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Comune di	ACCEGLIO
Provincia di	CUNEO
Opere in	CEMENTO ARMATO E ACCIAO
Lavori di	COSTRUZIONE DI TETTOIA APERTA AD USO RICOVERO BOVINI
Sito in	Vallone Traversiera Foglio catastale 7 particella 2
Committente	Comune di Acceglio
Prog. strutture	Arch. BONO Luca

RELAZIONE DI CALCOLO

ai sensi delle Norme Tecniche approvate con D.M. 14 gennaio 2008
e del D.P.R. 380 del 06/06/2001

Arch. BONO Luca

NORME DI RIFERIMENTO

La presente relazione di calcolo è stata redatta in base alla legge 5 novembre 1971 n. 1086 "Norme per la disciplina delle opere in conglomerato cementizio armato, normale e precompresso ed a struttura metallica", alla relativa circolare illustrativa n. 11951 del 14 febbraio 1974 e del DPR 380 del 06/06/2001.

Il metodo di calcolo adottato e le resistenze dei materiali sono quelli permessi dalle Norme Tecniche approvate con D.M. 17 gennaio 2018.

I valori dei carichi sulle strutture sono dedotti dalle Norme Tecniche approvate con D.M. 17 gennaio 2018.

METODO DI CALCOLO ADOTTATO

Per tutte le aste in progetto sono state eseguite, come indicato nei casi di carico riportati nella relazione, verifiche agli Stati Limite Ultimo e di Esercizio.

In relazione agli Stati Limite utilizzati e relativamente alla probabilità di superamento si precisa quanto segue:

- Per gli stati limite di esercizio è stato considerato lo stato limite di danno (SLD) con probabilità di superamento del periodo di riferimento (Pvr) pari al 63%
- Per gli stati limite ultimi è stato considerato lo stato limite di salvaguardia della vita (SLV) con probabilità di superamento del periodo di riferimento (Pvr) pari al 10%

MODELLO STRUTTURALE E CALCOLO DELLE SOLLECITAZIONI

Utilizzo dei metodi della Scienza delle Costruzioni.
Metodo di calcolo delle sollecitazioni: elastico lineare.

COMBINAZIONI DI CARICO

Si utilizzano le combinazioni di carico della normativa italiana per gli stati limite.

CONDIZIONI DI CARICO

Si utilizzano le condizioni di carico della normativa italiana per gli stati limite.

CARATTERISTICHE MECCANICHE DEI MATERIALI

- ✓ <u>Acciaio per Carpenteria</u>
  S355 (Fe510) dotato delle seguenti caratteristiche meccaniche *(NTC 2018, par. 11.3.4):*

✓ <u>Bulloni</u>

Verranno impiegati bulloni per carpenteria ad alta resistenza, aventi le seguenti caratteristiche *(NTC 2008, par 11.3.4.6):*

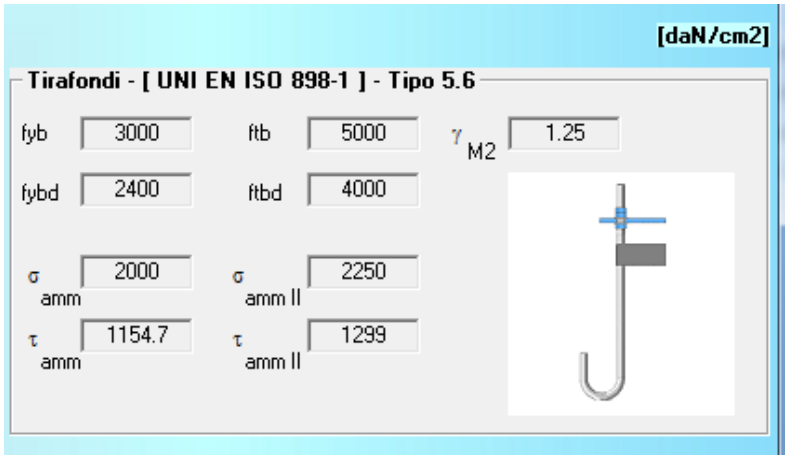
Tab. 11.3.XIII.a

Viti	Dadi	Rondelle	Riferimento
Classe di resistenza UNI EN ISO 898-1:2013	Classe di resistenza UNI EN ISO 898-2:2012	Durezza	
4.6	4; 5; 6 oppure 8	100 HV min.	UNI EN 15048-1
4.8			
5.6	5; 6 oppure 8		
5.8			
6.8	6 oppure 8		
8.8	8 oppure 10	100 HV min oppure 300 HV min.	
10.9	10 oppure 12		

Tab. 11.3.XIII.b

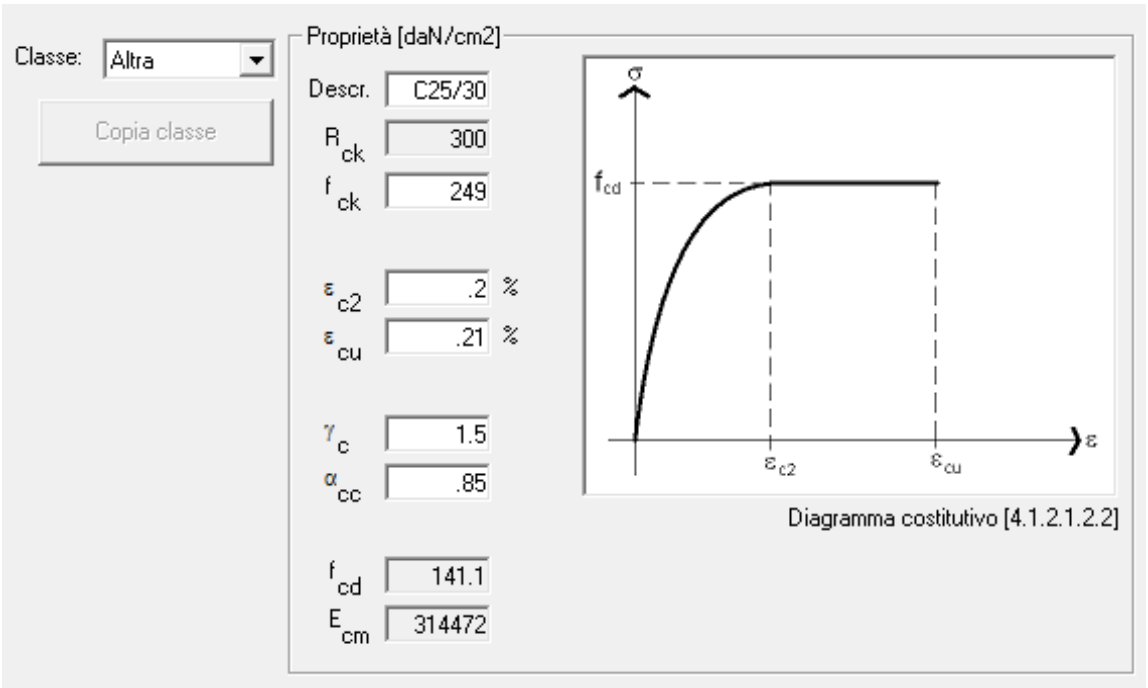
Classe	4.6	4.8	5.6	5.8	6.8	8.8	10.9
f_{yb} (N/mm²)	240	320	300	400	480	640	900
f_{tb} (N/mm²)	400	400	500	500	600	800	1000

✓ <u>Tirafondi</u>

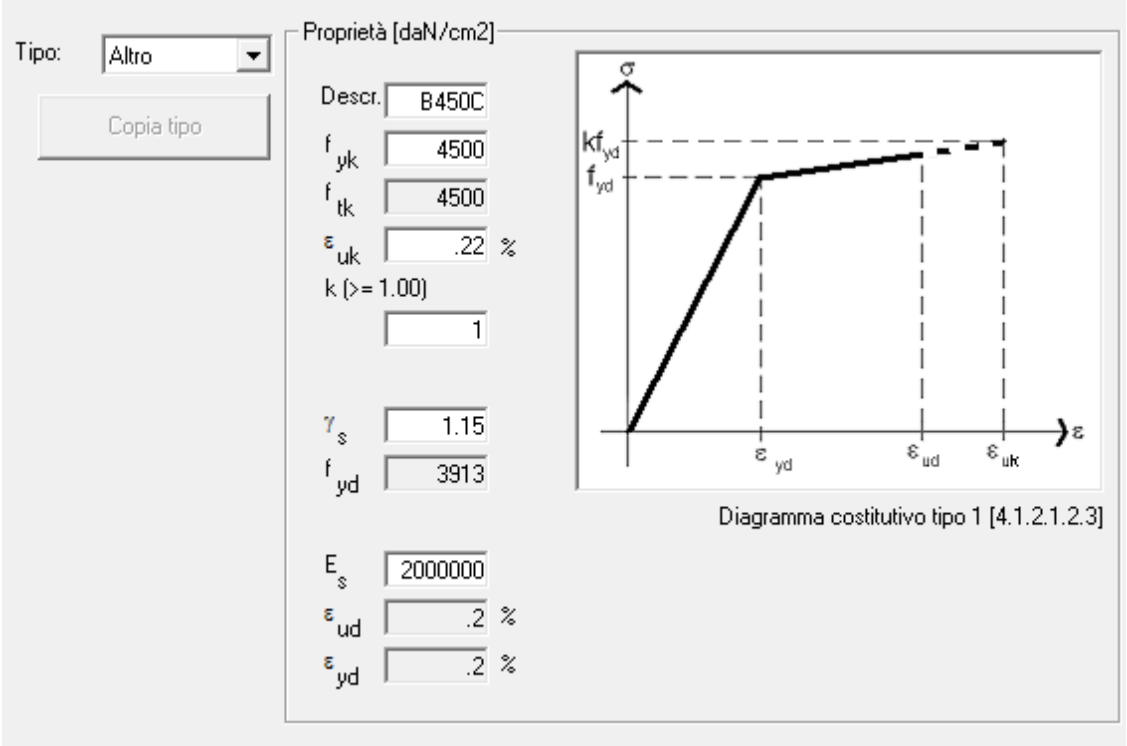


- ✓ <u>Saldature</u>
  Le saldature saranno realizzate in accordo con le prescrizioni del paragrafo 11.3.4.5 delle NTC2008.

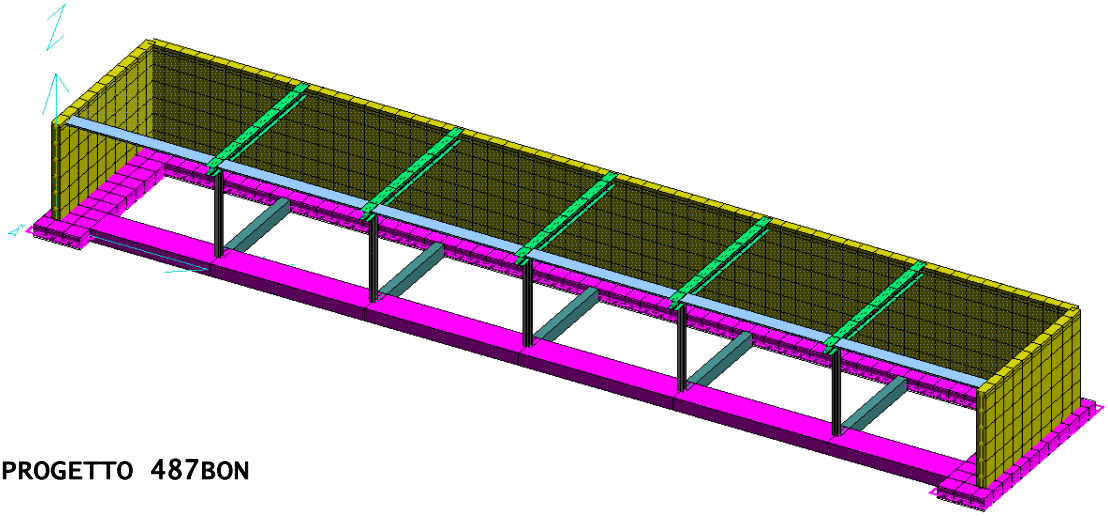
- ✓ <u>Calcestruzzo</u>
  Verrà impiegato calcestruzzo a prestazione garantita con le seguenti caratteristiche *(par. 4.1 e par. 11.2):*



- ✓ <u>Acciaio per c.a.</u>
  Verrà impiegato acciaio per armatura con le seguenti caratteristiche *(par. 11.3.2):*



MODELLO 3D DA ELABORATORE DI CALCOLO



TITOLO DEL PROGETTO 487BON

1. INDIVIDUAZIONE DEL MODELLO DI CALCOLO

1.1 DESCRIZIONE GENERALE DELL'OPERA

Oggetto della presente relazione e' l'analisi delle sollecitazioni ed il calcolo della struttura in cemento armato ordinario da realizzarsi in:

Comune di ACCEGLIO
Vallone Traversiera

1.2 NORMATIVE DI RIFERIMENTO

L'analisi della struttura in oggetto e' stata fatta utilizzando i metodi usuali della Scienza delle Costruzioni ed in conformita' alle normative e leggi vigenti:

- Legge 5/11/1971 n. 1086: Norme per la disciplina delle opere di conglomerato cementizio armato, normale e precompresso ed a struttura metallica.

- D.P.R. 6/6/2001 n. 380: Testo unico delle disposizione legislative e regolamentari in materia edilizia.

- D.M. 14/1/2008: Norme tecniche per le costruzioni.

1.3 CRITERI DI ANALISI DELLA SICUREZZA

Con riferimento alle normative precedentemente citate, le strutture in oggetto sono verificate per quanto riguarda:
- verifica di resistenza;
- verifica a deformazione e fessurazione.

Calcestruzzo per le strutture in elevazione: classe C25/30

Acciaio in barre : B450C

Acciaio per carpenteria : S355

1.4 SCHEMATIZZAZIONE DELLA STRUTTURA E DEI VINCOLI

La struttura e' stata schematizzata escludendo il contributo degli elementi aventi rigidezza e resistenza trascurabili a fronte dei principali. E' quindi stata considerata l'orditura a telaio tridimensionale, i solai ed i setti verticali ad elevata rigidezza (vano ascensore, setti in cls).
I plinti di fondazione vengono assimilati a vincoli elastici di cui e' fornita la costante di rigidezza. Le travi di fondazione sono schematizzate come poggianti su vincoli elastici distribuiti.

1.5 MODELLAZIONE DELLA STRUTTURA E DEI VINCOLI

La struttura e' modellata con il metodo degli elementi finiti, applicato a sistemi tridimensionali. Gli elementi utilizzati sono sia monodimensionali (trave con eventuali sconnessioni interne), che bidimensionali (piastre e membrane triangolari e quadrangolari). I vincoli sono considerati puntuali ed inseriti tramite le sei costanti di rigidezza elastica, oppure come elementi asta poggianti su suolo elastico. Le sezioni oggetto di verifica nelle travi sono stampate a passo costante; dei gusci si conoscono le sollecitazioni nel baricentro dell'elemento stesso.

1.6 SCHEMATIZZAZIONE DELLE AZIONI

In accordo con le sopracitate normative, sono state considerate nei calcoli le seguenti azioni:
- pesi propri strutturali
- carichi permanenti portati dalla struttura
- carichi variabili sui solai, neve, vento.
- forze di piano simulanti il sisma, ricavate tramite analisi statica/dinamica
- distorsioni termiche

Le condizioni ed i casi di carico prese in conto nei calcolo sono specificate nella stampa dei dati di input.

1.7 MODELLAZIONE DELLE AZIONI

Le azioni sono state modellate tramite opportuni carichi concentrati e distribuiti su nodi ed aste.

1.8 MODELLAZIONE DEI MATERIALI

I materiali costituenti la struttura sono considerati elastici e con comportamento lineare. Le loro caratteristiche sono specificate nella stampa dei dati di input.

1.9 TIPO DI ANALISI

Le analisi strutturali condotte sono statiche in regime lineare. Il metodo di calcolo e' ad elementi finiti. E' stata effettuata verifica sismica. La verifica delle membrature in cemento armato viene eseguita considerando tutte le caratteristiche di sollecitazione.

2. INDIVIDUAZIONE DEL CODICE DI CALCOLO

Per il calcolo delle sollecitazioni e per la verifica di travi e pilastri in cemento armato si e' fatto ricorso all'elaboratore elettronico utilizzando il seguente programma di calcolo:
DOLMEN WIN (R), versione 11.0 del 2011 prodotto, distribuito ed assistito dalla CDM DOLMEN srl, con sede in Torino, Via Drovetti 9/F.
Questa procedura e' sviluppata in ambiente Windows, ed e' stata scritta utilizzando i linguaggi Fortran e C. DOLMEN WIN permette l'analisi elastica lineare di strutture tridimensionali con nodi a sei gradi di liberta' utilizzando un solutore ad elementi finiti. Gli elementi considerati sono la trave, con eventuali svincoli interni o rotazione attorno al proprio asse, ed il guscio, sia rettangolare che triangolare, avente comportamento di membrana e di piastra. I carichi possono essere applicati sia ai nodi, come forze o coppie concentrate, sia sulle travi, comme forze distribuite, trapezie, concentrate, come coppie e come distorsioni termiche. I vincoli sono forniti tramite le sei costanti di rigidezza elastica.
A supporto del programma e' fornito un ampio manuale d'uso contenente fra l'altro una vasta serie di test di validazione sia su esempi classici di Scienza delle Costruzioni, sia su strutture particolarmente impegnative e reperibili nella bibliografia specializzata.

2.2 GRADO DI AFFIDABILITA' DEL CODICE

L' affidabilita' del codice di calcolo e' garantita dall'esistenza di un ampia documentazioe di supporto, come indicato nel paragrafo precedente. La presenza di un modulo CAD per l'introduzione di dati permette la visualizzazione dettagliata degli elementi introdotti. E' possibile inoltre ottenere rappresentazioni grafiche di deformate e sollecitazioni della struttura. Al termine dell'elaborazione viene inoltre valutata la qualita' della soluzione, in base all'uguaglianza del lavoro esterno e dell'energia di deformazione.

2.3 MOTIVAZIONE DELLA SCELTA DEL CODICE

DOLMEN WIN permette in campo elastico lineare un'analisi dettagliata del comportamento dell'intera struttura, tenendo conto del comportamento irrigidente di setti anche complessi e solai considerati con la loro effettiva rigidezza. E' possibile inoltre scegliere il grado di affinamento dell'analisi di elementi complessi utilizzando mesh via via piu' dettagliate.

2.4 NOTIZIE SULL'ELABORATORE

Unita' centrale di processo: Intel Corel 2 Duo CPU - E8500
sistema operativo: XP Professional
capacita' di memoria: 2.50 Gb di RAM

3. ESAME DEI RISULTATI E CONTROLLI

3.1 VALUTAZIONE DELLA CORRETTEZZA DEL MODELLO

Il modello di calcolo adottato e' da ritenersi appropriato in quanto non sono state riscontrate labilita', le reazioni vincolari equilibrano i carichi applicati, la simmetria di carichi e struttura da' origine a sollecitazioni simmetriche.

4. GIUDIZIO MOTIVATO DI ACCETTABILITA' DEI RISULTATI

L'analisi critica dei risultati e dei parametri di controllo nonche' il confronto con calcolazioni di massima eseguite manualmente porta ad confermare la validita' dei risultati.

DATI ANALISI SISMICA:

ANALISI DINAMICA lavoro :\487BON

PARAMETRI DI CALCOLO:

Modello generale
Assi di vibrazione: X Y
Combinazione quadratica completa (CQC)

DATI PROGETTO

Edificio sito in località ACCEGLIO (long. 6.954 lat. 44.527600)

Categoria del suolo di fondazione = B

Coeff. di amplificazione stratigrafica Ss = 1.200

Coeff. di amplificazione topografica ST = 1.200

S = 1.440

Vita nominale dell'opera VN = 50 anni

Coefficiente d'uso CU = 0.7

Periodo di riferimento VR = 35.0

PVR : probabilità di superamento in VR = 10 %

Tempo di ritorno = 332

Coeff. di smorzamento viscoso = 5.0

Valori risultanti per :
ag 1.024 [g/10]
Fo 2.451
TC* 0.271

Edificio con struttura in cem. armato :
Fattore di comportamento q = 3.000

q = q0 * KR * KW dove :
q0 = 3.00 (Classe di duttilità "B" (bassa))
KR = 1.0 (Edifici regolari in altezza)
KW = 1.00

Rapporto spettro di esercizio / spettro di progetto = 1.088

CONDIZIONI DI RIFERIMENTO	COEFFICIENTE	PESO RISULTANTE [daN]
2.	1.000	67899.9
3.	1.000	28890.0
4.	0.300	61150.5

*** TABELLA AUTOVETTORI ***

n	PERIODO [sec]	MASSA ATTIVATA %X	%Y	%Z	COEFFICIENTI DI CORRELAZIONE n+1	n+2	n+3	n+4	n+5	n+6	n+7
1	0.103674	0.000	99.924	0.000	0.087	0.002					
2	0.075195	22.044	0.000	0.000	0.003						
3	0.018094	77.749	0.000	0.000							
	MASSA TOTALE	99.793	99.924	0.000							

DESCRIZIONE CASI DI CARICO:

NOME	DESCRIZIONE	VERIFICA	TIPO	CONDIZ. INSERITE Num.	Coeff.	Segno	CASI INSERITI Num.	Coeff.
1	SLU SENZA SISMA	S.L.U.	somma	1	1.300	+		
				2	1.300	+		
				3	1.500	+		
				4	1.500	+		
2	SISMAX SLU	nessuna	somma	6	1.000	quadr.		
				8	1.000	quadr.		
				12	1.000	±		
3	SISMAY SLU	nessuna	somma	5	1.000	quadr.		
				7	1.000	quadr.		
				9	1.000	quadr.		
				13	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	0.200	+		
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	0.200	+		
6	SLD con SISMAX PRINC	S.L.Danno	somma	1	1.000	+	2	1.088
				2	1.000	+	3	0.326
				3	1.000	+		
				4	0.200	+		
7	SLD con SISMAY PRINC	S.L.Danno	somma	1	1.000	+	3	1.088
				2	1.000	+	2	0.326
				3	1.000	+		
				4	0.200	+		
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	0.200	+		
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	0.200	+		
10	Rara	Rara	somma	1	1.000	+		
				2	1.000	+		
				3	1.000	+		
				4	1.000	+		
11	Frequente	Freq.	somma	1	1.000	+		
				2	1.000	+		
				3	1.000	+		
				4	0.500	+		
12	Quasi Perm	QuasiPerm.	somma	1	1.000	+		
				2	1.000	+		
				3	1.000	+		
				4	0.200	+		

DATI STRUTTURA:

Unita` di misura :
LUNGHEZZE : cm
SUPERFICI : cm2

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DATI SEZIONALI   : cm
ANGOLI           : gradi
FORZE            : N
MOMENTI          : Nm
CARICHI LINEARI  : daN/cm
CARICHI SUPERFIC.: N/m2
TENSIONI         : N/mm2
PESI DI VOLUME   : daN/cm3
COEFF. DI WINKLER: daN/cm3
RIGIDEZZE VINCOL.: N/cm - Nm/rad
```

CARICHI NODI------|-----------|-----------|-----------|-----------|num.= 452

Nome		Nodo	Direzione	Intensita`
1 -	224 : Forze Dinamiche (Autovettori)			
225 -	338 : Forze Sismiche (Analisi Semplificata)			
339 -	452 : Momenti Torcenti Addizionali			

CARICHI DI SOLAIO-|-----------|-----------|-----------|-----------|num.= 3

Nome	Cos X	Cos Y	Cos Z	Cond.	Rifer.	Intens.	Quota
1	1.0000	0.0000	0.0000	2	glob	-400.0	320.00
2	1.0000	0.0000	0.0000	3	glob	-180.0	320.00
3	1.0000	0.0000	0.0000	4	glob	-1270.0	320.00

CARICHI ASTE------|-----------|-----------|-----------|-----------|num.= 276

Nome	Asta	Dir	Tip	RIF	Parametro 1	Parametro 2	Parametro 3	Parametro 4
453 S001-Pp_solaio	77	Z	FT	glo	-10.000	-10.000	0.000	0.000
454 S001-Pp_solaio	78	Z	FT	glo	-10.000	-10.000	0.000	0.000
455 S001-Pp_solaio	79	Z	FT	glo	-10.000	-10.000	0.000	0.000
456 S001-Pp_solaio	80	Z	FT	glo	-10.000	-10.000	0.000	0.000
457 S001-Pp_solaio	81	Z	FT	glo	-10.000	-10.000	0.000	0.000
458 S001-Pp_solaio	82	Z	FT	glo	-10.000	-10.000	0.000	0.000
459 S001-Pp_solaio	147	Z	FT	glo	-10.000	-10.000	0.000	0.000
460 S001-Pp_solaio	148	Z	FT	glo	-10.000	-10.000	0.000	0.000
461 S001-Pp_solaio	149	Z	FT	glo	-10.000	-10.000	0.000	0.000
462 S001-Pp_solaio	150	Z	FT	glo	-10.000	-10.000	0.000	0.000
463 S001-Pp_solaio	151	Z	FT	glo	-10.000	-10.000	0.000	0.000
464 S001-Pp_solaio	152	Z	FT	glo	-10.000	-10.000	0.000	0.000
465 S001-Pp_solaio	68	Z	FT	glo	-20.000	-20.000	0.000	0.000
466 S001-Pp_solaio	63	Z	FT	glo	-20.000	-20.000	0.000	0.000
467 S001-Pp_solaio	58	Z	FT	glo	-20.000	-20.000	0.000	0.000
468 S001-Pp_solaio	53	Z	FT	glo	-20.000	-20.000	0.000	0.000
469 S001-Pp_solaio	48	Z	FT	glo	-20.000	-20.000	0.000	0.000
470 S001-Pp_solaio	157	Z	FT	glo	-20.000	-20.000	0.000	0.000
471 S001-Pp_solaio	158	Z	FT	glo	-20.000	-20.000	0.000	0.000
472 S001-Pp_solaio	159	Z	FT	glo	-20.000	-20.000	0.000	0.000
473 S001-Pp_solaio	160	Z	FT	glo	-20.000	-20.000	0.000	0.000
474 S001-Pp_solaio	161	Z	FT	glo	-20.000	-20.000	0.000	0.000
475 S001-Pp_solaio	162	Z	FT	glo	-20.000	-20.000	0.000	0.000
476 S001-Pp_solaio	163	Z	FT	glo	-20.000	-20.000	0.000	0.000
477 S001-Pp_solaio	164	Z	FT	glo	-20.000	-20.000	0.000	0.000
478 S001-Pp_solaio	165	Z	FT	glo	-20.000	-20.000	0.000	0.000
479 S001-Pp_solaio	166	Z	FT	glo	-20.000	-20.000	0.000	0.000
480 S001-Pp_solaio	83	Z	FT	glo	-10.000	-10.000	0.000	0.000
481 S001-Pp_solaio	153	Z	FT	glo	-10.000	-10.000	0.000	0.000
482 S001-Pp_solaio	49	Z	FT	glo	-20.000	-20.000	0.000	0.000
483 S001-Pp_solaio	54	Z	FT	glo	-20.000	-20.000	0.000	0.000
484 S001-Pp_solaio	59	Z	FT	glo	-20.000	-20.000	0.000	0.000
485 S001-Pp_solaio	64	Z	FT	glo	-20.000	-20.000	0.000	0.000
486 S001-Pp_solaio	69	Z	FT	glo	-20.000	-20.000	0.000	0.000
487 S001-Pp_solaio	84	Z	FT	glo	-10.000	-10.000	0.000	0.000
488 S001-Pp_solaio	85	Z	FT	glo	-10.000	-10.000	0.000	0.000
489 S001-Pp_solaio	86	Z	FT	glo	-10.000	-10.000	0.000	0.000
490 S001-Pp_solaio	154	Z	FT	glo	-10.000	-10.000	0.000	0.000
491 S001-Pp_solaio	155	Z	FT	glo	-10.000	-10.000	0.000	0.000
492 S001-Pp_solaio	156	Z	FT	glo	-10.000	-10.000	0.000	0.000
493 S001-Pp_solaio	51	Z	FT	glo	-20.000	-20.000	0.000	0.000
494 S001-Pp_solaio	56	Z	FT	glo	-20.000	-20.000	0.000	0.000
495 S001-Pp_solaio	61	Z	FT	glo	-20.000	-20.000	0.000	0.000
496 S001-Pp_solaio	66	Z	FT	glo	-20.000	-20.000	0.000	0.000
497 S001-Pp_solaio	71	Z	FT	glo	-20.000	-20.000	0.000	0.000
498 S001-Pp_solaio	70	Z	FT	glo	-20.000	-20.000	0.000	0.000
499 S001-Pp_solaio	65	Z	FT	glo	-20.000	-20.000	0.000	0.000
500 S001-Pp_solaio	60	Z	FT	glo	-20.000	-20.000	0.000	0.000
501 S001-Pp_solaio	55	Z	FT	glo	-20.000	-20.000	0.000	0.000
502 S001-Pp_solaio	50	Z	FT	glo	-20.000	-20.000	0.000	0.000
503 S001-Terra	77	Z	FT	glo	-4.500	-4.500	0.000	0.000
504 S001-Terra	78	Z	FT	glo	-4.500	-4.500	0.000	0.000
505 S001-Terra	79	Z	FT	glo	-4.500	-4.500	0.000	0.000
506 S001-Terra	80	Z	FT	glo	-4.500	-4.500	0.000	0.000
507 S001-Terra	81	Z	FT	glo	-4.500	-4.500	0.000	0.000
508 S001-Terra	82	Z	FT	glo	-4.500	-4.500	0.000	0.000
509 S001-Terra	147	Z	FT	glo	-4.500	-4.500	0.000	0.000
510 S001-Terra	148	Z	FT	glo	-4.500	-4.500	0.000	0.000
511 S001-Terra	149	Z	FT	glo	-4.500	-4.500	0.000	0.000
512 S001-Terra	150	Z	FT	glo	-4.500	-4.500	0.000	0.000
513 S001-Terra	151	Z	FT	glo	-4.500	-4.500	0.000	0.000
514 S001-Terra	152	Z	FT	glo	-4.500	-4.500	0.000	0.000
515 S001-Terra	68	Z	FT	glo	-9.000	-9.000	0.000	0.000
516 S001-Terra	63	Z	FT	glo	-9.000	-9.000	0.000	0.000
517 S001-Terra	58	Z	FT	glo	-9.000	-9.000	0.000	0.000
518 S001-Terra	53	Z	FT	glo	-9.000	-9.000	0.000	0.000
519 S001-Terra	48	Z	FT	glo	-9.000	-9.000	0.000	0.000
520 S001-Terra	157	Z	FT	glo	-9.000	-9.000	0.000	0.000
521 S001-Terra	158	Z	FT	glo	-9.000	-9.000	0.000	0.000
522 S001-Terra	159	Z	FT	glo	-9.000	-9.000	0.000	0.000
523 S001-Terra	160	Z	FT	glo	-9.000	-9.000	0.000	0.000

524	S001-Terra	161	Z	FT	glo	-9.000	-9.000	0.000	0.000
525	S001-Terra	162	Z	FT	glo	-9.000	-9.000	0.000	0.000
526	S001-Terra	163	Z	FT	glo	-9.000	-9.000	0.000	0.000
527	S001-Terra	164	Z	FT	glo	-9.000	-9.000	0.000	0.000
528	S001-Terra	165	Z	FT	glo	-9.000	-9.000	0.000	0.000
529	S001-Terra	166	Z	FT	glo	-9.000	-9.000	0.000	0.000
530	S001-Terra	83	Z	FT	glo	-4.500	-4.500	0.000	0.000
531	S001-Terra	153	Z	FT	glo	-4.500	-4.500	0.000	0.000
532	S001-Terra	49	Z	FT	glo	-9.000	-9.000	0.000	0.000
533	S001-Terra	54	Z	FT	glo	-9.000	-9.000	0.000	0.000
534	S001-Terra	59	Z	FT	glo	-9.000	-9.000	0.000	0.000
535	S001-Terra	64	Z	FT	glo	-9.000	-9.000	0.000	0.000
536	S001-Terra	69	Z	FT	glo	-9.000	-9.000	0.000	0.000
537	S001-Terra	84	Z	FT	glo	-4.500	-4.500	0.000	0.000
538	S001-Terra	85	Z	FT	glo	-4.500	-4.500	0.000	0.000
539	S001-Terra	86	Z	FT	glo	-4.500	-4.500	0.000	0.000
540	S001-Terra	154	Z	FT	glo	-4.500	-4.500	0.000	0.000
541	S001-Terra	155	Z	FT	glo	-4.500	-4.500	0.000	0.000
542	S001-Terra	156	Z	FT	glo	-4.500	-4.500	0.000	0.000
543	S001-Terra	51	Z	FT	glo	-9.000	-9.000	0.000	0.000
544	S001-Terra	56	Z	FT	glo	-9.000	-9.000	0.000	0.000
545	S001-Terra	61	Z	FT	glo	-9.000	-9.000	0.000	0.000
546	S001-Terra	66	Z	FT	glo	-9.000	-9.000	0.000	0.000
547	S001-Terra	71	Z	FT	glo	-9.000	-9.000	0.000	0.000
548	S001-Terra	70	Z	FT	glo	-9.000	-9.000	0.000	0.000
549	S001-Terra	65	Z	FT	glo	-9.000	-9.000	0.000	0.000
550	S001-Terra	60	Z	FT	glo	-9.000	-9.000	0.000	0.000
551	S001-Terra	55	Z	FT	glo	-9.000	-9.000	0.000	0.000
552	S001-Terra	50	Z	FT	glo	-9.000	-9.000	0.000	0.000
553	S001-Neve	77	Z	FT	glo	-31.750	-31.750	0.000	0.000
554	S001-Neve	78	Z	FT	glo	-31.750	-31.750	0.000	0.000
555	S001-Neve	79	Z	FT	glo	-31.750	-31.750	0.000	0.000
556	S001-Neve	80	Z	FT	glo	-31.750	-31.750	0.000	0.000
557	S001-Neve	81	Z	FT	glo	-31.750	-31.750	0.000	0.000
558	S001-Neve	82	Z	FT	glo	-31.750	-31.750	0.000	0.000
559	S001-Neve	147	Z	FT	glo	-31.750	-31.750	0.000	0.000
560	S001-Neve	148	Z	FT	glo	-31.750	-31.750	0.000	0.000
561	S001-Neve	149	Z	FT	glo	-31.750	-31.750	0.000	0.000
562	S001-Neve	150	Z	FT	glo	-31.750	-31.750	0.000	0.000
563	S001-Neve	151	Z	FT	glo	-31.750	-31.750	0.000	0.000
564	S001-Neve	152	Z	FT	glo	-31.750	-31.750	0.000	0.000
565	S001-Neve	68	Z	FT	glo	-63.500	-63.500	0.000	0.000
566	S001-Neve	63	Z	FT	glo	-63.500	-63.500	0.000	0.000
567	S001-Neve	58	Z	FT	glo	-63.500	-63.500	0.000	0.000
568	S001-Neve	53	Z	FT	glo	-63.500	-63.500	0.000	0.000
569	S001-Neve	48	Z	FT	glo	-63.500	-63.500	0.000	0.000
570	S001-Neve	157	Z	FT	glo	-63.500	-63.500	0.000	0.000
571	S001-Neve	158	Z	FT	glo	-63.500	-63.500	0.000	0.000
572	S001-Neve	159	Z	FT	glo	-63.500	-63.500	0.000	0.000
573	S001-Neve	160	Z	FT	glo	-63.500	-63.500	0.000	0.000
574	S001-Neve	161	Z	FT	glo	-63.500	-63.500	0.000	0.000
575	S001-Neve	162	Z	FT	glo	-63.500	-63.500	0.000	0.000
576	S001-Neve	163	Z	FT	glo	-63.500	-63.500	0.000	0.000
577	S001-Neve	164	Z	FT	glo	-63.500	-63.500	0.000	0.000
578	S001-Neve	165	Z	FT	glo	-63.500	-63.500	0.000	0.000
579	S001-Neve	166	Z	FT	glo	-63.500	-63.500	0.000	0.000
580	S001-Neve	83	Z	FT	glo	-31.750	-31.750	0.000	0.000
581	S001-Neve	153	Z	FT	glo	-31.750	-31.750	0.000	0.000
582	S001-Neve	49	Z	FT	glo	-63.500	-63.500	0.000	0.000
583	S001-Neve	54	Z	FT	glo	-63.500	-63.500	0.000	0.000
584	S001-Neve	59	Z	FT	glo	-63.500	-63.500	0.000	0.000
585	S001-Neve	64	Z	FT	glo	-63.500	-63.500	0.000	0.000
586	S001-Neve	69	Z	FT	glo	-63.500	-63.500	0.000	0.000
587	S001-Neve	84	Z	FT	glo	-31.750	-31.750	0.000	0.000
588	S001-Neve	85	Z	FT	glo	-31.750	-31.750	0.000	0.000
589	S001-Neve	86	Z	FT	glo	-31.750	-31.750	0.000	0.000
590	S001-Neve	154	Z	FT	glo	-31.750	-31.750	0.000	0.000
591	S001-Neve	155	Z	FT	glo	-31.750	-31.750	0.000	0.000
592	S001-Neve	156	Z	FT	glo	-31.750	-31.750	0.000	0.000
593	S001-Neve	51	Z	FT	glo	-63.500	-63.500	0.000	0.000
594	S001-Neve	56	Z	FT	glo	-63.500	-63.500	0.000	0.000
595	S001-Neve	61	Z	FT	glo	-63.500	-63.500	0.000	0.000
596	S001-Neve	66	Z	FT	glo	-63.500	-63.500	0.000	0.000
597	S001-Neve	71	Z	FT	glo	-63.500	-63.500	0.000	0.000
598	S001-Neve	70	Z	FT	glo	-63.500	-63.500	0.000	0.000
599	S001-Neve	65	Z	FT	glo	-63.500	-63.500	0.000	0.000
600	S001-Neve	60	Z	FT	glo	-63.500	-63.500	0.000	0.000
601	S001-Neve	55	Z	FT	glo	-63.500	-63.500	0.000	0.000
602	S001-Neve	50	Z	FT	glo	-63.500	-63.500	0.000	0.000

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

Cond.	Nome Carichi	Aste
1	603-693	11-16, 77-156, 168, 170, 172, 174, 176
2	694-728	1-5, 48-51, 53-56, 58-61, 63-66, 68-71, 157-166

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

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

CARICHI GUSCI-----|-----------|-----------|-----------|-----------|num.= 1200

Nome	Guscio	Dir	Tip	RIF	Intensita`
729 Spintaterra	479	Z	FD	loc	623.3
730 Spintaterra	121	Z	FD	loc	2058.9
731 Spintaterra	122	Z	FD	loc	2058.9
732 Spintaterra	123	Z	FD	loc	2051.4
733 Spintaterra	124	Z	FD	loc	2056.7

734	Spintaterra	125	Z	FD	loc	2056.7
735	Spintaterra	126	Z	FD	loc	2056.7
736	Spintaterra	127	Z	FD	loc	2056.7
737	Spintaterra	128	Z	FD	loc	2056.7
738	Spintaterra	129	Z	FD	loc	2056.7
739	Spintaterra	130	Z	FD	loc	2056.7
740	Spintaterra	131	Z	FD	loc	2056.7
741	Spintaterra	132	Z	FD	loc	2056.7
742	Spintaterra	133	Z	FD	loc	2056.7
743	Spintaterra	134	Z	FD	loc	2056.7
744	Spintaterra	135	Z	FD	loc	2056.7
745	Spintaterra	136	Z	FD	loc	2056.7
746	Spintaterra	137	Z	FD	loc	2056.7
747	Spintaterra	138	Z	FD	loc	2056.7
748	Spintaterra	139	Z	FD	loc	2056.7
749	Spintaterra	140	Z	FD	loc	2056.7
750	Spintaterra	141	Z	FD	loc	2056.7
751	Spintaterra	142	Z	FD	loc	2056.7
752	Spintaterra	143	Z	FD	loc	2056.7
753	Spintaterra	144	Z	FD	loc	2056.7
754	Spintaterra	145	Z	FD	loc	2056.7
755	Spintaterra	146	Z	FD	loc	2056.7
756	Spintaterra	147	Z	FD	loc	2056.7
757	Spintaterra	148	Z	FD	loc	2056.7
758	Spintaterra	149	Z	FD	loc	2056.7
759	Spintaterra	150	Z	FD	loc	2056.7
760	Spintaterra	151	Z	FD	loc	2056.7
761	Spintaterra	152	Z	FD	loc	2056.7
762	Spintaterra	153	Z	FD	loc	2056.7
763	Spintaterra	154	Z	FD	loc	2056.7
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765	Spintaterra	156	Z	FD	loc	2056.7
766	Spintaterra	157	Z	FD	loc	2056.7
767	Spintaterra	158	Z	FD	loc	2056.7
768	Spintaterra	159	Z	FD	loc	2056.7
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770	Spintaterra	161	Z	FD	loc	2056.7
771	Spintaterra	162	Z	FD	loc	2056.7
772	Spintaterra	163	Z	FD	loc	2056.7
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775	Spintaterra	166	Z	FD	loc	2056.7
776	Spintaterra	167	Z	FD	loc	2056.7
777	Spintaterra	168	Z	FD	loc	2056.7
778	Spintaterra	169	Z	FD	loc	2056.7
779	Spintaterra	170	Z	FD	loc	2056.7
780	Spintaterra	171	Z	FD	loc	2056.7
781	Spintaterra	172	Z	FD	loc	2056.7
782	Spintaterra	173	Z	FD	loc	2056.7
783	Spintaterra	174	Z	FD	loc	2056.7
784	Spintaterra	175	Z	FD	loc	2056.7
785	Spintaterra	176	Z	FD	loc	2056.7
786	Spintaterra	177	Z	FD	loc	2056.7
787	Spintaterra	178	Z	FD	loc	2051.4
788	Spintaterra	179	Z	FD	loc	2058.9
789	Spintaterra	180	Z	FD	loc	2058.9
790	Spintaterra	181	Z	FD	loc	1770.0
791	Spintaterra	182	Z	FD	loc	1770.0
792	Spintaterra	183	Z	FD	loc	1770.0
793	Spintaterra	184	Z	FD	loc	1770.0
794	Spintaterra	185	Z	FD	loc	1770.0
795	Spintaterra	186	Z	FD	loc	1770.0
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800	Spintaterra	191	Z	FD	loc	1770.0
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803	Spintaterra	194	Z	FD	loc	1770.0
804	Spintaterra	195	Z	FD	loc	1770.0
805	Spintaterra	196	Z	FD	loc	1770.0
806	Spintaterra	197	Z	FD	loc	1770.0
807	Spintaterra	198	Z	FD	loc	1770.0
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810	Spintaterra	201	Z	FD	loc	1770.0
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812	Spintaterra	203	Z	FD	loc	1770.0
813	Spintaterra	204	Z	FD	loc	1770.0
814	Spintaterra	205	Z	FD	loc	1770.0
815	Spintaterra	206	Z	FD	loc	1770.0
816	Spintaterra	207	Z	FD	loc	1770.0
817	Spintaterra	208	Z	FD	loc	1770.0
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820	Spintaterra	211	Z	FD	loc	1770.0
821	Spintaterra	212	Z	FD	loc	1770.0
822	Spintaterra	213	Z	FD	loc	1770.0
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828	Spintaterra	219	Z	FD	loc	1770.0
829	Spintaterra	220	Z	FD	loc	1770.0

830	Spintaterra	221	Z	FD	loc	1770.0
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836	Spintaterra	227	Z	FD	loc	1770.0
837	Spintaterra	228	Z	FD	loc	1770.0
838	Spintaterra	229	Z	FD	loc	1770.0
839	Spintaterra	230	Z	FD	loc	1770.0
840	Spintaterra	231	Z	FD	loc	1770.0
841	Spintaterra	232	Z	FD	loc	1770.0
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843	Spintaterra	234	Z	FD	loc	1770.0
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845	Spintaterra	236	Z	FD	loc	1770.0
846	Spintaterra	237	Z	FD	loc	1770.0
847	Spintaterra	238	Z	FD	loc	1770.0
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850	Spintaterra	241	Z	FD	loc	1483.3
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862	Spintaterra	253	Z	FD	loc	1483.3
863	Spintaterra	254	Z	FD	loc	1483.3
864	Spintaterra	255	Z	FD	loc	1483.3
865	Spintaterra	256	Z	FD	loc	1483.3
866	Spintaterra	257	Z	FD	loc	1483.3
867	Spintaterra	258	Z	FD	loc	1483.3
868	Spintaterra	259	Z	FD	loc	1483.3
869	Spintaterra	260	Z	FD	loc	1483.3
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875	Spintaterra	266	Z	FD	loc	1483.3
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878	Spintaterra	269	Z	FD	loc	1483.3
879	Spintaterra	270	Z	FD	loc	1483.3
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882	Spintaterra	273	Z	FD	loc	1483.3
883	Spintaterra	274	Z	FD	loc	1483.3
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891	Spintaterra	282	Z	FD	loc	1483.3
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904	Spintaterra	295	Z	FD	loc	1483.3
905	Spintaterra	296	Z	FD	loc	1483.3
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908	Spintaterra	299	Z	FD	loc	1483.3
909	Spintaterra	300	Z	FD	loc	1483.3
910	Spintaterra	301	Z	FD	loc	1196.7
911	Spintaterra	302	Z	FD	loc	1196.7
912	Spintaterra	303	Z	FD	loc	1196.7
913	Spintaterra	304	Z	FD	loc	1196.7
914	Spintaterra	305	Z	FD	loc	1196.7
915	Spintaterra	306	Z	FD	loc	1196.7
916	Spintaterra	307	Z	FD	loc	1196.7
917	Spintaterra	308	Z	FD	loc	1196.7
918	Spintaterra	309	Z	FD	loc	1196.7
919	Spintaterra	310	Z	FD	loc	1196.7
920	Spintaterra	311	Z	FD	loc	1196.7
921	Spintaterra	312	Z	FD	loc	1196.7
922	Spintaterra	313	Z	FD	loc	1196.7
923	Spintaterra	314	Z	FD	loc	1196.7
924	Spintaterra	315	Z	FD	loc	1196.7
925	Spintaterra	316	Z	FD	loc	1196.7

926	Spintaterra	317	Z	FD	loc	1196.7
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928	Spintaterra	319	Z	FD	loc	1196.7
929	Spintaterra	320	Z	FD	loc	1196.7
930	Spintaterra	321	Z	FD	loc	1196.7
931	Spintaterra	322	Z	FD	loc	1196.7
932	Spintaterra	323	Z	FD	loc	1196.7
933	Spintaterra	324	Z	FD	loc	1196.7
934	Spintaterra	325	Z	FD	loc	1196.7
935	Spintaterra	326	Z	FD	loc	1196.7
936	Spintaterra	327	Z	FD	loc	1196.7
937	Spintaterra	328	Z	FD	loc	1196.7
938	Spintaterra	329	Z	FD	loc	1196.7
939	Spintaterra	330	Z	FD	loc	1196.7
940	Spintaterra	331	Z	FD	loc	1196.7
941	Spintaterra	332	Z	FD	loc	1196.7
942	Spintaterra	333	Z	FD	loc	1196.7
943	Spintaterra	334	Z	FD	loc	1196.7
944	Spintaterra	335	Z	FD	loc	1196.7
945	Spintaterra	336	Z	FD	loc	1196.7
946	Spintaterra	337	Z	FD	loc	1196.7
947	Spintaterra	338	Z	FD	loc	1196.7
948	Spintaterra	339	Z	FD	loc	1196.7
949	Spintaterra	340	Z	FD	loc	1196.7
950	Spintaterra	341	Z	FD	loc	1196.7
951	Spintaterra	342	Z	FD	loc	1196.7
952	Spintaterra	343	Z	FD	loc	1196.7
953	Spintaterra	344	Z	FD	loc	1196.7
954	Spintaterra	345	Z	FD	loc	1196.7
955	Spintaterra	346	Z	FD	loc	1196.7
956	Spintaterra	347	Z	FD	loc	1196.7
957	Spintaterra	348	Z	FD	loc	1196.7
958	Spintaterra	349	Z	FD	loc	1196.7
959	Spintaterra	350	Z	FD	loc	1196.7
960	Spintaterra	351	Z	FD	loc	1196.7
961	Spintaterra	352	Z	FD	loc	1196.7
962	Spintaterra	353	Z	FD	loc	1196.7
963	Spintaterra	354	Z	FD	loc	1196.7
964	Spintaterra	355	Z	FD	loc	1196.7
965	Spintaterra	356	Z	FD	loc	1196.7
966	Spintaterra	357	Z	FD	loc	1196.7
967	Spintaterra	358	Z	FD	loc	1196.7
968	Spintaterra	359	Z	FD	loc	1196.7
969	Spintaterra	360	Z	FD	loc	1196.7
970	Spintaterra	361	Z	FD	loc	910.0
971	Spintaterra	362	Z	FD	loc	910.0
972	Spintaterra	363	Z	FD	loc	910.0
973	Spintaterra	364	Z	FD	loc	910.0
974	Spintaterra	365	Z	FD	loc	910.0
975	Spintaterra	366	Z	FD	loc	910.0
976	Spintaterra	367	Z	FD	loc	910.0
977	Spintaterra	368	Z	FD	loc	910.0
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979	Spintaterra	370	Z	FD	loc	910.0
980	Spintaterra	371	Z	FD	loc	910.0
981	Spintaterra	372	Z	FD	loc	910.0
982	Spintaterra	373	Z	FD	loc	910.0
983	Spintaterra	374	Z	FD	loc	910.0
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985	Spintaterra	376	Z	FD	loc	910.0
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987	Spintaterra	378	Z	FD	loc	910.0
988	Spintaterra	379	Z	FD	loc	910.0
989	Spintaterra	380	Z	FD	loc	910.0
990	Spintaterra	381	Z	FD	loc	910.0
991	Spintaterra	382	Z	FD	loc	910.0
992	Spintaterra	383	Z	FD	loc	910.0
993	Spintaterra	384	Z	FD	loc	910.0
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996	Spintaterra	387	Z	FD	loc	910.0
997	Spintaterra	388	Z	FD	loc	910.0
998	Spintaterra	389	Z	FD	loc	910.0
999	Spintaterra	390	Z	FD	loc	910.0
1000	Spintaterra	391	Z	FD	loc	910.0
1001	Spintaterra	392	Z	FD	loc	910.0
1002	Spintaterra	393	Z	FD	loc	910.0
1003	Spintaterra	394	Z	FD	loc	910.0
1004	Spintaterra	395	Z	FD	loc	910.0
1005	Spintaterra	396	Z	FD	loc	910.0
1006	Spintaterra	397	Z	FD	loc	910.0
1007	Spintaterra	398	Z	FD	loc	910.0
1008	Spintaterra	399	Z	FD	loc	910.0
1009	Spintaterra	400	Z	FD	loc	910.0
1010	Spintaterra	401	Z	FD	loc	910.0
1011	Spintaterra	402	Z	FD	loc	910.0
1012	Spintaterra	403	Z	FD	loc	910.0
1013	Spintaterra	404	Z	FD	loc	910.0
1014	Spintaterra	405	Z	FD	loc	910.0
1015	Spintaterra	406	Z	FD	loc	910.0
1016	Spintaterra	407	Z	FD	loc	910.0
1017	Spintaterra	408	Z	FD	loc	910.0
1018	Spintaterra	409	Z	FD	loc	910.0
1019	Spintaterra	410	Z	FD	loc	910.0
1020	Spintaterra	411	Z	FD	loc	910.0
1021	Spintaterra	412	Z	FD	loc	910.0

1022	Spintaterra	413	Z	FD	loc	910.0
1023	Spintaterra	414	Z	FD	loc	910.0
1024	Spintaterra	415	Z	FD	loc	910.0
1025	Spintaterra	416	Z	FD	loc	910.0
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1030	Spintaterra	421	Z	FD	loc	623.3
1031	Spintaterra	422	Z	FD	loc	623.3
1032	Spintaterra	423	Z	FD	loc	623.3
1033	Spintaterra	424	Z	FD	loc	623.3
1034	Spintaterra	425	Z	FD	loc	623.3
1035	Spintaterra	426	Z	FD	loc	623.3
1036	Spintaterra	427	Z	FD	loc	623.3
1037	Spintaterra	428	Z	FD	loc	623.3
1038	Spintaterra	429	Z	FD	loc	623.3
1039	Spintaterra	430	Z	FD	loc	623.3
1040	Spintaterra	431	Z	FD	loc	623.3
1041	Spintaterra	432	Z	FD	loc	623.3
1042	Spintaterra	433	Z	FD	loc	623.3
1043	Spintaterra	434	Z	FD	loc	623.3
1044	Spintaterra	435	Z	FD	loc	623.3
1045	Spintaterra	436	Z	FD	loc	623.3
1046	Spintaterra	437	Z	FD	loc	623.3
1047	Spintaterra	438	Z	FD	loc	623.3
1048	Spintaterra	439	Z	FD	loc	623.3
1049	Spintaterra	440	Z	FD	loc	623.3
1050	Spintaterra	441	Z	FD	loc	623.3
1051	Spintaterra	442	Z	FD	loc	623.3
1052	Spintaterra	443	Z	FD	loc	623.3
1053	Spintaterra	444	Z	FD	loc	623.3
1054	Spintaterra	445	Z	FD	loc	623.3
1055	Spintaterra	446	Z	FD	loc	623.3
1056	Spintaterra	447	Z	FD	loc	623.3
1057	Spintaterra	448	Z	FD	loc	623.3
1058	Spintaterra	449	Z	FD	loc	623.3
1059	Spintaterra	450	Z	FD	loc	623.3
1060	Spintaterra	451	Z	FD	loc	623.3
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1062	Spintaterra	453	Z	FD	loc	623.3
1063	Spintaterra	454	Z	FD	loc	623.3
1064	Spintaterra	455	Z	FD	loc	623.3
1065	Spintaterra	456	Z	FD	loc	623.3
1066	Spintaterra	457	Z	FD	loc	623.3
1067	Spintaterra	458	Z	FD	loc	623.3
1068	Spintaterra	459	Z	FD	loc	623.3
1069	Spintaterra	460	Z	FD	loc	623.3
1070	Spintaterra	461	Z	FD	loc	623.3
1071	Spintaterra	462	Z	FD	loc	623.3
1072	Spintaterra	463	Z	FD	loc	623.3
1073	Spintaterra	464	Z	FD	loc	623.3
1074	Spintaterra	465	Z	FD	loc	623.3
1075	Spintaterra	466	Z	FD	loc	623.3
1076	Spintaterra	467	Z	FD	loc	623.3
1077	Spintaterra	468	Z	FD	loc	623.3
1078	Spintaterra	469	Z	FD	loc	623.3
1079	Spintaterra	470	Z	FD	loc	623.3
1080	Spintaterra	471	Z	FD	loc	623.3
1081	Spintaterra	472	Z	FD	loc	623.3
1082	Spintaterra	473	Z	FD	loc	623.3
1083	Spintaterra	474	Z	FD	loc	623.3
1084	Spintaterra	475	Z	FD	loc	623.3
1085	Spintaterra	476	Z	FD	loc	623.3
1086	Spintaterra	477	Z	FD	loc	623.3
1087	Spintaterra	478	Z	FD	loc	623.3
1088	Spintaterra	480	Z	FD	loc	623.3
1089	Spintaterra	1	Z	FD	loc	2056.7
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1091	Spintaterra	3	Z	FD	loc	2056.7
1092	Spintaterra	4	Z	FD	loc	2056.7
1093	Spintaterra	5	Z	FD	loc	2056.7
1094	Spintaterra	6	Z	FD	loc	2056.7
1095	Spintaterra	7	Z	FD	loc	2056.7
1096	Spintaterra	8	Z	FD	loc	2053.8
1097	Spintaterra	9	Z	FD	loc	2059.7
1098	Spintaterra	10	Z	FD	loc	2056.7
1099	Spintaterra	11	Z	FD	loc	1770.0
1100	Spintaterra	12	Z	FD	loc	1770.0
1101	Spintaterra	13	Z	FD	loc	1770.0
1102	Spintaterra	14	Z	FD	loc	1770.0
1103	Spintaterra	15	Z	FD	loc	1770.0
1104	Spintaterra	16	Z	FD	loc	1770.0
1105	Spintaterra	17	Z	FD	loc	1770.0
1106	Spintaterra	18	Z	FD	loc	1770.0
1107	Spintaterra	19	Z	FD	loc	1770.0
1108	Spintaterra	20	Z	FD	loc	1770.0
1109	Spintaterra	21	Z	FD	loc	1483.3
1110	Spintaterra	22	Z	FD	loc	1483.3
1111	Spintaterra	23	Z	FD	loc	1483.3
1112	Spintaterra	24	Z	FD	loc	1483.3
1113	Spintaterra	25	Z	FD	loc	1483.3
1114	Spintaterra	26	Z	FD	loc	1483.3
1115	Spintaterra	27	Z	FD	loc	1483.3
1116	Spintaterra	28	Z	FD	loc	1483.3
1117	Spintaterra	29	Z	FD	loc	1483.3

1118	Spintaterra	30	Z	FD	loc	1483.3
1119	Spintaterra	31	Z	FD	loc	1196.7
1120	Spintaterra	32	Z	FD	loc	1196.7
1121	Spintaterra	33	Z	FD	loc	1196.7
1122	Spintaterra	34	Z	FD	loc	1196.7
1123	Spintaterra	35	Z	FD	loc	1196.7
1124	Spintaterra	36	Z	FD	loc	1196.7
1125	Spintaterra	37	Z	FD	loc	1196.7
1126	Spintaterra	38	Z	FD	loc	1196.7
1127	Spintaterra	39	Z	FD	loc	1196.7
1128	Spintaterra	40	Z	FD	loc	1196.7
1129	Spintaterra	41	Z	FD	loc	910.0
1130	Spintaterra	42	Z	FD	loc	910.0
1131	Spintaterra	43	Z	FD	loc	910.0
1132	Spintaterra	44	Z	FD	loc	910.0
1133	Spintaterra	45	Z	FD	loc	910.0
1134	Spintaterra	46	Z	FD	loc	910.0
1135	Spintaterra	47	Z	FD	loc	910.0
1136	Spintaterra	48	Z	FD	loc	910.0
1137	Spintaterra	49	Z	FD	loc	910.0
1138	Spintaterra	50	Z	FD	loc	910.0
1139	Spintaterra	51	Z	FD	loc	623.3
1140	Spintaterra	52	Z	FD	loc	623.3
1141	Spintaterra	53	Z	FD	loc	623.3
1142	Spintaterra	54	Z	FD	loc	623.3
1143	Spintaterra	55	Z	FD	loc	623.3
1144	Spintaterra	56	Z	FD	loc	623.3
1145	Spintaterra	57	Z	FD	loc	623.3
1146	Spintaterra	58	Z	FD	loc	623.3
1147	Spintaterra	59	Z	FD	loc	623.3
1148	Spintaterra	60	Z	FD	loc	623.3
1149	Spintaterra	61	Z	FD	loc	2056.7
1150	Spintaterra	62	Z	FD	loc	2056.7
1151	Spintaterra	63	Z	FD	loc	2056.7
1152	Spintaterra	64	Z	FD	loc	2056.7
1153	Spintaterra	65	Z	FD	loc	2056.7
1154	Spintaterra	66	Z	FD	loc	2056.7
1155	Spintaterra	67	Z	FD	loc	2056.7
1156	Spintaterra	68	Z	FD	loc	2053.8
1157	Spintaterra	69	Z	FD	loc	2059.7
1158	Spintaterra	70	Z	FD	loc	2056.7
1159	Spintaterra	71	Z	FD	loc	1770.0
1160	Spintaterra	72	Z	FD	loc	1770.0
1161	Spintaterra	73	Z	FD	loc	1770.0
1162	Spintaterra	74	Z	FD	loc	1770.0
1163	Spintaterra	75	Z	FD	loc	1770.0
1164	Spintaterra	76	Z	FD	loc	1770.0
1165	Spintaterra	77	Z	FD	loc	1770.0
1166	Spintaterra	78	Z	FD	loc	1770.0
1167	Spintaterra	79	Z	FD	loc	1770.0
1168	Spintaterra	80	Z	FD	loc	1770.0
1169	Spintaterra	81	Z	FD	loc	1483.3
1170	Spintaterra	82	Z	FD	loc	1483.3
1171	Spintaterra	83	Z	FD	loc	1483.3
1172	Spintaterra	84	Z	FD	loc	1483.3
1173	Spintaterra	85	Z	FD	loc	1483.3
1174	Spintaterra	86	Z	FD	loc	1483.3
1175	Spintaterra	87	Z	FD	loc	1483.3
1176	Spintaterra	88	Z	FD	loc	1483.3
1177	Spintaterra	89	Z	FD	loc	1483.3
1178	Spintaterra	90	Z	FD	loc	1483.3
1179	Spintaterra	91	Z	FD	loc	1196.7
1180	Spintaterra	92	Z	FD	loc	1196.7
1181	Spintaterra	93	Z	FD	loc	1196.7
1182	Spintaterra	94	Z	FD	loc	1196.7
1183	Spintaterra	95	Z	FD	loc	1196.7
1184	Spintaterra	96	Z	FD	loc	1196.7
1185	Spintaterra	97	Z	FD	loc	1196.7
1186	Spintaterra	98	Z	FD	loc	1196.7
1187	Spintaterra	99	Z	FD	loc	1196.7
1188	Spintaterra	100	Z	FD	loc	1196.7
1189	Spintaterra	101	Z	FD	loc	910.0
1190	Spintaterra	102	Z	FD	loc	910.0
1191	Spintaterra	103	Z	FD	loc	910.0
1192	Spintaterra	104	Z	FD	loc	910.0
1193	Spintaterra	105	Z	FD	loc	910.0
1194	Spintaterra	106	Z	FD	loc	910.0
1195	Spintaterra	107	Z	FD	loc	910.0
1196	Spintaterra	108	Z	FD	loc	910.0
1197	Spintaterra	109	Z	FD	loc	910.0
1198	Spintaterra	110	Z	FD	loc	910.0
1199	Spintaterra	112	Z	FD	loc	623.3
1200	Spintaterra	113	Z	FD	loc	623.3
1201	Spintaterra	114	Z	FD	loc	623.3
1202	Spintaterra	115	Z	FD	loc	623.3
1203	Spintaterra	116	Z	FD	loc	623.3
1204	Spintaterra	117	Z	FD	loc	623.3
1205	Spintaterra	118	Z	FD	loc	623.3
1206	Spintaterra	119	Z	FD	loc	623.3
1207	Spintaterra	120	Z	FD	loc	623.3
1208	Spintaterra	111	Z	FD	loc	623.3

PESI PROPRI GUSCI-|-----------|-----------|-----------|-----------|-----------|

Cond.	Nome Carichi	Gusci
1	1209-1928	1-720

```
CONDIZIONI DI CARICO----------|-----------|-----------|-----------|num.=     13
  Nome
     1  Peso_proprio_fondaz   N. carichi:  811
        Lista carichi: 603-693, 1209-1928

     2         Peso_proprio   N. carichi:   85
        Lista carichi: 453-502, 694-728

     3           Permanente   N. carichi:  530
        Lista carichi: 503-552, 729-1208

     4                 Neve   N. carichi:   50
        Lista carichi: 553-602

     5     Autovett_001_(Y)   N. carichi:   57
        Lista carichi: 1-57

     6     Autovett_002_(X)   N. carichi:   57
        Lista carichi: 58-114

     7     Autovett_002_(Y)   N. carichi:   38
        Lista carichi: 115-152

     8     Autovett_003_(X)   N. carichi:   57
        Lista carichi: 153-209

     9     Autovett_003_(Y)   N. carichi:   15
        Lista carichi: 210-224

    10              Sisma_X   N. carichi:   57
        Lista carichi: 225-281

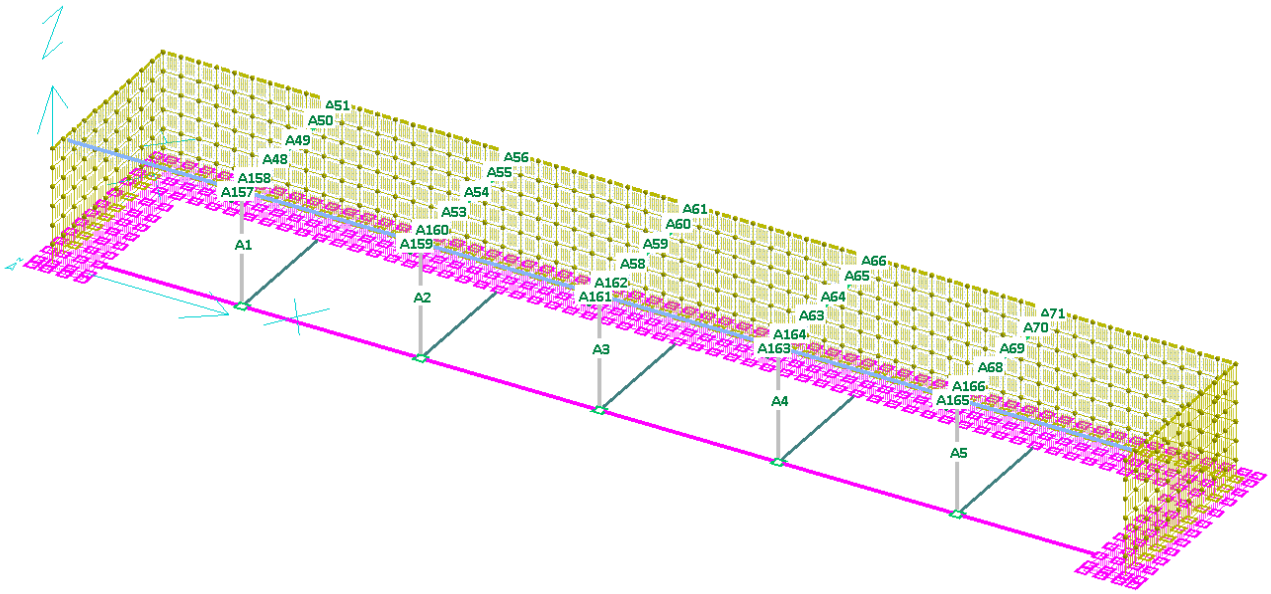
    11              Sisma_Y   N. carichi:   57
        Lista carichi: 282-338

    12      Torcente_add._X   N. carichi:   57
        Lista carichi: 339-395

    13      Torcente_add._Y   N. carichi:   57
        Lista carichi: 396-452

  RISULTANTI DEI CARICHI (punto di applicazione nell'origine degli assi):
  cond.          FX            FY            FZ            MX            MY            MZ
     1  0.000000E+00  0.000000E+00 -1.977875E+05 -7.675673E+07  2.966813E+08  0.000000E+00
     2  0.000000E+00  0.000000E+00 -6.789988E+04 -1.804032E+07  1.018498E+08  0.000000E+00
     3  0.000000E+00 -1.286400E+05 -2.889000E+04  8.573741E+06  4.333500E+07 -1.929601E+08
     4  0.000000E+00  0.000000E+00 -2.038350E+05 -5.452586E+07  3.057525E+08  0.000000E+00
     5  0.000000E+00  1.981873E+04  0.000000E+00 -6.341994E+06  0.000000E+00  2.972062E+07
     6  4.578870E+03  0.000000E+00  0.000000E+00  0.000000E+00  1.465238E+06 -9.824782E+05
     7  0.000000E+00  7.000000E-02  0.000000E+00 -2.240000E+01  0.000000E+00  9.590000E+03
     8  1.761261E+04  0.000000E+00  0.000000E+00  0.000000E+00  5.636035E+06 -4.884963E+06
     9  0.000000E+00 -8.000000E-02  0.000000E+00  2.560000E+01  0.000000E+00 -2.060000E+03
    10  1.983384E+04  0.000000E+00  0.000000E+00  0.000000E+00  6.346830E+06 -5.297823E+06
    11  0.000000E+00  1.983384E+04  0.000000E+00 -6.346830E+06  0.000000E+00  2.975077E+07
    12  0.000000E+00  0.000000E+00  0.000000E+00  0.000000E+00  0.000000E+00 -5.305553E+05
    13  0.000000E+00  0.000000E+00  0.000000E+00  0.000000E+00  0.000000E+00  2.975077E+06
```

NUMERAZIONE ASTE



VERIFICA ASTE IN ACCIAIO

```
Unità di misura:
 Lunghezze: cm
 Prop.Sez.: cm
 Forze:     daN
 Momenti:   daNcm
 Tensioni:  daN/cm2

MATERIALI
S355 (EN 10025-2): Mod.El.=   2100000.0; gM = 1.050;
     fyk  = 3550.0(3350.0 per sp>40 mm); fyd  = 3381.0(3190.5 per sp>40 mm).

CASI DI CARICO
|    N | Descrizione                    |   Soll.|
|     1|SLU SENZA SISMA                 |       1|
|     4|SLU con SISMAX PRINC            |      16|
|     5|SLU con SISMAY PRINC            |      16|

CARATTERISTICHE GEOMETRICHE

P_HEA180_S001 (  1) :
 A = 45.3671E+00 Jz=  2.5161E+03 Jy=924.7126E+00 Jt= 11.0401E+00

P_HEB300_S002 (  2) :
 A =149.4527E+00 Jz= 25.2209E+03 Jy=  8.5640E+03 Jt=143.3263E+00

PILASTRI
asta   | sez | profilo              |Tau %| Sx %| Si %| Ss %| Max %
     1|    1| P_HEA180_S001        |    1|   36|   36|   54|   54  Ss
     2|    1| P_HEA180_S001        |    1|   36|   36|   54|   54  Ss
     3|    1| P_HEA180_S001        |    1|   36|   36|   54|   54  Ss
     4|    1| P_HEA180_S001        |    1|   36|   36|   54|   54  Ss
     5|    1| P_HEA180_S001        |    1|   36|   36|   54|   54  Ss

TRAVI
asta   | sez | profilo              |Tau %| Sx %| Si %| Ss %| Max %
    48|    2| P_HEB300_S002        |   44|   87|   87|   87|   87  Si
    49|    2| P_HEB300_S002        |   23|   89|   89|   89|   89  Ss
    50|    2| P_HEB300_S002        |   54|   80|   80|   79|   80  Si
    51|    2| P_HEB300_S002        |   73|   34|   73|   26|   73  Si
    53|    2| P_HEB300_S002        |    9|   87|   87|   87|   87  Si
    54|    2| P_HEB300_S002        |   15|   89|   89|   89|   89  Ss
    55|    2| P_HEB300_S002        |   54|   80|   80|   79|   80  Si
    56|    2| P_HEB300_S002        |   73|   34|   73|   26|   73  Si
    58|    2| P_HEB300_S002        |   20|   87|   87|   87|   87  Si
    59|    2| P_HEB300_S002        |   23|   89|   89|   89|   89  Ss
    60|    2| P_HEB300_S002        |   54|   80|   80|   79|   80  Si
    61|    2| P_HEB300_S002        |   73|   34|   73|   26|   73  Si
```

63	2	P_HEB300_S002	28	87	87	87	87	Si
64	2	P_HEB300_S002	23	89	89	89	89	Ss
65	2	P_HEB300_S002	54	80	80	79	80	Si
66	2	P_HEB300_S002	73	34	73	26	73	Si
68	2	P_HEB300_S002	28	87	87	87	87	Si
69	2	P_HEB300_S002	23	89	89	89	89	Ss
70	2	P_HEB300_S002	54	80	80	79	80	Si
71	2	P_HEB300_S002	73	34	73	26	73	Si
157	2	P_HEB300_S002	16	5	16	4	16	Si
158	2	P_HEB300_S002	75	58	75	14	75	Si
159	2	P_HEB300_S002	16	5	16	4	16	Si
160	2	P_HEB300_S002	75	58	75	44	75	Si
161	2	P_HEB300_S002	16	5	16	4	16	Si
162	2	P_HEB300_S002	75	58	75	44	75	Si
163	2	P_HEB300_S002	16	5	16	1	16	Si
164	2	P_HEB300_S002	75	58	75	44	75	Si
165	2	P_HEB300_S002	16	5	16	4	16	Si
166	2	P_HEB300_S002	75	58	75	44	75	Si

VERIFICA DETTAGLAITA ASTA MAGGIORMENTE SOLLECITATA
P_HEB300_S002 (2) stato limite ultimo - ASTA (838- 840) 54

PROGR. 0.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
1- 1	3791263.5	-258.9	0.0	-113.0	-2.8	5245.5

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Si
1- 1	si	1	Sx	-2256.0	0.0	0.0	2256.0
1- 1	si	6	Tz	-2255.5	-34.4	0.0	2256.3
1- 1	si	9	Ty	-0.8	0.0	-177.1	306.7
1- 1	si	5	Si	-2255.7	34.3	0.0	2256.5

PROGR. 14.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
1- 1	3851761.6	-219.7	0.0	-113.0	-2.8	3320.6

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Si
1- 1	si	1	Sx	-2292.0	0.0	0.0	2292.0
1- 1	si	6	Tz	-2291.5	-21.8	0.0	2291.8
1- 1	si	9	Ty	-0.8	0.0	-112.1	194.2
1- 1	si	5	Si	-2291.7	21.7	0.0	2292.0

PROGR. 28.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
1- 1	3885071.4	-180.6	0.0	-113.0	-2.8	1395.8

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Si
1- 1	si	1	Sx Si	-2311.7	0.0	0.0	2311.7
1- 1	si	6	Tz	-2311.3	-9.2	0.0	2311.4
1- 1	si	9	Ty	-0.8	0.0	-47.1	81.6

PROGR. 42.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
1- 1	3891192.9	-141.5	0.0	-113.0	-2.8	-529.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Si
1- 1	si	1	Sx Si	-2315.3	0.0	0.0	2315.3
1- 1	si	5	Tz	-2315.1	-3.5	0.0	2315.1
1- 1	si	9	Ty	-0.8	0.0	17.9	30.9

PROGR. 56.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
1- 1	3870126.1	-102.4	0.0	-113.0	-2.8	-2453.9

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Si
1- 1	si	1	Sx	-2302.7	0.0	0.0	2302.7
1- 1	si	5	Tz Si	-2302.5	-16.1	0.0	2302.7
1- 1	si	9	Ty	-0.8	0.0	82.8	143.5

PROGR. 71.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
1- 1	3821870.9	-63.3	0.0	-113.0	-2.8	-4378.7

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Si
1- 1	si	1	Sx	-2273.9	0.0	0.0	2273.9
1- 1	si	5	Tz Si	-2273.8	-28.7	0.0	2274.4

```
|  1- 1|si| 9|    Ty  |      -0.8|       0.0|     147.8|     256.0|
                        ---------------------------------------- PROGR.      85.
SOLLECITAZIONI      :
| Caso |          MZ   |     MY   |     MT   |     N    |     TZ   |     TY   |
|  1- 1|     3746427.5|     -24.2|       0.0|    -113.0|      -2.8|   -6303.5|
TENSIONI (Sz=      0.00) :
| Caso |Ve|No|massimi |     Sx   |     Tz   |     Ty   |     Si   |
|  1- 1|si| 1|Sx      |   -2229.0|       0.0|       0.0|    2229.0|
|  1- 1|si| 5|  Tz  Si|   -2228.9|     -41.3|       0.0|    2230.1|
|  1- 1|si| 9|    Ty  |      -0.8|       0.0|     212.8|     368.6|
                        ---------------------------------------- PROGR.      99.
SOLLECITAZIONI      :
| Caso |          MZ   |     MY   |     MT   |     N    |     TZ   |     TY   |
|  1- 1|     3643795.7|      14.9|       0.0|    -113.0|      -2.8|   -8228.4|
TENSIONI (Sz=      0.00) :
| Caso |Ve|No|massimi |     Sx   |     Tz   |     Ty   |     Si   |
|  1- 1|si| 2|Sx      |   -2167.9|       0.0|       0.0|    2167.9|
|  1- 1|si| 5|  Tz    |   -2167.9|     -53.9|       0.0|    2169.9|
|  1- 1|si| 9|    Ty  |      -0.8|       0.0|     277.8|     481.1|
|  1- 1|si| 6|      Si|   -2167.9|      53.8|       0.0|    2169.9|
                        ---------------------------------------- PROGR.     113.
SOLLECITAZIONI      :
| Caso |          MZ   |     MY   |     MT   |     N    |     TZ   |     TY   |
|  1- 1|     3513975.7|      54.0|       0.0|    -113.0|      -2.8|  -10153.2|
TENSIONI (Sz=      0.00) :
| Caso |Ve|No|massimi |     Sx   |     Tz   |     Ty   |     Si   |
|  1- 1|si| 2|Sx      |   -2090.8|       0.0|       0.0|    2090.8|
|  1- 1|si| 5|  Tz    |   -2090.7|     -66.5|       0.0|    2093.8|
|  1- 1|si| 9|    Ty  |      -0.8|       0.0|     342.8|     593.7|
|  1- 1|si| 6|      Si|   -2090.7|      66.4|       0.0|    2093.9|

                        ------------------------------------------------------------
VERIFICA STABILITA` :

   |L0 =  113.|
Z  |Lc =  113.|Ro = 12.99|lm =   8.7|Ncr= 40937694.1|alfa(b )=0.3400|ki=1.0000|
Y  |Lc =  113.|Ro =  7.57|lm =  14.9|Ncr= 13900717.4|alfa(c )=0.4900|ki=1.0000|
Caso 1- 1 - Nodo  1 - Asse Y
Ned =     -113.0|Mzeq =  3891192.9|Myeq =     -194.1|Ss =    -2315.4 ( 0.884)
```

VERIFICA TRAVI DI FONDAZIONE

```
              VERIFICA TRAVATA IN CEMENTO ARMATO

Nome travata       : 13 - Travata TR1 (fondazione)
Metodo di verifica : stati limite (NTC18). ->
Duttilita'         : bassa con gerarchia.
Unita' di misura   : cm; daN; daN/cm; daNcm; daN/cm2; deform. %.
Unita' particolari : fessure [Wk]:mm - ferri:mm e cm2 - sezioni:cm e derivate.
Copriferri (assi)  : longitudinali= 4 ; staffe= 3

              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=.2% (limit.elastico)
ACCIAIO : B450C; ftk=4500. ; fyk=4500. ; Es=2000000. ;
          gs =1.15; fyd=3913. ; ftd(k*fyd)=3913. ; fud=3913. ; Eud=.2% (limit.elastico)

              TENSIONI E FESSURE MASSIME IN ESERCIZIO

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

              CASI DI CARICO DA MODELLO 3D

            SLU           |
Nome   Descrizione    Sest|
 1.|SLU SENZA SISMA     1.|
 4.|SLU con SISMAX PRINC16|
 5.|SLU con SISMAY PRINC16|
 8.|SLU FON con SISMAX P16|
 9.|SLU FON con SISMAY P16|

            RARE          |         FREQUENTI         |    QUASI PERMANENTI      |
Nome   Descrizione    Sest|Nome   Descrizione    Sest|Nome   Descrizione    Sest|
10.|Rara               1.|11.|Frequente          1.|12.|Quasi Perm         1.|
<-
              SEZIONI UTILIZZATE
```

3) Rettangolare: 30X40; A=1200.; Jg=160000.; E=314471.6

DESCRIZIONE CAMPATE

Cam.	Descriz.	S.ini	Sez.	S.fin	Incl.	L.assi	L.net.	lambda	K	r.Ar.	lam.max
1	A168		3	3	3	0	474.	450.	11.839	1.	2.416	42.548

VERIFICHE ALLO STATO LIMITE ULTIMO

FLESSIONE:

Progressive	SE	Ar	Msd	Epscl	Epsac	Mrd	Epscl	Epsac	Cam	x/d	Mr/Ms	VE
> 0.	0.	3.	1.	-4128.	0.	.001	-585918.	-.075	.196	2.	.278	142.	SI
0.	0.	3.	1.	178254.	-.022	.059	585918.	-.075	.196	2.	.278	3.287	SI
103.	103.	3.	1.	256.	0.	0.	585918.	-.075	.196	2.	.278	2285.!	SI
210.	210.	3.	1.	-148041.!	-.018	.049	-585918.	-.075	.196	2.	.278	3.958	SI
474.	474.	3.	1.	-49094.	-.006	.016	-585918.!	-.075	.196	2.	.278	11.94	SI
474.	474.	3.	1.	242556.!	-.03 !	.081!	585918.	-.075	.196	2.	.278	2.416!	SI

TAGLIO:

Progressive	Se	Vsd	VRd	VRcd	VRsd	Asw	s	ctgT	Ve
> 0.	0.	3.	-3716.!	4349.	23646.!	17781.!	1.57	28.	2.5	SI
11.	11.	3.	-3518.	4976.!	23646.	17781.	1.57	28.	2.5	SI
474.	474.	3.	3228.!	4349.	23646.	17781.	1.57	28.	2.5	SI

VERIFICHE ALLO STATO LIMITE DI ESERCIZIO

TENSIONI DI ESERCIZIO E FESSURAZIONE - RARE:

Progressive	Se	Ar	Momento	σc	σf	As	hc,ef	Eps%	Sr,max	Wd	Ve
> 0.	0.	3.	1.	125077.!	-20.7!	831.2!	4.62	10.	.0249	26.68	.067!	SI
210.	210.	3.	1.	-104466.!	-17.3	694.3	4.62	10.	.0208	26.68	.056	SI
474.	474.	3.	1.	59338.	-9.8	394.4	4.62	10.	.0118	26.68	.032	SI

TENSIONI DI ESERCIZIO E FESSURAZIONE - FREQUENTI:

Progressive	Se	Ar	Momento	σc	σf	As	hc,ef	Eps%	Sr,max	Wd	Ve
> 0.	0.	3.	1.	66012.	-10.9	438.7	4.62	10.	.0132	26.68	.035	SI
210.	210.	3.	1.	-71479.!	-11.8	475. !	4.62	10.	.0143	26.68	.038	SI
474.	474.	3.	1.	83054.!	-13.8!	552. !	4.62	10.	.0166	26.68	.044!	SI

TENSIONI DI ESERCIZIO E FESSURAZIONE - QUASI PERMANENTI:

Progressive	Se	Ar	Momento	σc	σf	As	hc,ef	Eps%	Sr,max	Wd	Ve
> 0.	0.	3.	1.	30573.	-5.1	203.2	4.62	10.	.0061	26.68	.016	SI
210.	210.	3.	1.	-51686.!	-8.6	343.5	4.62	10.	.0103	26.68	.027	SI
474.	474.	3.	1.	97283.!	-16.1!	646.5!	4.62	10.	.0194	26.68	.052!	SI

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

Nro	Totale	%	Super.	%	Barre	Infer.	%	Barre
1	9.24	.77	4.62	.385	3d14	4.62	.385	3d14

VERIFICA TRAVATA IN CEMENTO ARMATO

Nome travata : 14 - Travata TR2 (fondazione)
Metodo di verifica : stati limite (NTC18). ->
Duttilita' : bassa con gerarchia.
Unita' di misura : cm; daN; daN/cm; daNcm; daN/cm2; deform. %.
Unita' particolari : fessure [Wk]:mm - ferri:mm e cm2 - sezioni:cm e derivate.
Copriferri (assi) : longitudinali= 4 ; staffe= 3

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=.2% (limit.elastico)
ACCIAIO : B450C; ftk=4500. ; fyk=4500. ; Es=2000000. ;
gs =1.15; fyd=3913. ; ftd(k*fyd)=3913. ; fud=3913. ; Eud=.2% (limit.elastico)

TENSIONI E FESSURE MASSIME IN ESERCIZIO

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

CASI DI CARICO DA MODELLO 3D

SLU		
Nome	Descrizione	Sest
1.	SLU SENZA SISMA	1.
4.	SLU con SISMAX PRINC16	
5.	SLU con SISMAY PRINC16	
8.	SLU FON con SISMAX P16	
9.	SLU FON con SISMAY P16	

RARE			FREQUENTI			QUASI PERMANENTI		
Nome	Descrizione	Sest	Nome	Descrizione	Sest	Nome	Descrizione	Sest

```
10.|Rara               1.|11.|Frequente          1.|12.|Quasi Perm          1.|
<-
              SEZIONI UTILIZZATE

 3) Rettangolare: 30X40; A=1200.; Jg=160000.; E=314471.6

              DESCRIZIONE CAMPATE

Cam.| Descriz. |S.ini|Sez. |S.fin|Incl.|L.assi|L.net.|lambda | K |r.Ar.|lam.max|
   1|A170      |    3|    3|    3|    0|  474.|  450.| 11.839|1. |2.317| 40.811|

              VERIFICHE ALLO STATO LIMITE ULTIMO

FLESSIONE:

Progressive|SE|Ar|  Msd     Epscl Epsac|   Mrd    Epscl Epsac Cam x/d |Mr/Ms|VE|
>   0.|  0.|3.|1.|   -1698.|0.    | .001| -585918.|-.075| .196|2.| .278|345.1!SI|
    0.|  0.|3.|1.|  115651.|-.014| .038|  585918.!-.075| .196|2.| .278|5.066|SI|
  210.|210.|3.|1.| -156302.!-.019| .052| -585918.|-.075| .196|2.| .278|3.749|SI|
  474.|474.|3.|1.|  -49999.|-.006| .017| -585918.!-.075| .196|2.| .278!11.72|SI|
  474.|474.|3.|1.|  252879.!-.031! .084!  585918.|-.075| .196|2.| .278|2.317!SI|

TAGLIO:

Progressive|Se|  Vsd  |  VRd  |  VRcd |  VRsd   Asw    s  ctgT|Ve|
>   0.|  0.|3.| -3258.!  4349.| 23646.! 17781.! 1.57|28. |2.5 |SI|
   11.| 11.|3.| -3065.|  4976.! 23646.| 17781.| 1.57|28. |2.5 |SI|
  474.|474.|3.|  3147.!  4349.| 23646.| 17781.| 1.57|28. |2.5 |SI|

              VERIFICHE ALLO STATO LIMITE DI ESERCIZIO

TENSIONI DI ESERCIZIO E FESSURAZIONE - RARE:

Progressive|Se|Ar Momento      σc     σf  | As   hc,ef   Eps%  Sr,max   Wd  |Ve|
>   0.|  0.|3.|1.|    81224.! -13.5| 539.8| 4.62|10.  |  .0162| 26.68|  .043|SI|
  210.|210.|3.|1.|  -110379.! -18.3! 733.6! 4.62|10.  |  .022 | 26.68|  .059!SI|
  474.|474.|3.|1.|    57676.|  -9.6| 383.3| 4.62|10.  |  .0115| 26.68|  .031|SI|

TENSIONI DI ESERCIZIO E FESSURAZIONE - FREQUENTI:

Progressive|Se|Ar Momento      σc     σf  | As   hc,ef   Eps%  Sr,max   Wd  |Ve|
>   0.|  0.|3.|1.|    43318.|  -7.2| 287.9| 4.62|10.  |  .0086| 26.68|  .023|SI|
  210.|210.|3.|1.|   -75064.! -12.4| 498.9| 4.62|10.  |  .015 | 26.68|  .04 |SI|
  452.|452.|3.|1.|    90050.! -14.9! 598.5! 4.62|10.  |  .018 | 26.68|  .048!SI|
  474.|474.|3.|1.|    85029.| -14.1| 565.1| 4.62|10.  |  .017 | 26.68|  .045|SI|

TENSIONI DI ESERCIZIO E FESSURAZIONE - QUASI PERMANENTI:

Progressive|Se|Ar Momento      σc     σf  | As   hc,ef   Eps%  Sr,max   Wd  |Ve|
>   0.|  0.|3.|1.|    20574.|  -3.4| 136.7| 4.62|10.  |  .0041| 26.68|  .011|SI|
  210.|210.|3.|1.|   -53874.!  -8.9| 358. | 4.62|10.  |  .0107| 26.68|  .029|SI|
  452.|452.|3.|1.|   107223.! -17.8! 712.6! 4.62|10.  |  .0214| 26.68|  .057!SI|
  474.|474.|3.|1.|   101440.| -16.8| 674.2| 4.62|10.  |  .0202| 26.68|  .054|SI|

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

Nro|Totale   % |Super.   %        Barre        |Infer.   %        Barre        |
  1| 9.24| .77 | 4.62| .385|3d14               | 4.62| .385|3d14               |

              VERIFICA TRAVATA IN CEMENTO ARMATO

Nome travata       : 15 - Travata TR3 (fondazione)
Metodo di verifica : stati limite (NTC18). ->
Duttilita'         : bassa con gerarchia.
Unita' di misura   : cm; daN; daN/cm; daNcm; daN/cm2; deform. %.
Unita' particolari : fessure [Wk]:mm - ferri:mm e cm2 - sezioni:cm e derivate.
Copriferri (assi)  : longitudinali= 4 ; staffe= 3

              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=.2% (limit.elastico)
ACCIAIO : B450C; ftk=4500. ; fyk=4500. ; Es=2000000. ;
          gs =1.15; fyd=3913. ; ftd(k*fyd)=3913. ; fud=3913. ; Eud=.2% (limit.elastico)

              TENSIONI E FESSURE MASSIME IN ESERCIZIO

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

              CASI DI CARICO DA MODELLO 3D

            SLU          |
Nome   Descrizione    Sest|
 1.|SLU SENZA SISMA     1.|
 4.|SLU con SISMAX PRINC16|
 5.|SLU con SISMAY PRINC16|
```

```
 8.|SLU FON con SISMAX P16|
 9.|SLU FON con SISMAY P16|

           RARE          |         FREQUENTI         |    QUASI PERMANENTI      |
Nome   Descrizione    Sest|Nome   Descrizione    Sest|Nome   Descrizione    Sest|
10.|Rara                1.|11.|Frequente           1.|12.|Quasi Perm          1.|
<-
              SEZIONI UTILIZZATE

 3) Rettangolare: 30X40; A=1200.; Jg=160000.; E=314471.6

              DESCRIZIONE CAMPATE

Cam.| Descriz. |S.ini|Sez. |S.fin|Incl.|L.assi|L.net.|lambda | K |r.Ar.|lam.max|
   1|A172      |    3|    3|    3|    0|  474.|  450.| 11.839|1. |2.405| 42.364|

              VERIFICHE ALLO STATO LIMITE ULTIMO

FLESSIONE:

Progressive|SE|Ar|  Msd     Epscl Epsac|   Mrd    Epscl Epsac Cam x/d |Mr/Ms|VE|
>    0.|  0.|3.|1.|    -430.|0.    |0.    | -585918.|-.075| .196|2.| .278|1364.!SI|
     0.|  0.|3.|1.|  110308.|-.013| .037|  585918.!-.075| .196|2.| .278|5.312|SI|
  210.|210.|3.|1.| -159221.!-.019| .053| -585918.|-.075| .196|2.| .278|3.68 |SI|
  474.|474.|3.|1.|  -40391.|-.005| .013| -585918.!-.075| .196|2.| .278!14.51|SI|
  474.|474.|3.|1.|  243612.!-.03 ! .081!  585918.|-.075| .196|2.| .278|2.405!SI|

TAGLIO:

Progressive|Se|  Vsd  |  VRd  |  VRcd |  VRsd   Asw    s  ctgT|Ve|
>    0.|  0.|3.| -3249.!  4349.| 23646.! 17781.! 1.57|28. |2.5 |SI|
    11.| 11.|3.| -3054.|  4976.! 23646.| 17781.| 1.57|28. |2.5 |SI|
  474.|474.|3.|  3173.!  4349.| 23646.| 17781.| 1.57|28. |2.5 |SI|

              VERIFICHE ALLO STATO LIMITE DI ESERCIZIO

TENSIONI DI ESERCIZIO E FESSURAZIONE - RARE:

Progressive|Se|Ar Momento      σc     σf  | As   hc,ef   Eps%  Sr,max   Wd  |Ve|
>    0.|  0.|3.|1.|     77299.! -12.8| 513.7| 4.62|10.  |  .0154| 26.68|  .041|SI|
  210.|210.|3.|1.|  -112421.! -18.6! 747.1! 4.62|10.  |  .0224| 26.68|  .06 !SI|
  474.|474.|3.|1.|     57406.|  -9.5| 381.5| 4.62|10.  |  .0114| 26.68|  .031|SI|

TENSIONI DI ESERCIZIO E FESSURAZIONE - FREQUENTI:

Progressive|Se|Ar Momento      σc     σf  | As   hc,ef   Eps%  Sr,max   Wd  |Ve|
>    0.|  0.|3.|1.|     41369.|  -6.9| 274.9| 4.62|10.  |  .0082| 26.68|  .022|SI|
  210.|210.|3.|1.|    -76324.! -12.6| 507.2| 4.62|10.  |  .0152| 26.68|  .041|SI|
  452.|452.|3.|1.|     90565.! -15. ! 601.9! 4.62|10.  |  .0181| 26.68|  .048!SI|
  474.|474.|3.|1.|     85034.| -14.1| 565.1| 4.62|10.  |  .017 | 26.68|  .045|SI|

TENSIONI DI ESERCIZIO E FESSURAZIONE - QUASI PERMANENTI:

Progressive|Se|Ar Momento      σc     σf  | As   hc,ef   Eps%  Sr,max   Wd  |Ve|
>    0.|  0.|3.|1.|     19811.|  -3.3| 131.7| 4.62|10.  |  .0039| 26.68|  .011|SI|
  210.|210.|3.|1.|    -54666.!  -9.1| 363.3| 4.62|10.  |  .0109| 26.68|  .029|SI|
  452.|452.|3.|1.|    107807.! -17.9! 716.5! 4.62|10.  |  .0215| 26.68|  .057!SI|
  474.|474.|3.|1.|    101611.| -16.8| 675.3| 4.62|10.  |  .0203| 26.68|  .054|SI|

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

Nro|Totale   % |Super.   %        Barre        |Infer.   %        Barre        |
  1| 9.24| .77 | 4.62| .385|3d14               | 4.62| .385|3d14               |




              VERIFICA TRAVATA IN CEMENTO ARMATO

Nome travata       : 16 - Travata TR4 (fondazione)
Metodo di verifica : stati limite (NTC18). ->
Duttilita'         : bassa con gerarchia.
Unita' di misura   : cm; daN; daN/cm; daNcm; daN/cm2; deform. %.
Unita' particolari : fessure [Wk]:mm - ferri:mm e cm2 - sezioni:cm e derivate.
Copriferri (assi)  : longitudinali= 4 ; staffe= 3

              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=.2% (limit.elastico)
ACCIAIO : B450C; ftk=4500. ; fyk=4500. ; Es=2000000. ;
          gs =1.15; fyd=3913. ; ftd(k*fyd)=3913. ; fud=3913. ; Eud=.2% (limit.elastico)

              TENSIONI E FESSURE MASSIME IN ESERCIZIO

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

              CASI DI CARICO DA MODELLO 3D
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            SLU           |
Nome   Descrizione    Sest|
 1.|SLU SENZA SISMA     1.|
 4.|SLU con SISMAX PRINC16|
 5.|SLU con SISMAY PRINC16|
 8.|SLU FON con SISMAX P16|
 9.|SLU FON con SISMAY P16|

            RARE          |         FREQUENTI        |    QUASI PERMANENTI      |
Nome   Descrizione    Sest|Nome   Descrizione    Sest|Nome   Descrizione    Sest|
10.|Rara                1.|11.|Frequente          1.|12.|Quasi Perm          1.|
<-
              SEZIONI UTILIZZATE

 3) Rettangolare: 30X40; A=1200.; Jg=160000.; E=314471.6

              DESCRIZIONE CAMPATE

Cam.| Descriz. |S.ini|Sez. |S.fin|Incl.|L.assi|L.net.|lambda | K  |r.Ar.|lam.max|
   1|A174      |    3|    3|    3|    0|  474.|  450.| 11.839|1.  |2.32 | 40.862|

              VERIFICHE ALLO STATO LIMITE ULTIMO

FLESSIONE:

Progressive|SE|Ar|  Msd     Epscl Epsac|   Mrd    Epscl Epsac Cam x/d |Mr/Ms|VE|
>   0.|  0.|3.|1.|   -1673.|0.    | .001| -585918.|-.075| .196|2.| .278|350.2!SI|
    0.|  0.|3.|1.|  115675.|-.014| .038|  585918.!-.075| .196|2.| .278|5.065|SI|
  210.|210.|3.|1.| -156309.!-.019| .052| -585918.|-.075| .196|2.| .278|3.748|SI|
  474.|474.|3.|1.|  -49887.|-.006| .017| -585918.!-.075| .196|2.| .278!11.75|SI|
  474.|474.|3.|1.|  252564.!-.031! .084!  585918.|-.075| .196|2.| .278|2.32 !SI|

TAGLIO:

Progressive|Se|  Vsd  |  VRd  |  VRcd |  VRsd   Asw    s  ctgT|Ve|
>   0.|  0.|3.| -3259.!  4349.| 23646.! 17781.! 1.57|28. |2.5 |SI|
   11.| 11.|3.| -3065.|  4976.! 23646.| 17781.| 1.57|28. |2.5 |SI|
  474.|474.|3.|  3145.!  4349.| 23646.| 17781.| 1.57|28. |2.5 |SI|

              VERIFICHE ALLO STATO LIMITE DI ESERCIZIO

TENSIONI DI ESERCIZIO E FESSURAZIONE - RARE:

Progressive|Se|Ar Momento      σc     σf  | As   hc,ef   Eps%  Sr,max   Wd  |Ve|
>   0.|  0.|3.|1.|    81240.! -13.5| 539.9| 4.62|10.  |  .0162| 26.68|  .043|SI|
  210.|210.|3.|1.|  -110384.! -18.3! 733.6! 4.62|10.  |  .022 | 26.68|  .059!SI|
  474.|474.|3.|1.|    57566.|  -9.5| 382.6| 4.62|10.  |  .0115| 26.68|  .031|SI|

TENSIONI DI ESERCIZIO E FESSURAZIONE - FREQUENTI:

Progressive|Se|Ar Momento      σc     σf  | As   hc,ef   Eps%  Sr,max   Wd  |Ve|
>   0.|  0.|3.|1.|    43333.|  -7.2| 288. | 4.62|10.  |  .0086| 26.68|  .023|SI|
  210.|210.|3.|1.|   -75069.! -12.4| 498.9| 4.62|10.  |  .015 | 26.68|  .04 |SI|
  452.|452.|3.|1.|    89994.! -14.9! 598.1! 4.62|10.  |  .0179| 26.68|  .048!SI|
  474.|474.|3.|1.|    84924.| -14.1| 564.4| 4.62|10.  |  .0169| 26.68|  .045|SI|

TENSIONI DI ESERCIZIO E FESSURAZIONE - QUASI PERMANENTI:

Progressive|Se|Ar Momento      σc     σf  | As   hc,ef   Eps%  Sr,max   Wd  |Ve|
>   0.|  0.|3.|1.|    20588.|  -3.4| 136.8| 4.62|10.  |  .0041| 26.68|  .011|SI|
  210.|210.|3.|1.|   -53880.!  -8.9| 358.1| 4.62|10.  |  .0107| 26.68|  .029|SI|
  452.|452.|3.|1.|   107168.! -17.8! 712.2! 4.62|10.  |  .0214| 26.68|  .057!SI|
  474.|474.|3.|1.|   101338.| -16.8| 673.5| 4.62|10.  |  .0202| 26.68|  .054|SI|

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

Nro|Totale   % |Super.   %        Barre        |Infer.   %        Barre        |
  1| 9.24| .77 | 4.62| .385|3d14               | 4.62| .385|3d14               |




              VERIFICA TRAVATA IN CEMENTO ARMATO

Nome travata       : 17 - Travata TR5 (fondazione)
Metodo di verifica : stati limite (NTC18). ->
Duttilita'         : bassa con gerarchia.
Unita' di misura   : cm; daN; daN/cm; daNcm; daN/cm2; deform. %.
Unita' particolari : fessure [Wk]:mm - ferri:mm e cm2 - sezioni:cm e derivate.
Copriferri (assi)  : longitudinali= 4 ; staffe= 3

              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=.2% (limit.elastico)
ACCIAIO : B450C; ftk=4500. ; fyk=4500. ; Es=2000000. ;
          gs =1.15; fyd=3913. ; ftd(k*fyd)=3913. ; fud=3913. ; Eud=.2% (limit.elastico)

              TENSIONI E FESSURE MASSIME IN ESERCIZIO

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

               CASI DI CARICO DA MODELLO 3D

            SLU           |
Nome   Descrizione    Sest|
 1.|SLU SENZA SISMA     1.|
 4.|SLU con SISMAX PRINC16|
 5.|SLU con SISMAY PRINC16|
 8.|SLU FON con SISMAX P16|
 9.|SLU FON con SISMAY P16|

            RARE          |         FREQUENTI         |    QUASI PERMANENTI      |
Nome   Descrizione    Sest|Nome   Descrizione    Sest|Nome   Descrizione    Sest|
10.|Rara                1.|11.|Frequente           1.|12.|Quasi Perm          1.|
<-
               SEZIONI UTILIZZATE

 3) Rettangolare: 30X40; A=1200.; Jg=160000.; E=314471.6

               DESCRIZIONE CAMPATE

Cam.| Descriz. |S.ini|Sez. |S.fin|Incl.|L.assi|L.net.|lambda | K |r.Ar.|lam.max|
   1|A176      |    3|    3|    3|    0|  474.|  450.| 11.839|1. |2.269| 39.975|

               VERIFICHE ALLO STATO LIMITE ULTIMO

FLESSIONE:

Progressive|SE|Ar|  Msd     Epscl Epsac|   Mrd    Epscl Epsac Cam x/d |Mr/Ms|VE|
>   0.|  0.|3.|1.|   -4106.|0.    | .001| -585918.|-.075| .196|2.| .278|142.7!SI|
    0.|  0.|3.|1.|  178273.|-.022| .059|  585918.!-.075| .196|2.| .278|3.287|SI|
  210.|210.|3.|1.| -148198.!-.018| .049| -585918.|-.075| .196|2.| .278|3.954|SI|
  474.|474.|3.|1.|  -65199.|-.008| .022| -585918.!-.075| .196|2.| .278!8.987|SI|
  474.|474.|3.|1.|  258173.!-.032! .086!  585918.|-.075| .196|2.| .278|2.269!SI|

TAGLIO:

Progressive|Se|  Vsd  |  VRd  |  VRcd |  VRsd   Asw    s  ctgT|Ve|
>   0.|  0.|3.| -3716.!  4349.| 23646.! 17781.! 1.57|28. |2.5 |SI|
   11.| 11.|3.| -3508.|  4976.! 23646.| 17781.| 1.57|28. |2.5 |SI|
  474.|474.|3.|  3110.!  4349.| 23646.| 17781.| 1.57|28. |2.5 |SI|

               VERIFICHE ALLO STATO LIMITE DI ESERCIZIO

TENSIONI DI ESERCIZIO E FESSURAZIONE - RARE:

Progressive|Se|Ar Momento      σc     σf  | As   hc,ef   Eps%  Sr,max   Wd  |Ve|
>   0.|  0.|3.|1.|   125090.! -20.7! 831.3! 4.62|10.  |  .0249| 26.68|  .067!SI|
  210.|210.|3.|1.|  -104584.! -17.3| 695.1| 4.62|10.  |  .0209| 26.68|  .056|SI|
  474.|474.|3.|1.|    51327.|  -8.5| 341.1| 4.62|10.  |  .0102| 26.68|  .027|SI|

TENSIONI DI ESERCIZIO E FESSURAZIONE - FREQUENTI:

Progressive|Se|Ar Momento      σc     σf  | As   hc,ef   Eps%  Sr,max   Wd  |Ve|
>   0.|  0.|3.|1.|    66023.| -10.9| 438.8| 4.62|10.  |  .0132| 26.68|  .035|SI|
  210.|210.|3.|1.|   -71520.! -11.8| 475.3| 4.62|10.  |  .0143| 26.68|  .038|SI|
  452.|452.|3.|1.|    83069.! -13.8! 552.1! 4.62|10.  |  .0166| 26.68|  .044!SI|
  474.|474.|3.|1.|    79552.| -13.2| 528.7| 4.62|10.  |  .0159| 26.68|  .042|SI|

TENSIONI DI ESERCIZIO E FESSURAZIONE - QUASI PERMANENTI:

Progressive|Se|Ar Momento      σc     σf  | As   hc,ef   Eps%  Sr,max   Wd  |Ve|
>   0.|  0.|3.|1.|    30583.|  -5.1| 203.3| 4.62|10.  |  .0061| 26.68|  .016|SI|
  210.|210.|3.|1.|   -51682.!  -8.6| 343.5| 4.62|10.  |  .0103| 26.68|  .027|SI|
  452.|452.|3.|1.|   101298.! -16.8! 673.2! 4.62|10.  |  .0202| 26.68|  .054!SI|
  474.|474.|3.|1.|    96487.| -16. | 641.2| 4.62|10.  |  .0192| 26.68|  .051|SI|

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

Nro|Totale   % |Super.   %        Barre        |Infer.   %        Barre        |
  1| 9.24| .77 | 4.62| .385|3d14               | 4.62| .385|3d14               |

               VERIFICA TRAVATA IN CEMENTO ARMATO

Nome travata       : 12 - Travata TR6 (fondazione)
Metodo di verifica : stati limite (NTC18). ->
Duttilita'         : bassa con gerarchia.
Unita' di misura   : cm; daN; daN/cm; daNcm; daN/cm2; deform. %.
Unita' particolari : fessure [Wk]:mm - ferri:mm e cm2 - sezioni:cm e derivate.
Copriferri (assi)  : longitudinali= 4 ; staffe= 3

               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=.2% (limit.elastico)
ACCIAIO : B450C; ftk=4500. ; fyk=4500. ; Es=2000000. ;
          gs =1.15; fyd=3913. ; ftd(k*fyd)=3913. ; fud=3913. ; Eud=.2% (limit.elastico)
```

TENSIONI E FESSURE MASSIME IN ESERCIZIO

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

CASI DI CARICO DA MODELLO 3D

SLU	
Nome	Descrizione Sest
1.	SLU SENZA SISMA 1.
4.	SLU con SISMAX PRINC16
5.	SLU con SISMAY PRINC16
8.	SLU FON con SISMAX P16
9.	SLU FON con SISMAY P16

RARE		FREQUENTI		QUASI PERMANENTI	
Nome	Descrizione Sest	Nome	Descrizione Sest	Nome	Descrizione Sest
10.	Rara 1.	11.	Frequente 1.	12.	Quasi Perm 1.

<-

SEZIONI UTILIZZATE

3) Rettangolare: 100X40; A=4000.; Jg=533333.; E=314471.6

DESCRIZIONE CAMPATE

Cam.	Descriz.	S.ini	Sez.	S.fin	Incl.	L.assi	L.net.	lambda	K	r.Ar.	lam.max
1	A11	3	3	3	0	505.	481.	12.625	1.3	1.909	54.171
2	A12	3	3	3	0	500.	482.	12.5	1.5	1.785	58.441
3	A13	3	3	3	0	500.	482.	12.5	1.5	1.783	58.382
4	A14	3	3	3	0	500.	482.	12.5	1.5	1.783	58.381
5	A15	3	3	3	0	500.	482.	12.5	1.5	1.785	58.441
6	A16	3	3	3	0	505.	481.	12.625	1.3	1.83	51.92

VERIFICHE ALLO STATO LIMITE ULTIMO

FLESSIONE:

Progressive	SE	Ar	Msd	Epscl	Epsac	Mrd	Epscl	Epsac	Cam	x/d	Mr/Ms	VE
> 0.	0.	3.	1.	-294118.	-.014	.048	-1192373.!	-.059	.196	2.	.231	4.054	SI
166.	166.	3.	1.	-645931.!	-.031	.106	-1192373.	-.059	.196	2.	.231	1.846	SI
339.	339.	3.	1.	-197766.	-.009	.032	-1192373.	-.059	.196	2.	.231	6.029!	SI
339.	339.	3.	1.	187049.	-.009	.035	1043215.	-.054	.196	2.	.215!	5.577	SI
454.	454.	3.	3.	1406839.	-.045	.099	2767024.!	-.093	.196	2.	.322!	1.967	SI
484.	484.	3.	3.	1449530.!	-.046!	.102	2767024.	-.093	.196	2.	.322	1.909	SI
505.	505.	3.	3.	1385050.	-.044	.097	2767024.	-.093	.196	2.	.322	1.998	SI
> 505.	0.	3.	3.	1168360.	-.037	.082	2767024.!	-.093	.196	2.	.322	2.368	SI
592.	87.	3.	4.	-130343.	-.005	.021	-1192521.!	-.052	.196	2.	.21 !	9.149	SI
592.	87.	3.	4.	361222.	-.012	.025	2745356.	-.102	.196	2.	.343!	7.6	SI
638.	133.	3.	1.	13910.	-.001	.003	1043215.	-.054	.196	2.	.215	75. !	SI
732.	227.	3.	1.	-747708.!	-.036	.122	-1192373.	-.059	.196	2.	.231	1.595!	SI
996.	491.	3.	3.	1550352.!	-.05 !	.109	2767024.	-.093	.196	2.	.322	1.785	SI
1005.	500.	3.	3.	1550352.	-.05	.109	2767024.	-.093	.196	2.	.322	1.785	SI
>1005.	0.	3.	3.	1550350.	-.05	.109	2767024.!	-.093	.196	2.	.322	1.785	SI
1092.	87.	3.	4.	-68113.	-.003	.011	-1192521.!	-.052	.196	2.	.21 !	17.51	SI
1092.	87.	3.	4.	511082.	-.017	.036	2745356.	-.102	.196	2.	.343!	5.372	SI
1278.	273.	3.	1.	-719891.!	-.035	.118	-1192373.	-.059	.196	2.	.231	1.656!	SI
1372.	367.	3.	1.	53946.	-.003	.01	1043215.	-.054	.196	2.	.215	19.34!	SI
1496.	491.	3.	3.	1551920.!	-.05 !	.109	2767024.	-.093	.196	2.	.322	1.783	SI
1505.	500.	3.	3.	1551920.	-.05	.109	2767024.	-.093	.196	2.	.322	1.783	SI
>1505.	0.	3.	3.	1551926.!	-.05 !	.109	2767024.!	-.093	.196	2.	.322	1.783	SI
1592.	87.	3.	4.	-68692.	-.003	.011	-1192521.!	-.052	.196	2.	.21 !	17.36	SI
1592.	87.	3.	4.	511020.	-.017	.036	2745356.	-.102	.196	2.	.343!	5.372	SI
1638.	133.	3.	1.	53948.	-.003	.01	1043215.	-.054	.196	2.	.215	19.34!	SI
1732.	227.	3.	1.	-719889.!	-.035	.118	-1192373.	-.059	.196	2.	.231	1.656!	SI
2005.	500.	3.	3.	1550339.	-.05	.109	2767024.	-.093	.196	2.	.322	1.785	SI
>2005.	0.	3.	3.	1550350.	-.05 !	.109	2767024.!	-.093	.196	2.	.322	1.785	SI
2092.	87.	3.	4.	-74755.	-.003	.012	-1192521.!	-.052	.196	2.	.21 !	15.95	SI
2092.	87.	3.	4.	508783.	-.017	.036	2745356.	-.102	.196	2.	.343!	5.396	SI
2278.	273.	3.	1.	-747708.!	-.036	.122	-1192373.	-.059	.196	2.	.231	1.595!	SI
2372.	367.	3.	1.	33338.	-.002	.006	1043215.	-.054	.196	2.	.215	31.29!	SI
2505.	500.	3.	3.	1518636.	-.049	.107	2767024.	-.093	.196	2.	.322	1.822	SI
>2505.	0.	3.	3.	1512376.!	-.049!	.106!	2767024.!	-.093	.196	2.	.322!	1.83 !	SI
2613.	108.	3.	2.	-80554.	-.004	.013	-1192745.!	-.055	.196	2.	.218	14.81	SI
2671.	166.	3.	1.	38541.	-.002	.007	1043215.	-.054	.196	2.	.215!	27.07	SI
2844.	339.	3.	1.	-638157.!	-.031	.104	-1192373.	-.059	.196	2.	.231	1.868	SI
2989.	484.	3.	1.	17037.	-.001	.003	1043215.	-.054	.196	2.	.215	61.23!	SI
3010.	505.	3.	1.	-283660.	-.013	.046	-1192373.	-.059	.196	2.	.231	4.204	SI
3010.	505.	3.	1.	18808.	-.001	.004	1043215.	-.054	.196	2.	.215	55.47	SI

TAGLIO:

Progressive	Se	Vsd	VRd	VRcd	VRsd	Asw	s	ctgT	Ve
> 0.	0.	3.	-6910.	14498.	78821.	49787.	3.14	20.	2.5	SI
473.	473.	3.	17503.!	16832.	78821.	49787.	3.14	20.	2.5	SI
484.	484.	3.	-18539.!	18717.	78821.	49787.	3.14	20.	2.5	SI
505.	505.	3.	-17204.	18717.!	78821.!	49787.!	3.14	20.	2.5	SI
> 505.	0.	3.	-17204.!	18717.!	78821.!	49787.!	3.14	20.	2.5	SI
1005.	500.	3.	18648.!	18717.!	78821.	49787.	3.14	20.	2.5	SI
>1005.	0.	3.	-18577.!	18717.!	78821.!	49787.!	3.14	20.	2.5	SI
1505.	500.	3.	18617.!	18717.!	78821.	49787.	3.14	20.	2.5	SI
>1505.	0.	3.	-18617.!	18717.!	78821.!	49787.!	3.14	20.	2.5	SI
2005.	500.	3.	18576.!	18717.!	78821.	49787.	3.14	20.	2.5	SI

>2005.	0.	3.	-18648.!	18717.!	78821.!	49787.!	3.14	20.	2.5	SI
2505.	500.	3.	18867.!	18717.!	78821.!	49787.!	3.14	20.	2.5	SI
>2505.	0.	3.	-17901.!	18717.!	78821.!	49787.!	3.14	20.	2.5	SI
3010.	505.	3.	-253.!	14498.!	78821.!	49787.!	3.14	20.	2.5	SI
3010.	505.	3.	9652.!	14498.!	78821.!	49787.!	3.14	20.	2.5	SI

VERIFICHE ALLO STATO LIMITE DI ESERCIZIO

TENSIONI DI ESERCIZIO E FESSURAZIONE - RARE:

Progressive	Se	Ar	Momento	σc	σf	As	hc,ef	Eps%	Sr,max	Wd	Ve
21.	21.	3.	1.	-220995.!	-14.2!	722.7!	9.24	10.	.0217	36.99	.08	SI
50.	50.	3.	1.	-310958.!	-20. !	1016.9!	9.24	10.	.0305	36.99	.113	SI
166.	166.	3.	1.	-443930.!	-28.6!	1451.8!	9.24	10.	.0436	36.99	.161!	SI
484.	484.	3.	3.	996352.!	-42.4!	1399.4	22.12	9.58	.0446	22.66	.101	SI
505.	505.	3.	3.	803159.!	-34.2!	1128.1	22.12	9.58	.0338	22.66	.077	SI
> 505.	0.	3.	3.	803159.!	-34.2!	1128.1	22.12	9.58	.0338	22.66	.077	SI
732.	227.	3.	1.	-513556.!	-33.1!	1679.5!	9.24	10.	.0504	36.99	.186!	SI
1005.	500.	3.	3.	1065132.!	-45.4!	1496. !	22.12	9.58	.0494	22.66	.112	SI
>1005.	0.	3.	3.	1065112.!	-45.4!	1496. !	22.12	9.58	.0494	22.66	.112	SI
1278.	273.	3.	1.	-494609.!	-31.9!	1617.6!	9.24	10.	.0485	36.99	.179!	SI
1505.	500.	3.	3.	1066296.!	-45.4!	1497.7	22.12	9.58	.0495	22.66	.112	SI
>1505.	0.	3.	3.	1066300.!	-45.4!	1497.7	22.12	9.58	.0495	22.66	.112	SI
1732.	227.	3.	1.	-494608.!	-31.9!	1617.6!	9.24	10.	.0485	36.99	.179!	SI
2005.	500.	3.	3.	1065105.!	-45.4!	1496. !	22.12	9.58	.0494	22.66	.112	SI
>2005.	0.	3.	3.	1065130.!	-45.4!	1496. !	22.12	9.58	.0494	22.66	.112	SI
2278.	273.	3.	1.	-513556.!	-33.1!	1679.5!	9.24	10.	.0504	36.99	.186!	SI
2505.	500.	3.	3.	1043836.!	-44.5!	1466.1	22.12	9.58	.0479	22.66	.109	SI
>2505.	0.	3.	3.	1039685.!	-44.3!	1460.3	22.12	9.58	.0476	22.66	.108	SI
2844.	339.	3.	1.	-439065.!	-28.3!	1435.9!	9.24	10.	.0431	36.99	.159!	SI
3010.	505.	3.	1.	-132865.!	-8.6!	434.5!	9.24	10.	.013	36.99	.048	SI

TENSIONI DI ESERCIZIO E FESSURAZIONE - FREQUENTI:

Progressive	Se	Ar	Momento	σc	σf	As	hc,ef	Eps%	Sr,max	Wd	Ve
21.	21.	3.	1.	-141206.!	-9.1!	461.8!	9.24	10.	.0139	36.99	.051	SI
50.	50.	3.	1.	-220731.!	-14.2!	721.9!	9.24	10.	.0217	36.99	.08	SI
166.	166.	3.	1.	-345025.!	-22.2!	1128.4!	9.24	10.	.0339	36.99	.125!	SI
484.	484.	3.	3.	643628.!	-27.4!	904. !	22.12	9.58	.0271	22.66	.061	SI
505.	505.	3.	3.	517639.!	-22. !	727. !	22.12	9.58	.0218	22.66	.049	SI
> 505.	0.	3.	3.	517639.!	-22. !	727. !	22.12	9.58	.0218	22.66	.049	SI
732.	227.	3.	1.	-339538.!	-21.9!	1110.4!	9.24	10.	.0333	36.99	.123!	SI
1005.	500.	3.	3.	707528.!	-30.1!	993.8	22.12	9.58	.0298	22.66	.068	SI
>1005.	0.	3.	3.	707576.!	-30.1!	993.8	22.12	9.58	.0298	22.66	.068	SI
1278.	273.	3.	1.	-328174.!	-21.2!	1073.2!	9.24	10.	.0322	36.99	.119!	SI
1505.	500.	3.	3.	706904.!	-30.1!	992.9	22.12	9.58	.0298	22.66	.068	SI
>1505.	0.	3.	3.	706909.!	-30.1!	992.9	22.12	9.58	.0298	22.66	.068	SI
1732.	227.	3.	1.	-328172.!	-21.2!	1073.2!	9.24	10.	.0322	36.99	.119!	SI
2005.	500.	3.	3.	707568.!	-30.1!	993.8	22.12	9.58	.0298	22.66	.068	SI
>2005.	0.	3.	3.	707528.!	-30.1!	993.7	22.12	9.58	.0298	22.66	.068	SI
2278.	273.	3.	1.	-339538.!	-21.9!	1110.4!	9.24	10.	.0333	36.99	.123!	SI
2505.	500.	3.	3.	674592.!	-28.7!	947.5	22.12	9.58	.0284	22.66	.064	SI
>2505.	0.	3.	3.	671131.!	-28.6!	942.6	22.12	9.58	.0283	22.66	.064	SI
2844.	339.	3.	1.	-337697.!	-21.8!	1104.4!	9.24	10.	.0331	36.99	.123!	SI
3010.	505.	3.	1.	-71363.!	-4.6!	233.4!	9.24	10.	.007	36.99	.026	SI

TENSIONI DI ESERCIZIO E FESSURAZIONE - QUASI PERMANENTI:

Progressive	Se	Ar	Momento	σc	σf	As	hc,ef	Eps%	Sr,max	Wd	Ve
21.	21.	3.	1.	-93333.!	-6. !	305.2!	9.24	10.	.0092	36.99	.034	SI
50.	50.	3.	1.	-166595.!	-10.7!	544.8!	9.24	10.	.0163	36.99	.06	SI
166.	166.	3.	1.	-285683.!	-18.4!	934.3!	9.24	10.	.028	36.99	.104!	SI
484.	484.	3.	3.	431994.!	-18.4!	606.8	22.12	9.58	.0182	22.66	.041	SI
505.	505.	3.	3.	346327.!	-14.7!	486.4	22.12	9.58	.0146	22.66	.033	SI
> 505.	0.	3.	3.	346327.!	-14.7!	486.4	22.12	9.58	.0146	22.66	.033	SI
732.	227.	3.	1.	-235127.!	-15.2!	769. !	9.24	10.	.0231	36.99	.085!	SI
1005.	500.	3.	3.	492967.!	-21. !	692.4	22.12	9.58	.0208	22.66	.047	SI
>1005.	0.	3.	3.	493054.!	-21. !	692.5	22.12	9.58	.0208	22.66	.047	SI
1278.	273.	3.	1.	-228312.!	-14.7!	746.7!	9.24	10.	.0224	36.99	.083!	SI
1505.	500.	3.	3.	491269.!	-20.9!	690. !	22.12	9.58	.0207	22.66	.047	SI
>1505.	0.	3.	3.	491274.!	-20.9!	690. !	22.12	9.58	.0207	22.66	.047	SI
1732.	227.	3.	1.	-228311.!	-14.7!	746.7!	9.24	10.	.0224	36.99	.083!	SI
2005.	500.	3.	3.	493045.!	-21. !	692.5	22.12	9.58	.0208	22.66	.047	SI
>2005.	0.	3.	3.	492966.!	-21. !	692.4	22.12	9.58	.0208	22.66	.047	SI
2278.	273.	3.	1.	-235127.!	-15.2!	769. !	9.24	10.	.0231	36.99	.085!	SI
2505.	500.	3.	3.	453045.!	-19.3!	636.3	22.12	9.58	.0191	22.66	.043	SI
>2505.	0.	3.	3.	449998.!	-19.2!	632. !	22.12	9.58	.019	22.66	.043	SI
2786.	281.	3.	1.	-279472.!	-18. !	914. !	9.24	10.	.0274	36.99	.101	SI
3010.	505.	3.	1.	-34462.!	-2.2!	112.7!	9.24	10.	.0034	36.99	.013	SI

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

Nro	Totale	%	Super.	%	Barre	Infer.	%	Barre
1	17.28	.432	9.24	.231	6d14	8.04	.201	4d16
2	25.32	.633	9.24	.231	6d14	16.08	.402	4d16 +4d16
3	40.59	1.015	18.47	.462	6d14 +6d14	22.12	.553	3d16 +4d16 +4d16
4	31.35	.784	9.24	.231	6d14	22.12	.553	3d16 +4d16 +4d16

VERIFICA STRUTTURALE MURO

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
8	SLU FON con SISMAX P
9	SLU FON con SISMAY P

DATI:

tensione di snervamento acciaio (fyk):	4500	daN/cm2
coefficiente sicurezza acciaio :	1.15	
deformazione ultima acciaio :	1.97	per mille
deformazione ultima cls :	3.5	per mille
rapporto rottura/snervamento (k):	1	
resistenza cilindrica cls (fck):	249	daN/cm2
coefficiente sicurezza cls :	1.5	
coefficiente riduttivo (alfa):	0.85	
copriferro inferiore (asse armatura):	3	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.

Per gli elementi non dissipativi la permanenza in campo elastico è ottenuta limitando la deformazione dell'acciaio alla deformazione di snervamento (1.97 per mille) e quella del calcestruzzo al 2 per mille.

AREE ARMATURA (cm2 al metro)

	INF. ORIZZ.			INF. VERTIC.			SUP. ORIZZ.			SUP. VERTIC.					
GUSCI	area	EpsC	EpsF	area	EpsC	EpsF	area	EpsC	EpsF	area	EpsC	EpsF	tauX	tauY	tauT
121	4.52	0.00	0.26	4.52	0.00	0.36	4.52	0.00	0.17	4.52	0.00	0.13			
122	4.52	0.00	0.25	4.52	0.07	0.41	4.52	0.00	0.18	4.52	0.00	0.10			
123	4.52	0.00	0.28	4.52	0.14	0.58	4.52	0.00	0.19	4.52	0.00	0.06			
124	4.52	0.00	0.29	4.52	0.19	0.76	4.52	0.00	0.21	4.52	0.00	0.05			
125	4.52	0.00	0.29	4.52	0.23	0.90	4.52	0.00	0.22	4.52	0.00	0.05			
126	4.52	0.00	0.29	4.52	0.25	1.00	4.52	0.00	0.22	4.52	0.00	0.00			
127	4.52	0.00	0.30	4.52	0.27	1.06	4.52	0.00	0.22	4.52	0.00	0.00			
128	4.52	0.00	0.30	4.52	0.28	1.09	4.52	0.00	0.19	4.52	0.01	-0.01			
129	4.52	0.00	0.26	4.52	0.29	1.09	4.52	0.00	0.19	4.52	0.01	-0.01			
130	4.52	0.00	0.25	4.52	0.30	1.08	4.52	0.00	0.18	4.52	0.01	-0.01			
131	4.52	0.00	0.22	4.52	0.30	1.06	4.52	0.00	0.14	4.52	0.01	-0.01			
132	4.52	0.00	0.19	4.52	0.29	1.04	4.52	0.00	0.11	4.52	0.01	-0.01			
133	4.52	0.00	0.17	4.52	0.29	1.03	4.52	0.00	0.10	4.52	0.01	-0.01			
134	4.52	0.00	0.15	4.52	0.29	1.02	4.52	0.00	0.09	4.52	0.01	-0.01			
135	4.52	0.00	0.15	4.52	0.28	1.03	4.52	0.00	0.08	4.52	0.01	-0.01			
136	4.52	0.00	0.14	4.52	0.29	1.05	4.52	0.00	0.08	4.52	0.01	-0.01			
137	4.52	0.00	0.13	4.52	0.29	1.07	4.52	0.00	0.06	4.52	0.01	-0.01			
138	4.52	0.02	0.14	4.52	0.30	1.08	4.52	0.00	0.04	4.52	0.01	-0.01			
139	4.52	0.03	0.13	4.52	0.31	1.08	4.52	0.00	0.03	4.52	0.02	-0.02			
140	4.52	0.03	0.13	4.52	0.31	1.07	4.52	0.00	0.01	4.52	0.02	-0.02			
141	4.52	0.03	0.13	4.52	0.31	1.05	4.52	0.00	0.00	4.52	0.02	-0.02			
142	4.52	0.03	0.13	4.52	0.31	1.04	4.52	0.00	0.00	4.52	0.02	-0.02			
143	4.52	0.03	0.10	4.52	0.31	1.02	4.52	0.00	0.00	4.52	0.02	-0.02			
144	4.52	0.02	0.10	4.52	0.30	1.01	4.52	0.00	0.00	4.52	0.02	-0.02			
145	4.52	0.02	0.09	4.52	0.30	1.01	4.52	0.00	0.00	4.52	0.02	-0.02			
146	4.52	0.03	0.11	4.52	0.30	1.02	4.52	0.00	0.00	4.52	0.02	-0.02			
147	4.52	0.03	0.13	4.52	0.30	1.04	4.52	0.00	0.00	4.52	0.02	-0.02			
148	4.52	0.03	0.12	4.52	0.31	1.05	4.52	0.00	0.00	4.52	0.02	-0.02			
149	4.52	0.03	0.14	4.52	0.32	1.05	4.52	0.00	0.00	4.52	0.02	-0.02			
150	4.52	0.04	0.15	4.52	0.32	1.04	4.52	0.00	0.00	4.52	0.02	-0.02			

151	4.52	0.04	0.15	4.52	0.32	1.04	4.52	0.00	0.00	4.52	0.02	-0.02
152	4.52	0.03	0.14	4.52	0.32	1.05	4.52	0.00	0.00	4.52	0.02	-0.02
153	4.52	0.03	0.12	4.52	0.31	1.05	4.52	0.00	0.00	4.52	0.02	-0.02
154	4.52	0.03	0.13	4.52	0.30	1.04	4.52	0.00	0.00	4.52	0.02	-0.02
155	4.52	0.03	0.11	4.52	0.30	1.02	4.52	0.00	0.00	4.52	0.02	-0.02
156	4.52	0.02	0.09	4.52	0.30	1.01	4.52	0.00	0.00	4.52	0.02	-0.02
157	4.52	0.02	0.09	4.52	0.30	1.01	4.52	0.00	0.00	4.52	0.02	-0.02
158	4.52	0.03	0.10	4.52	0.31	1.02	4.52	0.00	0.00	4.52	0.02	-0.02
159	4.52	0.03	0.13	4.52	0.31	1.04	4.52	0.00	0.00	4.52	0.02	-0.02
160	4.52	0.03	0.13	4.52	0.31	1.05	4.52	0.00	0.00	4.52	0.02	-0.02
161	4.52	0.03	0.13	4.52	0.31	1.07	4.52	0.00	0.01	4.52	0.02	-0.02
162	4.52	0.03	0.13	4.52	0.31	1.08	4.52	0.00	0.03	4.52	0.02	-0.02
163	4.52	0.02	0.14	4.52	0.30	1.08	4.52	0.00	0.04	4.52	0.01	-0.01
164	4.52	0.00	0.13	4.52	0.29	1.07	4.52	0.00	0.06	4.52	0.01	-0.01
165	4.52	0.00	0.14	4.52	0.29	1.05	4.52	0.00	0.08	4.52	0.01	-0.01
166	4.52	0.00	0.15	4.52	0.28	1.03	4.52	0.00	0.08	4.52	0.01	-0.01
167	4.52	0.00	0.15	4.52	0.29	1.02	4.52	0.00	0.09	4.52	0.01	-0.01
168	4.52	0.00	0.17	4.52	0.29	1.03	4.52	0.00	0.10	4.52	0.01	-0.01
169	4.52	0.00	0.19	4.52	0.29	1.04	4.52	0.00	0.11	4.52	0.01	-0.01
170	4.52	0.00	0.22	4.52	0.30	1.06	4.52	0.00	0.14	4.52	0.01	-0.01
171	4.52	0.00	0.25	4.52	0.30	1.08	4.52	0.00	0.18	4.52	0.01	-0.01
172	4.52	0.00	0.26	4.52	0.29	1.09	4.52	0.00	0.19	4.52	0.01	-0.01
173	4.52	0.00	0.30	4.52	0.28	1.09	4.52	0.00	0.19	4.52	0.01	-0.01
174	4.52	0.00	0.30	4.52	0.27	1.06	4.52	0.00	0.22	4.52	0.00	0.00
175	4.52	0.00	0.29	4.52	0.25	1.00	4.52	0.00	0.22	4.52	0.00	0.00
176	4.52	0.00	0.29	4.52	0.23	0.90	4.52	0.00	0.22	4.52	0.00	0.05
177	4.52	0.00	0.29	4.52	0.19	0.76	4.52	0.00	0.21	4.52	0.00	0.05
178	4.52	0.00	0.28	4.52	0.14	0.58	4.52	0.00	0.19	4.52	0.00	0.06
179	4.52	0.00	0.25	4.52	0.07	0.41	4.52	0.00	0.18	4.52	0.00	0.10
180	4.52	0.00	0.26	4.52	0.00	0.36	4.52	0.00	0.17	4.52	0.00	0.13
181	4.52	0.00	0.29	4.52	0.00	0.22	4.52	0.00	0.16	4.52	0.00	0.22
182	4.52	0.00	0.24	4.52	0.00	0.22	4.52	0.00	0.22	4.52	0.00	0.22
183	4.52	0.00	0.25	4.52	0.00	0.23	4.52	0.00	0.26	4.52	0.00	0.21
184	4.52	0.00	0.25	4.52	0.00	0.24	4.52	0.00	0.26	4.52	0.00	0.21
185	4.52	0.00	0.25	4.52	0.00	0.26	4.52	0.00	0.26	4.52	0.00	0.21
186	4.52	0.00	0.25	4.52	0.00	0.26	4.52	0.00	0.25	4.52	0.00	0.20
187	4.52	0.00	0.25	4.52	0.00	0.25	4.52	0.00	0.26	4.52	0.00	0.17
188	4.52	0.00	0.25	4.52	0.00	0.23	4.52	0.00	0.25	4.52	0.00	0.13
189	4.52	0.00	0.24	4.52	0.00	0.20	4.52	0.00	0.24	4.52	0.00	0.09
190	4.52	0.00	0.22	4.52	0.03	0.17	4.52	0.00	0.18	4.52	0.00	0.04
191	4.52	0.00	0.18	4.52	0.04	0.16	4.52	0.00	0.13	4.52	0.01	0.02
192	4.52	0.00	0.14	4.52	0.04	0.16	4.52	0.00	0.10	4.52	0.01	0.02
193	4.52	0.00	0.12	4.52	0.04	0.15	4.52	0.00	0.08	4.52	0.01	0.02
194	4.52	0.00	0.11	4.52	0.05	0.20	4.52	0.00	0.08	4.52	0.01	0.03
195	4.52	0.00	0.11	4.52	0.06	0.24	4.52	0.00	0.08	4.52	0.01	0.03
196	4.52	0.00	0.11	4.52	0.08	0.29	4.52	0.00	0.09	4.52	0.01	0.03
197	4.52	0.00	0.09	4.52	0.08	0.29	4.52	0.00	0.08	4.52	0.01	0.03
198	4.52	0.00	0.09	4.52	0.07	0.25	4.52	0.00	0.05	4.52	0.01	-0.01
199	4.52	0.00	0.09	4.52	0.06	0.20	4.52	0.00	0.04	4.52	0.01	-0.01
200	4.52	0.02	0.08	4.52	0.04	0.15	4.52	0.00	0.03	4.52	0.01	-0.01
201	4.52	0.02	0.08	4.52	0.04	0.15	4.52	0.00	0.01	4.52	0.01	-0.01
202	4.52	0.02	0.08	4.52	0.04	0.14	4.52	0.00	0.00	4.52	0.01	-0.01
203	4.52	0.01	0.06	4.52	0.04	0.14	4.52	0.00	0.00	4.52	0.01	-0.01
204	4.52	0.01	0.05	4.52	0.04	0.13	4.52	0.00	0.00	4.52	0.01	-0.01
205	4.52	0.01	0.05	4.52	0.05	0.18	4.52	0.00	0.01	4.52	0.01	-0.01
206	4.52	0.01	0.06	4.52	0.07	0.22	4.52	0.00	0.01	4.52	0.01	-0.01
207	4.52	0.02	0.07	4.52	0.08	0.27	4.52	0.00	0.01	4.52	0.01	-0.01
208	4.52	0.02	0.06	4.52	0.07	0.22	4.52	0.00	0.00	4.52	0.01	-0.01
209	4.52	0.02	0.07	4.52	0.06	0.18	4.52	0.00	0.00	4.52	0.01	-0.01
210	4.52	0.02	0.09	4.52	0.04	0.12	4.52	0.00	0.00	4.52	0.01	-0.01
211	4.52	0.02	0.09	4.52	0.04	0.12	4.52	0.00	0.00	4.52	0.01	-0.01
212	4.52	0.02	0.07	4.52	0.06	0.17	4.52	0.00	0.00	4.52	0.01	-0.01
213	4.52	0.02	0.06	4.52	0.07	0.22	4.52	0.00	0.00	4.52	0.01	-0.01
214	4.52	0.02	0.07	4.52	0.09	0.27	4.52	0.00	0.00	4.52	0.01	-0.01
215	4.52	0.01	0.06	4.52	0.07	0.22	4.52	0.00	0.00	4.52	0.01	-0.01
216	4.52	0.01	0.04	4.52	0.05	0.17	4.52	0.00	0.00	4.52	0.01	-0.01
217	4.52	0.01	0.05	4.52	0.04	0.13	4.52	0.00	0.00	4.52	0.01	-0.01
218	4.52	0.01	0.06	4.52	0.04	0.13	4.52	0.00	0.00	4.52	0.01	-0.01
219	4.52	0.02	0.08	4.52	0.04	0.14	4.52	0.00	0.00	4.52	0.01	-0.01
220	4.52	0.02	0.08	4.52	0.04	0.14	4.52	0.00	0.01	4.52	0.01	-0.01
221	4.52	0.02	0.08	4.52	0.04	0.15	4.52	0.00	0.03	4.52	0.01	-0.01
222	4.52	0.00	0.09	4.52	0.06	0.20	4.52	0.00	0.04	4.52	0.01	-0.01
223	4.52	0.00	0.09	4.52	0.07	0.25	4.52	0.00	0.05	4.52	0.01	-0.01
224	4.52	0.00	0.09	4.52	0.08	0.29	4.52	0.00	0.08	4.52	0.01	0.03
225	4.52	0.00	0.11	4.52	0.08	0.28	4.52	0.00	0.09	4.52	0.01	0.03
226	4.52	0.00	0.11	4.52	0.06	0.24	4.52	0.00	0.08	4.52	0.01	0.03
227	4.52	0.00	0.11	4.52	0.05	0.20	4.52	0.00	0.08	4.52	0.01	0.03
228	4.52	0.00	0.12	4.52	0.04	0.15	4.52	0.00	0.08	4.52	0.01	0.02

229	4.52	0.00	0.14	4.52	0.04	0.16	4.52	0.00	0.10	4.52	0.01	0.02
230	4.52	0.00	0.18	4.52	0.04	0.16	4.52	0.00	0.13	4.52	0.01	0.02
231	4.52	0.00	0.22	4.52	0.03	0.17	4.52	0.00	0.18	4.52	0.00	0.04
232	4.52	0.00	0.23	4.52	0.00	0.20	4.52	0.00	0.24	4.52	0.00	0.08
233	4.52	0.00	0.25	4.52	0.00	0.23	4.52	0.00	0.25	4.52	0.00	0.13
234	4.52	0.00	0.25	4.52	0.00	0.25	4.52	0.00	0.26	4.52	0.00	0.17
235	4.52	0.00	0.25	4.52	0.00	0.26	4.52	0.00	0.25	4.52	0.00	0.20
236	4.52	0.00	0.25	4.52	0.00	0.26	4.52	0.00	0.26	4.52	0.00	0.21
237	4.52	0.00	0.25	4.52	0.00	0.24	4.52	0.00	0.26	4.52	0.00	0.21
238	4.52	0.00	0.25	4.52	0.00	0.23	4.52	0.00	0.26	4.52	0.00	0.22
239	4.52	0.00	0.24	4.52	0.00	0.22	4.52	0.00	0.22	4.52	0.00	0.22
240	4.52	0.00	0.29	4.52	0.00	0.22	4.52	0.00	0.16	4.52	0.00	0.22
241	4.52	0.00	0.34	4.52	0.00	0.17	4.52	0.00	0.14	4.52	0.00	0.24
242	4.52	0.00	0.21	4.52	0.00	0.15	4.52	0.00	0.22	4.52	0.00	0.29
243	4.52	0.00	0.19	4.52	0.00	0.14	4.52	0.00	0.26	4.52	0.00	0.33
244	4.52	0.00	0.19	4.52	0.00	0.14	4.52	0.00	0.27	4.52	0.00	0.37
245	4.52	0.00	0.20	4.52	0.00	0.15	4.52	0.00	0.28	4.52	0.00	0.39
246	4.52	0.00	0.20	4.52	0.00	0.15	4.52	0.00	0.29	4.52	0.00	0.40
247	4.52	0.00	0.23	4.52	0.00	0.14	4.52	0.00	0.31	4.52	0.00	0.39
248	4.52	0.00	0.28	4.52	0.00	0.11	4.52	0.00	0.35	4.52	0.00	0.36
249	4.52	0.00	0.27	4.52	0.00	0.07	4.52	0.00	0.33	4.52	0.02	0.32
250	4.52	0.00	0.19	4.52	0.00	0.02	4.52	0.00	0.22	4.52	0.06	0.26
251	4.52	0.00	0.11	4.52	0.00	0.00	4.52	0.00	0.12	4.52	0.06	0.25
252	4.52	0.00	0.07	4.52	0.00	0.00	4.52	0.00	0.09	4.52	0.06	0.24
253	4.52	0.00	0.06	4.52	0.00	0.00	4.52	0.00	0.08	4.52	0.06	0.24
254	4.52	0.00	0.07	4.52	0.00	0.01	4.52	0.00	0.10	4.52	0.06	0.25
255	4.52	0.00	0.07	4.52	0.00	0.02	4.52	0.00	0.11	4.52	0.04	0.27
256	4.52	0.00	0.07	4.52	0.00	0.02	4.52	0.00	0.12	4.52	0.04	0.28
257	4.52	0.00	0.08	4.52	0.00	0.02	4.52	0.00	0.13	4.52	0.05	0.28
258	4.52	0.00	0.10	4.52	0.00	0.00	4.52	0.00	0.15	4.52	0.06	0.26
259	4.52	0.00	0.10	4.52	0.00	0.00	4.52	0.00	0.14	4.52	0.06	0.25
260	4.52	0.00	0.06	4.52	0.00	0.00	4.52	0.00	0.10	4.52	0.06	0.24
261	4.52	0.00	0.01	4.52	0.01	-0.01	4.52	0.00	0.05	4.52	0.07	0.24
262	4.52	0.00	0.00	4.52	0.01	-0.01	4.52	0.01	0.03	4.52	0.07	0.24
263	4.52	0.00	0.00	4.52	0.01	-0.01	4.52	0.01	0.04	4.52	0.07	0.26
264	4.52	0.00	0.00	4.52	0.00	0.00	4.52	0.01	0.04	4.52	0.07	0.25
265	4.52	0.00	0.00	4.52	0.00	0.00	4.52	0.01	0.04	4.52	0.06	0.25
266	4.52	0.00	0.00	4.52	0.00	0.00	4.52	0.01	0.05	4.52	0.07	0.26
267	4.52	0.00	0.00	4.52	0.00	0.00	4.52	0.01	0.05	4.52	0.07	0.26
268	4.52	0.00	0.01	4.52	0.00	0.00	4.52	0.01	0.05	4.52	0.07	0.26
269	4.52	0.00	0.02	4.52	0.01	-0.01	4.52	0.00	0.06	4.52	0.07	0.25
270	4.52	0.01	0.02	4.52	0.01	-0.01	4.52	0.00	0.05	4.52	0.07	0.24
271	4.52	0.01	0.02	4.52	0.01	-0.01	4.52	0.00	0.05	4.52	0.07	0.23
272	4.52	0.00	0.02	4.52	0.01	-0.01	4.52	0.01	0.06	4.52	0.07	0.25
273	4.52	0.00	0.01	4.52	0.01	-0.01	4.52	0.01	0.04	4.52	0.07	0.25
274	4.52	0.00	0.00	4.52	0.00	0.00	4.52	0.01	0.05	4.52	0.07	0.25
275	4.52	0.00	0.00	4.52	0.00	0.00	4.52	0.01	0.04	4.52	0.07	0.25
276	4.52	0.00	0.00	4.52	0.00	0.00	4.52	0.01	0.04	4.52	0.07	0.25
277	4.52	0.00	0.00	4.52	0.01	-0.01	4.52	0.01	0.04	4.52	0.07	0.25
278	4.52	0.00	0.00	4.52	0.01	-0.01	4.52	0.01	0.04	4.52	0.07	0.25
279	4.52	0.00	0.00	4.52	0.01	-0.01	4.52	0.01	0.03	4.52	0.07	0.24
280	4.52	0.00	0.01	4.52	0.01	-0.01	4.52	0.00	0.05	4.52	0.07	0.23
281	4.52	0.00	0.06	4.52	0.01	-0.01	4.52	0.00	0.10	4.52	0.07	0.24
282	4.52	0.00	0.10	4.52	0.00	0.00	4.52	0.00	0.14	4.52	0.06	0.25
283	4.52	0.00	0.10	4.52	0.00	0.00	4.52	0.00	0.15	4.52	0.06	0.26
284	4.52	0.00	0.08	4.52	0.00	0.02	4.52	0.00	0.13	4.52	0.05	0.27
285	4.52	0.00	0.07	4.52	0.00	0.02	4.52	0.00	0.12	4.52	0.04	0.28
286	4.52	0.00	0.07	4.52	0.00	0.02	4.52	0.00	0.11	4.52	0.04	0.27
287	4.52	0.00	0.07	4.52	0.00	0.00	4.52	0.00	0.10	4.52	0.06	0.25
288	4.52	0.00	0.06	4.52	0.00	0.00	4.52	0.00	0.08	4.52	0.06	0.24
289	4.52	0.00	0.07	4.52	0.00	0.00	4.52	0.00	0.09	4.52	0.06	0.24
290	4.52	0.00	0.11	4.52	0.00	0.00	4.52	0.00	0.12	4.52	0.06	0.24
291	4.52	0.00	0.19	4.52	0.00	0.02	4.52	0.00	0.22	4.52	0.06	0.26
292	4.52	0.00	0.27	4.52	0.00	0.07	4.52	0.00	0.33	4.52	0.02	0.32
293	4.52	0.00	0.28	4.52	0.00	0.11	4.52	0.00	0.35	4.52	0.00	0.36
294	4.52	0.00	0.23	4.52	0.00	0.14	4.52	0.00	0.31	4.52	0.00	0.39
295	4.52	0.00	0.20	4.52	0.00	0.15	4.52	0.00	0.29	4.52	0.00	0.40
296	4.52	0.00	0.20	4.52	0.00	0.15	4.52	0.00	0.28	4.52	0.00	0.39
297	4.52	0.00	0.19	4.52	0.00	0.14	4.52	0.00	0.27	4.52	0.00	0.37
298	4.52	0.00	0.19	4.52	0.00	0.14	4.52	0.00	0.26	4.52	0.00	0.33
299	4.52	0.00	0.21	4.52	0.00	0.15	4.52	0.00	0.22	4.52	0.00	0.29
300	4.52	0.00	0.34	4.52	0.00	0.17	4.52	0.00	0.14	4.52	0.00	0.24
301	4.52	0.00	0.36	4.52	0.00	0.17	4.52	0.00	0.15	4.52	0.00	0.23
302	4.52	0.00	0.18	4.52	0.00	0.17	4.52	0.00	0.18	4.52	0.00	0.29
303	4.52	0.00	0.17	4.52	0.00	0.18	4.52	0.00	0.25	4.52	0.00	0.36
304	4.52	0.00	0.18	4.52	0.00	0.18	4.52	0.00	0.27	4.52	0.00	0.43
305	4.52	0.00	0.19	4.52	0.00	0.18	4.52	0.00	0.27	4.52	0.00	0.50
306	4.52	0.00	0.19	4.52	0.00	0.17	4.52	0.00	0.30	4.52	0.00	0.55

307	4.52	0.00	0.22	4.52	0.00	0.17	4.52	0.00	0.31	4.52	0.00	0.56
308	4.52	0.00	0.29	4.52	0.00	0.14	4.52	0.00	0.36	4.52	0.00	0.52
309	4.52	0.00	0.38	4.52	0.00	0.09	4.52	0.00	0.46	4.52	0.04	0.44
310	4.52	0.00	0.26	4.52	0.00	0.01	4.52	0.00	0.33	4.52	0.08	0.33
311	4.52	0.00	0.08	4.52	0.00	0.00	4.52	0.00	0.12	4.52	0.08	0.31
312	4.52	0.00	0.03	4.52	0.00	0.00	4.52	0.01	0.07	4.52	0.08	0.30
313	4.52	0.00	0.04	4.52	0.00	0.00	4.52	0.00	0.08	4.52	0.08	0.31
314	4.52	0.00	0.05	4.52	0.00	0.03	4.52	0.00	0.10	4.52	0.07	0.35
315	4.52	0.00	0.05	4.52	0.00	0.05	4.52	0.00	0.11	4.52	0.04	0.37
316	4.52	0.00	0.06	4.52	0.00	0.05	4.52	0.00	0.12	4.52	0.04	0.39
317	4.52	0.00	0.08	4.52	0.00	0.05	4.52	0.00	0.13	4.52	0.05	0.40
318	4.52	0.00	0.12	4.52	0.00	0.03	4.52	0.00	0.18	4.52	0.08	0.38
319	4.52	0.00	0.18	4.52	0.00	0.00	4.52	0.00	0.24	4.52	0.08	0.33
320	4.52	0.00	0.15	4.52	0.01	-0.01	4.52	0.00	0.21	4.52	0.08	0.31
321	4.52	0.00	0.06	4.52	0.01	-0.01	4.52	0.00	0.12	4.52	0.08	0.29
322	4.52	0.00	0.00	4.52	0.01	-0.01	4.52	0.01	0.05	4.52	0.08	0.31
323	4.52	0.00	0.00	4.52	0.01	-0.01	4.52	0.02	0.05	4.52	0.08	0.32
324	4.52	0.00	0.00	4.52	0.00	0.00	4.52	0.01	0.05	4.52	0.08	0.32
325	4.52	0.00	0.00	4.52	0.00	0.00	4.52	0.01	0.05	4.52	0.08	0.32
326	4.52	0.00	0.00	4.52	0.00	0.00	4.52	0.01	0.05	4.52	0.08	0.33
327	4.52	0.00	0.02	4.52	0.00	0.00	4.52	0.01	0.07	4.52	0.08	0.33
328	4.52	0.00	0.05	4.52	0.00	0.00	4.52	0.00	0.10	4.52	0.08	0.33
329	4.52	0.00	0.07	4.52	0.01	-0.01	4.52	0.00	0.12	4.52	0.08	0.32
330	4.52	0.00	0.10	4.52	0.01	-0.01	4.52	0.00	0.15	4.52	0.09	0.30
331	4.52	0.00	0.10	4.52	0.01	-0.01	4.52	0.00	0.15	4.52	0.09	0.29
332	4.52	0.00	0.07	4.52	0.01	-0.01	4.52	0.00	0.12	4.52	0.09	0.31
333	4.52	0.00	0.05	4.52	0.00	0.00	4.52	0.00	0.10	4.52	0.08	0.32
334	4.52	0.00	0.01	4.52	0.00	0.00	4.52	0.01	0.06	4.52	0.08	0.32
335	4.52	0.00	0.00	4.52	0.00	0.00	4.52	0.01	0.05	4.52	0.08	0.32
336	4.52	0.00	0.00	4.52	0.00	0.00	4.52	0.02	0.05	4.52	0.08	0.31
337	4.52	0.00	0.00	4.52	0.00	0.00	4.52	0.02	0.05	4.52	0.08	0.31
338	4.52	0.00	0.00	4.52	0.01	-0.01	4.52	0.02	0.05	4.52	0.08	0.31
339	4.52	0.00	0.00	4.52	0.01	-0.01	4.52	0.01	0.05	4.52	0.08	0.30
340	4.52	0.00	0.06	4.52	0.01	-0.01	4.52	0.00	0.12	4.52	0.08	0.29
341	4.52	0.00	0.15	4.52	0.01	-0.01	4.52	0.00	0.21	4.52	0.08	0.30
342	4.52	0.00	0.18	4.52	0.00	0.00	4.52	0.00	0.24	4.52	0.08	0.33
343	4.52	0.00	0.12	4.52	0.00	0.03	4.52	0.00	0.17	4.52	0.08	0.38
344	4.52	0.00	0.08	4.52	0.00	0.05	4.52	0.00	0.13	4.52	0.05	0.40
345	4.52	0.00	0.06	4.52	0.00	0.05	4.52	0.00	0.12	4.52	0.04	0.39
346	4.52	0.00	0.05	4.52	0.00	0.05	4.52	0.00	0.11	4.52	0.04	0.37
347	4.52	0.00	0.05	4.52	0.00	0.03	4.52	0.00	0.10	4.52	0.07	0.34
348	4.52	0.00	0.03	4.52	0.00	0.00	4.52	0.00	0.07	4.52	0.08	0.31
349	4.52	0.00	0.00	4.52	0.00	0.00	4.52	0.01	0.05	4.52	0.08	0.30
350	4.52	0.00	0.08	4.52	0.00	0.00	4.52	0.00	0.12	4.52	0.08	0.30
351	4.52	0.00	0.26	4.52	0.00	0.01	4.52	0.00	0.33	4.52	0.08	0.33
352	4.52	0.00	0.38	4.52	0.00	0.09	4.52	0.00	0.46	4.52	0.05	0.44
353	4.52	0.00	0.29	4.52	0.00	0.14	4.52	0.00	0.36	4.52	0.00	0.52
354	4.52	0.00	0.22	4.52	0.00	0.17	4.52	0.00	0.31	4.52	0.00	0.56
355	4.52	0.00	0.19	4.52	0.00	0.17	4.52	0.00	0.30	4.52	0.00	0.55
356	4.52	0.00	0.19	4.52	0.00	0.18	4.52	0.00	0.27	4.52	0.00	0.50
357	4.52	0.00	0.18	4.52	0.00	0.18	4.52	0.00	0.27	4.52	0.00	0.43
358	4.52	0.00	0.17	4.52	0.00	0.18	4.52	0.00	0.25	4.52	0.00	0.36
359	4.52	0.00	0.18	4.52	0.00	0.17	4.52	0.00	0.18	4.52	0.00	0.29
360	4.52	0.00	0.36	4.52	0.00	0.17	4.52	0.00	0.15	4.52	0.00	0.23
361	4.52	0.00	0.37	4.52	0.00	0.21	4.52	0.00	0.18	4.52	0.00	0.29
362	4.52	0.00	0.25	4.52	0.00	0.20	4.52	0.00	0.26	4.52	0.00	0.35
363	4.52	0.00	0.19	4.52	0.00	0.21	4.52	0.00	0.29	4.52	0.00	0.41
364	4.52	0.00	0.19	4.52	0.00	0.20	4.52	0.00	0.28	4.52	0.00	0.46
365	4.52	0.00	0.19	4.52	0.00	0.20	4.52	0.00	0.26	4.52	0.00	0.50
366	4.52	0.00	0.19	4.52	0.00	0.20	4.52	0.00	0.28	4.52	0.00	0.54
367	4.52	0.00	0.22	4.52	0.00	0.21	4.52	0.00	0.30	4.52	0.00	0.56
368	4.52	0.00	0.28	4.52	0.00	0.20	4.52	0.00	0.35	4.52	0.00	0.55
369	4.52	0.00	0.44	4.52	0.00	0.15	4.52	0.00	0.49	4.52	0.03	0.47
370	4.52	0.00	0.50	4.52	0.00	0.01	4.52	0.00	0.55	4.52	0.07	0.32
371	4.52	0.00	0.18	4.52	0.01	-0.01	4.52	0.01	0.23	4.52	0.07	0.27
372	4.52	0.00	0.00	4.52	0.01	-0.01	4.52	0.01	0.05	4.52	0.07	0.28
373	4.52	0.00	0.02	4.52	0.00	0.02	4.52	0.00	0.07	4.52	0.07	0.29
374	4.52	0.00	0.04	4.52	0.00	0.06	4.52	0.00	0.09	4.52	0.03	0.34
375	4.52	0.00	0.05	4.52	0.00	0.08	4.52	0.00	0.10	4.52	0.01	0.39
376	4.52	0.00	0.06	4.52	0.00	0.09	4.52	0.00	0.12	4.52	0.02	0.43
377	4.52	0.00	0.08	4.52	0.00	0.10	4.52	0.00	0.13	4.52	0.02	0.46
378	4.52	0.00	0.12	4.52	0.00	0.10	4.52	0.00	0.18	4.52	0.03	0.45
379	4.52	0.00	0.28	4.52	0.00	0.05	4.52	0.00	0.33	4.52	0.08	0.37
380	4.52	0.00	0.30	4.52	0.01	-0.01	4.52	0.00	0.36	4.52	0.08	0.29
381	4.52	0.00	0.20	4.52	0.01	-0.01	4.52	0.00	0.23	4.52	0.08	0.26
382	4.52	0.00	0.06	4.52	0.01	-0.01	4.52	0.01	0.10	4.52	0.08	0.27
383	4.52	0.00	0.00	4.52	0.00	0.00	4.52	0.01	0.05	4.52	0.08	0.28
384	4.52	0.00	0.00	4.52	0.00	0.00	4.52	0.01	0.05	4.52	0.07	0.29

385	4.52	0.00	0.00	4.52	0.00	0.00	4.52	0.01	0.05	4.52	0.07	0.29
386	4.52	0.00	0.01	4.52	0.00	0.03	4.52	0.01	0.05	4.52	0.05	0.33
387	4.52	0.00	0.03	4.52	0.00	0.04	4.52	0.00	0.08	4.52	0.04	0.35
388	4.52	0.00	0.05	4.52	0.00	0.04	4.52	0.00	0.10	4.52	0.07	0.35
389	4.52	0.00	0.16	4.52	0.00	0.00	4.52	0.00	0.21	4.52	0.08	0.30
390	4.52	0.00	0.24	4.52	0.01	-0.01	4.52	0.00	0.27	4.52	0.08	0.28
391	4.52	0.00	0.24	4.52	0.01	-0.01	4.52	0.00	0.27	4.52	0.08	0.27
392	4.52	0.00	0.16	4.52	0.01	-0.01	4.52	0.00	0.21	4.52	0.08	0.30
393	4.52	0.00	0.05	4.52	0.00	0.04	4.52	0.00	0.10	4.52	0.07	0.34
394	4.52	0.00	0.03	4.52	0.00	0.04	4.52	0.00	0.07	4.52	0.04	0.35
395	4.52	0.00	0.01	4.52	0.00	0.03	4.52	0.01	0.05	4.52	0.06	0.33
396	4.52	0.00	0.00	4.52	0.00	0.00	4.52	0.01	0.05	4.52	0.07	0.29
397	4.52	0.00	0.00	4.52	0.00	0.00	4.52	0.02	0.04	4.52	0.07	0.28
398	4.52	0.00	0.00	4.52	0.00	0.00	4.52	0.01	0.05	4.52	0.07	0.29
399	4.52	0.00	0.06	4.52	0.01	-0.01	4.52	0.01	0.10	4.52	0.08	0.28
400	4.52	0.00	0.20	4.52	0.01	-0.01	4.52	0.00	0.23	4.52	0.08	0.25
401	4.52	0.00	0.30	4.52	0.01	-0.01	4.52	0.00	0.36	4.52	0.08	0.29
402	4.52	0.00	0.28	4.52	0.00	0.04	4.52	0.00	0.33	4.52	0.08	0.36
403	4.52	0.00	0.12	4.52	0.00	0.10	4.52	0.00	0.18	4.52	0.03	0.45
404	4.52	0.00	0.08	4.52	0.00	0.10	4.52	0.00	0.13	4.52	0.02	0.46
405	4.52	0.00	0.06	4.52	0.00	0.09	4.52	0.00	0.12	4.52	0.02	0.43
406	4.52	0.00	0.05	4.52	0.00	0.08	4.52	0.00	0.10	4.52	0.01	0.39
407	4.52	0.00	0.04	4.52	0.00	0.06	4.52	0.00	0.09	4.52	0.04	0.34
408	4.52	0.00	0.02	4.52	0.00	0.01	4.52	0.00	0.06	4.52	0.07	0.29
409	4.52	0.00	0.00	4.52	0.01	-0.01	4.52	0.01	0.05	4.52	0.07	0.27
410	4.52	0.00	0.18	4.52	0.01	-0.01	4.52	0.01	0.23	4.52	0.07	0.27
411	4.52	0.00	0.50	4.52	0.00	0.00	4.52	0.00	0.54	4.52	0.07	0.31
412	4.52	0.00	0.44	4.52	0.00	0.15	4.52	0.00	0.49	4.52	0.03	0.47
413	4.52	0.00	0.28	4.52	0.00	0.20	4.52	0.00	0.35	4.52	0.00	0.55
414	4.52	0.00	0.22	4.52	0.00	0.21	4.52	0.00	0.30	4.52	0.00	0.56
415	4.52	0.00	0.19	4.52	0.00	0.20	4.52	0.00	0.28	4.52	0.00	0.54
416	4.52	0.00	0.19	4.52	0.00	0.20	4.52	0.00	0.26	4.52	0.00	0.50
417	4.52	0.00	0.19	4.52	0.00	0.20	4.52	0.00	0.28	4.52	0.00	0.46
418	4.52	0.00	0.19	4.52	0.00	0.21	4.52	0.00	0.29	4.52	0.00	0.41
419	4.52	0.00	0.25	4.52	0.00	0.20	4.52	0.00	0.26	4.52	0.00	0.35
420	4.52	0.00	0.37	4.52	0.00	0.21	4.52	0.00	0.18	4.52	0.00	0.29
421	4.52	0.00	0.36	4.52	0.00	0.29	4.52	0.00	0.20	4.52	0.00	0.32
422	4.52	0.00	0.30	4.52	0.00	0.29	4.52	0.00	0.30	4.52	0.00	0.35
423	4.52	0.00	0.25	4.52	0.00	0.30	4.52	0.00	0.32	4.52	0.00	0.39
424	4.52	0.00	0.21	4.52	0.00	0.25	4.52	0.00	0.29	4.52	0.00	0.40
425	4.52	0.00	0.19	4.52	0.00	0.22	4.52	0.00	0.26	4.52	0.00	0.41
426	4.52	0.00	0.19	4.52	0.00	0.23	4.52	0.00	0.27	4.52	0.00	0.42
427	4.52	0.00	0.22	4.52	0.00	0.28	4.52	0.00	0.28	4.52	0.00	0.45
428	4.52	0.00	0.27	4.52	0.00	0.37	4.52	0.00	0.33	4.52	0.00	0.51
429	4.52	0.00	0.45	4.52	0.00	0.36	4.52	0.00	0.49	4.52	0.00	0.51
430	4.52	0.00	0.65	4.52	0.01	-0.01	4.52	0.00	0.70	4.52	0.05	0.18
431	4.52	0.00	0.27	4.52	0.02	-0.02	4.52	0.00	0.31	4.52	0.06	0.15
432	4.52	0.00	0.00	4.52	0.01	-0.01	4.52	0.01	0.04	4.52	0.05	0.15
433	4.52	0.00	0.02	4.52	0.00	0.01	4.52	0.00	0.06	4.52	0.04	0.17
434	4.52	0.00	0.04	4.52	0.00	0.10	4.52	0.00	0.08	4.52	0.00	0.26
435	4.52	0.00	0.06	4.52	0.00	0.11	4.52	0.00	0.10	4.52	0.00	0.29
436	4.52	0.00	0.07	4.52	0.00	0.13	4.52	0.00	0.11	4.52	0.00	0.33
437	4.52	0.00	0.08	4.52	0.00	0.18	4.52	0.00	0.13	4.52	0.00	0.36
438	4.52	0.00	0.13	4.52	0.00	0.27	4.52	0.00	0.18	4.52	0.00	0.42
439	4.52	0.00	0.32	4.52	0.00	0.26	4.52	0.00	0.35	4.52	0.00	0.41
440	4.52	0.00	0.49	4.52	0.01	-0.01	4.52	0.00	0.53	4.52	0.05	0.17
441	4.52	0.00	0.30	4.52	0.02	-0.02	4.52	0.00	0.33	4.52	0.06	0.15
442	4.52	0.00	0.09	4.52	0.01	0.09	4.52	0.00	0.12	4.52	0.04	0.21
443	4.52	0.00	0.00	4.52	0.00	0.09	4.52	0.01	0.04	4.52	0.03	0.22
444	4.52	0.00	0.00	4.52	0.00	0.00	4.52	0.01	0.03	4.52	0.04	0.15
445	4.52	0.00	0.00	4.52	0.00	0.04	4.52	0.01	0.04	4.52	0.03	0.19
446	4.52	0.00	0.02	4.52	0.00	0.07	4.52	0.00	0.05	4.52	0.00	0.22
447	4.52	0.00	0.03	4.52	0.00	0.10	4.52	0.00	0.07	4.52	0.00	0.25
448	4.52	0.00	0.05	4.52	0.00	0.18	4.52	0.00	0.10	4.52	0.00	0.32
449	4.52	0.00	0.18	4.52	0.00	0.17	4.52	0.00	0.22	4.52	0.03	0.31
450	4.52	0.00	0.35	4.52	0.02	-0.02	4.52	0.00	0.38	4.52	0.06	0.15
451	4.52	0.00	0.35	4.52	0.02	-0.02	4.52	0.00	0.38	4.52	0.06	0.15
452	4.52	0.00	0.18	4.52	0.00	0.17	4.52	0.00	0.22	4.52	0.03	0.31
453	4.52	0.00	0.05	4.52	0.00	0.18	4.52	0.00	0.09	4.52	0.00	0.32
454	4.52	0.00	0.03	4.52	0.00	0.10	4.52	0.00	0.07	4.52	0.00	0.25
455	4.52	0.00	0.02	4.52	0.00	0.07	4.52	0.00	0.05	4.52	0.00	0.22
456	4.52	0.00	0.00	4.52	0.00	0.04	4.52	0.01	0.04	4.52	0.03	0.19
457	4.52	0.00	0.00	4.52	0.00	0.00	4.52	0.01	0.03	4.52	0.04	0.15
458	4.52	0.00	0.00	4.52	0.00	0.09	4.52	0.01	0.04	4.52	0.03	0.21
459	4.52	0.00	0.08	4.52	0.00	0.09	4.52	0.00	0.12	4.52	0.04	0.21
460	4.52	0.00	0.30	4.52	0.02	-0.02	4.52	0.00	0.33	4.52	0.06	0.15
461	4.52	0.00	0.49	4.52	0.01	-0.01	4.52	0.00	0.53	4.52	0.06	0.17
462	4.52	0.00	0.31	4.52	0.00	0.26	4.52	0.00	0.35	4.52	0.00	0.41

463	4.52	0.00	0.12	4.52	0.00	0.27	4.52	0.00	0.18	4.52	0.00	0.42
464	4.52	0.00	0.08	4.52	0.00	0.18	4.52	0.00	0.13	4.52	0.00	0.36
465	4.52	0.00	0.06	4.52	0.00	0.13	4.52	0.00	0.11	4.52	0.00	0.33
466	4.52	0.00	0.06	4.52	0.00	0.11	4.52	0.00	0.09	4.52	0.00	0.29
467	4.52	0.00	0.04	4.52	0.00	0.09	4.52	0.00	0.08	4.52	0.00	0.26
468	4.52	0.00	0.02	4.52	0.00	0.00	4.52	0.00	0.05	4.52	0.04	0.17
469	4.52	0.00	0.00	4.52	0.01	-0.01	4.52	0.01	0.04	4.52	0.05	0.15
470	4.52	0.00	0.27	4.52	0.02	-0.02	4.52	0.00	0.31	4.52	0.06	0.15
471	4.52	0.00	0.65	4.52	0.01	-0.01	4.52	0.00	0.70	4.52	0.05	0.18
472	4.52	0.00	0.45	4.52	0.00	0.36	4.52	0.00	0.49	4.52	0.00	0.51
473	4.52	0.00	0.27	4.52	0.00	0.37	4.52	0.00	0.33	4.52	0.00	0.51
474	4.52	0.00	0.22	4.52	0.00	0.28	4.52	0.00	0.27	4.52	0.00	0.45
475	4.52	0.00	0.19	4.52	0.00	0.23	4.52	0.00	0.26	4.52	0.00	0.42
476	4.52	0.00	0.19	4.52	0.00	0.22	4.52	0.00	0.26	4.52	0.00	0.41
477	4.52	0.00	0.21	4.52	0.00	0.25	4.52	0.00	0.29	4.52	0.00	0.40
478	4.52	0.00	0.25	4.52	0.00	0.30	4.52	0.00	0.32	4.52	0.00	0.39
479	4.52	0.00	0.30	4.52	0.00	0.29	4.52	0.00	0.30	4.52	0.00	0.35
480	4.52	0.00	0.36	4.52	0.00	0.29	4.52	0.00	0.20	4.52	0.00	0.32

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

MACROGUSCIO FONDAZIONE

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
8	SLU FON con SISMAX P
9	SLU FON con SISMAY P

DATI:

tensione di snervamento acciaio (fyk)	4500	daN/cm2
coefficiente sicurezza acciaio	1.15	
deformazione ultima acciaio	1.97	per mille
deformazione ultima cls	3.5	per mille
rapporto rottura/snervamento (k)	1	
resistenza cilindrica cls (fck)	249	daN/cm2
coefficiente sicurezza cls	1.5	
coefficiente riduttivo (alfa)	0.85	
copriferro inferiore (asse armatura)	3	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.

Per gli elementi non dissipativi la permanenza in campo elastico è ottenuta limitando la deformazione dell'acciaio alla deformazione di snervamento (1.97 per mille) e quella del calcestruzzo al 2 per mille.

AREE ARMATURA (cm2 al metro)

	INF. ORIZZ.			INF. VERTIC.			SUP. ORIZZ.			SUP. VERTIC.					
GUSCI	area	EpsC	EpsF	area	EpsC	EpsF	area	EpsC	EpsF	area	EpsC	EpsF	tauX	tauY	tauT
481	4.52	0.11	0.55	4.52	0.12	0.60	4.52	0.04	0.22	4.52	0.00	0.02			
482	4.52	0.11	0.53	4.52	0.11	0.57	4.52	0.06	0.28	4.52	0.07	0.34			
483	4.52	0.10	0.50	4.52	0.11	0.55	4.52	0.07	0.34	4.52	0.07	0.37			
484	4.52	0.09	0.47	4.52	0.10	0.52	4.52	0.07	0.34	4.52	0.07	0.36			
485	4.52	0.09	0.44	4.52	0.09	0.48	4.52	0.07	0.33	4.52	0.07	0.34			
486	4.52	0.08	0.41	4.52	0.09	0.44	4.52	0.06	0.31	4.52	0.06	0.32			
487	4.52	0.07	0.38	4.52	0.08	0.40	4.52	0.06	0.29	4.52	0.07	0.33			
488	4.52	0.06	0.33	4.52	0.08	0.39	4.52	0.05	0.26	4.52	0.07	0.36			
489	4.52	0.05	0.25	4.52	0.07	0.36	4.52	0.04	0.23	4.52	0.07	0.34			
490	4.52	0.04	0.18	4.52	0.07	0.38	4.52	0.04	0.20	4.52	0.04	0.19			

491	4.52	0.11	0.55	4.52	0.07	0.36	4.52	0.04	0.21	4.52	0.00	0.00
492	4.52	0.11	0.53	4.52	0.06	0.32	4.52	0.06	0.28	4.52	0.00	0.01
493	4.52	0.10	0.50	4.52	0.06	0.32	4.52	0.07	0.34	4.52	0.01	0.05
494	4.52	0.09	0.47	4.52	0.06	0.30	4.52	0.07	0.34	4.52	0.01	0.06
495	4.52	0.09	0.44	4.52	0.05	0.27	4.52	0.07	0.33	4.52	0.01	0.08
496	4.52	0.08	0.41	4.52	0.05	0.25	4.52	0.06	0.31	4.52	0.02	0.10
497	4.52	0.07	0.38	4.52	0.04	0.22	4.52	0.06	0.29	4.52	0.03	0.14
498	4.52	0.06	0.33	4.52	0.04	0.22	4.52	0.05	0.26	4.52	0.04	0.20
499	4.52	0.05	0.25	4.52	0.04	0.21	4.52	0.04	0.23	4.52	0.04	0.19
500	4.52	0.03	0.17	4.52	0.06	0.28	4.52	0.03	0.17	4.52	0.01	0.07
501	4.52	0.06	0.31	4.52	0.03	0.16	4.52	0.05	0.25	4.52	0.02	0.12
502	4.52	0.04	0.23	4.52	0.04	0.19	4.52	0.07	0.36	4.52	0.02	0.11
503	4.52	0.03	0.14	4.52	0.04	0.21	4.52	0.05	0.24	4.52	0.02	0.09
504	4.52	0.02	0.10	4.52	0.04	0.20	4.52	0.02	0.08	4.52	0.01	0.07
505	4.52	0.02	0.11	4.52	0.03	0.17	4.52	0.00	0.00	4.52	0.01	0.06
506	4.52	0.03	0.13	4.52	0.03	0.15	4.52	0.00	0.00	4.52	0.01	0.05
507	4.52	0.03	0.16	4.52	0.03	0.15	4.52	0.00	0.00	4.52	0.01	0.05
508	4.52	0.04	0.18	4.52	0.03	0.15	4.52	0.00	0.00	4.52	0.01	0.04
509	4.52	0.04	0.18	4.52	0.03	0.15	4.52	0.00	0.00	4.52	0.01	0.03
510	4.52	0.03	0.14	4.52	0.03	0.14	4.52	0.00	0.00	4.52	0.00	0.00
511	4.52	0.02	0.10	4.52	0.02	0.12	4.52	0.00	0.00	4.52	0.00	0.00
512	4.52	0.03	0.14	4.52	0.02	0.10	4.52	0.00	0.00	4.52	0.00	0.01
513	4.52	0.03	0.14	4.52	0.02	0.09	4.52	0.00	0.00	4.52	0.01	0.03
514	4.52	0.02	0.11	4.52	0.02	0.08	4.52	0.00	0.00	4.52	0.00	0.02
515	4.52	0.02	0.08	4.52	0.01	0.07	4.52	0.00	0.00	4.52	0.00	0.01
516	4.52	0.02	0.11	4.52	0.02	0.09	4.52	0.00	0.00	4.52	0.00	0.02
517	4.52	0.03	0.14	4.52	0.02	0.11	4.52	0.00	0.00	4.52	0.01	0.03
518	4.52	0.03	0.17	4.52	0.03	0.13	4.52	0.00	0.00	4.52	0.01	0.04
519	4.52	0.04	0.18	4.52	0.03	0.14	4.52	0.00	0.00	4.52	0.00	0.02
520	4.52	0.03	0.13	4.52	0.03	0.13	4.52	0.00	0.00	4.52	0.00	0.00
521	4.52	0.02	0.12	4.52	0.02	0.11	4.52	0.00	0.00	4.52	0.00	0.00
522	4.52	0.03	0.16	4.52	0.02	0.12	4.52	0.00	0.00	4.52	0.00	0.02
523	4.52	0.03	0.15	4.52	0.02	0.11	4.52	0.00	0.00	4.52	0.01	0.03
524	4.52	0.02	0.13	4.52	0.02	0.09	4.52	0.00	0.00	4.52	0.00	0.02
525	4.52	0.02	0.09	4.52	0.01	0.07	4.52	0.00	0.00	4.52	0.00	0.01
526	4.52	0.02	0.10	4.52	0.02	0.08	4.52	0.00	0.00	4.52	0.00	0.02
527	4.52	0.03	0.14	4.52	0.02	0.10	4.52	0.00	0.00	4.52	0.01	0.03
528	4.52	0.03	0.16	4.52	0.02	0.12	4.52	0.00	0.00	4.52	0.01	0.03
529	4.52	0.03	0.17	4.52	0.03	0.13	4.52	0.00	0.00	4.52	0.00	0.02
530	4.52	0.02	0.13	4.52	0.02	0.12	4.52	0.00	0.00	4.52	0.00	0.00
531	4.52	0.02	0.13	4.52	0.02	0.12	4.52	0.00	0.00	4.52	0.00	0.00
532	4.52	0.03	0.17	4.52	0.03	0.13	4.52	0.00	0.00	4.52	0.00	0.02
533	4.52	0.03	0.16	4.52	0.02	0.12	4.52	0.00	0.00	4.52	0.01	0.03
534	4.52	0.03	0.13	4.52	0.02	0.10	4.52	0.00	0.00	4.52	0.01	0.03
535	4.52	0.02	0.10	4.52	0.02	0.08	4.52	0.00	0.00	4.52	0.00	0.02
536	4.52	0.02	0.09	4.52	0.01	0.07	4.52	0.00	0.00	4.52	0.00	0.01
537	4.52	0.02	0.13	4.52	0.02	0.09	4.52	0.00	0.00	4.52	0.00	0.02
538	4.52	0.03	0.15	4.52	0.02	0.11	4.52	0.00	0.00	4.52	0.01	0.03
539	4.52	0.03	0.16	4.52	0.02	0.12	4.52	0.00	0.00	4.52	0.00	0.01
540	4.52	0.02	0.12	4.52	0.02	0.11	4.52	0.00	0.00	4.52	0.00	0.00
541	4.52	0.03	0.13	4.52	0.03	0.13	4.52	0.00	0.00	4.52	0.00	0.00
542	4.52	0.04	0.18	4.52	0.03	0.14	4.52	0.00	0.00	4.52	0.00	0.02
543	4.52	0.03	0.17	4.52	0.03	0.13	4.52	0.00	0.00	4.52	0.01	0.04
544	4.52	0.03	0.14	4.52	0.02	0.11	4.52	0.00	0.00	4.52	0.01	0.03
545	4.52	0.02	0.11	4.52	0.02	0.09	4.52	0.00	0.00	4.52	0.00	0.02
546	4.52	0.02	0.08	4.52	0.01	0.07	4.52	0.00	0.00	4.52	0.00	0.01
547	4.52	0.02	0.11	4.52	0.02	0.08	4.52	0.00	0.00	4.52	0.00	0.02
548	4.52	0.03	0.14	4.52	0.02	0.09	4.52	0.00	0.00	4.52	0.01	0.03
549	4.52	0.03	0.14	4.52	0.02	0.10	4.52	0.00	0.00	4.52	0.00	0.01
550	4.52	0.02	0.10	4.52	0.02	0.12	4.52	0.00	0.00	4.52	0.00	0.00
551	4.52	0.03	0.14	4.52	0.03	0.14	4.52	0.00	0.00	4.52	0.00	0.01
552	4.52	0.04	0.19	4.52	0.03	0.15	4.52	0.00	0.00	4.52	0.01	0.03
553	4.52	0.04	0.18	4.52	0.03	0.15	4.52	0.00	0.00	4.52	0.01	0.05
554	4.52	0.03	0.16	4.52	0.03	0.15	4.52	0.00	0.00	4.52	0.01	0.05
555	4.52	0.03	0.13	4.52	0.03	0.15	4.52	0.00	0.00	4.52	0.01	0.05
556	4.52	0.02	0.11	4.52	0.03	0.17	4.52	0.00	0.00	4.52	0.01	0.06
557	4.52	0.02	0.10	4.52	0.04	0.20	4.52	0.02	0.08	4.52	0.01	0.07
558	4.52	0.03	0.14	4.52	0.04	0.21	4.52	0.05	0.24	4.52	0.02	0.09
559	4.52	0.04	0.23	4.52	0.04	0.19	4.52	0.07	0.36	4.52	0.02	0.11
560	4.52	0.06	0.31	4.52	0.03	0.16	4.52	0.05	0.25	4.52	0.02	0.12
561	4.52	0.03	0.14	4.52	0.03	0.13	4.52	0.04	0.19	4.52	0.03	0.13
562	4.52	0.02	0.12	4.52	0.03	0.13	4.52	0.03	0.14	4.52	0.03	0.13
563	4.52	0.27	1.38	4.52	0.10	0.53	4.52	0.00	0.00	4.52	0.03	0.14
564	4.52	0.09	0.44	4.52	0.10	0.52	4.52	0.08	0.41	4.52	0.03	0.13
565	4.52	0.30	1.53	4.52	0.10	0.52	4.52	0.00	0.00	4.52	0.08	0.39
566	4.52	0.11	0.55	4.52	0.10	0.53	4.52	0.10	0.48	4.52	0.08	0.43
567	4.52	0.31	1.58	4.52	0.11	0.55	4.52	0.00	0.00	4.52	0.08	0.39
568	4.52	0.13	0.65	4.52	0.12	0.60	4.52	0.10	0.51	4.52	0.08	0.39

569	4.52	0.30	1.49	4.52	0.10	0.53	4.52	0.00	0.00	4.52	0.07	0.36
570	4.52	0.13	0.66	4.52	0.11	0.58	4.52	0.09	0.44	4.52	0.07	0.36
571	4.52	0.27	1.35	4.52	0.10	0.49	4.52	0.01	0.03	4.52	0.07	0.34
572	4.52	0.12	0.63	4.52	0.10	0.53	4.52	0.08	0.41	4.52	0.07	0.35
573	4.52	0.24	1.21	4.52	0.09	0.45	4.52	0.02	0.08	4.52	0.07	0.34
574	4.52	0.12	0.59	4.52	0.10	0.49	4.52	0.08	0.42	4.52	0.07	0.35
575	4.52	0.21	1.04	4.52	0.08	0.41	4.52	0.03	0.14	4.52	0.07	0.36
576	4.52	0.10	0.52	4.52	0.09	0.45	4.52	0.10	0.50	4.52	0.07	0.37
577	4.52	0.17	0.84	4.52	0.08	0.41	4.52	0.04	0.22	4.52	0.08	0.39
578	4.52	0.09	0.44	4.52	0.09	0.47	4.52	0.11	0.54	4.52	0.09	0.43
579	4.52	0.09	0.44	4.52	0.09	0.46	4.52	0.08	0.41	4.52	0.01	0.05
580	4.52	0.27	1.38	4.52	0.07	0.35	4.52	0.00	0.00	4.52	0.00	0.00
581	4.52	0.11	0.55	4.52	0.10	0.52	4.52	0.10	0.48	4.52	0.08	0.42
582	4.52	0.30	1.53	4.52	0.06	0.32	4.52	0.00	0.00	4.52	0.03	0.16
583	4.52	0.13	0.65	4.52	0.12	0.60	4.52	0.10	0.51	4.52	0.08	0.39
584	4.52	0.31	1.58	4.52	0.07	0.35	4.52	0.00	0.00	4.52	0.03	0.13
585	4.52	0.13	0.66	4.52	0.11	0.58	4.52	0.09	0.44	4.52	0.07	0.34
586	4.52	0.30	1.49	4.52	0.07	0.33	4.52	0.00	0.00	4.52	0.03	0.14
587	4.52	0.12	0.63	4.52	0.10	0.53	4.52	0.08	0.41	4.52	0.06	0.33
588	4.52	0.27	1.35	4.52	0.06	0.30	4.52	0.01	0.04	4.52	0.03	0.16
589	4.52	0.12	0.59	4.52	0.10	0.49	4.52	0.08	0.42	4.52	0.07	0.33
590	4.52	0.24	1.21	4.52	0.05	0.27	4.52	0.02	0.08	4.52	0.04	0.18
591	4.52	0.10	0.52	4.52	0.09	0.45	4.52	0.10	0.50	4.52	0.07	0.36
592	4.52	0.21	1.04	4.52	0.05	0.25	4.52	0.03	0.14	4.52	0.04	0.20
593	4.52	0.09	0.44	4.52	0.09	0.47	4.52	0.11	0.54	4.52	0.09	0.43
594	4.52	0.17	0.84	4.52	0.05	0.26	4.52	0.04	0.22	4.52	0.05	0.24
595	4.52	0.01	0.03	4.52	0.07	0.38	4.52	0.08	0.41	4.52	0.05	0.23
596	4.52	0.01	0.07	4.52	0.07	0.34	4.52	0.02	0.12	4.52	0.03	0.15
597	4.52	0.02	0.11	4.52	0.06	0.30	4.52	0.00	0.00	4.52	0.01	0.06
598	4.52	0.03	0.15	4.52	0.06	0.30	4.52	0.00	0.00	4.52	0.01	0.04
599	4.52	0.04	0.19	4.52	0.07	0.33	4.52	0.00	0.00	4.52	0.01	0.05
600	4.52	0.04	0.22	4.52	0.08	0.39	4.52	0.00	0.00	4.52	0.01	0.06
601	4.52	0.04	0.22	4.52	0.09	0.44	4.52	0.00	0.00	4.52	0.00	0.00
602	4.52	0.03	0.18	4.52	0.08	0.42	4.52	0.01	0.06	4.52	0.00	0.00
603	4.52	0.03	0.14	4.52	0.07	0.36	4.52	0.01	0.06	4.52	0.00	0.00
604	4.52	0.04	0.18	4.52	0.08	0.39	4.52	0.00	0.00	4.52	0.00	0.00
605	4.52	0.03	0.18	4.52	0.07	0.34	4.52	0.00	0.00	4.52	0.00	0.03
606	4.52	0.03	0.14	4.52	0.06	0.28	4.52	0.00	0.00	4.52	0.00	0.00
607	4.52	0.02	0.11	4.52	0.05	0.24	4.52	0.00	0.00	4.52	0.00	0.00
608	4.52	0.03	0.14	4.52	0.06	0.28	4.52	0.00	0.00	4.52	0.00	0.00
609	4.52	0.04	0.18	4.52	0.07	0.33	4.52	0.00	0.00	4.52	0.00	0.01
610	4.52	0.04	0.22	4.52	0.08	0.39	4.52	0.00	0.00	4.52	0.01	0.04
611	4.52	0.04	0.22	4.52	0.09	0.46	4.52	0.00	0.00	4.52	0.00	0.00
612	4.52	0.03	0.17	4.52	0.09	0.43	4.52	0.01	0.06	4.52	0.00	0.00
613	4.52	0.03	0.15	4.52	0.08	0.40	4.52	0.01	0.06	4.52	0.00	0.00
614	4.52	0.04	0.20	4.52	0.08	0.43	4.52	0.00	0.00	4.52	0.00	0.00
615	4.52	0.04	0.20	4.52	0.07	0.37	4.52	0.00	0.00	4.52	0.01	0.03
616	4.52	0.03	0.16	4.52	0.06	0.31	4.52	0.00	0.00	4.52	0.00	0.00
617	4.52	0.02	0.12	4.52	0.05	0.26	4.52	0.00	0.00	4.52	0.00	0.00
618	4.52	0.03	0.14	4.52	0.05	0.27	4.52	0.00	0.00	4.52	0.00	0.00
619	4.52	0.03	0.18	4.52	0.06	0.32	4.52	0.00	0.00	4.52	0.00	0.00
620	4.52	0.04	0.21	4.52	0.08	0.38	4.52	0.00	0.00	4.52	0.01	0.03
621	4.52	0.04	0.21	4.52	0.09	0.45	4.52	0.00	0.00	4.52	0.00	0.00
622	4.52	0.03	0.16	4.52	0.08	0.42	4.52	0.01	0.06	4.52	0.00	0.00
623	4.52	0.03	0.16	4.52	0.08	0.41	4.52	0.01	0.06	4.52	0.00	0.00
624	4.52	0.04	0.21	4.52	0.09	0.44	4.52	0.00	0.00	4.52	0.00	0.00
625	4.52	0.04	0.21	4.52	0.08	0.38	4.52	0.00	0.00	4.52	0.01	0.04
626	4.52	0.03	0.18	4.52	0.06	0.32	4.52	0.00	0.00	4.52	0.00	0.01
627	4.52	0.03	0.13	4.52	0.05	0.27	4.52	0.00	0.00	4.52	0.00	0.00
628	4.52	0.02	0.12	4.52	0.05	0.26	4.52	0.00	0.00	4.52	0.00	0.00
629	4.52	0.03	0.16	4.52	0.06	0.31	4.52	0.00	0.00	4.52	0.00	0.00
630	4.52	0.04	0.20	4.52	0.07	0.37	4.52	0.00	0.00	4.52	0.00	0.02
631	4.52	0.04	0.20	4.52	0.08	0.43	4.52	0.00	0.00	4.52	0.00	0.00
632	4.52	0.03	0.15	4.52	0.08	0.40	4.52	0.01	0.06	4.52	0.00	0.00
633	4.52	0.03	0.17	4.52	0.08	0.43	4.52	0.01	0.07	4.52	0.00	0.00
634	4.52	0.04	0.22	4.52	0.09	0.46	4.52	0.00	0.01	4.52	0.00	0.00
635	4.52	0.04	0.22	4.52	0.08	0.39	4.52	0.00	0.00	4.52	0.01	0.04
636	4.52	0.04	0.18	4.52	0.07	0.33	4.52	0.00	0.00	4.52	0.00	0.02
637	4.52	0.03	0.14	4.52	0.06	0.28	4.52	0.00	0.00	4.52	0.00	0.00
638	4.52	0.02	0.11	4.52	0.05	0.24	4.52	0.00	0.00	4.52	0.00	0.00
639	4.52	0.03	0.14	4.52	0.06	0.28	4.52	0.00	0.00	4.52	0.00	0.00
640	4.52	0.03	0.18	4.52	0.07	0.34	4.52	0.00	0.00	4.52	0.00	0.02
641	4.52	0.04	0.18	4.52	0.08	0.39	4.52	0.00	0.00	4.52	0.00	0.00
642	4.52	0.03	0.14	4.52	0.07	0.36	4.52	0.01	0.05	4.52	0.00	0.00
643	4.52	0.03	0.18	4.52	0.08	0.42	4.52	0.01	0.07	4.52	0.00	0.00
644	4.52	0.04	0.22	4.52	0.09	0.44	4.52	0.00	0.01	4.52	0.00	0.00
645	4.52	0.04	0.22	4.52	0.08	0.39	4.52	0.00	0.00	4.52	0.01	0.06
646	4.52	0.04	0.19	4.52	0.07	0.33	4.52	0.00	0.00	4.52	0.01	0.05

647	4.52	0.03	0.15	4.52	0.06	0.30	4.52	0.00	0.00	4.52	0.01	0.04
648	4.52	0.02	0.11	4.52	0.06	0.30	4.52	0.00	0.00	4.52	0.01	0.06
649	4.52	0.01	0.07	4.52	0.07	0.34	4.52	0.02	0.12	4.52	0.03	0.15
650	4.52	0.00	0.02	4.52	0.07	0.38	4.52	0.08	0.41	4.52	0.05	0.23
651	4.52	0.01	0.03	4.52	0.15	0.77	4.52	0.07	0.37	4.52	0.00	0.00
652	4.52	0.01	0.07	4.52	0.17	0.84	4.52	0.02	0.12	4.52	0.00	0.00
653	4.52	0.02	0.10	4.52	0.17	0.87	4.52	0.00	0.01	4.52	0.00	0.00
654	4.52	0.03	0.13	4.52	0.18	0.90	4.52	0.00	0.00	4.52	0.00	0.00
655	4.52	0.03	0.16	4.52	0.19	0.94	4.52	0.00	0.00	4.52	0.00	0.00
656	4.52	0.04	0.19	4.52	0.20	0.99	4.52	0.00	0.00	4.52	0.00	0.00
657	4.52	0.04	0.19	4.52	0.20	1.03	4.52	0.00	0.00	4.52	0.00	0.00
658	4.52	0.03	0.15	4.52	0.20	1.03	4.52	0.01	0.04	4.52	0.00	0.00
659	4.52	0.02	0.11	4.52	0.20	1.01	4.52	0.01	0.04	4.52	0.00	0.00
660	4.52	0.03	0.14	4.52	0.20	0.99	4.52	0.00	0.00	4.52	0.00	0.00
661	4.52	0.03	0.14	4.52	0.19	0.97	4.52	0.00	0.00	4.52	0.00	0.00
662	4.52	0.02	0.11	4.52	0.18	0.92	4.52	0.00	0.00	4.52	0.00	0.00
663	4.52	0.02	0.08	4.52	0.18	0.90	4.52	0.00	0.00	4.52	0.00	0.00
664	4.52	0.02	0.11	4.52	0.18	0.93	4.52	0.00	0.00	4.52	0.00	0.00
665	4.52	0.03	0.15	4.52	0.19	0.97	4.52	0.00	0.00	4.52	0.00	0.00
666	4.52	0.04	0.18	4.52	0.20	1.03	4.52	0.00	0.00	4.52	0.00	0.00
667	4.52	0.04	0.18	4.52	0.21	1.06	4.52	0.00	0.00	4.52	0.00	0.00
668	4.52	0.03	0.14	4.52	0.21	1.07	4.52	0.01	0.04	4.52	0.00	0.00
669	4.52	0.02	0.12	4.52	0.21	1.05	4.52	0.01	0.04	4.52	0.00	0.00
670	4.52	0.03	0.16	4.52	0.21	1.06	4.52	0.00	0.00	4.52	0.00	0.00
671	4.52	0.03	0.16	4.52	0.20	1.02	4.52	0.00	0.00	4.52	0.00	0.00
672	4.52	0.03	0.13	4.52	0.19	0.97	4.52	0.00	0.00	4.52	0.00	0.00
673	4.52	0.02	0.10	4.52	0.18	0.93	4.52	0.00	0.00	4.52	0.00	0.00
674	4.52	0.02	0.10	4.52	0.19	0.94	4.52	0.00	0.00	4.52	0.00	0.00
675	4.52	0.03	0.14	4.52	0.19	0.98	4.52	0.00	0.00	4.52	0.00	0.00
676	4.52	0.03	0.17	4.52	0.20	1.04	4.52	0.00	0.00	4.52	0.00	0.00
677	4.52	0.03	0.17	4.52	0.21	1.07	4.52	0.00	0.00	4.52	0.00	0.00
678	4.52	0.03	0.13	4.52	0.21	1.08	4.52	0.01	0.04	4.52	0.00	0.00
679	4.52	0.03	0.13	4.52	0.21	1.07	4.52	0.01	0.05	4.52	0.00	0.00
680	4.52	0.03	0.17	4.52	0.21	1.07	4.52	0.00	0.00	4.52	0.00	0.00
681	4.52	0.03	0.17	4.52	0.20	1.03	4.52	0.00	0.00	4.52	0.00	0.00
682	4.52	0.03	0.14	4.52	0.19	0.98	4.52	0.00	0.00	4.52	0.00	0.00
683	4.52	0.02	0.10	4.52	0.19	0.94	4.52	0.00	0.00	4.52	0.00	0.00
684	4.52	0.02	0.10	4.52	0.18	0.93	4.52	0.00	0.00	4.52	0.00	0.00
685	4.52	0.03	0.13	4.52	0.19	0.97	4.52	0.00	0.00	4.52	0.00	0.00
686	4.52	0.03	0.16	4.52	0.20	1.02	4.52	0.00	0.00	4.52	0.00	0.00
687	4.52	0.03	0.16	4.52	0.21	1.06	4.52	0.00	0.00	4.52	0.00	0.00
688	4.52	0.02	0.12	4.52	0.21	1.05	4.52	0.01	0.04	4.52	0.00	0.00
689	4.52	0.03	0.14	4.52	0.21	1.07	4.52	0.01	0.05	4.52	0.00	0.00
690	4.52	0.04	0.18	4.52	0.21	1.06	4.52	0.00	0.01	4.52	0.00	0.00
691	4.52	0.04	0.18	4.52	0.20	1.03	4.52	0.00	0.00	4.52	0.00	0.00
692	4.52	0.03	0.15	4.52	0.19	0.97	4.52	0.00	0.00	4.52	0.00	0.00
693	4.52	0.02	0.11	4.52	0.18	0.93	4.52	0.00	0.00	4.52	0.00	0.00
694	4.52	0.02	0.08	4.52	0.18	0.90	4.52	0.00	0.00	4.52	0.00	0.00
695	4.52	0.02	0.11	4.52	0.18	0.92	4.52	0.00	0.00	4.52	0.00	0.00
696	4.52	0.03	0.14	4.52	0.19	0.97	4.52	0.00	0.00	4.52	0.00	0.00
697	4.52	0.03	0.14	4.52	0.20	0.99	4.52	0.00	0.00	4.52	0.00	0.00
698	4.52	0.02	0.11	4.52	0.20	1.01	4.52	0.01	0.04	4.52	0.00	0.00
699	4.52	0.03	0.15	4.52	0.20	1.03	4.52	0.01	0.05	4.52	0.00	0.00
700	4.52	0.04	0.19	4.52	0.20	1.03	4.52	0.00	0.01	4.52	0.00	0.00
701	4.52	0.04	0.19	4.52	0.20	0.99	4.52	0.00	0.00	4.52	0.00	0.00
702	4.52	0.03	0.16	4.52	0.19	0.94	4.52	0.00	0.00	4.52	0.00	0.00
703	4.52	0.03	0.13	4.52	0.18	0.90	4.52	0.00	0.00	4.52	0.00	0.00
704	4.52	0.02	0.10	4.52	0.17	0.87	4.52	0.00	0.01	4.52	0.00	0.00
705	4.52	0.01	0.07	4.52	0.17	0.84	4.52	0.02	0.12	4.52	0.00	0.00
706	4.52	0.01	0.03	4.52	0.15	0.77	4.52	0.07	0.37	4.52	0.00	0.00
707	4.52	0.12	0.60	4.52	0.07	0.38	4.52	0.05	0.25	4.52	0.07	0.34
708	4.52	0.07	0.34	4.52	0.08	0.38	4.52	0.10	0.49	4.52	0.06	0.29
709	4.52	0.08	0.40	4.52	0.09	0.48	4.52	0.05	0.25	4.52	0.03	0.13
710	4.52	0.05	0.26	4.52	0.12	0.62	4.52	0.08	0.42	4.52	0.00	0.01
711	4.52	0.07	0.34	4.52	0.07	0.35	4.52	0.10	0.49	4.52	0.05	0.25
712	4.52	0.12	0.60	4.52	0.05	0.27	4.52	0.05	0.25	4.52	0.04	0.23
713	4.52	0.05	0.26	4.52	0.12	0.61	4.52	0.08	0.42	4.52	0.00	0.00
714	4.52	0.08	0.40	4.52	0.08	0.41	4.52	0.05	0.25	4.52	0.01	0.04
715	4.52	0.11	0.57	4.52	0.08	0.40	4.52	0.03	0.13	4.52	0.00	0.00
716	4.52	0.25	1.24	4.52	0.07	0.34	4.52	0.00	0.00	4.52	0.00	0.00
717	4.52	0.07	0.33	4.52	0.06	0.29	4.52	0.07	0.36	4.52	0.00	0.00
718	4.52	0.11	0.57	4.52	0.06	0.31	4.52	0.03	0.13	4.52	0.00	0.00
719	4.52	0.07	0.33	4.52	0.04	0.22	4.52	0.07	0.36	4.52	0.00	0.00
720	4.52	0.25	1.24	4.52	0.05	0.25	4.52	0.00	0.00	4.52	0.00	0.00

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

VERIFICA NODO 2 – HEA 180 - HEB 300

VERIFICA TENSIONALE NODI: 834, 843, 848, 853 - METODO DEGLI STATI LIMITE (NTC 2008)

UNITA' DI MISURA: [daN] ; [daNcm] ; [daN/cm2] ; [mm]

GEOMETRIA NODO

Profili utilizzati

Tipo prof.	h	b	a	e	r
HEA180	171.	180.	6.	9.5	15.
HEB300	300.	300.	11.	19.	27.

Inclinazione trave: 2.55°

Piastre (n°1)

Num	H1	H2	B	Sp
1	200.	200.	300.	12.

BULLONI

Num	X	Y	Fi	Area	Num	X	Y	Fi	Area
1	-100.	52.	16.	155.87	3	100.	52.	16.	155.87
2	-100.	148.	16.	155.87	4	100.	148.	16.	155.87

SALDATURE

Lato saldature su colonna: 10

MATERIALI

Acciaio S 235 (Fe 360)		Classe viti 8.8
fd s<40mm	fd 40mm<s<80mm	fd
2238.1	2047.6	6400.

SOLLECITAZIONI AGENTI E STATO TENSIONALE

Combinazione di sollecitazioni agenti Caso 4 As. 2 Nd. 834

N = -12689.3 Ty = 3.8 Tz = -0.9
Mt = 0 My = 0 Mz = 0

Verifica bulloni
Co-1, Co-2: NTC 2008, 4.2.8.1.1 formula (4.2.65)

Num	Fv,Ed	Fv,Rd	Fb,Rd	Ft,Ed	Ft,Rd	Bp,Rd	Co-1	Co-2	Ver
1	142.1	5985.3	13824.	-32.9	8978.	15634.6	.02	0.	SI'
2	142.1	5985.3	13824.	-32.9	8978.	15634.6	.02	0.	SI'
3	142.1	5985.3	13824.	-33.	8978.	15634.6	.02	0.	SI'
4	142.1	5985.3	13824.	-32.9	8978.	15634.6	.02	0.	SI'

Compressione massima sulla piastra

Sig	fd	Ver
-21.2	2238.1	SI'

Tensione massima piastra (mensola sup. ed inf.)

Sig	fd	Ver
92.2	2238.1	SI'

Saldature su colonna
SEq-1, SLim-1: NTC 2008, 4.2.8.2.4 formula (4.2.78)
SEq-2, SLim-2: NTC 2008, 4.2.8.2.4 formula (4.2.79)

Nome	S_prp	Tau_pa	Tau_pe	SEq-1	SEq-2	SLim-1	SLim-2	Ver
s1	201.	-32.9	0.	203.7	201.	1997.5	2350.	SI'
s1'	201.	-32.9	0.	203.7	201.	1997.5	2350.	SI'
s2	201.	-.4	0.	201.	201.	1997.5	2350.	SI'
s2'	201.	-.4	0.	201.	201.	1997.5	2350.	SI'
s3	201.	-.4	0.	201.	201.	1997.5	2350.	SI'
s3'	201.	-.4	0.	201.	201.	1997.5	2350.	SI'
s10	201.	-.4	0.	201.	201.	1997.5	2350.	SI'
s10'	0.	-.4	0.	.4	0.	1997.5	2350.	SI'
s11	201.	-.4	0.	201.	201.	1997.5	2350.	SI'
s11'	0.	-.4	0.	.4	0.	1997.5	2350.	SI'

NODO VERIFICATO IN BASE ALLA COMB. DI SOLLECITAZIONI AGENTI Caso 4 As. 2 Nd. 834

Combinazione di sollecitazioni agenti Caso 1 As. 2 Nd. 834

N = -40335.4 Ty = -33.9 Tz = 0.2

```
Mt = 0              My = 0              Mz = 0
Verifica bulloni
Co-1, Co-2: NTC 2008, 4.2.8.1.1 formula (4.2.65)
Num|  Fv,Ed|  Fv,Rd|  Fb,Rd|  Ft,Ed|  Ft,Rd|  Bp,Rd|Co-1|Co-2|Ver|
1  |  440.2| 5985.3| 13824.|  -105.|  8978.|15634.6| .07| .01|SI'|
2  |  440.2| 5985.3| 13824.| -104.3|  8978.|15634.6| .07| .01|SI'|
3  |  440.2| 5985.3| 13824.|  -105.|  8978.|15634.6| .07| .01|SI'|
4  |  440.2| 5985.3| 13824.| -104.3|  8978.|15634.6| .07| .01|SI'|

Compressione massima sulla piastra
    Sig|     fd|Ver|
  -67.6| 2238.1|SI'|

Tensione massima piastra (mensola sup. ed inf.)
    Sig|     fd|Ver|
  294.6| 2238.1|SI'|

Saldature su colonna
SEq-1, SLim-1: NTC 2008, 4.2.8.2.4 formula (4.2.78)
SEq-2, SLim-2: NTC 2008, 4.2.8.2.4 formula (4.2.79)
Nome|  S_prp| Tau_pa| Tau_pe|  SEq-1|  SEq-2| SLim-1| SLim-2|Ver|
s1  |  638.8| -106.1|     0.|  647.6|  638.8| 1997.5|  2350.|SI'|
s1' |  638.8| -106.1|     0.|  647.6|  638.8| 1997.5|  2350.|SI'|
s2  |  638.8|     .1|     0.|  638.8|  638.8| 1997.5|  2350.|SI'|
s2' |  638.8|     .1|     0.|  638.8|  638.8| 1997.5|  2350.|SI'|
s3  |  638.8|     .1|     0.|  638.8|  638.8| 1997.5|  2350.|SI'|
s3' |  638.8|     .1|     0.|  638.8|  638.8| 1997.5|  2350.|SI'|
s10 |  638.8|     .1|     0.|  638.8|  638.8| 1997.5|  2350.|SI'|
s10'|     0.|     .1|     0.|     .1|     0.| 1997.5|  2350.|SI'|
s11 |  638.8|     .1|     0.|  638.8|  638.8| 1997.5|  2350.|SI'|
s11'|     0.|     .1|     0.|     .1|     0.| 1997.5|  2350.|SI'|

NODO VERIFICATO IN BASE ALLA COMB. DI SOLLECITAZIONI AGENTI Caso 1 As. 2 Nd. 834

Combinazione di sollecitazioni agenti Caso 1 As. 5 Nd. 853
-------------------------------------------------------------------------------
N = -40335.4        Ty = -25.7          Tz = 3.7
Mt = 0              My = 0              Mz = 0
Verifica bulloni
Co-1, Co-2: NTC 2008, 4.2.8.1.1 formula (4.2.65)
Num|  Fv,Ed|  Fv,Rd|  Fb,Rd|  Ft,Ed|  Ft,Rd|  Bp,Rd|Co-1|Co-2|Ver|
1  |  442.2| 5985.3| 13824.|  -105.|  8978.|15634.6| .07| .01|SI'|
2  |  442.2| 5985.3| 13824.| -104.4|  8978.|15634.6| .07| .01|SI'|
3  |  442.2| 5985.3| 13824.| -104.9|  8978.|15634.6| .07| .01|SI'|
4  |  442.2| 5985.3| 13824.| -104.4|  8978.|15634.6| .07| .01|SI'|

Compressione massima sulla piastra
    Sig|     fd|Ver|
  -67.6| 2238.1|SI'|

Tensione massima piastra (mensola sup. ed inf.)
    Sig|     fd|Ver|
  294.3| 2238.1|SI'|

Saldature su colonna
SEq-1, SLim-1: NTC 2008, 4.2.8.2.4 formula (4.2.78)
SEq-2, SLim-2: NTC 2008, 4.2.8.2.4 formula (4.2.79)
Nome|  S_prp| Tau_pa| Tau_pe|  SEq-1|  SEq-2| SLim-1| SLim-2|Ver|
s1  |  638.8| -107.1|     0.|  647.8|  638.8| 1997.5|  2350.|SI'|
s1' |  638.8| -107.1|     0.|  647.8|  638.8| 1997.5|  2350.|SI'|
s2  |  638.8|    1.7|     0.|  638.8|  638.8| 1997.5|  2350.|SI'|
s2' |  638.8|    1.7|     0.|  638.8|  638.8| 1997.5|  2350.|SI'|
s3  |  638.8|    1.7|     0.|  638.8|  638.8| 1997.5|  2350.|SI'|
s3' |  638.8|    1.7|     0.|  638.8|  638.8| 1997.5|  2350.|SI'|
s10 |  638.8|    1.7|     0.|  638.8|  638.8| 1997.5|  2350.|SI'|
s10'|     0.|    1.7|     0.|    1.7|     0.| 1997.5|  2350.|SI'|
s11 |  638.8|    1.7|     0.|  638.8|  638.8| 1997.5|  2350.|SI'|
s11'|     0.|    1.7|     0.|    1.7|     0.| 1997.5|  2350.|SI'|

NODO VERIFICATO IN BASE ALLA COMB. DI SOLLECITAZIONI AGENTI Caso 1 As. 5 Nd. 853

Combinazione di sollecitazioni agenti Caso 4 As. 4 Nd. 848
-------------------------------------------------------------------------------
N = -12689.3        Ty = 10.2           Tz = -1.3
Mt = 0              My = 0              Mz = 0
Verifica bulloni
Co-1, Co-2: NTC 2008, 4.2.8.1.1 formula (4.2.65)
Num|  Fv,Ed|  Fv,Rd|  Fb,Rd|  Ft,Ed|  Ft,Rd|  Bp,Rd|Co-1|Co-2|Ver|
```

1	143.7	5985.3	13824.	-32.9	8978.	15634.6	.02	0.	SI'
2	143.7	5985.3	13824.	-32.9	8978.	15634.6	.02	0.	SI'
3	143.7	5985.3	13824.	-32.9	8978.	15634.6	.02	0.	SI'
4	143.7	5985.3	13824.	-33.	8978.	15634.6	.02	0.	SI'

Compressione massima sulla piastra

Sig	fd	Ver
-21.2	2238.1	SI'

Tensione massima piastra (mensola sup. ed inf.)

Sig	fd	Ver
92.	2238.1	SI'

Saldature su colonna
SEq-1, SLim-1: NTC 2008, 4.2.8.2.4 formula (4.2.78)
SEq-2, SLim-2: NTC 2008, 4.2.8.2.4 formula (4.2.79)

Nome	S_prp	Tau_pa	Tau_pe	SEq-1	SEq-2	SLim-1	SLim-2	Ver
s1	201.	-32.7	0.	203.6	201.	1997.5	2350.	SI'
s1'	201.	-32.7	0.	203.6	201.	1997.5	2350.	SI'
s2	201.	-.6	0.	201.	201.	1997.5	2350.	SI'
s2'	201.	-.6	0.	201.	201.	1997.5	2350.	SI'
s3	201.	-.6	0.	201.	201.	1997.5	2350.	SI'
s3'	201.	-.6	0.	201.	201.	1997.5	2350.	SI'
s10	201.	-.6	0.	201.	201.	1997.5	2350.	SI'
s10'	0.	-.6	0.	.6	0.	1997.5	2350.	SI'
s11	201.	-.6	0.	201.	201.	1997.5	2350.	SI'
s11'	0.	-.6	0.	.6	0.	1997.5	2350.	SI'

NODO VERIFICATO IN BASE ALLA COMB. DI SOLLECITAZIONI AGENTI Caso 4 As. 4 Nd. 848

Combinazione di sollecitazioni agenti Caso 5 As. 2 Nd. 834

N = -12689.3 Ty = 24 Tz = -0.5
Mt = 0 My = 0 Mz = 0

Verifica bulloni
Co-1, Co-2: NTC 2008, 4.2.8.1.1 formula (4.2.65)

Num	Fv,Ed	Fv,Rd	Fb,Rd	Ft,Ed	Ft,Rd	Bp,Rd	Co-1	Co-2	Ver
1	147.1	5985.3	13824.	-32.8	8978.	15634.6	.02	0.	SI'
2	147.1	5985.3	13824.	-33.	8978.	15634.6	.02	0.	SI'
3	147.1	5985.3	13824.	-32.8	8978.	15634.6	.02	0.	SI'
4	147.1	5985.3	13824.	-33.	8978.	15634.6	.02	0.	SI'

Compressione massima sulla piastra

Sig	fd	Ver
-21.3	2238.1	SI'

Tensione massima piastra (mensola sup. ed inf.)

Sig	fd	Ver
91.5	2238.1	SI'

Saldature su colonna
SEq-1, SLim-1: NTC 2008, 4.2.8.2.4 formula (4.2.78)
SEq-2, SLim-2: NTC 2008, 4.2.8.2.4 formula (4.2.79)

Nome	S_prp	Tau_pa	Tau_pe	SEq-1	SEq-2	SLim-1	SLim-2	Ver
s1	201.	-31.5	0.	203.5	201.	1997.5	2350.	SI'
s1'	201.	-31.5	0.	203.5	201.	1997.5	2350.	SI'
s2	201.	-.2	0.	201.	201.	1997.5	2350.	SI'
s2'	201.	-.2	0.	201.	201.	1997.5	2350.	SI'
s3	201.	-.2	0.	201.	201.	1997.5	2350.	SI'
s3'	201.	-.2	0.	201.	201.	1997.5	2350.	SI'
s10	201.	-.2	0.	201.	201.	1997.5	2350.	SI'
s10'	0.	-.2	0.	.2	0.	1997.5	2350.	SI'
s11	201.	-.2	0.	201.	201.	1997.5	2350.	SI'
s11'	0.	-.2	0.	.2	0.	1997.5	2350.	SI'

NODO VERIFICATO IN BASE ALLA COMB. DI SOLLECITAZIONI AGENTI Caso 5 As. 2 Nd. 834

Combinazione di sollecitazioni agenti Caso 1 As. 3 Nd. 843

N = -40335.4 Ty = -35.6 Tz = 0
Mt = 0 My = 0 Mz = 0

Verifica bulloni
Co-1, Co-2: NTC 2008, 4.2.8.1.1 formula (4.2.65)

Num	Fv,Ed	Fv,Rd	Fb,Rd	Ft,Ed	Ft,Rd	Bp,Rd	Co-1	Co-2	Ver
1	439.8	5985.3	13824.	-105.	8978.	15634.6	.07	.01	SI'
2	439.8	5985.3	13824.	-104.3	8978.	15634.6	.07	.01	SI'
3	439.8	5985.3	13824.	-105.	8978.	15634.6	.07	.01	SI'
4	439.8	5985.3	13824.	-104.3	8978.	15634.6	.07	.01	SI'

Compressione massima sulla piastra

Sig	fd	Ver
-67.6	2238.1	SI'

Tensione massima piastra (mensola sup. ed inf.)

Sig	fd	Ver
294.7	2238.1	SI'

Saldature su colonna
SEq-1, SLim-1: NTC 2008, 4.2.8.2.4 formula (4.2.78)
SEq-2, SLim-2: NTC 2008, 4.2.8.2.4 formula (4.2.79)

Nome	S_prp	Tau_pa	Tau_pe	SEq-1	SEq-2	SLim-1	SLim-2	Ver
s1	638.8	-106.1	0.	647.6	638.8	1997.5	2350.	SI'
s1'	638.8	-106.1	0.	647.6	638.8	1997.5	2350.	SI'
s2	638.8	0.	0.	638.8	638.8	1997.5	2350.	SI'
s2'	638.8	0.	0.	638.8	638.8	1997.5	2350.	SI'
s3	638.8	0.	0.	638.8	638.8	1997.5	2350.	SI'
s3'	638.8	0.	0.	638.8	638.8	1997.5	2350.	SI'
s10	638.8	0.	0.	638.8	638.8	1997.5	2350.	SI'
s10'	0.	0.	0.	0.	0.	1997.5	2350.	SI'
s11	638.8	0.	0.	638.8	638.8	1997.5	2350.	SI'
s11'	0.	0.	0.	0.	0.	1997.5	2350.	SI'

NODO VERIFICATO IN BASE ALLA COMB. DI SOLLECITAZIONI AGENTI Caso 1 As. 3 Nd. 843

VERIFICA NODO 3 - PIASTRA DI BASE PILASTRO HEA 180

VERIFICA TENSIONALE NODI: 859, 860, 861, 862 - METODO DEGLI STATI LIMITE (NTC 2008)

UNITA' DI MISURA: [daN] ; [daNcm] ; [daN/cm2] ; [mm]

GEOMETRIA NODO

Profili utilizzati

Tipo prof.	h	b	a	e	r
HEA180	171.	180.	6.	9.5	15.

Piastra e fazzoletti

Num	Lz	Ly	Sp
1	380.	380.	10.
2(Y)	380.	100.	10.
3(Z)	90.	100.	10.

TIRAFONDI

Tirafondi (n° 4)

Num	X	Y	Fi	Area	Num	X	Y	Fi	Area
1	330.	50.	20.	245.	3	330.	330.	20.	245.
2	50.	50.	20.	245.	4	50.	330.	20.	245.

Dimensioni

l	lft	l1	r
250.	150.	50.	50.

SALDATURE (n° 44)

Nome	Lung	Lato	Nome	Lung	Lato
S1	122.	7.	S23	104.5	7.
S2	72.	7.	S24	104.5	7.
S3	180.	7.	S25	90.	7.
S4	72.	7.	S26	90.	7.
S5	122.	7.	S27	90.	7.
S6	72.	7.	S28	90.	7.
S7	180.	7.	S29	100.	7.
S8	72.	7.	S30	100.	7.
S9	152.	7.	S31	100.	7.
S10	151.	7.	S32	100.	7.
S11	104.5	7.	S33	100.	7.
S12	104.5	7.	S34	100.	7.
S13	104.5	7.	S35	100.	7.
S14	104.5	7.	S36	100.	7.
S15	90.	7.	S37	100.	7.
S16	90.	7.	S38	100.	7.
S17	90.	7.	S39	100.	7.
S18	90.	7.	S40	100.	7.

S19	152.	7.	S41	100.	7.
S20	151.	7.	S42	100.	7.
S21	104.5	7.	S43	100.	7.
S22	104.5	7.	S44	100.	7.

MATERIALI

Acciaio S 235 (Fe 360)		Calcestruzzo C25/30
fd s<40mm	fd 40mm<s<80mm	fcd
2238.1	2047.6	141.1
Acciaio tirafondi 5.6		
fd		
2400.		

SOLLECITAZIONI AGENTI E STATO TENSIONALE

Combinazione di sollecitazioni agenti Caso 4 As. 2 Nd. 859

N: -12803.1 Ty: -3.8 Tz: -0.9
Mt: 0 My: -301 Mz: 1209

Verifica tirafondi
Co-1, Co-2: NTC 2008, 4.2.8.1.1 formula (4.2.65)
Co-3: Ft,Ed / Tad,Rd

Num	Fv,Ed	Fv,Rd	Fb,Rd	Ft,Ed	Ft,Rd	Bp,Rd	Tad,Rd	Co-1	Co-2	Co-3	Ver
1	1.	5880.	9600.	-138.6	8820.	16286.	4413.3	0.	.02	.03	SI'
2	1.	5880.	9600.	-137.8	8820.	16286.	4413.3	0.	.02	.03	SI'
3	1.	5880.	9600.	-141.6	8820.	16286.	4413.3	0.	.02	.03	SI'
4	1.	5880.	9600.	-140.8	8820.	16286.	4413.3	0.	.02	.03	SI'

Verifica saldature
SEq-1, SLim-1: NTC 2008, 4.2.8.2.4 formula (4.2.78)
SEq-2, SLim-2: NTC 2008, 4.2.8.2.4 formula (4.2.79)

Nome	S_prp	Tau_pa	Tau_pe	SEq-1	SEq-2	SLim-1	SLim-2	Ver
S1	85.3	0.	0.	85.3	85.3	1997.5	2350.	SI'
S2	84.2	0.	0.	84.2	84.2	1997.5	2350.	SI'
S3	84.1	0.	0.	84.1	84.1	1997.5	2350.	SI'
S4	84.	0.	0.	84.	84.	1997.5	2350.	SI'
S5	85.2	0.	0.	85.2	85.2	1997.5	2350.	SI'
S6	85.3	0.	0.	85.3	85.3	1997.5	2350.	SI'
S7	85.7	0.	0.	85.7	85.7	1997.5	2350.	SI'
S8	85.5	0.	0.	85.5	85.5	1997.5	2350.	SI'
S9	85.2	0.	0.	85.2	85.2	1997.5	2350.	SI'
S10	85.2	0.	0.	85.2	85.2	1997.5	2350.	SI'
S11	83.8	0.	0.	83.8	83.8	1997.5	2350.	SI'
S12	83.7	0.	0.	83.7	83.7	1997.5	2350.	SI'
S13	86.2	0.	0.	86.2	86.2	1997.5	2350.	SI'
S14	86.2	0.	0.	86.2	86.2	1997.5	2350.	SI'
S15	83.8	0.	0.	83.8	83.8	1997.5	2350.	SI'
S16	83.7	0.	0.	83.7	83.7	1997.5	2350.	SI'
S17	85.2	0.	0.	85.2	85.2	1997.5	2350.	SI'
S18	85.3	0.	0.	85.3	85.3	1997.5	2350.	SI'
S19	85.6	0.	0.	85.6	85.6	1997.5	2350.	SI'
S20	85.6	0.	0.	85.6	85.6	1997.5	2350.	SI'
S21	84.1	0.	0.	84.1	84.1	1997.5	2350.	SI'
S22	84.1	0.	0.	84.1	84.1	1997.5	2350.	SI'
S23	86.6	0.	0.	86.6	86.6	1997.5	2350.	SI'
S24	86.6	0.	0.	86.6	86.6	1997.5	2350.	SI'
S25	84.4	0.	0.	84.4	84.4	1997.5	2350.	SI'
S26	84.3	0.	0.	84.3	84.3	1997.5	2350.	SI'
S27	85.8	0.	0.	85.8	85.8	1997.5	2350.	SI'
S28	85.9	0.	0.	85.9	85.9	1997.5	2350.	SI'
S29	0.	253.8	159.8	299.9	159.8	1997.5	2350.	SI'
S30	216.6	185.2	159.8	326.7	376.4	1997.5	2350.	SI'
S31	0.	252.2	159.8	298.5	159.8	1997.5	2350.	SI'
S32	215.4	185.2	159.8	325.9	375.2	1997.5	2350.	SI'
S33	215.4	164.3	0.	270.9	215.4	1997.5	2350.	SI'
S34	215.4	181.3	189.9	339.6	405.3	1997.5	2350.	SI'
S35	215.4	164.3	0.	270.9	215.4	1997.5	2350.	SI'
S36	0.	260.1	189.9	322.1	189.9	1997.5	2350.	SI'
S37	216.6	181.3	189.9	340.3	406.5	1997.5	2350.	SI'
S38	0.	261.8	189.9	323.4	189.9	1997.5	2350.	SI'
S39	216.6	165.2	0.	272.4	216.6	1997.5	2350.	SI'
S40	216.6	165.2	0.	272.4	216.6	1997.5	2350.	SI'
S41	0.	254.3	0.	254.3	0.	1997.5	2350.	SI'
S42	0.	252.6	0.	252.6	0.	1997.5	2350.	SI'
S43	0.	261.4	0.	261.4	0.	1997.5	2350.	SI'

S44	0.	259.7	0.	259.7	0.	1997.5	2350.	SI'

Verifica piastra

Smax	fd	Ver
96.6	2238.1	SI'

Verifica nervature

Posizione	Smax	fd	Ver
Z	467.5	2238.1	SI'
Y	359.1	2238.1	SI'

Verifica pressione sul calcestruzzo

Smax	fcd	Ver
8.7	141.1	SI'

NODO VERIFICATO IN BASE ALLA COMB. DI SOLLECITAZIONI AGENTI Caso 4 As. 2 Nd. 859

Combinazione di sollecitazioni agenti Caso 1 As. 2 Nd. 859

N: -40483.3 Ty: 33.9 Tz: 0.2
Mt: 0 My: 65 Mz: -10840

Verifica tirafondi
Co-1, Co-2: NTC 2008, 4.2.8.1.1 formula (4.2.65)
Co-3: Ft,Ed / Tad,Rd

Num	Fv,Ed	Fv,Rd	Fb,Rd	Ft,Ed	Ft,Rd	Bp,Rd	Tad,Rd	Co-1	Co-2	Co-3	Ver
1	8.5	5880.	9600.	-455.	8820.	16286.	4413.3	0.	.05	.1	SI'
2	8.5	5880.	9600.	-455.2	8820.	16286.	4413.3	0.	.05	.1	SI'
3	8.5	5880.	9600.	-428.1	8820.	16286.	4413.3	0.	.05	.1	SI'
4	8.5	5880.	9600.	-428.3	8820.	16286.	4413.3	0.	.05	.1	SI'

Verifica saldature
SEq-1, SLim-1: NTC 2008, 4.2.8.2.4 formula (4.2.78)
SEq-2, SLim-2: NTC 2008, 4.2.8.2.4 formula (4.2.79)

Nome	S_prp	Tau_pa	Tau_pe	SEq-1	SEq-2	SLim-1	SLim-2	Ver
S1	272.7	.4	0.	272.7	272.7	1997.5	2350.	SI'
S2	273.7	0.	0.	273.7	273.7	1997.5	2350.	SI'
S3	275.	0.	0.	275.	275.	1997.5	2350.	SI'
S4	273.8	0.	0.	273.8	273.8	1997.5	2350.	SI'
S5	272.7	.4	0.	272.7	272.7	1997.5	2350.	SI'
S6	261.9	0.	0.	261.9	261.9	1997.5	2350.	SI'
S7	260.7	0.	0.	260.7	260.7	1997.5	2350.	SI'
S8	261.9	0.	0.	261.9	261.9	1997.5	2350.	SI'
S9	274.	.4	0.	274.	274.	1997.5	2350.	SI'
S10	273.9	.4	0.	273.9	273.9	1997.5	2350.	SI'
S11	283.2	.4	0.	283.2	283.2	1997.5	2350.	SI'
S12	283.2	.4	0.	283.2	283.2	1997.5	2350.	SI'
S13	260.9	.4	0.	260.9	260.9	1997.5	2350.	SI'
S14	260.9	.4	0.	260.9	260.9	1997.5	2350.	SI'
S15	273.8	0.	0.	273.8	273.8	1997.5	2350.	SI'
S16	274.6	0.	0.	274.6	274.6	1997.5	2350.	SI'
S17	261.6	0.	0.	261.6	261.6	1997.5	2350.	SI'
S18	260.8	0.	0.	260.8	260.8	1997.5	2350.	SI'
S19	273.9	.4	0.	273.9	273.9	1997.5	2350.	SI'
S20	273.9	.4	0.	273.9	273.9	1997.5	2350.	SI'
S21	283.1	.4	0.	283.1	283.1	1997.5	2350.	SI'
S22	283.1	.4	0.	283.1	283.1	1997.5	2350.	SI'
S23	260.9	.4	0.	260.9	260.9	1997.5	2350.	SI'
S24	260.9	.4	0.	260.9	260.9	1997.5	2350.	SI'
S25	273.7	0.	0.	273.7	273.7	1997.5	2350.	SI'
S26	274.5	0.	0.	274.5	274.5	1997.5	2350.	SI'
S27	261.5	0.	0.	261.5	261.5	1997.5	2350.	SI'
S28	260.7	0.	0.	260.7	260.7	1997.5	2350.	SI'
S29	0.	847.9	487.4	978.	487.4	1997.5	2350.	SI'
S30	683.	562.	487.4	1009.9	1170.3	1997.5	2350.	SI'
S31	0.	848.3	487.4	978.3	487.4	1997.5	2350.	SI'
S32	683.2	562.	487.4	1010.	1170.6	1997.5	2350.	SI'
S33	683.2	551.7	0.	878.2	683.2	1997.5	2350.	SI'
S34	683.2	596.7	627.6	1103.1	1310.8	1997.5	2350.	SI'
S35	683.2	551.7	0.	878.2	683.2	1997.5	2350.	SI'
S36	0.	777.1	627.6	998.9	627.6	1997.5	2350.	SI'
S37	683.	596.7	627.6	1102.9	1310.6	1997.5	2350.	SI'
S38	0.	776.7	627.6	998.6	627.6	1997.5	2350.	SI'
S39	683.	551.5	0.	877.9	683.	1997.5	2350.	SI'
S40	683.	551.5	0.	877.9	683.	1997.5	2350.	SI'
S41	0.	844.1	0.	844.1	0.	1997.5	2350.	SI'
S42	0.	844.5	0.	844.5	0.	1997.5	2350.	SI'
S43	0.	780.5	0.	780.5	0.	1997.5	2350.	SI'

S44	0.	780.9	0.	780.9	0.	1997.5	2350.	SI'

Verifica piastra

Smax	fd	Ver
318.9	2238.1	SI'

Verifica nervature

Posizione	Smax	fd	Ver
Z	1536.	2238.1	SI'
Y	1197.2	2238.1	SI'

Verifica pressione sul calcestruzzo

Smax	fcd	Ver
28.1	141.1	SI'

NODO VERIFICATO IN BASE ALLA COMB. DI SOLLECITAZIONI AGENTI Caso 1 As. 2 Nd. 859

Combinazione di sollecitazioni agenti Caso 1 As. 5 Nd. 862

N: -40483.3 Ty: 25.7 Tz: 3.7
Mt: 0 My: 1200 Mz: -8221

Verifica tirafondi
Co-1, Co-2: NTC 2008, 4.2.8.1.1 formula (4.2.65)
Co-3: Ft,Ed / Tad,Rd

Num	Fv,Ed	Fv,Rd	Fb,Rd	Ft,Ed	Ft,Rd	Bp,Rd	Tad,Rd	Co-1	Co-2	Co-3	Ver
1	6.5	5880.	9600.	-450.4	8820.	16286.	4413.3	0.	.05	.1	SI'
2	6.5	5880.	9600.	-453.3	8820.	16286.	4413.3	0.	.05	.1	SI'
3	6.5	5880.	9600.	-430.	8820.	16286.	4413.3	0.	.05	.1	SI'
4	6.5	5880.	9600.	-433.	8820.	16286.	4413.3	0.	.05	.1	SI'

Verifica saldature
SEq-1, SLim-1: NTC 2008, 4.2.8.2.4 formula (4.2.78)
SEq-2, SLim-2: NTC 2008, 4.2.8.2.4 formula (4.2.79)

Nome	S_prp	Tau_pa	Tau_pe	SEq-1	SEq-2	SLim-1	SLim-2	Ver
S1	271.5	.3	0.	271.5	271.5	1997.5	2350.	SI'
S2	272.2	.1	0.	272.2	272.2	1997.5	2350.	SI'
S3	273.9	.1	0.	273.9	273.9	1997.5	2350.	SI'
S4	273.	.1	0.	273.	273.	1997.5	2350.	SI'
S5	271.6	.3	0.	271.6	271.6	1997.5	2350.	SI'
S6	264.	.1	0.	264.	264.	1997.5	2350.	SI'
S7	263.1	.1	0.	263.1	263.1	1997.5	2350.	SI'
S8	263.2	.1	0.	263.2	263.2	1997.5	2350.	SI'
S9	273.2	.3	0.	273.2	273.2	1997.5	2350.	SI'
S10	273.2	.3	0.	273.2	273.2	1997.5	2350.	SI'
S11	280.1	.3	0.	280.1	280.1	1997.5	2350.	SI'
S12	280.3	.3	0.	280.3	280.3	1997.5	2350.	SI'
S13	263.3	.3	0.	263.3	263.3	1997.5	2350.	SI'
S14	263.4	.3	0.	263.4	263.4	1997.5	2350.	SI'
S15	273.8	.1	0.	273.8	273.8	1997.5	2350.	SI'
S16	274.4	.1	0.	274.4	274.4	1997.5	2350.	SI'
S17	264.5	.1	0.	264.5	264.5	1997.5	2350.	SI'
S18	263.9	.1	0.	263.9	263.9	1997.5	2350.	SI'
S19	271.8	.3	0.	271.8	271.8	1997.5	2350.	SI'
S20	271.6	.3	0.	271.6	271.6	1997.5	2350.	SI'
S21	278.8	.3	0.	278.8	278.8	1997.5	2350.	SI'
S22	278.6	.3	0.	278.6	278.6	1997.5	2350.	SI'
S23	261.9	.3	0.	261.9	261.9	1997.5	2350.	SI'
S24	261.8	.3	0.	261.8	261.8	1997.5	2350.	SI'
S25	271.5	.1	0.	271.5	271.5	1997.5	2350.	SI'
S26	272.1	.1	0.	272.1	272.1	1997.5	2350.	SI'
S27	262.2	.1	0.	262.2	262.2	1997.5	2350.	SI'
S28	261.6	.1	0.	261.6	261.6	1997.5	2350.	SI'
S29	0.	836.2	490.6	969.5	490.6	1997.5	2350.	SI'
S30	680.9	566.2	490.6	1012.4	1171.5	1997.5	2350.	SI'
S31	0.	842.9	490.6	975.2	490.6	1997.5	2350.	SI'
S32	685.7	566.2	490.6	1015.6	1176.3	1997.5	2350.	SI'
S33	685.7	541.9	0.	874.	685.7	1997.5	2350.	SI'
S34	685.7	592.5	622.8	1099.6	1308.5	1997.5	2350.	SI'
S35	685.7	541.9	0.	874.	685.7	1997.5	2350.	SI'
S36	0.	788.9	622.8	1005.1	622.8	1997.5	2350.	SI'
S37	680.9	592.5	622.8	1096.6	1303.7	1997.5	2350.	SI'
S38	0.	782.2	622.8	999.8	622.8	1997.5	2350.	SI'
S39	680.9	538.4	0.	868.1	680.9	1997.5	2350.	SI'
S40	680.9	538.4	0.	868.1	680.9	1997.5	2350.	SI'
S41	0.	833.3	0.	833.3	0.	1997.5	2350.	SI'
S42	0.	840.	0.	840.	0.	1997.5	2350.	SI'
S43	0.	785.1	0.	785.1	0.	1997.5	2350.	SI'

S44	0.	791.7	0.	791.7	0.	1997.5	2350.	SI'

Verifica piastra

Smax	fd	Ver
316.7	2238.1	SI'

Verifica nervature

Posizione	Smax	fd	Ver
Z	1532.4	2238.1	SI'
Y	1176.6	2238.1	SI'

Verifica pressione sul calcestruzzo

Smax	fcd	Ver
28.	141.1	SI'

NODO VERIFICATO IN BASE ALLA COMB. DI SOLLECITAZIONI AGENTI Caso 1 As. 5 Nd. 862

Combinazione di sollecitazioni agenti Caso 4 As. 4 Nd. 861

N: -12803.1 Ty: -10.2 Tz: -1.3
Mt: 0 My: -403 Mz: 3252

Verifica tirafondi
Co-1, Co-2: NTC 2008, 4.2.8.1.1 formula (4.2.65)
Co-3: Ft,Ed / Tad,Rd

Num	Fv,Ed	Fv,Rd	Fb,Rd	Ft,Ed	Ft,Rd	Bp,Rd	Tad,Rd	Co-1	Co-2	Co-3	Ver
1	2.6	5880.	9600.	-136.1	8820.	16286.	4413.3	0.	.02	.03	SI'
2	2.6	5880.	9600.	-135.1	8820.	16286.	4413.3	0.	.02	.03	SI'
3	2.6	5880.	9600.	-144.2	8820.	16286.	4413.3	0.	.02	.03	SI'
4	2.6	5880.	9600.	-143.2	8820.	16286.	4413.3	0.	.02	.03	SI'

Verifica saldature
SEq-1, SLim-1: NTC 2008, 4.2.8.2.4 formula (4.2.78)
SEq-2, SLim-2: NTC 2008, 4.2.8.2.4 formula (4.2.79)

Nome	S_prp	Tau_pa	Tau_pe	SEq-1	SEq-2	SLim-1	SLim-2	Ver
S1	86.2	.1	0.	86.2	86.2	1997.5	2350.	SI'
S2	83.2	0.	0.	83.2	83.2	1997.5	2350.	SI'
S3	82.8	0.	0.	82.8	82.8	1997.5	2350.	SI'
S4	82.9	0.	0.	82.9	82.9	1997.5	2350.	SI'
S5	86.2	.1	0.	86.2	86.2	1997.5	2350.	SI'
S6	86.4	0.	0.	86.4	86.4	1997.5	2350.	SI'
S7	87.1	0.	0.	87.1	87.1	1997.5	2350.	SI'
S8	86.7	0.	0.	86.7	86.7	1997.5	2350.	SI'
S9	86.3	.1	0.	86.3	86.3	1997.5	2350.	SI'
S10	86.3	.1	0.	86.3	86.3	1997.5	2350.	SI'
S11	82.4	.1	0.	82.4	82.4	1997.5	2350.	SI'
S12	82.4	.1	0.	82.4	82.4	1997.5	2350.	SI'
S13	89.1	.1	0.	89.1	89.1	1997.5	2350.	SI'
S14	89.	.1	0.	89.	89.	1997.5	2350.	SI'
S15	82.7	0.	0.	82.7	82.7	1997.5	2350.	SI'
S16	82.4	0.	0.	82.4	82.4	1997.5	2350.	SI'
S17	86.3	0.	0.	86.3	86.3	1997.5	2350.	SI'
S18	86.6	0.	0.	86.6	86.6	1997.5	2350.	SI'
S19	86.8	.1	0.	86.8	86.8	1997.5	2350.	SI'
S20	86.8	.1	0.	86.8	86.8	1997.5	2350.	SI'
S21	82.9	.1	0.	82.9	82.9	1997.5	2350.	SI'
S22	82.9	.1	0.	82.9	82.9	1997.5	2350.	SI'
S23	89.5	.1	0.	89.5	89.5	1997.5	2350.	SI'
S24	89.6	.1	0.	89.6	89.6	1997.5	2350.	SI'
S25	83.4	0.	0.	83.4	83.4	1997.5	2350.	SI'
S26	83.2	0.	0.	83.2	83.2	1997.5	2350.	SI'
S27	87.1	0.	0.	87.1	87.1	1997.5	2350.	SI'
S28	87.3	0.	0.	87.3	87.3	1997.5	2350.	SI'
S29	0.	247.4	162.3	295.9	162.3	1997.5	2350.	SI'
S30	216.8	188.4	162.3	329.9	379.	1997.5	2350.	SI'
S31	0.	245.2	162.3	294.	162.3	1997.5	2350.	SI'
S32	215.2	188.4	162.3	328.8	377.4	1997.5	2350.	SI'
S33	215.2	173.1	0.	276.1	215.2	1997.5	2350.	SI'
S34	215.2	178.	186.1	335.6	401.3	1997.5	2350.	SI'
S35	215.2	173.1	0.	276.1	215.2	1997.5	2350.	SI'
S36	0.	266.5	186.1	325.1	186.1	1997.5	2350.	SI'
S37	216.8	178.	186.1	336.6	402.9	1997.5	2350.	SI'
S38	0.	268.8	186.1	326.9	186.1	1997.5	2350.	SI'
S39	216.8	174.3	0.	278.1	216.8	1997.5	2350.	SI'
S40	216.8	174.3	0.	278.1	216.8	1997.5	2350.	SI'
S41	0.	248.5	0.	248.5	0.	1997.5	2350.	SI'
S42	0.	246.3	0.	246.3	0.	1997.5	2350.	SI'
S43	0.	267.6	0.	267.6	0.	1997.5	2350.	SI'

S44	0.	265.4	0.	265.4	0.	1997.5	2350.	SI'

Verifica piastra

Smax	fd	Ver
94.7	2238.1	SI'

Verifica nervature

Posizione	Smax	fd	Ver
Z	459.4	2238.1	SI'
Y	378.1	2238.1	SI'

Verifica pressione sul calcestruzzo

Smax	fcd	Ver
8.9	141.1	SI'

NODO VERIFICATO IN BASE ALLA COMB. DI SOLLECITAZIONI AGENTI Caso 4 As. 4 Nd. 861

Combinazione di sollecitazioni agenti Caso 1 As. 3 Nd. 860

N: -40483.3 Ty: 35.6 Tz: 0
Mt: 0 My: -7 Mz: -11382

Verifica tirafondi
Co-1, Co-2: NTC 2008, 4.2.8.1.1 formula (4.2.65)
Co-3: Ft,Ed / Tad,Rd

Num	Fv,Ed	Fv,Rd	Fb,Rd	Ft,Ed	Ft,Rd	Bp,Rd	Tad,Rd	Co-1	Co-2	Co-3	Ver
1	8.9	5880.	9600.	-455.8	8820.	16286.	4413.3	0.	.05	.1	SI'
2	8.9	5880.	9600.	-455.8	8820.	16286.	4413.3	0.	.05	.1	SI'
3	8.9	5880.	9600.	-427.6	8820.	16286.	4413.3	0.	.05	.1	SI'
4	8.9	5880.	9600.	-427.5	8820.	16286.	4413.3	0.	.05	.1	SI'

Verifica saldature
SEq-1, SLim-1: NTC 2008, 4.2.8.2.4 formula (4.2.78)
SEq-2, SLim-2: NTC 2008, 4.2.8.2.4 formula (4.2.79)

Nome	S_prp	Tau_pa	Tau_pe	SEq-1	SEq-2	SLim-1	SLim-2	Ver
S1	273.	.4	0.	273.	273.	1997.5	2350.	SI'
S2	274.	0.	0.	274.	274.	1997.5	2350.	SI'
S3	275.3	0.	0.	275.3	275.3	1997.5	2350.	SI'
S4	274.	0.	0.	274.	274.	1997.5	2350.	SI'
S5	273.	.4	0.	273.	273.	1997.5	2350.	SI'
S6	261.6	0.	0.	261.6	261.6	1997.5	2350.	SI'
S7	260.4	0.	0.	260.4	260.4	1997.5	2350.	SI'
S8	261.6	0.	0.	261.6	261.6	1997.5	2350.	SI'
S9	274.2	.4	0.	274.2	274.2	1997.5	2350.	SI'
S10	274.2	.4	0.	274.2	274.2	1997.5	2350.	SI'
S11	283.9	.4	0.	283.9	283.9	1997.5	2350.	SI'
S12	283.9	.4	0.	283.9	283.9	1997.5	2350.	SI'
S13	260.6	.4	0.	260.6	260.6	1997.5	2350.	SI'
S14	260.6	.4	0.	260.6	260.6	1997.5	2350.	SI'
S15	274.	0.	0.	274.	274.	1997.5	2350.	SI'
S16	274.8	0.	0.	274.8	274.8	1997.5	2350.	SI'
S17	261.2	0.	0.	261.2	261.2	1997.5	2350.	SI'
S18	260.3	0.	0.	260.3	260.3	1997.5	2350.	SI'
S19	274.3	.4	0.	274.3	274.3	1997.5	2350.	SI'
S20	274.2	.4	0.	274.2	274.2	1997.5	2350.	SI'
S21	283.9	.4	0.	283.9	283.9	1997.5	2350.	SI'
S22	283.9	.4	0.	283.9	283.9	1997.5	2350.	SI'
S23	260.6	.4	0.	260.6	260.6	1997.5	2350.	SI'
S24	260.6	.4	0.	260.6	260.6	1997.5	2350.	SI'
S25	274.	0.	0.	274.	274.	1997.5	2350.	SI'
S26	274.9	0.	0.	274.9	274.9	1997.5	2350.	SI'
S27	261.2	0.	0.	261.2	261.2	1997.5	2350.	SI'
S28	260.4	0.	0.	260.4	260.4	1997.5	2350.	SI'
S29	0.	849.9	486.7	979.4	486.7	1997.5	2350.	SI'
S30	683.1	561.1	486.7	1009.1	1169.8	1997.5	2350.	SI'
S31	0.	849.9	486.7	979.4	486.7	1997.5	2350.	SI'
S32	683.1	561.1	486.7	1009.1	1169.8	1997.5	2350.	SI'
S33	683.1	554.	0.	879.5	683.1	1997.5	2350.	SI'
S34	683.1	597.6	628.6	1104.	1311.7	1997.5	2350.	SI'
S35	683.1	554.	0.	879.5	683.1	1997.5	2350.	SI'
S36	0.	775.1	628.6	998.	628.6	1997.5	2350.	SI'
S37	683.1	597.6	628.6	1104.	1311.7	1997.5	2350.	SI'
S38	0.	775.2	628.6	998.	628.6	1997.5	2350.	SI'
S39	683.1	554.	0.	879.5	683.1	1997.5	2350.	SI'
S40	683.1	554.	0.	879.5	683.1	1997.5	2350.	SI'
S41	0.	845.9	0.	845.9	0.	1997.5	2350.	SI'
S42	0.	845.9	0.	845.9	0.	1997.5	2350.	SI'
S43	0.	779.1	0.	779.1	0.	1997.5	2350.	SI'

S44	0.	779.1	0.	779.1	0.	1997.5	2350.	SI'

Verifica piastra

Smax	fd	Ver
319.4	2238.1	SI'

Verifica nervature

Posizione	Smax	fd	Ver
Z	1537.9	2238.1	SI'
Y	1202.	2238.1	SI'

Verifica pressione sul calcestruzzo

Smax	fcd	Ver
28.2	141.1	SI'

NODO VERIFICATO IN BASE ALLA COMB. DI SOLLECITAZIONI AGENTI Caso 1 As. 3 Nd. 860

Combinazione di sollecitazioni agenti Caso 5 As. 2 Nd. 859

N: -12803.1 Ty: -24 Tz: -0.5
Mt: 0 My: -162 Mz: 7672

Verifica tirafondi
Co-1, Co-2: NTC 2008, 4.2.8.1.1 formula (4.2.65)
Co-3: Ft,Ed / Tad,Rd

Num	Fv,Ed	Fv,Rd	Fb,Rd	Ft,Ed	Ft,Rd	Bp,Rd	Tad,Rd	Co-1	Co-2	Co-3	Ver
1	6.	5880.	9600.	-130.4	8820.	16286.	4413.3	0.	.01	.03	SI'
2	6.	5880.	9600.	-130.	8820.	16286.	4413.3	0.	.01	.03	SI'
3	6.	5880.	9600.	-149.4	8820.	16286.	4413.3	0.	.02	.03	SI'
4	6.	5880.	9600.	-149.	8820.	16286.	4413.3	0.	.02	.03	SI'

Verifica saldature
SEq-1, SLim-1: NTC 2008, 4.2.8.2.4 formula (4.2.78)
SEq-2, SLim-2: NTC 2008, 4.2.8.2.4 formula (4.2.79)

Nome	S_prp	Tau_pa	Tau_pe	SEq-1	SEq-2	SLim-1	SLim-2	Ver
S1	88.2	.3	0.	88.2	88.2	1997.5	2350.	SI'
S2	80.6	0.	0.	80.6	80.6	1997.5	2350.	SI'
S3	79.8	0.	0.	79.8	79.8	1997.5	2350.	SI'
S4	80.5	0.	0.	80.5	80.5	1997.5	2350.	SI'
S5	88.2	.3	0.	88.2	88.2	1997.5	2350.	SI'
S6	88.9	0.	0.	88.9	88.9	1997.5	2350.	SI'
S7	89.8	0.	0.	89.8	89.8	1997.5	2350.	SI'
S8	89.	0.	0.	89.	89.	1997.5	2350.	SI'
S9	88.9	.3	0.	88.9	88.9	1997.5	2350.	SI'
S10	88.9	.3	0.	88.9	88.9	1997.5	2350.	SI'
S11	79.7	.3	0.	79.7	79.7	1997.5	2350.	SI'
S12	79.7	.3	0.	79.7	79.7	1997.5	2350.	SI'
S13	95.5	.3	0.	95.5	95.5	1997.5	2350.	SI'
S14	95.4	.3	0.	95.4	95.4	1997.5	2350.	SI'
S15	80.4	0.	0.	80.4	80.4	1997.5	2350.	SI'
S16	79.8	0.	0.	79.8	79.8	1997.5	2350.	SI'
S17	89.	0.	0.	89.	89.	1997.5	2350.	SI'
S18	89.6	0.	0.	89.6	89.6	1997.5	2350.	SI'
S19	89.1	.3	0.	89.1	89.1	1997.5	2350.	SI'
S20	89.1	.3	0.	89.1	89.1	1997.5	2350.	SI'
S21	79.9	.3	0.	79.9	79.9	1997.5	2350.	SI'
S22	79.9	.3	0.	79.9	79.9	1997.5	2350.	SI'
S23	95.6	.3	0.	95.6	95.6	1997.5	2350.	SI'
S24	95.7	.3	0.	95.7	95.7	1997.5	2350.	SI'
S25	80.7	0.	0.	80.7	80.7	1997.5	2350.	SI'
S26	80.2	0.	0.	80.2	80.2	1997.5	2350.	SI'
S27	89.4	0.	0.	89.4	89.4	1997.5	2350.	SI'
S28	89.9	0.	0.	89.9	89.9	1997.5	2350.	SI'
S29	0.	232.2	167.7	286.4	167.7	1997.5	2350.	SI'
S30	216.3	195.5	167.7	336.4	384.	1997.5	2350.	SI'
S31	0.	231.3	167.7	285.7	167.7	1997.5	2350.	SI'
S32	215.7	195.5	167.7	336.	383.4	1997.5	2350.	SI'
S33	215.7	192.8	0.	289.3	215.7	1997.5	2350.	SI'
S34	215.7	192.8	178.	339.6	393.6	1997.5	2350.	SI'
S35	215.7	192.8	0.	289.3	215.7	1997.5	2350.	SI'
S36	0.	281.7	178.	333.2	178.	1997.5	2350.	SI'
S37	216.3	193.3	178.	340.3	394.3	1997.5	2350.	SI'
S38	0.	282.6	178.	334.	178.	1997.5	2350.	SI'
S39	216.3	193.3	0.	290.1	216.3	1997.5	2350.	SI'
S40	216.3	193.3	0.	290.1	216.3	1997.5	2350.	SI'
S41	0.	234.9	0.	234.9	0.	1997.5	2350.	SI'
S42	0.	234.	0.	234.	0.	1997.5	2350.	SI'
S43	0.	279.9	0.	279.9	0.	1997.5	2350.	SI'

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  S44|      0.|    279.|      0.|    279.|      0.|  1997.5|   2350.|SI'|

Verifica piastra
   Smax|     fd|Ver|
  105.3| 2238.1|SI'|

Verifica nervature
Posizione|   Smax|     fd|Ver|
Z        |  455.4| 2238.1|SI'|
Y        |  419.5| 2238.1|SI'|

Verifica pressione sul calcestruzzo
   Smax|    fcd|Ver|
    9.3|  141.1|SI'|

NODO VERIFICATO IN BASE ALLA COMB. DI SOLLECITAZIONI AGENTI Caso 5 As. 2 Nd. 859
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