   FD glo    -0.02500
   421 Pietre                  387  Z   FD glo    -0.02500
   422 Pietre                  388  Z   FD glo    -0.02500
   423 Pietre                  389  Z   FD glo    -0.02500
   424 Pietre                  390  Z   FD glo    -0.02500
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   425 Accsoletta              365  Z   FD glo    -0.20000
   426 Accsoletta              366  Z   FD glo    -0.20000
   427 Accsoletta              367  Z   FD glo    -0.20000
   428 Accsoletta              368  Z   FD glo    -0.20000
   429 Accsoletta              369  Z   FD glo    -0.20000
   430 Accsoletta              370  Z   FD glo    -0.20000
   431 Accsoletta              371  Z   FD glo    -0.20000
   432 Accsoletta              372  Z   FD glo    -0.20000
   433 Accsoletta              373  Z   FD glo    -0.20000
   434 Accsoletta              374  Z   FD glo    -0.20000
   435 Accsoletta              375  Z   FD glo    -0.20000
   436 Accsoletta              376  Z   FD glo    -0.20000
   437 Accsoletta              377  Z   FD glo    -0.20000
   438 Accsoletta              378  Z   FD glo    -0.20000
   439 Accsoletta              379  Z   FD glo    -0.20000
   440 Accsoletta              380  Z   FD glo    -0.20000
   441 Accsoletta              387  Z   FD glo    -0.20000
   442 Accsoletta              388  Z   FD glo    -0.20000
   443 Accsoletta              389  Z   FD glo    -0.20000
   444 Accsoletta              390  Z   FD glo    -0.20000

PESI PROPRI GUSCI-|-----------|-----------|-----------|-----------|-----------|
  Cond.  Nome Carichi          Gusci
     1   445-585               240-252, 254-314, 318-380, 387-390

CONDIZIONI DI CARICO----------|-----------|-----------|-----------|num.=      6
  Nome
     1  Peso_proprio_______   N. carichi:  161
        Lista carichi: 405-424, 445-585

     2              PT_acc   N. carichi:   20
        Lista carichi: 425-444

     3             Sisma_X   N. carichi:  101
        Lista carichi: 1-101

     4             Sisma_Y   N. carichi:  101
        Lista carichi: 102-202

     5     Torcente_add._X   N. carichi:  101
        Lista carichi: 203-303

     6     Torcente_add._Y   N. carichi:  101
        Lista carichi: 304-404

  RISULTANTI DEI CARICHI (punto di applicazione nell'origine degli assi):
  cond.         FX            FY            FZ            MX            MY            MZ
     1  0.000000E+00  0.000000E+00 -8.953066E+04 -1.341433E+07  3.479070E+07  0.000000E+00
     2  0.000000E+00  0.000000E+00 -3.520000E+04 -3.520000E+06  1.548800E+07  0.000000E+00
     3  5.141116E+04  0.000000E+00  0.000000E+00  0.000000E+00  1.096299E+07 -6.777265E+06
     4  0.000000E+00  5.141116E+04  0.000000E+00 -1.096299E+07  0.000000E+00  2.107198E+07
     5  0.000000E+00  0.000000E+00  0.000000E+00  0.000000E+00  0.000000E+00 -1.439520E+06
     6  0.000000E+00  0.000000E+00  0.000000E+00  0.000000E+00  0.000000E+00  2.262097E+06
```

DESCRIZIONE CASI DI CARICO:

NOME	DESCRIZIONE	VERIFICA	TIPO	CONDIZ. INSERITE			CASI INSERITI	
				Num.	Coeff.	Segno	Num.	Coeff.
1	SLU SENZA SISMA	S.L.U.	somma	1	1.300	+		
				2	1.500	+		
2	SISMAX SLU	nessuna	somma	3	1.000	±		
				5	1.000	±		
3	SISMAY SLU	nessuna	somma	4	1.000	±		
				6	1.000	±		
4	SLU con SISMAX PRINC	S.L.U.	somma	1	1.000	+	2	1.000
				2	0.300	+	3	0.300
5	SLU con SISMAY PRINC	S.L.U.	somma	1	1.000	+	3	1.000
				2	0.300	+	2	0.300
6	SLD con SISMAX PRINC	S.L.Danno	somma	1	1.000	+	2	1.000
				2	0.300	+	3	0.300
7	SLD con SISMAY PRINC	S.L.Danno	somma	1	1.000	+	3	1.000
				2	0.300	+	2	0.300
8	SLU FON con SISMAX P	SLU_FON	somma	1	1.000	+	2	1.100
				2	0.300	+	3	0.330
9	SLU FON con SISMAY P	SLU_FON	somma	1	1.000	+	3	1.100
				2	0.300	+	2	0.330
10	Rara	Rara	somma	1	1.000	+		
				2	1.000	+		
11	Frequente	Freq.	somma	1	1.000	+		
				2	0.500	+		
12	Quasi Perm	QuasiPerm.	somma	1	1.000	+		
				2	0.300	+		

SOLLECITAZIONI GUSCI:

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SOLLECITAZIONI GUSCI TRIANGOLARI

CASO DI CARICO   :       1  SLU SENZA SISMA                        COMBINAZIONE

N.  7 CONDIZIONI ANALISI STATICA
    1      Peso_proprio_______ +    1.30
    2      Fondaz              +    1.50
    3      PT_pp               +    1.30
    4      PT_perm             +    1.50
    5      PT_acc              +    1.50
    6      tetto               +    1.30
    7      Neve                +    1.50

  1) +1.30*c001     +1.50*c002     +1.30*c003     +1.50*c004     +1.50*c005
   ) +1.30*c006     +1.50*c007
 Unità di misura: SI,SS [daN/cm2]

 tensione max =        0.           guscio =     0
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SOLLECITAZIONI GUSCI TRIANGOLARI

CASO DI CARICO   :       4  SLU con SISMAX PRINC                   COMBINAZIONE

N.  6 CONDIZIONI ANALISI STATICA
    1      Peso_proprio_______ +    1.00
    2      Fondaz              +    1.00
    3      PT_pp               +    1.00
    4      PT_perm             +    1.00
    5      PT_acc              +    0.30
    6      tetto               +    1.00
N.  2 CASI DI CARICO
    2     SISMAX SLU__________      1.00
    3     SISMAY SLU__________      0.30

  1) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c002.001 +0.30*c003.001
  2) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c002.001 +0.30*c003.002
  3) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c002.001 +0.30*c003.003
  4) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c002.001 +0.30*c003.004
  5) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c002.002 +0.30*c003.001
  6) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c002.002 +0.30*c003.002
  7) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c002.002 +0.30*c003.003
  8) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c002.002 +0.30*c003.004
  9) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c002.003 +0.30*c003.001
 10) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c002.003 +0.30*c003.002
 11) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c002.003 +0.30*c003.003
 12) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c002.003 +0.30*c003.004
 13) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c002.004 +0.30*c003.001
 14) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c002.004 +0.30*c003.002
 15) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c002.004 +0.30*c003.003
 16) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c002.004 +0.30*c003.004
 Unità di misura: SI,SS [daN/cm2]

 tensione max =        0.           guscio =     0
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SOLLECITAZIONI GUSCI TRIANGOLARI

CASO DI CARICO   :       5  SLU con SISMAY PRINC                   COMBINAZIONE

N.  6 CONDIZIONI ANALISI STATICA
    1      Peso_proprio_______ +    1.00
    2      Fondaz              +    1.00
    3      PT_pp               +    1.00
    4      PT_perm             +    1.00
    5      PT_acc              +    0.30
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    6      tetto               +    1.00
N.  2 CASI DI CARICO
    3     SISMAY SLU__________       1.00
    2     SISMAX SLU__________       0.30

  1) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c003.001 +0.30*c002.001
  2) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c003.001 +0.30*c002.002
  3) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c003.001 +0.30*c002.003
  4) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c003.001 +0.30*c002.004
  5) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c003.002 +0.30*c002.001
  6) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c003.002 +0.30*c002.002
  7) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c003.002 +0.30*c002.003
  8) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c003.002 +0.30*c002.004
  9) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c003.003 +0.30*c002.001
 10) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c003.003 +0.30*c002.002
 11) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c003.003 +0.30*c002.003
 12) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c003.003 +0.30*c002.004
 13) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c003.004 +0.30*c002.001
 14) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c003.004 +0.30*c002.002
 15) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c003.004 +0.30*c002.003
 16) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c003.004 +0.30*c002.004
 Unità di misura: SI,SS [daN/cm2]

 tensione max =        0.           guscio =     0



SOLLECITAZIONI GUSCI RETTANGOLARI

CASO DI CARICO   :       1  SLU SENZA SISMA                        COMBINAZIONE

N.  7 CONDIZIONI ANALISI STATICA
    1      Peso_proprio_______ +    1.30
    2      Fondaz              +    1.50
    3      PT_pp               +    1.30
    4      PT_perm             +    1.50
    5      PT_acc              +    1.50
    6      tetto               +    1.30
    7      Neve                +    1.50

  1) +1.30*c001     +1.50*c002     +1.30*c003     +1.50*c004     +1.50*c005
   ) +1.30*c006     +1.50*c007
 Unità di misura: SI,SS [daN/cm2]


GUSCIO          31    SS =      11.6      SI =      10.3
 tensione max =      11.6           guscio =    31



SOLLECITAZIONI GUSCI RETTANGOLARI

CASO DI CARICO   :       4  SLU con SISMAX PRINC                    COMBINAZIONE

N.  6 CONDIZIONI ANALISI STATICA
    1      Peso_proprio_______ +    1.00
    2      Fondaz              +    1.00
    3      PT_pp               +    1.00
    4      PT_perm             +    1.00
    5      PT_acc              +    0.30
    6      tetto               +    1.00
N.  2 CASI DI CARICO
    2     SISMAX SLU__________       1.00
    3     SISMAY SLU__________       0.30

  1) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c002.001 +0.30*c003.001
  2) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c002.001 +0.30*c003.002
  3) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c002.001 +0.30*c003.003
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  4) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c002.001 +0.30*c003.004
  5) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c002.002 +0.30*c003.001
  6) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c002.002 +0.30*c003.002
  7) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c002.002 +0.30*c003.003
  8) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c002.002 +0.30*c003.004
  9) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c002.003 +0.30*c003.001
 10) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c002.003 +0.30*c003.002
 11) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c002.003 +0.30*c003.003
 12) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c002.003 +0.30*c003.004
 13) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c002.004 +0.30*c003.001
 14) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c002.004 +0.30*c003.002
 15) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c002.004 +0.30*c003.003
 16) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c002.004 +0.30*c003.004
 Unità di misura: SI,SS [daN/cm2]

GUSCIO          31    SS =      11.4      SI =      13.8

                      SS =       7.9      SI =      10.8

                      SS =      11.5      SI =      14.2

                      SS =       8.0      SI =      11.2

                      SS =      13.5      SI =      15.8

                      SS =      10.2      SI =      16.1

                      SS =      13.7      SI =      15.5

                      SS =      10.3      SI =      15.8

                      SS =      10.9      SI =      12.9

                      SS =       7.5      SI =       9.9

                      SS =      11.0      SI =      13.3

                      SS =       7.6      SI =      10.3

                      SS =      13.1      SI =      16.2

                      SS =      10.3      SI =      16.6

                      SS =      13.3      SI =      15.9

                      SS =      10.4      SI =      16.3
 tensione max =      16.6           guscio =    31



SOLLECITAZIONI GUSCI RETTANGOLARI

CASO DI CARICO   :       5  SLU con SISMAY PRINC                    COMBINAZIONE

N.  6 CONDIZIONI ANALISI STATICA
    1      Peso_proprio_______ +    1.00
    2      Fondaz              +    1.00
    3      PT_pp               +    1.00
    4      PT_perm             +    1.00
    5      PT_acc              +    0.30
    6      tetto               +    1.00
N.  2 CASI DI CARICO
    3     SISMAY SLU__________      1.00
    2     SISMAX SLU__________      0.30

  1) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c003.001 +0.30*c002.001
  2) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c003.001 +0.30*c002.002
  3) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c003.001 +0.30*c002.003
  4) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c003.001 +0.30*c002.004
  5) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*c003.002 +0.30*c002.001
  6) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
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   ) +1.00*c006     +1.00*C003.002 +0.30*C002.002
  7) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*C003.002 +0.30*C002.003
  8) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*C003.002 +0.30*C002.004
  9) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*C003.003 +0.30*C002.001
 10) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*C003.003 +0.30*C002.002
 11) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*C003.003 +0.30*C002.003
 12) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*C003.003 +0.30*C002.004
 13) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*C003.004 +0.30*C002.001
 14) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*C003.004 +0.30*C002.002
 15) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*C003.004 +0.30*C002.003
 16) +1.00*c001     +1.00*c002     +1.00*c003     +1.00*c004     +0.30*c005
   ) +1.00*c006     +1.00*C003.004 +0.30*C002.004
 Unità di misura: SI,SS [daN/cm2]

GUSCIO          31    SS =      15.8      SI =      11.5

                      SS =      16.8      SI =      11.1

                      SS =      15.6      SI =      11.3

                      SS =      16.7      SI =      11.2

                      SS =       3.3      SI =       4.3

                      SS =       2.5      SI =      10.5

                      SS =       3.4      SI =       4.5

                      SS =       2.7      SI =      10.6

                      SS =      16.4      SI =      12.4

                      SS =      17.5      SI =      10.8

                      SS =      16.2      SI =      12.2

                      SS =      17.4      SI =      10.9

                      SS =       2.9      SI =       3.4

                      SS =       2.5      SI =       9.5

                      SS =       2.9      SI =       3.6

                      SS =       2.6      SI =       9.7
 tensione max =      17.5           guscio =    31
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