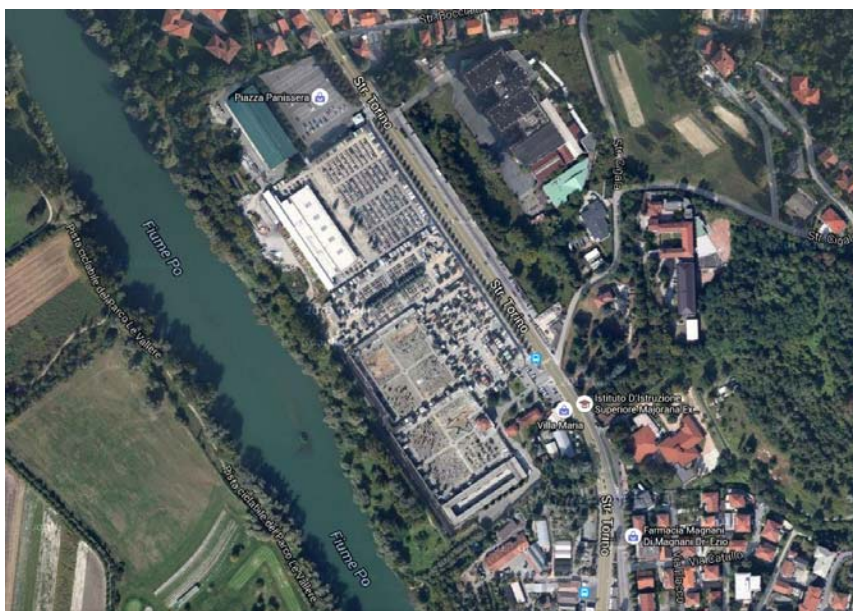




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PROGETTO DI:

**REALIZZAZIONE LOCULI IN INTEGRAZIONE SULL'AREA INTERNA DEL CIMITERO
URBANO
- 6°-7°- 8° -**



DEFINITIVO – ESECUTIVO
(ai sensi D.Lgs 18/04/2016 n°50 art. 23 co. 4)

ST.02 – RELAZIONE DI CALCOLO

Moncalieri, 19 Settembre 2016

*IL RESPONSABILE DEL
PROCEDIMENTO
E PROGETTISTA ARCHITETTONICO
(geom. Dario VIOLA)*

*IL PROGETTISTA E DIRETTORE
LAVORI STRUTTURALE
(ing. Alberto Maero)*

*I COLLABORATORI
(geom. Girolamo FICI)
(arch. Antonella ZOTTI)
(arch. Lucia Spriano)*

*Visto:
IL DIRIGENTE
(Dott. Roberto BIANCATO))*

PREMESSA

I calcoli sono stati eseguiti in conformità alle vigenti Norme Tecniche emanate dal Ministero dei Lavori Pubblici secondo quanto disposto dalle seguenti normative, tenendo presenti le caratteristiche, le qualità e le dosature dei materiali da impiegarsi nelle opere da costruire.

DESCRIZIONE SOMMARIA DELLE OPERE IN PROGETTO

Oggetto delle opere in conglomerato cementizio armato semplice è la costruzione di 225 loculi cimiteriali siti nel cimitero urbano di Moncalieri (TO). I loculi sono costituiti da una struttura di tipo scatolare costituita da setti e orizzontamenti in c.a.

NORMATIVA DI RIFERIMENTO

- 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 disposizioni legislative e regolamentari in materia edilizia.
- D.M. 14/1/2008: Norme tecniche per le costruzioni.

CARATTERISTICHE DEI MATERIALI

Nella esecuzione delle opere in epigrafe è previsto l'impiego dei seguenti materiali:

CALCESTRUZZO : Classe C25/30
 $R_{ck} = 30 \text{ N/mm}^2$
 $f_{ck} = 25 \text{ N/mm}^2$

ACCIAIO : B450c
 $f_{tk} = 540 \text{ N/mm}^2$
 $f_{yk} = 450 \text{ N/mm}^2$

ANALISI STRUTTURALE – CRITERI E METODI ADOTTATI NEI CALCOLI

In conformità alle vigenti disposizioni normative, poiché la nuova struttura in c.a. presenta le seguenti caratteristiche:

- Tipologia costruzione (art. 2.4.1 NTC): 2 $V_n \geq 50$ anni
- Classe d'uso (art. 2.4.2 NTC): II normali affollamenti.

- Sita nel Comune di Moncalieri (TO) ricadente in Zona 4
- Regolarità in pianta (art. 7.2.2 NTC): si
- Regolarità in altezza (art. 7.2.2 NTC): no
- Altezza massima (art. 7.3.3.2 NTC): 5.00 m. circa < 40.00 m

La nuova struttura in c.a., ai sensi delle prescrizioni indicate alla premessa del Cap.7 delle NTC 2008, sarà progettata e verificata applicando le regole valide per le costruzioni soggette ad azione sismica, secondo il metodo degli Stati Limite; sarà quindi condotta un'analisi semplificata, in regime statico lineare considerando oltre alle azioni permanenti e variabili, forze statiche equivalenti alle forze di inerzia indotte dall'azione sismica come indicato al punto 7.3.3.2 delle NTC 2008.

AZIONI DI PROGETTO

Azioni verticali

- Fondazione loculi Blocco D – VIII Ampliamento (h=50 cm):

Peso proprio struttura $G_{k1} = 1250 \text{ daN/m}^2$

Carico permanente $G_{k2} = 100 \text{ daN/m}^2$

Carico accidentale $Q_k = 250 \text{ daN/m}^2$

- Fondazione loculi Blocco A, B – VI Ampliamento ($h_{\text{MEDIA}} = 13 \text{ cm}$),
Blocco C – VII Ampliamento ($h_{\text{MEDIA}} = 13 \text{ cm}$):

Peso proprio struttura $G_{k1} = 325 \text{ daN/m}^2$

Carico permanente $G_{k2} = 100 \text{ daN/m}^2$

Carico accidentale $Q_k = 250 \text{ daN/m}^2$

- Copertura in pannelli precoibentati VI ampliamento:

Peso proprio struttura $G_{k1} = 15 \text{ daN /m}^2$

Carico neve $Q_k = 125 \text{ daN /m}^2$

Azioni orizzontali

Le azioni orizzontali agenti sulla struttura considerati nella presente analisi sono indotte dal sisma. Come indicato in precedenza si considerano delle forze statiche equivalenti applicate ai vari piani rigidi della struttura. La forza da applicare a ciascuna massa della costruzione è data dalla formula seguente:

$$F_i = F_h \cdot z_i \cdot W_i / \sum_j z_j \cdot W_j$$

dove:

$$F_h = S_d(T_1) \cdot W \cdot I / g$$

F_i è la forza da applicare alla massa i-esima;

W_i e W_j sono i pesi, rispettivamente, della massa i e della massa j;

z_i e z_j sono le quote, rispetto al piano di fondazione delle masse i e j;

$S_d(T_1)$ è l'ordinata dello spettro di risposta di progetto definito al § 3.2.3.5;

W è il peso complessivo della costruzione;

$I = 0,85$ se (valido per costruzioni con almeno tre orizzontamenti e $T_1 < 2T_C$, pari a 1,0)

g è l'accelerazione di gravità.

Carico neve

CALCOLO NEVE

Unità di misura : cm ; Kgf/cmq ; Kgf/cm

Zona 0

Altitudine [m]: 219

Periodo di Ritorno [anni]: 50

q_{sk} (carico neve al suolo) = .015457

COPERTURA AD UNA FALDA

alfa (inclinazione della falda [°]) = 1

mu		qs		qe		
mu1		.8		.012365		.606

INDIVIDUAZIONE DEL CODICE DI CALCOLO

Per il calcolo delle sollecitazioni e per la verifica di travi e pilastri in cemento armato si è fatto ricorso all'elaboratore elettronico utilizzando il seguente programma di calcolo:

DOLMEN WIN (R), versione 10.0 del 2010 prodotto, distribuito ed assistito dalla CDM DOLMEN srl, con sede in Torino, Via Drovetti 9/F.

Questa procedura e' sviluppata in ambiente Windows, ed è stata scritta utilizzando i linguaggi Fortran e C. DOLMEN WIN permette l'analisi elastica lineare di strutture tridimensionali con nodi a sei gradi di libertà 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, come forze distribuite, trapezie, concentrate, come coppie e come distorsioni termiche. I vincoli sono forniti tramite le sei costanti di rigidezza elastica.

GRADO DI AFFIDABILITA' DEL CODICE

L'affidabilità del codice di calcolo è garantita dall'esistenza di un'ampia documentazione 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 qualità della soluzione, in base all'uguaglianza del lavoro esterno e dell'energia di deformazione.

ESAME DEI RISULTATI E CONTROLLI

Valutazione della correttezza del modello

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

Giudizio motivato di accettabilita' dei risultati

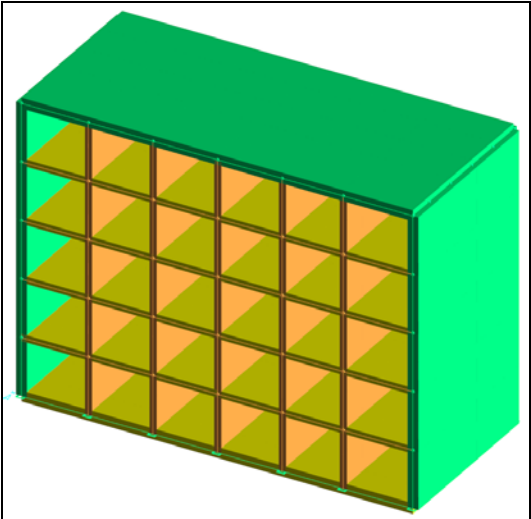
L'analisi critica dei risultati e dei parametri di controllo nonché il confronto con calcolazioni di massima eseguite manualmente porta ad confermare la validità dei risultati.

ALLEGATI

Alla presente relazione si allegano le seguenti stampe:

- dati di ingresso e verifiche di resistenza strutture loculi.

BLOCCO A - 30 LOCULI DA REALIZZARSI NEL VI AMPLIAMENTO



DATI STRUTTURA:

*** DATI STRUTTURA

Unità di misura :
LUNGHEZZE : cm
SUPERFICI : cm²
DATI SEZIONALI : cm
ANGOLI : gradi
FORZE : daN
MOMENTI : daNcm
CARICHI LINEARI : daN/cm
CARICHI SUPERFICI : daN/cm²
TENSIONI : daN/cm²
PESI DI VOLUME : daN/cm³
COEFF. DI WINKLER : daN/cm³
RIGIDENZE VINCOLI : daN/cm - daNcm/rad

PROPRIETÀ GUSCI						num. =
Nome	Material	Sp. membr.	Sp. piastra	Kw		
1	1	15.00	15.00	0.000000		2
2	1	10.00	10.00	0.000000		
MATERIALI						num. =
Nome	Mod. elast.	Coeff. nu	Mod. tang.	Peso spec.	Dil. te.	
1	3.00000E+05	1.50000E-01	1.30000E+05	2.50000E-03	1.00000E-05	1
VINCOLI						num. =
						42

[illegible]

CARICHI	NODI	-----	-----	-----	-----	-----	num. =
Nome			Nodo	Direzione	Intensità		
1 -	420	:	Forze Sismiche	(Analisi Semplificata)			
421 -	840	:	Momenti Torcenti	Addizionali			

CARICHI	DI	LI NEA	coordi nata		Cond.	Di rez.	Intensi ta		num. =
Nome		numero inizio		fine			inizio	fine	Descrizi one

CARI CHI	GUSCI	-----	-----	-----	-----	-----	num. =	535
Nome			Gusci o	Dir	Tip	RIF	Intensi ta'	
841 var	locul i		266	Z	FD	gl o	-0. 02500	
842 var	locul i		267	Z	FD	gl o	-0. 02500	
843 var	locul i		268	Z	FD	gl o	-0. 02500	
844 var	locul i		269	Z	FD	gl o	-0. 02500	
845 var	locul i		270	Z	FD	gl o	-0. 02500	
846 var	locul i		271	Z	FD	gl o	-0. 02500	
847 var	locul i		272	Z	FD	gl o	-0. 02500	
848 var	locul i		273	Z	FD	gl o	-0. 02500	
849 var	locul i		274	Z	FD	gl o	-0. 02500	
850 var	locul i		275	Z	FD	gl o	-0. 02500	
851 var	locul i		276	Z	FD	gl o	-0. 02500	
852 var	locul i		277	Z	FD	gl o	-0. 02500	
853 var	locul i		278	Z	FD	gl o	-0. 02500	
854 var	locul i		279	Z	FD	gl o	-0. 02500	
855 var	locul i		280	Z	FD	gl o	-0. 02500	
856 var	locul i		281	Z	FD	gl o	-0. 02500	
857 var	locul i		282	Z	FD	gl o	-0. 02500	
858 var	locul i		283	Z	FD	gl o	-0. 02500	
859 var	locul i		284	Z	FD	gl o	-0. 02500	
860 var	locul i		285	Z	FD	gl o	-0. 02500	
861 var	locul i		286	Z	FD	gl o	-0. 02500	
862 var	locul i		287	Z	FD	gl o	-0. 02500	
863 var	locul i		288	Z	FD	gl o	-0. 02500	
864 var	locul i		289	Z	FD	gl o	-0. 02500	
865 var	locul i		290	Z	FD	gl o	-0. 02500	
866 var	locul i		291	Z	FD	gl o	-0. 02500	
867 var	locul i		292	Z	FD	gl o	-0. 02500	
868 var	locul i		293	Z	FD	gl o	-0. 02500	
869 var	locul i		294	Z	FD	gl o	-0. 02500	
870 var	locul i		295	Z	FD	gl o	-0. 02500	
871 var	locul i		296	Z	FD	gl o	-0. 02500	
872 var	locul i		297	Z	FD	gl o	-0. 02500	
873 var	locul i		298	Z	FD	gl o	-0. 02500	
874 var	locul i		299	Z	FD	gl o	-0. 02500	
875 var	locul i		300	Z	FD	gl o	-0. 02500	
876 var	locul i		301	Z	FD	gl o	-0. 02500	
877 var	locul i		302	Z	FD	gl o	-0. 02500	
878 var	locul i		303	Z	FD	gl o	-0. 02500	
879 var	locul i		304	Z	FD	gl o	-0. 02500	
880 var	locul i		305	Z	FD	gl o	-0. 02500	
881 var	locul i		306	Z	FD	gl o	-0. 02500	
882 var	locul i		307	Z	FD	gl o	-0. 02500	
883 var	locul i		308	Z	FD	gl o	-0. 02500	
884 var	locul i		309	Z	FD	gl o	-0. 02500	
885 var	locul i		310	Z	FD	gl o	-0. 02500	
886 var	locul i		311	Z	FD	gl o	-0. 02500	
887 var	locul i		312	Z	FD	gl o	-0. 02500	

888	var	locul	i	313	Z	FD	glo	-0.02500
889	var	locul	i	314	Z	FD	glo	-0.02500
890	var	locul	i	315	Z	FD	glo	-0.02500
891	var	locul	i	316	Z	FD	glo	-0.02500
892	var	locul	i	317	Z	FD	glo	-0.02500
893	var	locul	i	318	Z	FD	glo	-0.02500
894	var	locul	i	319	Z	FD	glo	-0.02500
895	var	locul	i	320	Z	FD	glo	-0.02500
896	var	locul	i	321	Z	FD	glo	-0.02500
897	var	locul	i	322	Z	FD	glo	-0.02500
898	var	locul	i	323	Z	FD	glo	-0.02500
899	var	locul	i	324	Z	FD	glo	-0.02500
900	var	locul	i	325	Z	FD	glo	-0.02500
901	var	locul	i	326	Z	FD	glo	-0.02500
902	var	locul	i	327	Z	FD	glo	-0.02500
903	var	locul	i	328	Z	FD	glo	-0.02500
904	var	locul	i	329	Z	FD	glo	-0.02500
905	var	locul	i	330	Z	FD	glo	-0.02500
906	var	locul	i	331	Z	FD	glo	-0.02500
907	var	locul	i	332	Z	FD	glo	-0.02500
908	var	locul	i	333	Z	FD	glo	-0.02500
909	var	locul	i	334	Z	FD	glo	-0.02500
910	var	locul	i	335	Z	FD	glo	-0.02500
911	var	locul	i	336	Z	FD	glo	-0.02500
912	var	locul	i	337	Z	FD	glo	-0.02500
913	var	locul	i	338	Z	FD	glo	-0.02500
914	var	locul	i	339	Z	FD	glo	-0.02500
915	var	locul	i	340	Z	FD	glo	-0.02500
916	var	locul	i	341	Z	FD	glo	-0.02500
917	var	locul	i	342	Z	FD	glo	-0.02500
918	var	locul	i	343	Z	FD	glo	-0.02500
919	var	locul	i	344	Z	FD	glo	-0.02500
920	var	locul	i	345	Z	FD	glo	-0.02500
921	var	locul	i	346	Z	FD	glo	-0.02500
922	var	locul	i	347	Z	FD	glo	-0.02500
923	var	locul	i	348	Z	FD	glo	-0.02500
924	var	locul	i	349	Z	FD	glo	-0.02500
925	var	locul	i	350	Z	FD	glo	-0.02500
926	var	locul	i	351	Z	FD	glo	-0.02500
927	var	locul	i	352	Z	FD	glo	-0.02500
928	var	locul	i	353	Z	FD	glo	-0.02500
929	var	locul	i	354	Z	FD	glo	-0.02500
930	var	locul	i	355	Z	FD	glo	-0.02500
931	var	locul	i	356	Z	FD	glo	-0.02500
932	var	locul	i	357	Z	FD	glo	-0.02500
933	var	locul	i	358	Z	FD	glo	-0.02500
934	var	locul	i	359	Z	FD	glo	-0.02500
935	var	locul	i	360	Z	FD	glo	-0.02500
936	var	locul	i	361	Z	FD	glo	-0.02500
937	var	locul	i	362	Z	FD	glo	-0.02500
938	var	locul	i	363	Z	FD	glo	-0.02500
939	var	locul	i	364	Z	FD	glo	-0.02500
940	var	locul	i	365	Z	FD	glo	-0.02500
941	var	locul	i	366	Z	FD	glo	-0.02500
942	var	locul	i	367	Z	FD	glo	-0.02500
943	var	locul	i	368	Z	FD	glo	-0.02500
944	var	locul	i	369	Z	FD	glo	-0.02500
945	var	locul	i	370	Z	FD	glo	-0.02500
946	var	locul	i	371	Z	FD	glo	-0.02500
947	var	locul	i	372	Z	FD	glo	-0.02500
948	var</							

990 var I oculi 34 Z FD glo -0.02500

PESI PROPRI GUSCI - |-----|-----|-----|-----|-----|
Cond. Nome Carichi Gusci
1 991-1375 1-385

CONDIZIONI DI CARICO-----|-----|-----|-----| num. = 8

Nome
1 Peso_proprio_____ N. carichi: 385
Lista carichi: 991-1375
2 Permanente_____ N. carichi: 0
Lista carichi:
3 A: Var_abi tazione_____ N. carichi: 150
Lista carichi: 841-990
4 Neve_(<1000m_slm)_____ N. carichi: 0
Lista carichi:
5 Si sma_X N. carichi: 210
Lista carichi: 1-210
6 Si sma_Y N. carichi: 210
Lista carichi: 211-420
7 Torcente_add._X N. carichi: 210
Lista carichi: 421-630
8 Torcente_add._Y N. carichi: 210
Lista carichi: 631-840

RISULTANTI DEI CARICHI (punto di applicazione nell'origine degli assi):
cond. FX FY FZ MX MY MZ
1 0.000000E+00 0.000000E+00 -4.915492E+04 -8.162053E+07 1.243450E+08 0.000000E+00
2 0.000000E+00 0.000000E+00 0.000000E+00 0.000000E+00 0.000000E+00 0.000000E+00
3 0.000000E+00 0.000000E+00 -1.582617E+04 -2.597324E+07 4.003559E+07 0.000000E+00
4 0.000000E+00 0.000000E+00 0.000000E+00 0.000000E+00 0.000000E+00 0.000000E+00
5 3.185385E+03 0.000000E+00 0.000000E+00 0.000000E+00 9.078566E+05 -5.284840E+06
6 0.000000E+00 3.185385E+03 0.000000E+00 -9.078566E+05 0.000000E+00 8.057938E+06
7 0.000000E+00 0.000000E+00 0.000000E+00 0.000000E+00 0.000000E+00 -3.783297E+04
8 0.000000E+00 0.000000E+00 0.000000E+00 0.000000E+00 0.000000E+00 8.489052E+04

DATI ANALISI SISMICA:

Analisi sismica - Statica lineare - (NTC 2008)

Coeff. I lambda = 1.0000
Sd = 0.070

Numero condizioni generanti carichi sismici : 3

Cond. 001 : Peso_proprio_____ con coeff. 1.000
Cond. 002 : Permanente_____ con coeff. 1.000
Cond. 003 : A: Var_abi tazione_____ con coeff. 0.300

Condizioni di carico sismico generate:

Cond. 005 : Si sma X
Cond. 006 : Si sma Y
Cond. 007 : Torcente add. X
Cond. 008 : Torcente add. Y

Carichi sismici :

Piani cm	Pesi daN	C. distr.	Forze di piano daN	Torc. di piano X daNcm	Torc. di piano Y daNcm	Bari c. X cm	Bari c. Y cm
80.0	9514	0.0241	229	2719	6101	2529.7	1661.1
160.0	9514	0.0481	458	5438	12202	2529.7	1661.1
240.0	9514	0.0722	687	8157	18303	2529.7	1661.1
320.0	9514	0.0962	916	10876	24405	2529.7	1661.1
400.0	7448	0.1203	896	10642	23879	2529.7	1653.9

DESCRIZIONE CASI DI CARICO:

NOME	DESCRIZIONE	VERIFICA	TIPO	CONDIZ. INSERITE			CASI INSERITI	
				Num.	Coeff.	Segno	Num.	Coeff.
1	SLU SENZA SI SMA	S. L. U.	somma	1	1.300	+		
				2	1.500	+		
				3	1.500	+		
				4	1.500	+		
2	SI SMAX SLU	nessuna	somma	5	1.000	±		
				7	1.000	±		

3	SISMAV SLU	nessuna	somma	6 8	1.000 1.000	± ±		
4	SLU con SISMAX	S. L. U.	somma	1 2 3	1.000 1.000 0.300	+ + +	2	1.000
5	SLU con SISMAV	S. L. U.	somma	1 2 3	1.000 1.000 0.300	+ + +	3	1.000
6	SLUGeo	SLU_GEO	somma	1 2 3 4	1.000 1.300 1.300 1.300	+ + + +		
7	Rara	Rara	somma	1 2 3 4	1.000 1.000 1.000 1.000	+ + + +		
8	Frequente	Freq.	somma	1 2 3 4	1.000 1.000 0.500 0.200	+ + + +		
9	Quasi Perm	Quasi Perm.	somma	1 2 3	1.000 1.000 0.300	+ + +		

VERIFICA GUSCI IN C.A.:

MACROGUSCIO muro_di_fondo

VERIFICA ARMATURE EFFETTIVE (EFFETTO MEMBRANA + PIASTRA)

unità di misura:

lunghezze : [cm] - forze : [daN]
 momenti : [daNm/cm] - tensioni : [daN/cm2]
 pesi specifici : [daN/cm3] - angoli : [gradi]
 armature : [cm2]

CASI DI CARICO:

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

DATI:

tensione di snervamento acciaio (fyk): 4500 daN/cm2
 coefficiente sicurezza acciaio : 1.15
 deformazione ultima acciaio : 67.5 per mille
 deformazione ultima cls : 3.5 per mille
 rapporto rottura/snervamento (k): 1.15
 resistenza cilindrica cls (fck): 249 daN/cm2
 coefficiente sicurezza cls : 1.5
 coefficiente riduttivo (alfa): 0.85
 copri ferro inferiore (asse armatura): 2 cm
 copri ferro superiore (asse armatura): 2 cm
 moltiplicatore sollecitazioni : 1

GUSCI	spess	INFERIORE ORIZZONTALE						INFERIORE VERTICALE					
		Af	Afc	Mom	Nor	epsC	epsF	Af	Afc	Mom	Nor	epsC	epsF
1	15	4.03	3.96	0.	5.	0.00	0.03	3.95	4.02	0.	-3.	0.00	0.00
2	15	4.03	3.96	0.	2.	0.00	0.01	3.95	4.02	1.	-8.	0.01	-0.01
3	15	4.03	3.96	2.	1.	0.00	0.01	3.95	4.02	0.	-6.	0.00	0.00
4	15	4.03	3.96	2.	2.	0.00	0.01	3.95	4.02	0.	-3.	0.00	0.00
5	15	4.03	3.96	1.	3.	0.00	0.02	3.95	4.02	1.	0.	0.00	0.00
6	15	4.03	3.96	0.	5.	0.00	0.03	3.95	4.02	0.	-3.	0.00	0.00
7	15	4.03	3.96	0.	2.	0.00	0.01	3.95	4.02	2.	-9.	0.01	-0.01
8	15	4.03	3.96	2.	1.	0.00	0.01	3.95	4.02	0.	-7.	0.00	0.00
9	15	4.03	3.96	2.	2.	0.00	0.01	3.95	4.02	0.	-4.	0.00	0.00
10	15	4.03	3.96	2.	3.	0.00	0.02	3.95	4.02	1.	1.	0.00	0.00
11	15	4.03	3.96	0.	4.	0.00	0.02	3.95	4.02	0.	-6.	0.00	0.00
12	15	4.03	3.96	0.	3.	0.00	0.02	3.95	4.02	0.	-7.	0.00	0.00
13	15	4.03	3.96	0.	3.	0.00	0.02	3.95	4.02	0.	-6.	0.00	0.00
14	15	4.03	3.96	0.	4.	0.00	0.02	3.95	4.02	0.	-5.	0.00	0.00
15	15	4.03	3.96	2.	2.	0.00	0.01	3.95	4.02	4.	-9.	0.01	-0.01
16	15	4.03	3.96	2.	2.	0.00	0.01	3.95	4.02	0.	-8.	0.01	-0.01
17	15	4.03	3.96	2.	2.	0.00	0.01	3.95	4.02	0.	-5.	0.00	0.00
18	15	4.03	3.96	2.	1.	0.00	0.01	3.95	4.02	1.	-2.	0.00	0.00
19	15	4.03	3.96	2.	2.	0.00	0.01	3.95	4.02	4.	-11.	0.01	-0.01
20	15	4.03	3.96	2.	1.	0.00	0.01	3.95	4.02	0.	-9.	0.01	-0.01
21	15	4.03	3.96	2.	1.	0.00	0.01	3.95	4.02	0.	-6.	0.00	0.00
22	15	4.03	3.96	2.	1.	0.00	0.01	3.95	4.02	0.	-2.	0.00	0.00
23	15	4.03	3.96	2.	-1.	0.00	0.01	3.95	4.02	4.	-10.	0.01	-0.01
24	15	4.03	3.96	2.	1.	0.00	0.01	3.95	4.02	0.	-9.	0.01	-0.01
25	15	4.03	3.96	2.	1.	0.00	0.01	3.95	4.02	0.	-6.	0.00	0.00
26	15	4.03	3.96	2.	1.	0.00	0.01	3.95	4.02	0.	-2.	0.00	0.00
27	15	4.03	3.96	2.	2.	0.00	0.01	3.95	4.02	3.	-9.	0.01	-0.01
28	15	4.03	3.96	2.	1.	0.00	0.01	3.95	4.02	0.	-8.	0.01	-0.01
29	15	4.03	3.96	2.	2.	0.00	0.01	3.95	4.02	0.	-5.	0.00	0.00
30	15	4.03	3.96	2.	1.	0.00	0.01	3.95	4.02	0.	-2.	0.00	0.00

GUSCI	spess	SUPERIORE ORIZZONTALE						SUPERIORE VERTICALE					
		Af	Afc	Mom	Nor	epsC	epsF	Af	Afc	Mom	Nor	epsC	epsF
1	15	3.96	4.03	5.	5.	0.00	0.04	4.02	3.95	40.	-2.	0.04	0.08
2	15	3.96	4.03	3.	1.	0.00	0.01	4.02	3.95	0.	-8.	0.01	-0.01
3	15	3.96	4.03	1.	1.	0.00	0.01	4.02	3.95	2.	-6.	0.01	0.00
4	15	3.96	4.03	2.	1.	0.00	0.01	4.02	3.95	0.	-3.	0.00	0.00
5	15	3.96	4.03	1.	3.	0.00	0.02	4.02	3.95	0.	0.	0.00	0.01
6	15	3.96	4.03	6.	5.	0.00	0.04	4.02	3.95	48.	-3.	0.04	0.08
7	15	3.96	4.03	1.	0.	0.00	0.01	4.02	3.95	0.	-8.	0.01	-0.01
8	15	3.96	4.03	2.	1.	0.00	0.01	4.02	3.95	2.	-7.	0.01	0.00
9	15	3.96	4.03	2.	2.	0.00	0.01	4.02	3.95	1.	-4.	0.00	0.00
10	15	3.96	4.03	1.	3.	0.00	0.02	4.02	3.95	2.	0.	0.00	0.01
11	15	3.96	4.03	5.	4.	0.00	0.03	4.02	3.95	51.	-6.	0.04	0.09
12	15	3.96	4.03	4.	3.	0.00	0.03	4.02	3.95	52.	-7.	0.04	0.09
13	15	3.96	4.03	5.	3.	0.00	0.03	4.02	3.95	52.	-5.	0.04	0.09
14	15	3.96	4.03	6.	3.	0.00	0.03	4.02	3.95	49.	-4.	0.04	0.08
15	15	3.96	4.03	1.	1.	0.00	0.01	4.02	3.95	0.	-10.	0.01	-0.01
16	15	3.96	4.03	2.	2.	0.00	0.01	4.02	3.95	2.	-8.	0.01	0.00
17	15	3.96	4.03	2.	2.	0.00	0.01	4.02	3.95	1.	-5.	0.00	0.00
18	15	3.96	4.03	2.	1.	0.00	0.01	4.02	3.95	2.	-2.	0.00	0.00
19	15	3.96	4.03	1.	1.	0.00	0.01	4.02	3.95	0.	-11.	0.01	-0.01
20	15	3.96	4.03	2.	1.	0.00	0.01	4.02	3.95	2.	-9.	0.01	-0.01
21	15	3.96	4.03	2.	2.	0.00	0.01	4.02	3.95	1.	-6.	0.00	0.00
22	15	3.96	4.03	2.	1.	0.00	0.01	4.02	3.95	1.	-2.	0.00	0.00
23	15	3.96	4.03	1.	1.	0.00	0.01	4.02	3.95	0.	-10.	0.01	-0.01
24	15	3.96	4.03	2.	1.	0.00	0.01	4.02	3.95	2.	-8.	0.01	0.00
25	15	3.96	4.03	2.	1.	0.00	0.01	4.02	3.95	1.	-5.	0.00	0.00
26	15	3.96	4.03	2.	1.	0.00	0.01	4.02	3.95	1.	-2.	0.00	0.00
27	15	3.96	4.03	0.	1.	0.00	0.01	4.02	3.95	0.	-8.	0.01	-0.01
28	15	3.96	4.03	2.	1.	0.00	0.01	4.02	3.95	2.	-7.	0.01	0.00
29	15	3.96	4.03	2.	2.	0.00	0.01	4.02	3.95	0.	-4.	0.00	0.00
30	15	3.96	4.03	2.	1.	0.00	0.01	4.02	3.95	1.	-1.	0.00	0.00

***** TAGLIO PERPENDI COLARE

GUSCI	tx	ty	tt	GUSCI	tx	ty	tt	GUSCI	tx	ty	tt
1	0.0	0.1	0.1	2	0.0	0.0	0.0	3	0.0	0.0	0.0

4	0.0	0.0	0.0	5	0.0	0.0	0.0	6	0.0	0.1	0.1
7	0.0	0.0	0.0	8	0.0	0.0	0.0	9	0.0	0.0	0.0
10	0.0	0.0	0.0	11	0.0	0.1	0.1	12	0.0	0.1	0.1
13	0.0	0.1	0.1	14	0.0	0.1	0.1	15	0.0	0.0	0.0
16	0.0	0.0	0.0	17	0.0	0.0	0.0	18	0.0	0.0	0.0
19	0.0	0.0	0.0	20	0.0	0.0	0.0	21	0.0	0.0	0.0
22	0.0	0.0	0.0	23	0.0	0.0	0.0	24	0.0	0.0	0.0
25	0.0	0.0	0.0	26	0.0	0.0	0.0	27	0.0	0.0	0.0
28	0.0	0.0	0.0	29	0.0	0.0	0.0	30	0.0	0.0	0.0

MACROGUSCIO muro_di_fondo

VERIFICHE A FESSURAZIONE (EFFETTO MEMBRANA + PIASTRA)

unità di misura:
 lunghezze : [cm] - forze : [daN]
 momenti : [daNcm/cm] - tensioni : [daN/cm2]
 pesi specifici : [daN/cm3] - angoli : [gradi]
 armature : [cm2]

CASI DI CARICO:

Nome Descrizione
 7 Rara (RARA)
 8 Frequente (FREQUENTE)
 9 Quasi Perm (QUASI PERMANENTE)

DATI:

copri ferro inferiore (asse armatura): 2 cm
 copri ferro superiore (asse armatura): 2 cm

Af = area effettiva disposta nello strato indicato (cm2 al metro)
 wkR = apertura caratteristica per combinazione rara (mm) - apertura max = 0.6 mm
 wkF = '' '' '' '' frequente (mm) - '' '' = 0.4 mm
 wkP = '' '' '' '' quasi permanente (mm) - '' '' = 0.3 mm

ARMATURA INFERIORE ORIZZONTALE

GUSCI	COMBI NAZI ONE RARA							COMBI NAZI ONE FREQUENTE					COMBI NAZI ONE QUASI PERMANENTE				
	Af	Afc	Mom	Nor	σ_c	σ_f	WkR	Mom	Nor	σ_c	σ_f	WkF	Mom	Nor	σ_c	σ_f	WkP
1	4.03	3.96	0.	1	0.00	18.	0.002	0.	1	0.00	13.	0.001	0.	1	0.00	11.	0.001
2	4.03	3.96	0.	-1	0.05	-1.	0.000	0.	-1	0.06	-1.	0.000	0.	-1	0.06	-1.	0.000
3	4.03	3.96	0.	0.	0.02	0.	0.000	0.	-1	0.03	-1.	0.000	0.	-1	0.04	-1.	0.000
4	4.03	3.96	0.	1	0.00	8.	0.001	0.	0.	0.00	3.	0.000	0.	0.	0.00	1.	0.000
5	4.03	3.96	1	2	0.00	29.	0.003	1	1	0.00	20.	0.002	1	1	0.00	16.	0.001
6	4.03	3.96	0.	2	0.00	22.	0.002	0.	1	0.00	16.	0.002	0.	1	0.00	14.	0.001
7	4.03	3.96	0.	-1	0.04	-1.	0.000	0.	-1	0.05	-1.	0.000	0.	-1	0.05	-1.	0.000
8	4.03	3.96	0.	0.	0.01	0.	0.000	0.	0.	0.03	0.	0.000	0.	-1	0.03	-1.	0.000
9	4.03	3.96	0.	1	0.00	10.	0.001	0.	0.	0.00	5.	0.000	0.	0.	0.00	3.	0.000
10	4.03	3.96	1	2	0.00	30.	0.003	1	2	0.00	21.	0.002	1	1	0.00	17.	0.002
11	4.03	3.96	0.	-1	0.05	-1.	0.000	0.	-1	0.05	-1.	0.000	0.	-1	0.05	-1.	0.000
12	4.03	3.96	0.	-1	0.05	-1.	0.000	0.	-1	0.05	-1.	0.000	0.	-1	0.05	-1.	0.000
13	4.03	3.96	0.	-1	0.04	-1.	0.000	0.	-1	0.04	-1.	0.000	0.	-1	0.04	-1.	0.000
14	4.03	3.96	0.	-1	0.06	-1.	0.000	0.	-1	0.06	-1.	0.000	0.	-1	0.05	-1.	0.000
15	4.03	3.96	0.	-2	0.11	-1.	0.000	0.	-2	0.10	-1.	0.000	0.	-2	0.10	-1.	0.000
16	4.03	3.96	0.	-1	0.07	-1.	0.000	0.	-1	0.07	-1.	0.000	0.	-1	0.07	-1.	0.000
17	4.03	3.96	0.	-1	0.04	-1.	0.000	0.	-1	0.04	-1.	0.000	0.	-1	0.04	-1.	0.000
18	4.03	3.96	0.	-1	0.03	0.	0.000	0.	-1	0.03	-1.	0.000	0.	-1	0.03	-1.	0.000
19	4.03	3.96	0.	-1	0.10	-1.	0.000	0.	-1	0.09	-1.	0.000	0.	-1	0.09	-1.	0.000
20	4.03	3.96	0.	-1	0.06	-1.	0.000	0.	-1	0.06	-1.	0.000	0.	-1	0.06	-1.	0.000
21	4.03	3.96	0.	-1	0.04	-1.	0.000	0.	-1	0.04	-1.	0.000	0.	-1	0.04	-1.	0.000
22	4.03	3.96	0.	-1	0.06	-1.	0.000	0.	-1	0.05	-1.	0.000	0.	-1	0.05	-1.	0.000
23	4.03	3.96	0.	-1	0.09	-1.	0.000	0.	-1	0.08	-1.	0.000	0.	-1	0.08	-1.	0.000
24	4.03	3.96	0.	-1	0.05	-1.	0.000	0.	-1	0.05	-1.	0.000	0.	-1	0.05	-1.	0.000
25	4.03	3.96	0.	-1	0.03	0.	0.000	0.	-1	0.03	0.	0.000	0.	-1	0.03	-1.	0.000
26	4.03	3.96	0.	-1	0.04	-1.	0.000	0.	-1	0.04	-1.	0.000	0.	-1	0.04	-1.	0.000
27	4.03	3.96	1	-2	0.12	-1.	0.000	1	0.	0.03	0.	0.000	1	0.	0.02	0.	0.000
28	4.03	3.96	0.	-1	0.08	-1.	0.000	0.	-1	0.07	-1.	0.000	0.	-1	0.07	-1.	0.000
29	4.03	3.96	0.	-1	0.04	-1.	0.000	0.	-1	0.04	-1.	0.000	0.	-1	0.04	-1.	0.000
30	4.03	3.96	0.	0.	0.02	0.	0.000	0.	0.	0.03	0.	0.000	0.	0.	0.03	0.	0.000

ARMATURA INFERIORE VERTICALE

GUSCI	COMBINAZIONE RARA							COMBINAZIONE FREQUENTE					COMBINAZIONE QUASI PERMANENTE				
	Af	Afc	Mom	Nor	σ_c	σ_f	WkR	Mom	Nor	σ_c	σ_f	WkF	Mom	Nor	σ_c	σ_f	WkP
1	3.95	4.02	0.	-4	0.28	-4.	0.000	0.	-4	0.27	-4.	0.000	0.	-4	0.27	-4.	0.000
2	3.95	4.02	3	-12	0.80	-10.	0.000	3	-11	0.76	-10.	0.000	3	-11	0.74	-10.	0.000
3	3.95	4.02	0.	-9	0.54	-8.	0.000	0.	-8	0.52	-8.	0.000	0.	-8	0.52	-8.	0.000
4	3.95	4.02	0.	-4	0.26	-4.	0.000	0.	-4	0.27	-4.	0.000	0.	-4	0.27	-4.	0.000
5	3.95	4.02	0.	0.	0.00	2.	0.000	0.	0.	0.02	0.	0.000	0.	0.	0.03	0.	0.000
6	3.95	4.02	0.	-4	0.26	-4.	0.000	0.	-4	0.26	-4.	0.000	0.	-4	0.26	-4.	0.000
7	3.95	4.02	3	-12	0.81	-10.	0.000	3	-11	0.77	-10.	0.000	3	-11	0.75	-9.	0.000
8	3.95	4.02	0.	-9	0.53	-8.	0.000	0.	-8	0.52	-8.	0.000	0.	-8	0.51	-8.	0.000
9	3.95	4.02	0.	-4	0.25	-4.	0.000	0.	-4	0.26	-4.	0.000	0.	-4	0.27	-4.	0.000
10	3.95	4.02	0.	0.	0.00	3.	0.000	0.	0.	0.01	0.	0.000	0.	0.	0.03	0.	0.000
11	3.95	4.02	0.	-8	0.46	-7.	0.000	0.	-7	0.43	-6.	0.000	0.	-7	0.42	-6.	0.000
12	3.95	4.02	0.	-9	0.57	-9.	0.000	0.	-8	0.52	-8.	0.000	0.	-8	0.50	-8.	0.000
13	3.95	4.02	0.	-9	0.55	-8.	0.000	0.	-8	0.51	-8.	0.000	0.	-8	0.49	-7.	0.000
14	3.95	4.02	0.	-7	0.46	-7.	0.000	0.	-7	0.43	-6.	0.000	0.	-7	0.42	-6.	0.000
15	3.95	4.02	3	-13	0.89	-11.	0.000	3	-12	0.82	-10.	0.000	3	-12	0.79	-10.	0.000
16	3.95	4.02	0.	-10	0.63	-10.	0.000	0.	-10	0.59	-9.	0.000	0.	-9	0.58	-9.	0.000
17	3.95	4.02	0.	-6	0.37	-6.	0.000	0.	-6	0.36	-5.	0.000	0.	-6	0.35	-5.	0.000
18	3.95	4.02	0.	-2	0.10	-1.	0.000	0.	-2	0.11	-2.	0.000	0.	-2	0.11	-2.	0.000
19	3.95	4.02	3	-15	1.00	-13.	0.000	3	-14	0.92	-12.	0.000	3	-13	0.89	-11.	0.000
20	3.95	4.02	0.	-12	0.73	-11.	0.000	0.	-11	0.68	-10.	0.000	0.	-11	0.65	-10.	0.000
21	3.95	4.02	0.	-7	0.46	-7.	0.000	0.	-7	0.43	-6.	0.000	0.	-7	0.42	-6.	0.000
22	3.95	4.02	0.	-3	0.16	-2.	0.000	0.	-3	0.16	-2.	0.000	0.	-3	0.16	-2.	0.000

23	3.95	4.02	3	-15	0.99	-13.	0.000	3	-14	0.91	-12.	0.000	3	-13	0.87	-11.	0.000
24	3.95	4.02	0.	-12	0.72	-11.	0.000	0.	-11	0.67	-10.	0.000	0.	-10	0.64	-10.	0.000
25	3.95	4.02	0.	-7	0.45	-7.	0.000	0.	-7	0.42	-6.	0.000	0.	-7	0.41	-6.	0.000
26	3.95	4.02	0.	-2	0.15	-2.	0.000	0.	-2	0.15	-2.	0.000	0.	-2	0.15	-2.	0.000
27	3.95	4.02	3	-13	0.89	-11.	0.000	3	-12	0.82	-11.	0.000	3	-12	0.80	-10.	0.000
28	3.95	4.02	0.	-10	0.64	-10.	0.000	0.	-10	0.60	-9.	0.000	0.	-9	0.58	-9.	0.000
29	3.95	4.02	0.	-6	0.37	-6.	0.000	0.	-6	0.36	-5.	0.000	0.	-6	0.35	-5.	0.000
30	3.95	4.02	0.	-2	0.10	-1.	0.000	0.	-2	0.11	-2.	0.000	0.	-2	0.11	-2.	0.000

ARMATURA SUPERIORE ORIZZONTALE

GUSCI	COMBI NAZI ONE		RARA					COMBI NAZI ONE FREQUENTE					COMBI NAZI ONE		QUASI PERMANENTE				
			Mom	Nor	σ_c	σ_f	WkR	Mom	Nor	σ_c	σ_f	WkF			Mom	Nor	σ_c	σ_f	WkP
1	3.96	4.03	6	1	0.04	33.	0.003	6	1	0.13	26.	0.002	5	1	0.15	23.	0.002		
2	3.96	4.03	1	-1	0.04	-1.	0.000	1	-1	0.04	-1.	0.000	0.	-1	0.05	-1.	0.000		
3	3.96	4.03	0.	0.	0.01	0.	0.000	0.	-1	0.02	-1.	0.000	0.	-1	0.03	-1.	0.000		
4	3.96	4.03	1	1	0.00	9.	0.001	0.	0.	0.00	4.	0.000	0.	0.	0.01	2.	0.000		
5	3.96	4.03	1	2	0.00	30.	0.003	1	1	0.00	21.	0.002	1	1	0.00	17.	0.002		
6	3.96	4.03	6	2	0.00	37.	0.003	6	1	0.05	29.	0.002	5	1	0.10	26.	0.002		
7	3.96	4.03	0.	-1	0.03	-1.	0.000	0.	-1	0.04	-1.	0.000	0.	-1	0.04	-1.	0.000		
8	3.96	4.03	1	0.	0.00	0.	0.000	0.	0.	0.02	-1.	0.000	0.	-1	0.02	-1.	0.000		
9	3.96	4.03	1	1	0.00	11.	0.001	0.	0.	0.00	5.	0.000	0.	0.	0.00	3.	0.000		
10	3.96	4.03	1	2	0.00	31.	0.003	1	2	0.00	22.	0.002	1	1	0.00	17.	0.002		
11	3.96	4.03	6	-1	0.27	4.	0.000	6	-1	0.24	3.	0.000	5	-1	0.23	3.	0.000		
12	3.96	4.03	6	-1	0.27	4.	0.000	6	-1	0.24	3.	0.000	5	-1	0.23	3.	0.000		
13	3.96	4.03	6	-1	0.28	6.	0.000	6	-1	0.25	5.	0.000	5	-1	0.24	4.	0.000		
14	3.96	4.03	7	-1	0.29	4.	0.000	6	-1	0.26	3.	0.000	6	-1	0.24	3.	0.000		
15	3.96	4.03	0.	-2	0.10	-2.	0.000	0.	-2	0.10	-1.	0.000	0.	-2	0.09	-1.	0.000		
16	3.96	4.03	0.	-1	0.06	-1.	0.000	0.	-1	0.06	-1.	0.000	0.	-1	0.06	-1.	0.000		
17	3.96	4.03	0.	-1	0.03	-1.	0.000	0.	-1	0.04	-1.	0.000	0.	-1	0.04	-1.	0.000		
18	3.96	4.03	0.	-1	0.02	-1.	0.000	0.	-1	0.03	-1.	0.000	0.	-1	0.03	-1.	0.000		
19	3.96	4.03	0.	-1	0.09	-1.	0.000	0.	-1	0.08	-1.	0.000	0.	-1	0.08	-1.	0.000		
20	3.96	4.03	0.	-1	0.05	-1.	0.000	0.	-1	0.05	-1.	0.000	0.	-1	0.05	-1.	0.000		
21	3.96	4.03	0.	-1	0.04	-1.	0.000	0.	-1	0.04	-1.	0.000	0.	-1	0.04	-1.	0.000		
22	3.96	4.03	0.	-1	0.06	-1.	0.000	0.	-1	0.05	-1.	0.000	0.	-1	0.04	-1.	0.000		
23	3.96	4.03	0.	-1	0.08	-1.	0.000	0.	-1	0.08	-1.	0.000	0.	-1	0.08	-1.	0.000		
24	3.96	4.03	0.	-1	0.04	-1.	0.000	0.	-1	0.04	-1.	0.000	0.	-1	0.04	-1.	0.000		
25	3.96	4.03	0.	-1	0.03	-1.	0.000	0.	-1	0.03	-1.	0.000	0.	-1	0.03	-1.	0.000		
26	3.96	4.03	0.	-1	0.04	-1.	0.000	0.	-1	0.04	-1.	0.000	0.	-1	0.03	-1.	0.000		
27	3.96	4.03	0.	-2	0.11	-2.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.01	0.	0.000		
28	3.96	4.03	0.	-1	0.06	-1.	0.000	0.	-1	0.06	-1.	0.000	0.	-1	0.06	-1.	0.000		
29	3.96	4.03	0.	-1	0.03	-1.	0.000	0.	-1	0.04	-1.	0.000	0.	-1	0.04	-1.	0.000		
30	3.96	4.03	0.	0.	0.01	0.	0.000	0.	0.	0.02	0.	0.000	0.	0.	0.02	-1.	0.000		

ARMATURA SUPERIORE VERTICALE

GUSCI			COMBI NAZI ONE RARA					COMBI NAZI ONE FREQUENTE					COMBI NAZI ONE QUASI		PERMANENTE		
			Mom	Nor	σ_c	σ_f	WkR	Mom	Nor	σ_c	σ_f	WkF					
1	Af	Afc	31	-4	1.36	18.	0.001	28	-4	1.21	14.	0.001	27	-4	1.16	12.	0.001
2	4.02	3.95	0.	-12	0.74	-11.	0.000	0.	-11	0.70	-10.	0.000	0.	-11	0.68	-10.	0.000
3	4.02	3.95	1	-9	0.51	-8.	0.000	1	-8	0.49	-8.	0.000	1	-8	0.49	-8.	0.000
4	4.02	3.95	1	-4	0.25	-4.	0.000	0.	-4	0.26	-4.	0.000	0.	-4	0.26	-4.	0.000
5	4.02	3.95	1	0.	0.04	4.	0.000	1	0.	0.00	-1.	0.000	1	0.	0.01	-1.	0.000
6	4.02	3.95	33	-4	1.45	23.	0.001	30	-4	1.29	18.	0.001	29	-4	1.23	16.	0.001
7	4.02	3.95	0.	-12	0.73	-11.	0.000	0.	-11	0.69	-10.	0.000	0.	-11	0.68	-10.	0.000
8	4.02	3.95	2	-9	0.50	-8.	0.000	1	-8	0.49	-8.	0.000	1	-8	0.48	-8.	0.000
9	4.02	3.95	1	-4	0.24	-4.	0.000	0.	-4	0.25	-4.	0.000	0.	-4	0.26	-4.	0.000
10	4.02	3.95	1	0.	0.02	5.	0.000	1	0.	0.04	0.	0.000	1	0.	0.00	-1.	0.000
11	4.02	3.95	37	-8	1.53	9.	0.000	34	-7	1.38	7.	0.000	32	-7	1.32	7.	0.000
12	4.02	3.95	39	-9	1.59	5.	0.000	35	-8	1.44	4.	0.000	33	-8	1.38	4.	0.000
13	4.02	3.95	38	-9	1.57	5.	0.000	34	-8	1.41	4.	0.000	33	-8	1.35	4.	0.000
14	4.02	3.95	37	-7	1.51	9.	0.000	33	-7	1.36	7.	0.000	32	-7	1.30	6.	0.000
15	4.02	3.95	0.	-13	0.81	-12.	0.000	0.	-12	0.75	-11.	0.000	0.	-12	0.73	-11.	0.000
16	4.02	3.95	2	-10	0.59	-10.	0.000	2	-10	0.56	-9.	0.000	1	-9	0.54	-9.	0.000
17	4.02	3.95	1	-6	0.35	-6.	0.000	1	-6	0.34	-5.	0.000	1	-6	0.34	-5.	0.000
18	4.02	3.95	2	-2	0.05	-2.	0.000	2	-2	0.06	-2.	0.000	2	-2	0.07	-2.	0.000
19	4.02	3.95	0.	-15	0.92	-14.	0.000	0.	-14	0.84	-13.	0.000	0.	-13	0.81	-12.	0.000
20	4.02	3.95	2	-12	0.69	-12.	0.000	2	-11	0.64	-11.	0.000	2	-11	0.62	-10.	0.000
21	4.02	3.95	1	-7	0.44	-7.	0.000	1	-7	0.42	-7.	0.000	0.	-7	0.40	-6.	0.000
22	4.02	3.95	2	-3	0.12	-3.	0.000	2	-3	0.12	-3.	0.000	2	-3	0.12	-3.	0.000
23	4.02	3.95	0.	-15	0.92	-14.	0.000	0.	-14	0.84	-13.	0.000	0.	-13	0.81	-12.	0.000
24	4.02	3.95	2	-12	0.68	-11.	0.000	2	-11	0.63	-10.	0.000	2	-10	0.61	-10.	0.000
25	4.02	3.95	1	-7	0.43	-7.	0.000	1	-7	0.41	-6.	0.000	0.	-7	0.40	-6.	0.000
26	4.02	3.95	2	-2	0.11	-3.	0.000	2	-2	0.11	-3.	0.000	2	-2	0.11	-3.	0.000
27	4.02	3.95	0.	-13	0.82	-12.	0.000	0.	-12	0.75	-11.	0.000	0.	-12	0.73	-11.	0.000
28	4.02	3.95	2	-10	0.59	-10.	0.000	2	-10	0.56	-9.	0.000	2	-9	0.55	-9.	0.000
29	4.02	3.95	1	-6	0.35	-6.	0.000	1	-6	0.34	-6.	0.000	1	-6	0.34	-5.	0.000
30	4.02	3.95	2	-2	0.05	-2.	0.000	2	-2	0.06	-2.	0.000	2	-2	0.07	-2.	0.000

MACROGUSCIO platea_di_base

VERIFICA ARMATURE EFFETTIVE (EFFETTO MEMBRANA + PIASTRA)

unità di misura:

lunghezze : [cm] - forze : [daN]
 momenti : [daNcm/cm] - tensioni : [daN/cm2]
 pesi specifici : [daN/cm3] - angoli : [gradi]
 armature : [cm2]

CASI DI CARICO:

Nome Descrizione
 1 SLU SENZA SI SMA
 4 SLU con SI SMAX
 5 SLU con SI SMAY

DATI:

tensione di snervamento acciaio (fyk): 4500 daN/cm2
 coefficiente sicurezza acciaio : 1.15
 deformazione ultima acciaio : 67.5 per mille
 deformazione ultima cls : 3.5 per mille
 rapporto rottura/snervamento (k): 1.15
 resistenza cilindrica cls (fck): 249 daN/cm2
 coefficiente sicurezza cls : 1.5
 coefficiente riduttivo (alfa): 0.85
 copri ferro inferiore (asse armatura): 2 cm
 copri ferro superiore (asse armatura): 2 cm
 moltiplicatore sollecitazioni : 1

INFERIORE ORIZZONTALE								INFERIORE VERTICALE							
GUSCI	spess	Af	Afc	Mom	Nor	epsC	epsF	Af	Afc	Mom	Nor	epsC	epsF		
31	15	4.18	4.20	0.	0.	0.00	0.00	4.02	3.94	41.	0.	0.02	0.04		
32	15	4.18	4.20	0.	0.	0.00	0.00	4.02	3.94	39.	0.	0.02	0.04		
33	15	4.18	4.20	8.	0.	0.00	0.01	4.02	3.94	91.	0.	0.04	0.09		
34	15	4.18	4.20	0.	0.	0.00	0.00	4.02	3.94	0.	0.	0.00	0.00		
35	15	4.18	4.20	0.	0.	0.00	0.00	4.02	3.94	29.	0.	0.01	0.03		
36	15	4.18	4.20	0.	0.	0.00	0.00	4.02	3.94	42.	0.	0.02	0.04		
37	15	4.18	4.20	0.	0.	0.00	0.00	4.02	3.94	38.	0.	0.02	0.04		
38	15	4.18	4.20	10.	0.	0.00	0.01	4.02	3.94	91.	0.	0.04	0.09		
39	15	4.18	4.20	0.	0.	0.00	0.00	4.02	3.94	0.	0.	0.00	0.00		
40	15	4.18	4.20	0.	0.	0.00	0.00	4.02	3.94	29.	0.	0.01	0.03		
41	15	4.18	4.20	0.	0.	0.00	0.00	4.02	3.94	49.	0.	0.02	0.05		
42	15	4.18	4.20	0.	0.	0.00	0.00	4.02	3.94	48.	0.	0.02	0.05		
43	15	4.18	4.20	0.	0.	0.00	0.00	4.02	3.94	46.	0.	0.02	0.05		
44	15	4.18	4.20	1.	0.	0.00	0.00	4.02	3.94	48.	0.	0.02	0.05		
45	15	4.18	4.20	0.	0.	0.00	0.00	4.02	3.94	0.	0.	0.00	0.00		
46	15	4.18	4.20	6.	0.	0.00	0.01	4.02	3.94	43.	0.	0.02	0.04		
47	15	4.18	4.20	12.	0.	0.01	0.01	4.02	3.94	100.	0.	0.04	0.10		
48	15	4.18	4.20	0.	0.	0.00	0.00	4.02	3.94	0.	0.	0.00	0.00		
49	15	4.18	4.20	5.	0.	0.00	0.01	4.02	3.94	34.	0.	0.01	0.03		
50	15	4.18	4.20	5.	0.	0.00	0.00	4.02	3.94	41.	0.	0.02	0.04		
51	15	4.18	4.20	4.	0.	0.00	0.00	4.02	3.94	40.	0.	0.02	0.04		
52	15	4.18	4.20	8.	0.	0.00	0.01	4.02	3.94	40.	0.	0.02	0.04		
53	15	4.18	4.20	10.	0.	0.00	0.01	4.02	3.94	100.	0.	0.04	0.10		
54	15	4.18	4.20	10.	0.	0.00	0.01	4.02	3.94	100.	0.	0.04	0.10		
55	15	4.18	4.20	14.	0.	0.01	0.01	4.02	3.94	99.	0.	0.04	0.10		
56	15	4.18	4.20	0.	0.	0.00	0.00	4.02	3.94	0.	0.	0.00	0.00		
57	15	4.18	4.20	0.	0.	0.00	0.00	4.02	3.94	0.	0.	0.00	0.00		
58	15	4.18	4.20	4.	0.	0.00	0.00	4.02	3.94	31.	0.	0.01	0.03		
59	15	4.18	4.20	3.	0.	0.00	0.00	4.02	3.94	30.	0.	0.01	0.03		
60	15	4.18	4.20	7.	0.	0.00	0.01	4.02	3.94	31.	0.	0.01	0.03		

SUPERIORE ORIZZONTALE								SUPERIORE VERTICALE							
GUSCI	spess	Af	Afc	Mom	Nor	epsC	epsF	Af	Afc	Mom	Nor	epsC	epsF		
31	15	4.20	4.18	19.	0.	0.01	0.03	3.94	4.02	85.	0.	0.07	0.16		
32	15	4.20	4.18	10.	0.	0.01	0.02	3.94	4.02	51.	0.	0.05	0.11		
33	15	4.20	4.18	0.	0.	0.00	0.01	3.94	4.02	0.	0.	0.00	0.00		
34	15	4.20	4.18	4.	0.	0.00	0.01	3.94	4.02	0.	0.	0.01	0.01		
35	15	4.20	4.18	9.	0.	0.00	0.01	3.94	4.02	53.	0.	0.04	0.10		
36	15	4.20	4.18	25.	0.	0.01	0.03	3.94	4.02	0.	0.	0.07	0.16		
37	15	4.20	4.18	15.	0.	0.01	0.02	3.94	4.02	103.	0.	0.05	0.11		
38	15	4.20	4.18	1.	0.	0.00	0.01	3.94	4.02	0.	0.	0.00	0.00		
39	15	4.20	4.18	8.	0.	0.00	0.01	3.94	4.02	0.	0.	0.02	0.04		
40	15	4.20	4.18	9.	0.	0.00	0.01	3.94	4.02	0.	0.	0.04	0.10		
41	15	4.20	4.18	12.	0.	0.01	0.02	3.94	4.02	0.	0.	0.08	0.19		
42	15	4.20	4.18	12.	0.	0.01	0.02	3.94	4.02	0.	0.	0.08	0.20		
43	15	4.20	4.18	13.	0.	0.01	0.02	3.94	4.02	0.	0.	0.08	0.19		
44	15	4.20	4.18	12.	0.	0.01	0.02	3.94	4.02	0.	0.	0.08	0.19		
45	15	4.20	4.18	7.	0.	0.00	0.01	3.94	4.02	5.	0.	0.02	0.04		
46	15	4.20	4.18	15.	0.	0.01	0.02	3.94	4.02	123.	0.	0.05	0.13		
47	15	4.20	4.18	0.	0.	0.00	0.00	3.94	4.02	0.	0.	0.00	0.00		
48	15	4.20	4.18	10.	0.	0.00	0.01	3.94	4.02	60.	0.	0.03	0.06		
49	15	4.20	4.18	1.	0.	0.00	0.01	3.94	4.02	0.	0.	0.05	0.12		
50	15	4.20	4.18	8.	0.	0.01	0.02	3.94	4.02	51.	0.	0.06	0.13		
51	15	4.20	4.18	16.	0.	0.01	0.02	3.94	4.02	124.	0.	0.05	0.13		
52	15	4.20	4.18	15.	0.	0.01	0.01	3.94	4.02	120.	0.	0.05	0.13		
53	15	4.20	4.18	0.	0.	0.00	0.00	3.94	4.02	0.	0.	0.00	0.00		
54	15	4.20	4.18	0.	0.	0.00	0.00	3.94	4.02	0.	0.	0.00	0.00		
55	15	4.20	4.18	0.	0.	0.00	0.00	3.94	4.02	0.	0.	0.00	0.00		
56	15	4.20	4.18	8.	0.	0.00	0.01	3.94	4.02	45.	0.	0.03	0.06		
57	15	4.20	4.18	10.	0.	0.00	0.01	3.94	4.02	60.	0.	0.03	0.06		
58	15	4.20	4.18	5.	0.	0.00	0.01	3.94	4.02	53.	0.	0.05	0.12		
59	15	4.20	4.18	1.	0.	0.00	0.01	3.94	4.02	0.	0.	0.05	0.12		
60	15	4.20	4.18	0.	0.	0.00	0.00	3.94	4.02	0.	0.	0.05	0.12		

***** TAGLIO PERPENDICOLARE

GUSCI	tx	ty	tt	GUSCI	tx	ty	tt	GUSCI	tx	ty	tt
31	0.0	0.5	0.4	32	0.0	0.4	0.4	33	0.0	0.0	0.0
34	0.0	0.3	0.2	35	0.0	0.3	0.2	36	0.1	0.5	0.5
37	0.0	0.5	0.4	38	0.1	0.0	0.1	39	0.0	0.3	0.2
40	0.0	0.3	0.2	41	0.0	0.5	0.5	42	0.0	0.5	0.5
43	0.0	0.5	0.5	44	0.0	0.5	0.5	45	0.0	0.3	0.2
46	0.0	0.5	0.5	47	0.0	0.0	0.0	48	0.0	0.3	0.3
49	0.0	0.3	0.3	50	0.0	0.5	0.5	51	0.0	0.5	0.5
52	0.0	0.5	0.5	53	0.0	0.0	0.0	54	0.0	0.0	0.0
55	0.0	0.0	0.0	56	0.0	0.3	0.3	57	0.0	0.3	0.3
58	0.0	0.3	0.3	59	0.0	0.3	0.3	60	0.0	0.3	0.3

MACROGUSCIO platea_di_base

VERIFICHE A FESSURAZIONE (EFFETTO MEMBRANA + PIASTRA)

unità di misura:
 lunghezze : [cm] - forze : [daN]
 momenti : [daNm/cm] - tensioni : [daN/cm2]
 pesi specifici : [daN/cm3] - angoli : [gradi]
 armature : [cm2]

CASI DI CARICO:
 Nome Descrizione
 7 Rara (RARA)
 8 Frequente (FREQUENTE)
 9 Quasi Perm (QUASI PERMANENTE)

DATI:
 copri ferro inferiore (asse armatura): 2 cm
 copri ferro superiore (asse armatura): 2 cm
 Af = area effettiva disposta nello strato indicato (cm2 al metro)
 wkR = apertura caratteristica per combinazione rara (mm) - apertura max = 0.6 mm
 wkF = frequente (mm) - '' = 0.4 mm
 wkP = '' '' '' '' '' '' '' = 0.3 mm

ARMATURA INFERIORE ORIZZONTALE

GUSCI	COMBINAZIONE RARA							COMBINAZIONE FREQUENTE					COMBINAZIONE QUASI PERMANENTE				
	Af	Afc	Mom	Nor	σ_c	σ_f	WkR	Mom	Nor	σ_c	σ_f	WkF	Mom	Nor	σ_c	σ_f	WkP
31	4.18	4.20	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
32	4.18	4.20	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
33	4.18	4.20	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
34	4.18	4.20	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
35	4.18	4.20	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
36	4.18	4.20	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
37	4.18	4.20	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
38	4.18	4.20	1	0.	0.05	2.	0.000	1	0.	0.04	2.	0.000	1	0.	0.03	2.	0.000
39	4.18	4.20	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
40	4.18	4.20	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
41	4.18	4.20	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
42	4.18	4.20	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
43	4.18	4.20	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
44	4.18	4.20	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
45	4.18	4.20	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
46	4.18	4.20	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
47	4.18	4.20	9	0.	0.42	19.	0.001	8	0.	0.36	16.	0.001	7	0.	0.34	15.	0.001
48	4.18	4.20	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
49	4.18	4.20	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
50	4.18	4.20	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
51	4.18	4.20	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
52	4.18	4.20	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
53	4.18	4.20	9	0.	0.39	17.	0.001	7	0.	0.34	15.	0.001	7	0.	0.31	14.	0.001
54	4.18	4.20	8	0.	0.36	16.	0.001	7	0.	0.31	14.	0.001	6	0.	0.29	13.	0.001
55	4.18	4.20	11	0.	0.49	22.	0.001	9	0.	0.42	19.	0.001	9	0.	0.40	18.	0.001
56	4.18	4.20	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
57	4.18	4.20	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
58	4.18	4.20	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
59	4.18	4.20	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
60	4.18	4.20	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000

ARMATURA INFERIORE VERTICALE

GUSCI	COMBINAZIONE RARA							COMBINAZIONE FREQUENTE					COMBINAZIONE QUASI PERMANENTE				
	Af	Afc	Mom	Nor	σ_c	σ_f	WkR	Mom	Nor	σ_c	σ_f	WkF	Mom	Nor	σ_c	σ_f	WkP
31	4.02	3.94	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
32	4.02	3.94	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
33	4.02	3.94	61	0.	2.81	128.	0.006	53	0.	2.47	112.	0.006	50	0.	2.33	106.	0.005
34	4.02	3.94	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
35	4.02	3.94	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
36	4.02	3.94	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
37	4.02	3.94	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
38	4.02	3.94	62	0.	2.84	130.	0.006	54	0.	2.49	114.	0.006	51	0.	2.35	107.	0.005
39	4.02	3.94	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
40	4.02	3.94	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
41	4.02	3.94	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
42	4.02	3.94	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
43	4.02	3.94	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
44	4.02	3.94	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
45	4.02	3.94	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
46	4.02	3.94	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
47	4.02	3.94	72	0.	3.32	151.	0.007	62	0.	2.87	131.	0.006	58	0.	2.69	122.	0.006
48	4.02	3.94	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
49	4.02	3.94	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
50	4.02	3.94	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
51	4.02	3.94	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
52	4.02	3.94	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
53	4.02	3.94	74	0.	3.41	155.	0.008	64	0.	2.94	134.	0.007	60	0.	2.76	126.	0.006
54	4.02	3.94	74	0.	3.40	155.	0.008	64	0.	2.94	134.	0.007	60	0.	2.76	126.	0.006
55	4.02	3.94	72	0.	3.31	151.	0.007	62	0.	2.86	130.	0.006	58	0.	2.68	122.	0.006
56	4.02	3.94	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
57	4.02	3.94	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
58	4.02	3.94	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
59	4.02	3.94	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
60	4.02	3.94	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000

ARMATURA SUPERIORE ORIZZONTALE

GUSCI	COMBINAZIONE RARA							COMBINAZIONE FREQUENTE					COMBINAZIONE QUASI PERMANENTE				
	Af	Afc	Mom	Nor	σ_c	σ_f	WkR	Mom	Nor	σ_c	σ_f	WkF	Mom	Nor	σ_c	σ_f	WkP
31	4.20	4.18	18	0.	0.83	37.	0.002	17	0.	0.77	35.	0.002	17	0.	0.75	34.	0.002
32	4.20	4.18	10	0.	0.43	19.	0.001	8	0.	0.36	16.	0.001	7	0.	0.33	15.	0.001
33	4.20	4.18	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
34	4.20	4.18	7	0.	0.31	14.	0.001	6	0.	0.26	12.	0.001	5	0.	0.24	11.	0.001
35	4.20	4.18	9	0.	0.41	18.	0.001	8	0.	0.34	15.	0.001	7	0.	0.32	14.	0.001

36	4.20	4.18	18	0.	0.81	36.	0.002	17	0.	0.76	34.	0.002	16	0.	0.74	33.	0.002
37	4.20	4.18	9	0.	0.41	18.	0.001	7	0.	0.34	15.	0.001	7	0.	0.31	14.	0.001
38	4.20	4.18	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
39	4.20	4.18	7	0.	0.31	14.	0.001	6	0.	0.26	12.	0.001	5	0.	0.24	11.	0.001
40	4.20	4.18	9	0.	0.40	18.	0.001	7	0.	0.33	15.	0.001	7	0.	0.31	14.	0.001
41	4.20	4.18	11	0.	0.49	22.	0.001	10	0.	0.43	19.	0.001	9	0.	0.41	18.	0.001
42	4.20	4.18	10	0.	0.46	21.	0.001	9	0.	0.42	19.	0.001	9	0.	0.40	18.	0.001
43	4.20	4.18	11	0.	0.50	22.	0.001	10	0.	0.45	20.	0.001	9	0.	0.42	19.	0.001
44	4.20	4.18	9	0.	0.43	19.	0.001	8	0.	0.38	17.	0.001	8	0.	0.36	16.	0.001
45	4.20	4.18	7	0.	0.33	15.	0.001	6	0.	0.28	12.	0.001	6	0.	0.25	11.	0.001
46	4.20	4.18	5	0.	0.22	10.	0.000	4	0.	0.20	9.	0.000	4	0.	0.19	8.	0.000
47	4.20	4.18	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
48	4.20	4.18	7	0.	0.34	15.	0.001	6	0.	0.28	13.	0.001	6	0.	0.26	12.	0.001
49	4.20	4.18	3	0.	0.13	6.	0.000	3	0.	0.11	5.	0.000	2	0.	0.11	5.	0.000
50	4.20	4.18	5	0.	0.24	11.	0.001	5	0.	0.22	10.	0.000	5	0.	0.21	9.	0.000
51	4.20	4.18	6	0.	0.26	11.	0.001	5	0.	0.23	10.	0.000	5	0.	0.22	10.	0.000
52	4.20	4.18	4	0.	0.19	8.	0.000	4	0.	0.17	8.	0.000	4	0.	0.16	7.	0.000
53	4.20	4.18	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
54	4.20	4.18	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
55	4.20	4.18	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
56	4.20	4.18	8	0.	0.34	15.	0.001	6	0.	0.29	13.	0.001	6	0.	0.26	12.	0.001
57	4.20	4.18	8	0.	0.34	15.	0.001	6	0.	0.29	13.	0.001	6	0.	0.26	12.	0.001
58	4.20	4.18	3	0.	0.13	6.	0.000	2	0.	0.11	5.	0.000	2	0.	0.10	5.	0.000
59	4.20	4.18	3	0.	0.16	7.	0.000	3	0.	0.13	6.	0.000	3	0.	0.12	5.	0.000
60	4.20	4.18	2	0.	0.10	4.	0.000	2	0.	0.08	4.	0.000	2	0.	0.08	3.	0.000

ARMATURA SUPERIORE VERTICALE

			COMBI NAZI ONE RARA					COMBI NAZI ONE FREQUENTE					COMBI NAZI ONE QUASI PERMANENTE				
GUSCI	Af	Afc	Mom	Nor	σc	σf	WkR	Mom	Nor	σc	σf	WkF	Mom	Nor	σc	σf	WkP
31	3.94	4.02	53	0.	2.47	114.	0.006	49	0.	2.27	105.	0.005	47	0.	2.18	101.	0.005
32	3.94	4.02	32	0.	1.49	69.	0.003	28	0.	1.28	59.	0.003	26	0.	1.20	55.	0.003
33	3.94	4.02	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
34	3.94	4.02	25	0.	1.17	54.	0.003	20	0.	0.93	43.	0.002	18	0.	0.83	38.	0.002
35	3.94	4.02	34	0.	1.57	72.	0.004	29	0.	1.36	63.	0.003	28	0.	1.28	59.	0.003
36	3.94	4.02	53	0.	2.47	114.	0.006	49	0.	2.27	105.	0.005	47	0.	2.18	101.	0.005
37	3.94	4.02	32	0.	1.49	69.	0.003	28	0.	1.28	59.	0.003	26	0.	1.20	55.	0.003
38	3.94	4.02	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
39	3.94	4.02	25	0.	1.18	54.	0.003	20	0.	0.93	43.	0.002	18	0.	0.84	39.	0.002
40	3.94	4.02	34	0.	1.57	72.	0.004	29	0.	1.36	63.	0.003	28	0.	1.28	59.	0.003
41	3.94	4.02	62	0.	2.89	133.	0.007	57	0.	2.64	122.	0.006	55	0.	2.54	117.	0.006
42	3.94	4.02	65	0.	3.01	139.	0.007	59	0.	2.74	127.	0.006	57	0.	2.64	122.	0.006
43	3.94	4.02	65	0.	3.04	140.	0.007	60	0.	2.77	128.	0.006	57	0.	2.67	123.	0.006
44	3.94	4.02	61	0.	2.82	130.	0.007	55	0.	2.57	119.	0.006	53	0.	2.47	114.	0.006
45	3.94	4.02	31	0.	1.42	66.	0.003	24	0.	1.13	52.	0.003	22	0.	1.01	46.	0.002
46	3.94	4.02	37	0.	1.70	79.	0.004	32	0.	1.47	68.	0.003	30	0.	1.38	63.	0.003
47	3.94	4.02	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
48	3.94	4.02	31	0.	1.46	67.	0.003	25	0.	1.15	53.	0.003	22	0.	1.03	48.	0.002
49	3.94	4.02	37	0.	1.74	80.	0.004	32	0.	1.51	70.	0.003	30	0.	1.42	65.	0.003
50	3.94	4.02	36	0.	1.69	78.	0.004	31	0.	1.46	67.	0.003	29	0.	1.37	63.	0.003
51	3.94	4.02	36	0.	1.69	78.	0.004	31	0.	1.46	67.	0.003	29	0.	1.36	63.	0.003
52	3.94	4.02	36	0.	1.65	76.	0.004	31	0.	1.43	66.	0.003	29	0.	1.34	62.	0.003
53	3.94	4.02	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
54	3.94	4.02	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
55	3.94	4.02	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
56	3.94	4.02	32	0.	1.50	69.	0.003	25	0.	1.18	55.	0.003	23	0.	1.06	49.	0.002
57	3.94	4.02	32	0.	1.49	69.	0.003	25	0.	1.18	54.	0.003	23	0.	1.05	49.	0.002
58	3.94	4.02	38	0.	1.75	81.	0.004	33	0.	1.52	70.	0.003	31	0.	1.42	66.	0.003
59	3.94	4.02	38	0.	1.75	81.	0.004	33	0.	1.51	70.	0.003	31	0.	1.42	66.	0.003
60	3.94	4.02	36	0.	1.70	78.	0.004	32	0.	1.47	68.	0.003	30	0.	1.38	64.	0.003

MACROGUSCIO SETTO DI VISO RI O LOCULI

VERIFICA ARMATURE EFFETTIVE (EFFETTO MEMBRANA + PIASTRA)

unità di misura:

lunghezze : [cm] - forze : [daN]
 momenti : [daNcm/cm] - tensioni : [daN/cm2]
 pesi specifici : [daN/cm3] - angoli : [gradi]
 armature : [cm2]

CASI DI CARICO:

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

DATI:

tensione di snervamento acciaio (fyk): 4500 daN/cm2
 coefficiente sicurezza acciaio : 1.15
 deformazione ultima acciaio : 67.5 per mille
 deformazione ultima cls : 3.5 per mille
 rapporto rottura/snervamento (k): 1.15
 resistenza cilindrica cls (fck): 249 daN/cm2
 coefficiente sicurezza cls : 1.5
 coefficiente riduttivo (αf): 0.85
 copri ferro inferiore (asse armatura): 2 cm
 copri ferro superiore (asse armatura): 2 cm
 moltiplicatore sollecitazioni : 1

GUSCI	spess	INFERIORE ORIZZONTALE						INFERIORE VERTICALE					
		Af	Afc	Mom	Nor	epsC	epsF	Af	Afc	Mom	Nor	epsC	epsF
241	10	2.64	2.54	1.	37.	0.00	0.34	2.60	2.65	0.	-29.	0.03	-0.03
242	10	2.64	2.54	0.	-1.	0.00	0.01	2.60	2.65	0.	-11.	0.01	-0.01
243	10	2.64	2.54	0.	-1.	0.00	0.00	2.60	2.65	0.	-8.	0.01	-0.01

GUSCI	spess	SUPERIORE ORIZZONTALE						SUPERIORE VERTICALE					
		Af	Afc	Mom	Nor	epsC	epsF	Af	Afc	Mom	Nor	epsC	epsF
241	10	2.54	2.64	1.	15.	0.00	0.35	2.65	2.60	0.	-29.	0.03	-0.03
242	10	2.54	2.64	1.	0.	0.00	0.01	2.65	2.60	0.	-11.	0.01	-0.01
243	10	2.54	2.64	0.	0.	0.00	0.00	2.65	2.60	0.	-8.	0.01	-0.01
244	10	2.54	2.64	0.	1.	0.00	0.01	2.65	2.60	0.	-5.	0.01	-0.01
245	10	2.54	2.64	1.	3.	0.00	0.03	2.65	2.60	0.	-1.	0.00	0.01
246	10	2.54	2.64	0.	0.	0.00	0.00	2.65	2.60	2.	-3.	0.01	0.00
247	10	2.54	2.64	0.	0.	0.00	0.00	2.65	2.60	1.	-4.	0.01	0.00
248	10	2.54	2.64	0.	0.	0.00	0.00	2.65	2.60	2.	-4.	0.01	0.00
249	10	2.54	2.64	0.	0.	0.00	0.00	2.65	2.60	1.	-3.	0.00	0.00
250	10	2.54	2.64	0.	6.	0.00	0.07	2.65	2.60	0.	-9.	0.01	-0.01
251	10	2.54	2.64	0.	-1.	0.00	0.05	2.65	2.60	0.	-25.	0.04	-0.04
252	10	2.54	2.64	1.	6.	0.00	0.12	2.65	2.60	0.	-32.	0.04	-0.03
253	10	2.54	2.64	0.	10.	0.00	0.31	2.65	2.60	0.	-4.	0.03	-0.03
254	10	2.54	2.64	0.	0.	0.00	0.00	2.65	2.60	0.	-23.	0.03	-0.03
255	10	2.54	2.64	0.	-1.	0.00	0.00	2.65	2.60	0.	-16.	0.02	-0.02
256	10	2.54	2.64	0.	-1.	0.00	0.00	2.65	2.60	0.	-10.	0.01	-0.01
257	10	2.54	2.64	0.	-1.	0.00	0.00	2.65	2.60	0.	-9.	0.01	-0.01
258	10	2.54	2.64	0.	0.	0.00	0.00	2.65	2.60	0.	-15.	0.02	-0.02
259	10	2.54	2.64	0.	-1.	0.00	0.00	2.65	2.60	0.	-20.	0.02	-0.02
260	10	2.54	2.64	0.	-1.	0.00	0.01	2.65	2.60	0.	-16.	0.02	-0.02
261	10	2.54	2.64	0.	-1.	0.00	0.00	2.65	2.60	0.	-12.	0.01	-0.01
262	10	2.54	2.64	0.	-1.	0.00	0.00	2.65	2.60	0.	-8.	0.01	-0.01
263	10	2.54	2.64	0.	0.	0.00	0.00	2.65	2.60	0.	-6.	0.01	-0.01
264	10	2.54	2.64	0.	-1.	0.00	0.00	2.65	2.60	0.	-10.	0.01	-0.01
265	10	2.54	2.64	0.	0.	0.00	0.00	2.65	2.60	0.	-14.	0.02	-0.02

GUSCI	τ_x	τ_y	τ_t	GUSCI	τ_x	τ_y	τ_t	GUSCI	τ_x	τ_y	τ_t
241	0.0	0.0	0.0	242	0.0	0.0	0.0	243	0.0	0.0	0.0
244	0.0	0.0	0.0	245	0.0	0.0	0.0	246	0.0	0.0	0.0
247	0.0	0.0	0.0	248	0.0	0.0	0.0	249	0.0	0.0	0.0
250	0.0	0.0	0.0	251	0.0	0.0	0.0	252	0.0	0.0	0.0
253	0.0	0.0	0.0	254	0.0	0.0	0.0	255	0.0	0.0	0.0
256	0.0	0.0	0.0	257	0.0	0.0	0.0	258	0.0	0.0	0.0
259	0.0	0.0	0.0	260	0.0	0.0	0.0	261	0.0	0.0	0.0
262	0.0	0.0	0.0	263	0.0	0.0	0.0	264	0.0	0.0	0.0
265	0.0	0.0	0.0								

lunghezze	: [cm]	-	forze	: [daN]
momenti	: [daNcm/cm]	-	tensi oni	: [daN/cm ²]
pesi speci fi ci	: [daN/cm ³]	-	angol i	: [gradi]
armature	: [cm ²]			

Nome	Descrizione
7	Rara (RARA)
8	Frequente (FREQUENTE)
9	Quasi Perm (QUASI PERMANENTE)

Af = area effettiva di sposta nello strato indicato (cm² al metro)
 wkR = apertura caratteristica per combinazione rara (mm) - apertura max = 0.6 mm
 wkF = " " " " frequente (mm) - " " = 0.4 mm
 wkP = " " " " quasi permanente (mm) - " " = 0.3 mm

GUSCI	Af	Afc	COMBI NAZI ONE RARA					COMBI NAZI ONE FREQUENTE					COMBI NAZI ONE QUASI PERMANENTE				
			Mom	Nor	σC	σf	WkR	Mom	Nor	σC	σf	WkF	Mom	Nor	σC	σf	WkP
241	2.64	2.54	1	6	0.00	117.	0.010	0.	6	0.00	114.	0.010	0.	6	0.00	112.	0.010
242	2.64	2.54	0.	0	0.05	-1.	0.000	0.	-1	0.09	-1.	0.000	0.	-1	0.08	-1.	0.000
243	2.64	2.54	0.	-1	0.08	-1.	0.000	0.	-1	0.08	-1.	0.000	0.	-1	0.08	-1.	0.000
244	2.64	2.54	0.	0.	0.00	7.	0.001	0.	0.	0.00	1.	0.000	0.	0.	0.01	0.	0.000

245	2.64	2.54	0.	2	0.00	44.	0.004	0.	2	0.00	32.	0.003	0.	1	0.00	26.	0.002
246	2.64	2.54	0.	0.	0.03	0.	0.000	0.	0.	0.04	-1.	0.000	0.	0.	0.04	-1.	0.000
247	2.64	2.54	0.	0.	0.03	-1.	0.000	0.	0.	0.04	-1.	0.000	0.	0.	0.04	-1.	0.000
248	2.64	2.54	0.	0.	0.03	0.	0.000	0.	0.	0.03	-1.	0.000	0.	0.	0.03	-1.	0.000
249	2.64	2.54	0.	0.	0.00	2.	0.000	0.	0.	0.01	0.	0.000	0.	0.	0.02	0.	0.000
250	2.64	2.54	0.	0.	0.00	8.	0.001	0.	0.	0.00	11.	0.001	0.	1	0.00	11.	0.001
251	2.64	2.54	0.	-2	0.20	-3.	0.000	0.	-2	0.17	-2.	0.000	0.	-2	0.15	-2.	0.000
252	2.64	2.54	0.	0.	0.03	2.	0.000	0.	0.	0.02	0.	0.000	0.	0.	0.03	0.	0.000
253	2.64	2.54	0.	6	0.00	124.	0.011	0.	6	0.00	105.	0.009	0.	5	0.00	98.	0.009
254	2.64	2.54	0.	-2	0.16	-2.	0.000	0.	-1	0.14	-2.	0.000	0.	-1	0.13	-2.	0.000
255	2.64	2.54	0.	-2	0.18	-3.	0.000	0.	-2	0.16	-2.	0.000	0.	-2	0.15	-2.	0.000
256	2.64	2.54	0.	-1	0.11	-2.	0.000	0.	-1	0.10	-2.	0.000	0.	-1	0.10	-1.	0.000
257	2.64	2.54	0.	-1	0.10	-2.	0.000	0.	-1	0.10	-1.	0.000	0.	-1	0.09	-1.	0.000
258	2.64	2.54	0.	-2	0.18	-3.	0.000	0.	-2	0.16	-2.	0.000	0.	-2	0.15	-2.	0.000
259	2.64	2.54	0.	-2	0.22	-3.	0.000	0.	-2	0.19	-3.	0.000	0.	-2	0.18	-3.	0.000
260	2.64	2.54	0.	-1	0.06	-1.	0.000	0.	0.	0.04	-1.	0.000	0.	0.	0.04	-1.	0.000
261	2.64	2.54	0.	-1	0.11	-2.	0.000	0.	-1	0.10	-1.	0.000	0.	-1	0.09	-1.	0.000
262	2.64	2.54	0.	-1	0.07	-1.	0.000	0.	-1	0.06	-1.	0.000	0.	-1	0.06	-1.	0.000
263	2.64	2.54	0.	-1	0.06	-1.	0.000	0.	-1	0.06	-1.	0.000	0.	-1	0.06	-1.	0.000
264	2.64	2.54	0.	0.	0.03	0.	0.000	0.	0.	0.04	-1.	0.000	0.	0.	0.05	-1.	0.000
265	2.64	2.54	0.	0.	0.01	0.	0.000	0.	0.	0.03	0.	0.000	0.	0.	0.03	0.	0.000

ARMATURA I NFERI ORE VERTI CALE

GUSCI	Af Afc		COMBI NAZI ONE RARA					COMBI NAZI ONE FREQUENTE					COMBI NAZI ONE QUASI PERMANENTE				
			Mom	Nor	σ_c	σ_f	WkR	Mom	Nor	σ_c	σ_f	WkF	Mom	Nor	σ_c	σ_f	WkP
241	2.60	2.65	0.	-15	1.40	-21.	0.000	0.	-13	1.22	-18.	0.000	0.	-12	1.15	-17.	0.000
242	2.60	2.65	0.	-14	1.26	-19.	0.000	0.	-12	1.10	-17.	0.000	0.	-11	1.04	-16.	0.000
243	2.60	2.65	0.	-8	0.71	-11.	0.000	0.	-7	0.69	-10.	0.000	0.	-7	0.67	-10.	0.000
244	2.60	2.65	0.	-3	0.32	-5.	0.000	0.	-4	0.34	-5.	0.000	0.	-4	0.34	-5.	0.000
245	2.60	2.65	0.	0.	0.00	6.	0.001	0.	0.	0.02	0.	0.000	0.	0.	0.04	-1.	0.000
246	2.60	2.65	0.	-3	0.30	-4.	0.000	0.	-3	0.32	-5.	0.000	0.	-4	0.33	-5.	0.000
247	2.60	2.65	0.	-4	0.36	-5.	0.000	0.	-4	0.37	-6.	0.000	0.	-4	0.37	-6.	0.000
248	2.60	2.65	0.	-4	0.33	-5.	0.000	0.	-4	0.34	-5.	0.000	0.	-4	0.35	-5.	0.000
249	2.60	2.65	0.	-2	0.16	-2.	0.000	0.	-2	0.20	-3.	0.000	0.	-2	0.22	-3.	0.000
250	2.60	2.65	1	-7	0.68	-10.	0.000	0.	-6	0.58	-8.	0.000	0.	-6	0.54	-8.	0.000
251	2.60	2.65	0.	-28	2.61	-39.	0.000	0.	-24	2.19	-33.	0.000	0.	-22	2.02	-30.	0.000
252	2.60	2.65	0.	-17	1.60	-24.	0.000	0.	-15	1.38	-20.	0.000	0.	-14	1.29	-19.	0.000
253	2.60	2.65	0.	-16	1.53	-23.	0.000	0.	-15	1.39	-21.	0.000	0.	-14	1.34	-20.	0.000
254	2.60	2.65	0.	-23	2.13	-32.	0.000	0.	-20	1.82	-27.	0.000	0.	-18	1.70	-25.	0.000
255	2.60	2.65	0.	-17	1.57	-24.	0.000	0.	-15	1.37	-21.	0.000	0.	-14	1.29	-19.	0.000
256	2.60	2.65	0.	-11	0.98	-15.	0.000	0.	-9	0.88	-13.	0.000	0.	-9	0.84	-13.	0.000
257	2.60	2.65	0.	-10	0.90	-13.	0.000	0.	-9	0.82	-12.	0.000	0.	-8	0.78	-12.	0.000
258	2.60	2.65	0.	-16	1.44	-22.	0.000	0.	-14	1.27	-19.	0.000	0.	-13	1.19	-18.	0.000
259	2.60	2.65	0.	-20	1.89	-28.	0.000	0.	-18	1.64	-25.	0.000	0.	-16	1.52	-23.	0.000
260	2.60	2.65	0.	-17	1.62	-24.	0.000	0.	-15	1.41	-21.	0.000	0.	-14	1.33	-20.	0.000
261	2.60	2.65	0.	-13	1.25	-19.	0.000	0.	-12	1.11	-17.	0.000	0.	-11	1.05	-16.	0.000
262	2.60	2.65	0.	-8	0.77	-11.	0.000	0.	-8	0.71	-11.	0.000	0.	-7	0.68	-10.	0.000
263	2.60	2.65	0.	-6	0.57	-8.	0.000	0.	-6	0.55	-8.	0.000	0.	-6	0.54	-8.	0.000
264	2.60	2.65	0.	-11	1.03	-15.	0.000	0.	-10	0.94	-14.	0.000	0.	-10	0.91	-14.	0.000
265	2.60	2.65	0.	-17	1.61	-24.	0.000	0.	-16	1.46	-22.	0.000	0.	-15	1.40	-21.	0.000

ARMATURA SUPERI ORE ORI ZZONTALE

GUSCI	Af Afc		COMBI NAZI ONE RARA					COMBI NAZI ONE FREQUENTE					COMBI NAZI ONE QUASI PERMANENTE				
			Mom	Nor	σ_c	σ_f	WkR	Mom	Nor	σ_c	σ_f	WkF	Mom	Nor	σ_c	σ_f	WkP
241	2.54	2.64	0.	6	0.00	118.	0.011	0.	6	0.00	115.	0.011	0.	6	0.00	114.	0.011
242	2.54	2.64	0.	0.	0.04	-1.	0.000	0.	-1	0.08	-1.	0.000	0.	-1	0.08	-1.	0.000
243	2.54	2.64	0.	-1	0.07	-1.	0.000	0.	-1	0.08	-1.	0.000	0.	-1	0.08	-1.	0.000
244	2.54	2.64	0.	0.	0.00	7.	0.001	0.	0.	0.00	1.	0.000	0.	0.	0.01	0.	0.000
245	2.54	2.64	0.	2	0.00	47.	0.004	0.	2	0.00	34.	0.003	0.	1	0.00	28.	0.003
246	2.54	2.64	0.	0.	0.02	-1.	0.000	0.	0.	0.03	-1.	0.000	0.	0.	0.03	-1.	0.000
247	2.54	2.64	0.	0.	0.03	-1.	0.000	0.	0.	0.03	-1.	0.000	0.	0.	0.03	-1.	0.000
248	2.54	2.64	0.	0.	0.02	-1.	0.000	0.	0.	0.03	-1.	0.000	0.	0.	0.03	-1.	0.000
249	2.54	2.64	0.	0.	0.02	3.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.01	0.	0.000
250	2.54	2.64	0.	0.	0.00	6.	0.001	0.	0.	0.00	9.	0.001	0.	1	0.00	10.	0.001
251	2.54	2.64	0.	-2	0.19	-3.	0.000	0.	-2	0.16	-3.	0.000	0.	-2	0.14	-2.	0.000
252	2.54	2.64	0.	0.	0.05	3.	0.000	0.	0.	0.03	0.	0.000	0.	0.	0.00	0.	0.000
253	2.54	2.64	0.	6	0.00	130.	0.012	0.	6	0.00	110.	0.010	0.	5	0.00	103.	0.010
254	2.54	2.64	0.	-2	0.15	-2.	0.000	0.	-1	0.14	-2.	0.000	0.	-1	0.13	-2.	0.000
255	2.54	2.64	0.	-2	0.18	-3.	0.000	0.	-2	0.16	-2.	0.000	0.	-2	0.15	-2.	0.000
256	2.54	2.64	0.	-1	0.11	-2.	0.000	0.	-1	0.10	-2.	0.000	0.	-1	0.10	-2.	0.000
257	2.54	2.64	0.	-1	0.10	-2.	0.000	0.	-1	0.10	-1.	0.000	0.	-1	0.09	-1.	0.000
258	2.54	2.64	0.	-2	0.18	-3.	0.000	0.	-2	0.16	-2.	0.000	0.	-2	0.15	-2.	0.000
259	2.54	2.64	0.	-2	0.22	-3.	0.000	0.	-2	0.19	-3.	0.000	0.	-2	0.18	-3.	0.000
260	2.54	2.64	0.	-1	0.06	-1.	0.000	0.	0.	0.04	-1.	0.000	0.	0.	0.04	-1.	0.000
261	2.54	2.64	0.	-1	0.11	-2.	0.000	0.	-1	0.09	-1.	0.000	0.	-1	0.09	-1.	0.000
262	2.54	2.64	0.	-1	0.06	-1.	0.000	0.	-1	0.06	-1.	0.000	0.	-1	0.06	-1.	0.000
263	2.54	2.64	0.	-1	0.06	-1.	0.000	0.	-1	0.06	-1.	0.000	0.	-1	0.06	-1.	0.000
264	2.54	2.64	0.	0.	0.03	0.	0.000	0.	0.	0.04	-1.	0.000	0.	0.	0.04	-1.	0.000
265	2.54	2.64	0.	0.	0.00	0.	0.000	0.	0.	0.02	0.	0.000	0.	0.	0.03	-1.	0.000

ARMATURA SUPERI ORE VERTI CALE

GUSCI	AfAfc		COMBI NAZI ONE RARA					COMBI NAZI ONE FREQUENTE					COMBI NAZI ONE QUASI PERMANENTE				
			Mom	Nor	σ_c	σ_f	WkR	Mom	Nor	σ_c	σ_f	WkF	Mom	Nor	σ_c	σ_f	WkP
241	2.65	2.60	0.	-15	1.38	-21.	0.000	0.	-13	1.20	-18.	0.000	0.	-12	1.13	-17.	0.000
242	2.65	2.60	0.	-14	1.26	-19.	0.000	0.	-12	1.10	-17.	0.000	0.	-11	1.04	-16.	0.000
243	2.65	2.60	0.	-8	0.71	-11.	0.000	0.	-7	0.68	-10.	0.000	0.	-7	0.67	-10.	0.000
244	2.65	2.60	0.	-3	0.31	-5.	0.000	0.	-4	0.33	-5.	0.000	0.	-4	0.33	-5.	0.000
245	2.65	2.60	1	0.	0.01	10.	0.001	0.	0.	0.05	0.	0.000	0.	0.	0.01	-1.	0.000
246	2.65	2.60	1	-3	0.26	-5.	0.000	1	-3	0.28	-5.	0.000	1	-4	0.30	-5.	0.000
247	2.65	2.60	1	-4	0.32	-6.	0.000	1	-4	0.33	-6.	0.000	1	-4	0.34	-6.	0.000
248	2.65	2.60	1	-4	0.29	-5.	0.000	1	-4	0.31	-5.	0.000	1	-4	0.31	-6.	0.000
249	2.65	2.60	1	-2	0.12	-3.	0.000	1	-2	0.17	-3.	0.000	1	-2	0.19	-4.	0.000
250	2.65	2.60	0.	-7	0.66	-10.	0.000	0.	-6	0.56	-8.	0.000	0.	-6	0.52	-8.	0.000
251	2.65	2.60	0.	-28	2.60	-39.	0.000	0.	-24	2.18	-33.	0.000	0.	-22	2.01	-30.	0.000
252	2.65	2.60	0.	-17	1.58	-24.	0.000	0.	-15	1.36	-21.	0.000	0.	-14	1.27	-19.	0.000
253	2.65	2.60	0.	-16	1.52	-23.	0.000	0.	-15	1.38	-21.	0.000	0.	-14	1.33	-20.	0.000
254	2.65	2.60	0.	-23	2.11	-32.	0.000	0.	-20	1.81	-27.	0.000	0.	-18	1.69	-26.	0.000
255	2.65	2.60	0.	-17	1.56	-24.	0.000	0.	-15	1.36	-21.	0.000	0.	-14	1.28	-19.	0.000

256	2.65	2.60	0.	-11	0.97	-15.	0.000	0.	-9	0.87	-13.	0.000	0.	-9	0.84	-13.	0.000
257	2.65	2.60	0.	-10	0.89	-13.	0.000	0.	-9	0.81	-12.	0.000	0.	-8	0.78	-12.	0.000
258	2.65	2.60	0.	-16	1.43	-22.	0.000	0.	-14	1.26	-19.	0.000	0.	-13	1.19	-18.	0.000
259	2.65	2.60	0.	-20	1.88	-28.	0.000	0.	-18	1.63	-25.	0.000	0.	-16	1.52	-23.	0.000
260	2.65	2.60	0.	-17	1.60	-24.	0.000	0.	-15	1.40	-21.	0.000	0.	-14	1.32	-20.	0.000
261	2.65	2.60	0.	-13	1.24	-19.	0.000	0.	-12	1.11	-17.	0.000	0.	-11	1.05	-16.	0.000
262	2.65	2.60	0.	-8	0.76	-12.	0.000	0.	-8	0.70	-11.	0.000	0.	-7	0.68	-10.	0.000
263	2.65	2.60	0.	-6	0.56	-9.	0.000	0.	-6	0.54	-8.	0.000	0.	-6	0.53	-8.	0.000
264	2.65	2.60	0.	-11	1.03	-16.	0.000	0.	-10	0.94	-14.	0.000	0.	-10	0.90	-14.	0.000
265	2.65	2.60	0.	-17	1.60	-24.	0.000	0.	-16	1.45	-22.	0.000	0.	-15	1.39	-21.	0.000

MACROGUSCIO SOLETTINA_LOCULI

VERIFICA ARMATURE EFFETTIVE (EFFETTO MEMBRANA + PIASTRA)

unità di misura:

lunghezze	: [cm]	-	forze	: [daN]
momenti	: [daNcm/cm]	-	tensioni	: [daN/cm2]
pesi specifici	: [daN/cm3]	-	angoli	: [gradi]
armature	: [cm2]			

CASI DI CARICO:

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

DATI:

tensione di snervamento acciaio (fyk):	4500	daN/cm2
coefficiente sicurezza acciaio	: 1.15	
deformazione ultima acciaio	: 67.5	per mille
deformazione ultima cls	: 3.5	per mille
rapporto rottura/snervamento (k):	1.15	
resistenza cilindrica cls (fck):	249	daN/cm2
coefficiente sicurezza cls	: 1.5	
coefficiente riduttivo (alfa):	0.85	
copri ferro inferiore (asse armatura):	2	cm
copri ferro superiore (asse armatura):	2	cm
moltiplicatore sollecitazioni	: 1	

		INFERIORE ORIZZONTALE						INFERIORE VERTICALE					
GUSCI	spess	Af	Afc	Mom	Nor	epsC	epsF	Af	Afc	Mom	Nor	epsC	epsF
356	10	2.61	2.54	2.	1.	0.00	0.02	2.58	2.56	9.	3.	0.00	0.05
357	10	2.61	2.54	2.	1.	0.00	0.02	2.58	2.56	0.	4.	0.00	0.03
358	10	2.61	2.54	1.	1.	0.00	0.01	2.58	2.56	1.	1.	0.00	0.01
359	10	2.61	2.54	1.	1.	0.00	0.01	2.58	2.56	1.	2.	0.00	0.02
360	10	2.61	2.54	1.	1.	0.00	0.01	2.58	2.56	2.	2.	0.00	0.02
361	10	2.61	2.54	2.	1.	0.00	0.02	2.58	2.56	9.	3.	0.00	0.05
362	10	2.61	2.54	2.	1.	0.00	0.02	2.58	2.56	0.	4.	0.00	0.03
363	10	2.61	2.54	1.	1.	0.00	0.01	2.58	2.56	1.	1.	0.00	0.01
364	10	2.61	2.54	1.	1.	0.00	0.01	2.58	2.56	1.	2.	0.00	0.02
365	10	2.61	2.54	1.	1.	0.00	0.01	2.58	2.56	2.	2.	0.00	0.02
366	10	2.61	2.54	1.	1.	0.00	0.01	2.58	2.56	10.	3.	0.00	0.05
367	10	2.61	2.54	1.	1.	0.00	0.01	2.58	2.56	11.	3.	0.00	0.06
368	10	2.61	2.54	1.	1.	0.00	0.01	2.58	2.56	11.	3.	0.00	0.06
369	10	2.61	2.54	1.	1.	0.00	0.01	2.58	2.56	11.	3.	0.00	0.06
370	10	2.61	2.54	0.	1.	0.00	0.00	2.58	2.56	0.	3.	0.00	0.02
371	10	2.61	2.54	1.	0.	0.00	0.00	2.58	2.56	1.	1.	0.00	0.01
372	10	2.61	2.54	0.	0.	0.00	0.00	2.58	2.56	1.	2.	0.00	0.02
373	10	2.61	2.54	1.	0.	0.00	0.00	2.58	2.56	2.	1.	0.00	0.02
374	10	2.61	2.54	0.	1.	0.00	0.01	2.58	2.56	0.	3.	0.00	0.03
375	10	2.61	2.54	0.	0.	0.00	0.00	2.58	2.56	1.	1.	0.00	0.01
376	10	2.61	2.54	0.	0.	0.00	0.00	2.58	2.56	1.	2.	0.00	0.02
377	10	2.61	2.54	0.	0.	0.00	0.00	2.58	2.56	2.	1.	0.00	0.02
378	10	2.61	2.54	0.	1.	0.00	0.01	2.58	2.56	0.	3.	0.00	0.03
379	10	2.61	2.54	0.	1.	0.00	0.01	2.58	2.56	0.	3.	0.00	0.03
380	10	2.61	2.54	0.	0.	0.00	0.00	2.58	2.56	2.	1.	0.00	0.01
381	10	2.61	2.54	0.	1.	0.00	0.01	2.58	2.56	2.	1.	0.00	0.01
382	10	2.61	2.54	0.	0.	0.00	0.00	2.58	2.56	1.	2.	0.00	0.02
383	10	2.61	2.54	1.	0.	0.00	0.00	2.58	2.56	1.	2.	0.00	0.02
384	10	2.61	2.54	0.	0.	0.00	0.00	2.58	2.56	2.	1.	0.00	0.02
385	10	2.61	2.54	1.	0.	0.00	0.00	2.58	2.56	2.	2.	0.00	0.02

		SUPERIORE ORIZZONTALE						SUPERIORE VERTICALE					
GUSCI	spess	Af	Afc	Mom	Nor	epsC	epsF	Af	Afc	Mom	Nor	epsC	epsF
356	10	2.54	2.61	0.	1.	0.00	0.01	2.56	2.58	0.	3.	0.00	0.04
357	10	2.54	2.61	0.	1.	0.00	0.02	2.56	2.58	3.	3.	0.00	0.04
358	10	2.54	2.61	0.	1.	0.00	0.01	2.56	2.58	0.	1.	0.00	0.01
359	10	2.54	2.61	0.	1.	0.00	0.01	2.56	2.58	0.	2.	0.00	0.02
360	10	2.54	2.61	0.	1.	0.00	0.01	2.56	2.58	0.	2.	0.00	0.02
361	10	2.54	2.61	0.	1.	0.00	0.01	2.56	2.58	0.	3.	0.00	0.04
362	10	2.54	2.61	2.	1.	0.00	0.02	2.56	2.58	4.	3.	0.00	0.04
363	10	2.54	2.61	2.	1.	0.00	0.02	2.56	2.58	1.	1.	0.00	0.01
364	10	2.54	2.61	0.	1.	0.00	0.01	2.56	2.58	0.	2.	0.00	0.02
365	10	2.54	2.61	1.	1.	0.00	0.01	2.56	2.58	0.	2.	0.00	0.02
366	10	2.54	2.61	0.	1.	0.00	0.01	2.56	2.58	0.	3.	0.00	0.04
367	10	2.54	2.61	0.	1.	0.00	0.01	2.56	2.58	0.	3.	0.00	0.04
368	10	2.54	2.61	0.	1.	0.00	0.01	2.56	2.58	0.	3.	0.00	0.04
369	10	2.54	2.61	0.	1.	0.00	0.01	2.56	2.58	0.	3.	0.00	0.04
370	10	2.54	2.61	0.	1.	0.00	0.01	2.56	2.58	5.	3.	0.00	0.04
371	10	2.54	2.61	0.	0.	0.00	0.00	2.56	2.58	1.	1.	0.00	0.01
372	10	2.54	2.61	0.	0.	0.00	0.00	2.56	2.58	0.	2.	0.00	0.02
373	10	2.54	2.61	0.	0.	0.00	0.00	2.56	2.58	0.	1.	0.00	0.01
374	10	2.54	2.61	1.	1.	0.00	0.01	2.56	2.58	5.	3.	0.00	0.04
375	10	2.54	2.61	0.	0.	0.00	0.00	2.56	2.58	0.	1.	0.00	0.01
376	10	2.54	2.61	0.	0.	0.00	0.00	2.56	2.58	0.	2.	0.00	0.02

377	10	2.54	2.61	0.	0.	0.00	0.00	2.56	2.58	0.	1.	0.00	0.01
378	10	2.54	2.61	0.	1.	0.00	0.01	2.56	2.58	5.	3.	0.00	0.04
379	10	2.54	2.61	1.	1.	0.00	0.01	2.56	2.58	5.	3.	0.00	0.04
380	10	2.54	2.61	0.	0.	0.00	0.00	2.56	2.58	0.	1.	0.00	0.01
381	10	2.54	2.61	0.	1.	0.00	0.01	2.56	2.58	1.	1.	0.00	0.01
382	10	2.54	2.61	0.	0.	0.00	0.00	2.56	2.58	0.	2.	0.00	0.02
383	10	2.54	2.61	0.	0.	0.00	0.00	2.56	2.58	0.	2.	0.00	0.02
384	10	2.54	2.61	0.	0.	0.00	0.00	2.56	2.58	0.	1.	0.00	0.01
385	10	2.54	2.61	0.	0.	0.00	0.00	2.56	2.58	0.	1.	0.00	0.02

***** TAGLI O PERPENDI COLARE

GUSCI	tx	ty	tt	GUSCI	tx	ty	tt	GUSCI	tx	ty	tt
356	0.0	0.0	0.0	357	0.0	0.0	0.0	358	0.0	0.0	0.0
359	0.0	0.0	0.0	360	0.0	0.0	0.0	361	0.0	0.0	0.0
362	0.0	0.0	0.0	363	0.0	0.0	0.0	364	0.0	0.0	0.0
365	0.0	0.0	0.0	366	0.0	0.0	0.0	367	0.0	0.0	0.0
368	0.0	0.0	0.0	369	0.0	0.0	0.0	370	0.0	0.0	0.0
371	0.0	0.0	0.0	372	0.0	0.0	0.0	373	0.0	0.0	0.0
374	0.0	0.0	0.0	375	0.0	0.0	0.0	376	0.0	0.0	0.0
377	0.0	0.0	0.0	378	0.0	0.0	0.0	379	0.0	0.0	0.0
380	0.0	0.0	0.0	381	0.0	0.0	0.0	382	0.0	0.0	0.0
383	0.0	0.0	0.0	384	0.0	0.0	0.0	385	0.0	0.0	0.0

MACROGUSCI O SOLETTI NA_LOCULI

VERIFICHE A FESSURAZIONE (EFFETTO MEMBRANA + PIASTRA)

unità di misura:
 lunghezze : [cm] - forze : [daN]
 momenti : [daNcm/cm] - tensioni : [daN/cm2]
 pesi specifici : [daN/cm3] - angoli : [gradi]
 armature : [cm2]

CASI DI CARICO:
 Nome Descrizione
 7 Rara (RARA)
 8 Frequente (FREQUENTE)
 9 Quasi Perm (QUASI PERMANENTE)

DATI:
 copri ferro inferiore (asse armatura): 2 cm
 copri ferro superiore (asse armatura): 2 cm
 Af = area effettiva disposta nello strato indicato (cm2 al metro)
 wkR = apertura caratteristica per combinazione rara (mm) - apertura max = 0.6 mm
 wkF = frequente (mm) - frequente (mm) = 0.4 mm
 wkP = quasi permanente (mm) - quasi permanente (mm) = 0.3 mm

ARMATURA INFERIORE ORIZZONTALE

GUSCI			COMBINAZIONE RARA					COMBINAZIONE FREQUENTE					COMBINAZIONE QUASI PERMANENTE				
	Af	Afc	Mom	Nor	σc	σf	WkR	Mom	Nor	σc	σf	WkF	Mom	Nor	σc	σf	WkP
356	2.61	2.54	1	1	0.00	19.	0.002	0.	1	0.00	16.	0.001	0.	1	0.00	15.	0.001
357	2.61	2.54	0.	1	0.00	20.	0.002	0.	1	0.00	17.	0.002	0.	1	0.00	16.	0.001
358	2.61	2.54	0.	1	0.00	14.	0.001	0.	1	0.00	12.	0.001	0.	0.	0.00	11.	0.001
359	2.61	2.54	0.	1	0.00	13.	0.001	0.	1	0.00	11.	0.001	0.	0.	0.00	10.	0.001
360	2.61	2.54	0.	1	0.00	14.	0.001	0.	1	0.00	12.	0.001	0.	1	0.00	11.	0.001
361	2.61	2.54	1	1	0.00	22.	0.002	0.	1	0.00	19.	0.002	0.	1	0.00	18.	0.002
362	2.61	2.54	0.	1	0.00	18.	0.002	0.	1	0.00	16.	0.001	0.	1	0.00	15.	0.001
363	2.61	2.54	0.	1	0.00	15.	0.001	0.	1	0.00	13.	0.001	0.	1	0.00	12.	0.001
364	2.61	2.54	0.	1	0.00	11.	0.001	0.	0.	0.00	10.	0.001	0.	0.	0.00	9.	0.001
365	2.61	2.54	0.	1	0.00	13.	0.001	0.	1	0.00	12.	0.001	0.	1	0.00	11.	0.001
366	2.61	2.54	1	1	0.00	18.	0.002	1	1	0.00	16.	0.001	1	1	0.00	15.	0.001
367	2.61	2.54	1	1	0.00	20.	0.002	1	1	0.00	18.	0.002	1	1	0.00	17.	0.002
368	2.61	2.54	1	1	0.00	16.	0.001	1	1	0.00	14.	0.001	0.	1	0.00	14.	0.001
369	2.61	2.54	1	1	0.00	17.	0.001	1	1	0.00	15.	0.001	1	1	0.00	14.	0.001
370	2.61	2.54	0.	0.	0.00	5.	0.000	0.	0.	0.00	4.	0.000	0.	0.	0.00	4.	0.000
371	2.61	2.54	0.	0.	0.05	2.	0.000	0.	0.	0.04	1.	0.000	0.	0.	0.04	1.	0.000
372	2.61	2.54	0.	0.	0.05	4.	0.000	0.	0.	0.04	3.	0.000	0.	0.	0.04	3.	0.000
373	2.61	2.54	0.	0.	0.06	3.	0.000	0.	0.	0.05	3.	0.000	0.	0.	0.05	2.	0.000
374	2.61	2.54	0.	1	0.00	11.	0.001	0.	1	0.00	10.	0.001	0.	0.	0.00	10.	0.001
375	2.61	2.54	0.	0.	0.01	3.	0.000	0.	0.	0.00	3.	0.000	0.	0.	0.00	2.	0.000
376	2.61	2.54	0.	0.	0.01	2.	0.000	0.	0.	0.01	1.	0.000	0.	0.	0.01	1.	0.000
377	2.61	2.54	0.	0.	0.03	2.	0.000	0.	0.	0.03	2.	0.000	0.	0.	0.03	2.	0.000
378	2.61	2.54	0.	1	0.00	11.	0.001	0.	1	0.00	10.	0.001	0.	0.	0.00	10.	0.001
379	2.61	2.54	0.	1	0.00	15.	0.001	0.	1	0.00	13.	0.001	0.	1	0.00	12.	0.001
380	2.61	2.54	0.	0.	0.00	4.	0.000	0.	0.	0.00	3.	0.000	0.	0.	0.00	3.	0.000
381	2.61	2.54	0.	0.	0.00	9.	0.001	0.	0.	0.00	8.	0.001	0.	0.	0.00	8.	0.001
382	2.61	2.54	0.	0.	0.01	0.	0.000	0.	0.	0.01	0.	0.000	0.	0.	0.01	0.	0.000
383	2.61	2.54	0.	0.	0.05	3.	0.000	0.	0.	0.04	2.	0.000	0.	0.	0.03	2.	0.000
384	2.61	2.54	0.	0.	0.03	3.	0.000	0.	0.	0.02	2.	0.000	0.	0.	0.02	2.	0.000
385	2.61	2.54	0.	0.	0.03	6.	0.001	0.	0.	0.02	5.	0.000	0.	0.	0.02	5.	0.000

ARMATURA INFERIORE VERTICALE

GUSCI			COMBINAZIONE RARA						COMBINAZIONE FREQUENTE						COMBINAZIONE QUASI PERMANENTE					
	Af	Afc	Mom	Nor	σc	σf	WkR	Mom	Nor	σc	σf	WkF	Mom	Nor	σc	σf	WkP			
356	2.58	2.56	3	2	0.00	65.	0.006	3	2	0.00	59.	0.005	3	2	0.00	56.	0.005			
357	2.58	2.56	0.	3	0.00	50.	0.005	0.	2	0.00	45.	0.004	0.	2	0.00	43.	0.004			
358	2.58	2.56	1	1	0.00	17.	0.002	1	1	0.00	15.	0.001	1	1	0.00	15.	0.001			
359	2.58	2.56	1	2	0.00	35.	0.003	0.	1	0.00	30.	0.003	0.	1	0.00	28.	0.003			
360	2.58	2.56	1	1	0.00	32.	0.003	1	1	0.00	28.	0.003	1	1	0.00	27.	0.002			
361	2.58	2.56	3	3	0.00	71.	0.006	3	2	0.00	64.	0.006	3	2	0.00	61.	0.005			
362	2.58	2.56	0.	3	0.00	49.	0.005	0.	2	0.00	44.	0.004	0.	2	0.00	43.	0.004			

363	2.58	2.56	1	1	0.00	20.	0.002	1	1	0.00	18.	0.002	1	1	0.00	17.	0.001
364	2.58	2.56	1	2	0.00	34.	0.003	0.	1	0.00	30.	0.003	0.	1	0.00	28.	0.003
365	2.58	2.56	1	1	0.00	33.	0.003	1	1	0.00	29.	0.003	1	1	0.00	27.	0.002
366	2.58	2.56	3	2	0.00	63.	0.005	3	2	0.00	58.	0.005	3	2	0.00	55.	0.005
367	2.58	2.56	3	2	0.00	68.	0.006	3	2	0.00	62.	0.005	3	2	0.00	60.	0.005
368	2.58	2.56	3	2	0.00	65.	0.006	3	2	0.00	60.	0.005	3	2	0.00	57.	0.005
369	2.58	2.56	3	2	0.00	63.	0.005	3	2	0.00	57.	0.005	3	2	0.00	55.	0.005
370	2.58	2.56	0.	2	0.00	37.	0.003	0.	2	0.00	33.	0.003	0.	2	0.00	32.	0.003
371	2.58	2.56	1	0.	0.07	14.	0.001	1	0.	0.04	12.	0.001	1	0.	0.03	12.	0.001
372	2.58	2.56	1	1	0.00	29.	0.003	1	1	0.00	24.	0.002	0.	1	0.00	22.	0.002
373	2.58	2.56	1	1	0.00	27.	0.002	1	1	0.00	23.	0.002	1	1	0.00	22.	0.002
374	2.58	2.56	0.	2	0.00	41.	0.004	0.	2	0.00	37.	0.003	0.	2	0.00	36.	0.003
375	2.58	2.56	1	0.	0.07	14.	0.001	1	0.	0.04	12.	0.001	1	0.	0.03	12.	0.001
376	2.58	2.56	1	1	0.00	29.	0.003	0.	1	0.00	24.	0.002	0.	1	0.00	23.	0.002
377	2.58	2.56	1	1	0.00	26.	0.002	1	1	0.00	23.	0.002	1	1	0.00	21.	0.002
378	2.58	2.56	0.	2	0.00	43.	0.004	0.	2	0.00	39.	0.004	0.	2	0.00	37.	0.003
379	2.58	2.56	0.	2	0.00	45.	0.004	0.	2	0.00	41.	0.004	0.	2	0.00	39.	0.004
380	2.58	2.56	1	0.	0.03	16.	0.001	1	0.	0.00	14.	0.001	1	0.	0.00	14.	0.001
381	2.58	2.56	1	1	0.00	20.	0.002	1	1	0.00	18.	0.002	1	1	0.00	17.	0.001
382	2.58	2.56	1	1	0.00	27.	0.002	0.	1	0.00	23.	0.002	0.	1	0.00	22.	0.002
383	2.58	2.56	1	1	0.00	30.	0.003	1	1	0.00	26.	0.002	0.	1	0.00	24.	0.002
384	2.58	2.56	1	1	0.00	28.	0.002	1	1	0.00	24.	0.002	1	1	0.00	23.	0.002
385	2.58	2.56	1	1	0.00	30.	0.003	1	1	0.00	26.	0.002	1	1	0.00	25.	0.002

ARMATURA SUPERIORE ORIZZONTALE

GUSCI	Af Afc		COMBINAZIONE RARA					COMBINAZIONE FREQUENTE					COMBINAZIONE QUASI PERMANENTE				
			Mom	Nor	σ_c	σ_f	WkR	Mom	Nor	σ_c	σ_f	WkF	Mom	Nor	σ_c	σ_f	WkP
356	2.54	2.61	0.	1	0.00	16.	0.001	0.	1	0.00	14.	0.001	0.	1	0.00	13.	0.001
357	2.54	2.61	0.	1	0.00	22.	0.002	0.	1	0.00	19.	0.002	0.	1	0.00	18.	0.002
358	2.54	2.61	0.	1	0.00	12.	0.001	0.	1	0.00	10.	0.001	0.	0.	0.00	10.	0.001
359	2.54	2.61	0.	1	0.00	12.	0.001	0.	1	0.00	10.	0.001	0.	0.	0.00	9.	0.001
360	2.54	2.61	0.	1	0.00	13.	0.001	0.	1	0.00	11.	0.001	0.	1	0.00	10.	0.001
361	2.54	2.61	0.	1	0.00	19.	0.002	0.	1	0.00	17.	0.002	0.	1	0.00	16.	0.001
362	2.54	2.61	0.	1	0.00	21.	0.002	0.	1	0.00	18.	0.002	0.	1	0.00	17.	0.002
363	2.54	2.61	0.	1	0.00	14.	0.001	0.	1	0.00	12.	0.001	0.	1	0.00	11.	0.001
364	2.54	2.61	0.	1	0.00	11.	0.001	0.	0.	0.00	9.	0.001	0.	0.	0.00	9.	0.001
365	2.54	2.61	0.	1	0.00	13.	0.001	0.	1	0.00	11.	0.001	0.	1	0.00	10.	0.001
366	2.54	2.61	0.	1	0.00	14.	0.001	0.	1	0.00	12.	0.001	0.	1	0.00	11.	0.001
367	2.54	2.61	0.	1	0.00	17.	0.002	0.	1	0.00	15.	0.001	0.	1	0.00	14.	0.001
368	2.54	2.61	0.	1	0.00	13.	0.001	0.	1	0.00	11.	0.001	0.	1	0.00	11.	0.001
369	2.54	2.61	0.	1	0.00	13.	0.001	0.	1	0.00	12.	0.001	0.	1	0.00	11.	0.001
370	2.54	2.61	0.	0.	0.00	6.	0.001	0.	0.	0.00	6.	0.001	0.	0.	0.00	6.	0.000
371	2.54	2.61	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
372	2.54	2.61	0.	0.	0.00	2.	0.000	0.	0.	0.00	1.	0.000	0.	0.	0.00	1.	0.000
373	2.54	2.61	0.	0.	0.00	1.	0.000	0.	0.	0.00	1.	0.000	0.	0.	0.00	0.	0.000
374	2.54	2.61	0.	1	0.00	14.	0.001	0.	1	0.00	12.	0.001	0.	0.	0.00	12.	0.001
375	2.54	2.61	0.	0.	0.00	2.	0.000	0.	0.	0.00	2.	0.000	0.	0.	0.00	2.	0.000
376	2.54	2.61	0.	0.	0.00	1.	0.000	0.	0.	0.00	1.	0.000	0.	0.	0.00	1.	0.000
377	2.54	2.61	0.	0.	0.00	1.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
378	2.54	2.61	0.	1	0.00	14.	0.001	0.	1	0.00	12.	0.001	0.	0.	0.00	12.	0.001
379	2.54	2.61	0.	1	0.00	17.	0.002	0.	1	0.00	15.	0.001	0.	1	0.00	15.	0.001
380	2.54	2.61	0.	0.	0.00	2.	0.000	0.	0.	0.00	2.	0.000	0.	0.	0.00	2.	0.000
381	2.54	2.61	0.	0.	0.00	7.	0.001	0.	0.	0.00	6.	0.001	0.	0.	0.00	6.	0.001
382	2.54	2.61	0.	0.	0.01	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
383	2.54	2.61	0.	0.	0.00	1.	0.000	0.	0.	0.00	1.	0.000	0.	0.	0.00	1.	0.000
384	2.54	2.61	0.	0.	0.00	1.	0.000	0.	0.	0.00	1.	0.000	0.	0.	0.00	1.	0.000
385	2.54	2.61	0.	0.	0.00	4.	0.000	0.	0.	0.00	3.	0.000	0.	0.	0.00	3.	0.000

ARMATURA SUPERIORE VERTICALE

GUSCI	Af Afc		COMBI NAZI ONE RARA					COMBI NAZI ONE FREQUENTE					COMBI NAZI ONE QUASI PERMANENTE				
			Mom	Nor	σ_c	σ_f	WkR	Mom	Nor	σ_c	σ_f	WkF	Mom	Nor	σ_c	σ_f	WkP
356	2.56	2.58	0.	2	0.00	46.	0.004	0.	2	0.00	41.	0.004	0.	2	0.00	39.	0.004
357	2.56	2.58	2	3	0.00	64.	0.006	2	2	0.00	58.	0.005	2	2	0.00	56.	0.005
358	2.56	2.58	0.	1	0.00	12.	0.001	0.	1	0.00	11.	0.001	0.	1	0.00	11.	0.001
359	2.56	2.58	0.	2	0.00	32.	0.003	0.	1	0.00	27.	0.003	0.	1	0.00	25.	0.002
360	2.56	2.58	0.	1	0.00	25.	0.002	0.	1	0.00	21.	0.002	0.	1	0.00	20.	0.002
361	2.56	2.58	0.	3	0.00	50.	0.005	0.	2	0.00	45.	0.004	0.	2	0.00	43.	0.004
362	2.56	2.58	2	3	0.00	64.	0.006	2	2	0.00	58.	0.005	2	2	0.00	56.	0.005
363	2.56	2.58	0.	1	0.00	15.	0.001	0.	1	0.00	13.	0.001	0.	1	0.00	13.	0.001
364	2.56	2.58	0.	2	0.00	31.	0.003	0.	1	0.00	27.	0.002	0.	1	0.00	25.	0.002
365	2.56	2.58	0.	1	0.00	26.	0.002	0.	1	0.00	22.	0.002	0.	1	0.00	21.	0.002
366	2.56	2.58	0.	2	0.00	43.	0.004	0.	2	0.00	39.	0.004	0.	2	0.00	37.	0.003
367	2.56	2.58	0.	2	0.00	46.	0.004	0.	2	0.00	42.	0.004	0.	2	0.00	40.	0.004
368	2.56	2.58	0.	2	0.00	44.	0.004	0.	2	0.00	39.	0.004	0.	2	0.00	37.	0.003
369	2.56	2.58	0.	2	0.00	43.	0.004	0.	2	0.00	39.	0.004	0.	2	0.00	37.	0.003
370	2.56	2.58	2	2	0.00	52.	0.005	2	2	0.00	48.	0.004	2	2	0.00	46.	0.004
371	2.56	2.58	0.	0.	0.00	8.	0.001	0.	0.	0.00	7.	0.001	0.	0.	0.00	7.	0.001
372	2.56	2.58	0.	1	0.00	25.	0.002	0.	1	0.00	21.	0.002	0.	1	0.00	19.	0.002
373	2.56	2.58	0.	1	0.00	18.	0.002	0.	1	0.00	15.	0.001	0.	1	0.00	14.	0.001
374	2.56	2.58	3	2	0.00	58.	0.005	2	2	0.00	53.	0.005	2	2	0.00	51.	0.004
375	2.56	2.58	0.	0.	0.00	8.	0.001	0.	0.	0.00	7.	0.001	0.	0.	0.00	7.	0.001
376	2.56	2.58	0.	1	0.00	25.	0.002	0.	1	0.00	21.	0.002	0.	1	0.00	20.	0.002
377	2.56	2.58	0.	1	0.00	17.	0.002	0.	1	0.00	15.	0.001	0.	1	0.00	14.	0.001
378	2.56	2.58	3	2	0.00	60.	0.005	2	2	0.00	55.	0.005	2	2	0.00	53.	0.005
379	2.56	2.58	2	2	0.00	61.	0.005	2	2	0.00	56.	0.005	2	2	0.00	54.	0.005
380	2.56	2.58	0.	0.	0.00	10.	0.001	0.	0.	0.00	9.	0.001	0.	0.	0.00	9.	0.001
381	2.56	2.58	0.	1	0.00	14.	0.001	0.	1	0.00	13.	0.001	0.	1	0.00	12.	0.001
382	2.56	2.58	0.	1	0.00	24.	0.002	0.	1	0.00	20.	0.002	0.	1	0.00	19.	0.002
383	2.56	2.58	0.	1	0.00	26.	0.002	0.	1	0.00	22.	0.002	0.	1	0.00	21.	0.002
384	2.56	2.58	0.	1	0.00	19.	0.002	0.	1	0.00	16.	0.002	0.	1	0.00	15.	0.001
385	2.56	2.58	0.	1	0.00	22.	0.002	0.	1	0.00	19.	0.002	0.	1	0.00	18.	0.002

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

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

[illegible]

961	varl ocul i	266	Z	FD glo	-0.02500
962	varl ocul i	267	Z	FD glo	-0.02500
963	varl ocul i	268	Z	FD glo	-0.02500
964	varl ocul i	269	Z	FD glo	-0.02500
965	varl ocul i	270	Z	FD glo	-0.02500
966	varl ocul i	271	Z	FD glo	-0.02500
967	varl ocul i	272	Z	FD glo	-0.02500
968	varl ocul i	273	Z	FD glo	-0.02500
969	varl ocul i	274	Z	FD glo	-0.02500
970	varl ocul i	275	Z	FD glo	-0.02500
971	varl ocul i	276	Z	FD glo	-0.02500
972	varl ocul i	277	Z	FD glo	-0.02500
973	varl ocul i	278	Z	FD glo	-0.02500
974	varl ocul i	279	Z	FD glo	-0.02500
975	varl ocul i	280	Z	FD glo	-0.02500
976	varl ocul i	281	Z	FD glo	-0.02500
977	varl ocul i	282	Z	FD glo	-0.02500
978	varl ocul i	283	Z	FD glo	-0.02500
979	varl ocul i	284	Z	FD glo	-0.02500
980	varl ocul i	285	Z	FD glo	-0.02500
981	varl ocul i	286	Z	FD glo	-0.02500
982	varl ocul i	287	Z	FD glo	-0.02500
983	varl ocul i	288	Z	FD glo	-0.02500
984	varl ocul i	289	Z	FD glo	-0.02500
985	varl ocul i	290	Z	FD glo	-0.02500
986	varl ocul i	291	Z	FD glo	-0.02500
987	varl ocul i	292	Z	FD glo	-0.02500
988	varl ocul i	293	Z	FD glo	-0.02500
989	varl ocul i	294	Z	FD glo	-0.02500
990	varl ocul i	295	Z	FD glo	-0.02500
991	varl ocul i	296	Z	FD glo	-0.02500
992	varl ocul i	297	Z	FD glo	-0.02500
993	varl ocul i	298	Z	FD glo	-0.02500
994	varl ocul i	299	Z	FD glo	-0.02500
995	varl ocul i	300	Z	FD glo	-0.02500
996	varl ocul i	301	Z	FD glo	-0.02500
997	varl ocul i	302	Z	FD glo	-0.02500
998	varl ocul i	303	Z	FD glo	-0.02500
999	varl ocul i	304	Z	FD glo	-0.02500
1000	varl ocul i	305	Z	FD glo	-0.02500
1001	varl ocul i	306	Z	FD glo	-0.02500
1002	varl ocul i	307	Z	FD glo	-0.02500
1003	varl ocul i	308	Z	FD glo	-0.02500
1004	varl ocul i	309	Z	FD glo	-0.02500
1005	varl ocul i	310	Z	FD glo	-0.02500
1006	varl ocul i	311	Z	FD glo	-0.02500
1007	varl ocul i	312	Z	FD glo	-0.02500
1008	varl ocul i	313	Z	FD glo	-0.02500
1009	varl ocul i	314	Z	FD glo	-0.02500
1010	varl ocul i	315	Z	FD glo	-0.02500
1011	varl ocul i	316	Z	FD glo	-0.02500
1012	varl ocul i	317	Z	FD glo	-0.02500
1013	varl ocul i	318	Z	FD glo	-0.02500
1014	varl ocul i	319	Z	FD glo	-0.02500
1015	varl ocul i	320	Z	FD glo	-0.02500
1016	varl ocul i	321	Z	FD glo	-0.02500
1017	varl ocul i	322	Z	FD glo	-0.02500
1018	varl ocul i	323	Z	FD glo	-0.02500
1019	varl ocul i	324	Z	FD glo	-0.02500
1020	varl ocul i	325	Z	FD glo	-0.02500
1021	varl ocul i	326	Z	FD glo	-0.02500
1022	varl ocul i	327	Z	FD glo	-0.02500
1023	varl ocul i	328	Z	FD glo	-0.02500
1024	varl ocul i	329	Z	FD glo	-0.02500
1025	varl ocul i	330	Z	FD glo	-0.02500
1026	varl ocul i	331	Z	FD glo	-0.02500
1027	varl ocul i	332	Z	FD glo	-0.02500
1028	varl ocul i	333	Z	FD glo	-0.02500
1029	varl ocul i	334	Z	FD glo	-0.02500
1030	varl ocul i	335	Z	FD glo	-0.02500
1031	varl ocul i	336	Z	FD glo	-0.02500
1032	varl ocul i	337	Z	FD glo	-0.02500
1033	varl ocul i	338	Z	FD glo	-0.02500
1034	varl ocul i	339	Z	FD glo	-0.02500
1035	varl ocul i	340	Z	FD glo	-0.02500

1046	varl ocul i	351	Z	FD	gl o	-0. 02500
1047	varl ocul i	352	Z	FD	gl o	-0. 02500
1048	varl ocul i	353	Z	FD	gl o	-0. 02500
1049	varl ocul i	354	Z	FD	gl o	-0. 02500
1050	varl ocul i	355	Z	FD	gl o	-0. 02500
1051	varl ocul i	356	Z	FD	gl o	-0. 02500
1052	varl ocul i	357	Z	FD	gl o	-0. 02500
1053	varl ocul i	358	Z	FD	gl o	-0. 02500
1054	varl ocul i	359	Z	FD	gl o	-0. 02500
1055	varl ocul i	360	Z	FD	gl o	-0. 02500
1056	varl ocul i	361	Z	FD	gl o	-0. 02500
1057	varl ocul i	362	Z	FD	gl o	-0. 02500
1058	varl ocul i	363	Z	FD	gl o	-0. 02500
1059	varl ocul i	364	Z	FD	gl o	-0. 02500
1060	varl ocul i	365	Z	FD	gl o	-0. 02500
1061	varl ocul i	366	Z	FD	gl o	-0. 02500
1062	varl ocul i	367	Z	FD	gl o	-0. 02500
1063	varl ocul i	368	Z	FD	gl o	-0. 02500
1064	varl ocul i	369	Z	FD	gl o	-0. 02500
1065	varl ocul i	370	Z	FD	gl o	-0. 02500
1066	varl ocul i	371	Z	FD	gl o	-0. 02500
1067	varl ocul i	372	Z	FD	gl o	-0. 02500
1068	varl ocul i	373	Z	FD	gl o	-0. 02500
1069	varl ocul i	374	Z	FD	gl o	-0. 02500
1070	varl ocul i	375	Z	FD	gl o	-0. 02500
1071	varl ocul i	376	Z	FD	gl o	-0. 02500
1072	varl ocul i	377	Z	FD	gl o	-0. 02500
1073	varl ocul i	378	Z	FD	gl o	-0. 02500
1074	varl ocul i	379	Z	FD	gl o	-0. 02500
1075	varl ocul i	380	Z	FD	gl o	-0. 02500
1076	varl ocul i	381	Z	FD	gl o	-0. 02500
1077	varl ocul i	382	Z	FD	gl o	-0. 02500
1078	varl ocul i	383	Z	FD	gl o	-0. 02500
1079	varl ocul i	384	Z	FD	gl o	-0. 02500
1080	varl ocul i	385	Z	FD	gl o	-0. 02500
1081	varl ocul i	36	Z	FD	gl o	-0. 02500
1082	varl ocul i	37	Z	FD	gl o	-0. 02500
1083	varl ocul i	38	Z	FD	gl o	-0. 02500
1084	varl ocul i	40	Z	FD	gl o	-0. 02500
1085	varl ocul i	39	Z	FD	gl o	-0. 02500
1086	varl ocul i	41	Z	FD	gl o	-0. 02500
1087	varl ocul i	46	Z	FD	gl o	-0. 02500
1088	varl ocul i	47	Z	FD	gl o	-0. 02500
1089	varl ocul i	49	Z	FD	gl o	-0. 02500
1090	varl ocul i	48	Z	FD	gl o	-0. 02500
1091	varl ocul i	56	Z	FD	gl o	-0. 02500
1092	varl ocul i	58	Z	FD	gl o	-0. 02500
1093	varl ocul i	53	Z	FD	gl o	-0. 02500
1094	varl ocul i	50	Z	FD	gl o	-0. 02500
1095	varl ocul i	42	Z	FD	gl o	-0. 02500
1096	varl ocul i	43	Z	FD	gl o	-0. 02500
1097	varl ocul i	51	Z	FD	gl o	-0. 02500
1098	varl ocul i	54	Z	FD	gl o	-0. 02500
1099	varl ocul i	59	Z	FD	gl o	-0. 02500
1100	varl ocul i	57	Z	FD	gl o	-0. 02500
1101	varl ocul i	45	Z	FD	gl o	-0. 02500
1102	varl ocul i	60	Z	FD	gl o	-0. 02500
1103	varl ocul i	55	Z	FD	gl o	-0. 02500
1104	varl ocul i	52	Z	FD	gl o	-0. 02500
1105	varl ocul i	44	Z	FD	gl o	-0. 02500
1106	varl ocul i	32	Z	FD	gl o	-0. 02500
1107	varl ocul i	31	Z	FD	gl o	-0. 02500
1108	varl ocul i	33	Z	FD	gl o	-0. 02500
1109	varl ocul i	35	Z	FD	gl o	-0. 02500
1110	varl ocul i	34	Z	FD	gl o	-0. 02500
1111	varl ocul i	411	Z	FD	gl o	-0. 02500
1112	varl ocul i	412	Z	FD	gl o	-0. 02500
1113	varl ocul i	413	Z	FD	gl o	-0. 02500
1114	varl ocul i	414	Z	FD	gl o	-0. 02500
1115	varl ocul i	415	Z	FD	gl o	-0. 02500
1116	varl ocul i	426	Z	FD	gl o	-0. 02500
1117	varl ocul i	427	Z	FD	gl o	-0. 02500
1118	varl ocul i	428	Z	FD	gl o	-0. 02500
1119	varl ocul i	429	Z	FD	gl o	-0. 02500
1120	varl ocul i	430	Z	FD	gl o	-0. 02500
1121	varl ocul i	431	Z	FD	gl o	-0. 02500
1122	varl ocul i	432	Z	FD	gl o	-0. 02500
1123	varl ocul i	433	Z	FD	gl o	-0. 02500
1124	varl ocul i	434	Z	FD	gl o	-0. 02500
1125	varl ocul i	435	Z	FD	gl o	-0. 02500
1126	varl ocul i	436	Z	FD	gl o	-0. 02500
1127	varl ocul i	437	Z	FD	gl o	-0. 02500
1128	varl ocul i	438	Z	FD	gl o	-0. 02500
1129	varl ocul i	439	Z	FD	gl o	-0. 02500
1130	varl ocul i	440	Z	FD	gl o	-0. 02500
1131	varl ocul i	441	Z	FD	gl o	-0. 02500
1132	varl ocul i	442	Z	FD	gl o	-0. 02500
1133	varl ocul i	443	Z	FD	gl o	-0. 02500
1134	varl ocul i	444	Z	FD	gl o	-0. 02500
1135	varl ocul i	445	Z	FD	gl o	-0. 02500

PESI PROPRI GUSCI - ----- ----- ----- ----- -----			
Cond.	Nome Cari chi	Gusci	
1	1136-1580	1-445	

CONDIZIONI DI CARICO----- ----- ----- ----- num. = 8			
Nome			
1	Peso proprio _____	N. cari chi :	445
	Li sta cari chi :	1136-1580	
2	Permanente _____	N. cari chi :	0
	Li sta cari chi :		

- 3 A: Var_abi tazione___ N. carichi : 175
Lista carichi : 961-1135
- 4 Neve_(<1000m_slm)___ N. carichi : 0
Lista carichi :
- 5 Si sma_X N. carichi : 240
Lista carichi : 1-240
- 6 Si sma_Y N. carichi : 240
Lista carichi : 241-480
- 7 Torcente_add._X N. carichi : 240
Lista carichi : 481-720
- 8 Torcente_add._Y N. carichi : 240
Lista carichi : 721-960

RISULTANTI DEI CARICHI (punto di applicazione nell'origine degli assi):

cond.	FX	FY	FZ	MX	MY	MZ
1	0.000000E+00	0.000000E+00	-5.722200E+04	-9.500172E+07	1.473235E+08	0.000000E+00
2	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
3	0.000000E+00	0.000000E+00	-1.819024E+04	-2.985304E+07	4.674012E+07	0.000000E+00
4	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
5	3.706849E+03	0.000000E+00	0.000000E+00	0.000000E+00	1.055910E+06	-6.149213E+06
6	0.000000E+00	3.706849E+03	0.000000E+00	-1.055910E+06	0.000000E+00	9.542304E+06
7	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	-4.402642E+04
8	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	1.135441E+05

DATI ANALISI SISMICA:

Analisi sismica - Statica lineare - (NTC 2008)

Coeff. I lambda = 1.0000
Sd = 0.070

Numero condizioni generanti carichi sismici : 3

Cond. 001 : Peso_proprio_____ con coeff. 1.000
Cond. 002 : Permanente_____ con coeff. 1.000
Cond. 003 : A: Var_abi tazione_____ con coeff. 0.300

Condizioni di carico sismico generate:

Cond. 005 : Si sma X
Cond. 006 : Si sma Y
Cond. 007 : Torcente add. X
Cond. 008 : Torcente add. Y

Carichi sismici :

Piani cm	Pesi daN	C. distr.	Forze di piano daN	Torc. di piano X daNcm	Torc. di piano Y daNcm	Bari c. X cm	Bari c. Y cm
80.0	11081	0.0241	267	3168	8171	2574.8	1660.9
160.0	11081	0.0482	534	6337	16343	2574.8	1660.9
240.0	11081	0.0722	800	9505	24514	2574.8	1660.9
320.0	11081	0.0963	1067	12674	32685	2574.8	1660.9
400.0	8633	0.1204	1039	12342	31831	2572.9	1653.8

DESCRIZIONE CASI DI CARICO:

NOME	DESCRIZIONE	VERIFICA	TIPO	CONDIZ. INSERITE			CASI INSERITI	
				Num.	Coeff.	Segno	Num.	Coeff.
1	SLU SENZA SISMA	S. L. U.	somma	1	1.300	+		
				2	1.500	+		
				3	1.500	+		
				4	1.500	+		
2	SISMAX SLU	nessuna	somma	5	1.000	±		
				7	1.000	±		
3	SISMAY SLU	nessuna	somma	6	1.000	±		
				8	1.000	±		
4	SLU con SISMAX	S. L. U.	somma	1	1.000	+	2	1.000
				2	1.000	+		
				3	0.300	+		
5	SLU con SISMAY	S. L. U.	somma	1	1.000	+	3	1.000
				2	1.000	+		
				3	0.300	+		
6	SLUGeo	SLU_GEO	somma	1	1.000	+		
				2	1.300	+		
				3	1.300	+		
				4	1.300	+		
7	Rara	Rara	somma	1	1.000	+		
				2	1.000	+		
				3	1.000	+		
				4	1.000	+		
8	Frequente	Freq.	somma	1	1.000	+		
				2	1.000	+		
				3	0.500	+		
				4	0.200	+		
9	Quasi Perm	Quasi Perm.	somma	1	1.000	+		
				2	1.000	+		
				3	0.300	+		

|-----|

VERIFICA GUSCI IN C.A.:

MACROGUSCIO muro_di_fondo

VERIFICA ARMATURE EFFETTIVE (EFFETTO MEMBRANA + PIASTRA)

unità di misura:

lunghezze : [cm] - forze : [daN]
 momenti : [daNcm/cm] - tensioni : [daN/cm2]
 pesi specifici : [daN/cm3] - angoli : [gradi]
 armature : [cm2]

CASI DI CARICO:

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

DATI:

tensione di snervamento acciaio (fyk): 4500 daN/cm2
 coefficiente sicurezza acciaio : 1.15
 deformazione ultima acciaio : 67.5 per mille
 deformazione ultima cls : 3.5 per mille
 rapporto rottura/snervamento (k): 1.15
 resistenza cilindrica cls (fck): 249 daN/cm2
 coefficiente sicurezza cls : 1.5
 coefficiente riduttivo (alfa): 0.85
 copri ferro inferiore (asse armatura): 2 cm
 copri ferro superiore (asse armatura): 2 cm
 moltiplicatore sollecitazioni : 1

GUSCI	spess	INFERIORE ORIZZONTALE						INFERIORE VERTICALE					
		Af	Afc	Mom	Nor	epsC	epsF	Af	Afc	Mom	Nor	epsC	epsF
1	15	4.12	4.11	0.	6.	0.00	0.03	3.94	3.97	0.	-4.	0.00	0.00
2	15	4.12	4.11	2.	3.	0.00	0.02	3.94	3.97	3.	-8.	0.01	-0.01
3	15	4.12	4.11	2.	2.	0.00	0.01	3.94	3.97	0.	-7.	0.00	0.00
4	15	4.12	4.11	2.	2.	0.00	0.02	3.94	3.97	0.	-4.	0.00	0.00
5	15	4.12	4.11	2.	2.	0.00	0.01	3.94	3.97	0.	-1.	0.00	0.00
6	15	4.12	4.11	0.	6.	0.00	0.03	3.94	3.97	0.	-3.	0.00	0.00
7	15	4.12	4.11	0.	2.	0.00	0.01	3.94	3.97	2.	-9.	0.01	-0.01
8	15	4.12	4.11	2.	1.	0.00	0.01	3.94	3.97	0.	-6.	0.00	0.00
9	15	4.12	4.11	2.	2.	0.00	0.01	3.94	3.97	0.	-4.	0.00	0.00
10	15	4.12	4.11	2.	3.	0.00	0.02	3.94	3.97	1.	1.	0.00	0.00
11	15	4.12	4.11	0.	4.	0.00	0.02	3.94	3.97	0.	-5.	0.00	0.00
12	15	4.12	4.11	0.	3.	0.00	0.02	3.94	3.97	0.	-6.	0.00	0.00
13	15	4.12	4.11	0.	4.	0.00	0.02	3.94	3.97	0.	-7.	0.00	0.00
14	15	4.12	4.11	0.	5.	0.00	0.03	3.94	3.97	0.	-5.	0.00	0.00
15	15	4.12	4.11	1.	2.	0.00	0.01	3.94	3.97	4.	-9.	0.01	-0.01
16	15	4.12	4.11	1.	2.	0.00	0.01	3.94	3.97	0.	-8.	0.01	-0.01
17	15	4.12	4.11	2.	2.	0.00	0.01	3.94	3.97	0.	-5.	0.00	0.00
18	15	4.12	4.11	2.	1.	0.00	0.01	3.94	3.97	1.	-1.	0.00	0.00
19	15	4.12	4.11	1.	2.	0.00	0.01	3.94	3.97	4.	-10.	0.01	-0.01
20	15	4.12	4.11	1.	1.	0.00	0.01	3.94	3.97	0.	-9.	0.01	-0.01
21	15	4.12	4.11	2.	2.	0.00	0.01	3.94	3.97	0.	-6.	0.00	0.00
22	15	4.12	4.11	2.	1.	0.00	0.01	3.94	3.97	0.	-2.	0.00	0.00
23	15	4.12	4.11	1.	2.	0.00	0.01	3.94	3.97	4.	-11.	0.01	-0.01
24	15	4.12	4.11	1.	1.	0.00	0.01	3.94	3.97	0.	-9.	0.01	-0.01
25	15	4.12	4.11	1.	1.	0.00	0.01	3.94	3.97	0.	-6.	0.00	0.00
26	15	4.12	4.11	1.	1.	0.00	0.01	3.94	3.97	0.	-3.	0.00	0.00
27	15	4.12	4.11	1.	2.	0.00	0.01	3.94	3.97	3.	-9.	0.01	-0.01
28	15	4.12	4.11	1.	2.	0.00	0.01	3.94	3.97	0.	-8.	0.01	-0.01
29	15	4.12	4.11	1.	2.	0.00	0.01	3.94	3.97	0.	-5.	0.00	0.00
30	15	4.12	4.11	1.	2.	0.00	0.01	3.94	3.97	0.	-2.	0.00	0.00

GUSCI	spess	SUPERIORE ORIZZONTALE						SUPERIORE VERTICALE					
		Af	Afc	Mom	Nor	epsC	epsF	Af	Afc	Mom	Nor	epsC	epsF
1	15	4.11	4.12	4.	6.	0.00	0.04	3.97	3.94	44.	-3.	0.04	0.08
2	15	4.11	4.12	0.	2.	0.00	0.02	3.97	3.94	0.	-8.	0.01	-0.01
3	15	4.11	4.12	1.	2.	0.00	0.01	3.97	3.94	2.	-6.	0.01	0.00
4	15	4.11	4.12	1.	2.	0.00	0.02	3.97	3.94	0.	-4.	0.00	0.00
5	15	4.11	4.12	1.	2.	0.00	0.02	3.97	3.94	1.	-1.	0.00	0.00
6	15	4.11	4.12	5.	6.	0.00	0.04	3.97	3.94	48.	-3.	0.04	0.08
7	15	4.11	4.12	0.	1.	0.00	0.01	3.97	3.94	0.	-8.	0.01	-0.01
8	15	4.11	4.12	2.	1.	0.00	0.01	3.97	3.94	2.	-6.	0.01	0.00
9	15	4.11	4.12	2.	2.	0.00	0.01	3.97	3.94	1.	-4.	0.00	0.00
10	15	4.11	4.12	1.	3.	0.00	0.02	3.97	3.94	2.	0.	0.00	0.01
11	15	4.11	4.12	5.	4.	0.00	0.03	3.97	3.94	52.	-5.	0.04	0.09
12	15	4.11	4.12	4.	3.	0.00	0.03	3.97	3.94	52.	-6.	0.04	0.09
13	15	4.11	4.12	5.	4.	0.00	0.03	3.97	3.94	51.	-6.	0.04	0.09
14	15	4.11	4.12	4.	4.	0.00	0.04	3.97	3.94	49.	-4.	0.04	0.09
15	15	4.11	4.12	0.	1.	0.00	0.01	3.97	3.94	0.	-10.	0.01	-0.01
16	15	4.11	4.12	2.	2.	0.00	0.01	3.97	3.94	2.	-8.	0.01	0.00
17	15	4.11	4.12	2.	2.	0.00	0.01	3.97	3.94	1.	-5.	0.00	0.00
18	15	4.11	4.12	2.	1.	0.00	0.01	3.97	3.94	2.	-2.	0.00	0.00
19	15	4.11	4.12	0.	1.	0.00	0.01	3.97	3.94	0.	-11.	0.01	-0.01
20	15	4.11	4.12	2.	1.	0.00	0.01	3.97	3.94	2.	-9.	0.01	0.00
21	15	4.11	4.12	2.	2.	0.00	0.01	3.97	3.94	1.	-6.	0.00	0.00
22	15	4.11	4.12	2.	1.	0.00	0.01	3.97	3.94	1.	-2.	0.00	0.00
23	15	4.11	4.12	1.	1.	0.00	0.01	3.97	3.94	0.	-10.	0.01	-0.01
24	15	4.11	4.12	2.	1.	0.00	0.01	3.97	3.94	2.	-8.	0.01	-0.01
25	15	4.11	4.12	2.	1.	0.00	0.01	3.97	3.94	1.	-6.	0.00	0.00
26	15	4.11	4.12	1.	0.	0.00	0.01	3.97	3.94	1.	-2.	0.00	0.00
27	15	4.11	4.12	0.	2.	0.00	0.01	3.97	3.94	0.	-9.	0.01	-0.01
28	15	4.11	4.12	2.	2.	0.00	0.01	3.97	3.94	2.	-7.	0.01	0.00
29	15	4.11	4.12	2.	2.	0.00	0.02	3.97	3.94	0.	-4.	0.00	0.00
30	15	4.11	4.12	2.	2.	0.00	0.01	3.97	3.94	1.	-1.	0.00	0.00

***** TAGLIO PERPENDI COLARE

GUSCI	tx	ty	tt	GUSCI	tx	ty	tt	GUSCI	tx	ty	tt
1	0.0	0.1	0.1	2	0.0	0.0	0.0	3	0.0	0.0	0.0

4	0.0	0.0	0.0	5	0.0	0.0	0.0	6	0.0	0.1	0.1
7	0.0	0.0	0.0	8	0.0	0.0	0.0	9	0.0	0.0	0.0
10	0.0	0.0	0.0	11	0.0	0.1	0.1	12	0.0	0.1	0.1
13	0.0	0.1	0.1	14	0.0	0.1	0.1	15	0.0	0.0	0.0
16	0.0	0.0	0.0	17	0.0	0.0	0.0	18	0.0	0.0	0.0
19	0.0	0.0	0.0	20	0.0	0.0	0.0	21	0.0	0.0	0.0
22	0.0	0.0	0.0	23	0.0	0.0	0.0	24	0.0	0.0	0.0
25	0.0	0.0	0.0	26	0.0	0.0	0.0	27	0.0	0.0	0.0
28	0.0	0.0	0.0	29	0.0	0.0	0.0	30	0.0	0.0	0.0

MACROGUSCIO muro_di_fondo

VERIFICHE A FESSURAZIONE (EFFETTO MEMBRANA + PIASTRA)

unità di misura:

lunghezze : [cm] - forze : [daN]
 momenti : [daNcm/cm] - tensioni : [daN/cm2]
 pesi specifici : [daN/cm3] - angoli : [gradi]
 armature : [cm2]

CASI DI CARICO:

Nome Descrizione
 7 Rara (RARA)
 8 Frequente (FREQUENTE)
 9 Quasi Perm (QUASI PERMANENTE)

DATI:

copri ferro inferiore (asse armatura): 2 cm
 copri ferro superiore (asse armatura): 2 cm

Af = area effettiva disposta nello strato indicato (cm2 al metro)
 wkR = apertura caratteristica per combinazioni rara (mm) - apertura max = 0.6 mm
 wkF = " " " " frequente (mm) - " " " " = 0.4 mm
 wkP = " " " " quasi permanente (mm) - " " " " = 0.3 mm

ARMATURA INFERIORE ORIZZONTALE

GUSCI			COMBINAZIONE RARA					COMBINAZIONE FREQUENTE					COMBINAZIONE QUASI PERMANENTE				
	Af	Afc	Mom	Nor	σ_c	σ_f	WkR	Mom	Nor	σ_c	σ_f	WkF	Mom	Nor	σ_c	σ_f	WkP
1	4.12	4.11	0.	0.	0.00	1.	0.000	0.	0.	0.01	0.	0.000	0.	0.	0.01	0.	0.000
2	4.12	4.11	1	-1	0.09	-1.	0.000	1	-1	0.09	-1.	0.000	1	-1	0.09	-1.	0.000
3	4.12	4.11	0.	-1	0.05	-1.	0.000	0.	-1	0.05	-1.	0.000	0.	-1	0.06	-1.	0.000
4	4.12	4.11	0.	0.	0.01	0.	0.000	0.	0.	0.02	0.	0.000	0.	0.	0.02	0.	0.000
5	4.12	4.11	0.	1	0.00	8.	0.001	0.	0.	0.00	4.	0.000	0.	0.	0.00	2.	0.000
6	4.12	4.11	0.	2	0.00	24.	0.002	0.	1	0.00	18.	0.002	0.	1	0.00	16.	0.001
7	4.12	4.11	0.	-1	0.03	0.	0.000	0.	-1	0.04	-1.	0.000	0.	-1	0.05	-1.	0.000
8	4.12	4.11	0.	0.	0.01	0.	0.000	0.	0.	0.02	0.	0.000	0.	0.	0.03	0.	0.000
9	4.12	4.11	0.	1	0.00	11.	0.001	0.	0.	0.00	6.	0.001	0.	0.	0.00	4.	0.000
10	4.12	4.11	1	2	0.00	30.	0.003	1	2	0.00	22.	0.002	1	1	0.00	18.	0.002
11	4.12	4.11	0.	-1	0.04	-1.	0.000	0.	-1	0.04	-1.	0.000	0.	-1	0.04	-1.	0.000
12	4.12	4.11	0.	0.	0.03	0.	0.000	0.	0.	0.03	0.	0.000	0.	0.	0.03	0.	0.000
13	4.12	4.11	0.	-1	0.06	-1.	0.000	0.	-1	0.06	-1.	0.000	0.	-1	0.06	-1.	0.000
14	4.12	4.11	0.	-1	0.07	-1.	0.000	0.	-1	0.06	-1.	0.000	0.	-1	0.06	-1.	0.000
15	4.12	4.11	0.	-2	0.10	-1.	0.000	0.	-1	0.10	-1.	0.000	0.	-1	0.10	-1.	0.000
16	4.12	4.11	0.	-1	0.07	-1.	0.000	0.	-1	0.07	-1.	0.000	0.	-1	0.07	-1.	0.000
17	4.12	4.11	0.	-1	0.03	0.	0.000	0.	-1	0.04	-1.	0.000	0.	-1	0.04	-1.	0.000
18	4.12	4.11	0.	0.	0.02	0.	0.000	0.	0.	0.03	0.	0.000	0.	0.	0.03	0.	0.000
19	4.12	4.11	1	-1	0.07	-1.	0.000	1	-1	0.07	-1.	0.000	1	-1	0.07	-1.	0.000
20	4.12	4.11	0.	-1	0.04	-1.	0.000	0.	-1	0.04	-1.	0.000	0.	-1	0.04	-1.	0.000
21	4.12	4.11	0.	0.	0.03	0.	0.000	0.	0.	0.03	0.	0.000	0.	0.	0.03	0.	0.000
22	4.12	4.11	0.	-1	0.05	-1.	0.000	0.	-1	0.04	-1.	0.000	0.	-1	0.04	-1.	0.000
23	4.12	4.11	0.	-2	0.11	-2.	0.000	0.	-2	0.11	-1.	0.000	0.	-2	0.11	-1.	0.000
24	4.12	4.11	0.	-1	0.08	-1.	0.000	0.	-1	0.07	-1.	0.000	0.	-1	0.07	-1.	0.000
25	4.12	4.11	0.	-1	0.06	-1.	0.000	0.	-1	0.05	-1.	0.000	0.	-1	0.05	-1.	0.000
26	4.12	4.11	0.	-1	0.06	-1.	0.000	0.	-1	0.05	-1.	0.000	0.	-1	0.05	-1.	0.000
27	4.12	4.11	0.	0.	0.03	0.	0.000	0.	0.	0.04	0.	0.000	0.	-1	0.04	0.	0.000
28	4.12	4.11	0.	0.	0.00	0.	0.000	0.	0.	0.01	0.	0.000	0.	0.	0.01	0.	0.000
29	4.12	4.11	0.	-1	0.06	-1.	0.000	0.	-1	0.05	-1.	0.000	0.	-1	0.05	-1.	0.000
30	4.12	4.11	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000

ARMATURA INFERIORE VERTICALE

GUSCI			COMBI NAZI ONE RARA					COMBI NAZI ONE FREQUENTE					COMBI NAZI ONE QUASI PERMANENTE				
	Af	Afc	Mom	Nor	σ_c	σ_f	WkR	Mom	Nor	σ_c	σ_f	WkF	Mom	Nor	σ_c	σ_f	WkP
1	3.94	3.97	0.	-6	0.36	-5.	0.000	0.	-6	0.34	-5.	0.000	0.	-5	0.33	-5.	0.000
2	3.94	3.97	3	-12	0.81	-10.	0.000	3	-11	0.76	-10.	0.000	3	-11	0.74	-9.	0.000
3	3.94	3.97	0.	-9	0.57	-9.	0.000	0.	-9	0.55	-8.	0.000	0.	-9	0.54	-8.	0.000
4	3.94	3.97	0.	-5	0.31	-5.	0.000	0.	-5	0.31	-5.	0.000	0.	-5	0.31	-5.	0.000
5	3.94	3.97	0.	-1	0.04	-1.	0.000	0.	-1	0.06	-1.	0.000	0.	-1	0.07	-1.	0.000
6	3.94	3.97	0.	-4	0.25	-4.	0.000	0.	-4	0.25	-4.	0.000	0.	-4	0.25	-4.	0.000
7	3.94	3.97	3	-12	0.80	-10.	0.000	3	-11	0.76	-9.	0.000	3	-11	0.75	-9.	0.000
8	3.94	3.97	0.	-8	0.52	-8.	0.000	0.	-8	0.51	-8.	0.000	0.	-8	0.51	-8.	0.000
9	3.94	3.97	0.	-4	0.24	-4.	0.000	0.	-4	0.26	-4.	0.000	0.	-4	0.26	-4.	0.000
10	3.94	3.97	0.	0.	0.00	4.	0.000	0.	0.	0.01	0.	0.000	0.	0.	0.02	0.	0.000
11	3.94	3.97	0.	-7	0.45	-7.	0.000	0.	-7	0.42	-6.	0.000	0.	-7	0.41	-6.	0.000
12	3.94	3.97	0.	-9	0.55	-8.	0.000	0.	-8	0.50	-8.	0.000	0.	-8	0.48	-7.	0.000
13	3.94	3.97	0.	-9	0.58	-9.	0.000	0.	-9	0.53	-8.	0.000	0.	-8	0.51	-8.	0.000
14	3.94	3.97	0.	-8	0.48	-7.	0.000	0.	-7	0.45	-7.	0.000	0.	-7	0.43	-6.	0.000
15	3.94	3.97	3	-13	0.87	-11.	0.000	3	-12	0.81	-10.	0.000	3	-12	0.78	-10.	0.000
16	3.94	3.97	0.	-10	0.62	-9.	0.000	0.	-9	0.58	-9.	0.000	0.	-9	0.57	-8.	0.000
17	3.94	3.97	0.	-6	0.35	-5.	0.000	0.	-6	0.34	-5.	0.000	0.	-6	0.34	-5.	0.000
18	3.94	3.97	0.	-1	0.08	-1.	0.000	0.	-2	0.10	-1.	0.000	0.	-2	0.10	-2.	0.000
19	3.94	3.97	3	-15	0.98	-13.	0.000	3	-13	0.90	-12.	0.000	3	-13	0.87	-11.	0.000
20	3.94	3.97	0.	-12	0.71	-11.	0.000	0.	-11	0.66	-10.	0.000	0.	-10	0.64	-10.	0.000
21	3.94	3.97	0.	-7	0.44	-7.	0.000	0.	-7	0.41	-6.	0.000	0.	-7	0.40	-6.	0.000
22	3.94	3.97	0.	-2	0.15	-2.	0.000	0.	-2	0.15	-2.	0.000	0.	-2	0.15	-2.	0.000
23	3.94	3.97	3	-15	1.01	-13.	0.000	3	-14	0.93	-12.	0.000	3	-13	0.89	-12.	0.000
24	3.94	3.97	0.	-12	0.75	-11.	0.000	0.	-11	0.69	-10.	0.000	0.	-11	0.66	-10.	0.000
25	3.94	3.97	0.	-8	0.47	-7.	0.000	0.	-7	0.44	-7.	0.000	0.	-7	0.42	-6.	0.000
26	3.94	3.97	0.	-3	0.17	-3.	0.000	0.	-3	0.16	-2.	0.000	0.	-3	0.16	-2.	0.000

27	3.94	3.97	3	-14	0.92	-12.	0.000	3	-13	0.84	-11.	0.000	3	-12	0.82	-10.	0.000
28	3.94	3.97	0.	-11	0.66	-10.	0.000	0.	-10	0.62	-9.	0.000	0.	-10	0.60	-9.	0.000
29	3.94	3.97	0.	-6	0.39	-6.	0.000	0.	-6	0.38	-6.	0.000	0.	-6	0.37	-6.	0.000
30	3.94	3.97	0.	-2	0.11	-2.	0.000	0.	-2	0.12	-2.	0.000	0.	-2	0.12	-2.	0.000

ARMATURA SUPERIORE ORIZZONTALE

GUSCI	Af	Afc	COMBINAZIONE RARA					COMBINAZIONE FREQUENTE					COMBINAZIONE QUASI PERMANENTE				
			Mom	Nor	σ_c	σ_f	WkR	Mom	Nor	σ_c	σ_f	WkF	Mom	Nor	σ_c	σ_f	WkP
1	4.11	4.12	6	0.	0.26	13.	0.001	5	0.	0.24	10.	0.000	5	0.	0.23	9.	0.000
2	4.11	4.12	0.	-1	0.08	-1.	0.000	0.	-1	0.08	-1.	0.000	0.	-1	0.08	-1.	0.000
3	4.11	4.12	0.	-1	0.04	-1.	0.000	0.	-1	0.05	-1.	0.000	0.	-1	0.05	-1.	0.000
4	4.11	4.12	0.	0.	0.00	0.	0.000	0.	0.	0.01	0.	0.000	0.	0.	0.02	0.	0.000
5	4.11	4.12	1	1	0.00	9.	0.001	0.	0.	0.00	5.	0.000	0.	0.	0.00	3.	0.000
6	4.11	4.12	6	2	0.00	38.	0.003	6	1	0.00	30.	0.002	5	1	0.03	28.	0.002
7	4.11	4.12	0.	-1	0.02	-1.	0.000	0.	-1	0.03	-1.	0.000	0.	-1	0.04	-1.	0.000
8	4.11	4.12	1	0.	0.02	0.	0.000	1	0.	0.01	0.	0.000	0.	0.	0.02	-1.	0.000
9	4.11	4.12	1	1	0.00	12.	0.001	0.	0.	0.00	6.	0.001	0.	0.	0.00	4.	0.000
10	4.11	4.12	1	2	0.00	31.	0.003	1	2	0.00	23.	0.002	1	1	0.00	18.	0.002
11	4.11	4.12	6	-1	0.28	5.	0.000	6	-1	0.24	4.	0.000	5	-1	0.23	3.	0.000
12	4.11	4.12	6	0.	0.28	8.	0.000	5	0.	0.25	6.	0.000	5	0.	0.24	5.	0.000
13	4.11	4.12	6	-1	0.26	3.	0.000	6	-1	0.23	2.	0.000	5	-1	0.22	2.	0.000
14	4.11	4.12	7	-1	0.27	3.	0.000	6	-1	0.24	2.	0.000	6	-1	0.23	2.	0.000
15	4.11	4.12	0.	-2	0.09	-1.	0.000	0.	-1	0.09	-1.	0.000	0.	-1	0.09	-1.	0.000
16	4.11	4.12	0.	-1	0.05	-1.	0.000	0.	-1	0.06	-1.	0.000	0.	-1	0.06	-1.	0.000
17	4.11	4.12	0.	-1	0.02	-1.	0.000	0.	-1	0.03	-1.	0.000	0.	-1	0.03	-1.	0.000
18	4.11	4.12	0.	0.	0.01	0.	0.000	0.	0.	0.02	-1.	0.000	0.	0.	0.02	-1.	0.000
19	4.11	4.12	0.	-1	0.06	-1.	0.000	0.	-1	0.06	-1.	0.000	0.	-1	0.06	-1.	0.000
20	4.11	4.12	0.	-1	0.03	-1.	0.000	0.	-1	0.03	-1.	0.000	0.	-1	0.03	-1.	0.000
21	4.11	4.12	0.	0.	0.02	0.	0.000	0.	0.	0.02	0.	0.000	0.	0.	0.02	0.	0.000
22	4.11	4.12	0.	-1	0.04	-1.	0.000	0.	-1	0.04	-1.	0.000	0.	-1	0.03	-1.	0.000
23	4.11	4.12	0.	-2	0.11	-2.	0.000	0.	-2	0.10	-2.	0.000	0.	-2	0.10	-2.	0.000
24	4.11	4.12	1	-1	0.07	-1.	0.000	0.	-1	0.06	-1.	0.000	0.	-1	0.06	-1.	0.000
25	4.11	4.12	0.	-1	0.05	-1.	0.000	0.	-1	0.05	-1.	0.000	0.	-1	0.05	-1.	0.000
26	4.11	4.12	0.	-1	0.06	-1.	0.000	0.	-1	0.05	-1.	0.000	0.	-1	0.05	-1.	0.000
27	4.11	4.12	0.	0.	0.02	0.	0.000	0.	0.	0.03	0.	0.000	0.	-1	0.03	0.	0.000
28	4.11	4.12	0.	0.	0.02	1.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
29	4.11	4.12	0.	-1	0.05	-1.	0.000	0.	-1	0.05	-1.	0.000	0.	-1	0.05	-1.	0.000
30	4.11	4.12	0.	0.	0.02	0.	0.000	0.	0.	0.01	0.	0.000	0.	0.	0.01	0.	0.000

ARMATURA SUPERIORE VERTICALE

GUSCI	Af	Afc	COMBINAZIONE RARA					COMBINAZIONE FREQUENTE					COMBINAZIONE QUASI PERMANENTE				
			Mom	Nor	σ_c	σ_f	WkR	Mom	Nor	σ_c	σ_f	WkF	Mom	Nor	σ_c	σ_f	WkP
1	3.97	3.94	34	-6	1.43	14.	0.001	31	-6	1.28	11.	0.001	30	-5	1.23	10.	0.000
2	3.97	3.94	0.	-12	0.75	-11.	0.000	0.	-11	0.70	-10.	0.000	0.	-11	0.68	-10.	0.000
3	3.97	3.94	2	-9	0.54	-9.	0.000	1	-9	0.52	-9.	0.000	1	-9	0.51	-8.	0.000
4	3.97	3.94	1	-5	0.30	-5.	0.000	0.	-5	0.30	-5.	0.000	0.	-5	0.30	-5.	0.000
5	3.97	3.94	1	-1	0.01	-1.	0.000	1	-1	0.03	-1.	0.000	1	-1	0.04	-1.	0.000
6	3.97	3.94	33	-4	1.48	25.	0.001	30	-4	1.32	19.	0.001	29	-4	1.26	17.	0.001
7	3.97	3.94	0.	-12	0.72	-11.	0.000	0.	-11	0.69	-10.	0.000	0.	-11	0.67	-10.	0.000
8	3.97	3.94	2	-8	0.49	-8.	0.000	1	-8	0.48	-8.	0.000	1	-8	0.48	-8.	0.000
9	3.97	3.94	1	-4	0.23	-4.	0.000	0.	-4	0.24	-4.	0.000	0.	-4	0.25	-4.	0.000
10	3.97	3.94	1	0.	0.00	6.	0.001	1	0.	0.04	0.	0.000	1	0.	0.00	-1.	0.000
11	3.97	3.94	38	-7	1.55	10.	0.001	34	-7	1.39	8.	0.000	32	-7	1.33	8.	0.000
12	3.97	3.94	39	-9	1.60	6.	0.000	35	-8	1.44	5.	0.000	34	-8	1.37	4.	0.000
13	3.97	3.94	38	-9	1.57	4.	0.000	34	-9	1.41	3.	0.000	33	-8	1.35	3.	0.000
14	3.97	3.94	37	-8	1.53	8.	0.000	34	-7	1.38	6.	0.000	32	-7	1.32	6.	0.000
15	3.97	3.94	0.	-13	0.79	-12.	0.000	0.	-12	0.74	-11.	0.000	0.	-12	0.71	-11.	0.000
16	3.97	3.94	2	-10	0.57	-10.	0.000	2	-9	0.54	-9.	0.000	2	-9	0.53	-9.	0.000
17	3.97	3.94	1	-6	0.33	-5.	0.000	1	-6	0.33	-5.	0.000	1	-6	0.33	-5.	0.000
18	3.97	3.94	2	-1	0.04	-2.	0.000	2	-2	0.05	-2.	0.000	2	-2	0.06	-2.	0.000
19	3.97	3.94	0.	-15	0.90	-14.	0.000	0.	-13	0.82	-12.	0.000	0.	-13	0.79	-12.	0.000
20	3.97	3.94	2	-12	0.66	-11.	0.000	2	-11	0.62	-10.	0.000	2	-10	0.60	-10.	0.000
21	3.97	3.94	1	-7	0.42	-7.	0.000	1	-7	0.40	-6.	0.000	1	-7	0.39	-6.	0.000
22	3.97	3.94	2	-2	0.10	-3.	0.000	2	-2	0.11	-3.	0.000	2	-2	0.11	-3.	0.000
23	3.97	3.94	0.	-15	0.94	-14.	0.000	0.	-14	0.86	-13.	0.000	0.	-13	0.82	-12.	0.000
24	3.97	3.94	2	-12	0.70	-12.	0.000	2	-11	0.64	-11.	0.000	2	-11	0.62	-10.	0.000
25	3.97	3.94	1	-8	0.45	-7.	0.000	1	-7	0.42	-7.	0.000	0.	-7	0.41	-6.	0.000
26	3.97	3.94	2	-3	0.13	-3.	0.000	2	-3	0.13	-3.	0.000	1	-3	0.13	-3.	0.000
27	3.97	3.94	0.	-14	0.84	-13.	0.000	0.	-13	0.78	-12.	0.000	0.	-12	0.75	-11.	0.000
28	3.97	3.94	2	-11	0.62	-10.	0.000	2	-10	0.58	-10.	0.000	1	-10	0.56	-9.	0.000
29	3.97	3.94	1	-6	0.38	-6.	0.000	1	-6	0.36	-6.	0.000	1	-6	0.36	-6.	0.000
30	3.97	3.94	2	-2	0.07	-2.	0.000	2	-2	0.08	-2.	0.000	2	-2	0.08	-2.	0.000

MACROGUSCIO pl_atea_di_base

VERIFICA ARMATURE EFFETTIVE (EFFETTO MEMBRANA + PIASTRA)

unità di misura:

lunghezze : [cm] - forze : [daN]
 momenti : [daNcm/cm] - tensioni : [daN/cm2]
 pesi specifici : [daN/cm3] - angoli : [gradi]
 armature : [cm2]

CASI DI CARICO:

Nome Descrizione
 1 SLU SENZA SI SMA
 4 SLU con SI SMA
 5 SLU con SI SMAY

DATI:

tensione di snervamento acciaio (fyk): 4500 daN/cm2
 coefficiente sicurezza acciaio : 1.15
 deformazione ultima acciaio : 67.5 per mille

deformazione ultima cls : 3.5 per mille
 rapporto rottura/snervamento (k): 1.15
 resistenza cilindrica cls (fck): 249 daN/cm2
 coefficiente sicurezza cls : 1.5
 coefficiente riduttivo (al fa): 0.85
 copri ferro inferiore (asse armatura): 2 cm
 copri ferro superiore (asse armatura): 2 cm
 moltiplicatore sollecitazioni : 1

		I N F E R I O R E O R I Z Z O N T A L E						I N F E R I O R E V E R T I C A L E					
GUSCI	spess	Af	Afc	Mom	Nor	epsC	epsF	Af	Afc	Mom	Nor	epsC	epsF
31	15	4.12	4.05	1.	0.	0.00	0.00	3.93	3.95	44.	0.	0.02	0.05
32	15	4.12	4.05	7.	0.	0.00	0.01	3.93	3.95	38.	0.	0.02	0.04
33	15	4.12	4.05	12.	0.	0.01	0.01	3.93	3.95	94.	0.	0.04	0.10
34	15	4.12	4.05	0.	0.	0.00	0.00	3.93	3.95	0.	0.	0.00	0.00
35	15	4.12	4.05	6.	0.	0.00	0.01	3.93	3.95	29.	0.	0.01	0.03
36	15	4.12	4.05	0.	0.	0.00	0.00	3.93	3.95	42.	0.	0.02	0.04
37	15	4.12	4.05	0.	0.	0.00	0.00	3.93	3.95	39.	0.	0.02	0.04
38	15	4.12	4.05	10.	0.	0.00	0.01	3.93	3.95	91.	0.	0.04	0.10
39	15	4.12	4.05	0.	0.	0.00	0.00	3.93	3.95	0.	0.	0.00	0.00
40	15	4.12	4.05	0.	0.	0.00	0.00	3.93	3.95	29.	0.	0.01	0.03
41	15	4.12	4.05	0.	0.	0.00	0.00	3.93	3.95	49.	0.	0.02	0.05
42	15	4.12	4.05	0.	0.	0.00	0.00	3.93	3.95	48.	0.	0.02	0.05
43	15	4.12	4.05	0.	0.	0.00	0.00	3.93	3.95	46.	0.	0.02	0.05
44	15	4.12	4.05	0.	0.	0.00	0.00	3.93	3.95	44.	0.	0.02	0.05
45	15	4.12	4.05	0.	0.	0.00	0.00	3.93	3.95	0.	0.	0.00	0.00
46	15	4.12	4.05	6.	0.	0.00	0.01	3.93	3.95	43.	0.	0.02	0.05
47	15	4.12	4.05	12.	0.	0.01	0.01	3.93	3.95	100.	0.	0.04	0.10
48	15	4.12	4.05	0.	0.	0.00	0.00	3.93	3.95	0.	0.	0.00	0.00
49	15	4.12	4.05	5.	0.	0.00	0.01	3.93	3.95	34.	0.	0.01	0.04
50	15	4.12	4.05	5.	0.	0.00	0.00	3.93	3.95	41.	0.	0.02	0.04
51	15	4.12	4.05	4.	0.	0.00	0.00	3.93	3.95	40.	0.	0.02	0.04
52	15	4.12	4.05	6.	0.	0.00	0.01	3.93	3.95	37.	0.	0.02	0.04
53	15	4.12	4.05	11.	0.	0.00	0.01	3.93	3.95	100.	0.	0.04	0.11
54	15	4.12	4.05	10.	0.	0.00	0.01	3.93	3.95	100.	0.	0.04	0.10
55	15	4.12	4.05	12.	0.	0.01	0.01	3.93	3.95	98.	0.	0.04	0.10
56	15	4.12	4.05	0.	0.	0.00	0.00	3.93	3.95	0.	0.	0.00	0.00
57	15	4.12	4.05	0.	0.	0.00	0.00	3.93	3.95	0.	0.	0.00	0.00
58	15	4.12	4.05	4.	0.	0.00	0.00	3.93	3.95	31.	0.	0.01	0.03
59	15	4.12	4.05	4.	0.	0.00	0.00	3.93	3.95	31.	0.	0.01	0.03
60	15	4.12	4.05	5.	0.	0.00	0.01	3.93	3.95	28.	0.	0.01	0.03

		SUPERIORE ORIZZONTALE						SUPERIORE VERTICALE					
GUSCI	spess	Af	Afc	Mom	Nor	epsC	epsF	Af	Afc	Mom	Nor	epsC	epsF
31	15	4.05	4.12	14.	0.	0.01	0.02	3.95	3.93	81.	0.	0.07	0.17
32	15	4.05	4.12	8.	0.	0.01	0.01	3.95	3.93	49.	0.	0.05	0.12
33	15	4.05	4.12	0.	0.	0.00	0.00	3.95	3.93	0.	0.	0.00	0.00
34	15	4.05	4.12	4.	0.	0.00	0.01	3.95	3.93	37.	0.	0.02	0.04
35	15	4.05	4.12	5.	0.	0.00	0.01	3.95	3.93	50.	0.	0.05	0.11
36	15	4.05	4.12	25.	0.	0.01	0.03	3.95	3.93	0.	0.	0.07	0.16
37	15	4.05	4.12	15.	0.	0.01	0.02	3.95	3.93	103.	0.	0.05	0.11
38	15	4.05	4.12	1.	0.	0.00	0.01	3.95	3.93	0.	0.	0.00	0.00
39	15	4.05	4.12	8.	0.	0.00	0.01	3.95	3.93	0.	0.	0.01	0.03
40	15	4.05	4.12	9.	0.	0.00	0.01	3.95	3.93	0.	0.	0.04	0.10
41	15	4.05	4.12	12.	0.	0.01	0.02	3.95	3.93	0.	0.	0.08	0.19
42	15	4.05	4.12	12.	0.	0.01	0.02	3.95	3.93	0.	0.	0.08	0.20
43	15	4.05	4.12	13.	0.	0.01	0.02	3.95	3.93	0.	0.	0.08	0.19
44	15	4.05	4.12	13.	0.	0.01	0.02	3.95	3.93	0.	0.	0.08	0.18
45	15	4.05	4.12	10.	0.	0.00	0.01	3.95	3.93	59.	0.	0.03	0.06
46	15	4.05	4.12	15.	0.	0.01	0.02	3.95	3.93	123.	0.	0.05	0.13
47	15	4.05	4.12	0.	0.	0.00	0.00	3.95	3.93	0.	0.	0.00	0.00
48	15	4.05	4.12	7.	0.	0.00	0.01	3.95	3.93	4.	0.	0.02	0.04
49	15	4.05	4.12	1.	0.	0.00	0.01	3.95	3.93	0.	0.	0.05	0.12
50	15	4.05	4.12	8.	0.	0.01	0.02	3.95	3.93	51.	0.	0.06	0.13
51	15	4.05	4.12	16.	0.	0.01	0.02	3.95	3.93	124.	0.	0.05	0.13
52	15	4.05	4.12	16.	0.	0.01	0.02	3.95	3.93	119.	0.	0.05	0.12
53	15	4.05	4.12	0.	0.	0.00	0.00	3.95	3.93	0.	0.	0.00	0.00
54	15	4.05	4.12	0.	0.	0.00	0.00	3.95	3.93	0.	0.	0.00	0.00
55	15	4.05	4.12	0.	0.	0.00	0.00	3.95	3.93	0.	0.	0.00	0.00
56	15	4.05	4.12	8.	0.	0.00	0.01	3.95	3.93	45.	0.	0.03	0.06
57	15	4.05	4.12	10.	0.	0.00	0.01	3.95	3.93	61.	0.	0.03	0.06
58	15	4.05	4.12	5.	0.	0.00	0.01	3.95	3.93	53.	0.	0.05	0.12
59	15	4.05	4.12	1.	0.	0.00	0.01	3.95	3.93	0.	0.	0.05	0.12
60	15	4.05	4.12	1.	0.	0.00	0.01	3.95	3.93	0.	0.	0.05	0.12

***** TAGLIO PERPENDI COLARE

GUSCI	tx	ty	tt	GUSCI	tx	ty	tt	GUSCI	tx	ty	tt
31	0.0	0.5	0.4	32	0.0	0.4	0.4	33	0.0	0.0	0.0
34	0.0	0.2	0.2	35	0.0	0.3	0.2	36	0.1	0.5	0.5
37	0.0	0.5	0.4	38	0.1	0.0	0.1	39	0.0	0.3	0.2
40	0.0	0.3	0.2	41	0.0	0.5	0.5	42	0.0	0.5	0.5
43	0.0	0.5	0.5	44	0.0	0.5	0.5	45	0.0	0.2	0.2
46	0.0	0.5	0.5	47	0.0	0.0	0.0	48	0.0	0.3	0.3
49	0.0	0.3	0.3	50	0.0	0.5	0.5	51	0.0	0.5	0.5
52	0.0	0.5	0.5	53	0.0	0.0	0.0	54	0.0	0.0	0.0
55	0.0	0.0	0.0	56	0.0	0.3	0.3	57	0.0	0.3	0.3
58	0.0	0.3	0.3	59	0.0	0.3	0.3	60	0.0	0.3	0.3

MACROGUSCIO platea_di_base

VERIFICHE A FESSURAZIONE (EFFETTO MEMBRANA + PIASTRA)

unità di misura:
 lunghezze : [cm] - forze : [daN]
 momenti : [daNcm/cm] - tensioni : [daN/cm2]

pesi specifici: [daN/cm3] - angoli : [gradi]
armature : [cm2]

CASI DI CARICO:

Nome Descrizione
7 Rara (RARA)
8 Frequente (FREQUENTE)
9 Quasi Perm (QUASI PERMANENTE)

DATI:

copri ferro inferiore (asse armatura): 2 cm
copri ferro superiore (asse armatura): 2 cm

Af = area effettiva di sposta nello strato indicato (cm2 al metro)
wKR = apertura caratteristica per combinazione rara (mm) - apertura max = 0.6 mm
wKF = " " " " frequente (mm) - " " " " = 0.4 mm
wKP = " " " " quasi permanente (mm) - " " " " = 0.3 mm

ARMATURA INFERIORE ORIZZONTALE

GUSCI			COMBI NAZI ONE RARA					COMBI NAZI ONE FREQUENTE					COMBI NAZI ONE QUASI PERMANENTE				
	Af	Afc	Mom	Nor	σ_c	σ_f	WkR	Mom	Nor	σ_c	σ_f	WkF	Mom	Nor	σ_c	σ_f	WkP
31	4.12	4.05	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
32	4.12	4.05	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
33	4.12	4.05	8	0.	0.39	17.	0.001	7	0.	0.34	15.	0.001	7	0.	0.32	14.	0.001
34	4.12	4.05	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
35	4.12	4.05	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
36	4.12	4.05	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
37	4.12	4.05	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
38	4.12	4.05	1	0.	0.05	2.	0.000	1	0.	0.04	2.	0.000	1	0.	0.03	1.	0.000
39	4.12	4.05	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
40	4.12	4.05	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
41	4.12	4.05	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
42	4.12	4.05	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
43	4.12	4.05	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
44	4.12	4.05	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
45	4.12	4.05	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
46	4.12	4.05	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
47	4.12	4.05	9	0.	0.43	19.	0.001	8	0.	0.37	17.	0.001	7	0.	0.34	15.	0.001
48	4.12	4.05	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
49	4.12	4.05	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
50	4.12	4.05	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
51	4.12	4.05	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
52	4.12	4.05	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
53	4.12	4.05	9	0.	0.39	18.	0.001	7	0.	0.34	15.	0.001	7	0.	0.32	14.	0.001
54	4.12	4.05	8	0.	0.36	16.	0.001	7	0.	0.31	14.	0.001	6	0.	0.29	13.	0.001
55	4.12	4.05	9	0.	0.42	19.	0.001	8	0.	0.36	16.	0.001	7	0.	0.34	15.	0.001
56	4.12	4.05	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
57	4.12	4.05	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
58	4.12	4.05	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
59	4.12	4.05	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
60	4.12	4.05	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000

ARMATURA INFERIORE VERTICALE

GUSCI	Af	Afc	COMBI NAZI ONE RARA					COMBI NAZI ONE FREQUENTE					COMBI NAZI ONE QUASI PERMANENTE				
			Mom	Nor	σc	σf	WkR	Mom	Nor	σc	σf	WkF	Mom	Nor	σc	σf	WkP
31	3.93	3.95	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
32	3.93	3.95	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
33	3.93	3.95	66	0.	3.08	142.	0.007	58	0.	2.69	124.	0.006	54	0.	2.53	117.	0.006
34	3.93	3.95	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
35	3.93	3.95	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
36	3.93	3.95	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
37	3.93	3.95	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
38	3.93	3.95	62	0.	2.88	133.	0.007	54	0.	2.53	117.	0.006	51	0.	2.39	110.	0.006
39	3.93	3.95	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
40	3.93	3.95	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
41	3.93	3.95	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
42	3.93	3.95	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
43	3.93	3.95	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
44	3.93	3.95	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
45	3.93	3.95	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
46	3.93	3.95	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
47	3.93	3.95	72	0.	3.35	155.	0.008	62	0.	2.90	134.	0.007	58	0.	2.72	125.	0.006
48	3.93	3.95	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
49	3.93	3.95	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
50	3.93	3.95	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
51	3.93	3.95	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
52	3.93	3.95	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
53	3.93	3.95	74	0.	3.45	159.	0.008	64	0.	2.98	137.	0.007	60	0.	2.79	129.	0.006
54	3.93	3.95	73	0.	3.42	158.	0.008	64	0.	2.96	137.	0.007	60	0.	2.77	128.	0.006
55	3.93	3.95	72	0.	3.35	155.	0.008	62	0.	2.90	134.	0.007	58	0.	2.72	126.	0.006
56	3.93	3.95	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
57	3.93	3.95	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
58	3.93	3.95	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
59	3.93	3.95	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
60	3.93	3.95	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000

ARMATURA SUPERIORE ORIZZONTALE

GUSCI	COMBI NAZI ONE RARA						COMBI NAZI ONE FREQUENTE					COMBI NAZI ONE QUASI PERMANENTE					
	Af	Afc	Mom	Nor	σ_c	σ_f	WkR	Mom	Nor	σ_c	σ_f	WkF	Mom	Nor	σ_c	σ_f	WkP
31	4.05	4.12	11	0.	0.48	22.	0.001	10	0.	0.44	20.	0.001	9	0.	0.43	19.	0.001
32	4.05	4.12	5	0.	0.24	11.	0.001	5	0.	0.21	9.	0.000	4	0.	0.19	9.	0.000
33	4.05	4.12	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
34	4.05	4.12	7	0.	0.31	14.	0.001	6	0.	0.26	12.	0.001	5	0.	0.24	11.	0.001
35	4.05	4.12	4	0.	0.18	8.	0.000	3	0.	0.15	7.	0.000	3	0.	0.14	6.	0.000
36	4.05	4.12	18	0.	0.83	38.	0.002	17	0.	0.78	35.	0.002	16	0.	0.75	34.	0.002
37	4.05	4.12	9	0.	0.42	19.	0.001	8	0.	0.35	16.	0.001	7	0.	0.32	15.	0.001
38	4.05	4.12	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
39	4.05	4.12	7	0.	0.32	14.	0.001	6	0.	0.27	12.	0.001	5	0.	0.25	11.	0.001

40	4.05	4.12	9	0.	0.41	19.	0.001	7	0.	0.34	15.	0.001	7	0.	0.31	14.	0.001
41	4.05	4.12	11	0.	0.49	22.	0.001	10	0.	0.44	20.	0.001	9	0.	0.42	19.	0.001
42	4.05	4.12	10	0.	0.47	21.	0.001	9	0.	0.42	19.	0.001	9	0.	0.40	18.	0.001
43	4.05	4.12	11	0.	0.51	23.	0.001	10	0.	0.46	21.	0.001	10	0.	0.44	20.	0.001
44	4.05	4.12	11	0.	0.49	22.	0.001	10	0.	0.44	20.	0.001	9	0.	0.42	19.	0.001
45	4.05	4.12	7	0.	0.34	15.	0.001	6	0.	0.28	13.	0.001	6	0.	0.26	12.	0.001
46	4.05	4.12	5	0.	0.22	10.	0.000	4	0.	0.20	9.	0.000	4	0.	0.19	9.	0.000
47	4.05	4.12	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
48	4.05	4.12	7	0.	0.34	16.	0.001	6	0.	0.29	13.	0.001	6	0.	0.26	12.	0.001
49	4.05	4.12	3	0.	0.14	6.	0.000	3	0.	0.12	5.	0.000	2	0.	0.11	5.	0.000
50	4.05	4.12	5	0.	0.25	11.	0.001	5	0.	0.22	10.	0.000	5	0.	0.21	9.	0.000
51	4.05	4.12	6	0.	0.26	12.	0.001	5	0.	0.23	10.	0.001	5	0.	0.22	10.	0.000
52	4.05	4.12	5	0.	0.22	10.	0.000	4	0.	0.20	9.	0.000	4	0.	0.19	9.	0.000
53	4.05	4.12	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
54	4.05	4.12	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
55	4.05	4.12	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
56	4.05	4.12	8	0.	0.35	16.	0.001	6	0.	0.29	13.	0.001	6	0.	0.27	12.	0.001
57	4.05	4.12	8	0.	0.35	16.	0.001	6	0.	0.29	13.	0.001	6	0.	0.27	12.	0.001
58	4.05	4.12	3	0.	0.14	6.	0.000	3	0.	0.12	5.	0.000	2	0.	0.11	5.	0.000
59	4.05	4.12	4	0.	0.16	7.	0.000	3	0.	0.14	6.	0.000	3	0.	0.13	6.	0.000
60	4.05	4.12	3	0.	0.14	6.	0.000	3	0.	0.12	5.	0.000	2	0.	0.11	5.	0.000

ARMATURA SUPERIORE VERTICALE

GUSCI	COMBI NAZI ONE RARA							COMBI NAZI ONE FREQUENTE					COMBI NAZI ONE QUASI PERMANENTE				
	Af	Afc	Mom	Nor	σc	σf	WkR	Mom	Nor	σc	σf	WkF	Mom	Nor	σc	σf	WkP
31	3.95	3.93	58	0.	2.70	124.	0.006	53	0.	2.46	113.	0.006	51	0.	2.37	109.	0.005
32	3.95	3.93	35	0.	1.61	74.	0.004	30	0.	1.39	64.	0.003	28	0.	1.30	60.	0.003
33	3.95	3.93	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
34	3.95	3.93	29	0.	1.35	62.	0.003	23	0.	1.08	50.	0.002	21	0.	0.97	45.	0.002
35	3.95	3.93	36	0.	1.67	77.	0.004	31	0.	1.45	67.	0.003	29	0.	1.36	63.	0.003
36	3.95	3.93	54	0.	2.50	115.	0.006	49	0.	2.30	106.	0.005	48	0.	2.22	102.	0.005
37	3.95	3.93	32	0.	1.49	69.	0.003	28	0.	1.28	59.	0.003	26	0.	1.20	55.	0.003
38	3.95	3.93	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
39	3.95	3.93	25	0.	1.17	54.	0.003	20	0.	0.92	42.	0.002	18	0.	0.82	38.	0.002
40	3.95	3.93	34	0.	1.57	72.	0.004	29	0.	1.37	63.	0.003	28	0.	1.29	59.	0.003
41	3.95	3.93	63	0.	2.91	134.	0.007	57	0.	2.66	122.	0.006	55	0.	2.56	118.	0.006
42	3.95	3.93	65	0.	3.02	139.	0.007	59	0.	2.75	126.	0.006	57	0.	2.64	122.	0.006
43	3.95	3.93	65	0.	3.03	140.	0.007	59	0.	2.76	127.	0.006	57	0.	2.65	122.	0.006
44	3.95	3.93	61	0.	2.83	130.	0.007	56	0.	2.58	119.	0.006	53	0.	2.48	114.	0.006
45	3.95	3.93	31	0.	1.45	67.	0.003	25	0.	1.15	53.	0.003	22	0.	1.03	47.	0.002
46	3.95	3.93	37	0.	1.71	79.	0.004	32	0.	1.47	68.	0.003	30	0.	1.38	63.	0.003
47	3.95	3.93	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
48	3.95	3.93	31	0.	1.45	67.	0.003	25	0.	1.15	53.	0.003	22	0.	1.03	47.	0.002
49	3.95	3.93	38	0.	1.75	80.	0.004	33	0.	1.51	70.	0.003	31	0.	1.42	65.	0.003
50	3.95	3.93	36	0.	1.70	78.	0.004	31	0.	1.46	67.	0.003	29	0.	1.37	63.	0.003
51	3.95	3.93	36	0.	1.69	78.	0.004	31	0.	1.46	67.	0.003	29	0.	1.36	63.	0.003
52	3.95	3.93	36	0.	1.67	77.	0.004	31	0.	1.44	66.	0.003	29	0.	1.35	62.	0.003
53	3.95	3.93	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
54	3.95	3.93	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
55	3.95	3.93	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
56	3.95	3.93	32	0.	1.49	68.	0.003	25	0.	1.17	54.	0.003	23	0.	1.05	48.	0.002
57	3.95	3.93	32	0.	1.48	68.	0.003	25	0.	1.17	54.	0.003	22	0.	1.04	48.	0.002
58	3.95	3.93	38	0.	1.75	81.	0.004	33	0.	1.52	70.	0.003	31	0.	1.42	66.	0.003
59	3.95	3.93	38	0.	1.75	80.	0.004	32	0.	1.51	70.	0.003	30	0.	1.42	65.	0.003
60	3.95	3.93	37	0.	1.72	79.	0.004	32	0.	1.49	69.	0.003	30	0.	1.40	65.	0.003

MACROGUSCIO SETTO DIVISORIO LOCU

VERIFICA ARMATURE EFFETTIVE (EFFETTO MEMBRANA + PIASTRA)

unità di misura:

lunghezze : [cm] - forze : [daN]
 momenti : [daNcm/cm] - tensioni : [daN/cm2]
 pesi specifici : [daN/cm3] - angoli : [gradi]
 armature : [cm2]

CASI DI CARICO:

Nome Descrizione
 1 SLU SENZA SI SMA
 4 SLU con SI SMA
 5 SLU con SI SMAY

DATI:

tensione di snervamento acciaio (fyk): 4500 daN/cm2
 coefficiente sicurezza acciaio : 1.15
 deformazione ultima acciaio : 67.5 per mille
 deformazione ultima cls : 3.5 per mille
 rapporto rottura/snervamento (k): 1.15
 resistenza cilindrica cls (fck): 249 daN/cm2
 coefficiente sicurezza cls : 1.5
 coefficiente riduttivo (αf): 0.85
 copri ferro inferiore (asse armatura): 2 cm
 copri ferro superiore (asse armatura): 2 cm
 moltiplicatore sollecitazioni : 1

GUSCI	spess	I N F E R I O R E O R I Z Z O N T A L E						I N F E R I O R E V E R T I C A L E					
		Af	Afc	Mom	Nor	epsC	epsF	Af	Afc	Mom	Nor	epsC	epsF
166	10	2.57	2.56	0.	5.	0.00	0.05	2.57	2.61	0.	-38.	0.04	-0.04
167	10	2.57	2.56	0.	-3.	0.00	0.00	2.57	2.61	1.	-24.	0.03	-0.03
168	10	2.57	2.56	0.	-2.	0.00	0.00	2.57	2.61	1.	-17.	0.02	-0.02
169	10	2.57	2.56	0.	-1.	0.00	0.00	2.57	2.61	1.	-11.	0.01	-0.01
170	10	2.57	2.56	0.	0.	0.00	0.00	2.57	2.61	1.	-5.	0.01	0.00
171	10	2.57	2.56	0.	13.	0.00	0.12	2.57	2.61	0.	-32.	0.04	-0.04
172	10	2.57	2.56	0.	-2.	0.00	0.00	2.57	2.61	0.	-20.	0.02	-0.02
173	10	2.57	2.56	0.	-1.	0.00	0.00	2.57	2.61	0.	-15.	0.02	-0.02
174	10	2.57	2.56	0.	-1.	0.00	0.00	2.57	2.61	0.	-10.	0.01	-0.01
175	10	2.57	2.56	0.	-1.	0.00	0.00	2.57	2.61	1.	-4.	0.01	0.00
176	10	2.57	2.56	0.	8.	0.00	0.07	2.57	2.61	0.	-10.	0.01	-0.01

177	10	2.57	2.56	0.	-2.	0.00	0.00	2.57	2.61	0.	-17.	0.02	-0.02
178	10	2.57	2.56	0.	-1.	0.00	0.00	2.57	2.61	0.	-12.	0.01	-0.01
179	10	2.57	2.56	0.	-1.	0.00	0.00	2.57	2.61	1.	-8.	0.01	-0.01
180	10	2.57	2.56	0.	-1.	0.00	0.00	2.57	2.61	1.	-4.	0.00	0.00
181	10	2.57	2.56	0.	0.	0.00	0.00	2.57	2.61	0.	-4.	0.00	0.00
182	10	2.57	2.56	0.	-1.	0.00	0.00	2.57	2.61	0.	-7.	0.01	-0.01
183	10	2.57	2.56	0.	-1.	0.00	0.00	2.57	2.61	0.	-10.	0.01	-0.01
184	10	2.57	2.56	0.	-1.	0.00	0.00	2.57	2.61	0.	-15.	0.02	-0.02
185	10	2.57	2.56	0.	35.	0.00	0.32	2.57	2.61	0.	-34.	0.04	-0.04
186	10	2.57	2.56	0.	40.	0.00	0.37	2.57	2.61	0.	-32.	0.03	-0.03
187	10	2.57	2.56	0.	-1.	0.00	0.01	2.57	2.61	0.	-12.	0.01	-0.01
188	10	2.57	2.56	0.	-1.	0.00	0.00	2.57	2.61	0.	-8.	0.01	-0.01
189	10	2.57	2.56	0.	1.	0.00	0.01	2.57	2.61	0.	-5.	0.01	-0.01
190	10	2.57	2.56	0.	3.	0.00	0.03	2.57	2.61	0.	-2.	0.00	0.00

GUSCI	spess	SUPERIORE ORIZZONTALE						SUPERIORE VERTICALE					
		Af	Afc	Mom	Nor	epsC	epsF	Af	Afc	Mom	Nor	epsC	epsF
166	10	2.56	2.57	0.	-1.	0.00	0.05	2.61	2.57	0.	-25.	0.04	-0.04
167	10	2.56	2.57	0.	0.	0.00	0.00	2.61	2.57	0.	-24.	0.03	-0.03
168	10	2.56	2.57	0.	-1.	0.00	0.00	2.61	2.57	0.	-17.	0.02	-0.02
169	10	2.56	2.57	0.	-1.	0.00	0.00	2.61	2.57	0.	-11.	0.01	-0.01
170	10	2.56	2.57	0.	0.	0.00	0.00	2.61	2.57	0.	-5.	0.01	-0.01
171	10	2.56	2.57	0.	6.	0.00	0.12	2.61	2.57	0.	-32.	0.04	-0.04
172	10	2.56	2.57	0.	-1.	0.00	0.00	2.61	2.57	0.	-20.	0.02	-0.02
173	10	2.56	2.57	0.	0.	0.00	0.00	2.61	2.57	0.	-15.	0.02	-0.02
174	10	2.56	2.57	0.	0.	0.00	0.00	2.61	2.57	0.	-10.	0.01	-0.01
175	10	2.56	2.57	0.	0.	0.00	0.00	2.61	2.57	0.	-4.	0.01	0.00
176	10	2.56	2.57	0.	6.	0.00	0.07	2.61	2.57	0.	-10.	0.01	-0.01
177	10	2.56	2.57	0.	-1.	0.00	0.00	2.61	2.57	0.	-17.	0.02	-0.02
178	10	2.56	2.57	0.	-1.	0.00	0.00	2.61	2.57	0.	-12.	0.01	-0.01
179	10	2.56	2.57	0.	-1.	0.00	0.00	2.61	2.57	0.	-8.	0.01	-0.01
180	10	2.56	2.57	0.	0.	0.00	0.00	2.61	2.57	0.	-4.	0.00	0.00
181	10	2.56	2.57	0.	0.	0.00	0.00	2.61	2.57	0.	-4.	0.00	0.00
182	10	2.56	2.57	0.	0.	0.00	0.00	2.61	2.57	0.	-7.	0.01	-0.01
183	10	2.56	2.57	0.	-1.	0.00	0.00	2.61	2.57	0.	-10.	0.01	-0.01
184	10	2.56	2.57	0.	-1.	0.00	0.00	2.61	2.57	0.	-15.	0.02	-0.02
185	10	2.56	2.57	0.	10.	0.00	0.32	2.61	2.57	0.	-4.	0.04	-0.04
186	10	2.56	2.57	0.	16.	0.00	0.37	2.61	2.57	0.	-32.	0.03	-0.03
187	10	2.56	2.57	0.	1.	0.00	0.01	2.61	2.57	0.	-12.	0.01	-0.01
188	10	2.56	2.57	0.	0.	0.00	0.00	2.61	2.57	0.	-8.	0.01	-0.01
189	10	2.56	2.57	0.	1.	0.00	0.01	2.61	2.57	0.	-5.	0.01	-0.01
190	10	2.56	2.57	0.	3.	0.00	0.03	2.61	2.57	0.	-2.	0.00	0.00

***** TAGLIO PERPENDICOLARE

GUSCI	tx	ty	tz	GUSCI	tx	ty	tz	GUSCI	tx	ty	tz
166	0.0	0.0	0.0	167	0.0	0.0	0.0	168	0.0	0.0	0.0
169	0.0	0.0	0.0	170	0.0	0.0	0.0	171	0.0	0.0	0.0
172	0.0	0.0	0.0	173	0.0	0.0	0.0	174	0.0	0.0	0.0
175	0.0	0.0	0.0	176	0.0	0.0	0.0	177	0.0	0.0	0.0
178	0.0	0.0	0.0	179	0.0	0.0	0.0	180	0.0	0.0	0.0
181	0.0	0.0	0.0	182	0.0	0.0	0.0	183	0.0	0.0	0.0
184	0.0	0.0	0.0	185	0.0	0.0	0.0	186	0.0	0.0	0.0
187	0.0	0.0	0.0	188	0.0	0.0	0.0	189	0.0	0.0	0.0
190	0.0	0.0	0.0								

MACROGUSCIO SETTO DIVISORIO LOCUI

VERIFICHE A FESSURAZIONE (EFFETTO MEMBRANA + PIASTRA)

unità di misura:

lunghezze : [cm] - forze : [daN]
momenti : [daNcm/cm] - tensioni : [daN/cm2]
pesi specifici : [daN/cm3] - angoli : [gradi]
armature : [cm2]

CASI DI CARICO:

Nome Descrizione
7 Rara (RARA)
8 Frequente (FREQUENTE)
9 Quasi Perm (QUASI PERMANENTE)

DATI:

copri ferro inferiore (asse armatura): 2 cm
copri ferro superiore (asse armatura): 2 cm

Af = area effettiva disposta nello strato indicato (cm2 al metro)
wkR = apertura caratteristica per combinazione rara (mm) - apertura max = 0.6 mm
wkF = " " " " frequente (mm) - " " " " = 0.4 mm
wkP = " " " " quasi permanente (mm) - " " " " = 0.3 mm

ARMATURA INFERIORE ORIZZONTALE

GUSCI	COMBINAZIONE RARA							COMBINAZIONE FREQUENTE					COMBINAZIONE QUASI PERMANENTE				
	Af	Afc	Mom	Nor	σC	σF	WkR	Mom	Nor	σC	σF	WkF	Mom	Nor	σC	σF	WkP
166	2.57	2.56	0.	-2	0.21	-3.	0.000	0.	-2	0.18	-3.	0.000	0.	-2	0.16	-2.	0.000
167	2.57	2.56	0.	-2	0.17	-3.	0.000	0.	-2	0.15	-2.	0.000	0.	-2	0.14	-2.	0.000
168	2.57	2.56	0.	-2	0.20	-3.	0.000	0.	-2	0.17	-3.	0.000	0.	-2	0.16	-2.	0.000
169	2.57	2.56	0.	-1	0.12	-2.	0.000	0.	-1	0.11	-2.	0.000	0.	-1	0.11	-2.	0.000
170	2.57	2.56	0.	0.	0.03	0.	0.000	0.	0.	0.04	0.	0.000	0.	0.	0.04	-1.	0.000
171	2.57	2.56	0.	0.	0.00	2.	0.000	0.	0.	0.01	0.	0.000	0.	0.	0.01	0.	0.000
172	2.57	2.56	0.	-2	0.23	-3.	0.000	0.	-2	0.21	-3.	0.000	0.	-2	0.19	-3.	0.000
173	2.57	2.56	0.	-2	0.18	-3.	0.000	0.	-2	0.16	-2.	0.000	0.	-2	0.16	-2.	0.000
174	2.57	2.56	0.	-1	0.10	-2.	0.000	0.	-1	0.10	-1.	0.000	0.	-1	0.09	-1.	0.000
175	2.57	2.56	0.	0.	0.03	0.	0.000	0.	0.	0.03	0.	0.000	0.	0.	0.03	0.	0.000
176	2.57	2.56	0.	0.	0.00	5.	0.001	0.	0.	0.00	8.	0.001	0.	0.	0.00	9.	0.001
177	2.57	2.56	0.	-1	0.08	-1.	0.000	0.	-1	0.06	-1.	0.000	0.	-1	0.05	-1.	0.000
178	2.57	2.56	0.	-1	0.14	-2.	0.000	0.	-1	0.12	-2.	0.000	0.	-1	0.11	-2.	0.000
179	2.57	2.56	0.	-1	0.09	-1.	0.000	0.	-1	0.08	-1.	0.000	0.	-1	0.08	-1.	0.000
180	2.57	2.56	0.	-1	0.05	-1.	0.000	0.	0.	0.05	-1.	0.000	0.	0.	0.05	-1.	0.000
181	2.57	2.56	0.	0.	0.02	0.	0.000	0.	0.	0.03	0.	0.000	0.	0.	0.04	0.	0.000

182	2.57	2.56	0.	-1	0.08	-1.	0.000	0.	0.	0.01	0.	0.000	0.	0.	0.01	0.	0.000
183	2.57	2.56	0.	-1	0.06	-1.	0.000	0.	-1	0.07	-1.	0.000	0.	-1	0.07	-1.	0.000
184	2.57	2.56	0.	0.	0.04	0.	0.000	0.	-1	0.05	-1.	0.000	0.	-1	0.06	-1.	0.000
185	2.57	2.56	0.	7	0.00	128.	0.012	0.	6	0.00	109.	0.010	0.	5	0.00	101.	0.009
186	2.57	2.56	0.	7	0.00	132.	0.012	0.	7	0.00	127.	0.012	0.	6	0.00	126.	0.012
187	2.57	2.56	0.	0.	0.00	0.	0.000	0.	-1	0.08	-1.	0.000	0.	-1	0.07	-1.	0.000
188	2.57	2.56	0.	-1	0.08	-1.	0.000	0.	-1	0.08	-1.	0.000	0.	-1	0.08	-1.	0.000
189	2.57	2.56	0.	0.	0.00	3.	0.000	0.	0.	0.01	0.	0.000	0.	0.	0.02	0.	0.000
190	2.57	2.56	0.	2	0.00	39.	0.004	0.	1	0.00	25.	0.002	0.	1	0.00	20.	0.002

ARMATURA I NFERI ORE VERTI CALE

GUSCI	Af Afc		COMBI NAZI ONE RARA					COMBI NAZI ONE FREQUENTE					COMBI NAZI ONE QUASI PERMANENTE				
			Mom	Nor	σc	σf	WkR	Mom	Nor	σc	σf	WkF	Mom	Nor	σc	σf	WkP
166	2.57	2.61	0.	-30	2.74	-41.	0.000	0.	-25	2.30	-34.	0.000	0.	-23	2.12	-32.	0.000
167	2.57	2.61	0.	-24	2.25	-34.	0.000	0.	-21	1.92	-29.	0.000	0.	-19	1.79	-27.	0.000
168	2.57	2.61	0.	-18	1.68	-25.	0.000	0.	-16	1.46	-22.	0.000	0.	-15	1.37	-21.	0.000
169	2.57	2.61	0.	-11	1.06	-16.	0.000	0.	-10	0.95	-14.	0.000	0.	-10	0.91	-14.	0.000
170	2.57	2.61	0.	-4	0.42	-6.	0.000	0.	-4	0.42	-6.	0.000	0.	-4	0.41	-6.	0.000
171	2.57	2.61	0.	-18	1.65	-25.	0.000	0.	-15	1.42	-21.	0.000	0.	-14	1.33	-20.	0.000
172	2.57	2.61	0.	-21	1.99	-30.	0.000	0.	-19	1.72	-26.	0.000	0.	-17	1.61	-24.	0.000
173	2.57	2.61	0.	-16	1.53	-23.	0.000	0.	-14	1.34	-20.	0.000	0.	-14	1.27	-19.	0.000
174	2.57	2.61	0.	-10	0.96	-14.	0.000	0.	-9	0.87	-13.	0.000	0.	-9	0.83	-12.	0.000
175	2.57	2.61	0.	-4	0.37	-5.	0.000	0.	-4	0.38	-6.	0.000	0.	-4	0.38	-6.	0.000
176	2.57	2.61	0.	-7	0.68	-10.	0.000	0.	-6	0.58	-9.	0.000	0.	-6	0.54	-8.	0.000
177	2.57	2.61	0.	-18	1.71	-26.	0.000	0.	-16	1.49	-22.	0.000	0.	-15	1.40	-21.	0.000
178	2.57	2.61	0.	-14	1.34	-20.	0.000	0.	-13	1.18	-18.	0.000	0.	-12	1.12	-17.	0.000
179	2.57	2.61	0.	-9	0.84	-13.	0.000	0.	-8	0.77	-11.	0.000	0.	-8	0.74	-11.	0.000
180	2.57	2.61	0.	-4	0.36	-5.	0.000	0.	-4	0.37	-5.	0.000	0.	-4	0.37	-5.	0.000
181	2.57	2.61	0.	-2	0.22	-3.	0.000	0.	-3	0.25	-4.	0.000	0.	-3	0.26	-4.	0.000
182	2.57	2.61	0.	-7	0.63	-9.	0.000	0.	-6	0.59	-9.	0.000	0.	-6	0.58	-9.	0.000
183	2.57	2.61	0.	-12	1.10	-17.	0.000	0.	-11	1.00	-15.	0.000	0.	-10	0.96	-14.	0.000
184	2.57	2.61	0.	-18	1.71	-26.	0.000	0.	-17	1.53	-23.	0.000	0.	-16	1.47	-22.	0.000
185	2.57	2.61	0.	-17	1.60	-24.	0.000	0.	-16	1.45	-22.	0.000	0.	-15	1.39	-21.	0.000
186	2.57	2.61	0.	-15	1.40	-21.	0.000	0.	-13	1.21	-18.	0.000	0.	-12	1.14	-17.	0.000
187	2.57	2.61	0.	-14	1.27	-19.	0.000	0.	-12	1.11	-17.	0.000	0.	-11	1.05	-16.	0.000
188	2.57	2.61	0.	-8	0.76	-11.	0.000	0.	-8	0.72	-11.	0.000	0.	-8	0.71	-11.	0.000
189	2.57	2.61	0.	-4	0.36	-5.	0.000	0.	-4	0.36	-5.	0.000	0.	-4	0.37	-5.	0.000
190	2.57	2.61	0.	0.	0.01	0.	0.000	0.	0.	0.05	-1.	0.000	0.	-1	0.07	-1.	0.000

ARMATURA SUPERI ORE ORI ZZONTALE

GUSCI	Af Afc		COMBI NAZI ONE RARA					COMBI NAZI ONE FREQUENTE					COMBI NAZI ONE QUASI PERMANENTE				
			Mom	Nor	σc	σf	WkR	Mom	Nor	σc	σf	WkF	Mom	Nor	σc	σf	WkP
166	2.56	2.57	0.	-2	0.21	-3.	0.000	0.	-2	0.17	-3.	0.000	0.	-2	0.16	-2.	0.000
167	2.56	2.57	0.	-2	0.17	-3.	0.000	0.	-2	0.15	-2.	0.000	0.	-2	0.14	-2.	0.000
168	2.56	2.57	0.	-2	0.20	-3.	0.000	0.	-2	0.17	-3.	0.000	0.	-2	0.16	-2.	0.000
169	2.56	2.57	0.	-1	0.12	-2.	0.000	0.	-1	0.11	-2.	0.000	0.	-1	0.11	-2.	0.000
170	2.56	2.57	0.	0.	0.03	0.	0.000	0.	0.	0.03	-1.	0.000	0.	0.	0.03	-1.	0.000
171	2.56	2.57	0.	0.	0.00	2.	0.000	0.	0.	0.01	0.	0.000	0.	0.	0.01	0.	0.000
172	2.56	2.57	0.	-2	0.23	-3.	0.000	0.	-2	0.20	-3.	0.000	0.	-2	0.19	-3.	0.000
173	2.56	2.57	0.	-2	0.18	-3.	0.000	0.	-2	0.16	-2.	0.000	0.	-2	0.16	-2.	0.000
174	2.56	2.57	0.	-1	0.10	-2.	0.000	0.	-1	0.10	-1.	0.000	0.	-1	0.09	-1.	0.000
175	2.56	2.57	0.	0.	0.02	0.	0.000	0.	0.	0.03	0.	0.000	0.	0.	0.03	0.	0.000
176	2.56	2.57	0.	0.	0.00	6.	0.001	0.	0.	0.00	8.	0.001	0.	0.	0.00	9.	0.001
177	2.56	2.57	0.	-1	0.08	-1.	0.000	0.	-1	0.06	-1.	0.000	0.	-1	0.05	-1.	0.000
178	2.56	2.57	0.	-1	0.13	-2.	0.000	0.	-1	0.12	-2.	0.000	0.	-1	0.11	-2.	0.000
179	2.56	2.57	0.	-1	0.09	-1.	0.000	0.	-1	0.08	-1.	0.000	0.	-1	0.08	-1.	0.000
180	2.56	2.57	0.	-1	0.05	-1.	0.000	0.	0.	0.05	-1.	0.000	0.	0.	0.04	-1.	0.000
181	2.56	2.57	0.	0.	0.01	0.	0.000	0.	0.	0.03	0.	0.000	0.	0.	0.03	-1.	0.000
182	2.56	2.57	0.	-1	0.07	-1.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.01	0.	0.000
183	2.56	2.57	0.	-1	0.06	-1.	0.000	0.	-1	0.06	-1.	0.000	0.	-1	0.07	-1.	0.000
184	2.56	2.57	0.	0.	0.04	-1.	0.000	0.	-1	0.05	-1.	0.000	0.	-1	0.05	-1.	0.000
185	2.56	2.57	0.	7	0.00	129.	0.012	0.	6	0.00	109.	0.010	0.	5	0.00	101.	0.009
186	2.56	2.57	0.	7	0.00	134.	0.012	0.	7	0.00	129.	0.012	0.	6	0.00	127.	0.012
187	2.56	2.57	0.	0.	0.01	0.	0.000	0.	-1	0.07	-1.	0.000	0.	-1	0.07	-1.	0.000
188	2.56	2.57	0.	-1	0.08	-1.	0.000	0.	-1	0.08	-1.	0.000	0.	-1	0.08	-1.	0.000
189	2.56	2.57	0.	0.	0.00	3.	0.000	0.	0.	0.01	0.	0.000	0.	0.	0.02	0.	0.000
190	2.56	2.57	0.	2	0.00	39.	0.004	0.	1	0.00	25.	0.002	0.	1	0.00	20.	0.002

ARMATURA SUPERI ORE VERTI CALE

GUSCI	AfAfc		COMBI NAZI ONE RARA					COMBI NAZI ONE FREQUENTE					COMBI NAZI ONE QUASI PERMANENTE				
			Mom	Nor	σc	σf	WkR	Mom	Nor	σc	σf	WkF	Mom	Nor	σc	σf	WkP
166	2.61	2.57	0.	-30	2.74	-41.	0.000	0.	-25	2.29	-34.	0.000	0.	-23	2.12	-32.	0.000
167	2.61	2.57	0.	-24	2.25	-34.	0.000	0.	-21	1.92	-29.	0.000	0.	-19	1.79	-27.	0.000
168	2.61	2.57	0.	-18	1.68	-25.	0.000	0.	-16	1.46	-22.	0.000	0.	-15	1.37	-21.	0.000
169	2.61	2.57	0.	-11	1.06	-16.	0.000	0.	-10	0.95	-14.	0.000	0.	-10	0.91	-14.	0.000
170	2.61	2.57	0.	-4	0.41	-6.	0.000	0.	-4	0.41	-6.	0.000	0.	-4	0.41	-6.	0.000
171	2.61	2.57	0.	-18	1.65	-25.	0.000	0.	-15	1.41	-21.	0.000	0.	-14	1.32	-20.	0.000
172	2.61	2.57	0.	-21	1.99	-30.	0.000	0.	-19	1.72	-26.	0.000	0.	-17	1.60	-24.	0.000
173	2.61	2.57	0.	-16	1.53	-23.	0.000	0.	-14	1.34	-20.	0.000	0.	-14	1.27	-19.	0.000
174	2.61	2.57	0.	-10	0.96	-14.	0.000	0.	-9	0.87	-13.	0.000	0.	-9	0.83	-12.	0.000
175	2.61	2.57	0.	-4	0.37	-6.	0.000	0.	-4	0.37	-6.	0.000	0.	-4	0.37	-6.	0.000
176	2.61	2.57	0.	-7	0.68	-10.	0.000	0.	-6	0.58	-9.	0.000	0.	-6	0.54	-8.	0.000
177	2.61	2.57	0.	-18	1.70	-26.	0.000	0.	-16	1.49	-22.	0.000	0.	-15	1.40	-21.	0.000
178	2.61	2.57	0.	-14	1.33	-20.	0.000	0.	-13	1.18	-18.	0.000	0.	-12	1.12	-17.	0.000
179	2.61	2.57	0.	-9	0.84	-13.	0.000	0.	-8	0.76	-12.	0.000	0.	-8	0.74	-11.	0.000
180	2.61	2.57	0.	-4	0.36	-5.	0.000	0.	-4	0.36	-5.	0.000	0.	-4	0.36	-5.	0.000
181	2.61	2.57	0.	-2	0.21	-3.	0.000	0.	-3	0.24	-4.	0.000	0.	-3	0.26	-4.	0.000
182	2.61	2.57	0.	-7	0.62	-9.	0.000	0.	-6	0.59	-9.	0.000	0.	-6	0.57	-9.	0.000
183	2.61	2.57	0.	-12	1.10	-17.	0.000	0.	-11	1.00	-15.	0.000	0.	-10	0.96	-14.	0.000
184	2.61	2.57	0.	-18	1.70	-26.	0.000	0.	-17	1.53	-23.	0.000	0.	-16	1.46	-22.	0.000
185	2.61	2.57	0.	-17	1.60	-24.	0.000	0.	-16	1.45	-22.	0.000	0.	-15	1.39	-21.	0.000
186	2.61	2.57	0.	-15	1.40	-21.	0.000	0.	-13	1.21	-18.	0.000	0.	-12	1.13	-17.	0.000
187	2.61	2.57	0.	-14	1.27	-19.	0.000	0.	-12	1.11	-17.	0.000	0.	-11	1.05	-16.	0.000
188	2.61	2.57	0.	-8	0.76	-11.	0.000	0.	-8	0.72	-11.	0.000	0.	-8	0.71	-11.	0.000
189	2.61	2.57	0.	-4	0.35	-5.	0.000	0.	-4	0.36	-5.	0.000	0.	-4	0.36	-5.	0.000
190	2.61	2.57	0.	0.	0.00	0.	0.000	0.	0.	0.04	-1.	0.000	0.	-1	0.06	-1.	0.000

VERIFICA ARMATURE EFFETTIVE (EFFETTO MEMBRANA + PIASTRA)

unità di misura:
 lunghezze : [cm] - forze : [daN]
 momenti : [daNcm/cm] - tensioni : [daN/cm2]
 pesi specifici : [daN/cm3] - angoli : [gradi]
 armature : [cm2]

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

DATI:
 tensione di snervamento acciaio (fyk): 4500 daN/cm2
 coefficiente sicurezza acciaio : 1.15
 deformazione ultima acciaio : 67.5 per mille
 deformazione ultima cls : 3.5 per mille
 rapporto rottura/snervamento (k): 1.15
 resistenza cilindrica cls (fck): 249 daN/cm2
 coefficiente sicurezza cls : 1.5
 coefficiente ridotto (alfa): 0.85
 copri ferro inferiore (asse armatura): 2 cm
 copri ferro superiore (asse armatura): 2 cm
 moltiplicatore sollecitazioni : 1

		INFERIORE ORIZZONTALE				INFERIORE VERTICALE			
GUSCI	spess	Af	Afc	Mom	Nor	epsC	epsF	Af	Afc
326	10	2.54	2.57	1.	1.	0.00	0.01	2.56	2.55
327	10	2.54	2.57	1.	1.	0.00	0.01	2.56	2.55
328	10	2.54	2.57	0.	0.	0.00	0.00	2.56	2.55
329	10	2.54	2.57	0.	0.	0.00	0.00	2.56	2.55
330	10	2.54	2.57	0.	0.	0.00	0.00	2.56	2.55
331	10	2.54	2.57	1.	1.	0.00	0.01	2.56	2.55
332	10	2.54	2.57	1.	1.	0.00	0.01	2.56	2.55
333	10	2.54	2.57	0.	1.	0.00	0.01	2.56	2.55
334	10	2.54	2.57	0.	1.	0.00	0.01	2.56	2.55
335	10	2.54	2.57	0.	1.	0.00	0.01	2.56	2.55
336	10	2.54	2.57	1.	1.	0.00	0.01	2.56	2.55
337	10	2.54	2.57	1.	1.	0.00	0.01	2.56	2.55
338	10	2.54	2.57	1.	1.	0.00	0.01	2.56	2.55
339	10	2.54	2.57	1.	1.	0.00	0.01	2.56	2.55
340	10	2.54	2.57	1.	0.	0.00	0.01	2.56	2.55
341	10	2.54	2.57	1.	0.	0.00	0.00	2.56	2.55
342	10	2.54	2.57	1.	0.	0.00	0.00	2.56	2.55
343	10	2.54	2.57	1.	0.	0.00	0.00	2.56	2.55
344	10	2.54	2.57	1.	1.	0.00	0.01	2.56	2.55
345	10	2.54	2.57	1.	0.	0.00	0.00	2.56	2.55
346	10	2.54	2.57	0.	0.	0.00	0.00	2.56	2.55
347	10	2.54	2.57	0.	0.	0.00	0.00	2.56	2.55
348	10	2.54	2.57	1.	1.	0.00	0.01	2.56	2.55
349	10	2.54	2.57	1.	1.	0.00	0.01	2.56	2.55
350	10	2.54	2.57	0.	0.	0.00	0.00	2.56	2.55
351	10	2.54	2.57	1.	1.	0.00	0.01	2.56	2.55
352	10	2.54	2.57	0.	0.	0.00	0.00	2.56	2.55
353	10	2.54	2.57	0.	0.	0.00	0.00	2.56	2.55
354	10	2.54	2.57	0.	0.	0.00	0.00	2.56	2.55
355	10	2.54	2.57	0.	0.	0.00	0.00	2.56	2.55
431	10	2.54	2.57	0.	0.	0.00	0.00	2.56	2.55
432	10	2.54	2.57	0.	0.	0.00	0.01	2.56	2.55
433	10	2.54	2.57	1.	0.	0.00	0.01	2.56	2.55
434	10	2.54	2.57	1.	1.	0.00	0.01	2.56	2.55
435	10	2.54	2.57	2.	1.	0.00	0.01	2.56	2.55

		SUPERIORE ORIZZONTALE				SUPERIORE VERTICALE			
GUSCI	spess	Af	Afc	Mom	Nor	epsC	epsF	Af	Afc
326	10	2.57	2.54	0.	1.	0.00	0.01	2.55	2.56
327	10	2.57	2.54	0.	1.	0.00	0.01	2.55	2.56
328	10	2.57	2.54	0.	0.	0.00	0.01	2.55	2.56
329	10	2.57	2.54	0.	0.	0.00	0.00	2.55	2.56
330	10	2.57	2.54	0.	0.	0.00	0.00	2.55	2.56
331	10	2.57	2.54	2.	1.	0.00	0.01	2.55	2.56
332	10	2.57	2.54	2.	1.	0.00	0.01	2.55	2.56
333	10	2.57	2.54	2.	1.	0.00	0.01	2.55	2.56
334	10	2.57	2.54	1.	1.	0.00	0.01	2.55	2.56
335	10	2.57	2.54	1.	1.	0.00	0.01	2.55	2.56
336	10	2.57	2.54	1.	1.	0.00	0.01	2.55	2.56
337	10	2.57	2.54	1.	1.	0.00	0.01	2.55	2.56
338	10	2.57	2.54	1.	1.	0.00	0.01	2.55	2.56
339	10	2.57	2.54	1.	1.	0.00	0.01	2.55	2.56
340	10	2.57	2.54	0.	0.	0.00	0.00	2.55	2.56
341	10	2.57	2.54	0.	0.	0.00	0.00	2.55	2.56
342	10	2.57	2.54	0.	0.	0.00	0.00	2.55	2.56
343	10	2.57	2.54	0.	0.	0.00	0.00	2.55	2.56
344	10	2.57	2.54	1.	1.	0.00	0.01	2.55	2.56
345	10	2.57	2.54	1.	0.	0.00	0.00	2.55	2.56
346	10	2.57	2.54	0.	0.	0.00	0.00	2.55	2.56
347	10	2.57	2.54	0.	0.	0.00	0.00	2.55	2.56
348	10	2.57	2.54	1.	1.	0.00	0.01	2.55	2.56
349	10	2.57	2.54	0.	1.	0.00	0.01	2.55	2.56
350	10	2.57	2.54	0.	0.	0.00	0.00	2.55	2.56
351	10	2.57	2.54	0.	1.	0.00	0.01	2.55	2.56
352	10	2.57	2.54	0.	0.	0.00	0.00	2.55	2.56
353	10	2.57	2.54	0.	0.	0.00	0.00	2.55	2.56
354	10	2.57	2.54	0.	0.	0.00	0.00	2.55	2.56
355	10	2.57	2.54	0.	0.	0.00	0.00	2.55	2.56
431	10	2.57	2.54	0.	0.	0.00	0.00	2.55	2.56
432	10	2.57	2.54	0.	0.	0.00	0.01	2.55	2.56
433	10	2.57	2.54	0.	0.	0.00	0.01	2.55	2.56
434	10	2.57	2.54	0.	1.	0.00	0.01	2.55	2.56

435 | 10 | 2.57 2.54 0. 1. 0.00 0.01 | 2.55 2.56 0. 1. 0.00 0.01 |

***** TAGLIO PERPENDI COLARE

GUSCI	τ_x	τ_y	τ_t	GUSCI	τ_x	τ_y	τ_t	GUSCI	τ_x	τ_y	τ_t
326	0.0	0.0	0.0	327	0.0	0.0	0.0	328	0.0	0.0	0.0
329	0.0	0.0	0.0	330	0.0	0.0	0.0	331	0.0	0.0	0.0
332	0.0	0.0	0.0	333	0.0	0.0	0.0	334	0.0	0.0	0.0
335	0.0	0.0	0.0	336	0.0	0.0	0.0	337	0.0	0.0	0.0
338	0.0	0.0	0.0	339	0.0	0.0	0.0	340	0.0	0.0	0.0
341	0.0	0.0	0.0	342	0.0	0.0	0.0	343	0.0	0.0	0.0
344	0.0	0.0	0.0	345	0.0	0.0	0.0	346	0.0	0.0	0.0
347	0.0	0.0	0.0	348	0.0	0.0	0.0	349	0.0	0.0	0.0
350	0.0	0.0	0.0	351	0.0	0.0	0.0	352	0.0	0.0	0.0
353	0.0	0.0	0.0	354	0.0	0.0	0.0	355	0.0	0.0	0.0
431	0.0	0.0	0.0	432	0.0	0.0	0.0	433	0.0	0.0	0.0
434	0.0	0.0	0.0	435	0.0	0.0	0.0				

MACROGUSCIO SOLETTI NA_LOCULI

VERIFICHE A FESSURAZIONE (EFFETTO MEMBRANA + PIASTRA)

unità di misura:
lunghezze : [cm] - forze : [daN]
momenti : [daNcm/cm] - tensioni : [daN/cm2]
pesi specifici : [daN/cm3] - angoli : [gradi]
armature : [cm2]

CASI DI CARICO:
Nome Descrizione
7 Rara (RARA)
8 Frequente (FREQUENTE)
9 Quasi Perm (QUASI PERMANENTE)

DATI:
copri ferro inferiore (asse armatura): 2 cm
copri ferro superiore (asse armatura): 2 cm

Af = area effettiva disposta nello strato indicato (cm2 al metro)
wKR = apertura caratteristica per combinazione rara (mm) - apertura max = 0.6 mm
wKF = " " " " frequente (mm) - " " = 0.4 mm
wKP = " " " " quasi permanente (mm) - " " = 0.3 mm

ARMATURA INFERIORE ORIZZONTALE

GUSCI			COMBI NAZI ONE RARA					COMBI NAZI ONE FREQUENTE					COMBI NAZI ONE QUASI PERMANENTE				
	Af	Afc	Mom	Nor	σ_c	σ_f	WkR	Mom	Nor	σ_c	σ_f	WkF	Mom	Nor	σ_c	σ_f	WkP
326	2.54	2.57	0.	0.	0.00	9.	0.001	0.	0.	0.00	8.	0.001	0.	0.	0.00	8.	0.001
327	2.54	2.57	0.	0.	0.00	9.	0.001	0.	0.	0.00	8.	0.001	0.	0.	0.00	7.	0.001
328	2.54	2.57	0.	0.	0.00	5.	0.000	0.	0.	0.00	4.	0.000	0.	0.	0.00	4.	0.000
329	2.54	2.57	0.	0.	0.00	5.	0.000	0.	0.	0.00	4.	0.000	0.	0.	0.00	4.	0.000
330	2.54	2.57	0.	0.	0.00	5.	0.000	0.	0.	0.00	5.	0.000	0.	0.	0.00	4.	0.000
331	2.54	2.57	0.	1	0.00	15.	0.001	0.	1	0.00	13.	0.001	0.	0.	0.00	12.	0.001
332	2.54	2.57	0.	1	0.00	13.	0.001	0.	0.	0.00	11.	0.001	0.	0.	0.00	10.	0.001
333	2.54	2.57	0.	1	0.00	13.	0.001	0.	1	0.00	11.	0.001	0.	1	0.00	10.	0.001
334	2.54	2.57	0.	0.	0.00	8.	0.001	0.	0.	0.00	7.	0.001	0.	0.	0.00	6.	0.001
335	2.54	2.57	0.	1	0.00	11.	0.001	0.	0.	0.00	10.	0.001	0.	0.	0.00	9.	0.001
336	2.54	2.57	0.	0.	0.00	9.	0.001	0.	0.	0.00	8.	0.001	0.	0.	0.00	7.	0.001
337	2.54	2.57	0.	0.	0.00	10.	0.001	0.	0.	0.00	8.	0.001	0.	0.	0.00	8.	0.001
338	2.54	2.57	0.	0.	0.00	7.	0.001	0.	0.	0.00	6.	0.001	0.	0.	0.00	6.	0.001
339	2.54	2.57	0.	0.	0.00	10.	0.001	0.	0.	0.00	9.	0.001	0.	0.	0.00	8.	0.001
340	2.54	2.57	0.	0.	0.03	6.	0.001	0.	0.	0.02	5.	0.000	0.	0.	0.01	5.	0.000
341	2.54	2.57	0.	0.	0.05	5.	0.000	0.	0.	0.03	4.	0.000	0.	0.	0.03	3.	0.000
342	2.54	2.57	0.	0.	0.06	4.	0.000	0.	0.	0.05	3.	0.000	0.	0.	0.04	3.	0.000
343	2.54	2.57	0.	0.	0.04	6.	0.001	0.	0.	0.03	5.	0.000	0.	0.	0.02	5.	0.000
344	2.54	2.57	0.	0.	0.00	8.	0.001	0.	0.	0.00	7.	0.001	0.	0.	0.00	6.	0.001
345	2.54	2.57	0.	0.	0.00	2.	0.000	0.	0.	0.00	2.	0.000	0.	0.	0.00	2.	0.000
346	2.54	2.57	0.	0.	0.01	0.	0.000	0.	0.	0.01	0.	0.000	0.	0.	0.01	0.	0.000
347	2.54	2.57	0.	0.	0.00	2.	0.000	0.	0.	0.00	2.	0.000	0.	0.	0.00	2.	0.000
348	2.54	2.57	0.	0.	0.00	7.	0.001	0.	0.	0.00	6.	0.001	0.	0.	0.00	5.	0.000
349	2.54	2.57	0.	1	0.00	13.	0.001	0.	0.	0.00	11.	0.001	0.	0.	0.00	10.	0.001
350	2.54	2.57	0.	0.	0.00	4.	0.000	0.	0.	0.00	4.	0.000	0.	0.	0.00	3.	0.000
351	2.54	2.57	0.	0.	0.00	9.	0.001	0.	0.	0.00	8.	0.001	0.	0.	0.00	8.	0.001
352	2.54	2.57	0.	0.	0.01	0.	0.000	0.	0.	0.01	0.	0.000	0.	0.	0.01	0.	0.000
353	2.54	2.57	0.	0.	0.03	1.	0.000	0.	0.	0.02	0.	0.000	0.	0.	0.02	0.	0.000
354	2.54	2.57	0.	0.	0.01	0.	0.000	0.	0.	0.01	0.	0.000	0.	0.	0.01	0.	0.000
355	2.54	2.57	0.	0.	0.03	3.	0.000	0.	0.	0.03	2.	0.000	0.	0.	0.02	2.	0.000
431	2.54	2.57	0.	0.	0.00	5.	0.000	0.	0.	0.00	5.	0.000	0.	0.	0.00	4.	0.000
432	2.54	2.57	0.	0.	0.00	8.	0.001	0.	0.	0.00	7.	0.001	0.	0.	0.00	7.	0.001
433	2.54	2.57	0.	0.	0.00	9.	0.001	0.	0.	0.00	8.	0.001	0.	0.	0.00	8.	0.001
434	2.54	2.57	0.	0.	0.00	10.	0.001	0.	0.	0.00	9.	0.001	0.	0.	0.00	8.	0.001
435	2.54	2.57	0.	1	0.00	12.	0.001	0.	0.	0.00	10.	0.001	0.	0.	0.00	10.	0.001

ARMATURA INFERIORE VERTICALE

GUSCI			COMBI NAZI ONE RARA					COMBI NAZI ONE FREQUENTE					COMBI NAZI ONE QUASI PERMANENTE				
	Af	Afc	Mom	Nor	σ_c	σ_f	WKR	Mom	Nor	σ_c	σ_f	WKF	Mom	Nor	σ_c	σ_f	WKP
326	2.56	2.55	0.	1	0.00	13.	0.001	0.	1	0.00	12.	0.001	0.	1	0.00	11.	0.001
327	2.56	2.55	0.	1	0.00	20.	0.002	0.	1	0.00	17.	0.002	0.	1	0.00	16.	0.001
328	2.56	2.55	0.	1	0.00	14.	0.001	0.	1	0.00	13.	0.001	0.	1	0.00	12.	0.001
329	2.56	2.55	0.	1	0.00	15.	0.001	0.	1	0.00	13.	0.001	0.	1	0.00	12.	0.001
330	2.56	2.55	0.	1	0.00	15.	0.001	0.	1	0.00	13.	0.001	0.	1	0.00	12.	0.001
331	2.56	2.55	0.	1	0.00	17.	0.002	0.	1	0.00	15.	0.001	0.	1	0.00	15.	0.001
332	2.56	2.55	0.	1	0.00	21.	0.002	0.	1	0.00	18.	0.002	0.	1	0.00	17.	0.002
333	2.56	2.55	0.	1	0.00	19.	0.002	0.	1	0.00	17.	0.002	0.	1	0.00	16.	0.002
334	2.56	2.55	0.	1	0.00	15.	0.001	0.	1	0.00	13.	0.001	0.	1	0.00	13.	0.001
335	2.56	2.55	0.	1	0.00	17.	0.002	0.	1	0.00	15.	0.001	0.	1	0.00	14.	0.001
336	2.56	2.55	0.	1	0.00	12.	0.001	0.	1	0.00	11.	0.001	0.	1	0.00	10.	0.001
337	2.56	2.55	0.	1	0.00	12.	0.001	0.	1	0.00	11.	0.001	0.	1	0.00	11.	0.001
338	2.56	2.55	0.	1	0.00	10.	0.001	0.	0.	0.00	9.	0.001	0.	0.	0.00	9.	0.001
339	2.56	2.55	0.	1	0.00	13.	0.001	0.	1	0.00	11.	0.001	0.	1	0.00	11.	0.001

340	2.56	2.55	0.	1	0.00	16.	0.001	0.	1	0.00	14.	0.001	0.	1	0.00	13.	0.001
341	2.56	2.55	0.	1	0.00	13.	0.001	0.	1	0.00	11.	0.001	0.	1	0.00	11.	0.001
342	2.56	2.55	0.	1	0.00	13.	0.001	0.	1	0.00	11.	0.001	0.	1	0.00	11.	0.001
343	2.56	2.55	0.	1	0.00	14.	0.001	0.	1	0.00	12.	0.001	0.	1	0.00	12.	0.001
344	2.56	2.55	0.	1	0.00	17.	0.002	0.	1	0.00	15.	0.001	0.	1	0.00	14.	0.001
345	2.56	2.55	0.	0.	0.00	11.	0.001	0.	0.	0.00	9.	0.001	0.	0.	0.00	9.	0.001
346	2.56	2.55	0.	1	0.00	13.	0.001	0.	1	0.00	11.	0.001	0.	1	0.00	10.	0.001
347	2.56	2.55	0.	1	0.00	13.	0.001	0.	0.	0.00	11.	0.001	0.	0.	0.00	10.	0.001
348	2.56	2.55	0.	1	0.00	16.	0.001	0.	1	0.00	14.	0.001	0.	1	0.00	13.	0.001
349	2.56	2.55	0.	1	0.00	20.	0.002	0.	1	0.00	18.	0.002	0.	1	0.00	17.	0.002
350	2.56	2.55	0.	1	0.00	13.	0.001	0.	1	0.00	11.	0.001	0.	1	0.00	11.	0.001
351	2.56	2.55	0.	1	0.00	16.	0.002	0.	1	0.00	14.	0.001	0.	1	0.00	14.	0.001
352	2.56	2.55	0.	1	0.00	11.	0.001	0.	0.	0.00	10.	0.001	0.	0.	0.00	9.	0.001
353	2.56	2.55	0.	1	0.00	12.	0.001	0.	1	0.00	11.	0.001	0.	0.	0.00	10.	0.001
354	2.56	2.55	0.	0.	0.00	10.	0.001	0.	0.	0.00	9.	0.001	0.	0.	0.00	9.	0.001
355	2.56	2.55	0.	1	0.00	13.	0.001	0.	0.	0.00	11.	0.001	0.	0.	0.00	10.	0.001
431	2.56	2.55	0.	1	0.00	14.	0.001	0.	1	0.00	12.	0.001	0.	1	0.00	11.	0.001
432	2.56	2.55	0.	1	0.00	15.	0.001	0.	1	0.00	14.	0.001	0.	1	0.00	13.	0.001
433	2.56	2.55	0.	1	0.00	16.	0.001	0.	1	0.00	14.	0.001	0.	1	0.00	14.	0.001
434	2.56	2.55	0.	1	0.00	19.	0.002	0.	1	0.00	17.	0.002	0.	1	0.00	16.	0.002
435	2.56	2.55	0.	1	0.00	16.	0.001	0.	1	0.00	14.	0.001	0.	1	0.00	14.	0.001

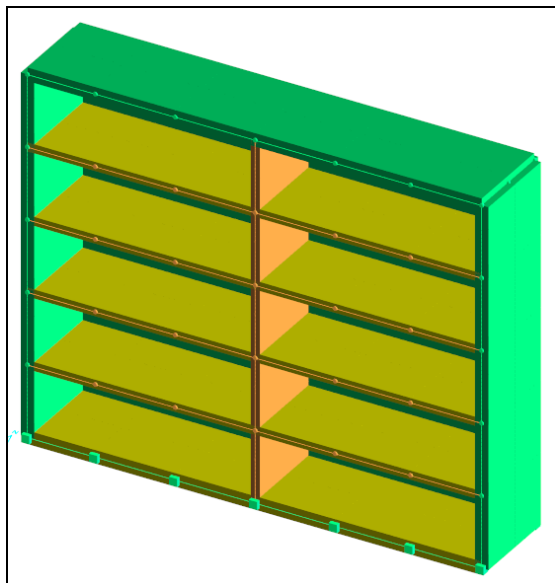
ARMATURA SUPERIORE ORIZZONTALE

GUSCI	Af	Afc	COMBINAZIONE RARA					COMBINAZIONE FREQUENTE					COMBINAZIONE QUASI PERMANENTE				
			Mom	Nor	σc	σf	WkR	Mom	Nor	σc	σf	WkF	Mom	Nor	σc	σf	WkP
326	2.57	2.54	0.	0.	0.00	12.	0.001	0.	0.	0.00	10.	0.001	0.	0.	0.00	9.	0.001
327	2.57	2.54	0.	0.	0.00	10.	0.001	0.	0.	0.00	8.	0.001	0.	0.	0.00	8.	0.001
328	2.57	2.54	0.	0.	0.00	6.	0.001	0.	0.	0.00	5.	0.000	0.	0.	0.00	4.	0.000
329	2.57	2.54	0.	0.	0.00	5.	0.000	0.	0.	0.00	5.	0.000	0.	0.	0.00	4.	0.000
330	2.57	2.54	0.	0.	0.00	6.	0.001	0.	0.	0.00	5.	0.000	0.	0.	0.00	4.	0.000
331	2.57	2.54	1	1	0.02	19.	0.002	1	1	0.00	16.	0.001	1	0.	0.00	15.	0.001
332	2.57	2.54	1	1	0.00	17.	0.001	1	0.	0.00	14.	0.001	1	0.	0.00	13.	0.001
333	2.57	2.54	1	1	0.00	17.	0.002	1	1	0.00	15.	0.001	0.	1	0.00	13.	0.001
334	2.57	2.54	1	0.	0.00	11.	0.001	0.	0.	0.00	10.	0.001	0.	0.	0.00	9.	0.001
335	2.57	2.54	1	1	0.00	15.	0.001	0.	0.	0.00	12.	0.001	0.	0.	0.00	12.	0.001
336	2.57	2.54	0.	0.	0.00	8.	0.001	0.	0.	0.00	7.	0.001	0.	0.	0.00	7.	0.001
337	2.57	2.54	0.	0.	0.00	10.	0.001	0.	0.	0.00	8.	0.001	0.	0.	0.00	8.	0.001
338	2.57	2.54	0.	0.	0.00	7.	0.001	0.	0.	0.00	6.	0.001	0.	0.	0.00	6.	0.001
339	2.57	2.54	0.	0.	0.00	9.	0.001	0.	0.	0.00	8.	0.001	0.	0.	0.00	8.	0.001
340	2.57	2.54	0.	0.	0.00	3.	0.000	0.	0.	0.00	3.	0.000	0.	0.	0.00	3.	0.000
341	2.57	2.54	0.	0.	0.00	2.	0.000	0.	0.	0.00	2.	0.000	0.	0.	0.00	2.	0.000
342	2.57	2.54	0.	0.	0.00	1.	0.000	0.	0.	0.00	1.	0.000	0.	0.	0.00	1.	0.000
343	2.57	2.54	0.	0.	0.00	3.	0.000	0.	0.	0.00	3.	0.000	0.	0.	0.00	3.	0.000
344	2.57	2.54	0.	0.	0.00	7.	0.001	0.	0.	0.00	6.	0.001	0.	0.	0.00	6.	0.001
345	2.57	2.54	0.	0.	0.00	1.	0.000	0.	0.	0.00	1.	0.000	0.	0.	0.00	1.	0.000
346	2.57	2.54	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
347	2.57	2.54	0.	0.	0.00	2.	0.000	0.	0.	0.00	1.	0.000	0.	0.	0.00	1.	0.000
348	2.57	2.54	0.	0.	0.00	6.	0.001	0.	0.	0.00	5.	0.000	0.	0.	0.00	5.	0.000
349	2.57	2.54	0.	1	0.00	11.	0.001	0.	0.	0.00	10.	0.001	0.	0.	0.00	9.	0.001
350	2.57	2.54	0.	0.	0.00	3.	0.000	0.	0.	0.00	3.	0.000	0.	0.	0.00	3.	0.000
351	2.57	2.54	0.	0.	0.00	7.	0.001	0.	0.	0.00	7.	0.001	0.	0.	0.00	6.	0.001
352	2.57	2.54	0.	0.	0.01	0.	0.000	0.	0.	0.01	0.	0.000	0.	0.	0.01	0.	0.000
353	2.57	2.54	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
354	2.57	2.54	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
355	2.57	2.54	0.	0.	0.00	1.	0.000	0.	0.	0.00	1.	0.000	0.	0.	0.00	1.	0.000
431	2.57	2.54	0.	0.	0.00	6.	0.001	0.	0.	0.00	6.	0.000	0.	0.	0.00	5.	0.000
432	2.57	2.54	0.	0.	0.00	9.	0.001	0.	0.	0.00	8.	0.001	0.	0.	0.00	8.	0.001
433	2.57	2.54	0.	0.	0.00	11.	0.001	0.	0.	0.00	9.	0.001	0.	0.	0.00	9.	0.001
434	2.57	2.54	0.	0.	0.00	12.	0.001	0.	0.	0.00	10.	0.001	0.	0.	0.00	10.	0.001
435	2.57	2.54	0.	1	0.00	13.	0.001	0.	0.	0.00	11.	0.001	0.	0.	0.00	11.	0.001

ARMATURA SUPERIORE VERTICALE

GUSCI	Af	Afc	COMBI NAZI ONE RARA					COMBI NAZI ONE FREQUENTE					COMBI NAZI ONE QUASI PERMANENTE				
			Mom	Nor	σc	σf	WkR	Mom	Nor	σc	σf	WkF	Mom	Nor	σc	σf	WkP
326	2.55	2.56	1	1	0.00	18.	0.002	1	1	0.00	15.	0.001	0.	1	0.00	14.	0.001
327	2.55	2.56	0.	1	0.00	18.	0.002	0.	1	0.00	16.	0.002	0.	1	0.00	15.	0.001
328	2.55	2.56	0.	1	0.00	14.	0.001	0.	1	0.00	12.	0.001	0.	1	0.00	12.	0.001
329	2.55	2.56	0.	1	0.00	15.	0.001	0.	1	0.00	13.	0.001	0.	1	0.00	12.	0.001
330	2.55	2.56	0.	1	0.00	14.	0.001	0.	1	0.00	12.	0.001	0.	1	0.00	11.	0.001
331	2.55	2.56	1	1	0.00	20.	0.002	1	1	0.00	18.	0.002	1	1	0.00	17.	0.001
332	2.55	2.56	0.	1	0.00	21.	0.002	0.	1	0.00	19.	0.002	0.	1	0.00	18.	0.002
333	2.55	2.56	0.	1	0.00	20.	0.002	0.	1	0.00	18.	0.002	0.	1	0.00	17.	0.002
334	2.55	2.56	0.	1	0.00	16.	0.002	0.	1	0.00	14.	0.001	0.	1	0.00	13.	0.001
335	2.55	2.56	0.	1	0.00	17.	0.002	0.	1	0.00	15.	0.001	0.	1	0.00	14.	0.001
336	2.55	2.56	1	1	0.00	17.	0.001	1	1	0.00	14.	0.001	1	1	0.00	13.	0.001
337	2.55	2.56	1	1	0.00	17.	0.002	1	1	0.00	15.	0.001	0.	1	0.00	14.	0.001
338	2.55	2.56	1	1	0.00	15.	0.001	1	0.	0.00	13.	0.001	0.	0.	0.00	12.	0.001
339	2.55	2.56	1	1	0.00	17.	0.002	1	1	0.00	15.	0.001	0.	1	0.00	14.	0.001
340	2.55	2.56	0.	1	0.00	13.	0.001	0.	1	0.00	12.	0.001	0.	1	0.00	11.	0.001
341	2.55	2.56	0.	1	0.00	12.	0.001	0.	1	0.00	10.	0.001	0.	1	0.00	10.	0.001
342	2.55	2.56	0.	1	0.00	12.	0.001	0.	1	0.00	11.	0.001	0.	1	0.00	10.	0.001
343	2.55	2.56	0.	1	0.00	13.	0.001	0.	1	0.00	11.	0.001	0.	1	0.00	10.	0.001
344	2.55	2.56	0.	1	0.00	15.	0.001	0.	1	0.00	13.	0.001	0.	1	0.00	13.	0.001
345	2.55	2.56	0.	0.	0.00	10.	0.001	0.	0.	0.00	9.	0.001	0.	0.	0.00	8.	0.001
346	2.55	2.56	0.	1	0.00	13.	0.001	0.	1	0.00	11.	0.001	0.	1	0.00	10.	0.001
347	2.55	2.56	0.	1	0.00	11.	0.001	0.	0.	0.00	10.	0.001	0.	0.	0.00	9.	0.001
348	2.55	2.56	0.	1	0.00	14.	0.001	0.	1	0.00	13.	0.001	0.	1	0.00	12.	0.001
349	2.55	2.56	0.	1	0.00	18.	0.002	0.	1	0.00	16.	0.002	0.	1	0.00	15.	0.001
350	2.55	2.56	0.	1	0.00	12.	0.001	0.	1	0.00	11.	0.001	0.	1	0.00	10.	0.001
351	2.55	2.56	0.	1	0.00	15.	0.001	0.	1	0.00	14.	0.001	0.	1	0.00	13.	0.001
352	2.55	2.56	0.	1	0.00	11.	0.001	0.	0.	0.00	10.	0.001	0.	0.	0.00	9.	0.001
353	2.55	2.56	0.	1	0.00	12.	0.001	0.	1	0.00	10.	0.001	0.	0.	0.00	10.	0.001
354	2.55	2.56	0.	0.	0.00	9.	0.001	0.	0.	0.00	8.	0.001	0.	0.	0.00	8.	0.001
355	2.55	2.56	0.	1	0.00	11.	0.001	0.	0.	0.00	10.	0.001	0.	0.	0.00	9.	0.001
431	2.55	2.56	0.	1	0.00	14.	0.001	0.	1	0.00	12.	0.001	0.	1	0.00	12.	0.001
432	2.55	2.56	0.	1	0.00	15.	0.001	0.	1	0.00	13.	0.001	0.	1	0.00	12.	0.001
433	2.55	2.56	0.	1	0.00	16.	0.002	0.	1	0.00	15.	0.001	0.	1	0.00	14.	0.001
434	2.55	2.56	0.	1	0.00	20.	0.002	0.	1	0.00	18.	0.002	0.	1	0.00	18.	0.002
435	2.55	2.56	0.	1	0.00	16.	0.001	0.	1	0.00	14.	0.001	0.	1	0.00	14.	0.001

BLOCCO C - 5x2 x 8 = 80 LOCULI DA REALIZZARSI NEL VII AMPLIAMENTO



DATI STRUTTURA:

*** DATI STRUTTURA

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

PROPRIETA` GUSCI	----	-----	-----	-----	num. =
Nome Materiale	Sp. membr.	Sp. piastra	Kw		
1	1	15.00	0.000000		2
2	1	10.00	0.000000		

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

VINCOLI	-----	-----	-----	-----	-----	num. =
Nodo	Ri gi d. X	Ri gi d. Y	Ri gi d. Z	Ri gi d. RX	Ri gi d. RY	Ri gi d. RZ
2	bl occato	bl occato	bl occato	bl occato	bl occato	bl occato
13	bl occato	bl occato	bl occato	bl occato	bl occato	bl occato
25	bl occato	bl occato	bl occato	bl occato	bl occato	bl occato
27	bl occato	bl occato	bl occato	bl occato	bl occato	bl occato
29	bl occato	bl occato	bl occato	bl occato	bl occato	bl occato
45	bl occato	bl occato	bl occato	bl occato	bl occato	bl occato
56	bl occato	bl occato	bl occato	bl occato	bl occato	bl occato
68	bl occato	bl occato	bl occato	bl occato	bl occato	bl occato
72	bl occato	bl occato	bl occato	bl occato	bl occato	bl occato
73	bl occato	bl occato	bl occato	bl occato	bl occato	bl occato
43	bl occato	bl occato	lib ero	lib ero	lib ero	lib ero
54	bl occato	bl occato	lib ero	lib ero	lib ero	lib ero
63	bl occato	bl occato	lib ero	lib ero	lib ero	lib ero
64	bl occato	bl occato	lib ero	lib ero	lib ero	lib ero
65	bl occato	bl occato	lib ero	lib ero	lib ero	lib ero
1	bl occato	bl occato	bl occato	bl occato	bl occato	bl occato
46	bl occato	bl occato	bl occato	bl occato	bl occato	bl occato
44	bl occato	bl occato	lib ero	lib ero	lib ero	lib ero
14	bl occato	bl occato	bl occato	bl occato	bl occato	bl occato
55	bl occato	bl occato	bl occato	bl occato	bl occato	bl occato
53	bl occato	bl occato	lib ero	lib ero	lib ero	lib ero

CARCHI NODI	-----	-----	-----	-----	num. =
Nome	Nodo	Di rezi one	Intensi ta`		
1 -	210	: Forze Si smi che	(Anal isi Sempl i fi cata)		420
211 -	420	: Momenti Torcenti	Addi zi onali		

CARCHI DI LINEA	-----	-----	-----	-----	num. =
Nome	numero	coordinata	Intensi ta`		
	inizi o	fi ne	Cond. Di rez.	inizi o	fi ne
					Descr i zi one

CARCHI GUSCI	-----	-----	-----	-----	num. =
Nome	Guscio	Dir	Tip	RIF	Intensi ta`
421 varl oculi	266	Z	FD glo	-0.02500	
422 varl oculi	267	Z	FD glo	-0.02500	
423 varl oculi	271	Z	FD glo	-0.02500	
424 varl oculi	272	Z	FD glo	-0.02500	
425 varl oculi	276	Z	FD glo	-0.02500	

426	varl ocul i	277	Z	FD	gl o	-0. 02500
427	varl ocul i	278	Z	FD	gl o	-0. 02500
428	varl ocul i	279	Z	FD	gl o	-0. 02500
429	varl ocul i	280	Z	FD	gl o	-0. 02500
430	varl ocul i	284	Z	FD	gl o	-0. 02500
431	varl ocul i	288	Z	FD	gl o	-0. 02500
432	varl ocul i	289	Z	FD	gl o	-0. 02500
433	varl ocul i	296	Z	FD	gl o	-0. 02500
434	varl ocul i	297	Z	FD	gl o	-0. 02500
435	varl ocul i	301	Z	FD	gl o	-0. 02500
436	varl ocul i	302	Z	FD	gl o	-0. 02500
437	varl ocul i	306	Z	FD	gl o	-0. 02500
438	varl ocul i	307	Z	FD	gl o	-0. 02500
439	varl ocul i	308	Z	FD	gl o	-0. 02500
440	varl ocul i	309	Z	FD	gl o	-0. 02500
441	varl ocul i	310	Z	FD	gl o	-0. 02500
442	varl ocul i	314	Z	FD	gl o	-0. 02500
443	varl ocul i	318	Z	FD	gl o	-0. 02500
444	varl ocul i	319	Z	FD	gl o	-0. 02500
445	varl ocul i	326	Z	FD	gl o	-0. 02500
446	varl ocul i	327	Z	FD	gl o	-0. 02500
447	varl ocul i	331	Z	FD	gl o	-0. 02500
448	varl ocul i	332	Z	FD	gl o	-0. 02500
449	varl ocul i	336	Z	FD	gl o	-0. 02500
450	varl ocul i	337	Z	FD	gl o	-0. 02500
451	varl ocul i	338	Z	FD	gl o	-0. 02500
452	varl ocul i	339	Z	FD	gl o	-0. 02500
453	varl ocul i	340	Z	FD	gl o	-0. 02500
454	varl ocul i	344	Z	FD	gl o	-0. 02500
455	varl ocul i	348	Z	FD	gl o	-0. 02500
456	varl ocul i	349	Z	FD	gl o	-0. 02500
457	varl ocul i	356	Z	FD	gl o	-0. 02500
458	varl ocul i	357	Z	FD	gl o	-0. 02500
459	varl ocul i	361	Z	FD	gl o	-0. 02500
460	varl ocul i	362	Z	FD	gl o	-0. 02500
461	varl ocul i	366	Z	FD	gl o	-0. 02500
462	varl ocul i	367	Z	FD	gl o	-0. 02500
463	varl ocul i	368	Z	FD	gl o	-0. 02500
464	varl ocul i	369	Z	FD	gl o	-0. 02500
465	varl ocul i	370	Z	FD	gl o	-0. 02500
466	varl ocul i	374	Z	FD	gl o	-0. 02500
467	varl ocul i	378	Z	FD	gl o	-0. 02500
468	varl ocul i	379	Z	FD	gl o	-0. 02500
469	varl ocul i	36	Z	FD	gl o	-0. 02500
470	varl ocul i	37	Z	FD	gl o	-0. 02500
471	varl ocul i	41	Z	FD	gl o	-0. 02500
472	varl ocul i	46	Z	FD	gl o	-0. 02500
473	varl ocul i	50	Z	FD	gl o	-0. 02500
474	varl ocul i	42	Z	FD	gl o	-0. 02500
475	varl ocul i	43	Z	FD	gl o	-0. 02500
476	varl ocul i	51	Z	FD	gl o	-0. 02500
477	varl ocul i	52	Z	FD	gl o	-0. 02500
478	varl ocul i	44	Z	FD	gl o	-0. 02500
479	varl ocul i	32	Z	FD	gl o	-0. 02500
480	varl ocul i	31	Z	FD	gl o	-0. 02500

PESI PROPRI GUSCI -|-----|-----|-----|-----|-----|
Cond. Nome Carichi Gusci
1 481-612 1-32, 36-37, 41-44, 46, 50-52, 61-62, 66-73, 86-87, 91-98, 111-112, 116-117, 121-124, 126, 130-132, 191-196, 200, 213-215, 266-267, 271-272, 276-280, 284, 288-289, 296-297, 301-302, 306-310, 314, 318-319, 326-327, 331-332, 336-340, 344, 348-349, 356-357, 361-362, 366-370, 374, 378-379

CONDIZIONI DI CARICO-----|-----|-----|-----| num. = 8
Nome
1 Peso_proprio_____ N. carichi : 132
Lista carichi : 481-612
2 Permanente_____ N. carichi : 0
Lista carichi :
3 A: Var_abi tazione_____ N. carichi : 60
Lista carichi : 421-480
4 Neve_(<1000m_slm)_____ N. carichi : 0
Lista carichi :
5 Si sma_X N. carichi : 105
Lista carichi : 1-105
6 Si sma_Y N. carichi : 105
Lista carichi : 106-210
7 Torcente_add._X N. carichi : 105
Lista carichi : 211-315
8 Torcente_add._Y N. carichi : 105
Lista carichi : 316-420

RISULTANTI DEI CARICHI (punto di applicazione nell'origine degli assi):
cond. FX FY FZ MX MY MZ
1 0. 000000E+00 0. 000000E+00 -2. 025000E+04 -3. 500104E+07 5. 122737E+07 0. 000000E+00
2 0. 000000E+00 0. 000000E+00 0. 000000E+00 0. 000000E+00 0. 000000E+00 0. 000000E+00
3 0. 000000E+00 0. 000000E+00 -6. 250000E+03 -1. 068705E+07 1. 581068E+07 0. 000000E+00
4 0. 000000E+00 0. 000000E+00 0. 000000E+00 0. 000000E+00 0. 000000E+00 0. 000000E+00
5 1. 310750E+03 0. 000000E+00 0. 000000E+00 0. 000000E+00 3. 729159E+05 -2. 263887E+06
6 0. 000000E+00 1. 310750E+03 0. 000000E+00 -3. 729159E+05 0. 000000E+00 3. 315862E+06
7 0. 000000E+00 0. 000000E+00 0. 000000E+00 0. 000000E+00 0. 000000E+00 -6. 553750E+03
8 0. 000000E+00 0. 000000E+00 0. 000000E+00 0. 000000E+00 0. 000000E+00 3. 276875E+04

DATI ANALISI SISMICA:

Analisi sismica - Statica lineare - (NTC 2008)

Coeff. I lambda = 1.0000
Sd = 0.070

Numero condizioni generanti carichi sismici : 3

Cond. 001 : Peso_proprio_____ con coeff. 1.000
Cond. 002 : Permanente_____ con coeff. 1.000
Cond. 003 : A: Var_abitazioni_____ con coeff. 0.300

Condizioni di carico sismico generate:

Cond. 005 : Sisma X
Cond. 006 : Sisma Y
Cond. 007 : Torcente add. X
Cond. 008 : Torcente add. Y

Carichi sismici :

Piani	Pesi	C. distr.	Forze di piano	Torc. di piano X	Torc. di piano Y	Bari c. X	Bari c. Y
cm	daN		daN	daNcm	daNcm	cm	cm
80.0	3925	0.0241	95	473	2365	2529.7	1729.0
160.0	3925	0.0482	189	946	4731	2529.7	1729.0
240.0	3925	0.0723	284	1419	7096	2529.7	1729.0
320.0	3925	0.0964	378	1892	9462	2529.7	1729.0
400.0	3025	0.1205	365	1823	9115	2529.7	1722.3

DESCRIZIONE CASI DI CARICO:

NOME	DESCRIZIONE	VERIFICA	TIPO	CONDIZ. INSERITE			CASI INSERITI	
				Num.	Coeff.	Segno	Num.	Coeff.
1	SLU SENZA SISMA	S. L. U.	somma	1	1.300	+		
				2	1.500	+		
				3	1.500	+		
				4	1.500	+		
2	SISMAX SLU	nessuna	somma	5	1.000	±		
				7	1.000	±		
3	SISMAY SLU	nessuna	somma	6	1.000	±		
				8	1.000	±		
4	SLU con SISMAX	S. L. U.	somma	1	1.000	+	2	1.000
				2	1.000	+		
				3	0.300	+		
5	SLU con SISMAY	S. L. U.	somma	1	1.000	+	3	1.000
				2	1.000	+		
				3	0.300	+		
6	SLUGeo	SLUGEO	somma	1	1.000	+		
				2	1.300	+		
				3	1.300	+		
				4	1.300	+		
7	Rara	Rara	somma	1	1.000	+		
				2	1.000	+		
				3	1.000	+		
				4	1.000	+		
8	Frequente	Freq.	somma	1	1.000	+		
				2	1.000	+		
				3	0.500	+		
				4	0.200	+		
9	Quasi Perm	Quasi Perm.	somma	1	1.000	+		
				2	1.000	+		
				3	0.300	+		

VERIFICA GUSCI IN C.A.:

MACROGUSCIO muro_di_fondo

VERIFICA ARMATURE EFFETTIVE (EFFETTO MEMBRANA + PIASTRA)

unità di misura:

lunghezze : [cm] - forze : [daN]
 momenti : [daNm/cm] - tensioni : [daN/cm2]
 pesi specifici : [daN/cm3] - angoli : [gradi]
 armature : [cm2]

CASI DI CARICO:

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

DATI:

tensione di snervamento acciaio (fyk): 4500 daN/cm2
 coefficiente sicurezza acciaio : 1.15
 deformazione ultima acciaio : 67.5 per mille
 deformazione ultima cls : 3.5 per mille
 rapporto rottura/snervamento (k): 1.15
 resistenza cilindrica cls (fck): 249 daN/cm2
 coefficiente sicurezza cls : 1.5
 coefficiente riduttivo (alfa): 0.85
 copri ferro inferiore (asse armatura): 2 cm
 copri ferro superiore (asse armatura): 2 cm
 moltiplicatore sollecitazioni : 1

GUSCI	spess	INFERIORE ORIZZONTALE						INFERIORE VERTICALE					
		Af	Afc	Mom	Nor	epsC	epsF	Af	Afc	Mom	Nor	epsC	epsF
1	15	4.09	4.06	0.	-1.	0.00	0.00	4.05	3.94	0.	-11.	0.01	-0.01
2	15	4.09	4.06	0.	3.	0.00	0.02	4.05	3.94	0.	-6.	0.00	0.00
3	15	4.09	4.06	0.	5.	0.00	0.03	4.05	3.94	5.	-8.	0.01	0.00
4	15	4.09	4.06	3.	5.	0.00	0.03	4.05	3.94	3.	2.	0.00	0.01
5	15	4.09	4.06	5.	5.	0.00	0.03	4.05	3.94	5.	3.	0.00	0.02
6	15	4.09	4.06	1.	-2.	0.00	0.00	4.05	3.94	0.	-12.	0.01	-0.01
7	15	4.09	4.06	0.	3.	0.00	0.02	4.05	3.94	0.	-7.	0.00	0.00
8	15	4.09	4.06	0.	5.	0.00	0.03	4.05	3.94	0.	-3.	0.00	0.00
9	15	4.09	4.06	3.	5.	0.00	0.03	4.05	3.94	3.	2.	0.00	0.01
10	15	4.09	4.06	4.	5.	0.00	0.03	4.05	3.94	4.	3.	0.00	0.02
11	15	4.09	4.06	0.	-1.	0.00	0.00	4.05	3.94	0.	-16.	0.01	-0.01
12	15	4.09	4.06	0.	-2.	0.00	0.00	4.05	3.94	0.	-16.	0.01	-0.01
13	15	4.09	4.06	0.	-2.	0.00	0.00	4.05	3.94	0.	-16.	0.01	-0.01
14	15	4.09	4.06	0.	-1.	0.00	0.00	4.05	3.94	0.	-15.	0.01	-0.01
15	15	4.09	4.06	0.	-1.	0.00	0.00	4.05	3.94	7.	-10.	0.01	-0.01
16	15	4.09	4.06	1.	-1.	0.00	0.00	4.05	3.94	10.	-6.	0.01	0.01
17	15	4.09	4.06	2.	0.	0.00	0.00	4.05	3.94	17.	-7.	0.01	0.01
18	15	4.09	4.06	3.	0.	0.00	0.00	4.05	3.94	33.	-2.	0.02	0.03
19	15	4.09	4.06	0.	-1.	0.00	0.00	4.05	3.94	0.	-12.	0.01	-0.01
20	15	4.09	4.06	0.	-1.	0.00	0.00	4.05	3.94	0.	-9.	0.01	-0.01
21	15	4.09	4.06	0.	-1.	0.00	0.00	4.05	3.94	4.	-5.	0.01	0.00
22	15	4.09	4.06	2.	-1.	0.00	0.00	4.05	3.94	17.	-2.	0.01	0.02
23	15	4.09	4.06	0.	-1.	0.00	0.00	4.05	3.94	0.	-12.	0.01	-0.01
24	15	4.09	4.06	2.	-1.	0.00	0.00	4.05	3.94	0.	-9.	0.01	-0.01
25	15	4.09	4.06	3.	-1.	0.00	0.00	4.05	3.94	5.	-5.	0.01	0.00
26	15	4.09	4.06	1.	-1.	0.00	0.00	4.05	3.94	16.	-2.	0.01	0.01
27	15	4.09	4.06	0.	-1.	0.00	0.00	4.05	3.94	5.	-10.	0.01	-0.01
28	15	4.09	4.06	0.	-1.	0.00	0.00	4.05	3.94	8.	-6.	0.01	-0.01
29	15	4.09	4.06	2.	0.	0.00	0.00	4.05	3.94	32.	-6.	0.02	0.03
30	15	4.09	4.06	2.	0.	0.00	0.00	4.05	3.94	31.	-2.	0.02	0.03

GUSCI	spess	SUPERIORE ORIZZONTALE						SUPERIORE VERTICALE					
		Af	Afc	Mom	Nor	epsC	epsF	Af	Afc	Mom	Nor	epsC	epsF
1	15	4.06	4.09	0.	-1.	0.00	0.00	3.94	4.05	3.	-7.	0.01	0.01
2	15	4.06	4.09	2.	2.	0.00	0.02	3.94	4.05	5.	0.	0.01	0.01
3	15	4.06	4.09	2.	5.	0.00	0.03	3.94	4.05	3.	0.	0.01	0.01
4	15	4.06	4.09	4.	5.	0.00	0.04	3.94	4.05	3.	2.	0.00	0.02
5	15	4.06	4.09	2.	5.	0.00	0.04	3.94	4.05	6.	3.	0.00	0.04
6	15	4.06	4.09	3.	-1.	0.00	0.00	3.94	4.05	28.	-12.	0.02	0.02
7	15	4.06	4.09	2.	2.	0.00	0.02	3.94	4.05	10.	-7.	0.01	0.01
8	15	4.06	4.09	2.	5.	0.00	0.03	3.94	4.05	6.	-3.	0.01	0.01
9	15	4.06	4.09	0.	5.	0.00	0.04	3.94	4.05	4.	0.	0.00	0.02
10	15	4.06	4.09	6.	5.	0.00	0.04	3.94	4.05	8.	1.	0.00	0.04
11	15	4.06	4.09	2.	-1.	0.00	0.00	3.94	4.05	30.	-16.	0.03	0.02
12	15	4.06	4.09	1.	-2.	0.00	0.00	3.94	4.05	23.	-16.	0.02	0.02
13	15	4.06	4.09	3.	-2.	0.00	0.00	3.94	4.05	30.	-16.	0.02	0.02
14	15	4.06	4.09	2.	-1.	0.00	0.00	3.94	4.05	24.	-12.	0.02	0.02
15	15	4.06	4.09	1.	-1.	0.00	0.00	3.94	4.05	12.	-12.	0.02	0.01
16	15	4.06	4.09	2.	0.	0.00	0.00	3.94	4.05	9.	-8.	0.01	0.02
17	15	4.06	4.09	2.	0.	0.00	0.00	3.94	4.05	5.	-4.	0.02	0.04
18	15	4.06	4.09	1.	-1.	0.00	0.00	3.94	4.05	6.	-2.	0.02	0.04
19	15	4.06	4.09	2.	-1.	0.00	0.00	3.94	4.05	13.	-11.	0.02	0.01
20	15	4.06	4.09	2.	0.	0.00	0.01	3.94	4.05	9.	-9.	0.01	0.01
21	15	4.06	4.09	1.	0.	0.00	0.00	3.94	4.05	5.	-6.	0.01	0.01
22	15	4.06	4.09	3.	-1.	0.00	0.01	3.94	4.05	6.	-2.	0.01	0.03
23	15	4.06	4.09	2.	0.	0.00	0.00	3.94	4.05	13.	-12.	0.02	0.01
24	15	4.06	4.09	1.	-1.	0.00	0.01	3.94	4.05	9.	-8.	0.01	0.01
25	15	4.06	4.09	1.	0.	0.00	0.00	3.94	4.05	4.	-6.	0.01	0.01
26	15	4.06	4.09	3.	0.	0.00	0.00	3.94	4.05	6.	-2.	0.01	0.02
27	15	4.06	4.09	2.	-1.	0.00	0.00	3.94	4.05	12.	-8.	0.02	0.02
28	15	4.06	4.09	1.	-1.	0.00	0.00	3.94	4.05	6.	-4.	0.01	0.02
29	15	4.06	4.09	2.	0.	0.00	0.00	3.94	4.05	4.	-1.	0.02	0.04
30	15	4.06	4.09	1.	0.	0.00	0.00	3.94	4.05	7.	0.	0.02	0.04

***** TAGLIO PERPENDI COLARE

GUSCI	tx	ty	tt	GUSCI	tx	ty	tt	GUSCI	tx	ty	tt
1	0.0	0.0	0.0	2	0.0	0.0	0.0	3	0.0	0.0	0.0

4	0.0	0.0	0.0	5	0.0	0.1	0.0	6	0.0	0.0	0.0
7	0.0	0.0	0.0	8	0.0	0.0	0.0	9	0.0	0.0	0.0
10	0.0	0.1	0.0	11	0.0	0.0	0.0	12	0.0	0.0	0.0
13	0.0	0.0	0.0	14	0.0	0.0	0.0	15	0.0	0.0	0.0
16	0.0	0.0	0.0	17	0.0	0.0	0.0	18	0.0	0.0	0.0
19	0.0	0.0	0.0	20	0.0	0.0	0.0	21	0.0	0.0	0.0
22	0.0	0.1	0.0	23	0.0	0.0	0.0	24	0.0	0.0	0.0
25	0.0	0.0	0.0	26	0.0	0.1	0.0	27	0.0	0.0	0.0
28	0.0	0.0	0.0	29	0.0	0.0	0.0	30	0.0	0.1	0.0

MACROGUSCIO muro_di_fondo

VERIFICHE A FESSURAZIONE (EFFETTO MEMBRANA + PIASTRA)

unità di misura:

lunghezze : [cm] - forze : [daN]
momenti : [daNcm/cm] - tensioni : [daN/cm2]
pesi specifici : [daN/cm3] - angoli : [gradi]
armature : [cm2]

CASI DI CARICO:

Nome Descrizione
7 Rara (RARA)
8 Frequente (FREQUENTE)
9 Quasi Perm (QUASI PERMANENTE)

DATI:

copri ferro inferiore (asse armatura): 2 cm
copri ferro superiore (asse armatura): 2 cm

Af = area effettiva disposta nello strato indicato (cm2 al metro)
wKR = apertura caratteristica per combinazioni rara (mm) - apertura max = 0.6 mm
wkF = frequente (mm) - '' = 0.4 mm
wkP = '' '' '' '' quasi permanente (mm) - '' '' = 0.3 mm

ARMATURA INFERIORE ORIZZONTALE

GUSCI			COMBI NAZI ONE RARA					COMBI NAZI ONE FREQUENTE					COMBI NAZI ONE QUASI PERMANENTE				
	Af	Afc	Mom	Nor	σc	σf	WkR	Mom	Nor	σc	σf	WkF	Mom	Nor	σc	σf	WkP
1	4.09	4.06	0.	-1	0.07	-1.	0.000	0.	-1	0.09	-1.	0.000	0.	-1	0.09	-1.	0.000
2	4.09	4.06	1	-1	0.08	-1.	0.000	0.	-1	0.08	-1.	0.000	0.	-1	0.08	-1.	0.000
3	4.09	4.06	1	1	0.00	9.	0.001	0.	0.	0.01	1.	0.000	0.	0.	0.01	0.	0.000
4	4.09	4.06	3	3	0.00	43.	0.004	2	2	0.00	27.	0.002	2	1	0.00	22.	0.002
5	4.09	4.06	4	4	0.00	53.	0.005	3	3	0.00	42.	0.004	2	3	0.00	37.	0.003
6	4.09	4.06	0.	-1	0.07	-1.	0.000	0.	-1	0.09	-1.	0.000	0.	-2	0.09	-1.	0.000
7	4.09	4.06	1	-1	0.08	-1.	0.000	0.	-1	0.08	-1.	0.000	0.	-1	0.08	-1.	0.000
8	4.09	4.06	1	1	0.00	10.	0.001	0.	0.	0.00	2.	0.000	0.	0.	0.01	0.	0.000
9	4.09	4.06	3	3	0.00	45.	0.004	2	2	0.00	29.	0.003	2	1	0.00	23.	0.002
10	4.09	4.06	4	4	0.00	53.	0.005	3	3	0.00	43.	0.004	2	3	0.00	38.	0.003
11	4.09	4.06	0.	-2	0.11	-2.	0.000	0.	-2	0.11	-2.	0.000	0.	-2	0.11	-2.	0.000
12	4.09	4.06	0.	-3	0.18	-3.	0.000	0.	-3	0.16	-2.	0.000	0.	-3	0.15	-2.	0.000
13	4.09	4.06	0.	-3	0.17	-3.	0.000	0.	-3	0.16	-2.	0.000	0.	-2	0.15	-2.	0.000
14	4.09	4.06	0.	-2	0.11	-2.	0.000	0.	-2	0.11	-2.	0.000	0.	-2	0.11	-2.	0.000
15	4.09	4.06	0.	0.	0.03	0.	0.000	0.	-1	0.04	-1.	0.000	0.	-1	0.04	-1.	0.000
16	4.09	4.06	0.	-1	0.05	-1.	0.000	0.	-1	0.05	-1.	0.000	0.	-1	0.05	-1.	0.000
17	4.09	4.06	0.	0.	0.02	0.	0.000	0.	0.	0.03	0.	0.000	0.	0.	0.03	0.	0.000
18	4.09	4.06	1	0.	0.06	1.	0.000	0.	0.	0.02	0.	0.000	0.	0.	0.02	0.	0.000
19	4.09	4.06	0.	-2	0.09	-1.	0.000	0.	-2	0.10	-1.	0.000	0.	-2	0.09	-1.	0.000
20	4.09	4.06	0.	-1	0.04	-1.	0.000	0.	-1	0.05	-1.	0.000	0.	-1	0.05	-1.	0.000
21	4.09	4.06	1	0.	0.05	0.	0.000	1	0.	0.04	0.	0.000	1	0.	0.04	0.	0.000
22	4.09	4.06	2	-1	0.07	0.	0.000	0.	0.	0.03	0.	0.000	0.	0.	0.02	0.	0.000
23	4.09	4.06	0.	-1	0.09	-1.	0.000	0.	-2	0.09	-1.	0.000	0.	-1	0.09	-1.	0.000
24	4.09	4.06	0.	-1	0.04	-1.	0.000	0.	-1	0.04	-1.	0.000	0.	-1	0.05	-1.	0.000
25	4.09	4.06	1	0.	0.05	0.	0.000	1	0.	0.04	0.	0.000	1	0.	0.04	0.	0.000
26	4.09	4.06	2	-1	0.08	0.	0.000	0.	0.	0.04	0.	0.000	0.	0.	0.03	0.	0.000
27	4.09	4.06	0.	0.	0.03	0.	0.000	0.	-1	0.04	-1.	0.000	0.	-1	0.04	-1.	0.000
28	4.09	4.06	0.	-1	0.05	-1.	0.000	0.	-1	0.05	-1.	0.000	0.	-1	0.05	-1.	0.000
29	4.09	4.06	0.	0.	0.02	0.	0.000	0.	0.	0.03	0.	0.000	0.	0.	0.03	0.	0.000
30	4.09	4.06	1	0.	0.03	0.	0.000	0.	0.	0.02	0.	0.000	0.	0.	0.02	0.	0.000

ARMATURA INFERIORE VERTICALE

GUSCI			COMBINAZIONE RARA					COMBINAZIONE FREQUENTE					COMBINAZIONE QUASI PERMANENTE				
	Af	Afc	Mom	Nor	σc	σf	WkR	Mom	Nor	σc	σf	WkF	Mom	Nor	σc	σf	WkP
1	4.05	3.94	0.	-20	1.22	-18.	0.000	0.	-19	1.16	-17.	0.000	0.	-18	1.14	-17.	0.000
2	4.05	3.94	0.	-11	0.69	-10.	0.000	0.	-11	0.69	-10.	0.000	0.	-11	0.69	-10.	0.000
3	4.05	3.94	0.	-6	0.36	-5.	0.000	0.	-6	0.39	-6.	0.000	0.	-7	0.40	-6.	0.000
4	4.05	3.94	0.	-1	0.08	-1.	0.000	0.	-2	0.12	-2.	0.000	0.	-2	0.14	-2.	0.000
5	4.05	3.94	0.	2	0.00	25.	0.002	0.	1	0.00	16.	0.002	0.	1	0.00	12.	0.001
6	4.05	3.94	0.	-20	1.22	-18.	0.000	0.	-19	1.16	-17.	0.000	0.	-18	1.13	-17.	0.000
7	4.05	3.94	0.	-11	0.68	-10.	0.000	0.	-11	0.68	-10.	0.000	0.	-11	0.69	-10.	0.000
8	4.05	3.94	0.	-6	0.36	-5.	0.000	0.	-6	0.39	-6.	0.000	0.	-6	0.40	-6.	0.000
9	4.05	3.94	0.	-1	0.08	-1.	0.000	0.	-2	0.12	-2.	0.000	0.	-2	0.13	-2.	0.000
10	4.05	3.94	0.	2	0.00	26.	0.003	0.	1	0.00	17.	0.002	0.	1	0.00	13.	0.001
11	4.05	3.94	0.	-22	1.37	-21.	0.000	0.	-20	1.26	-19.	0.000	0.	-20	1.21	-18.	0.000
12	4.05	3.94	0.	-24	1.50	-22.	0.000	0.	-22	1.36	-20.	0.000	0.	-21	1.31	-20.	0.000
13	4.05	3.94	0.	-24	1.50	-22.	0.000	0.	-22	1.36	-20.	0.000	0.	-21	1.30	-20.	0.000
14	4.05	3.94	0.	-22	1.37	-21.	0.000	0.	-20	1.26	-19.	0.000	0.	-20	1.21	-18.	0.000
15	4.05	3.94	0.	-16	1.01	-15.	0.000	0.	-15	0.94	-14.	0.000	0.	-15	0.91	-14.	0.000
16	4.05	3.94	0.	-10	0.64	-10.	0.000	0.	-10	0.61	-9.	0.000	0.	-10	0.60	-9.	0.000
17	4.05	3.94	0.	-6	0.34	-5.	0.000	0.	-6	0.34	-5.	0.000	0.	-6	0.34	-5.	0.000
18	4.05	3.94	0.	-2	0.11	-2.	0.000	0.	-2	0.15	-2.	0.000	0.	-3	0.16	-2.	0.000
19	4.05	3.94	0.	-18	1.10	-16.	0.000	0.	-16	1.01	-15.	0.000	0.	-16	0.98	-15.	0.000
20	4.05	3.94	0.	-12	0.77	-12.	0.000	0.	-12	0.72	-11.	0.000	0.	-11	0.70	-11.	0.000
21	4.05	3.94	0.	-7	0.45	-7.	0.000	0.	-7	0.43	-6.	0.000	0.	-7	0.42	-6.	0.000
22	4.05	3.94	0.	-2	0.11	-2.	0.000	0.	-2	0.11	-2.	0.000	0.	-2	0.11	-2.	0.000
23	4.05	3.94	0.	-18	1.10	-16.	0.000	0.	-16	1.01	-15.	0.000	0.	-16	0.98	-15.	0.000
24	4.05	3.94	0.	-12	0.77	-12.	0.000	0.	-12	0.72	-11.	0.000	0.	-11	0.70	-11.	0.000
25	4.05	3.94	0.	-7	0.45	-7.	0.000	0.	-7	0.43	-6.	0.000	0.	-7	0.43	-6.	0.000
26	4.05	3.94	0.	-2	0.11	-2.	0.000	0.	-2	0.11	-2.	0.000	0.	-2	0.11	-2.	0.000
27	4.05	3.94	0.	-16	1.02	-15.	0.000	0.	-15	0.95	-14.	0.000	0.	-15	0.92	-14.	0.000

28	4.05	3.94	0.	-10	0.65	-10.	0.000	0.	-10	0.62	-9.	0.000	0.	-10	0.61	-9.	0.000
29	4.05	3.94	0.	-6	0.35	-5.	0.000	0.	-6	0.35	-5.	0.000	0.	-6	0.35	-5.	0.000
30	4.05	3.94	0.	-2	0.11	-2.	0.000	0.	-2	0.15	-2.	0.000	0.	-3	0.16	-2.	0.000

ARMATURA SUPERIORE ORIZZONTALE

GUSCI	Af	Afc	COMBINAZIONE RARA					COMBINAZIONE FREQUENTE					COMBINAZIONE QUASI PERMANENTE				
			Mom	Nor	σ_c	σ_f	WkR	Mom	Nor	σ_c	σ_f	WkF	Mom	Nor	σ_c	σ_f	WkP
1	4.06	4.09	5	-1	0.20	0.	0.000	4	-1	0.00	-2.	0.000	3	-1	0.02	-2.	0.000
2	4.06	4.09	4	-1	0.18	1.	0.000	3	-1	0.01	-2.	0.000	3	-1	0.00	-2.	0.000
3	4.06	4.09	5	1	0.15	18.	0.001	4	0.	0.16	8.	0.000	3	0.	0.14	5.	0.000
4	4.06	4.09	4	3	0.00	46.	0.004	3	2	0.00	29.	0.003	3	1	0.00	23.	0.002
5	4.06	4.09	5	4	0.00	56.	0.005	5	3	0.00	47.	0.004	5	3	0.00	43.	0.004
6	4.06	4.09	6	-1	0.23	1.	0.000	4	-1	0.02	-2.	0.000	4	-2	0.00	-2.	0.000
7	4.06	4.09	4	-1	0.17	1.	0.000	3	-1	0.01	-2.	0.000	3	-1	0.00	-2.	0.000
8	4.06	4.09	5	1	0.14	18.	0.001	4	0.	0.16	8.	0.000	3	0.	0.14	5.	0.000
9	4.06	4.09	4	3	0.00	48.	0.004	3	2	0.00	31.	0.003	3	1	0.00	24.	0.002
10	4.06	4.09	6	4	0.00	58.	0.005	5	3	0.00	49.	0.004	5	3	0.00	45.	0.004
11	4.06	4.09	5	-2	0.01	-3.	0.000	4	-2	0.02	-3.	0.000	4	-2	0.03	-3.	0.000
12	4.06	4.09	5	-3	0.06	-4.	0.000	4	-3	0.07	-3.	0.000	3	-3	0.08	-3.	0.000
13	4.06	4.09	5	-3	0.06	-4.	0.000	4	-3	0.07	-3.	0.000	3	-2	0.08	-3.	0.000
14	4.06	4.09	5	-2	0.01	-3.	0.000	4	-2	0.02	-3.	0.000	3	-2	0.03	-3.	0.000
15	4.06	4.09	2	0.	0.10	1.	0.000	2	-1	0.01	-1.	0.000	2	-1	0.00	-1.	0.000
16	4.06	4.09	2	-1	0.01	-1.	0.000	1	-1	0.02	-1.	0.000	1	-1	0.03	-1.	0.000
17	4.06	4.09	1	0.	0.06	0.	0.000	1	0.	0.00	-1.	0.000	1	0.	0.00	-1.	0.000
18	4.06	4.09	0.	0.	0.00	0.	0.000	1	0.	0.06	1.	0.000	2	0.	0.08	1.	0.000
19	4.06	4.09	5	-2	0.02	-3.	0.000	4	-2	0.01	-2.	0.000	3	-2	0.02	-2.	0.000
20	4.06	4.09	4	-1	0.19	2.	0.000	3	-1	0.14	1.	0.000	3	-1	0.12	0.	0.000
21	4.06	4.09	4	0.	0.16	4.	0.000	3	0.	0.11	1.	0.000	2	0.	0.09	1.	0.000
22	4.06	4.09	4	-1	0.15	2.	0.000	4	0.	0.16	3.	0.000	3	0.	0.16	4.	0.000
23	4.06	4.09	5	-1	0.02	-3.	0.000	4	-2	0.01	-2.	0.000	3	-1	0.02	-2.	0.000
24	4.06	4.09	4	-1	0.18	3.	0.000	3	-1	0.13	1.	0.000	3	-1	0.12	0.	0.000
25	4.06	4.09	3	0.	0.15	3.	0.000	2	0.	0.10	1.	0.000	2	0.	0.08	0.	0.000
26	4.06	4.09	3	-1	0.13	1.	0.000	3	0.	0.14	2.	0.000	3	0.	0.14	2.	0.000
27	4.06	4.09	2	0.	0.09	1.	0.000	2	-1	0.00	-1.	0.000	2	-1	0.01	-1.	0.000
28	4.06	4.09	1	-1	0.02	-1.	0.000	1	-1	0.03	-1.	0.000	1	-1	0.03	-1.	0.000
29	4.06	4.09	1	0.	0.06	0.	0.000	1	0.	0.00	-1.	0.000	1	0.	0.00	-1.	0.000
30	4.06	4.09	1	0.	0.00	0.	0.000	2	0.	0.07	0.	0.000	2	0.	0.09	1.	0.000

ARMATURA SUPERIORE VERTICALE

GUSCI	Af	Afc	COMBINAZIONE RARA					COMBINAZIONE FREQUENTE					COMBINAZIONE QUASI PERMANENTE				
			Mom	Nor	σ_c	σ_f	WkR	Mom	Nor	σ_c	σ_f	WkF	Mom	Nor	σ_c	σ_f	WkP
1	3.94	4.05	22	-20	0.70	-24.	0.000	17	-19	0.75	-22.	0.000	15	-18	0.77	-21.	0.000
2	3.94	4.05	9	-11	0.48	-13.	0.000	7	-11	0.53	-12.	0.000	6	-11	0.55	-12.	0.000
3	3.94	4.05	9	-6	0.14	-8.	0.000	8	-6	0.21	-8.	0.000	7	-7	0.24	-8.	0.000
4	3.94	4.05	5	-1	0.20	0.	0.000	3	-2	0.05	-3.	0.000	2	-2	0.08	-3.	0.000
5	3.94	4.05	5	2	0.00	37.	0.003	7	1	0.17	32.	0.003	8	1	0.27	29.	0.002
6	3.94	4.05	22	-20	0.70	-24.	0.000	17	-19	0.75	-22.	0.000	15	-18	0.77	-21.	0.000
7	3.94	4.05	9	-11	0.47	-13.	0.000	7	-11	0.52	-12.	0.000	6	-11	0.54	-12.	0.000
8	3.94	4.05	9	-6	0.13	-8.	0.000	8	-6	0.21	-8.	0.000	7	-6	0.24	-8.	0.000
9	3.94	4.05	5	-1	0.20	0.	0.000	3	-2	0.04	-3.	0.000	2	-2	0.08	-3.	0.000
10	3.94	4.05	5	2	0.00	38.	0.003	7	1	0.14	33.	0.003	8	1	0.25	30.	0.002
11	3.94	4.05	26	-22	0.75	-27.	0.000	20	-20	0.78	-24.	0.000	18	-20	0.79	-23.	0.000
12	3.94	4.05	21	-24	0.99	-28.	0.000	17	-22	0.97	-25.	0.000	15	-21	0.96	-23.	0.000
13	3.94	4.05	20	-24	1.02	-28.	0.000	16	-22	0.99	-24.	0.000	14	-21	0.98	-23.	0.000
14	3.94	4.05	26	-22	0.75	-27.	0.000	20	-20	0.78	-24.	0.000	18	-20	0.79	-23.	0.000
15	3.94	4.05	8	-16	0.82	-17.	0.000	7	-15	0.78	-16.	0.000	6	-15	0.77	-15.	0.000
16	3.94	4.05	7	-10	0.48	-11.	0.000	6	-10	0.48	-11.	0.000	5	-10	0.48	-10.	0.000
17	3.94	4.05	4	-6	0.24	-6.	0.000	3	-6	0.27	-6.	0.000	3	-6	0.28	-6.	0.000
18	3.94	4.05	5	-2	0.00	-3.	0.000	9	-2	0.37	1.	0.000	11	-3	0.44	1.	0.000
19	3.94	4.05	12	-18	0.82	-19.	0.000	9	-16	0.80	-18.	0.000	8	-16	0.78	-17.	0.000
20	3.94	4.05	7	-12	0.60	-13.	0.000	6	-12	0.58	-12.	0.000	5	-11	0.58	-12.	0.000
21	3.94	4.05	6	-7	0.31	-8.	0.000	4	-7	0.33	-8.	0.000	3	-7	0.34	-7.	0.000
22	3.94	4.05	7	-2	0.30	1.	0.000	9	-2	0.37	2.	0.000	10	-2	0.40	3.	0.000
23	3.94	4.05	9	-18	0.89	-19.	0.000	7	-16	0.85	-17.	0.000	6	-16	0.83	-16.	0.000
24	3.94	4.05	10	-12	0.54	-14.	0.000	8	-12	0.53	-13.	0.000	7	-11	0.53	-12.	0.000
25	3.94	4.05	6	-7	0.31	-8.	0.000	5	-7	0.31	-8.	0.000	5	-7	0.31	-8.	0.000
26	3.94	4.05	7	-2	0.28	0.	0.000	9	-2	0.36	2.	0.000	10	-2	0.40	3.	0.000
27	3.94	4.05	8	-16	0.83	-17.	0.000	6	-15	0.79	-16.	0.000	6	-15	0.78	-15.	0.000
28	3.94	4.05	7	-10	0.49	-12.	0.000	6	-10	0.49	-11.	0.000	5	-10	0.48	-10.	0.000
29	3.94	4.05	4	-6	0.25	-6.	0.000	3	-6	0.28	-6.	0.000	3	-6	0.29	-6.	0.000
30	3.94	4.05	5	-2	0.01	-3.	0.000	9	-2	0.39	1.	0.000	11	-3	0.46	1.	0.000

MACROGUSCIO platea_di_base

VERIFICA ARMATURE EFFETTIVE (EFFETTO MEMBRANA + PIASTRA)

unità di misura:

lunghezze : [cm] - forze : [daN]
 momenti : [daNcm/cm] - tensioni : [daN/cm2]
 pesi specifici : [daN/cm3] - angoli : [gradi]
 armature : [cm2]

CASI DI CARICO:

Nome Descrizione
 1 SLU SENZA SI SMA
 4 SLU con SI SMAX
 5 SLU con SI SMAY

DATI:

tensione di snervamento acciaio (fyk): 4500 daN/cm2
 coefficiente sicurezza acciaio : 1.15
 deformazione ultima acciaio : 67.5 per mille
 deformazione ultima cls : 3.5 per mille
 rapporto rottura/snervamento (k): 1.15
 resistenza cilindrica cls (fck): 249 daN/cm2
 coefficiente sicurezza cls : 1.5
 coefficiente riduttivo (alfa): 0.85
 copri ferro inferiore (asse armatura): 2 cm

copri ferro superiore (asse armatura): 2 cm
 moltiplicatore sollecitazioni : 1

GUSCI	spess	INFERIORE ORIZZONTALE						INFERIORE VERTICALE					
		Af	Afc	Mom	Nor	epsC	epsF	Af	Afc	Mom	Nor	epsC	epsF
31	15	4.06	4.26	4.	0.	0.00	0.00	3.93	4.00	46.	0.	0.02	0.05
32	15	4.06	4.26	3.	0.	0.00	0.00	3.93	4.00	40.	0.	0.02	0.04
36	15	4.06	4.26	3.	0.	0.00	0.00	3.93	4.00	46.	0.	0.02	0.05
37	15	4.06	4.26	3.	0.	0.00	0.00	3.93	4.00	40.	0.	0.02	0.04
41	15	4.06	4.26	1.	0.	0.00	0.00	3.93	4.00	30.	0.	0.01	0.03
42	15	4.06	4.26	11.	0.	0.00	0.01	3.93	4.00	59.	0.	0.03	0.06
43	15	4.06	4.26	13.	0.	0.01	0.01	3.93	4.00	61.	0.	0.03	0.06
44	15	4.06	4.26	2.	0.	0.00	0.00	3.93	4.00	30.	0.	0.01	0.03
46	15	4.06	4.26	2.	0.	0.00	0.00	3.93	4.00	31.	0.	0.01	0.03
50	15	4.06	4.26	15.	0.	0.01	0.01	3.93	4.00	60.	0.	0.03	0.06
51	15	4.06	4.26	10.	0.	0.00	0.01	3.93	4.00	57.	0.	0.03	0.06
52	15	4.06	4.26	2.	0.	0.00	0.00	3.93	4.00	30.	0.	0.01	0.03

GUSCI	spess	SUPERIORE ORIZZONTALE						SUPERIORE VERTICALE					
		Af	Afc	Mom	Nor	epsC	epsF	Af	Afc	Mom	Nor	epsC	epsF
31	15	4.26	4.06	7.	0.	0.01	0.02	4.00	3.93	7.	0.	0.02	0.05
32	15	4.26	4.06	5.	0.	0.01	0.01	4.00	3.93	7.	0.	0.02	0.04
36	15	4.26	4.06	7.	0.	0.01	0.02	4.00	3.93	41.	0.	0.02	0.04
37	15	4.26	4.06	6.	0.	0.01	0.01	4.00	3.93	0.	0.	0.02	0.04
41	15	4.26	4.06	3.	0.	0.00	0.00	4.00	3.93	30.	0.	0.01	0.03
42	15	4.26	4.06	5.	0.	0.00	0.01	4.00	3.93	60.	0.	0.03	0.06
43	15	4.26	4.06	6.	0.	0.00	0.01	4.00	3.93	58.	0.	0.03	0.06
44	15	4.26	4.06	2.	0.	0.00	0.00	4.00	3.93	30.	0.	0.01	0.03
46	15	4.26	4.06	1.	0.	0.00	0.00	4.00	3.93	0.	0.	0.01	0.03
50	15	4.26	4.06	6.	0.	0.00	0.01	4.00	3.93	3.	0.	0.03	0.06
51	15	4.26	4.06	1.	0.	0.00	0.01	4.00	3.93	0.	0.	0.03	0.06
52	15	4.26	4.06	0.	0.	0.00	0.00	4.00	3.93	0.	0.	0.01	0.03

***** TAGLIO PERPENDICOLARE

GUSCI	tx	ty	tz	GUSCI	tx	ty	tz	GUSCI	tx	ty	tz
31	0.1	0.3	0.2	32	0.1	0.3	0.2	36	0.0	0.4	0.3
37	0.0	0.4	0.3	41	0.0	0.2	0.2	42	0.1	0.4	0.3
43	0.0	0.4	0.3	44	0.0	0.1	0.1	46	0.0	0.2	0.1
50	0.1	0.4	0.3	51	0.0	0.4	0.3	52	0.0	0.1	0.1

MACROGUSCIO platea_di_base

VERIFICHE A FESSURAZIONE (EFFETTO MEMBRANA + PIASTRA)

unità di misura:

lunghezze : [cm] - forze : [daN]
 momenti : [daNcm/cm] - tensioni : [daN/cm2]
 pesi specifici : [daN/cm3] - angoli : [gradi]
 armature : [cm2]

CASI DI CARICO:

Nome Descrizione
 7 Rara (RARA)
 8 Frequente (FREQUENTE)
 9 Quasi Perm (QUASI PERMANENTE)

DATI:

copri ferro inferiore (asse armatura): 2 cm
 copri ferro superiore (asse armatura): 2 cm

Af = area effettiva disposta nello strato indicato (cm2 al metro)
 wkR = apertura caratteristica per combinazione rara (mm) - apertura max = 0.6 mm
 wkF = " " " " frequente (mm) - " " " " = 0.4 mm
 wkP = " " " " quasi permanente (mm) - " " " " = 0.3 mm

ARMATURA INFERIORE ORIZZONTALE

GUSCI	Af Afc		COMBINAZIONE RARA					COMBINAZIONE FREQUENTE					COMBINAZIONE QUASI PERMANENTE				
			Mom	Nor	σc	σf	WkR	Mom	Nor	σc	σf	WkF	Mom	Nor	σc	σf	WkP
31	4.06	4.26	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
32	4.06	4.26	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
36	4.06	4.26	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
37	4.06	4.26	0.	0.	0.00	0.	0.000	0.	0.	0.01	0.	0.000	0.	0.	0.02	1.	0.000
41	4.06	4.26	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
42	4.06	4.26	2	0.	0.10	5.	0.000	2	0.	0.09	4.	0.000	2	0.	0.08	4.	0.000
43	4.06	4.26	2	0.	0.10	4.	0.000	2	0.	0.08	4.	0.000	2	0.	0.08	3.	0.000
44	4.06	4.26	1	0.	0.03	1.	0.000	0.	0.	0.02	1.	0.000	0.	0.	0.02	1.	0.000
46	4.06	4.26	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
50	4.06	4.26	7	0.	0.33	15.	0.001	6	0.	0.28	13.	0.001	6	0.	0.26	12.	0.001
51	4.06	4.26	7	0.	0.32	15.	0.001	6	0.	0.28	13.	0.001	6	0.	0.26	12.	0.001
52	4.06	4.26	0.	0.	0.02	1.	0.000	0.	0.	0.01	0.	0.000	0.	0.	0.01	0.	0.000

ARMATURA INFERIORE VERTICALE

GUSCI	Af Afc		COMBINAZIONE RARA					COMBINAZIONE FREQUENTE					COMBINAZIONE QUASI PERMANENTE				
			Mom	Nor	σc	σf	WkR	Mom	Nor	σc	σf	WkF	Mom	Nor	σc	σf	WkP
31	3.93	4.00	9	0.	0.40	19.	0.001	8	0.	0.36	16.	0.001	7	0.	0.34	16.	0.001
32	3.93	4.00	9	0.	0.40	19.	0.001	8	0.	0.36	16.	0.001	7	0.	0.34	16.	0.001
36	3.93	4.00	9	0.	0.42	19.	0.001	8	0.	0.37	17.	0.001	8	0.	0.36	16.	0.001
37	3.93	4.00	9	0.	0.42	19.	0.001	8	0.	0.37	17.	0.001	8	0.	0.36	16.	0.001
41	3.93	4.00	2	0.	0.07	3.	0.000	1	0.	0.06	3.	0.000	1	0.	0.05	3.	0.000
42	3.93	4.00	1	0.	0.06	3.	0.000	1	0.	0.05	2.	0.000	1	0.	0.05	2.	0.000
43	3.93	4.00	6	0.	0.27	12.	0.001	5	0.	0.23	11.	0.001	5	0.	0.22	10.	0.001
44	3.93	4.00	1	0.	0.05	2.	0.000	1	0.	0.04	2.	0.000	1	0.	0.04	2.	0.000
46	3.93	4.00	2	0.	0.07	3.	0.000	1	0.	0.06	3.	0.000	1	0.	0.05	3.	0.000
50	3.93	4.00	1	0.	0.06	3.	0.000	1	0.	0.05	2.	0.000	1	0.	0.05	2.	0.000
51	3.93	4.00	6	0.	0.27	12.	0.001	5	0.	0.23	11.	0.001	5	0.	0.22	10.	0.001
52	3.93	4.00	1	0.	0.05	2.	0.000	1	0.	0.04	2.	0.000	1	0.	0.04	2.	0.000

ARMATURA SUPERIORE ORIZZONTALE

GUSCI			COMBINAZIONE RARA					COMBINAZIONE FREQUENTE					COMBINAZIONE QUASI PERMANENTE				
	Af	Afc	Mom	Nor	σ_c	σ_f	WkR	Mom	Nor	σ_c	σ_f	WkF	Mom	Nor	σ_c	σ_f	WkP
31	4.26	4.06	6	0.	0.25	11.	0.001	5	0.	0.24	11.	0.000	5	0.	0.24	11.	0.000
32	4.26	4.06	6	0.	0.27	12.	0.001	6	0.	0.25	11.	0.001	5	0.	0.25	11.	0.001
36	4.26	4.06	4	0.	0.18	8.	0.000	3	0.	0.16	7.	0.000	3	0.	0.15	6.	0.000
37	4.26	4.06	5	0.	0.25	11.	0.001	5	0.	0.23	10.	0.000	5	0.	0.23	10.	0.000
41	4.26	4.06	0.	0.	0.02	1.	0.000	0.	0.	0.01	1.	0.000	0.	0.	0.01	1.	0.000
42	4.26	4.06	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
43	4.26	4.06	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
44	4.26	4.06	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
46	4.26	4.06	0.	0.	0.01	1.	0.000	0.	0.	0.01	1.	0.000	0.	0.	0.01	1.	0.000
50	4.26	4.06	2	0.	0.10	5.	0.000	2	0.	0.10	4.	0.000	2	0.	0.10	4.	0.000
51	4.26	4.06	3	0.	0.12	5.	0.000	2	0.	0.11	5.	0.000	2	0.	0.11	5.	0.000
52	4.26	4.06	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000

ARMATURA SUPERIORE VERTICALE

GUSCI			COMBINAZIONE RARA					COMBINAZIONE FREQUENTE					COMBINAZIONE QUASI PERMANENTE				
	Af	Afc	Mom	Nor	σ_c	σ_f	WkR	Mom	Nor	σ_c	σ_f	WkF	Mom	Nor	σ_c	σ_f	WkP
31	4.00	3.93	10	0.	0.47	21.	0.001	9	0.	0.42	19.	0.001	8	0.	0.39	18.	0.001
32	4.00	3.93	10	0.	0.47	21.	0.001	9	0.	0.42	19.	0.001	8	0.	0.39	18.	0.001
36	4.00	3.93	10	0.	0.48	22.	0.001	9	0.	0.43	20.	0.001	9	0.	0.40	19.	0.001
37	4.00	3.93	10	0.	0.48	22.	0.001	9	0.	0.43	20.	0.001	9	0.	0.40	19.	0.001
41	4.00	3.93	2	0.	0.08	4.	0.000	2	0.	0.07	3.	0.000	1	0.	0.06	3.	0.000
42	4.00	3.93	1	0.	0.06	3.	0.000	1	0.	0.05	2.	0.000	1	0.	0.05	2.	0.000
43	4.00	3.93	6	0.	0.27	12.	0.001	5	0.	0.23	11.	0.001	5	0.	0.22	10.	0.000
44	4.00	3.93	1	0.	0.06	3.	0.000	1	0.	0.05	2.	0.000	1	0.	0.04	2.	0.000
46	4.00	3.93	2	0.	0.08	4.	0.000	2	0.	0.07	3.	0.000	1	0.	0.06	3.	0.000
50	4.00	3.93	1	0.	0.06	3.	0.000	1	0.	0.05	2.	0.000	1	0.	0.05	2.	0.000
51	4.00	3.93	6	0.	0.27	12.	0.001	5	0.	0.23	11.	0.001	5	0.	0.22	10.	0.000
52	4.00	3.93	1	0.	0.06	3.	0.000	1	0.	0.05	2.	0.000	1	0.	0.04	2.	0.000

MACROGUSCIO setto di visori o_l ocu

VERIFICA ARMATURE EFFETTIVE (EFFETTO MEMBRANA + PIASTRA)

unità di misura:
 lunghezze : [cm] - forze : [daN]
 momenti : [daNcm/cm] - tensioni : [daN/cm2]
 pesi specifici : [daN/cm3] - angoli : [gradi]
 armature : [cm2]

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

DATI:
 tensione di snervamento acciaio (fyk): 4500 daN/cm2
 coefficiente sicurezza acciaio : 1.15
 deformazione ultima acciaio : 67.5 per mille
 deformazione ultima cls : 3.5 per mille
 rapporto rottura/snervamento (k): 1.15
 resistenza cilindrica cls (fck): 249 daN/cm2
 coefficiente sicurezza cls : 1.5
 coefficiente riduttivo (alfa): 0.85
 copri ferro inferiore (asse armatura): 2 cm
 copri ferro superiore (asse armatura): 2 cm
 moltiplicatore sollecitazioni : 1

		I N F E R I O R E O R I Z Z O N T A L E						I N F E R I O R E V E R T I C A L E					
GUSCI	spess	Af	Afc	Mom	Nor	epsC	epsF	Af	Afc	Mom	Nor	epsC	epsF
191	10	2.55	2.60	0.	7.	0.00	0.06	2.76	2.74	0.	-20.	0.02	-0.02
192	10	2.55	2.60	0.	-3.	0.00	0.01	2.76	2.74	0.	-23.	0.02	-0.02
193	10	2.55	2.60	0.	1.	0.00	0.01	2.76	2.74	0.	-17.	0.02	-0.02
194	10	2.55	2.60	0.	1.	0.00	0.01	2.76	2.74	0.	-11.	0.01	-0.01
195	10	2.55	2.60	0.	2.	0.00	0.02	2.76	2.74	1.	-6.	0.01	0.00
196	10	2.55	2.60	0.	-2.	0.00	0.00	2.76	2.74	1.	-10.	0.01	-0.01
200	10	2.55	2.60	0.	-8.	0.01	0.06	2.76	2.74	0.	-56.	0.06	-0.06
213	10	2.55	2.60	0.	-4.	0.00	0.00	2.76	2.74	0.	-20.	0.02	-0.02
214	10	2.55	2.60	0.	-5.	0.01	0.00	2.76	2.74	0.	-31.	0.03	-0.03
215	10	2.55	2.60	0.	-7.	0.01	-0.01	2.76	2.74	0.	-43.	0.05	-0.05

GUSCI	spess	SUPERIORE ORIZZONTALE						SUPERIORE VERTICALE					
		Af	Afc	Mom	Nor	epsC	epsF	Af	Afc	Mom	Nor	epsC	epsF
191	10	2.60	2.55	0.	4.	0.00	0.06	2.74	2.76	0.	-20.	0.02	-0.02
192	10	2.60	2.55	0.	1.	0.00	0.01	2.74	2.76	0.	-23.	0.02	-0.02
193	10	2.60	2.55	0.	1.	0.00	0.01	2.74	2.76	0.	-17.	0.02	-0.02
194	10	2.60	2.55	0.	1.	0.00	0.01	2.74	2.76	0.	-11.	0.01	-0.01
195	10	2.60	2.55	0.	1.	0.00	0.02	2.74	2.76	0.	-6.	0.01	-0.01
196	10	2.60	2.55	0.	0.	0.00	0.00	2.74	2.76	0.	-8.	0.01	-0.01
200	10	2.60	2.55	0.	4.	0.01	0.05	2.74	2.76	0.	-56.	0.06	-0.06
213	10	2.60	2.55	0.	0.	0.00	0.00	2.74	2.76	0.	-20.	0.02	-0.02
214	10	2.60	2.55	0.	-1.	0.01	0.00	2.74	2.76	0.	-31.	0.03	-0.03
215	10	2.60	2.55	0.	-1.	0.01	-0.01	2.74	2.76	0.	-43.	0.05	-0.05

***** TAGLIO PERPENDICOLARE

GUSCI	τ_x	τ_y	τ_t	GUSCI	τ_x	τ_y	τ_t	GUSCI	τ_x	τ_y	τ_t
191	0.0	0.0	0.0	192	0.0	0.0	0.0	193	0.0	0.0	0.0
194	0.0	0.0	0.0	195	0.0	0.0	0.0	196	0.0	0.0	0.0
200	0.0	0.0	0.0	213	0.0	0.0	0.0	214	0.0	0.0	0.0
215	0.0	0.0	0.0								

MACROGUSCIO setto_divi_sori_o_locu

VERIFICHE A FESSURAZIONE (EFFETTO MEMBRANA + PIASTRA)

unità di misura:

lunghezze : [cm] - forze : [daN]
momenti : [daNcm/cm] - tensioni : [daN/cm2]
pesi specifici : [daN/cm3] - angoli : [gradi]
armature : [cm2]

CASI DI CARICO:

Nome Descrizione
7 Rara (RARA)
8 Frequente (FREQUENTE)
9 Quasi Perm (QUASI PERMANENTE)

DATI:

copri ferro inferiore (asse armatura): 2 cm
copri ferro superiore (asse armatura): 2 cm

Af = area effettiva disposta nello strato indicato (cm2 al metro)
wkR = apertura caratteristica per combinazione rara (mm) - apertura max = 0.6 mm
wkF = " " " " frequente (mm) - " " " " = 0.4 mm
wkP = " " " " quasi permanente (mm) - " " " " = 0.3 mm

ARMATURA INFERIORE ORIZZONTALE

GUSCIO			COMBI NAZI ONE RARA					COMBI NAZI ONE FREQUENTE					COMBI NAZI ONE QUASI PERMANENTE				
	Af	AfC	Mom	Nor	σ_c	σ_f	WkR	Mom	Nor	σ_c	σ_f	WkF	Mom	Nor	σ_c	σ_f	WkP
191	2.55	2.60	0.	2	0.00	42.	0.004	0.	1	0.00	29.	0.003	0.	1	0.00	24.	0.002
192	2.55	2.60	0.	-1	0.14	-2.	0.000	0.	-1	0.12	-2.	0.000	0.	-1	0.12	-2.	0.000
193	2.55	2.60	0.	0.	0.03	0.	0.000	0.	0.	0.04	-1.	0.000	0.	0.	0.04	-1.	0.000
194	2.55	2.60	0.	-1	0.08	-1.	0.000	0.	-1	0.08	-1.	0.000	0.	-1	0.07	-1.	0.000
195	2.55	2.60	0.	0.	0.01	0.	0.000	0.	0.	0.03	0.	0.000	0.	0.	0.03	0.	0.000
196	2.55	2.60	0.	0.	0.02	0.	0.000	0.	0.	0.04	-1.	0.000	0.	-1	0.05	-1.	0.000
200	2.55	2.60	0.	-5	0.51	-8.	0.000	0.	-4	0.42	-6.	0.000	0.	-4	0.38	-6.	0.000
213	2.55	2.60	0.	-1	0.06	-1.	0.000	0.	-1	0.06	-1.	0.000	0.	-1	0.06	-1.	0.000
214	2.55	2.60	0.	-2	0.18	-3.	0.000	0.	-2	0.16	-2.	0.000	0.	-2	0.16	-2.	0.000
215	2.55	2.60	0.	-4	0.36	-5.	0.000	0.	-3	0.30	-5.	0.000	0.	-3	0.28	-4.	0.000

ARMATURA INFERIORE VERTICALE

GUSCI			COMBINAZIONE RARA					COMBINAZIONE FREQUENTE					COMBINAZIONE QUASI PERMANENTE				
			Mom	Nor	σ_c	σ_f	WkR	Mom	Nor	σ_c	σ_f	WkF	Mom	Nor	σ_c	σ_f	WkP
191	Af	Afc	0.	-9	0.83	-12.	0.000	0.	-8	0.76	-11.	0.000	0.	-8	0.73	-11.	0.000
192	2.76	2.74	0.	-18	1.68	-25.	0.000	0.	-16	1.48	-22.	0.000	0.	-15	1.39	-21.	0.000
193	2.76	2.74	0.	-13	1.21	-18.	0.000	0.	-12	1.08	-16.	0.000	0.	-11	1.03	-15.	0.000
194	2.76	2.74	0.	-8	0.70	-11.	0.000	0.	-7	0.64	-10.	0.000	0.	-7	0.62	-9.	0.000
195	2.76	2.74	0.	-3	0.25	-4.	0.000	0.	-3	0.27	-4.	0.000	0.	-3	0.28	-4.	0.000
196	2.76	2.74	0.	-7	0.66	-10.	0.000	0.	-8	0.71	-11.	0.000	0.	-8	0.73	-11.	0.000
200	2.76	2.74	0.	-39	3.56	-53.	0.000	0.	-32	2.94	-44.	0.000	0.	-29	2.70	-40.	0.000
213	2.76	2.74	0.	-16	1.47	-22.	0.000	0.	-14	1.32	-20.	0.000	0.	-14	1.27	-19.	0.000
214	2.76	2.74	0.	-25	2.31	-35.	0.000	0.	-22	1.99	-30.	0.000	0.	-20	1.86	-28.	0.000
215	2.76	2.74	0.	-35	3.22	-48.	0.000	0.	-29	2.71	-41.	0.000	0.	-27	2.51	-38.	0.000

ARMATURA SUPERIORE ORIZZONTALE

GUSCIO			COMBINAZIONE RARA					COMBINAZIONE FREQUENTE					COMBINAZIONE QUASI PERMANENTE				
			Mom	Nor	σ_c	σ_f	WkR	Mom	Nor	σ_c	σ_f	WkF	Mom	Nor	σ_c	σ_f	WkP
191	Af	Afc	0.	2	0.00	40.	0.004	0.	1	0.00	28.	0.003	0.	1	0.00	24.	0.002
192	2.60	2.55	0.	-1	0.13	-2.	0.000	0.	-1	0.12	-2.	0.000	0.	-1	0.11	-2.	0.000
193	2.60	2.55	0.	0.	0.03	0.	0.000	0.	0.	0.04	-1.	0.000	0.	0.	0.04	-1.	0.000
194	2.60	2.55	0.	-1	0.08	-1.	0.000	0.	-1	0.08	-1.	0.000	0.	-1	0.07	-1.	0.000
195	2.60	2.55	0.	0.	0.01	0.	0.000	0.	0.	0.02	0.	0.000	0.	0.	0.02	0.	0.000
196	2.60	2.55	0.	0.	0.02	0.	0.000	0.	0.	0.04	-1.	0.000	0.	-1	0.05	-1.	0.000
200	2.60	2.55	0.	-5	0.50	-8.	0.000	0.	-4	0.41	-6.	0.000	0.	-4	0.38	-6.	0.000
213	2.60	2.55	0.	-1	0.06	-1.	0.000	0.	-1	0.06	-1.	0.000	0.	-1	0.06	-1.	0.000
214	2.60	2.55	0.	-2	0.18	-3.	0.000	0.	-2	0.16	-2.	0.000	0.	-2	0.15	-2.	0.000
215	2.60	2.55	0.	-4	0.35	-5.	0.000	0.	-3	0.30	-5.	0.000	0.	-3	0.28	-4.	0.000

ARMATURA SUPERIORE VERTICALE

GUSCIO			COMBI NAZI ONE RARA					COMBI NAZI ONE FREQUENTE					COMBI NAZI ONE QUASI PERMANENTE				
			Mom	Nor	σ_c	σ_f	WkR	Mom	Nor	σ_c	σ_f	WkF	Mom	Nor	σ_c	σ_f	WkP
191	Af	Afc	0.	-9	0.83	-12.	0.000	0.	-8	0.76	-11.	0.000	0.	-8	0.73	-11.	0.000
192	2.74	2.76	0.	-18	1.68	-25.	0.000	0.	-16	1.48	-22.	0.000	0.	-15	1.39	-21.	0.000
193	2.74	2.76	0.	-13	1.21	-18.	0.000	0.	-12	1.08	-16.	0.000	0.	-11	1.03	-15.	0.000
194	2.74	2.76	0.	-8	0.70	-11.	0.000	0.	-7	0.64	-10.	0.000	0.	-7	0.62	-9.	0.000
195	2.74	2.76	0.	-3	0.25	-4.	0.000	0.	-3	0.27	-4.	0.000	0.	-3	0.28	-4.	0.000
196	2.74	2.76	0.	-7	0.66	-10.	0.000	0.	-8	0.71	-11.	0.000	0.	-8	0.72	-11.	0.000
200	2.74	2.76	0.	-39	3.56	-53.	0.000	0.	-32	2.94	-44.	0.000	0.	-29	2.69	-40.	0.000
213	2.74	2.76	0.	-16	1.47	-22.	0.000	0.	-14	1.32	-20.	0.000	0.	-14	1.26	-19.	0.000
214	2.74	2.76	0.	-25	2.31	-35.	0.000	0.	-22	1.99	-30.	0.000	0.	-20	1.86	-28.	0.000
215	2.74	2.76	0.	-35	3.22	-48.	0.000	0.	-29	2.71	-41.	0.000	0.	-27	2.51	-38.	0.000

MACROGUSCIO solletta_l oculi

VERIFICA ARMATURE EFFETTIVE (EFFETTO MEMBRANA + PIASTRA)

unità di misura:

lunghezze : [cm] - forze : [daN]
momenti : [daNcm/cm] - tensioni : [daN/cm2]
pesi specifici : [daN/cm3] - angoli : [gradi]
armature : [cm2]

CASI DI CARICO:

Nome Descrizione
1 SLU SENZA SISMA
4 SLU con SISMAX
5 SLU con SISWAY

DATI:

tensione di snervamento acciaio (fyk): 4500 daN/cm2
 coefficiente sicurezza acciaio : 1.15
 deformazione ultima acciaio : 67.5 per mille
 deformazione ultima cls : 3.5 per mille
 rapporto rottura/snervamento (k): 1.15
 resistenza cilindrica cls (fck): 249 daN/cm2
 coefficiente sicurezza cls : 1.5
 coefficiente riduttivo (alfa): 0.85
 copri ferro inferiore (asse armatura): 2 cm
 copri ferro superiore (asse armatura): 2 cm
 moltiplicatore sollecitazioni : 1

INFERIORE ORIZZONTALE								INFERIORE VERTICALE							
GUSCI	spess	Af	Afc	Mom	Nor	epsC	epsF	Af	Afc	Mom	Nor	epsC	epsF		
326	10	2.77	2.60	23.	0.	0.02	0.06	2.58	2.55	31.	1.	0.03	0.09		
327	10	2.77	2.60	60.	1.	0.07	0.15	2.58	2.55	55.	1.	0.06	0.15		
331	10	2.77	2.60	22.	0.	0.02	0.06	2.58	2.55	32.	1.	0.03	0.09		
332	10	2.77	2.60	59.	1.	0.07	0.15	2.58	2.55	55.	1.	0.06	0.15		
336	10	2.77	2.60	26.	1.	0.03	0.07	2.58	2.55	7.	0.	0.00	0.02		
337	10	2.77	2.60	26.	0.	0.03	0.07	2.58	2.55	32.	1.	0.03	0.09		
338	10	2.77	2.60	26.	1.	0.03	0.07	2.58	2.55	31.	1.	0.03	0.09		
339	10	2.77	2.60	26.	0.	0.03	0.07	2.58	2.55	7.	0.	0.01	0.02		
340	10	2.77	2.60	57.	0.	0.07	0.14	2.58	2.55	20.	0.	0.02	0.05		
344	10	2.77	2.60	61.	0.	0.07	0.15	2.58	2.55	55.	1.	0.06	0.15		
348	10	2.77	2.60	60.	0.	0.07	0.15	2.58	2.55	55.	0.	0.06	0.15		
349	10	2.77	2.60	58.	0.	0.07	0.14	2.58	2.55	20.	0.	0.02	0.05		

SUPERIORE ORIZZONTALE								SUPERIORE VERTICALE							
GUSCI	spess	Af	Afc	Mom	Nor	epsC	epsF	Af	Afc	Mom	Nor	epsC	epsF		
326	10	2.60	2.77	48.	1.	0.07	0.16	2.55	2.58	88.	0.	0.11	0.24		
327	10	2.60	2.77	17.	1.	0.12	0.26	2.55	2.58	25.	0.	0.06	0.16		
331	10	2.60	2.77	49.	1.	0.07	0.17	2.55	2.58	68.	1.	0.10	0.23		
332	10	2.60	2.77	68.	0.	0.12	0.27	2.55	2.58	35.	1.	0.06	0.16		
336	10	2.60	2.77	0.	1.	0.00	0.01	2.55	2.58	119.	0.	0.15	0.32		
337	10	2.60	2.77	44.	1.	0.07	0.15	2.55	2.58	74.	0.	0.11	0.25		
338	10	2.60	2.77	43.	1.	0.06	0.15	2.55	2.58	73.	1.	0.11	0.25		
339	10	2.60	2.77	0.	1.	0.00	0.01	2.55	2.58	122.	0.	0.15	0.33		
340	10	2.60	2.77	0.	0.	0.00	0.00	2.55	2.58	15.	0.	0.02	0.04		
344	10	2.60	2.77	62.	0.	0.11	0.24	2.55	2.58	36.	1.	0.06	0.15		
348	10	2.60	2.77	62.	0.	0.09	0.19	2.55	2.58	36.	0.	0.06	0.15		
349	10	2.60	2.77	0.	0.	0.00	0.00	2.55	2.58	13.	0.	0.02	0.04		

***** TAGLIO PERPENDI COLARE

GUSCI	tx	ty	tt	GUSCI	tx	ty	tt	GUSCI	tx	ty	tt
326	0.1	0.3	0.2	327	0.3	0.1	0.2	331	0.1	0.3	0.2
332	0.2	0.0	0.2	336	0.0	0.4	0.4	337	0.1	0.3	0.2
338	0.1	0.3	0.2	339	0.0	0.4	0.4	340	0.0	0.1	0.1
344	0.2	0.0	0.2	348	0.2	0.1	0.2	349	0.0	0.1	0.1

MACROGUSCIO soletti na_l oculi

VERIFICHE A FESSURAZIONE (EFFETTO MEMBRANA + PIASTRA)

unità di misura:

lunghezze : [cm] - forze : [daN]
 momenti : [daNcm/cm] - tensioni : [daN/cm2]
 pesi specifici : [daN/cm3] - angoli : [gradi]
 armature : [cm2]

CASI DI CARICO:

Nome Descrizione
 7 Rara (RARA)
 8 Frequente (FREQUENTE)
 9 Quasi Perm (QUASI PERMANENTE)

DATI:

copri ferro inferiore (asse armatura): 2 cm
 copri ferro superiore (asse armatura): 2 cm

Af = area effettiva disposta nello strato indicato (cm2 al metro)
 wkR = apertura caratteristica per combinazioni rara (mm) - apertura max = 0.6 mm
 wkF = " " " " frequente (mm) - " " " " = 0.4 mm
 wkP = " " " " quasi permanente (mm) - " " " " = 0.3 mm

ARMATURA INFERIORE ORIZZONTALE

COMBINAZIONE RARA								COMBINAZIONE FREQUENTE					COMBINAZIONE QUASI PERMANENTE				
GUSCI	Af	Afc	Mom	Nor	σc	σf	WkR	Mom	Nor	σc	σf	WkF	Mom	Nor	σc	σf	WkP
326	2.77	2.60	11	1	1.31	64.	0.004	8	1	0.98	50.	0.003	7	0.	0.85	44.	0.003
327	2.77	2.60	18	0.	2.20	96.	0.005	13	0.	1.65	72.	0.004	12	0.	1.43	63.	0.003
331	2.77	2.60	10	1	1.19	60.	0.004	7	1	0.89	47.	0.003	6	1	0.77	42.	0.003
332	2.77	2.60	17	0.	2.06	91.	0.005	12	0.	1.54	69.	0.004	11	0.	1.33	60.	0.003
336	2.77	2.60	12	1	1.44	72.	0.004	9	1	1.08	56.	0.003	8	1	0.93	49.	0.003
337	2.77	2.60	12	1	1.43	69.	0.004	9	1	1.07	53.	0.003	8	0.	0.93	47.	0.003
338	2.77	2.60	12	1	1.45	73.	0.004	9	1	1.08	57.	0.004	8	1	0.93	50.	0.003
339	2.77	2.60	11	1	1.40	67.	0.004	8	0.	1.05	51.	0.003	7	0.	0.91	45.	0.003
340	2.77	2.60	35	0.	4.37	179.	0.008	26	0.	3.28	135.	0.006	23	0.	2.84	117.	0.005
344	2.77	2.60	21	0.	2.55	103.	0.005	15	0.	1.91	77.	0.003	13	0.	1.66	67.	0.003
348	2.77	2.60	20	0.	2.50	101.	0.004	15	0.	1.87	76.	0.003	13	0.	1.63	66.	0.003
349	2.77	2.60	36	0.	4.46	179.	0.008	27	0.	3.34	135.	0.006	23	0.	2.90	117.	0.005

ARMATURA INFERIORE VERTICALE

COMBINAZIONE RARA								COMBINAZIONE FREQUENTE					COMBINAZIONE QUASI PERMANENTE				
GUSCI	Af	Afc	Mom	Nor	σc	σf	WkR	Mom	Nor	σc	σf	WkF	Mom	Nor	σc	σf	WkP
326	2.58	2.55	0.	1	0.00	10.	0.001	0.	0.	0.00	9.	0.001	0.	0.	0.00	9.	0.001
327	2.58	2.55	20	1	2.60	124.	0.007	15	1	1.95	95.	0.006	13	1	1.69	83.	0.005
331	2.58	2.55	0.	1	0.00	11.	0.001	0.	1	0.00	10.	0.001	0.	0.	0.00	9.	0.001

332	2.58	2.55	21	1	2.64	127.	0.008	15	1	1.98	97.	0.006	13	1	1.71	85.	0.005
336	2.58	2.55	0.	0.	0.00	5.	0.001	0.	0.	0.00	5.	0.000	0.	0.	0.00	5.	0.000
337	2.58	2.55	0.	0.	0.00	7.	0.001	0.	0.	0.00	7.	0.001	0.	0.	0.00	6.	0.001
338	2.58	2.55	0.	1	0.00	10.	0.001	0.	0.	0.00	9.	0.001	0.	0.	0.00	8.	0.001
339	2.58	2.55	0.	0.	0.00	3.	0.000	0.	0.	0.00	3.	0.000	0.	0.	0.00	3.	0.000
340	2.58	2.55	4	0.	0.45	22.	0.001	3	0.	0.34	17.	0.001	2	0.	0.30	15.	0.001
344	2.58	2.55	18	0.	2.36	107.	0.006	14	0.	1.77	81.	0.005	12	0.	1.54	71.	0.004
348	2.58	2.55	3	0.	0.32	22.	0.002	2	0.	0.24	18.	0.001	2	0.	0.21	16.	0.001
349	2.58	2.55	3	0.	0.41	17.	0.001	2	0.	0.31	13.	0.001	2	0.	0.27	11.	0.001

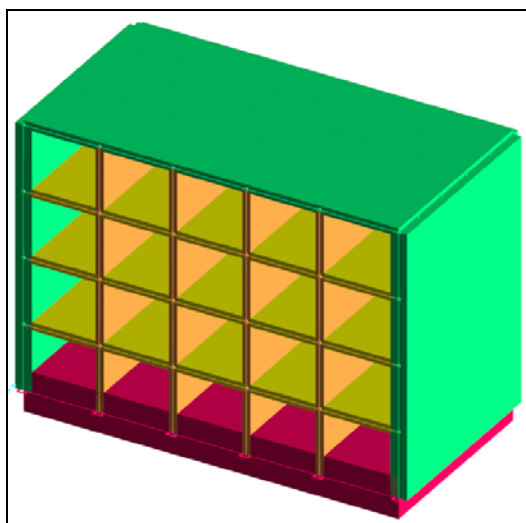
ARMATURA SUPERIORE ORIZZONTALE

GUSCI	Af	Afc	COMBINAZIONE RARA					COMBINAZIONE FREQUENTE					COMBINAZIONE QUASI PERMANENTE				
			Mom	Nor	σ_c	σ_f	WkR	Mom	Nor	σ_c	σ_f	WkF	Mom	Nor	σ_c	σ_f	WkP
326	2.60	2.77	38	1	4.82	211.	0.011	28	1	3.61	161.	0.009	25	0.	3.13	140.	0.008
327	2.60	2.77	52	0.	6.60	282.	0.014	39	0.	4.96	212.	0.011	34	0.	4.30	185.	0.009
331	2.60	2.77	39	1	5.01	221.	0.012	30	1	3.76	168.	0.009	26	1	3.26	146.	0.008
332	2.60	2.77	53	0.	6.81	291.	0.015	40	0.	5.11	220.	0.011	35	0.	4.43	191.	0.010
336	2.60	2.77	0.	1	0.00	13.	0.001	0.	1	0.00	12.	0.001	0.	1	0.00	11.	0.001
337	2.60	2.77	35	1	4.52	199.	0.011	27	1	3.38	151.	0.008	23	0.	2.93	132.	0.007
338	2.60	2.77	35	1	4.43	199.	0.011	26	1	3.32	151.	0.008	23	1	2.87	132.	0.007
339	2.60	2.77	0.	1	0.00	10.	0.001	0.	0.	0.00	9.	0.001	0.	0.	0.00	9.	0.001
340	2.60	2.77	0.	0.	0.00	3.	0.000	0.	0.	0.00	3.	0.000	0.	0.	0.00	3.	0.000
344	2.60	2.77	48	0.	6.10	254.	0.012	36	0.	4.57	191.	0.009	31	0.	3.96	165.	0.008
348	2.60	2.77	48	0.	6.10	255.	0.012	36	0.	4.58	191.	0.009	31	0.	3.96	165.	0.008
349	2.60	2.77	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000

ARMATURA SUPERIORE VERTICALE

GUSCI	Af	Afc	COMBINAZIONE RARA					COMBINAZIONE FREQUENTE					COMBINAZIONE QUASI PERMANENTE				
			Mom	Nor	σ_c	σ_f	WkR	Mom	Nor	σ_c	σ_f	WkF	Mom	Nor	σ_c	σ_f	WkP
326	2.55	2.58	42	1	5.44	240.	0.013	32	0.	4.08	181.	0.010	28	0.	3.54	158.	0.009
327	2.55	2.58	18	1	2.35	115.	0.007	14	1	1.76	88.	0.006	12	1	1.53	77.	0.005
331	2.55	2.58	42	1	5.40	238.	0.013	31	1	4.05	181.	0.010	27	0.	3.51	158.	0.009
332	2.55	2.58	18	1	2.32	114.	0.007	14	1	1.74	88.	0.006	12	1	1.50	77.	0.005
336	2.55	2.58	47	0.	6.02	259.	0.013	35	0.	4.51	195.	0.010	30	0.	3.91	169.	0.009
337	2.55	2.58	30	0.	3.83	169.	0.009	22	0.	2.87	128.	0.007	19	0.	2.49	111.	0.006
338	2.55	2.58	42	1	5.46	240.	0.013	32	0.	4.10	181.	0.010	28	0.	3.55	158.	0.008
339	2.55	2.58	47	0.	6.09	259.	0.013	36	0.	4.57	195.	0.010	31	0.	3.96	169.	0.008
340	2.55	2.58	0.	0.	0.00	3.	0.000	0.	0.	0.00	2.	0.000	0.	0.	0.00	2.	0.000
344	2.55	2.58	16	0.	2.06	95.	0.005	12	0.	1.54	72.	0.004	10	0.	1.34	63.	0.004
348	2.55	2.58	3	0.	0.41	26.	0.002	2	0.	0.30	20.	0.002	2	0.	0.26	18.	0.001
349	2.55	2.58	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000

BLOCCO D - 20x4 = 80 LOCULI DA REALIZZARSI NEL VIII AMPLIAMENTO



DATI STRUTTURA:

*** DATI STRUTTURA

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

PROPRIETA` GUSCI					num. =
Nome	Materiale	Sp. membr.	Sp. piastra	Kw	
1	1	20.00	20.00	0.000000	3
2	1	10.00	10.00	0.000000	
3	1	50.00	50.00	1.500000	

MATERIALI	num. =
1	

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

VINCOLI	-----	-----	-----	-----	-----	num. = 36
Nodo	Ri gi d. X	Ri gi d. Y	Ri gi d. Z	Ri gi d. RX	Ri gi d. RY	Ri gi d. RZ
13	bl occato	bl occato	li bero	li bero	li bero	li bero
14	bl occato	bl occato	li bero	li bero	li bero	li bero
25	bl occato	bl occato	li bero	li bero	li bero	li bero
27	bl occato	bl occato	li bero	li bero	li bero	li bero
29	bl occato	bl occato	li bero	li bero	li bero	li bero
55	bl occato	bl occato	li bero	li bero	li bero	li bero
56	bl occato	bl occato	li bero	li bero	li bero	li bero
57	bl occato	bl occato	li bero	li bero	li bero	li bero
58	bl occato	bl occato	li bero	li bero	li bero	li bero
68	bl occato	bl occato	li bero	li bero	li bero	li bero
69	bl occato	bl occato	li bero	li bero	li bero	li bero
72	bl occato	bl occato	li bero	li bero	li bero	li bero
73	bl occato	bl occato	li bero	li bero	li bero	li bero
74	bl occato	bl occato	li bero	li bero	li bero	li bero
75	bl occato	bl occato	li bero	li bero	li bero	li bero
60	bl occato	bl occato	li bero	li bero	li bero	li bero
61	bl occato	bl occato	li bero	li bero	li bero	li bero
67	bl occato	bl occato	li bero	li bero	li bero	li bero
70	bl occato	bl occato	li bero	li bero	li bero	li bero
76	bl occato	bl occato	li bero	li bero	li bero	li bero
53	bl occato	bl occato	li bero	li bero	li bero	li bero
54	bl occato	bl occato	li bero	li bero	li bero	li bero
63	bl occato	bl occato	li bero	li bero	li bero	li bero
64	bl occato	bl occato	li bero	li bero	li bero	li bero
65	bl occato	bl occato	li bero	li bero	li bero	li bero
59	bl occato	bl occato	li bero	li bero	li bero	li bero
62	bl occato	bl occato	li bero	li bero	li bero	li bero
66	bl occato	bl occato	li bero	li bero	li bero	li bero
71	bl occato	bl occato	li bero	li bero	li bero	li bero
77	bl occato	bl occato	li bero	li bero	li bero	li bero
1	bl occato	bl occato	li bero	li bero	li bero	li bero
44	bl occato	bl occato	li bero	li bero	li bero	li bero
46	bl occato	bl occato	li bero	li bero	li bero	li bero
48	bl occato	bl occato	li bero	li bero	li bero	li bero
50	bl occato	bl occato	li bero	li bero	li bero	li bero
51	bl occato	bl occato	li bero	li bero	li bero	li bero

CARI CHI	NODI	-----	-----	-----	-----	num. = 576
Nome		Nodo	Di rezi one	Intensi ta`		
1 -	288 : Forze Si smi che		(Anal isi	Sempl i fi cata)		
289 -	576 : Momenti Torcenti		Addi zi onali			

CARI CHI	DI	LI NEA	-----	-----	-----	-----	num. = 0
Nome	numero	coordi nata					
	ini zio	fi ne	Cond. Di rez.	ini zio	fi ne	Descr i zi one	

CARI CHI	GUSCI	-----	-----	-----	-----	num. = 415
Nome		Guscio	Dir	Tip	Ri F	Intensi ta`
577 varl ocul i	296	Z	FD	glo	-0.02500	
578 varl ocul i	297	Z	FD	glo	-0.02500	
579 varl ocul i	298	Z	FD	glo	-0.02500	
580 varl ocul i	299	Z	FD	glo	-0.02500	
581 varl ocul i	300	Z	FD	glo	-0.02500	
582 varl ocul i	301	Z	FD	glo	-0.02500	
583 varl ocul i	302	Z	FD	glo	-0.02500	
584 varl ocul i	303	Z	FD	glo	-0.02500	
585 varl ocul i	304	Z	FD	glo	-0.02500	
586 varl ocul i	305	Z	FD	glo	-0.02500	
587 varl ocul i	306	Z	FD	glo	-0.02500	
588 varl ocul i	307	Z	FD	glo	-0.02500	
589 varl ocul i	308	Z	FD	glo	-0.02500	
590 varl ocul i	310	Z	FD	glo	-0.02500	
591 varl ocul i	311	Z	FD	glo	-0.02500	
592 varl ocul i	312	Z	FD	glo	-0.02500	
593 varl ocul i	313	Z	FD	glo	-0.02500	
594 varl ocul i	314	Z	FD	glo	-0.02500	
595 varl ocul i	315	Z	FD	glo	-0.02500	
596 varl ocul i	316	Z	FD	glo	-0.02500	
597 varl ocul i	317	Z	FD	glo	-0.02500	
598 varl ocul i	318	Z	FD	glo	-0.02500	
599 varl ocul i	320	Z	FD	glo	-0.02500	
600 varl ocul i	322	Z	FD	glo	-0.02500	
601 varl ocul i	324	Z	FD	glo	-0.02500	
602 varl ocul i	326	Z	FD	glo	-0.02500	
603 varl ocul i	327	Z	FD	glo	-0.02500	
604 varl ocul i	328	Z	FD	glo	-0.02500	
605 varl ocul i	329	Z	FD	glo	-0.02500	
606 varl ocul i	330	Z	FD	glo	-0.02500	
607 varl ocul i	331	Z	FD	glo	-0.02500	
608 varl ocul i	332	Z	FD	glo	-0.02500	
609 varl ocul i	333	Z	FD	glo	-0.02500	
610 varl ocul i	334	Z	FD	glo	-0.02500	
611 varl ocul i	335	Z	FD	glo	-0.02500	
612 varl ocul i	336	Z	FD	glo	-0.02500	
613 varl ocul i	337	Z	FD	glo	-0.02500	
614 varl ocul i	338	Z	FD	glo	-0.02500	
615 varl ocul i	340	Z	FD	glo	-0.02500	
616 varl ocul i	341	Z	FD	glo	-0.02500	
617 varl ocul i	342	Z	FD	glo	-0.02500	
618 varl ocul i	343	Z	FD	glo	-0.02500	
619 varl ocul i	344	Z	FD	glo	-0.02500	
620 varl ocul i	345	Z	FD	glo	-0.02500	
621 varl ocul i	346	Z	FD	glo	-0.02500	
622 varl ocul i	347	Z	FD	glo	-0.02500	
623 varl ocul i	348	Z	FD	glo	-0.02500	
624 varl ocul i	350	Z	FD	glo	-0.02500	
625 varl ocul i	352	Z	FD	glo	-0.02500	

626	varl ocul i	354	Z	FD gl o	-0. 02500
627	varl ocul i	356	Z	FD gl o	-0. 02500
628	varl ocul i	357	Z	FD gl o	-0. 02500
629	varl ocul i	358	Z	FD gl o	-0. 02500
630	varl ocul i	359	Z	FD gl o	-0. 02500
631	varl ocul i	360	Z	FD gl o	-0. 02500
632	varl ocul i	361	Z	FD gl o	-0. 02500
633	varl ocul i	362	Z	FD gl o	-0. 02500
634	varl ocul i	363	Z	FD gl o	-0. 02500
635	varl ocul i	364	Z	FD gl o	-0. 02500
636	varl ocul i	365	Z	FD gl o	-0. 02500
637	varl ocul i	366	Z	FD gl o	-0. 02500
638	varl ocul i	367	Z	FD gl o	-0. 02500
639	varl ocul i	368	Z	FD gl o	-0. 02500
640	varl ocul i	370	Z	FD gl o	-0. 02500
641	varl ocul i	371	Z	FD gl o	-0. 02500
642	varl ocul i	372	Z	FD gl o	-0. 02500
643	varl ocul i	373	Z	FD gl o	-0. 02500
644	varl ocul i	374	Z	FD gl o	-0. 02500
645	varl ocul i	375	Z	FD gl o	-0. 02500
646	varl ocul i	376	Z	FD gl o	-0. 02500
647	varl ocul i	377	Z	FD gl o	-0. 02500
648	varl ocul i	378	Z	FD gl o	-0. 02500
649	varl ocul i	380	Z	FD gl o	-0. 02500
650	varl ocul i	382	Z	FD gl o	-0. 02500
651	varl ocul i	384	Z	FD gl o	-0. 02500
652	varl ocul i	36	Z	FD gl o	-0. 02500
653	varl ocul i	37	Z	FD gl o	-0. 02500
654	varl ocul i	38	Z	FD gl o	-0. 02500
655	varl ocul i	40	Z	FD gl o	-0. 02500
656	varl ocul i	39	Z	FD gl o	-0. 02500
657	varl ocul i	41	Z	FD gl o	-0. 02500
658	varl ocul i	46	Z	FD gl o	-0. 02500
659	varl ocul i	47	Z	FD gl o	-0. 02500
660	varl ocul i	49	Z	FD gl o	-0. 02500
661	varl ocul i	48	Z	FD gl o	-0. 02500
662	varl ocul i	56	Z	FD gl o	-0. 02500
663	varl ocul i	58	Z	FD gl o	-0. 02500
664	varl ocul i	53	Z	FD gl o	-0. 02500
665	varl ocul i	50	Z	FD gl o	-0. 02500
666	varl ocul i	42	Z	FD gl o	-0. 02500
667	varl ocul i	43	Z	FD gl o	-0. 02500
668	varl ocul i	51	Z	FD gl o	-0. 02500
669	varl ocul i	54	Z	FD gl o	-0. 02500
670	varl ocul i	59	Z	FD gl o	-0. 02500
671	varl ocul i	57	Z	FD gl o	-0. 02500
672	varl ocul i	32	Z	FD gl o	-0. 02500
673	varl ocul i	31	Z	FD gl o	-0. 02500
674	varl ocul i	33	Z	FD gl o	-0. 02500
675	varl ocul i	35	Z	FD gl o	-0. 02500
676	varl ocul i	34	Z	FD gl o	-0. 02500
677	MANUTENZI ONE	266	Z	FD gl o	-0. 01000
678	MANUTENZI ONE	267	Z	FD gl o	-0. 01000
679	MANUTENZI ONE	268	Z	FD gl o	-0. 01000
680	MANUTENZI ONE	269	Z	FD gl o	-0. 01000
681	MANUTENZI ONE	270	Z	FD gl o	-0. 01000
682	MANUTENZI ONE	271	Z	FD gl o	-0. 01000
683	MANUTENZI ONE	272	Z	FD gl o	-0. 01000
684	MANUTENZI ONE	273	Z	FD gl o	-0. 01000
685	MANUTENZI ONE	274	Z	FD gl o	-0. 01000
686	MANUTENZI ONE	275	Z	FD gl o	-0. 01000
687	MANUTENZI ONE	276	Z	FD gl o	-0. 01000
688	MANUTENZI ONE	277	Z	FD gl o	-0. 01000
689	MANUTENZI ONE	278	Z	FD gl o	-0. 01000
690	MANUTENZI ONE	280	Z	FD gl o	-0. 01000
691	MANUTENZI ONE	281	Z	FD gl o	-0. 01000
692	MANUTENZI ONE	282	Z	FD gl o	-0. 01000
693	MANUTENZI ONE	283	Z	FD gl o	-0. 01000
694	MANUTENZI ONE	284	Z	FD gl o	-0. 01000
695	MANUTENZI ONE	285	Z	FD gl o	-0. 01000
696	MANUTENZI ONE	286	Z	FD gl o	-0. 01000
697	MANUTENZI ONE	287	Z	FD gl o	-0. 01000
698	MANUTENZI ONE	288	Z	FD gl o	-0. 01000
699	MANUTENZI ONE	290	Z	FD gl o	-0. 01000
700	MANUTENZI ONE	292	Z	FD gl o	-0. 01000
701	MANUTENZI ONE	294	Z	FD gl o	-0. 01000
702	NEVE	266	Z	FD gl o	-0. 01250
703	NEVE	267	Z	FD gl o	-0. 01250
704	NEVE	268	Z	FD gl o	-0. 01250
705	NEVE	269	Z	FD gl o	-0. 01250
706	NEVE	270	Z	FD gl o	-0. 01250
707	NEVE	271	Z	FD gl o	-0. 01250
708	NEVE	272	Z	FD gl o	-0. 01250
709	NEVE	273	Z	FD gl o	-0. 01250
710	NEVE	274	Z	FD gl o	-0. 01250
711	NEVE	275	Z	FD gl o	-0. 01250
712	NEVE	276	Z	FD gl o	-0. 01250
713	NEVE	277	Z	FD gl o	-0. 01250
714	NEVE	278	Z	FD gl o	-0. 01250
715	NEVE	280	Z	FD gl o	-0. 01250
716	NEVE	281	Z	FD gl o	-0. 01250
717	NEVE	282	Z	FD gl o	-0. 01250
718	NEVE	283	Z	FD gl o	-0. 01250
719	NEVE	284	Z	FD gl o	-0. 01250
720	NEVE	285	Z	FD gl o	-0. 01250
721	NEVE	286	Z	FD gl o	-0. 01250
722	NEVE	287	Z	FD gl o	-0. 01250
723	NEVE	288	Z	FD gl o	-0. 01250
724	NEVE	290	Z	FD gl o	-0. 01250
725	NEVE	292	Z	FD gl o	-0. 01250
726	NEVE	294	Z	FD gl o	-0. 01250

PESI PROPRI GUSCI - |-----|-----|-----|-----|-----|
 Cond. Nome Carichi Gusci
 1 727-991 1-4, 6-9, 11-13, 15-17, 19-21, 23-25, 31-43, 46-51, 53-54, 56-59, 61-68, 70-72, 74-76, 78-80, 82-84, 86-93, 95-97, 99-101, 103-105, 107-109, 141-144, 150-169, 171-174, 176-179, 182-189, 191-194, 200-219, 225-240, 266-278, 280-288, 290, 292, 294, 296-308, 310-318, 320, 322, 324, 326-338, 340-348, 350, 352, 354, 356-368, 370-378, 380, 382, 384

CONDIZIONI DI CARICO-----|-----|-----|-----|num. = 8

Nome
 1 Peso proprio_____ N. carichi : 265
 Lista carichi : 727-991
 2 Permanente_____ N. carichi : 0
 Lista carichi :
 3 A: Var_abitazione_____ N. carichi : 125
 Lista carichi : 577-701
 4 Neve_(<1000m_slm)_____ N. carichi : 25
 Lista carichi : 702-726
 5 Si sma_X N. carichi : 144
 Lista carichi : 1-144
 6 Si sma_Y N. carichi : 144
 Lista carichi : 145-288
 7 Torcente_add._X N. carichi : 144
 Lista carichi : 289-432
 8 Torcente_add._Y N. carichi : 144
 Lista carichi : 433-576

RISULTANTI DEI CARICHI (punto di applicazione nell'origine degli assi):

cond.	FX	FY	FZ	MX	MY	MZ
1	0.000000E+00	0.000000E+00	-4.645365E+04	-7.709290E+07	1.155733E+08	0.000000E+00
2	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
3	0.000000E+00	0.000000E+00	-1.175828E+04	-1.929719E+07	2.925705E+07	0.000000E+00
4	0.000000E+00	0.000000E+00	-1.336168E+03	-2.192862E+06	3.324664E+06	0.000000E+00
5	2.311219E+03	0.000000E+00	0.000000E+00	0.000000E+00	5.234273E+05	-3.843999E+06
6	0.000000E+00	2.311219E+03	0.000000E+00	-5.234273E+05	0.000000E+00	5.750015E+06
7	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	-2.745046E+04
8	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	5.200243E+04

DATI ANALISI SISMICA:

 Analisi sismica - Statica lineare - (NTC 2008)

Coeff. Iambda = 1.0000
 Sd = 0.070

Numero condizioni generanti carichi sismici : 3

Cond. 001 : Peso proprio_____ con coeff. 1.000
 Cond. 002 : Permanente_____ con coeff. 1.000
 Cond. 003 : A: Var_abitazione_____ con coeff. 0.300

Condizioni di carico sismico generate:

Cond. 005 : Si sma X
 Cond. 006 : Si sma Y
 Cond. 007 : Torcente add. X
 Cond. 008 : Torcente add. Y

Carichi sismici :

Piani cm	Pesi daN	C. distr.	Forze di piano daN	Torc. di piano X daNcm	Torc. di piano Y daNcm	Bari c. X cm	Bari c. Y cm
80.0	9075	0.0298	270	3209	6080	2487.8	1664.7
160.0	9075	0.0596	540	6418	12159	2487.8	1664.7
240.0	9075	0.0893	811	9628	18239	2487.8	1664.7
320.0	5793	0.1191	690	8195	15525	2487.9	1659.6

DESCRIZIONE CASI DI CARICO:

NOME	DESCRIZIONE	VERIFICA	TIPO	CONDIZ. INSERITE			CASI INSERITI	
				Num.	Coeff.	Segno	Num.	Coeff.
1	SLU SENZA SISMA	S. L. U.	somma	1	1.300	+		
				2	1.500	+		
				3	1.500	+		
				4	1.500	+		
2	SISMAX SLU	nessuna	somma	5	1.000	±		
				7	1.000	±		

3	SIMAY SLU	nessuna	somma	6 8	1.000 1.000	± ±		
4	SLU con SIMAX	S. L. U.	somma	1 2 3	1.000 1.000 0.300	+ + +	2	1.000
5	SLU con SIMAY	S. L. U.	somma	1 2 3	1.000 1.000 0.300	+ + +	3	1.000
6	SLUGeo	SLU_GEO	somma	1 2 3 4	1.000 1.300 1.300 1.300	+ + + +		
7	Rara	Rara	somma	1 2 3 4	1.000 1.000 1.000 1.000	+ + + +		
8	Frequente	Freq.	somma	1 2 3 4	1.000 1.000 0.500 0.200	+ + + +		
9	Quasi Perm	Quasi Perm.	somma	1 2 3	1.000 1.000 0.300	+ + +		

VERIFICA GUSCI IN C.A.:

MACROGUSCIO muro_di_fondo

VERIFICA ARMATURE EFFETTIVE (EFFETTO MEMBRANA + PIASTRA)

unità di misura:

lunghezze : [cm] - forze : [daN]
 momenti : [daNcm/cm] - tensioni : [daN/cm2]
 pesi specifici : [daN/cm3] - angoli : [gradi]
 armature : [cm2]

CASI DI CARICO:

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

DATI:

tensione di snervamento acciaio (fyk): 4500 daN/cm2
 coefficiente sicurezza acciaio : 1.15
 deformazione ultima acciaio : 67.5 per mille
 deformazione ultima cls : 3.5 per mille
 rapporto rottura/snervamento (k): 1.15
 resistenza cilindrica cls (fck): 249 daN/cm2
 coefficiente sicurezza cls : 1.5
 coefficiente riduttivo (alfa): 0.85
 copri ferro inferiore (asse armatura): 2 cm
 copri ferro superiore (asse armatura): 2 cm
 moltiplicatore sollecitazioni : 1

		INFERIORE ORIZZONTALE						INFERIORE VERTICALE					
GUSCI	spess	Af	Afc	Mom	Nor	epsC	epsF	Af	Afc	Mom	Nor	epsC	epsF
1	20	4.16	4.13	12.	9.	0.00	0.06	3.94	4.02	0.	-6.	0.00	0.03
2	20	4.16	4.13	12.	7.	0.00	0.05	3.94	4.02	3.	-5.	0.00	0.01
3	20	4.16	4.13	11.	5.	0.00	0.03	3.94	4.02	0.	-3.	0.00	0.00
4	20	4.16	4.13	11.	4.	0.00	0.03	3.94	4.02	8.	1.	0.00	0.01
6	20	4.16	4.13	12.	9.	0.00	0.06	3.94	4.02	0.	-5.	0.00	0.03
7	20	4.16	4.13	12.	8.	0.00	0.05	3.94	4.02	2.	-4.	0.00	0.01
8	20	4.16	4.13	11.	5.	0.00	0.04	3.94	4.02	0.	-3.	0.00	0.00
9	20	4.16	4.13	12.	4.	0.00	0.03	3.94	4.02	8.	1.	0.00	0.01
11	20	4.16	4.13	9.	3.	0.00	0.02	3.94	4.02	0.	-13.	0.01	-0.01
12	20	4.16	4.13	0.	-1.	0.00	0.00	3.94	4.02	0.	-15.	0.01	-0.01
13	20	4.16	4.13	9.	2.	0.00	0.02	3.94	4.02	0.	-13.	0.01	-0.01
15	20	4.16	4.13	13.	5.	0.00	0.04	3.94	4.02	3.	-10.	0.01	0.00
16	20	4.16	4.13	13.	5.	0.00	0.04	3.94	4.02	0.	-6.	0.00	0.00
17	20	4.16	4.13	13.	5.	0.00	0.04	3.94	4.02	1.	-1.	0.00	0.00
19	20	4.16	4.13	5.	0.	0.00	0.00	3.94	4.02	4.	-13.	0.01	-0.01
20	20	4.16	4.13	7.	0.	0.00	0.01	3.94	4.02	2.	-9.	0.01	0.00
21	20	4.16	4.13	7.	1.	0.00	0.01	3.94	4.02	2.	-3.	0.00	0.00
23	20	4.16	4.13	12.	5.	0.00	0.04	3.94	4.02	2.	-10.	0.01	0.00
24	20	4.16	4.13	12.	5.	0.00	0.04	3.94	4.02	1.	-6.	0.00	0.00
25	20	4.16	4.13	12.	5.	0.00	0.04	3.94	4.02	1.	-2.	0.00	0.00

		SUPERIORE ORIZZONTALE						SUPERIORE VERTICALE					
GUSCI	spess	Af	Afc	Mom	Nor	epsC	epsF	Af	Afc	Mom	Nor	epsC	epsF
1	20	4.13	4.16	10.	8.	0.00	0.06	4.02	3.94	23.	4.	0.01	0.04
2	20	4.13	4.16	13.	7.	0.00	0.05	4.02	3.94	11.	1.	0.00	0.01
3	20	4.13	4.16	10.	5.	0.00	0.04	4.02	3.94	2.	-1.	0.00	0.00
4	20	4.13	4.16	8.	4.	0.00	0.03	4.02	3.94	8.	1.	0.00	0.01
6	20	4.13	4.16	16.	7.	0.00	0.06	4.02	3.94	23.	-5.	0.01	0.04
7	20	4.13	4.16	12.	6.	0.00	0.05	4.02	3.94	1.	-4.	0.00	0.01
8	20	4.13	4.16	10.	4.	0.00	0.04	4.02	3.94	3.	-3.	0.00	0.00
9	20	4.13	4.16	10.	4.	0.00	0.03	4.02	3.94	3.	1.	0.00	0.01
11	20	4.13	4.16	8.	2.	0.00	0.03	4.02	3.94	32.	-13.	0.02	0.02
12	20	4.13	4.16	5.	-1.	0.00	0.00	4.02	3.94	35.	-14.	0.02	0.03
13	20	4.13	4.16	6.	1.	0.00	0.02	4.02	3.94	28.	-10.	0.02	0.02
15	20	4.13	4.16	12.	5.	0.00	0.04	4.02	3.94	0.	-10.	0.01	-0.01
16	20	4.13	4.16	14.	5.	0.00	0.04	4.02	3.94	2.	-6.	0.00	0.00
17	20	4.13	4.16	13.	5.	0.00	0.04	4.02	3.94	1.	-1.	0.00	0.00
19	20	4.13	4.16	2.	0.	0.00	0.00	4.02	3.94	0.	-12.	0.01	-0.01
20	20	4.13	4.16	2.	0.	0.00	0.01	4.02	3.94	2.	-7.	0.01	0.00
21	20	4.13	4.16	8.	1.	0.00	0.01	4.02	3.94	1.	-3.	0.00	0.00
23	20	4.13	4.16	14.	4.	0.00	0.04	4.02	3.94	1.	-7.	0.01	-0.01
24	20	4.13	4.16	14.	5.	0.00	0.04	4.02	3.94	2.	-4.	0.00	0.00
25	20	4.13	4.16	14.	5.	0.00	0.04	4.02	3.94	1.	-1.	0.00	0.00

***** TAGLIO PERPENDICOLARE

GUSCI	tx	ty	tt	GUSCI	tx	ty	tt	GUSCI	tx	ty	tt
1	0.0	0.1	0.0	2	0.0	0.0	0.0	3	0.0	0.0	0.0
4	0.0	0.0	0.0	6	0.0	0.1	0.0	7	0.0	0.0	0.0
8	0.0	0.0	0.0	9	0.0	0.0	0.0	11	0.0	0.1	0.1
12	0.0	0.1	0.1	13	0.0	0.1	0.1	15	0.0	0.0	0.0
16	0.0	0.0	0.0	17	0.0	0.0	0.0	19	0.0	0.0	0.0
20	0.0	0.0	0.0	21	0.0	0.0	0.0	23	0.0	0.0	0.0
24	0.0	0.0	0.0	25	0.0	0.0	0.0				

MACROGUSCIO muro_di_fondo

VERIFICHE A FESSURAZIONE (EFFETTO MEMBRANA + PIASTRA)

unità di misura:

lunghezze : [cm] - forze : [daN]
 momenti : [daNcm/cm] - tensioni : [daN/cm2]
 pesi specifici : [daN/cm3] - angoli : [gradi]
 armature : [cm2]

CASI DI CARICO:

Nome	Descrizione
7	Rara (RARA)
8	Frequente (FREQUENTE)
9	Quasi Perm (QUASI PERMANENTE)

DATI:

copri ferro inferiore (asse armatura): 2 cm
 copri ferro superiore (asse armatura): 2 cm

Af = area effettiva disposta nello strato indicato (cm² al metro)
 wkR = apertura caratteristica per combinazione rara (mm) - apertura max = 0.6 mm
 wkF = frequente (mm) - = 0.4 mm
 wkP = quasi permanente (mm) - = 0.3 mm

ARMATURA INFERIORE ORIZZONTALE

GUSCI			COMBINAZIONE RARA					COMBINAZIONE FREQUENTE					COMBINAZIONE QUASI PERMANENTE				
	Af	Afc	Mom	Nor	σ_c	σ_f	WkR	Mom	Nor	σ_c	σ_f	WkF	Mom	Nor	σ_c	σ_f	WkP
1	4.16	4.13	0.	4	0.00	45.	0.005	0.	4	0.00	49.	0.006	0.	4	0.00	51.	0.006
2	4.16	4.13	0.	2	0.00	25.	0.003	0.	2	0.00	30.	0.004	0.	3	0.00	32.	0.004
3	4.16	4.13	0.	2	0.00	18.	0.002	0.	2	0.00	24.	0.003	0.	2	0.00	27.	0.003
4	4.16	4.13	0.	2	0.00	23.	0.003	0.	3	0.00	32.	0.004	0.	3	0.00	37.	0.004
6	4.16	4.13	0.	4	0.00	50.	0.006	0.	4	0.00	54.	0.006	0.	5	0.00	55.	0.007
7	4.16	4.13	0.	2	0.00	29.	0.003	0.	3	0.00	33.	0.004	0.	3	0.00	35.	0.004
8	4.16	4.13	0.	2	0.00	20.	0.002	0.	2	0.00	26.	0.003	0.	2	0.00	28.	0.003
9	4.16	4.13	0.	2	0.00	24.	0.003	0.	3	0.00	34.	0.004	0.	3	0.00	38.	0.005
11	4.16	4.13	0.	-1	0.06	-1.	0.000	0.	-1	0.05	-1.	0.000	0.	-1	0.05	-1.	0.000
12	4.16	4.13	0.	-2	0.10	-2.	0.000	0.	-2	0.09	-1.	0.000	0.	-2	0.09	-1.	0.000
13	4.16	4.13	0.	-2	0.07	-1.	0.000	0.	-1	0.06	-1.	0.000	0.	-1	0.05	-1.	0.000
15	4.16	4.13	0.	0.	0.00	3.	0.000	0.	0.	0.00	5.	0.001	0.	0.	0.00	5.	0.001
16	4.16	4.13	0.	1	0.00	13.	0.001	0.	1	0.00	15.	0.002	0.	1	0.00	16.	0.002
17	4.16	4.13	0.	3	0.00	32.	0.004	0.	3	0.00	35.	0.004	0.	3	0.00	37.	0.004
19	4.16	4.13	0.	-1	0.05	-1.	0.000	0.	-1	0.04	-1.	0.000	0.	-1	0.04	-1.	0.000
20	4.16	4.13	0.	0.	0.01	0.	0.000	0.	0.	0.01	0.	0.000	0.	0.	0.01	0.	0.000
21	4.16	4.13	0.	1	0.00	12.	0.001	0.	1	0.00	13.	0.002	0.	1	0.00	14.	0.002
23	4.16	4.13	0.	0.	0.00	1.	0.000	0.	0.	0.00	3.	0.000	0.	0.	0.00	4.	0.000
24	4.16	4.13	0.	1	0.00	11.	0.001	0.	1	0.00	13.	0.001	0.	1	0.00	13.	0.002
25	4.16	4.13	0.	2	0.00	28.	0.003	0.	3	0.00	32.	0.004	0.	3	0.00	33.	0.004

ARMATURA INFERIORE VERTICALE

GUSCI			COMBI NAZI ONE RARA					COMBI NAZI ONE FREQUENTE					COMBI NAZI ONE QUASI PERMANENTE				
	Af	Afc	Mom	Nor	σ_c	σ_f	WkR	Mom	Nor	σ_c	σ_f	WkF	Mom	Nor	σ_c	σ_f	WkP
1	3.94	4.02	0.	-5	0.26	-4.	0.000	0.	-4	0.21	-3.	0.000	0.	-4	0.19	-3.	0.000
2	3.94	4.02	0.	-6	0.30	-4.	0.000	1	-5	0.25	-4.	0.000	1	-5	0.23	-3.	0.000
3	3.94	4.02	0.	-4	0.20	-3.	0.000	0.	-3	0.15	-2.	0.000	0.	-3	0.13	-2.	0.000
4	3.94	4.02	0.	-1	0.03	0.	0.000	0.	0.	0.00	1.	0.000	0.	0.	0.00	4.	0.000
6	3.94	4.02	0.	-5	0.25	-4.	0.000	0.	-4	0.20	-3.	0.000	0.	-4	0.19	-3.	0.000
7	3.94	4.02	1	-6	0.30	-4.	0.000	1	-5	0.25	-3.	0.000	1	-5	0.23	-3.	0.000
8	3.94	4.02	0.	-4	0.19	-3.	0.000	0.	-3	0.15	-2.	0.000	0.	-3	0.13	-2.	0.000
9	3.94	4.02	0.	-1	0.03	0.	0.000	0.	0.	0.00	1.	0.000	0.	0.	0.00	4.	0.000
11	3.94	4.02	0.	-17	0.81	-12.	0.000	0.	-15	0.72	-11.	0.000	0.	-15	0.69	-10.	0.000
12	3.94	4.02	0.	-21	1.00	-15.	0.000	0.	-19	0.91	-14.	0.000	0.	-18	0.87	-13.	0.000
13	3.94	4.02	0.	-18	0.83	-12.	0.000	0.	-16	0.74	-11.	0.000	0.	-15	0.70	-11.	0.000
15	3.94	4.02	1	-12	0.60	-9.	0.000	2	-11	0.53	-7.	0.000	2	-10	0.51	-7.	0.000
16	3.94	4.02	0.	-7	0.33	-5.	0.000	0.	-6	0.28	-4.	0.000	0.	-6	0.26	-4.	0.000
17	3.94	4.02	0.	-1	0.06	-1.	0.000	0.	-1	0.03	-1.	0.000	0.	-1	0.03	0.	0.000
19	3.94	4.02	2	-18	0.87	-12.	0.000	2	-16	0.79	-11.	0.000	2	-15	0.76	-11.	0.000
20	3.94	4.02	0.	-11	0.54	-8.	0.000	0.	-10	0.48	-7.	0.000	0.	-10	0.46	-7.	0.000
21	3.94	4.02	0.	-4	0.20	-3.	0.000	0.	-4	0.17	-3.	0.000	0.	-3	0.16	-2.	0.000
23	3.94	4.02	1	-13	0.61	-9.	0.000	1	-11	0.53	-8.	0.000	1	-10	0.51	-7.	0.000
24	3.94	4.02	0.	-7	0.34	-5.	0.000	0.	-6	0.29	-4.	0.000	0.	-6	0.27	-4.	0.000
25	3.94	4.02	0.	-1	0.06	-1.	0.000	0.	-1	0.04	-1.	0.000	0.	-1	0.03	0.	0.000

ARMATURA SUPERIORE ORIZZONTALE

GUSCI			COMBI NAZI ONE RARA					COMBI NAZI ONE FREQUENTE					COMBI NAZI ONE QUASI PERMANENTE				
	Af	Afc	Mom	Nor	σ_c	σ_f	WkR	Mom	Nor	σ_c	σ_f	WkF	Mom	Nor	σ_c	σ_f	WkP
1	4.13	4.16	6	4	0.00	54.	0.006	5	4	0.00	57.	0.006	5	4	0.00	58.	0.007
2	4.13	4.16	1	2	0.00	27.	0.003	1	2	0.00	31.	0.004	1	3	0.00	33.	0.004
3	4.13	4.16	1	2	0.00	20.	0.002	1	2	0.00	26.	0.003	1	2	0.00	28.	0.003
4	4.13	4.16	1	2	0.00	24.	0.003	1	3	0.00	34.	0.004	1	3	0.00	38.	0.004
6	4.13	4.16	5	4	0.00	58.	0.007	4	4	0.00	61.	0.007	4	5	0.00	62.	0.007
7	4.13	4.16	0.	2	0.00	29.	0.003	0.	3	0.00	33.	0.004	0.	3	0.00	35.	0.004
8	4.13	4.16	1	2	0.00	21.	0.002	0.	2	0.00	27.	0.003	0.	2	0.00	29.	0.003
9	4.13	4.16	0.	2	0.00	25.	0.003	0.	3	0.00	35.	0.004	0.	3	0.00	39.	0.005
11	4.13	4.16	6	-1	0.15	0.	0.000	6	-1	0.13	0.	0.000	5	-1	0.12	0.	0.000
12	4.13	4.16	6	-2	0.03	-2.	0.000	5	-2	0.03	-2.	0.000	5	-2	0.03	-2.	0.000
13	4.13	4.16	6	-2	0.01	-2.	0.000	6	-1	0.14	0.	0.000	5	-1	0.13	0.	0.000
15	4.13	4.16	1	0.	0.00	5.	0.000	1	0.	0.00	6.	0.001	1	0.	0.00	7.	0.001
16	4.13	4.16	1	1	0.00	14.	0.002	1	1	0.00	16.	0.002	1	1	0.00	17.	0.002
17	4.13	4.16	1	3	0.00	33.	0.004	1	3	0.00	37.	0.004	1	3	0.00	39.	0.005
19	4.13	4.16	0.	-1	0.04	-1.	0.000	0.	-1	0.04	-1.	0.000	0.	-1	0.04	-1.	0.000
20	4.13	4.16	1	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
21	4.13	4.16	1	1	0.00	13.	0.001	1	1	0.00	14.	0.002	1	1	0.00	15.	0.002
23	4.13	4.16	1	0.	0.03	3.	0.000	1	0.	0.00	5.	0.000	1	0.	0.00	5.	0.001
24	4.13	4.16	1	1	0.00	13.	0.001	1	1	0.00	14.	0.002	1	1	0.00	15.	0.002
25	4.13	4.16	1	2	0.00	31.	0.004	1	3	0.00	34.	0.004	1	3	0.00	36.	0.004

ARMATURA SUPERIORE VERTICALE

GUSCI			COMBI NAZI ONE RARA					COMBI NAZI ONE FREQUENTE					COMBI NAZI ONE QUASI PERMANENTE				
	Af	Afc	Mom	Nor	σ_c	σ_f	WkR	Mom	Nor	σ_c	σ_f	WkF	Mom	Nor	σ_c	σ_f	WkP
1	4.02	3.94	20	-5	0.02	-7.	0.000	18	-4	0.04	-6.	0.000	17	-4	0.42	0.	0.000
2	4.02	3.94	0.	-6	0.29	-5.	0.000	0.	-5	0.24	-4.	0.000	0.	-5	0.22	-3.	0.000
3	4.02	3.94	2	-4	0.17	-3.	0.000	2	-3	0.12	-2.	0.000	2	-3	0.11	-2.	0.000
4	4.02	3.94	1	-1	0.01	-1.	0.000	1	0.	0.03	3.	0.000	1	0.	0.00	6.	0.001
6	4.02	3.94	20	-5	0.02	-7.	0.000	18	-4	0.04	-6.	0.000	17	-4	0.42	0.	0.000
7	4.02	3.94	0.	-6	0.30	-4.	0.000	0.	-5	0.24	-4.	0.000	0.	-5	0.22	-3.	0.000

8	4.02	3.94	2	-4	0.16	-3.	0.000	2	-3	0.12	-2.	0.000	1	-3	0.11	-2.	0.000
9	4.02	3.94	1	-1	0.01	-1.	0.000	1	0.	0.03	2.	0.000	1	0.	0.00	5.	0.001
11	4.02	3.94	33	-17	0.37	-18.	0.000	30	-15	0.32	-16.	0.000	28	-15	0.30	-15.	0.000
12	4.02	3.94	37	-21	0.51	-21.	0.000	33	-19	0.46	-19.	0.000	32	-18	0.45	-18.	0.000
13	4.02	3.94	33	-18	0.38	-18.	0.000	30	-16	0.33	-16.	0.000	29	-15	0.31	-15.	0.000
15	4.02	3.94	0.	-12	0.59	-9.	0.000	0.	-11	0.51	-8.	0.000	0.	-10	0.48	-7.	0.000
16	4.02	3.94	2	-7	0.30	-5.	0.000	2	-6	0.26	-4.	0.000	1	-6	0.24	-4.	0.000
17	4.02	3.94	1	-1	0.04	-1.	0.000	1	-1	0.02	-1.	0.000	1	-1	0.02	-1.	0.000
19	4.02	3.94	0.	-18	0.85	-13.	0.000	0.	-16	0.76	-11.	0.000	0.	-15	0.73	-11.	0.000
20	4.02	3.94	2	-11	0.51	-8.	0.000	1	-10	0.46	-7.	0.000	1	-10	0.44	-7.	0.000
21	4.02	3.94	1	-4	0.18	-3.	0.000	0.	-4	0.16	-3.	0.000	0.	-3	0.16	-2.	0.000
23	4.02	3.94	0.	-13	0.60	-9.	0.000	0.	-11	0.52	-8.	0.000	0.	-10	0.49	-7.	0.000
24	4.02	3.94	2	-7	0.31	-6.	0.000	2	-6	0.27	-5.	0.000	1	-6	0.25	-4.	0.000
25	4.02	3.94	1	-1	0.05	-1.	0.000	1	-1	0.03	-1.	0.000	1	-1	0.02	-1.	0.000

MACROGUSCIO platea_di_base

VERIFICA ARMATURE EFFETTIVE (EFFETTO MEMBRANA + PIASTRA)

unità di misura:

lunghezze : [cm] - forze : [daN]
momenti : [daNcm/cm] - tensioni : [daN/cm2]
pesi specifici : [daN/cm3] - angoli : [gradi]
armature : [cm2]

CASI DI CARICO:

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

DATI:

tensione di snervamento acciaio (fyk): 4500 daN/cm2
coefficiente sicurezza acciaio : 1.15
deformazione ultima acciaio : 67.5 per mille
deformazione ultima cls : 3.5 per mille
rapporto rottura/snervamento (k): 1.15
resistenza cilindrica cls (fck): 249 daN/cm2
coefficiente sicurezza cls : 1.5
coefficiente riduttivo (alfa): 0.85
copri ferro inferiore (asse armatura): 2 cm
copri ferro superiore (asse armatura): 2 cm
moltiplicatore sollecitazioni : 1

INFERIORE ORIZZONTALE								INFERIORE VERTICALE							
GUSCI	spess	Af	Afc	Mom	Nor	epsC	epsF	Af	Afc	Mom	Nor	epsC	epsF		
31	50	5.83	5.83	182.	0.	0.01	0.03	5.83	5.75	188.	0.	0.01	0.03		
32	50	5.83	5.83	177.	0.	0.01	0.03	5.83	5.75	0.	0.	0.00	0.00		
33	50	5.83	5.83	182.	0.	0.01	0.03	5.83	5.75	0.	0.	0.00	0.00		
34	50	5.83	5.83	163.	0.	0.01	0.03	5.83	5.75	154.	0.	0.01	0.03		
35	50	5.83	5.83	180.	0.	0.01	0.03	5.83	5.75	149.	0.	0.01	0.03		
36	50	5.83	5.83	214.	0.	0.01	0.04	5.83	5.75	188.	0.	0.01	0.03		
37	50	5.83	5.83	201.	0.	0.01	0.04	5.83	5.75	0.	0.	0.00	0.00		
38	50	5.83	5.83	204.	0.	0.01	0.04	5.83	5.75	0.	0.	0.00	0.00		
39	50	5.83	5.83	194.	0.	0.01	0.04	5.83	5.75	148.	0.	0.01	0.03		
40	50	5.83	5.83	205.	0.	0.01	0.04	5.83	5.75	138.	0.	0.01	0.03		
41	50	5.83	5.83	0.	0.	0.00	0.00	5.83	5.75	169.	0.	0.01	0.03		
42	50	5.83	5.83	0.	0.	0.00	0.00	5.83	5.75	0.	0.	0.00	0.00		
43	50	5.83	5.83	0.	0.	0.00	0.00	5.83	5.75	62.	0.	0.00	0.01		
46	50	5.83	5.83	0.	0.	0.00	0.00	5.83	5.75	0.	0.	0.00	0.00		
47	50	5.83	5.83	0.	0.	0.00	0.00	5.83	5.75	0.	0.	0.00	0.00		
48	50	5.83	5.83	0.	0.	0.00	0.00	5.83	5.75	171.	0.	0.01	0.03		
49	50	5.83	5.83	0.	0.	0.00	0.00	5.83	5.75	108.	0.	0.00	0.02		
50	50	5.83	5.83	0.	0.	0.00	0.00	5.83	5.75	0.	0.	0.00	0.00		
51	50	5.83	5.83	0.	0.	0.00	0.00	5.83	5.75	0.	0.	0.00	0.00		
53	50	5.83	5.83	0.	0.	0.00	0.00	5.83	5.75	0.	0.	0.00	0.00		
54	50	5.83	5.83	0.	0.	0.00	0.00	5.83	5.75	0.	0.	0.00	0.00		
56	50	5.83	5.83	0.	0.	0.00	0.00	5.83	5.75	32.	0.	0.00	0.01		
57	50	5.83	5.83	0.	0.	0.00	0.00	5.83	5.75	18.	0.	0.00	0.00		
58	50	5.83	5.83	0.	0.	0.00	0.00	5.83	5.75	0.	0.	0.00	0.00		
59	50	5.83	5.83	0.	0.	0.00	0.00	5.83	5.75	0.	0.	0.00	0.00		

SUPERIORE ORIZZONTALE								SUPERIORE VERTICALE							
GUSCI	spess	Af	Afc	Mom	Nor	epsC	epsF	Af	Afc	Mom	Nor	epsC	epsF		
31	50	5.83	5.83	415.	0.	0.02	0.08	5.75	5.83	490.	0.	0.02	0.10		
32	50	5.83	5.83	358.	0.	0.02	0.07	5.75	5.83	590.	0.	0.03	0.11		
33	50	5.83	5.83	330.	0.	0.02	0.06	5.75	5.83	245.	0.	0.02	0.06		
34	50	5.83	5.83	479.	0.	0.02	0.09	5.75	5.83	180.	0.	0.01	0.04		
35	50	5.83	5.83	414.	0.	0.02	0.07	5.75	5.83	301.	0.	0.01	0.06		
36	50	5.83	5.83	448.	0.	0.02	0.08	5.75	5.83	388.	0.	0.02	0.10		
37	50	5.83	5.83	369.	0.	0.02	0.07	5.75	5.83	536.	0.	0.03	0.11		
38	50	5.83	5.83	323.	0.	0.01	0.06	5.75	5.83	323.	0.	0.01	0.06		
39	50	5.83	5.83	380.	0.	0.02	0.09	5.75	5.83	196.	0.	0.01	0.04		
40	50	5.83	5.83	301.	0.	0.02	0.07	5.75	5.83	110.	0.	0.01	0.06		
41	50	5.83	5.83	282.	0.	0.01	0.06	5.75	5.83	343.	0.	0.02	0.09		
42	50	5.83	5.83	348.	0.	0.02	0.06	5.75	5.83	119.	0.	0.01	0.06		
43	50	5.83	5.83	274.	0.	0.01	0.06	5.75	5.83	230.	0.	0.02	0.09		
46	50	5.83	5.83	240.	0.	0.01	0.05	5.75	5.83	531.	0.	0.03	0.11		
47	50	5.83	5.83	271.	0.	0.01	0.06	5.75	5.83	358.	0.	0.02	0.07		
48	50	5.83	5.83	482.	0.	0.02	0.09	5.75	5.83	84.	0.	0.01	0.03		
49	50	5.83	5.83	353.	0.	0.02	0.08	5.75	5.83	116.	0.	0.01	0.05		
50	50	5.83	5.83	201.	0.	0.01	0.04	5.75	5.83	511.	0.	0.02	0.09		
51	50	5.83	5.83	231.	0.	0.01	0.05	5.75	5.83	422.	0.	0.03	0.11		
53	50	5.83	5.83	233.	0.	0.01	0.04	5.75	5.83	273.	0.	0.01	0.05		
54	50	5.83	5.83	267.	0.	0.01	0.06	5.75	5.83	258.	0.	0.01	0.05		
56	50	5.83	5.83	358.	0.	0.02	0.06	5.75	5.83	85.	0.	0.00	0.02		

57	50	5.83	5.83	477.	0.	0.02	0.09	5.75	5.83	183.	0.	0.01	0.03
58	50	5.83	5.83	338.	0.	0.02	0.06	5.75	5.83	175.	0.	0.01	0.05
59	50	5.83	5.83	349.	0.	0.02	0.08	5.75	5.83	272.	0.	0.01	0.05

***** TAGLI O PERPENDI COLARE

GUSCI	τ_x	τ_y	τ_t	GUSCI	τ_x	τ_y	τ_t	GUSCI	τ_x	τ_y	τ_t
31	0.1	0.2	0.1	32	0.1	0.0	0.1	33	0.1	0.1	0.1
34	0.1	0.0	0.1	35	0.1	0.1	0.1	36	0.1	0.2	0.2
37	0.1	0.1	0.1	38	0.1	0.1	0.1	39	0.1	0.1	0.1
40	0.1	0.0	0.1	41	0.0	0.3	0.3	42	0.0	0.3	0.3
43	0.0	0.3	0.3	46	0.0	0.0	0.0	47	0.0	0.1	0.1
48	0.0	0.0	0.0	49	0.0	0.0	0.0	50	0.0	0.0	0.0
51	0.0	0.0	0.0	53	0.0	0.1	0.1	54	0.0	0.1	0.1
56	0.0	0.0	0.0	57	0.0	0.0	0.0	58	0.0	0.0	0.0
59	0.0	0.0	0.0								

MACROGUSCIO platea_di_base

VERIFICHE A FESSURAZIONE (EFFETTO MEMBRANA + PIASTRA)

unità di misura:

lunghezze	:	[cm]	-	forze	:	[daN]
momenti	:	[daNcm/cm]	-	tensioni	:	[daN/cm2]
pesi specifici	:	[daN/cm3]	-	angoli	:	[gradi]
armature	:	[cm2]				

CASI DI CARICO:

Nome	Descrizione
7	Rara (RARA)
8	Frequente (FREQUENTE)
9	Quasi Perm (QUASI PERMANENTE)

DATI:

copri ferro inferiore (asse armatura):	2	cm
copri ferro superiore (asse armatura):	2	cm

Af	=	area effettiva disposta nello strato indicato (cm2 al metro)	
wkR	=	apertura caratteristica per combinazione rara (mm)	- apertura max = 0.6 mm
wkF	=	frequente (mm)	- '' '' = 0.4 mm
wkP	=	quasi permanente (mm)	- '' '' = 0.3 mm

ARMATURA INFERIORE ORIZZONTALE

GUSCI			COMBINAZIONE RARA					COMBINAZIONE FREQUENTE					COMBINAZIONE QUASI PERMANENTE				
	Af	Afc	Mom	Nor	σ_c	σ_f	WkR	Mom	Nor	σ_c	σ_f	WkF	Mom	Nor	σ_c	σ_f	WkP
31	5.83	5.83	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
32	5.83	5.83	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
33	5.83	5.83	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
34	5.83	5.83	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
35	5.83	5.83	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
36	5.83	5.83	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
37	5.83	5.83	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
38	5.83	5.83	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
39	5.83	5.83	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
40	5.83	5.83	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
41	5.83	5.83	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
42	5.83	5.83	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
43	5.83	5.83	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
46	5.83	5.83	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
47	5.83	5.83	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
48	5.83	5.83	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
49	5.83	5.83	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
50	5.83	5.83	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
51	5.83	5.83	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
53	5.83	5.83	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
54	5.83	5.83	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
56	5.83	5.83	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
57	5.83	5.83	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
58	5.83	5.83	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
59	5.83	5.83	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000

ARMATURA INFERIORE VERTICALE

GUSCI			COMBI NAZI ONE RARA					COMBI NAZI ONE FREQUENTE					COMBI NAZI ONE QUASI PERMANENTE				
	Af	Afc	Mom	Nor	σ_c	σ_f	WkR	Mom	Nor	σ_c	σ_f	WkF	Mom	Nor	σ_c	σ_f	WkP
31	5.83	5.75	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
32	5.83	5.75	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
33	5.83	5.75	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
34	5.83	5.75	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
35	5.83	5.75	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
36	5.83	5.75	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
37	5.83	5.75	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
38	5.83	5.75	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
39	5.83	5.75	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
40	5.83	5.75	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
41	5.83	5.75	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
42	5.83	5.75	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
43	5.83	5.75	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
46	5.83	5.75	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
47	5.83	5.75	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
48	5.83	5.75	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
49	5.83	5.75	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
50	5.83	5.75	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
51	5.83	5.75	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
53	5.83	5.75	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
54	5.83	5.75	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000

56	5.83	5.75	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
57	5.83	5.75	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
58	5.83	5.75	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000
59	5.83	5.75	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000	0.	0.	0.00	0.	0.000

ARMATURA SUPERIORE ORIZZONTALE

GUSCI	Af	Afc	COMBI NAZI ONE RARA					COMBI NAZI ONE FREQUENTE					COMBI NAZI ONE QUASI PERMANENTE				
			Mom	Nor	σ_c	σ_f	WkR	Mom	Nor	σ_c	σ_f	WkF	Mom	Nor	σ_c	σ_f	WkP
31	5.83	5.83	338	0.	1.64	127.	0.007	305	0.	1.48	115.	0.006	292	0.	1.42	110.	0.006
32	5.83	5.83	303	0.	1.47	114.	0.006	272	0.	1.32	102.	0.005	260	0.	1.26	98.	0.005
33	5.83	5.83	281	0.	1.36	106.	0.006	252	0.	1.22	95.	0.005	240	0.	1.17	91.	0.005
34	5.83	5.83	219	0.	1.06	83.	0.004	193	0.	0.94	73.	0.004	183	0.	0.89	69.	0.004
35	5.83	5.83	250	0.	1.21	94.	0.005	222	0.	1.07	83.	0.004	211	0.	1.02	80.	0.004
36	5.83	5.83	329	0.	1.60	124.	0.006	297	0.	1.44	112.	0.006	285	0.	1.38	107.	0.006
37	5.83	5.83	294	0.	1.43	111.	0.006	264	0.	1.28	99.	0.005	253	0.	1.23	95.	0.005
38	5.83	5.83	272	0.	1.32	103.	0.005	243	0.	1.18	92.	0.005	233	0.	1.13	88.	0.005
39	5.83	5.83	210	0.	1.02	79.	0.004	185	0.	0.90	70.	0.004	175	0.	0.85	66.	0.003
40	5.83	5.83	241	0.	1.17	91.	0.005	214	0.	1.04	80.	0.004	203	0.	0.99	77.	0.004
41	5.83	5.83	269	0.	1.31	101.	0.005	249	0.	1.21	94.	0.005	241	0.	1.17	91.	0.005
42	5.83	5.83	165	0.	0.80	62.	0.003	155	0.	0.75	58.	0.003	152	0.	0.74	57.	0.003
43	5.83	5.83	259	0.	1.26	98.	0.005	240	0.	1.16	90.	0.005	233	0.	1.13	88.	0.005
46	5.83	5.83	264	0.	1.28	100.	0.005	244	0.	1.18	92.	0.005	236	0.	1.14	89.	0.005
47	5.83	5.83	259	0.	1.25	97.	0.005	238	0.	1.15	90.	0.005	230	0.	1.12	87.	0.005
48	5.83	5.83	257	0.	1.25	97.	0.005	235	0.	1.14	89.	0.005	227	0.	1.10	86.	0.004
49	5.83	5.83	264	0.	1.28	100.	0.005	243	0.	1.18	91.	0.005	235	0.	1.14	88.	0.005
50	5.83	5.83	172	0.	0.83	65.	0.003	161	0.	0.78	61.	0.003	158	0.	0.76	59.	0.003
51	5.83	5.83	256	0.	1.24	96.	0.005	236	0.	1.14	89.	0.005	229	0.	1.11	86.	0.004
53	5.83	5.83	174	0.	0.84	66.	0.003	163	0.	0.79	61.	0.003	159	0.	0.77	60.	0.003
54	5.83	5.83	251	0.	1.22	95.	0.005	231	0.	1.12	87.	0.005	224	0.	1.09	84.	0.004
56	5.83	5.83	193	0.	0.94	73.	0.004	180	0.	0.88	68.	0.004	176	0.	0.85	66.	0.003
57	5.83	5.83	252	0.	1.22	95.	0.005	231	0.	1.12	87.	0.005	224	0.	1.08	84.	0.004
58	5.83	5.83	190	0.	0.92	72.	0.004	178	0.	0.86	67.	0.003	174	0.	0.84	65.	0.003
59	5.83	5.83	258	0.	1.25	97.	0.005	238	0.	1.15	90.	0.005	230	0.	1.12	87.	0.004

ARMATURA SUPERIORE VERTICALE

GUSCI	Af	Afc	COMBI NAZI ONE RARA					COMBI NAZI ONE FREQUENTE					COMBI NAZI ONE QUASI PERMANENTE				
			Mom	Nor	σ_c	σ_f	WkR	Mom	Nor	σ_c	σ_f	WkF	Mom	Nor	σ_c	σ_f	WkP
31	5.75	5.83	352	0.	1.72	135.	0.007	322	0.	1.57	123.	0.006	311	0.	1.52	119.	0.006
32	5.75	5.83	440	0.	2.14	168.	0.009	401	0.	1.96	153.	0.008	387	0.	1.89	148.	0.008
33	5.75	5.83	263	0.	1.28	100.	0.005	238	0.	1.16	91.	0.005	229	0.	1.12	87.	0.005
34	5.75	5.83	34	0.	0.17	13.	0.001	30	0.	0.15	11.	0.001	28	0.	0.14	11.	0.001
35	5.75	5.83	103	0.	0.50	39.	0.002	89	0.	0.43	34.	0.002	84	0.	0.41	32.	0.002
36	5.75	5.83	353	0.	1.72	135.	0.007	323	0.	1.58	123.	0.006	312	0.	1.52	119.	0.006
37	5.75	5.83	438	0.	2.14	168.	0.009	400	0.	1.95	153.	0.008	386	0.	1.88	148.	0.008
38	5.75	5.83	261	0.	1.27	100.	0.005	236	0.	1.15	90.	0.005	227	0.	1.11	87.	0.005
39	5.75	5.83	34	0.	0.16	13.	0.001	30	0.	0.14	11.	0.001	28	0.	0.14	11.	0.001
40	5.75	5.83	102	0.	0.50	39.	0.002	88	0.	0.43	34.	0.002	83	0.	0.41	32.	0.002
41	5.75	5.83	319	0.	1.55	122.	0.006	292	0.	1.42	111.	0.006	282	0.	1.37	108.	0.006
42	5.75	5.83	246	0.	1.20	94.	0.005	226	0.	1.10	86.	0.005	219	0.	1.07	84.	0.004
43	5.75	5.83	316	0.	1.54	121.	0.006	289	0.	1.41	111.	0.006	280	0.	1.36	107.	0.006
46	5.75	5.83	440	0.	2.15	168.	0.009	403	0.	1.97	154.	0.008	390	0.	1.90	149.	0.008
47	5.75	5.83	279	0.	1.36	107.	0.006	255	0.	1.24	97.	0.005	246	0.	1.20	94.	0.005
48	5.75	5.83	35	0.	0.17	13.	0.001	30	0.	0.15	12.	0.001	28	0.	0.14	11.	0.001
49	5.75	5.83	119	0.	0.58	45.	0.002	105	0.	0.51	40.	0.002	100	0.	0.49	38.	0.002
50	5.75	5.83	415	0.	2.02	158.	0.008	381	0.	1.86	146.	0.008	369	0.	1.80	141.	0.007
51	5.75	5.83	441	0.	2.15	168.	0.009	404	0.	1.97	154.	0.008	390	0.	1.90	149.	0.008
53	5.75	5.83	285	0.	1.39	109.	0.006	261	0.	1.27	100.	0.005	253	0.	1.23	97.	0.005
54	5.75	5.83	281	0.	1.37	107.	0.006	256	0.	1.25	98.	0.005	247	0.	1.21	94.	0.005
56	5.75	5.83	40	0.	0.20	15.	0.001	34	0.	0.17	13.	0.001	32	0.	0.16	12.	0.001
57	5.75	5.83	36	0.	0.17	14.	0.001	31	0.	0.15	12.	0.001	29	0.	0.14	11.	0.001
58	5.75	5.83	133	0.	0.65	51.	0.003	120	0.	0.58	46.	0.002	115	0.	0.56	44.	0.002
59	5.75	5.83	120	0.	0.59	46.	0.002	106	0.	0.52	41.	0.002	101	0.	0.49	39.	0.002

MACROGUSCIO SETTO DI VI SORIO LOCU

VERIFICA ARMATURE EFFETTIVE (EFFETTO MEMBRANA + PIASTRA)

unità di misura:

lunghezze : [cm] - forze : [daN]
 momenti : [daNcm/cm] - tensioni : [daN/cm2]
 pesi specifici : [daN/cm3] - angoli : [gradi]
 armature : [cm2]

CASI DI CARICO:

Nome Descrizione
 1 SLU SENZA SISMA
 4 SLU con SISMAX
 5 SLU con SISWAY

DATI:

tensione di snervamento acciaio (fyk): 4500 daN/cm2
 coefficiente sicurezza acciaio : 1.15
 deformazione ultima acciaio : 67.5 per mille
 deformazione ultima cls : 3.5 per mille
 rapporto rottura/snervamento (k): 1.15
 resistenza cilindrica cls (fck): 249 daN/cm2
 coefficiente sicurezza cls : 1.5
 coefficiente riduttivo (alfa): 0.85
 copri ferro inferiore (asse armatura): 2 cm
 copri ferro superiore (asse armatura): 2 cm
 moltiplicatore sollecitazioni : 1

INFERIORE ORIZZONTALE

INFERIORE VERTICALE

GUSCI	spess	Af	Afc	Mom	Nor	epsC	epsF	Af	Afc	Mom	Nor	epsC	epsF
191	10	2.61	2.53	0.	8.	0.00	0.07	2.63	2.71	0.	-10.	0.01	-0.01
192	10	2.61	2.53	0.	3.	0.00	0.03	2.63	2.71	0.	-6.	0.01	-0.01
193	10	2.61	2.53	0.	1.	0.00	0.01	2.63	2.71	0.	-3.	0.00	0.00
194	10	2.61	2.53	0.	1.	0.00	0.01	2.63	2.71	1.	-1.	0.00	0.00
200	10	2.61	2.53	0.	-2.	0.00	0.00	2.63	2.71	0.	-19.	0.02	-0.02
201	10	2.61	2.53	0.	-2.	0.00	0.00	2.63	2.71	1.	-23.	0.03	-0.03
202	10	2.61	2.53	0.	-3.	0.00	0.01	2.63	2.71	2.	-25.	0.03	-0.03
203	10	2.61	2.53	0.	-3.	0.00	0.00	2.63	2.71	2.	-25.	0.03	-0.03
204	10	2.61	2.53	0.	-2.	0.00	0.00	2.63	2.71	2.	-18.	0.02	-0.02
205	10	2.61	2.53	0.	-1.	0.00	0.00	2.63	2.71	2.	-11.	0.01	-0.01
206	10	2.61	2.53	0.	0.	0.00	0.00	2.63	2.71	2.	-4.	0.01	0.00
207	10	2.61	2.53	0.	-2.	0.00	0.00	2.63	2.71	2.	-16.	0.02	-0.02
208	10	2.61	2.53	0.	-1.	0.00	0.00	2.63	2.71	2.	-9.	0.01	-0.01
209	10	2.61	2.53	0.	0.	0.00	0.00	2.63	2.71	2.	-3.	0.01	0.00
210	10	2.61	2.53	0.	-1.	0.00	0.00	2.63	2.71	0.	-14.	0.02	-0.01
211	10	2.61	2.53	0.	0.	0.00	0.00	2.63	2.71	1.	-7.	0.01	-0.01
212	10	2.61	2.53	0.	1.	0.00	0.01	2.63	2.71	2.	-2.	0.00	0.00
213	10	2.61	2.53	0.	1.	0.00	0.01	2.63	2.71	1.	-1.	0.00	0.00
214	10	2.61	2.53	0.	1.	0.00	0.01	2.63	2.71	0.	-5.	0.01	-0.01
215	10	2.61	2.53	0.	1.	0.00	0.01	2.63	2.71	0.	-10.	0.01	-0.01

GUSCI	spess	SUPERIORE ORI ZZONTALE						SUPERIORE VERTICALE					
		Af	Afc	Mom	Nor	epsC	epsF	Af	Afc	Mom	Nor	epsC	epsF
191	10	2.53	2.61	0.	4.	0.00	0.07	2.71	2.63	1.	-10.	0.01	-0.01
192	10	2.53	2.61	0.	2.	0.00	0.03	2.71	2.63	0.	-6.	0.01	-0.01
193	10	2.53	2.61	0.	1.	0.00	0.01	2.71	2.63	0.	-3.	0.00	0.00
194	10	2.53	2.61	0.	1.	0.00	0.01	2.71	2.63	0.	-1.	0.00	0.00
200	10	2.53	2.61	0.	0.	0.00	0.00	2.71	2.63	1.	-19.	0.02	-0.02
201	10	2.53	2.61	0.	0.	0.00	0.00	2.71	2.63	1.	-23.	0.03	-0.02
202	10	2.53	2.61	0.	-3.	0.00	0.01	2.71	2.63	1.	-25.	0.03	-0.03
203	10	2.53	2.61	0.	-3.	0.00	0.00	2.71	2.63	1.	-25.	0.03	-0.03
204	10	2.53	2.61	0.	-1.	0.00	0.00	2.71	2.63	0.	-18.	0.02	-0.02
205	10	2.53	2.61	0.	-1.	0.00	0.00	2.71	2.63	0.	-11.	0.01	-0.01
206	10	2.53	2.61	0.	0.	0.00	0.00	2.71	2.63	0.	-4.	0.01	0.00
207	10	2.53	2.61	0.	-2.	0.00	0.00	2.71	2.63	0.	-17.	0.02	-0.02
208	10	2.53	2.61	0.	-1.	0.00	0.00	2.71	2.63	0.	-10.	0.01	-0.01
209	10	2.53	2.61	0.	0.	0.00	0.00	2.71	2.63	0.	-3.	0.01	0.00
210	10	2.53	2.61	0.	-1.	0.00	0.00	2.71	2.63	0.	-14.	0.02	-0.02
211	10	2.53	2.61	0.	0.	0.00	0.00	2.71	2.63	0.	-8.	0.01	-0.01
212	10	2.53	2.61	0.	1.	0.00	0.01	2.71	2.63	0.	-2.	0.00	0.00
213	10	2.53	2.61	0.	1.	0.00	0.01	2.71	2.63	0.	-1.	0.00	0.00
214	10	2.53	2.61	0.	1.	0.00	0.01	2.71	2.63	0.	-5.	0.01	-0.01
215	10	2.53	2.61	0.	1.	0.00	0.01	2.71	2.63	0.	-10.	0.01	-0.01

***** TAGLIO PERPENDICOLARE

GUSCI	tx	ty	tz	GUSCI	tx	ty	tz	GUSCI	tx	ty	tz
191	0.0	0.0	0.0	192	0.0	0.0	0.0	193	0.0	0.0	0.0
194	0.0	0.0	0.0	200	0.0	0.0	0.0	201	0.0	0.0	0.0
202	0.0	0.1	0.0	203	0.0	0.0	0.0	204	0.0	0.0	0.0
205	0.0	0.0	0.0	206	0.0	0.0	0.0	207	0.0	0.0	0.0
208	0.0	0.0	0.0	209	0.0	0.0	0.0	210	0.0	0.0	0.0
211	0.0	0.0	0.0	212	0.0	0.0	0.0	213	0.0	0.0	0.0
214	0.0	0.0	0.0	215	0.0	0.0	0.0				

MACROGUSCIO SETTORE DI VI SORIO LOCU

VERIFICHE A FESSURAZIONE (EFFETTO MEMBRANA + PIASTRA)

unità di misura:

lunghezze : [cm] - forze : [daN]
 momenti : [daNcm/cm] - tensioni : [daN/cm2]
 pesi specifici : [daN/cm3] - angoli : [gradi]
 armature : [cm2]

CASI DI CARICO:

Nome Descrizione
 7 Rara (RARA)
 8 Frequente (FREQUENTE)
 9 Quasi Perm (QUASI PERMANENTE)

DATI:

copri ferro inferiore (asse armatura): 2 cm
 copri ferro superiore (asse armatura): 2 cm

Af = area effettiva di posta nello strato indicato (cm2 al metro)
 wkR = apertura caratteristica per combinazione rara (mm) - apertura max = 0.6 mm
 wkF = " " " " frequente (mm) - " " = 0.4 mm
 wkP = " " " " quasi permanente (mm) - " " = 0.3 mm

ARMATURA INFERIORE ORI ZZONTALE

GUSCI	COMBINAZIONE RARA		COMBINAZIONE FREQUENTE					COMBINAZIONE QUASI PERMANENTE				
	Af	Afc	Mom	Nor	σc	σf	WkR	Mom	Nor	σc	σf	WkP
191	2.61	2.53	0.	1	0.00	23.	0.002	0.	1	0.00	31.	0.003
192	2.61	2.53	0.	0.	0.02	0.	0.000	0.	0.	0.00	4.	0.000
193	2.61	2.53	0.	-1	0.06	-1.	0.000	0.	0.	0.03	0.	0.000
194	2.61	2.53	0.	0.	0.04	-1.	0.000	0.	0.	0.02	0.	0.000
200	2.61	2.53	0.	-3	0.27	-4.	0.000	0.	-2	0.22	-3.	0.000
201	2.61	2.53	0.	-4	0.35	-5.	0.000	0.	-3	0.30	-4.	0.000
202	2.61	2.53	0.	-1	0.12	-2.	0.000	0.	-1	0.08	-1.	0.000
203	2.61	2.53	0.	-2	0.16	-2.	0.000	0.	-1	0.12	-2.	0.000
204	2.61	2.53	0.	-3	0.24	-4.	0.000	0.	-2	0.19	-3.	0.000
205	2.61	2.53	0.	-1	0.11	-2.	0.000	0.	-1	0.09	-1.	0.000
206	2.61	2.53	0.	0.	0.02	0.	0.000	0.	0.	0.01	0.	0.000
207	2.61	2.53	0.	-2	0.19	-3.	0.000	0.	-2	0.15	-2.	0.000

208	2.61	2.53	0.	0.	0.04	-1.	0.000	0.	0.	0.02	0.	0.000	0.	0.	0.02	0.	0.000
209	2.61	2.53	0.	0.	0.04	-1.	0.000	0.	0.	0.02	0.	0.000	0.	0.	0.02	0.	0.000
210	2.61	2.53	0.	0.	0.04	0.	0.000	0.	0.	0.02	0.	0.000	0.	0.	0.01	0.	0.000
211	2.61	2.53	0.	-1	0.10	-1.	0.000	0.	-1	0.07	-1.	0.000	0.	-1	0.06	-1.	0.000
212	2.61	2.53	0.	0.	0.02	0.	0.000	0.	0.	0.00	1.	0.000	0.	0.	0.00	2.	0.000
213	2.61	2.53	0.	0.	0.03	0.	0.000	0.	0.	0.01	3.	0.000	0.	0.	0.00	5.	0.000
214	2.61	2.53	0.	-1	0.07	-1.	0.000	0.	0.	0.05	0.	0.000	0.	0.	0.04	0.	0.000
215	2.61	2.53	0.	-1	0.10	-1.	0.000	0.	-1	0.07	-1.	0.000	0.	-1	0.06	-1.	0.000

ARMATURA I NFERI ORE VERTI CALE

GUSCI	Af	Afc	COMBI NAZI ONE RARA					COMBI NAZI ONE FREQUENTE					COMBI NAZI ONE QUASI PERMANENTE				
			Mom	Nor	σ_c	σ_f	WkR	Mom	Nor	σ_c	σ_f	WkF	Mom	Nor	σ_c	σ_f	WkP
191	2.63	2.71	0.	-10	0.93	-14.	0.000	0.	-8	0.78	-12.	0.000	0.	-8	0.72	-11.	0.000
192	2.63	2.71	0.	-8	0.78	-12.	0.000	0.	-7	0.64	-10.	0.000	0.	-6	0.59	-9.	0.000
193	2.63	2.71	0.	-6	0.57	-9.	0.000	0.	-5	0.44	-7.	0.000	0.	-4	0.39	-6.	0.000
194	2.63	2.71	0.	-3	0.30	-4.	0.000	0.	-2	0.20	-3.	0.000	0.	-2	0.16	-2.	0.000
200	2.63	2.71	0.	-24	2.20	-33.	0.000	0.	-20	1.88	-28.	0.000	0.	-19	1.76	-26.	0.000
201	2.63	2.71	0.	-30	2.82	-42.	0.000	0.	-26	2.40	-36.	0.000	0.	-24	2.24	-34.	0.000
202	2.63	2.71	0.	-24	2.22	-33.	0.000	0.	-19	1.78	-27.	0.000	0.	-17	1.61	-24.	0.000
203	2.63	2.71	0.	-27	2.49	-37.	0.000	0.	-22	2.05	-31.	0.000	0.	-20	1.89	-28.	0.000
204	2.63	2.71	0.	-21	1.98	-30.	0.000	0.	-17	1.61	-24.	0.000	0.	-16	1.47	-22.	0.000
205	2.63	2.71	0.	-13	1.24	-19.	0.000	0.	-11	0.99	-15.	0.000	0.	-10	0.90	-14.	0.000
206	2.63	2.71	0.	-5	0.51	-7.	0.000	0.	-4	0.39	-6.	0.000	0.	-4	0.35	-5.	0.000
207	2.63	2.71	0.	-21	1.92	-29.	0.000	0.	-17	1.58	-24.	0.000	0.	-16	1.46	-22.	0.000
208	2.63	2.71	0.	-12	1.13	-17.	0.000	0.	-10	0.90	-14.	0.000	0.	-9	0.83	-12.	0.000
209	2.63	2.71	0.	-5	0.44	-6.	0.000	0.	-3	0.33	-5.	0.000	0.	-3	0.30	-4.	0.000
210	2.63	2.71	0.	-19	1.73	-26.	0.000	0.	-15	1.44	-21.	0.000	0.	-14	1.33	-20.	0.000
211	2.63	2.71	0.	-10	0.96	-14.	0.000	0.	-8	0.77	-12.	0.000	0.	-8	0.71	-11.	0.000
212	2.63	2.71	0.	-4	0.36	-5.	0.000	0.	-3	0.26	-4.	0.000	0.	-2	0.23	-3.	0.000
213	2.63	2.71	0.	-3	0.32	-5.	0.000	0.	-2	0.22	-3.	0.000	0.	-2	0.19	-3.	0.000
214	2.63	2.71	0.	-8	0.76	-11.	0.000	0.	-7	0.60	-9.	0.000	0.	-6	0.55	-8.	0.000
215	2.63	2.71	0.	-14	1.30	-19.	0.000	0.	-12	1.08	-16.	0.000	0.	-11	1.00	-15.	0.000

ARMATURA SUPERI ORE ORI ZZONTALE

GUSCI	Af	Afc	COMBI NAZI ONE RARA					COMBI NAZI ONE FREQUENTE					COMBI NAZI ONE QUASI PERMANENTE				
			Mom	Nor	σ_c	σ_f	WkR	Mom	Nor	σ_c	σ_f	WkF	Mom	Nor	σ_c	σ_f	WkP
191	2.53	2.61	0.	1	0.00	25.	0.002	0.	1	0.00	30.	0.003	0.	2	0.00	33.	0.003
192	2.53	2.61	0.	0.	0.01	0.	0.000	0.	0.	0.00	5.	0.000	0.	0.	0.00	8.	0.001
193	2.53	2.61	0.	-1	0.05	-1.	0.000	0.	0.	0.02	-1.	0.000	0.	0.	0.01	0.	0.000
194	2.53	2.61	0.	0.	0.03	-1.	0.000	0.	0.	0.02	0.	0.000	0.	0.	0.00	0.	0.000
200	2.53	2.61	0.	-3	0.27	-4.	0.000	0.	-2	0.22	-3.	0.000	0.	-2	0.20	-3.	0.000
201	2.53	2.61	0.	-4	0.35	-5.	0.000	0.	-3	0.30	-5.	0.000	0.	-3	0.28	-4.	0.000
202	2.53	2.61	0.	-1	0.12	-2.	0.000	0.	-1	0.07	-1.	0.000	0.	-1	0.05	-1.	0.000
203	2.53	2.61	0.	-2	0.15	-2.	0.000	0.	-1	0.11	-2.	0.000	0.	-1	0.09	-2.	0.000
204	2.53	2.61	0.	-3	0.23	-4.	0.000	0.	-2	0.19	-3.	0.000	0.	-2	0.17	-3.	0.000
205	2.53	2.61	0.	-1	0.11	-2.	0.000	0.	-1	0.08	-1.	0.000	0.	-1	0.08	-1.	0.000
206	2.53	2.61	0.	0.	0.02	0.	0.000	0.	0.	0.01	0.	0.000	0.	0.	0.01	0.	0.000
207	2.53	2.61	0.	-2	0.18	-3.	0.000	0.	-2	0.15	-2.	0.000	0.	-2	0.14	-2.	0.000
208	2.53	2.61	0.	0.	0.03	-1.	0.000	0.	0.	0.02	0.	0.000	0.	0.	0.01	0.	0.000
209	2.53	2.61	0.	0.	0.04	-1.	0.000	0.	0.	0.02	0.	0.000	0.	0.	0.02	0.	0.000
210	2.53	2.61	0.	0.	0.03	-1.	0.000	0.	0.	0.01	0.	0.000	0.	0.	0.00	0.	0.000
211	2.53	2.61	0.	-1	0.09	-1.	0.000	0.	-1	0.07	-1.	0.000	0.	-1	0.06	-1.	0.000
212	2.53	2.61	0.	0.	0.01	0.	0.000	0.	0.	0.00	1.	0.000	0.	0.	0.00	2.	0.000
213	2.53	2.61	0.	0.	0.02	0.	0.000	0.	0.	0.00	2.	0.000	0.	0.	0.00	4.	0.000
214	2.53	2.61	0.	-1	0.06	-1.	0.000	0.	0.	0.04	-1.	0.000	0.	0.	0.03	0.	0.000
215	2.53	2.61	0.	-1	0.10	-1.	0.000	0.	-1	0.07	-1.	0.000	0.	-1	0.05	-1.	0.000

ARMATURA SUPERI ORE VERTI CALE

GUSCI	Af	Afc	COMBI NAZI ONE RARA					COMBI NAZI ONE FREQUENTE					COMBI NAZI ONE QUASI PERMANENTE				
			Mom	Nor	σ_c	σ_f	WkR	Mom	Nor	σ_c	σ_f	WkF	Mom	Nor	σ_c	σ_f	WkP
191	2.71	2.63	0.	-10	0.91	-14.	0.000	0.	-8	0.76	-12.	0.000	0.	-8	0.71	-11.	0.000
192	2.71	2.63	0.	-8	0.78	-12.	0.000	0.	-7	0.64	-10.	0.000	0.	-6	0.59	-9.	0.000
193	2.71	2.63	0.	-6	0.56	-9.	0.000	0.	-5	0.44	-7.	0.000	0.	-4	0.39	-6.	0.000
194	2.71	2.63	0.	-3	0.29	-4.	0.000	0.	-2	0.19	-3.	0.000	0.	-2	0.16	-2.	0.000
200	2.71	2.63	0.	-24	2.17	-33.	0.000	0.	-20	1.85	-28.	0.000	0.	-19	1.73	-27.	0.000
201	2.71	2.63	0.	-30	2.79	-43.	0.000	0.	-26	2.38	-36.	0.000	0.	-24	2.22	-34.	0.000
202	2.71	2.63	0.	-24	2.20	-34.	0.000	0.	-19	1.75	-27.	0.000	0.	-17	1.58	-24.	0.000
203	2.71	2.63	0.	-27	2.46	-38.	0.000	0.	-22	2.03	-31.	0.000	0.	-20	1.86	-29.	0.000
204	2.71	2.63	0.	-21	1.98	-30.	0.000	0.	-17	1.61	-24.	0.000	0.	-16	1.47	-22.	0.000
205	2.71	2.63	0.	-13	1.24	-19.	0.000	0.	-11	0.99	-15.	0.000	0.	-10	0.90	-14.	0.000
206	2.71	2.63	0.	-5	0.50	-8.	0.000	0.	-4	0.38	-6.	0.000	0.	-4	0.34	-5.	0.000
207	2.71	2.63	0.	-21	1.92	-29.	0.000	0.	-17	1.58	-24.	0.000	0.	-16	1.46	-22.	0.000
208	2.71	2.63	0.	-12	1.12	-17.	0.000	0.	-10	0.90	-14.	0.000	0.	-9	0.82	-12.	0.000
209	2.71	2.63	0.	-5	0.43	-6.	0.000	0.	-3	0.32	-5.	0.000	0.	-3	0.29	-4.	0.000
210	2.71	2.63	0.	-19	1.72	-26.	0.000	0.	-15	1.43	-21.	0.000	0.	-14	1.33	-20.	0.000
211	2.71	2.63	0.	-10	0.96	-14.	0.000	0.	-8	0.77	-12.	0.000	0.	-8	0.71	-11.	0.000
212	2.71	2.63	0.	-4	0.35	-5.	0.000	0.	-3	0.25	-4.	0.000	0.	-2	0.22	-3.	0.000
213	2.71	2.63	0.	-3	0.31	-5.	0.000	0.	-2	0.21	-3.	0.000	0.	-2	0.18	-3.	0.000
214	2.71	2.63	0.	-8	0.76	-11.	0.000	0.	-7	0.60	-9.	0.000	0.	-6	0.55	-8.	0.000
215	2.71	2.63	0.	-14	1.30	-19.	0.000	0.	-12	1.08	-16.	0.000	0.	-11	1.00	-15.	0.000

MACROGUSCIO sol etti na_locl i

VERI FICA ARMATURE EFFETTIVE (EFFETTO MEMBRANA + PIASTRA)

unità di misura:

lunghezze : [cm] - forze : [daN]
 momenti : [daNm/cm] - tensi oni : [daN/cm2]
 pesi speci fi ci : [daN/cm3] - angol i : [gradi]
 armature : [cm2]

CASI DI CARICO:

Nome Descr i z i o n e
1 SLU SENZA SI SMA
4 SLU con SI SMA X
5 SLU con SI SMA Y

DATI :

tensione di snervamento acciaio (fyk): 4500 daN/cm2
coefficiente sicurezza acciaio : 1.15
deformazione ultima acciaio : 67.5 per mille
deformazione ultima cls : 3.5 per mille
rapporto rottura/snervamento (k): 1.15
resistenza cilindrica cls (fck): 249 daN/cm2
coefficiente sicurezza cls : 1.5
coefficiente riduttivo (alfa): 0.85
copri ferro inferiore (asse armatura): 2 cm
copri ferro superiore (asse armatura): 2 cm
moltiplicatore sollecitazioni : 1

INFERIORE ORIZZONTALE								INFERIORE VERTICALE							
GUSCI	spess	Af	Afc	Mom	Nor	epsC	epsF	Af	Afc	Mom	Nor	epsC	epsF		
356	10	2.58	2.54	2.	1.	0.00	0.01	2.59	2.58	3.	1.	0.00	0.02		
357	10	2.58	2.54	2.	1.	0.00	0.02	2.59	2.58	3.	2.	0.00	0.02		
358	10	2.58	2.54	2.	1.	0.00	0.02	2.59	2.58	3.	2.	0.00	0.02		
359	10	2.58	2.54	2.	1.	0.00	0.01	2.59	2.58	2.	1.	0.00	0.02		
360	10	2.58	2.54	2.	2.	0.00	0.02	2.59	2.58	3.	2.	0.00	0.02		
361	10	2.58	2.54	2.	1.	0.00	0.02	2.59	2.58	3.	2.	0.00	0.02		
362	10	2.58	2.54	2.	1.	0.00	0.02	2.59	2.58	3.	2.	0.00	0.02		
363	10	2.58	2.54	2.	1.	0.00	0.02	2.59	2.58	3.	2.	0.00	0.02		
364	10	2.58	2.54	2.	1.	0.00	0.01	2.59	2.58	2.	1.	0.00	0.02		
365	10	2.58	2.54	2.	1.	0.00	0.02	2.59	2.58	3.	1.	0.00	0.02		
366	10	2.58	2.54	2.	1.	0.00	0.02	2.59	2.58	7.	1.	0.00	0.03		
367	10	2.58	2.54	3.	2.	0.00	0.02	2.59	2.58	8.	2.	0.00	0.04		
368	10	2.58	2.54	3.	2.	0.00	0.02	2.59	2.58	7.	2.	0.00	0.03		
370	10	2.58	2.54	1.	1.	0.00	0.01	2.59	2.58	2.	1.	0.00	0.02		
371	10	2.58	2.54	1.	1.	0.00	0.01	2.59	2.58	2.	1.	0.00	0.02		
372	10	2.58	2.54	0.	0.	0.00	0.00	2.59	2.58	2.	1.	0.00	0.01		
373	10	2.58	2.54	0.	0.	0.00	0.00	2.59	2.58	2.	1.	0.00	0.02		
374	10	2.58	2.54	2.	2.	0.00	0.02	2.59	2.58	1.	2.	0.00	0.02		
375	10	2.58	2.54	2.	1.	0.00	0.02	2.59	2.58	2.	2.	0.00	0.02		
376	10	2.58	2.54	0.	0.	0.00	0.00	2.59	2.58	3.	1.	0.00	0.01		
377	10	2.58	2.54	0.	0.	0.00	0.00	2.59	2.58	2.	1.	0.00	0.02		
378	10	2.58	2.54	1.	1.	0.00	0.02	2.59	2.58	1.	2.	0.00	0.02		
380	10	2.58	2.54	1.	1.	0.00	0.01	2.59	2.58	2.	1.	0.00	0.02		
382	10	2.58	2.54	0.	0.	0.00	0.00	2.59	2.58	2.	1.	0.00	0.01		
384	10	2.58	2.54	2.	1.	0.00	0.01	2.59	2.58	2.	1.	0.00	0.02		

SUPERIORE ORIZZONTALE								SUPERIORE VERTICALE							
GUSCI	spess	Af	Afc	Mom	Nor	epsC	epsF	Af	Afc	Mom	Nor	epsC	epsF		
356	10	2.54	2.58	0.	1.	0.00	0.01	2.58	2.59	0.	1.	0.00	0.02		
357	10	2.54	2.58	0.	1.	0.00	0.01	2.58	2.59	2.	2.	0.00	0.03		
358	10	2.54	2.58	0.	2.	0.00	0.02	2.58	2.59	1.	2.	0.00	0.03		
359	10	2.54	2.58	0.	1.	0.00	0.01	2.58	2.59	2.	1.	0.00	0.02		
360	10	2.54	2.58	0.	2.	0.00	0.02	2.58	2.59	0.	2.	0.00	0.02		
361	10	2.54	2.58	0.	1.	0.00	0.02	2.58	2.59	2.	1.	0.00	0.02		
362	10	2.54	2.58	1.	1.	0.00	0.01	2.58	2.59	4.	2.	0.00	0.02		
363	10	2.54	2.58	0.	1.	0.00	0.01	2.58	2.59	3.	2.	0.00	0.02		
364	10	2.54	2.58	0.	1.	0.00	0.01	2.58	2.59	0.	1.	0.00	0.01		
365	10	2.54	2.58	0.	1.	0.00	0.01	2.58	2.59	0.	1.	0.00	0.02		
366	10	2.54	2.58	1.	1.	0.00	0.02	2.58	2.59	0.	1.	0.00	0.02		
367	10	2.54	2.58	1.	2.	0.00	0.02	2.58	2.59	0.	2.	0.00	0.03		
368	10	2.54	2.58	0.	2.	0.00	0.02	2.58	2.59	0.	2.	0.00	0.02		
370	10	2.54	2.58	2.	0.	0.00	0.01	2.58	2.59	4.	1.	0.00	0.02		
371	10	2.54	2.58	1.	1.	0.00	0.01	2.58	2.59	3.	1.	0.00	0.02		
372	10	2.54	2.58	1.	0.	0.00	0.01	2.58	2.59	0.	1.	0.00	0.01		
373	10	2.54	2.58	1.	0.	0.00	0.01	2.58	2.59	3.	1.	0.00	0.02		
374	10	2.54	2.58	3.	2.	0.00	0.02	2.58	2.59	4.	2.	0.00	0.03		
375	10	2.54	2.58	3.	1.	0.00	0.02	2.58	2.59	3.	2.	0.00	0.02		
376	10	2.54	2.58	1.	0.	0.00	0.01	2.58	2.59	2.	1.	0.00	0.01		
377	10	2.54	2.58	1.	0.	0.00	0.01	2.58	2.59	3.	1.	0.00	0.02		
378	10	2.54	2.58	2.	1.	0.00	0.02	2.58	2.59	4.	2.	0.00	0.03		
380	10	2.54	2.58	3.	1.	0.00	0.01	2.58	2.59	3.	1.	0.00	0.02		
382	10	2.54	2.58	1.	0.	0.00	0.01	2.58	2.59	0.	1.	0.00	0.01		
384	10	2.54	2.58	1.	1.	0.00	0.01	2.58	2.59	3.	1.	0.00	0.02		

***** TAGLIO PERPENDICOLARE

GUSCI	tx	ty	tt	GUSCI	tx	ty	tt	GUSCI	tx	ty	tt
356	0.0	0.0	0.0	357	0.0	0.0	0.0	358	0.0	0.0	0.0
359	0.0	0.0	0.0	360	0.0	0.0	0.0	361	0.0	0.0	0.0
362	0.0	0.0	0.0	363	0.0	0.0	0.0	364	0.1	0.0	0.1
365	0.0	0.0	0.0	366	0.0	0.0	0.0	367	0.0	0.0	0.0
368	0.0	0.0	0.0	370	0.0	0.0	0.0	371	0.0	0.0	0.0
372	0.0	0.0	0.0	373	0.0	0.0	0.0	374	0.0	0.0	0.0
375	0.0	0.0	0.0	376	0.0	0.0	0.0	377	0.0	0.0	0.0
378	0.0	0.0	0.0	380	0.0	0.0	0.0	382	0.0	0.0	0.0
384	0.0	0.0	0.0								

MACROGUSCIO solletti na_l oculi

VERIFICHE A FESSURAZIONE (EFFETTO MEMBRANA + PIASTRA)

unità di misura:

lunghezze : [cm] - forze : [daN]
momenti : [daNcm/cm] - tensioni : [daN/cm2]
pesi specifici : [daN/cm3] - angoli : [gradi]
armature : [cm2]

CASI DI CARICO:

Nome Descr i z i o n e
7 Rara (RARA)
8 Frequente (FREQUENTE)

DATI:

copri ferro inferiore (asse armatura): 2 cm
 copri ferro superiore (asse armatura): 2 cm

Af = area effettiva disposta nello strato indicato (cm² al metro)

wkR = apertura caratteristica per combinazione rara (mm) - apertura max = 0.6 mm

wkF = " " " " " " frequente (mm) - " " " " = 0.4 mm

wkP = " " " " " " quasi permanente (mm) - " " " " = 0.3 mm

ARMATURA INFERIORE ORIZZONTALE

GUSCI	Af	Afc	COMBINAZIONE RARA					COMBINAZIONE FREQUENTE					COMBINAZIONE QUASI PERMANENTE				
			Mom	Nor	σ_c	σ_f	WkR	Mom	Nor	σ_c	σ_f	WkF	Mom	Nor	σ_c	σ_f	WkP
356	2.58	2.54	1	1	0.05	21.	0.002	1	1	0.09	18.	0.001	1	0.	0.10	17.	0.001
357	2.58	2.54	2	1	0.03	32.	0.003	2	1	0.10	28.	0.002	2	1	0.12	26.	0.002
358	2.58	2.54	2	1	0.00	36.	0.003	2	1	0.00	31.	0.003	2	1	0.00	30.	0.003
359	2.58	2.54	2	1	0.15	24.	0.002	2	1	0.16	21.	0.002	2	1	0.16	20.	0.002
360	2.58	2.54	2	1	0.00	34.	0.003	2	1	0.00	30.	0.003	2	1	0.00	28.	0.002
361	2.58	2.54	1	1	0.00	27.	0.002	1	1	0.00	24.	0.002	1	1	0.00	23.	0.002
362	2.58	2.54	2	1	0.06	31.	0.003	2	1	0.12	27.	0.002	2	1	0.13	26.	0.002
363	2.58	2.54	2	1	0.00	33.	0.003	2	1	0.00	29.	0.002	2	1	0.04	28.	0.002
364	2.58	2.54	2	1	0.17	23.	0.002	2	1	0.17	21.	0.002	2	0.	0.17	19.	0.002
365	2.58	2.54	2	1	0.03	29.	0.002	2	1	0.08	25.	0.002	2	1	0.09	24.	0.002
366	2.58	2.54	0.	1	0.00	20.	0.002	0.	1	0.00	18.	0.002	0.	1	0.00	17.	0.002
367	2.58	2.54	0.	1	0.00	26.	0.002	0.	1	0.00	23.	0.002	0.	1	0.00	22.	0.002
368	2.58	2.54	0.	1	0.00	24.	0.002	0.	1	0.00	21.	0.002	0.	1	0.00	20.	0.002
370	2.58	2.54	0.	0.	0.00	7.	0.001	0.	0.	0.00	6.	0.001	0.	0.	0.00	6.	0.001
371	2.58	2.54	0.	0.	0.00	5.	0.000	0.	0.	0.00	4.	0.000	0.	0.	0.00	4.	0.000
372	2.58	2.54	0.	0.	0.00	3.	0.000	0.	0.	0.00	3.	0.000	0.	0.	0.00	3.	0.000
373	2.58	2.54	0.	0.	0.00	3.	0.000	0.	0.	0.00	3.	0.000	0.	0.	0.00	3.	0.000
374	2.58	2.54	0.	1	0.00	16.	0.001	0.	1	0.00	14.	0.001	0.	1	0.00	13.	0.001
375	2.58	2.54	0.	1	0.00	10.	0.001	0.	0.	0.00	9.	0.001	0.	0.	0.00	9.	0.001
376	2.58	2.54	0.	0.	0.00	3.	0.000	0.	0.	0.00	3.	0.000	0.	0.	0.00	3.	0.000
377	2.58	2.54	0.	0.	0.00	4.	0.000	0.	0.	0.00	4.	0.000	0.	0.	0.00	4.	0.000
378	2.58	2.54	0.	1	0.00	12.	0.001	0.	1	0.00	11.	0.001	0.	1	0.00	11.	0.001
380	2.58	2.54	0.	0.	0.00	7.	0.001	0.	0.	0.00	6.	0.001	0.	0.	0.00	6.	0.001
382	2.58	2.54	0.	0.	0.00	2.	0.000	0.	0.	0.00	2.	0.000	0.	0.	0.00	2.	0.000
384	2.58	2.54	0.	1	0.00	10.	0.001	0.	0.	0.00	9.	0.001	0.	0.	0.00	8.	0.001

ARMATURA INFERIORE VERTICALE

GUSCI	Af	Afc	COMBINAZIONE RARA					COMBINAZIONE FREQUENTE					COMBINAZIONE QUASI PERMANENTE				
			Mom	Nor	σ_c	σ_f	WkR	Mom	Nor	σ_c	σ_f	WkF	Mom	Nor	σ_c	σ_f	WkP
356	2.59	2.58	1	1	0.00	22.	0.002	1	1	0.00	19.	0.002	1	1	0.00	18.	0.002
357	2.59	2.58	0.	2	0.00	31.	0.003	0.	1	0.00	26.	0.002	0.	1	0.00	25.	0.002
358	2.59	2.58	0.	2	0.00	34.	0.003	0.	2	0.00	29.	0.003	0.	1	0.00	27.	0.003
359	2.59	2.58	1	1	0.00	22.	0.002	0.	1	0.00	18.	0.002	0.	1	0.00	17.	0.002
360	2.59	2.58	0.	2	0.00	33.	0.003	0.	1	0.00	29.	0.003	0.	1	0.00	27.	0.002
361	2.59	2.58	1	1	0.00	27.	0.002	1	1	0.00	24.	0.002	1	1	0.00	22.	0.002
362	2.59	2.58	0.	2	0.00	30.	0.003	0.	1	0.00	26.	0.002	0.	1	0.00	24.	0.002
363	2.59	2.58	0.	2	0.00	32.	0.003	0.	1	0.00	27.	0.003	0.	1	0.00	26.	0.002
364	2.59	2.58	1	1	0.00	21.	0.002	0.	1	0.00	18.	0.002	0.	1	0.00	17.	0.001
365	2.59	2.58	0.	1	0.00	28.	0.003	0.	1	0.00	24.	0.002	0.	1	0.00	22.	0.002
366	2.59	2.58	3	1	0.26	39.	0.003	3	1	0.27	35.	0.003	3	1	0.27	34.	0.003
367	2.59	2.58	3	1	0.22	48.	0.004	3	1	0.24	44.	0.004	3	1	0.25	42.	0.004
368	2.59	2.58	3	1	0.19	43.	0.004	3	1	0.21	39.	0.003	3	1	0.22	38.	0.003
370	2.59	2.58	0.	1	0.00	24.	0.002	0.	1	0.00	20.	0.002	0.	1	0.00	19.	0.002
371	2.59	2.58	0.	1	0.00	25.	0.002	0.	1	0.00	21.	0.002	0.	1	0.00	20.	0.002
372	2.59	2.58	0.	1	0.00	16.	0.001	0.	1	0.00	13.	0.001	0.	1	0.00	12.	0.001
373	2.59	2.58	0.	1	0.00	18.	0.002	0.	1	0.00	16.	0.001	0.	1	0.00	15.	0.001
374	2.59	2.58	0.	2	0.00	31.	0.003	0.	1	0.00	27.	0.002	0.	1	0.00	26.	0.002
375	2.59	2.58	0.	1	0.00	29.	0.003	0.	1	0.00	25.	0.002	0.	1	0.00	24.	0.002
376	2.59	2.58	0.	1	0.00	17.	0.002	0.	1	0.00	14.	0.001	0.	1	0.00	13.	0.001
377	2.59	2.58	0.	1	0.00	20.	0.002	0.	1	0.00	18.	0.002	0.	1	0.00	16.	0.002
378	2.59	2.58	0.	1	0.00	28.	0.003	0.	1	0.00	25.	0.002	0.	1	0.00	24.	0.002
380	2.59	2.58	0.	1	0.00	25.	0.002	0.	1	0.00	22.	0.002	0.	1	0.00	21.	0.002
382	2.59	2.58	0.	1	0.00	14.	0.001	0.	1	0.00	12.	0.001	0.	1	0.00	11.	0.001
384	2.59	2.58	0.	1	0.00	26.	0.002	0.	1	0.00	22.	0.002	0.	1	0.00	20.	0.002

ARMATURA SUPERIORE ORIZZONTALE

GUSCI	Af	Afc	COMBI NAZI ONE RARA					COMBI NAZI ONE FREQUENTE					COMBI NAZI ONE QUASI PERMANENTE				
			Mom	Nor	σ_c	σ_f	WkR	Mom	Nor	σ_c	σ_f	WkF	Mom	Nor	σ_c	σ_f	WkP
356	2.54	2.58	0.	1	0.00	13.	0.001	0.	1	0.00	10.	0.001	0.	0.	0.00	9.	0.001
357	2.54	2.58	0.	1	0.00	20.	0.002	0.	1	0.00	17.	0.002	0.	1	0.00	15.	0.001
358	2.54	2.58	0.	1	0.00	25.	0.002	0.	1	0.00	21.	0.002	0.	1	0.00	20.	0.002
359	2.54	2.58	0.	1	0.00	13.	0.001	0.	1	0.00	11.	0.001	0.	1	0.00	10.	0.001
360	2.54	2.58	0.	1	0.00	24.	0.002	0.	1	0.00	20.	0.002	0.	1	0.00	19.	0.002
361	2.54	2.58	0.	1	0.00	19.	0.002	0.	1	0.00	16.	0.001	0.	1	0.00	15.	0.001
362	2.54	2.58	0.	1	0.00	19.	0.002	0.	1	0.00	16.	0.002	0.	1	0.00	15.	0.001
363	2.54	2.58	0.	1	0.00	22.	0.002	0.	1	0.00	18.	0.002	0.	1	0.00	17.	0.002
364	2.54	2.58	0.	1	0.00	12.	0.001	0.	1	0.00	11.	0.001	0.	0.	0.00	10.	0.001
365	2.54	2.58	0.	1	0.00	18.	0.002	0.	1	0.00	15.	0.001	0.	1	0.00	14.	0.001
366	2.54	2.58	0.	1	0.00	19.	0.002	0.	1	0.00	17.	0.002	0.	1	0.00	16.	0.001
367	2.54	2.58	0.	1	0.00	26.	0.002	0.	1	0.00	23.	0.002	0.	1	0.00	21.	0.002
368	2.54	2.58	0.	1	0.00	23.	0.002	0.	1	0.00	20.	0.002	0.	1	0.00	19.	0.002
370	2.54	2.58	1	0.	0.11	13.	0.001	1	0.	0.10	12.	0.001	1	0.	0.11	12.	0.001
371	2.54	2.58	1	0.	0.10	11.	0.001	1	0.	0.10	10.	0.001	1	0.	0.10	9.	0.001
372	2.54	2.58	1	0.	0.07	7.	0.001	1	0.	0.07	7.	0.001	1	0.	0.07	7.	0.001
373	2.54	2.58	1	0.	0.09	7.	0.001	1	0.	0.09	7.	0.001	1	0.	0.08	7.	0.001
374	2.54	2.58	1	1	0.00	20.	0.002	1	1	0.00	18.	0.002	1	1	0.00	17.	0.002
375	2.54	2.58	1	1	0.00	14.	0.001	1	0.	0.00	13.	0.001	1	0.	0.00	12.	0.001
376	2.54	2.58	1	0.	0.05	7.	0.001	1	0.	0.05	7.	0.001	0.	0.	0.04	7.	0.001
377	2.54	2.58	1	0.	0.05	8.	0.001	1	0.	0.05	8.	0.001	1	0.	0.05	7.	0.001
378	2.54	2.58	1	1	0.00	19.	0.002	1	1	0.00	18.	0.002	1	1	0.00	18.	0.002
380	2.54	2.58	1	0.	0.08	13.	0.001	1	0.	0.08	12.	0.001	1	0.	0.08	12.	0.001
382	2.54	2.58	1	0.	0.08	6.	0.000	1	0.	0.08	5.	0.000	1	0.	0.08	5.	0.000
384	2.54	2.58	1	1	0.00	15.	0.001	1	0.	0.00	13.	0.001	1	0.	0.00	13.	0.000

ARMATURA SUPERIORE VERTICALE

			COMBI NAZI ONE RARA					COMBI NAZI ONE FREQUENTE					COMBI NAZI ONE QUASI PERMANENTE				
GUSCI	Af	Afc	Mom	Nor	σ c	σ f	WkR	Mom	Nor	σ c	σ f	WkF	Mom	Nor	σ c	σ f	WkP
356	2.58	2.59	0.	1	0.00	16.	0.001	0.	1	0.00	13.	0.001	0.	1	0.00	12.	0.001
357	2.58	2.59	0.	2	0.00	33.	0.003	0.	1	0.00	29.	0.003	0.	1	0.00	27.	0.002
358	2.58	2.59	0.	2	0.00	35.	0.003	0.	2	0.00	30.	0.003	0.	1	0.00	28.	0.003
359	2.58	2.59	0.	1	0.00	18.	0.002	0.	1	0.00	15.	0.001	0.	1	0.00	14.	0.001
360	2.58	2.59	0.	2	0.00	31.	0.003	0.	1	0.00	26.	0.002	0.	1	0.00	25.	0.002
361	2.58	2.59	0.	1	0.00	20.	0.002	0.	1	0.00	17.	0.002	0.	1	0.00	16.	0.002
362	2.58	2.59	0.	2	0.00	32.	0.003	0.	1	0.00	28.	0.003	0.	1	0.00	26.	0.002
363	2.58	2.59	0.	2	0.00	33.	0.003	0.	1	0.00	28.	0.003	0.	1	0.00	26.	0.002
364	2.58	2.59	0.	1	0.00	18.	0.002	0.	1	0.00	15.	0.001	0.	1	0.00	14.	0.001
365	2.58	2.59	0.	1	0.00	26.	0.002	0.	1	0.00	22.	0.002	0.	1	0.00	20.	0.002
366	2.58	2.59	0.	1	0.00	21.	0.002	0.	1	0.00	18.	0.002	0.	1	0.00	17.	0.002
367	2.58	2.59	0.	1	0.00	28.	0.003	0.	1	0.00	25.	0.002	0.	1	0.00	23.	0.002
368	2.58	2.59	0.	1	0.00	25.	0.002	0.	1	0.00	22.	0.002	0.	1	0.00	21.	0.002
370	2.58	2.59	2	1	0.00	34.	0.003	2	1	0.00	31.	0.003	2	1	0.00	30.	0.003
371	2.58	2.59	1	1	0.00	31.	0.003	1	1	0.00	27.	0.002	1	1	0.00	26.	0.002
372	2.58	2.59	0.	1	0.00	15.	0.001	0.	1	0.00	12.	0.001	0.	1	0.00	11.	0.001
373	2.58	2.59	0.	1	0.00	20.	0.002	0.	1	0.00	18.	0.002	0.	1	0.00	17.	0.002
374	2.58	2.59	2	2	0.00	40.	0.004	2	1	0.00	37.	0.003	2	1	0.00	35.	0.003
375	2.58	2.59	1	1	0.00	35.	0.003	1	1	0.00	31.	0.003	1	1	0.00	29.	0.003
376	2.58	2.59	0.	1	0.00	16.	0.002	0.	1	0.00	14.	0.001	0.	1	0.00	13.	0.001
377	2.58	2.59	0.	1	0.00	23.	0.002	0.	1	0.00	20.	0.002	0.	1	0.00	19.	0.002
378	2.58	2.59	2	1	0.00	39.	0.003	2	1	0.00	36.	0.003	2	1	0.00	34.	0.003
380	2.58	2.59	1	1	0.00	32.	0.003	1	1	0.00	29.	0.003	1	1	0.00	28.	0.002
382	2.58	2.59	0.	1	0.00	14.	0.001	0.	1	0.00	11.	0.001	0.	1	0.00	11.	0.001
384	2.58	2.59	0.	1	0.00	28.	0.003	0.	1	0.00	24.	0.002	0.	1	0.00	22.	0.002

PORTALE TIPO 1 - VERIFICA ASTE IN ACCIAIO

RIASSUNTO DELLE ASTE VERIFICATE CON L'ULTIMO CALCOLO EFFETTUATO

asta	2 - sez.	1 - P_HEA180_S001	- 84% della Si limite.
asta	3 - sez.	1 - P_HEA180_S001	- 69% della Si limite.
asta	5 - sez.	1 - P_HEA180_S001	- 78% della Si limite.
asta	6 - sez.	1 - P_HEA180_S001	- 73% della Si limite.
asta	7 - sez.	1 - P_HEA180_S001	- 73% della Si limite.

PORTALE TIPO 1 - VERIFICA ELEMENTI IN ACCIAIO

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

MATERIALI

S275 (EN 10025-2): Mod.El.= 2100000.0; gM = 1.050;
fyk = 2750.0(2550.0 per sp>40 mm); fyd = 2619.0(2428.6 per sp>40 mm).

CASI DI CARICO

N	Descrizione	Soll.	
1	SLU SENZA SISMA		1
4	SLU con SISMALX		4
5	SLU con SISMAY		4

CARATTERISTICHE GEOMETRICHE

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

P_HEA180_S001 (1) stato limite ultimo - ASTA (153- 151) 2
----- PROGR. 0.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-2	0.0	-210903.9	0.0	-5669.4	-570.3	0.0
4-2	108332.7	0.0	0.0	-5963.3	0.0	-292.8

TENSIONI :

Caso	Ve	No	massimi	Sx	Tz	Ty	Si
5- 2	si	1	Sx Si	-2177.6	0.0	0.0	2177.6
5- 2	si	5	Tz	-535.5	-24.0	0.0	537.1
4- 2	si	9	Ty	-131.4	0.0	31.6	142.4
-----							PROGR.

SOLLECITAZIONI :

Caseo	MZ	MY	MT	N	TZ	TY
5-2	0.0	-184527.8	0.0	-5652.9	-570.3	0.0
4-2	94791.1	0.0	0.0	-5946.8	0.0	-292.8

TENSIONI :

Case	Ve	No	massimi	Sx	Tz	Ty	Si	
5-2	si	1	Sx	Si	-1920.6	0.0	0.0	1920.6
5-2	si	5	Tz		-483.8	-24.0	0.0	485.6
4-2	si	9	Ty		-131.1	0.0	31.6	142.0

----- PROGR. 92

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 2	0.0	-158151.7	0.0	-5636.5	-570.3	0.0
4- 2	81249.6	0.0	0.0	-5930.4	0.0	-292.8

TENSIONI :

Caso	Vel	No	massimi	Sx	Tz	Ty	Si
5- 2 si 1	Sx	Si	-1663.5	0.0	0.0	1663.5	
5- 2 si 5	Tz		-432.1	-24.0	0.0	434.1	
4- 2 si 9	Ty		-130.7	0.0	31.6	141.7	

----- PROGR. 139.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 2	0.0	-131775.6	0.0	-5620.0	-570.3	0.0
4- 2	67708.0	0.0	0.0	-5913.9	0.0	-292.8

TENSIONI :

Caso	Vel	No	massimi	Sx	Tz	Ty	Si
5- 2 si 1	Sx	Si	-1406.4	0.0	0.0	1406.4	
5- 2 si 5	Tz		-380.4	-24.0	0.0	382.6	
4- 2 si 9	Ty		-130.4	0.0	31.6	141.4	

----- PROGR. 185.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 2	0.0	-105399.5	0.0	-5603.6	-570.3	0.0
4- 2	54166.4	0.0	0.0	-5897.5	0.0	-292.8

TENSIONI :

Caso	Vel	No	massimi	Sx	Tz	Ty	Si
5- 2 si 1	Sx	Si	-1149.3	0.0	0.0	1149.3	
5- 2 si 5	Tz		-328.7	-24.0	0.0	331.3	
4- 2 si 9	Ty		-130.0	0.0	31.6	141.0	

----- PROGR. 231.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 2	0.0	-79023.4	0.0	-5587.1	-570.3	0.0
4- 2	40624.8	0.0	0.0	-5881.0	0.0	-292.8

TENSIONI :

Caso	Vel	No	massimi	Sx	Tz	Ty	Si
5- 2 si 1	Sx	Si	-892.3	0.0	0.0	892.3	
5- 2 si 5	Tz		-277.0	-24.0	0.0	280.1	
4- 2 si 9	Ty		-129.6	0.0	31.6	140.7	

----- PROGR. 278.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 2	0.0	-52647.3	0.0	-5570.7	-570.3	0.0
4- 2	27083.2	0.0	0.0	-5864.6	0.0	-292.8

TENSIONI :

Caso	Vel	No	massimi	Sx	Tz	Ty	Si
5- 2 si 1	Sx	Si	-635.2	0.0	0.0	635.2	
5- 2 si 5	Tz		-225.3	-24.0	0.0	229.1	
4- 2 si 9	Ty		-129.3	0.0	31.6	140.4	

----- PROGR. 324.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 2	0.0	-26271.2	0.0	-5554.2	-570.3	0.0
4- 2	13541.6	0.0	0.0	-5848.2	0.0	-292.8

TENSIONI :

Caso	Vel	No	massimi	Sx	Tz	Ty	Si
5- 2 si 1	Sx	Si	-378.1	0.0	0.0	378.1	
5- 2 si 5	Tz		-173.6	-24.0	0.0	178.5	
4- 2 si 9	Ty		-128.9	0.0	31.6	140.0	

----- PROGR. 370.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
1- 1	0.0	0.0	0.0	-10123.2	0.0	0.0
5- 2	0.0	104.9	0.0	-5537.8	-570.3	0.0
4- 2	0.0	0.0	0.0	-5831.7	0.0	-292.8

TENSIONI :

Caso	Vel	No	massimi	Sx	Tz	Ty	Si
1- 1 si 1	Sx	Si	-223.1	0.0	0.0	223.1	
5- 2 si 5	Tz		-121.9	-24.0	0.0	128.7	
4- 2 si 9	Ty		-128.5	0.0	31.6	139.7	

VERIFICA STABILITA` :

|L0 = 370.
 Z |Lc = 370.|Ro = 7.45|Im = 49.7|Ncr= 380923.1|alfa(b)=0.3400|ki=0.8507|
 Y |Lc = 370.|Ro = 4.51|Im = 82.0|Ncr= 139998.2|alfa(c)=0.4900|ki=0.5731|

Caso 5- 2 - Nodo 1 - Asse Y

Ned = -5669.4|Mzeq = 0.0|Myeq = -126500.4|Ss = -1501.2 (0.573)

P_HEA180_S001 (1) stato limite ultimo - ASTA (154- 152) 3
----- PROGR. 0.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 1	0.0	170722.8	0.0	-5669.4	461.4	0.0
4- 2	108332.7	0.0	0.0	-5375.5	0.0	-292.8

TENSIONI :

Caso	Vel	No	massimi	Sx	Tz	Ty	Si	
5- 1	si	2	Sx	Si	-1786.6	0.0	0.0	1786.6
5- 1	si	5	Tz		207.4	19.4	0.0	210.1
4- 2	si	9	Ty		-118.5	0.0	31.6	130.5

----- PROGR. 46.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 1	0.0	149382.4	0.0	-5652.9	461.4	0.0
4- 2	94791.1	0.0	0.0	-5359.0	0.0	-292.8

TENSIONI :

Caso	Vel	No	massimi	Sx	Tz	Ty	Si	
5- 1	si	2	Sx	Si	-1578.5	0.0	0.0	1578.5
5- 1	si	5	Tz		166.2	19.4	0.0	169.5
4- 2	si	9	Ty		-118.1	0.0	31.6	130.2

----- PROGR. 92.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 1	0.0	128042.1	0.0	-5636.5	461.4	0.0
4- 2	81249.6	0.0	0.0	-5342.6	0.0	-292.8

TENSIONI :

Caso	Vel	No	massimi	Sx	Tz	Ty	Si	
5- 1	si	2	Sx	Si	-1370.4	0.0	0.0	1370.4
5- 1	si	5	Tz		125.0	19.4	0.0	129.4
4- 2	si	9	Ty		-117.8	0.0	31.6	129.8

----- PROGR. 139.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 1	0.0	106701.7	0.0	-5620.0	461.4	0.0
4- 2	67708.0	0.0	0.0	-5326.1	0.0	-292.8

TENSIONI :

Caso	Vel	No	massimi	Sx	Tz	Ty	Si	
5- 1	si	2	Sx	Si	-1162.4	0.0	0.0	1162.4
5- 1	si	5	Tz		83.8	19.4	0.0	90.3
4- 2	si	9	Ty		-117.4	0.0	31.6	129.5

----- PROGR. 185.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 1	0.0	85361.4	0.0	-5603.6	461.4	0.0
4- 2	54166.4	0.0	0.0	-5309.7	0.0	-292.8

TENSIONI :

Caso	Vel	No	massimi	Sx	Tz	Ty	Si	
5- 1	si	2	Sx	Si	-954.3	0.0	0.0	954.3
5- 1	si	5	Tz		42.6	19.4	0.0	54.3
4- 2	si	9	Ty		-117.0	0.0	31.6	129.2

----- PROGR. 231.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 1	0.0	64021.0	0.0	-5587.1	461.4	0.0
4- 2	40624.8	0.0	0.0	-5293.2	0.0	-292.8

TENSIONI :

Caso	Vel	No	massimi	Sx	Tz	Ty	Si	
5- 1	si	2	Sx	Si	-746.3	0.0	0.0	746.3
5- 1	si	5	Tz		1.5	19.4	0.0	33.6
4- 2	si	9	Ty		-116.7	0.0	31.6	128.9

----- PROGR. 278.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 1	0.0	42680.7	0.0	-5570.7	461.4	0.0
4- 2	27083.2	0.0	0.0	-5276.8	0.0	-292.8

TENSIONI :

Caso	Vel	No	massimi	Sx	Tz	Ty	Si	
5- 1	si	2	Sx	Si	-538.2	0.0	0.0	538.2
5- 1	si	5	Tz		-39.7	19.4	0.0	52.0
4- 2	si	9	Ty		-116.3	0.0	31.6	128.5

----- PROGR. 324.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
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5- 1	0.0	21340.3	0.0	-5554.2	461.4	0.0
4- 2	13541.6	0.0	0.0	-5260.3	0.0	-292.8

TENSIONI :

Caso	Vel	No	massimi	Sx	Tz	Ty	Si
5- 1	si	2	Sx Si	-330.1	0.0	0.0	330.1
5- 1	si	5	Tz	-80.9	19.4	0.0	87.6
4- 2	si	9	Ty	-116.0	0.0	31.6	128.2

----- PROGR. 370.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
1- 1	0.0	0.0	0.0	-10123.2	0.0	0.0
5- 1	0.0	0.0	0.0	-5537.8	461.4	0.0
4- 2	0.0	0.0	0.0	-5243.9	0.0	-292.8

TENSIONI :

Caso	Vel	No	massimi	Sx	Tz	Ty	Si
1- 1	si	1	Sx Si	-223.1	0.0	0.0	223.1
5- 1	si	5	Tz	-122.1	19.4	0.0	126.6
4- 2	si	9	Ty	-115.6	0.0	31.6	127.9

VERIFICA STABILITA` :

|L0 = 370.|
Z |Lc = 370.|Ro = 7.45|Im = 49.7|Ncr= 380923.1|alfa(b)=0.3400|ki=0.8507|
Y |Lc = 370.|Ro = 4.51|Im = 82.0|Ncr= 139998.2|alfa(c)=0.4900|ki=0.5731|
Caso 5- 1 - Nodo 2 - Asse Y
Ned = -5669.4|Mzeq = 0.0|Myeq = 102433.7|Ss = -1257.1 (0.480)

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----- PROGR. 0.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 2	0.0	-189145.2	-69.1	-8479.6	-510.9	0.0
4- 2	177739.8	0.0	0.0	-8479.6	0.0	-871.2

TENSIONI :

Caso	Vel	No	massimi	Sx	Tz	Ty	Si
5- 2	si	1	Sx Si	-2027.8	0.0	0.0	2027.8
5- 2	si	5	Tz	-555.1	-27.4	0.0	557.1
4- 2	si	9	Ty	-186.9	0.0	94.0	247.8

----- PROGR. 46.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 2	0.0	-165515.2	-69.1	-8463.1	-510.9	0.0
4- 2	137447.3	0.0	0.0	-8463.1	0.0	-871.2

TENSIONI :

Caso	Vel	No	massimi	Sx	Tz	Ty	Si
5- 2	si	1	Sx Si	-1797.5	0.0	0.0	1797.5
5- 2	si	5	Tz	-508.7	-27.4	0.0	510.9
4- 2	si	9	Ty	-186.5	0.0	94.0	247.6

----- PROGR. 92.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 2	0.0	-141885.2	-69.1	-8446.7	-510.9	0.0
4- 2	97154.7	0.0	0.0	-8446.7	0.0	-871.2

TENSIONI :

Caso	Vel	No	massimi	Sx	Tz	Ty	Si
5- 2	si	1	Sx Si	-1567.1	0.0	0.0	1567.1
5- 2	si	5	Tz	-462.4	-27.4	0.0	464.8
4- 2	si	9	Ty	-186.2	0.0	94.0	247.3

----- PROGR. 139.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 2	0.0	-118255.1	-69.1	-8430.2	-510.9	0.0
4- 2	56862.2	0.0	0.0	-8430.2	0.0	-871.2

TENSIONI :

Caso	Vel	No	massimi	Sx	Tz	Ty	Si
5- 2	si	1	Sx Si	-1336.8	0.0	0.0	1336.8
5- 2	si	5	Tz	-416.0	-27.4	0.0	418.7
4- 2	si	9	Ty	-185.8	0.0	94.0	247.0

----- PROGR. 185.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 2	0.0	-94625.1	-69.1	-8413.8	-510.9	0.0
4- 2	16569.6	0.0	0.0	-8413.8	0.0	-871.2

TENSIONI :

Caso	Vel	No	massimi	Sx	Tz	Ty	Si
5- 2	si	1	Sx Si	-1106.4	0.0	0.0	1106.4

5-2 si 5	Tz	-369.7	-27.4	0.0	372.7
4-2 si 9	Ty	-185.5	0.0	94.0	246.8

----- PROGR. 231.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-2	0.0	-70995.1	-69.1	-8397.3	-510.9	0.0
4-2	-23722.9	0.0	0.0	-8397.3	0.0	-871.2

TENSIONI :

Caso Ve No massimi	Sx	Tz	Ty	Si	
5-2 si 1 Sx	Si	-876.1	0.0	0.0	876.1
5-2 si 5	Tz	-323.3	-27.4	0.0	326.8
4-2 si 9	Ty	-185.1	0.0	94.0	246.5

----- PROGR. 278.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-2	0.0	-47365.0	-69.1	-8380.9	-510.9	0.0
4-2	-64015.5	0.0	0.0	-8380.9	0.0	-871.2

TENSIONI :

Caso Ve No massimi	Sx	Tz	Ty	Si	
5-2 si 1 Sx	Si	-645.7	0.0	0.0	645.7
5-2 si 5	Tz	-276.9	-27.4	0.0	281.0
4-2 si 9	Ty	-184.7	0.0	94.0	246.2

----- PROGR. 324.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
4-2	-104308.1	0.0	0.0	-8364.4	0.0	-871.2
5-2	0.0	-23735.0	-69.1	-8364.4	-510.9	0.0

TENSIONI :

Caso Ve No massimi	Sx	Tz	Ty	Si	
4-2 si 3 Sx	Si	-538.8	0.0	0.0	538.8
5-2 si 5	Tz	-230.6	-27.4	0.0	235.4
4-2 si 9	Ty	-184.4	0.0	94.0	245.9
4-2 si 7	Si	-538.8	20.1	0.0	540.0

----- PROGR. 370.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
4-2	-144600.6	0.0	0.0	-8348.0	0.0	-871.2
5-2	0.0	-104.9	-69.1	-8348.0	-510.9	0.0

TENSIONI :

Caso Ve No massimi	Sx	Tz	Ty	Si	
4-2 si 3 Sx	Si	-675.4	0.0	0.0	675.4
5-2 si 5	Tz	-184.2	-27.4	0.0	190.2
4-2 si 9	Ty	-184.0	0.0	94.0	245.7
4-2 si 7	Si	-675.4	20.1	0.0	676.3

VERIFICA STABILITA` :

|L0 = 370.|
Z |Lc = 370.|Ro = 7.45|Im = 49.7|Ncr= 380923.1|alfa(b)=0.3400|ki=0.8507|
Y |Lc = 370.|Ro = 4.51|Im = 82.0|Ncr= 139998.2|alfa(c)=0.4900|ki=0.5731|
Caso 5-2 - Nodo 1 - Asse Y
Ned = -8479.6|Mzeq = 0.0|Myeq = -113529.1|Ss = -1502.4 (0.574)

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----- PROGR. 0.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
4-2	0.0	0.0	0.0	196.7	0.0	5831.7
1-1	0.0	0.0	0.0	0.0	0.0	10123.2

TENSIONI :

Caso Ve No massimi	Sx	Tz	Ty	Si	
4-2 si 1 Sx	Si	4.3	0.0	0.0	4.3
1-1 si 5	Tz	0.0	233.9	0.0	405.2
1-1 si 9	TySi	0.0	0.0	-1091.9	1891.3

----- PROGR. 31.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
1-1	251078.1	0.0	0.0	0.0	0.0	6106.5

TENSIONI :

Caso Ve No massimi	Sx	Tz	Ty	Si	
1-1 si 1 Sx	Si	-853.2	0.0	0.0	853.2
1-1 si 5	Tz	-853.2	141.1	0.0	887.5
1-1 si 9	Ty	0.0	0.0	-658.7	1140.8
1-1 si 11	Si	-608.7	0.0	-613.5	1224.6

----- PROGR. 62.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
1- 1	375495.9	0.0	0.0	0.0	0.0	1985.7

TENSIONI :

Caso	Vel	No	massimi	Sx	Tz	Ty	Si
1- 1 si 1	Sx			-1276.0	0.0	0.0	1276.0
1- 1 si 5	Tz	Si		-1276.0	45.9	0.0	1278.5
1- 1 si 9	Ty			0.0	0.0	-214.2	371.0

----- PROGR. 92.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
1- 1	373201.5	0.0	0.0	0.0	0.0	-2135.0

TENSIONI :

Caso	Vel	No	massimi	Sx	Tz	Ty	Si
1- 1 si 1	Sx			-1268.2	0.0	0.0	1268.2
1- 1 si 5	Tz	Si		-1268.2	-49.3	0.0	1271.1
1- 1 si 9	Ty			0.0	0.0	230.3	398.9

----- PROGR. 123.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
1- 1	269361.6	0.0	0.0	0.0	0.0	-3967.8

TENSIONI :

Caso	Vel	No	massimi	Sx	Tz	Ty	Si
1- 1 si 1	Sx			-915.3	0.0	0.0	915.3
1- 1 si 5	Tz			-915.3	-91.7	0.0	929.0
1- 1 si 9	Ty			0.0	0.0	428.0	741.3
1- 1 si 13	Si			653.0	0.0	398.6	950.4

----- PROGR. 154.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
1- 1	133162.1	0.0	0.0	0.0	0.0	-4890.7

TENSIONI :

Caso	Vel	No	massimi	Sx	Tz	Ty	Si
1- 1 si 1	Sx			-452.5	0.0	0.0	452.5
1- 1 si 5	Tz			-452.5	-113.0	0.0	493.0
1- 1 si 9	TySi			0.0	0.0	527.5	913.7

----- PROGR. 185.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
4- 3	-71531.8	0.0	0.0	-196.7	0.0	-3467.0
1- 1	-31415.9	0.0	0.0	0.0	0.0	-5813.6

TENSIONI :

Caso	Vel	No	massimi	Sx	Tz	Ty	Si
4- 3 si 3	Sx			-247.4	0.0	0.0	247.4
1- 1 si 5	Tz			106.8	-134.3	0.0	256.0
1- 1 si 9	TySi			0.0	0.0	627.1	1086.1

----- PROGR. 215.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
1- 1	-224372.3	0.0	0.0	0.0	0.0	-6736.4

TENSIONI :

Caso	Vel	No	massimi	Sx	Tz	Ty	Si
1- 1 si 1	Sx			762.5	0.0	0.0	762.5
1- 1 si 5	Tz			762.5	-155.7	0.0	808.7
1- 1 si 9	Ty			0.0	0.0	726.6	1258.5
1- 1 si 11	Si			544.0	0.0	676.8	1292.3

----- PROGR. 246.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
1- 1	-445707.3	0.0	0.0	0.0	0.0	-7659.3

TENSIONI :

Caso	Vel	No	massimi	Sx	Tz	Ty	Si
1- 1 si 1	Sx			1514.6	0.0	0.0	1514.6
1- 1 si 5	Tz			1514.6	-177.0	0.0	1545.3
1- 1 si 9	Ty			0.0	0.0	826.2	1430.9
1- 1 si 11	Si			1080.6	0.0	769.5	1715.9

VERIFICA STABILITA` :

|L0 = 246.|
Z |Lc = 246.|Ro = 7.45|Im = 33.0|Ncr= 861728.8|alfa(b)=0.3400|ki=0.9337|
Y |Lc = 246.|Ro = 4.51|Im = 54.5|Ncr= 316705.5|alfa(c)=0.4900|ki=0.7689|
Caso 4- 3 - Nodo 3 - Asse Y
Ned = -196.7|Mzeq = -236646.4|Myeq = 0.0|Ss = -810.0 (0.309)

P_HEA180_S001 (1) stato limite ultimo - ASTA (156- 152) 7
----- PROGR. 0.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
1- 1	-445707.3	0.0	0.0	0.0	0.0	7659.3

TENSIONI :

Caso	Vel	No	massimi	Sx	Tz	Ty	Si
1- 1 si 1	Sx			1514.6	0.0	0.0	1514.6
1- 1 si 5	Tz			1514.6	177.0	0.0	1545.3
1- 1 si 9	Ty			0.0	0.0	-826.2	1430.9
1- 1 si 11	Si			1080.6	0.0	-769.5	1715.9

----- PROGR. 31.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
1- 1	-224372.3	0.0	0.0	0.0	0.0	6736.4

TENSIONI :

Caso	Vel	No	massimi	Sx	Tz	Ty	Si
1- 1 si 1	Sx			762.5	0.0	0.0	762.5
1- 1 si 5	Tz			762.5	155.7	0.0	808.7
1- 1 si 9	Ty			0.0	0.0	-726.6	1258.5
1- 1 si 11	Si			544.0	0.0	-676.8	1292.3

----- PROGR. 62.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
4- 2	-71531.8	0.0	0.0	-196.7	0.0	3467.0
1- 1	-31415.9	0.0	0.0	0.0	0.0	5813.6

TENSIONI :

Caso	Vel	No	massimi	Sx	Tz	Ty	Si
4- 2 si 3	Sx			-247.4	0.0	0.0	247.4
1- 1 si 5	Tz			106.8	134.3	0.0	256.0
1- 1 si 9	TySi			0.0	0.0	-627.1	1086.1

----- PROGR. 92.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
1- 1	133162.1	0.0	0.0	0.0	0.0	4890.7

TENSIONI :

Caso	Vel	No	massimi	Sx	Tz	Ty	Si
1- 1 si 1	Sx			-452.5	0.0	0.0	452.5
1- 1 si 5	Tz			-452.5	113.0	0.0	493.0
1- 1 si 9	TySi			0.0	0.0	-527.5	913.7

----- PROGR. 123.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
1- 1	269361.6	0.0	0.0	0.0	0.0	3967.8

TENSIONI :

Caso	Vel	No	massimi	Sx	Tz	Ty	Si
1- 1 si 1	Sx			-915.3	0.0	0.0	915.3
1- 1 si 5	Tz			-915.3	91.7	0.0	929.0
1- 1 si 9	Ty			0.0	0.0	-428.0	741.3
1- 1 si 13	Si			653.0	0.0	-398.6	950.4

----- PROGR. 154.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
1- 1	373201.5	0.0	0.0	0.0	0.0	2135.0

TENSIONI :

Caso	Vel	No	massimi	Sx	Tz	Ty	Si
1- 1 si 1	Sx			-1268.2	0.0	0.0	1268.2
1- 1 si 5	Tz Si			-1268.2	49.3	0.0	1271.1
1- 1 si 9	Ty			0.0	0.0	-230.3	398.9

----- PROGR. 184.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
1- 1	375495.9	0.0	0.0	0.0	0.0	-1985.7

TENSIONI :

Caso	Vel	No	massimi	Sx	Tz	Ty	Si
1- 1 si 1	Sx			-1276.0	0.0	0.0	1276.0
1- 1 si 5	Tz Si			-1276.0	-45.9	0.0	1278.5
1- 1 si 9	Ty			0.0	0.0	214.2	371.0

----- PROGR. 215.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
1- 1	251078.1	0.0	0.0	0.0	0.0	-6106.5

TENSIONI :

Caso	Vel	No	massimi	Sx	Tz	Ty	Si
1- 1 si 1	Sx			-853.2	0.0	0.0	853.2
1- 1 si 5	Tz			-853.2	-141.1	0.0	887.5
1- 1 si 9	Ty			0.0	0.0	658.7	1140.8
1- 1 si 11	Si			-608.7	0.0	613.5	1224.6

----- PROGR. 246.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
4- 2	0.0	0.0	0.0	-196.7	0.0	-5243.9
1- 1	0.0	0.0	0.0	0.0	0.0	-10123.2

TENSIONI :

Caso	Vel	No	massimi	Sx	Tz	Ty	Si
4- 2	si	1	Sx	-4.3	0.0	0.0	4.3
1- 1	si	5	Tz	0.0	-233.9	0.0	405.2
1- 1	si	9	TySi	0.0	0.0	1091.9	1891.3

VERIFICA STABILITA' :

$l_0 = 246$
 $Z \quad |L_c = 246|Ro = 7.45|Im = 33.0|Ncr = 861728.8|alfa(b) = 0.3400|ki = 0.9337|$
 $Y \quad |L_c = 246|Ro = 4.51|Im = 54.5|Ncr = 316705.5|alfa(c) = 0.4900|ki = 0.7689|$
 Caso 4- 2 - Nodo 3 - Asse Y
 $Ned = -196.7|Mzeq = -236646.4|Myeq = 0.0|Ss = -810.0 (0.309)$

VERIFICA TENSIONALE NODO: TRAVE SU COLONNA - 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
HEA180	171	180	6	9.5	15

Inclinazione trave: 0°

Piastrine (n°1)

Num	H1	H2	B	Sp
1	171	171	180	10

BULLONI

Num	X	Y	Fi	Area	Num	X	Y	Fi	Area
1	-59.7	43	12	86.4	4	59.7	43	12	86.4
2	-59.7	85.5	12	86.4	5	59.7	85.5	12	86.4
3	-59.7	128	12	86.4	6	59.7	128	12	86.4

SALDATURE

Lato saldature su colonna: 7

MATERIALI

Acciaio S 275 (Fe 430) | Classe viti 8.8
 $f_d \leq 40\text{mm}$ | $f_d \ 40\text{mm} < s < 80\text{mm}$ | f_d
 2619 | 2428.6 | 6400

SOLLECITAZIONI AGENTI E STATO TENSIONALE

Combinazione di sollecitazioni agenti Cond 5 As. 2 Nd. 151

$N = 277.1$ $T_y = -276$ $T_z = 0$
 $M_t = 0$ $M_y = 0$ $M_z = 0$

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	46	3317.6	9804	34	4976.5	11088.1	0.02	0.01	SI'
2	46	3317.6	8232.8	83.2	4976.5	11088.1	0.03	0.02	SI'
3	46	3317.6	9804	132.4	4976.5	11088.1	0.03	0.03	SI'
4	46	3317.6	9804	34	4976.5	11088.1	0.02	0.01	SI'
5	46	3317.6	8232.8	83.2	4976.5	11088.1	0.03	0.02	SI'
6	46	3317.6	9804	132.4	4976.5	11088.1	0.03	0.03	SI'

Compressione massima sulla piastra

Sig	fd	Ver
-18.2	2619	SI'

Tensione massima piastra (mensola sup. ed inf.)

Sig	fd	Ver
0	2619	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	10.5	-22.9	0	25.2	10.5	1925	2337.5	SI'
s1'	10.5	-22.9	0	25.2	10.5	1925	2337.5	SI'
s2	10.5	0	0	10.5	10.5	1925	2337.5	SI'
s2'	10.5	0	0	10.5	10.5	1925	2337.5	SI'
s3	10.5	0	0	10.5	10.5	1925	2337.5	SI'
s3'	10.5	0	0	10.5	10.5	1925	2337.5	SI'

NODO VERIFICATO IN BASE ALLA COMB. DI SOLLECITAZIONI AGENTI Cond 5 As. 2 Nd. 151

Combinazione di sollecitazioni agenti Caso 1 As. 2 Nd. 151

N = -10123.2 Ty = 0 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 | 0| 3317.6| 9804| -28.4| 4976.5|11088.1| 0|0.01|SI'|
2 | 0| 3317.6| 8232.8| -28.4| 4976.5|11088.1| 0|0.01|SI'|
3 | 0| 3317.6| 9804| -28.4| 4976.5|11088.1| 0|0.01|SI'|
4 | 0| 3317.6| 9804| -28.4| 4976.5|11088.1| 0|0.01|SI'|
5 | 0| 3317.6| 8232.8| -28.4| 4976.5|11088.1| 0|0.01|SI'|
6 | 0| 3317.6| 9804| -28.4| 4976.5|11088.1| 0|0.01|SI'|

Compressione massima sulla piastra

Sig| fd|Ver|
-32.9| 2619|SI'|

Tensione massima piastra (mensola sup. ed inf.)

Sig| fd|Ver|
0| 2619|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 | 384.4| 0| 0| 384.4| 384.4| 1925| 2337.5|SI'|
s1' | 384.4| 0| 0| 384.4| 384.4| 1925| 2337.5|SI'|
s2 | 384.4| 0| 0| 384.4| 384.4| 1925| 2337.5|SI'|
s2' | 384.4| 0| 0| 384.4| 384.4| 1925| 2337.5|SI'|
s3 | 384.4| 0| 0| 384.4| 384.4| 1925| 2337.5|SI'|
s3' | 384.4| 0| 0| 384.4| 384.4| 1925| 2337.5|SI'|

NODO VERIFICATO IN BASE ALLA COMB. DI SOLLECITAZIONI AGENTI Caso 1 As. 2 Nd. 151

Combinazione di sollecitazioni agenti Caso 5 As. 2 Nd. 151

N = -5537.8 Ty = 0 Tz = 570.3
Mt = 0 My = -105 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 | 95| 3317.6| 9804| -19| 4976.5|11088.1|0.03| 0|SI'|
2 | 95| 3317.6| 8232.8| -19| 4976.5|11088.1|0.03| 0|SI'|
3 | 95| 3317.6| 9804| -19| 4976.5|11088.1|0.03| 0|SI'|
4 | 95| 3317.6| 9804| -12.1| 4976.5|11088.1|0.03| 0|SI'|
5 | 95| 3317.6| 8232.8| -12.1| 4976.5|11088.1|0.03| 0|SI'|
6 | 95| 3317.6| 9804| -12.1| 4976.5|11088.1|0.03| 0|SI'|

Compressione massima sulla piastra

Sig| fd|Ver|
-24| 2619|SI'|

Tensione massima piastra (mensola sup. ed inf.)

Sig| fd|Ver|
0| 2619|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 | 210.1| 0| 0| 210.1| 210.1| 1925| 2337.5|SI'|
s1' | 210.5| 0| 0| 210.5| 210.5| 1925| 2337.5|SI'|
s2 | 209.9| 40| 0| 213.7| 209.9| 1925| 2337.5|SI'|
s2' | 212.3| 40| 0| 216| 212.3| 1925| 2337.5|SI'|
s3 | 209.9| 40| 0| 213.7| 209.9| 1925| 2337.5|SI'|
s3' | 212.3| 40| 0| 216| 212.3| 1925| 2337.5|SI'|

NODO VERIFICATO IN BASE ALLA COMB. DI SOLLECITAZIONI AGENTI Caso 5 As. 2 Nd. 151

Combinazione di sollecitazioni agenti Caso 5 As. 2 Nd. 151

N = -5537.8 Ty = 0 Tz = -570.3
Mt = 0 My = 105 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 | 95| 3317.6| 9804| -12.1| 4976.5|11088.1|0.03| 0|SI'|

2		95		3317.6		8232.8		-12.1		4976.5		11088.1		0.03		0		SI'
3		95		3317.6		9804		-12.1		4976.5		11088.1		0.03		0		SI'
4		95		3317.6		9804		-19		4976.5		11088.1		0.03		0		SI'
5		95		3317.6		8232.8		-19		4976.5		11088.1		0.03		0		SI'
6		95		3317.6		9804		-19		4976.5		11088.1		0.03		0		SI'

Compressione massima sulla piastra

Sig		fd		Ver
-24		2619		SI'

Tensione massima piastra (mensola sup. ed inf.)

Sig		fd		Ver
0		2619		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		210.5		0		0		210.5		210.5		1925		2337.5		SI'
s1'		210.1		0		0		210.1		210.1		1925		2337.5		SI'
s2		212.3		-40		0		216		212.3		1925		2337.5		SI'
s2'		209.9		-40		0		213.7		209.9		1925		2337.5		SI'
s3		212.3		-40		0		216		212.3		1925		2337.5		SI'
s3'		209.9		-40		0		213.7		209.9		1925		2337.5		SI'

NODO VERIFICATO IN BASE ALLA COMB. DI SOLLECITAZIONI AGENTI Caso 5 As. 2 Nd. 151

Combinazione di sollecitazioni agenti Caso 4 As. 2 Nd. 151

N	=	-5831.7		Ty	=	292.8		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		48.8		3317.6		9804		-15		4976.5		11088.1		0.01		0		SI'
2		48.8		3317.6		8232.8		-16.4		4976.5		11088.1		0.01		0		SI'
3		48.8		3317.6		9804		-17.7		4976.5		11088.1		0.01		0		SI'
4		48.8		3317.6		9804		-15		4976.5		11088.1		0.01		0		SI'
5		48.8		3317.6		8232.8		-16.4		4976.5		11088.1		0.01		0		SI'
6		48.8		3317.6		9804		-17.7		4976.5		11088.1		0.01		0		SI'

Compressione massima sulla piastra

Sig		fd		Ver
-22.1		2619		SI'

Tensione massima piastra (mensola sup. ed inf.)

Sig		fd		Ver
0		2619		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		221.5		24.2		0		222.8		221.5		1925		2337.5		SI'
s1'		221.5		24.2		0		222.8		221.5		1925		2337.5		SI'
s2		221.5		0		0		221.5		221.5		1925		2337.5		SI'
s2'		221.5		0		0		221.5		221.5		1925		2337.5		SI'
s3		221.5		0		0		221.5		221.5		1925		2337.5		SI'
s3'		221.5		0		0		221.5		221.5		1925		2337.5		SI'

NODO VERIFICATO IN BASE ALLA COMB. DI SOLLECITAZIONI AGENTI Caso 4 As. 2 Nd. 151

Combinazione di sollecitazioni agenti Caso 4 As. 2 Nd. 151

N	=	-5243.9		Ty	=	-292.8		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		48.8		3317.6		9804		-16.1		4976.5		11088.1		0.01		0		SI'
2		48.8		3317.6		8232.8		-14.7		4976.5		11088.1		0.01		0		SI'
3		48.8		3317.6		9804		-13.4		4976.5		11088.1		0.01		0		SI'
4		48.8		3317.6		9804		-16.1		4976.5		11088.1		0.01		0		SI'
5		48.8		3317.6		8232.8		-14.7		4976.5		11088.1		0.01		0		SI'
6		48.8		3317.6		9804		-13.4		4976.5		11088.1		0.01		0		SI'

Compressione massima sulla piastra

Sig| fd|Ver|
-20.2| 2619|SI'|

Tensione massima piastra (mensola sup. ed inf.)

Sig| fd|Ver|
0| 2619|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 | 199.1| -24.2| 0| 200.6| 199.1| 1925| 2337.5|SI'|

s1' | 199.1| -24.2| 0| 200.6| 199.1| 1925| 2337.5|SI'|

s2 | 199.1| 0| 0| 199.1| 199.1| 1925| 2337.5|SI'|

s2' | 199.1| 0| 0| 199.1| 199.1| 1925| 2337.5|SI'|

s3 | 199.1| 0| 0| 199.1| 199.1| 1925| 2337.5|SI'|

s3' | 199.1| 0| 0| 199.1| 199.1| 1925| 2337.5|SI'|

NODO VERIFICATO IN BASE ALLA COMB. DI SOLLECITAZIONI AGENTI Caso 4 As. 2 Nd. 151

VERIFICA TENSIONALE NODO: ATTACCO A TERRA COLONNA - 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 | 450| 450| 30|

2(Y) | 450| 150| 6|

3(Z) | 129| 150| 6|

TIRAFONDI

Tirafondi (n° 6)

Num| X| Y| Fi| Area| Num| X| Y| Fi| Area|

1 | 400| 50| 16| 157| 4 | 50| 400| 16| 157|

2 | 50| 50| 16| 157| 5 | 400| 225| 16| 157|

3 | 400| 400| 16| 157| 6 | 50| 225| 16| 157|

Dimensioni

l| lft| l1| r|
400| 120| 350| 70|

SALDATURE (n° 8)

Nome | Lung|Lato| Nome | Lung|Lato|

S1 | 122| 10| S5 | 122| 10|

S2 | 72| 10| S6 | 72| 10|

S3 | 180| 10| S7 | 180| 10|

S4 | 72| 10| S8 | 72| 10|

MATERIALI

Acciaio S 275 (Fe 430) |Calcestruzzo C20/25

fd s<40mm |fd 40mm<s<80mm |fcd

2619 |2428.6 |117.6

Acciaio tirafondi S 275 (Fe 430) |

fd |

2200 |

SOLLECITAZIONI AGENTI E STATO TENSIONALE

Combinazione di sollecitazioni agenti Cond 5 As. 2 Nd. 153

N: 277.1 Ty: 276 Tz: 0
Mt: 0 My: 0 Mz: -102138

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 | 46| 3240.5|32761.9| -53.1| 4860.7|46686.6| 5259.1|0.01|0.01|0.01|SI'|

2 | 46| 3240.5|32761.9| -53.1| 4860.7|46686.6| 5259.1|0.01|0.01|0.01|SI'|

3 | 46| 3240.5|32761.9| 1137.2| 4860.7|46686.6| 5259.1|0.18|0.23|0.22|SI'|

4		46	3240.5	32761.9	1137.2	4860.7	46686.6	5259.1	0.18	0.23	0.22	SI'
5		46	3240.5	38400	542	4860.7	46686.6	5259.1	0.09	0.11	0.1	SI'
6		46	3240.5	38400	542	4860.7	46686.6	5259.1	0.09	0.11	0.1	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	193	16	0	193.7	193	1925	2337.5 SI'
S2	219.7	0	0	219.7	219.7	1925	2337.5 SI'
S3	270.9	0	0	270.9	270.9	1925	2337.5 SI'
S4	219.7	0	0	219.7	219.7	1925	2337.5 SI'
S5	193	16	0	193.7	193	1925	2337.5 SI'
S6	228.5	0	0	228.5	228.5	1925	2337.5 SI'
S7	279.7	0	0	279.7	279.7	1925	2337.5 SI'
S8	228.5	0	0	228.5	228.5	1925	2337.5 SI'

Verifica piastra

Smax	fd Ver
1580.5	2619 SI'

Verifica pressione sul calcestruzzo

Smax	fcd Ver
20.3	117.6 SI'

NODO VERIFICATO IN BASE ALLA COMB. DI SOLLECITAZIONI AGENTI Cond 5 As. 2 Nd. 153

Combinazione di sollecitazioni agenti Caso 1 As. 2 Nd. 153

N: -10294.2	Ty: 0	Tz: 0
Mt: 0	My: 0	Mz: 0

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	0	3240.5	32761.9	-54.5	4860.7	46686.6	5259.1	0	0.01	0.01 SI'
2	0	3240.5	32761.9	-54.5	4860.7	46686.6	5259.1	0	0.01	0.01 SI'
3	0	3240.5	32761.9	-54.5	4860.7	46686.6	5259.1	0	0.01	0.01 SI'
4	0	3240.5	32761.9	-54.5	4860.7	46686.6	5259.1	0	0.01	0.01 SI'
5	0	3240.5	38400	-54.5	4860.7	46686.6	5259.1	0	0.01	0.01 SI'
6	0	3240.5	38400	-54.5	4860.7	46686.6	5259.1	0	0.01	0.01 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	163.2	0	0	163.2	163.2	1925	2337.5 SI'
S2	163.2	0	0	163.2	163.2	1925	2337.5 SI'
S3	163.2	0	0	163.2	163.2	1925	2337.5 SI'
S4	163.2	0	0	163.2	163.2	1925	2337.5 SI'
S5	163.2	0	0	163.2	163.2	1925	2337.5 SI'
S6	163.2	0	0	163.2	163.2	1925	2337.5 SI'
S7	163.2	0	0	163.2	163.2	1925	2337.5 SI'
S8	163.2	0	0	163.2	163.2	1925	2337.5 SI'

Verifica piastra

Smax	fd Ver
385.9	2619 SI'

Verifica pressione sul calcestruzzo

Smax	fcd Ver
4.9	117.6 SI'

NODO VERIFICATO IN BASE ALLA COMB. DI SOLLECITAZIONI AGENTI Caso 1 As. 2 Nd. 153

Combinazione di sollecitazioni agenti Caso 5 As. 2 Nd. 153

N: -5669.4	Ty: 0	Tz: 570.3
Mt: 0	My: 210904	Mz: 0

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	95	3240.5	32761.9	959.6	4860.7	46686.6	5259.1	0.17	0.2	0.18 SI'
2	95	3240.5	32761.9	-195.6	4860.7	46686.6	5259.1	0.03	0.04	0.04 SI'

3		95		3240.5		32761.9		959.6		4860.7		46686.6		5259.1		0.17		0.2		0.18		SI'
4		95		3240.5		32761.9		-195.6		4860.7		46686.6		5259.1		0.03		0.04		0.04		SI'
5		95		3240.5		38400		959.6		4860.7		46686.6		5259.1		0.17		0.2		0.18		SI'
6		95		3240.5		38400		-195.6		4860.7		46686.6		5259.1		0.03		0.04		0.04		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	10.2	0	0	10.2	10.2	1925	2337.5	SI'
S2	1288.4	12.4	0	1288.4	1288.4	1925	2337.5	SI'
S3	1468.1	12.4	0	1468.2	1468.1	1925	2337.5	SI'
S4	1468.1	12.4	0	1468.2	1468.1	1925	2337.5	SI'
S5	190	0	0	190	190	1925	2337.5	SI'
S6	1468.1	12.4	0	1468.2	1468.1	1925	2337.5	SI'
S7	1468.1	12.4	0	1468.2	1468.1	1925	2337.5	SI'
S8	1288.4	12.4	0	1288.4	1288.4	1925	2337.5	SI'

Verifica piastra

Smax	fd	Ver
2553.8	2619	SI'

Verifica pressione sul calcestruzzo

Smax	fcd	Ver
32.7	117.6	SI'

NODO VERIFICATO IN BASE ALLA COMB. DI SOLLECITAZIONI AGENTI Caso 5 As. 2 Nd. 153

Combinazione di sollecitazioni agenti Caso 5 As. 2 Nd. 153

N: -5669.4	Ty: 0	Tz: -570.3
Mt: 0	My: -210904	Mz: 0

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		95		3240.5		32761.9		-195.6		4860.7		46686.6		5259.1		0.03		0.04		0.04		SI'
2		95		3240.5		32761.9		959.6		4860.7		46686.6		5259.1		0.17		0.2		0.18		SI'
3		95		3240.5		32761.9		-195.6		4860.7		46686.6		5259.1		0.03		0.04		0.04		SI'
4		95		3240.5		32761.9		959.6		4860.7		46686.6		5259.1		0.17		0.2		0.18		SI'
5		95		3240.5		38400		-195.6		4860.7		46686.6		5259.1		0.03		0.04		0.04		SI'
6		95		3240.5		38400		959.6		4860.7		46686.6		5259.1		0.17		0.2		0.18		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	190	0	0	190	190	1925	2337.5	SI'
S2	1468.1	12.4	0	1468.2	1468.1	1925	2337.5	SI'
S3	1468.1	12.4	0	1468.2	1468.1	1925	2337.5	SI'
S4	1288.4	12.4	0	1288.4	1288.4	1925	2337.5	SI'
S5	10.2	0	0	10.2	10.2	1925	2337.5	SI'
S6	1288.4	12.4	0	1288.4	1288.4	1925	2337.5	SI'
S7	1468.1	12.4	0	1468.2	1468.1	1925	2337.5	SI'
S8	1468.1	12.4	0	1468.2	1468.1	1925	2337.5	SI'

Verifica piastra

Smax	fd	Ver
2553.8	2619	SI'

Verifica pressione sul calcestruzzo

Smax	fcd	Ver
32.7	117.6	SI'

NODO VERIFICATO IN BASE ALLA COMB. DI SOLLECITAZIONI AGENTI Caso 5 As. 2 Nd. 153

Combinazione di sollecitazioni agenti Caso 4 As. 2 Nd. 153

N: -5375.5	Ty: 292.8	Tz: 0
Mt: 0	My: 0	Mz: -108333

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		48.8		3240.5		32761.9		-117.2		4860.7		46686.6		5259.1		0.02		0.02		0.02		SI'

2		48.8	3240.5	32761.9	-117.2	4860.7	46686.6	5259.1	0.02	0.02	0.02	SI'
3		48.8	3240.5	32761.9	227.7	4860.7	46686.6	5259.1	0.05	0.05	0.04	SI'
4		48.8	3240.5	32761.9	227.7	4860.7	46686.6	5259.1	0.05	0.05	0.04	SI'
5		48.8	3240.5	38400	55.3	4860.7	46686.6	5259.1	0.02	0.01	0.01	SI'
6		48.8	3240.5	38400	55.3	4860.7	46686.6	5259.1	0.02	0.01	0.01	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	285.3	17	0	285.8	285.3	1925	2337.5 SI'
S2	322.9	0	0	322.9	322.9	1925	2337.5 SI'
S3	377.2	0	0	377.2	377.2	1925	2337.5 SI'
S4	322.9	0	0	322.9	322.9	1925	2337.5 SI'
S5	285.3	17	0	285.8	285.3	1925	2337.5 SI'
S6	152.4	0	0	152.4	152.4	1925	2337.5 SI'
S7	206.8	0	0	206.8	206.8	1925	2337.5 SI'
S8	152.4	0	0	152.4	152.4	1925	2337.5 SI'

Verifica piastra

Smax	fd Ver
1178.8	2619 SI'

Verifica pressione sul calcestruzzo

Smax	fcd Ver
15.1	117.6 SI'

NODO VERIFICATO IN BASE ALLA COMB. DI SOLLECITAZIONI AGENTI Caso 4 As. 2 Nd. 153

Combinazione di sollecitazioni agenti Caso 4 As. 2 Nd. 153

N: -5963.3	Ty: -292.8	Tz: 0
Mt: 0	My: 0	Mz: 108333

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		48.8	3240.5	32761.9	168.5	4860.7	46686.6	5259.1	0.04	0.03 0.03 SI'
2		48.8	3240.5	32761.9	168.5	4860.7	46686.6	5259.1	0.04	0.03 0.03 SI'
3		48.8	3240.5	32761.9	-115.8	4860.7	46686.6	5259.1	0.02	0.02 0.02 SI'
4		48.8	3240.5	32761.9	-115.8	4860.7	46686.6	5259.1	0.02	0.02 0.02 SI'
5		48.8	3240.5	38400	26.3	4860.7	46686.6	5259.1	0.02	0.01 0.01 SI'
6		48.8	3240.5	38400	26.3	4860.7	46686.6	5259.1	0.02	0.01 0.01 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	294.6	17	0	295.1	294.6	1925	2337.5 SI'
S2	143.1	0	0	143.1	143.1	1925	2337.5 SI'
S3	197.5	0	0	197.5	197.5	1925	2337.5 SI'
S4	143.1	0	0	143.1	143.1	1925	2337.5 SI'
S5	294.6	17	0	295.1	294.6	1925	2337.5 SI'
S6	332.2	0	0	332.2	332.2	1925	2337.5 SI'
S7	386.5	0	0	386.5	386.5	1925	2337.5 SI'
S8	332.2	0	0	332.2	332.2	1925	2337.5 SI'

Verifica piastra

Smax	fd Ver
1108.1	2619 SI'

Verifica pressione sul calcestruzzo

Smax	fcd Ver
14.2	117.6 SI'

NODO VERIFICATO IN BASE ALLA COMB. DI SOLLECITAZIONI AGENTI Caso 4 As. 2 Nd. 153

PORTALE TIPO 2 - VERIFICA ASTE IN ACCIAIO

RIASSUNTO DELLE ASTE VERIFICATE CON L'ULTIMO CALCOLO EFFETTUATO

asta	8 - sez.	3 - P_HEB220_S003	- 62% della Si limite.
asta	19 - sez.	3 - P_HEB220_S003	- 39% della Si limite.
asta	41 - sez.	3 - P_HEB220_S003	- 74% della Si limite.

PORTALE TIPO 2 - VERIFICA ELEMENTI IN ACCIAIO

Unità di misura:

Lunghezze: cm

Prop.Sez.: cm
Forze: daN
Momenti: daNcm
Tensioni: daN/cm2

MATERIALI

S275 (EN 10025-2): Mod.El.= 2100000.0; gM = 1.050;
fyk = 2750.0(2550.0 per sp>40 mm); fyd = 2619.0(2428.6 per sp>40 mm).

CASI DI CARICO

N	Descrizione	Soll.
1	SLU SENZA SISMA	1
4	SLU con SISMAX	4
5	SLU con SISMAX	4

CARATTERISTICHE GEOMETRICHE

P_HEB220_S003 (3) :

A = 91.2079E+00 Jz= 8.1037E+03 Jy= 2.8435E+03 Jt= 62.6929E+00

P_HEB220_S003 (3) stato limite ultimo - ASTA (157- 158) 8
----- PROGR. 0.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 1	192295.7	314638.0	0.0	-10906.9	851.9	-519.7
1- 1	351014.2	0.0	0.0	-19761.7	0.0	-948.7

TENSIONI :

Caso	Vel	No	massimi	Sx	Tz	Ty	Si
5- 1	si	2	Sx Si	-1597.8	0.0	0.0	1597.8
5- 1	si	6	Tz	-632.3	23.1	0.0	633.6
1- 1	si	9	Ty	-216.7	0.0	51.0	234.0
----- PROGR. 46.							

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 1	168258.8	275238.0	0.0	-10873.9	851.9	-519.7
1- 1	307137.4	0.0	0.0	-19718.7	0.0	-948.7

TENSIONI :

Caso	Vel	No	massimi	Sx	Tz	Ty	Si
5- 1	si	2	Sx Si	-1412.4	0.0	0.0	1412.4
5- 1	si	6	Tz	-567.8	23.1	0.0	569.2
1- 1	si	9	Ty	-216.2	0.0	51.0	233.6
----- PROGR. 92.							

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 1	144221.8	235838.0	0.0	-10840.9	851.9	-519.7
1- 1	263260.7	0.0	0.0	-19675.8	0.0	-948.7

TENSIONI :

Caso	Vel	No	massimi	Sx	Tz	Ty	Si
5- 1	si	2	Sx Si	-1226.9	0.0	0.0	1226.9
5- 1	si	6	Tz	-503.3	23.1	0.0	504.9
1- 1	si	9	Ty	-215.7	0.0	51.0	233.1
----- PROGR. 139.							

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 1	120184.8	196437.9	0.0	-10807.8	851.9	-519.7
1- 1	219383.9	0.0	0.0	-19632.8	0.0	-948.7

TENSIONI :

Caso	Vel	No	massimi	Sx	Tz	Ty	Si
5- 1	si	2	Sx Si	-1041.5	0.0	0.0	1041.5
5- 1	si	6	Tz	-438.8	23.1	0.0	440.6
1- 1	si	9	Ty	-215.3	0.0	51.0	232.7
----- PROGR. 185.							

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 1	96147.9	157037.9	0.0	-10774.8	851.9	-519.7
1- 1	175507.1	0.0	0.0	-19589.9	0.0	-948.7

TENSIONI :

Caso	Vel	No	massimi	Sx	Tz	Ty	Si
5- 1	si	2	Sx Si	-856.1	0.0	0.0	856.1
5- 1	si	6	Tz	-374.3	23.1	0.0	376.4
1- 1	si	9	Ty	-214.8	0.0	51.0	232.3
----- PROGR. 231.							

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 1	72110.9	117637.9	0.0	-10741.7	851.9	-519.7
1- 1	131630.3	0.0	0.0	-19546.9	0.0	-948.7

TENSIONI :

Caso	Vel	No	massimi	Sx	Tz	Ty	Si
------	-----	----	---------	----	----	----	----

5- 1	si 2	Sx	Si	-670.7	0.0	0.0	670.7
5- 1	si 6	Tz		-309.8	23.1	0.0	312.3
1- 1	si 9	Ty		-214.3	0.0	51.0	231.8

----- PROGR. 278.

SOLLECITAZIONI :

Caso	MZ		MY		MT		N		TZ		TY	
5- 1	48073.9		78237.9		0.0		-10708.7		851.9		-519.7	
1- 1	87753.6		0.0		0.0		-19504.0		0.0		-948.7	

TENSIONI :

Caso	Vel	No	massimi	Sx		Tz		Ty		Si	
5- 1	si 2	Sx	Si	-485.3		0.0		0.0		485.3	
5- 1	si 6	Tz		-245.3		23.1		0.0		248.5	
1- 1	si 9	Ty		-213.8		0.0		51.0		231.4	

----- PROGR. 324.

SOLLECITAZIONI :

Caso	MZ		MY		MT		N		TZ		TY	
5- 1	24037.0		38837.8		0.0		-10675.7		851.9		-519.7	
1- 1	43876.8		0.0		0.0		-19461.0		0.0		-948.7	

TENSIONI :

Caso	Vel	No	massimi	Sx		Tz		Ty		Si	
5- 1	si 2	Sx	Si	-299.9		0.0		0.0		299.9	
5- 1	si 6	Tz		-180.7		23.1		0.0		185.1	
1- 1	si 9	Ty		-213.4		0.0		51.0		231.0	

----- PROGR. 370.

SOLLECITAZIONI :

Caso	MZ		MY		MT		N		TZ		TY	
1- 1	0.0		0.0		0.0		-19418.1		0.0		-948.7	
5- 1	0.0		-562.2		0.0		-10642.6		851.9		-519.7	

TENSIONI :

Caso	Vel	No	massimi	Sx		Tz		Ty		Si	
1- 1	si 3	Sx		-212.9		0.0		0.0		212.9	
5- 1	si 6	Tz		-116.2		23.1		0.0		122.9	
1- 1	si 9	Ty		-212.9		0.0		51.0		230.5	

VERIFICA STABILITA` :

|L0 = 370.|
Z |Lc = 370.|Ro = 9.43|Im = 39.3|Ncr= 1226878.4|alfa(b)=0.3400|ki=0.9048|
Y |Lc = 370.|Ro = 5.58|Im = 66.3|Ncr= 430500.2|alfa(c)=0.4900|ki=0.6852|
Caso 5- 1 - Nodo 2 - Asse Y
Ned = -10906.9|Mzeq = 115377.4|Myeq = 188557.9|Ss = -1080.9 (0.413)

P_HEB220_S003 (3) stato limite ultimo - ASTA (179- 180) 19
----- PROGR. 0.

SOLLECITAZIONI :

Caso	MZ		MY		MT		N		TZ		TY	
5- 1	69712.7		214312.2		376.4		-7530.3		577.7		519.7	
4- 1	-145533.4		0.0		0.0		-7894.8		0.0		1452.2	

TENSIONI :

Caso	Vel	No	massimi	Sx		Tz		Ty		Si	
5- 1	si 2	Sx	Si	-1006.2		0.0		0.0		1006.2	
5- 1	si 5	Tz		-5.7		27.1		0.0		47.3	
4- 1	si 9	Ty		-86.6		0.0		-78.1		160.7	

----- PROGR. 46.

SOLLECITAZIONI :

Caso	MZ		MY		MT		N		TZ		TY	
5- 1	93749.7		187593.5		376.4		-7497.3		577.7		519.7	
4- 1	-78370.4		0.0		0.0		-7861.8		0.0		1452.2	

TENSIONI :

Caso	Vel	No	massimi	Sx		Tz		Ty		Si	
5- 1	si 2	Sx	Si	-935.1		0.0		0.0		935.1	
5- 1	si 5	Tz		-59.4		27.1		0.0		75.7	
4- 1	si 9	Ty		-86.2		0.0		-78.1		160.5	

----- PROGR. 92.

SOLLECITAZIONI :

Caso	MZ		MY		MT		N		TZ		TY	
5- 1	117786.7		160874.7		376.4		-7464.2		577.7		519.7	
4- 1	-11207.3		0.0		0.0		-7828.7		0.0		1452.2	

TENSIONI :

Caso	Vel	No	massimi	Sx		Tz		Ty		Si	
5- 1	si 2	Sx	Si	-864.1		0.0		0.0		864.1	
5- 1	si 5	Tz		-113.0		27.1		0.0		122.4	
4- 1	si 9	Ty		-85.8		0.0		-78.1		160.3	

----- PROGR. 139.

SOLLECITAZIONI :

Caso	MZ		MY		MT		N		TZ		TY	
------	----	--	----	--	----	--	---	--	----	--	----	--

| 5- 1| 141823.6| 134156.0| 376.4| -7431.2| 577.7| 519.7|
 | 4- 1| 55955.7| 0.0| 0.0| -7795.7| 0.0| 1452.2|

TENSIONI :

Caso	Ve	No	massimi	Sx	Tz	Ty	Si
5- 1	si	2	Sx Si	-793.0	0.0	0.0	793.0
5- 1	si	5	Tz	-166.7	27.1	0.0	173.1
4- 1	si	9	Ty	-85.5	0.0	-78.1	160.1

----- PROGR. 185.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 1	165860.6	107437.2	376.4	-7398.2	577.7	519.7
4- 1	123118.8	0.0	0.0	-7762.7	0.0	1452.2

TENSIONI :

Caso	Ve	No	massimi	Sx	Tz	Ty	Si
5- 1	si	2	Sx Si	-721.9	0.0	0.0	721.9
5- 1	si	5	Tz	-220.3	27.1	0.0	225.2
4- 1	si	9	Ty	-85.1	0.0	-78.1	159.9

----- PROGR. 231.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 1	189897.6	80718.5	376.4	-7365.1	577.7	519.7
4- 1	190281.8	0.0	0.0	-7729.6	0.0	1452.2

TENSIONI :

Caso	Ve	No	massimi	Sx	Tz	Ty	Si
5- 1	si	2	Sx Si	-650.8	0.0	0.0	650.8
5- 1	si	5	Tz	-273.9	27.1	0.0	277.9
4- 1	si	9	Ty	-84.7	0.0	-78.1	159.7

----- PROGR. 278.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
1- 1	390513.4	0.0	0.0	-13357.2	0.0	948.7
5- 1	213934.5	53999.7	376.4	-7332.1	577.7	519.7
4- 1	257444.9	0.0	0.0	-7696.6	0.0	1452.2

TENSIONI :

Caso	Ve	No	massimi	Sx	Tz	Ty	Si
1- 1	si	1	Sx	-676.5	0.0	0.0	676.5
5- 1	si	5	Tz	-327.6	27.1	0.0	330.9
4- 1	si	9	Ty	-84.4	0.0	-78.1	159.5
1- 1	si	5	Si	-676.5	10.4	0.0	676.8

----- PROGR. 324.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
1- 1	434390.2	0.0	0.0	-13314.2	0.0	948.7
5- 1	237971.5	27281.0	376.4	-7299.0	577.7	519.7
4- 1	324607.9	0.0	0.0	-7663.5	0.0	1452.2

TENSIONI :

Caso	Ve	No	massimi	Sx	Tz	Ty	Si
1- 1	si	1	Sx	-735.6	0.0	0.0	735.6
5- 1	si	5	Tz	-381.2	27.1	0.0	384.1
4- 1	si	9	Ty	-84.0	0.0	-78.1	159.3
1- 1	si	5	Si	-735.6	10.4	0.0	735.8

----- PROGR. 370.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
1- 1	478266.9	0.0	0.0	-13271.3	0.0	948.7
5- 1	262008.5	562.2	376.4	-7266.0	577.7	519.7
4- 1	391770.9	0.0	0.0	-7630.5	0.0	1452.2

TENSIONI :

Caso	Ve	No	massimi	Sx	Tz	Ty	Si
1- 1	si	1	Sx	-794.7	0.0	0.0	794.7
5- 1	si	5	Tz	-434.9	27.1	0.0	437.4
4- 1	si	9	Ty	-83.7	0.0	-78.1	159.1
1- 1	si	5	Si	-794.7	10.4	0.0	794.9

VERIFICA STABILITA` :

|L0 = 370.|
 Z |Lc = 370.|Ro = 9.43|Im = 39.3|Ncr= 1226878.4|alfa(b)=0.3400|ki=0.9048|
 Y |Lc = 370.|Ro = 5.58|Im = 66.3|Ncr= 430500.2|alfa(c)=0.4900|ki=0.6852|
 Caso 5- 1 - Nodo 2 - Asse Y
 Ned = -7530.3|Mzeq = 185090.2|Myeq = 128812.2|Ss = -880.5 (0.336)

P_HEB220_S003 (3) stato limite ultimo - ASTA (158- 180) 41
 ----- PROGR. 0.

SOLLECITAZIONI :

| Caso | MZ | MY | MT | N | TZ | TY |

4- 3	0.0	0.0	0.0	-1005.1	0.0	10323.2
1- 1	0.0	0.0	0.0	-948.7	0.0	19418.1

TENSIONI :

Caso	Vel	No	massimi	Sx	Tz	Ty	Si
4- 3	si	1	Sx	-11.0	0.0	0.0	11.0
1- 1	si	5	Tz	-10.4	213.2	0.0	369.5
1- 1	si	9	TySi	-10.4	0.0	-1044.9	1809.8

----- PROGR. 44.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
1- 1	735535.3	0.0	0.0	-948.7	0.0	13538.0

TENSIONI :

Caso	Vel	No	massimi	Sx	Tz	Ty	Si
1- 1	si	1	Sx	-1008.8	0.0	0.0	1008.8
1- 1	si	5	Tz	-1008.8	148.7	0.0	1041.2
1- 1	si	9	Ty	-10.4	0.0	-728.5	1261.8
1- 1	si	11	Si	-700.2	0.0	-680.2	1370.5

----- PROGR. 89.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
1- 1	1204831.1	0.0	0.0	-948.7	0.0	7553.9

TENSIONI :

Caso	Vel	No	massimi	Sx	Tz	Ty	Si
1- 1	si	1	Sx	-1645.8	0.0	0.0	1645.8
1- 1	si	5	Tz Si	-1645.8	83.0	0.0	1652.1
1- 1	si	9	Ty	-10.4	0.0	-406.5	704.1

----- PROGR. 134.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
1- 1	1407835.5	0.0	0.0	-948.7	0.0	1569.9
5- 2	771505.2	-205.6	819.0	-519.7	1.5	858.8

TENSIONI :

Caso	Vel	No	massimi	Sx	Tz	Ty	Si
1- 1	si	1	Sx	-1921.4	0.0	0.0	1921.4
5- 2	si	5	Tz	-1053.1	30.4	0.0	1054.4
1- 1	si	9	Ty	-10.4	0.0	-84.5	146.7
1- 1	si	5	Si	-1921.4	17.2	0.0	1921.6

----- PROGR. 178.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
1- 1	1344548.5	0.0	0.0	-948.7	0.0	-4414.2

TENSIONI :

Caso	Vel	No	massimi	Sx	Tz	Ty	Si
1- 1	si	1	Sx	-1835.5	0.0	0.0	1835.5
1- 1	si	5	Tz Si	-1835.5	-48.5	0.0	1837.4
1- 1	si	9	Ty	-10.4	0.0	237.5	411.5

----- PROGR. 222.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
1- 1	1021846.6	0.0	0.0	-948.7	0.0	-9202.4

TENSIONI :

Caso	Vel	No	massimi	Sx	Tz	Ty	Si
1- 1	si	1	Sx	-1397.5	0.0	0.0	1397.5
1- 1	si	5	Tz Si	-1397.5	-101.1	0.0	1408.4
1- 1	si	9	Ty	-10.4	0.0	495.2	857.7

----- PROGR. 267.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
1- 1	582164.1	0.0	0.0	-948.7	0.0	-10558.7

TENSIONI :

Caso	Vel	No	massimi	Sx	Tz	Ty	Si
1- 1	si	1	Sx	-800.6	0.0	0.0	800.6
1- 1	si	5	Tz	-800.6	-116.0	0.0	825.4
1- 1	si	9	Ty	-10.4	0.0	568.2	984.1
1- 1	si	11	Si	-556.4	0.0	530.5	1074.2

----- PROGR. 312.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
4- 4	158400.5	0.0	0.0	-183.1	0.0	-6161.3
1- 1	82126.3	0.0	0.0	-948.7	0.0	-11915.0

TENSIONI :

Caso	Vel	No	massimi	Sx	Tz	Ty	Si
4- 4	si	1	Sx	-217.0	0.0	0.0	217.0
1- 1	si	5	Tz	-121.9	-130.8	0.0	257.3
1- 1	si	9	TySi	-10.4	0.0	641.1	1110.5

----- PROGR. 356.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
1-1	-478266.9	0.0	0.0	-948.7	0.0	-13271.3

TENSIONI :

Caso	Vel	No	massimi	Sx	Tz	Ty	Si
1-1	3	Sx	-659.6	0.0	0.0	659.6	
1-1	5	Tz	638.8	-145.7	0.0	686.9	
1-1	9	Ty	-10.4	0.0	714.1	1236.9	
1-1	13	Si	-458.9	0.0	666.8	1242.8	

VERIFICA STABILITA' :

$L_0 = 356$
 $Z \quad |L_c = 356 \quad |R_o = 9.43 \quad |I_m = 37.8 \quad |N_{cr} = 1325271.9 \quad |a(b) = 0.3400 \quad |k_i = 0.9119$
 $Y \quad |L_c = 356 \quad |R_o = 5.58 \quad |I_m = 63.8 \quad |N_{cr} = 465025.6 \quad |a(c) = 0.4900 \quad |k_i = 0.7033$
 Caso 1- 1 - Nodo 1 - Asse Y
 $N_{ed} = -948.7 \quad |M_{zeq} = 1055876.6 \quad |M_{yeq} = 0.0 \quad |S_s = -1449.1 \quad (0.553)$

VERIFICA TENSIONALE NODO: TRAVE SU COLONNA - 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
HEB220	220	220	9.5	16	18
HEB220	220	220	9.5	16	18

Inclinazione trave: 0°

Piastre (n°1)

Num	H1	H2	B	Sp
1	220	220	220	16

BULLONI

Num	X	Y	Fi	Area	Num	X	Y	Fi	Area
1	-70.8	52	16	155.87	5	70.8	52	16	155.87
2	-70.8	90.7	16	155.87	6	70.8	90.7	16	155.87
3	-70.8	129.3	16	155.87	7	70.8	129.3	16	155.87
4	-70.8	168	16	155.87	8	70.8	168	16	155.87

SALDATURE

Lato saldature su colonna: 7

MATERIALI

Acciaio S 275 (Fe 430) Classe viti 8.8
 $f_d \quad s < 40 \text{ mm} \quad | \quad f_d \quad 40 \text{ mm} < s < 80 \text{ mm} \quad | \quad f_d$
 2619 2428.6 6400

SOLLECITAZIONI AGENTI E STATO TENSIONALE

Combinazione di sollecitazioni agenti Cond 7 As. 41 Nd. 158

$N = 74.4 \quad Ty = -22.5 \quad Tz = 0$
 $M_t = 0 \quad My = 0 \quad M_z = 0$

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	2.8	5985.3	22016	4.4	8978	24899.5	0	0	SI'
2	2.8	5985.3	11187.9	8.6	8978	24899.5	0	0	SI'
3	2.8	5985.3	11187.9	12.8	8978	24899.5	0	0	SI'
4	2.8	5985.3	22016	17.1	8978	24899.5	0	0	SI'
5	2.8	5985.3	22016	4.4	8978	24899.5	0	0	SI'
6	2.8	5985.3	11187.9	8.6	8978	24899.5	0	0	SI'
7	2.8	5985.3	11187.9	12.8	8978	24899.5	0	0	SI'
8	2.8	5985.3	22016	17.1	8978	24899.5	0	0	SI'

Compressione massima sulla piastra

$Sig \quad f_d \quad Ver$
 -0.8 2619 SI'

Tensione massima piastra (mensola sup. ed inf.)

$Sig \quad f_d \quad Ver$
 0 2619 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	2.3	-1.5	0	2.7	2.3	1925	2337.5	SI'
s1'	2.3	-1.5	0	2.7	2.3	1925	2337.5	SI'

s2		2.3		0		0		2.3		2.3		1925		2337.5		SI'
s2'		2.3		0		0		2.3		2.3		1925		2337.5		SI'
s3		2.3		0		0		2.3		2.3		1925		2337.5		SI'
s3'		2.3		0		0		2.3		2.3		1925		2337.5		SI'

NODO VERIFICATO IN BASE ALLA COMB. DI SOLLECITAZIONI AGENTI Cond 7 As. 41 Nd. 158

Combinazione di sollecitazioni agenti Caso 4 As. 41 Nd. 158

N = -1005.1 Ty = 10323.2 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		1290.4		5985.3		22016		2114.8		8978		24899.5		0.38		0.24		SI'
2		1290.4		5985.3		11187.9		1516.3		8978		24899.5		0.34		0.17		SI'
3		1290.4		5985.3		11187.9		917.9		8978		24899.5		0.29		0.1		SI'
4		1290.4		5985.3		22016		319.4		8978		24899.5		0.24		0.04		SI'
5		1290.4		5985.3		22016		2114.8		8978		24899.5		0.38		0.24		SI'
6		1290.4		5985.3		11187.9		1516.3		8978		24899.5		0.34		0.17		SI'
7		1290.4		5985.3		11187.9		917.9		8978		24899.5		0.29		0.1		SI'
8		1290.4		5985.3		22016		319.4		8978		24899.5		0.24		0.04		SI'

Compressione massima sulla piastra

Sig		fd		Ver
-311.4		2619		SI'

Tensione massima piastra (mensola sup. ed inf.)

Sig		fd		Ver
0		2619		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		31.1		686.1		0		686.8		31.1		1925		2337.5		SI'
s1'		31.1		686.1		0		686.8		31.1		1925		2337.5		SI'
s2		31.1		0		0		31.1		31.1		1925		2337.5		SI'
s2'		31.1		0		0		31.1		31.1		1925		2337.5		SI'
s3		31.1		0		0		31.1		31.1		1925		2337.5		SI'
s3'		31.1		0		0		31.1		31.1		1925		2337.5		SI'

NODO VERIFICATO IN BASE ALLA COMB. DI SOLLECITAZIONI AGENTI Caso 4 As. 41 Nd. 158

Combinazione di sollecitazioni agenti Caso 5 As. 41 Nd. 158

N = -519.7 Ty = 10642.6 Tz = 1.5
Mt = 819 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		1319.8		5985.3		22016		2262.3		8978		24899.5		0.4		0.25		SI'
2		1319.8		5985.3		11187.9		1625.1		8978		24899.5		0.35		0.18		SI'
3		1319.8		5985.3		11187.9		987.9		8978		24899.5		0.3		0.11		SI'
4		1319.8		5985.3		22016		350.7		8978		24899.5		0.25		0.04		SI'
5		1340.9		5985.3		22016		2262.4		8978		24899.5		0.4		0.25		SI'
6		1340.9		5985.3		11187.9		1625.2		8978		24899.5		0.35		0.18		SI'
7		1340.9		5985.3		11187.9		988		8978		24899.5		0.3		0.11		SI'
8		1340.9		5985.3		22016		350.8		8978		24899.5		0.25		0.04		SI'

Compressione massima sulla piastra

Sig		fd		Ver
-324.8		2619		SI'

Tensione massima piastra (mensola sup. ed inf.)

Sig		fd		Ver
0		2619		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		16.1		861.1		0		861.2		16.1		1925		2337.5		SI'
s1'		16.1		861.1		0		861.2		16.1		1925		2337.5		SI'
s2		16.1		153.9		0		154.7		16.1		1925		2337.5		SI'
s2'		16.1		153.9		0		154.7		16.1		1925		2337.5		SI'
s3		16.1		153.9		0		154.7		16.1		1925		2337.5		SI'

s3' | 16.1| 153.9| 0| 154.7| 16.1| 1925| 2337.5|SI'|

NODO VERIFICATO IN BASE ALLA COMB. DI SOLLECITAZIONI AGENTI Caso 5 As. 41 Nd. 158

Combinazione di sollecitazioni agenti Caso 5 As. 41 Nd. 158

N = -519.7 Ty = 10642.6 Tz = -1.5
Mt = -819 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 | 1340.9| 5985.3| 22016| 2262.4| 8978|24899.5| 0.4|0.25|SI'|
2 | 1340.9| 5985.3|11187.9| 1625.2| 8978|24899.5|0.35|0.18|SI'|
3 | 1340.9| 5985.3|11187.9| 988| 8978|24899.5| 0.3|0.11|SI'|
4 | 1340.9| 5985.3| 22016| 350.8| 8978|24899.5|0.25|0.04|SI'|
5 | 1319.8| 5985.3| 22016| 2262.3| 8978|24899.5| 0.4|0.25|SI'|
6 | 1319.8| 5985.3|11187.9| 1625.1| 8978|24899.5|0.35|0.18|SI'|
7 | 1319.8| 5985.3|11187.9| 987.9| 8978|24899.5| 0.3|0.11|SI'|
8 | 1319.8| 5985.3| 22016| 350.7| 8978|24899.5|0.25|0.04|SI'|

Compressione massima sulla piastra

Sig| fd|Ver|
-324.8| 2619|SI'|

Tensione massima piastra (mensola sup. ed inf.)

Sig| fd|Ver|
0| 2619|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 | 16.1| 861.1| 0| 861.2| 16.1| 1925| 2337.5|SI'|
s1' | 16.1| 861.1| 0| 861.2| 16.1| 1925| 2337.5|SI'|
s2 | 16.1| -153.9| 0| 154.7| 16.1| 1925| 2337.5|SI'|
s2' | 16.1| -153.9| 0| 154.7| 16.1| 1925| 2337.5|SI'|
s3 | 16.1| -153.9| 0| 154.7| 16.1| 1925| 2337.5|SI'|
s3' | 16.1| -153.9| 0| 154.7| 16.1| 1925| 2337.5|SI'|

NODO VERIFICATO IN BASE ALLA COMB. DI SOLLECITAZIONI AGENTI Caso 5 As. 41 Nd. 158

Combinazione di sollecitazioni agenti Caso 1 As. 41 Nd. 158

N = -948.7 Ty = 19418.1 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 | 2427.3| 5985.3| 22016| 4127.7| 8978|24899.5|0.73|0.46|SI'|
2 | 2427.3| 5985.3|11187.9| 2965.1| 8978|24899.5|0.64|0.33|SI'|
3 | 2427.3| 5985.3|11187.9| 1802.5| 8978|24899.5|0.55| 0.2|SI'|
4 | 2427.3| 5985.3| 22016| 639.9| 8978|24899.5|0.46|0.07|SI'|
5 | 2427.3| 5985.3| 22016| 4127.7| 8978|24899.5|0.73|0.46|SI'|
6 | 2427.3| 5985.3|11187.9| 2965.1| 8978|24899.5|0.64|0.33|SI'|
7 | 2427.3| 5985.3|11187.9| 1802.5| 8978|24899.5|0.55| 0.2|SI'|
8 | 2427.3| 5985.3| 22016| 639.9| 8978|24899.5|0.46|0.07|SI'|

Compressione massima sulla piastra

Sig| fd|Ver|
-592.5| 2619|SI'|

Tensione massima piastra (mensola sup. ed inf.)

Sig| fd|Ver|
0| 2619|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 | 29.4| 1290.5| 0| 1290.8| 29.4| 1925| 2337.5|SI'|
s1' | 29.4| 1290.5| 0| 1290.8| 29.4| 1925| 2337.5|SI'|
s2 | 29.4| 0| 0| 29.4| 29.4| 1925| 2337.5|SI'|
s2' | 29.4| 0| 0| 29.4| 29.4| 1925| 2337.5|SI'|
s3 | 29.4| 0| 0| 29.4| 29.4| 1925| 2337.5|SI'|
s3' | 29.4| 0| 0| 29.4| 29.4| 1925| 2337.5|SI'|

NODO VERIFICATO IN BASE ALLA COMB. DI SOLLECITAZIONI AGENTI Caso 1 As. 41 Nd. 158

Combinazione di sollecitazioni agenti Cond 5 As. 41 Nd. 158

N = -411 Ty = -342 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	42.8	5985.3	22016	-2.2	8978	24899.5	0.01	0	SI'
2	42.8	5985.3	11187.9	3.6	8978	24899.5	0.01	0	SI'
3	42.8	5985.3	11187.9	9.5	8978	24899.5	0.01	0	SI'
4	42.8	5985.3	22016	15.3	8978	24899.5	0.01	0	SI'
5	42.8	5985.3	22016	-2.2	8978	24899.5	0.01	0	SI'
6	42.8	5985.3	11187.9	3.6	8978	24899.5	0.01	0	SI'
7	42.8	5985.3	11187.9	9.5	8978	24899.5	0.01	0	SI'
8	42.8	5985.3	22016	15.3	8978	24899.5	0.01	0	SI'

Compressione massima sulla piastra

Sig| fd|Ver|
-6.4| 2619|SI'

Tensione massima piastra (mensola sup. ed inf.)

Sig| fd|Ver|
0| 2619|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	12.7	-22.7	0	26.1	12.7	1925	2337.5	SI'
s1'	12.7	-22.7	0	26.1	12.7	1925	2337.5	SI'
s2	12.7	0	0	12.7	12.7	1925	2337.5	SI'
s2'	12.7	0	0	12.7	12.7	1925	2337.5	SI'
s3	12.7	0	0	12.7	12.7	1925	2337.5	SI'
s3'	12.7	0	0	12.7	12.7	1925	2337.5	SI'

NODO VERIFICATO IN BASE ALLA COMB. DI SOLLECITAZIONI AGENTI Cond 5 As. 41 Nd. 158

VERIFICA TENSIONALE NODO: ATTACCO A TERRA COLONNA - 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
HEB220	220	220	9.5	16	18

Piastra e fazzoletti

Num	Lz	Ly	Sp
1	450	450	30
2(Y)	450	150	6
3(Z)	109	150	6

TIRAFONDI

Tirafondi (n° 4)

Num	X	Y	Fi	Area	Num	X	Y	Fi	Area
1	400	50	16	157	3	400	400	16	157
2	50	50	16	157	4	50	400	16	157

Dimensioni

l	lft	l1	r
400	120	350	70

SALDATURE (n° 40)

Nome	Lung	Lato	Nome	Lung	Lato
S1	152	10	S21	115	10
S2	87.3	10	S22	115	10
S3	220	10	S23	115	10
S4	87.3	10	S24	115	10
S5	152	10	S25	109	10
S6	87.3	10	S26	109	10
S7	220	10	S27	109	10
S8	87.3	10	S28	109	10
S9	-	-	S29	150	10
S10	208	10	S30	150	10
S11	115	10	S31	150	10
S12	115	10	S32	150	10

S13		115		10		S33		150		10
S14		115		10		S34		150		10
S15		109		10		S35		150		10
S16		109		10		S36		150		10
S17		109		10		S37		150		10
S18		109		10		S38		150		10
S19		-		-		S39		150		10
S20		208		10		S40		150		10

MATERIALI

Acciaio S 275 (Fe 430) | Calcestruzzo C20/25
 fd s<40mm | fd 40mm<s<80mm | fcd
 2619 | 2428.6 | 117.6
 Acciaio tirafondi S 275 (Fe 430) |
 fd |
 2200 |

SOLLECITAZIONI AGENTI E STATO TENSIONALE

Combinazione di sollecitazioni agenti Cond 5 As. 8 Nd. 157

N: 342 Ty: 392.2 Tz: 0
 Mt: 0 My: 0 Mz: -145097

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		98		3240.5		32761.9		-29.9		4860.7		46686.6		5259.1		0.03		0.01		0.01		SI'
2		98		3240.5		32761.9		-29.9		4860.7		46686.6		5259.1		0.03		0.01		0.01		SI'
3		98		3240.5		32761.9		1995.8		4860.7		46686.6		5259.1		0.32		0.41		0.38		SI'
4		98		3240.5		32761.9		1995.8		4860.7		46686.6		5259.1		0.32		0.41		0.38		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		34.3		3.4		0		34.5		34.3		1925		2337.5		SI'
S2		37.6		0		0		37.6		37.6		1925		2337.5		SI'
S3		47.6		0		0		47.6		47.6		1925		2337.5		SI'
S4		37.6		0		0		37.6		37.6		1925		2337.5		SI'
S5		34.3		3.4		0		34.5		34.3		1925		2337.5		SI'
S6		40.6		0		0		40.6		40.6		1925		2337.5		SI'
S7		50.5		0		0		50.5		50.5		1925		2337.5		SI'
S8		40.6		0		0		40.6		40.6		1925		2337.5		SI'
S10		46.4		3.4		0		46.5		46.4		1925		2337.5		SI'
S11		95.8		3.4		0		95.9		95.8		1925		2337.5		SI'
S12		95.8		3.4		0		95.9		95.8		1925		2337.5		SI'
S13		98.7		3.4		0		98.8		98.7		1925		2337.5		SI'
S14		98.7		3.4		0		98.8		98.7		1925		2337.5		SI'
S15		42		0		0		42		42		1925		2337.5		SI'
S16		47.6		0		0		47.6		47.6		1925		2337.5		SI'
S17		44.9		0		0		44.9		44.9		1925		2337.5		SI'
S18		50.5		0		0		50.5		50.5		1925		2337.5		SI'
S20		46.4		3.4		0		46.5		46.4		1925		2337.5		SI'
S21		95.8		3.4		0		95.9		95.8		1925		2337.5		SI'
S22		95.8		3.4		0		95.9		95.8		1925		2337.5		SI'
S23		98.7		3.4		0		98.8		98.7		1925		2337.5		SI'
S24		98.7		3.4		0		98.8		98.7		1925		2337.5		SI'
S25		42		0		0		42		42		1925		2337.5		SI'
S26		47.6		0		0		47.6		47.6		1925		2337.5		SI'
S27		44.9		0		0		44.9		44.9		1925		2337.5		SI'
S28		50.5		0		0		50.5		50.5		1925		2337.5		SI'
S29		0		289.3		20.7		290.1		20.7		1925		2337.5		SI'
S30		28.1		86		20.7		92.8		48.7		1925		2337.5		SI'
S31		0		289.3		20.7		290.1		20.7		1925		2337.5		SI'
S32		28.1		86		20.7		92.8		48.7		1925		2337.5		SI'
S33		28.1		71.7		0		77		28.1		1925		2337.5		SI'
S34		28.1		94.1		338.1		352.1		366.2		1925		2337.5		SI'
S35		28.1		71.7		0		77		28.1		1925		2337.5		SI'
S36		0		305.4		338.1		455.7		338.1		1925		2337.5		SI'
S37		28.1		94.1		338.1		352.1		366.2		1925		2337.5		SI'
S38		0		305.4		338.1		455.7		338.1		1925		2337.5		SI'
S39		28.1		71.7		0		77		28.1		1925		2337.5		SI'
S40		28.1		71.7		0		77		28.1		1925		2337.5		SI'

Verifica piastra

Smax | fd | Ver

340.8| 2619|SI'

Verifica nervature

Posizione| Smax| fd|Ver|

Z | 1088.2| 2619|SI'

Y | 340.8| 2619|SI'

Verifica pressione sul calcestruzzo

Smax| fcd|Ver|

29| 117.6|SI'

NODO VERIFICATO IN BASE ALLA COMB. DI SOLLECITAZIONI AGENTI Cond 5 As. 8 Nd. 157

Combinazione di sollecitazioni agenti Caso 1 As. 8 Nd. 157

N: -19761.7 Ty: -948.7 Tz: 0
Mt: 0 My: 0 Mz: 351014

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 | 237.2| 3240.5|32761.9| 520.4| 4860.7|46686.6| 5259.1|0.15|0.11| 0.1|SI'

2 | 237.2| 3240.5|32761.9| 520.4| 4860.7|46686.6| 5259.1|0.15|0.11| 0.1|SI'

3 | 237.2| 3240.5|32761.9| -374.6| 4860.7|46686.6| 5259.1|0.07|0.08|0.07|SI'

4 | 237.2| 3240.5|32761.9| -374.6| 4860.7|46686.6| 5259.1|0.07|0.08|0.07|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| 164.1| 8.2| 0| 164.3| 164.1| 1925| 2337.5|SI'

S2| 9.9| 0| 0| 9.9| 9.9| 1925| 2337.5|SI'

S3| 34.1| 0| 0| 34.1| 34.1| 1925| 2337.5|SI'

S4| 9.9| 0| 0| 9.9| 9.9| 1925| 2337.5|SI'

S5| 164.1| 8.2| 0| 164.3| 164.1| 1925| 2337.5|SI'

S6| 179.3| 0| 0| 179.3| 179.3| 1925| 2337.5|SI'

S7| 203.4| 0| 0| 203.4| 203.4| 1925| 2337.5|SI'

S8| 179.3| 0| 0| 179.3| 179.3| 1925| 2337.5|SI'

S10| 193.4| 8.2| 0| 193.6| 193.4| 1925| 2337.5|SI'

S11| 150.6| 8.2| 0| 150.9| 150.6| 1925| 2337.5|SI'

S12| 150.6| 8.2| 0| 150.9| 150.6| 1925| 2337.5|SI'

S13| 320| 8.2| 0| 320.1| 320| 1925| 2337.5|SI'

S14| 320| 8.2| 0| 320.1| 320| 1925| 2337.5|SI'

S15| 20.4| 0| 0| 20.4| 20.4| 1925| 2337.5|SI'

S16| 34.1| 0| 0| 34.1| 34.1| 1925| 2337.5|SI'

S17| 189.7| 0| 0| 189.7| 189.7| 1925| 2337.5|SI'

S18| 203.4| 0| 0| 203.4| 203.4| 1925| 2337.5|SI'

S20| 193.4| 8.2| 0| 193.6| 193.4| 1925| 2337.5|SI'

S21| 150.6| 8.2| 0| 150.9| 150.6| 1925| 2337.5|SI'

S22| 150.6| 8.2| 0| 150.9| 150.6| 1925| 2337.5|SI'

S23| 320| 8.2| 0| 320.1| 320| 1925| 2337.5|SI'

S24| 320| 8.2| 0| 320.1| 320| 1925| 2337.5|SI'

S25| 20.4| 0| 0| 20.4| 20.4| 1925| 2337.5|SI'

S26| 34.1| 0| 0| 34.1| 34.1| 1925| 2337.5|SI'

S27| 189.7| 0| 0| 189.7| 189.7| 1925| 2337.5|SI'

S28| 203.4| 0| 0| 203.4| 203.4| 1925| 2337.5|SI'

S29| 0| 264.8| 20.1| 265.6| 20.1| 1925| 2337.5|SI'

S30| 103.9| 189.9| 20.1| 217.4| 124| 1925| 2337.5|SI'

S31| 0| 264.8| 20.1| 265.6| 20.1| 1925| 2337.5|SI'

S32| 103.9| 189.9| 20.1| 217.4| 124| 1925| 2337.5|SI'

S33| 103.9| 189.9| 0| 216.5| 103.9| 1925| 2337.5|SI'

S34| 103.9| 408.6| 379| 566.9| 483| 1925| 2337.5|SI'

S35| 103.9| 189.9| 0| 216.5| 103.9| 1925| 2337.5|SI'

S36| 0| 1116.5| 379| 1179.1| 379| 1925| 2337.5|SI'

S37| 103.9| 408.6| 379| 566.9| 483| 1925| 2337.5|SI'

S38| 0| 1116.5| 379| 1179.1| 379| 1925| 2337.5|SI'

S39| 103.9| 189.9| 0| 216.5| 103.9| 1925| 2337.5|SI'

S40| 103.9| 189.9| 0| 216.5| 103.9| 1925| 2337.5|SI'

Verifica piastra

Smax| fd|Ver|

592.2| 2619|SI'

Verifica nervature

Posizione| Smax| fd|Ver|

Z | 2021.2| 2619|SI'

Y | 612.8| 2619|SI'|

Verifica pressione sul calcestruzzo

Smax| fcd|Ver|

45.6| 117.6|SI'|

NODO VERIFICATO IN BASE ALLA COMB. DI SOLLECITAZIONI AGENTI Caso 1 As. 8 Nd. 157

Combinazione di sollecitazioni agenti Caso 5 As. 8 Nd. 157

N: -10906.9 Ty: -519.7 Tz: 851.9

Mt: 0 My: 314638 Mz: 192296

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 | 249.5| 3240.5|32761.9| 2180.9| 4860.7|46686.6| 5259.1| 0.4|0.45|0.41|SI'|

2 | 249.5| 3240.5|32761.9| 197.4| 4860.7|46686.6| 5259.1|0.11|0.04|0.04|SI'|

3 | 249.5| 3240.5|32761.9| 1294.5| 4860.7|46686.6| 5259.1|0.27|0.25|SI'|

4 | 249.5| 3240.5|32761.9| -689| 4860.7|46686.6| 5259.1|0.08|0.14|0.13|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| 82.5| 4.5| 0| 82.6| 82.5| 1925| 2337.5|SI'|
S2| 108.1| 7.3| 0| 108.4| 108.1| 1925| 2337.5|SI'|
S3| 121.4| 7.3| 0| 121.6| 121.4| 1925| 2337.5|SI'|
S4| 97.9| 7.3| 0| 98.2| 97.9| 1925| 2337.5|SI'|
S5| 98| 4.5| 0| 98.1| 98| 1925| 2337.5|SI'|
S6| 201.6| 7.3| 0| 201.7| 201.6| 1925| 2337.5|SI'|
S7| 214.8| 7.3| 0| 214.9| 214.8| 1925| 2337.5|SI'|
S8| 77.2| 7.3| 0| 77.6| 77.2| 1925| 2337.5|SI'|
S10| 218.3| 4.5| 0| 218.3| 218.3| 1925| 2337.5|SI'|
S11| 83.4| 4.5| 0| 83.5| 83.4| 1925| 2337.5|SI'|
S12| 95.7| 4.5| 0| 95.8| 95.7| 1925| 2337.5|SI'|
S13| 275.3| 4.5| 0| 275.4| 275.3| 1925| 2337.5|SI'|
S14| 287.6| 4.5| 0| 287.6| 287.6| 1925| 2337.5|SI'|
S15| 199.9| 7.3| 0| 200| 199.9| 1925| 2337.5|SI'|
S16| 192.4| 7.3| 0| 192.6| 192.4| 1925| 2337.5|SI'|
S17| 315| 7.3| 0| 315.1| 315| 1925| 2337.5|SI'|
S18| 322.5| 7.3| 0| 322.6| 322.5| 1925| 2337.5|SI'|
S20| 124.8| 4.5| 0| 124.9| 124.8| 1925| 2337.5|SI'|
S21| 181.9| 4.5| 0| 182| 181.9| 1925| 2337.5|SI'|
S22| 194.1| 4.5| 0| 194.2| 194.1| 1925| 2337.5|SI'|
S23| 75.9| 4.5| 0| 76| 75.9| 1925| 2337.5|SI'|
S24| 63.7| 4.5| 0| 63.8| 63.7| 1925| 2337.5|SI'|
S25| 221.6| 7.3| 0| 221.7| 221.6| 1925| 2337.5|SI'|
S26| 229.1| 7.3| 0| 229.2| 229.1| 1925| 2337.5|SI'|
S27| 106.5| 7.3| 0| 106.7| 106.5| 1925| 2337.5|SI'|
S28| 99| 7.3| 0| 99.2| 99| 1925| 2337.5|SI'|
S29| 0| 842.6| 41.5| 843.6| 41.5| 1925| 2337.5|SI'|
S30| 83.8| 95.2| 41.5| 133.5| 125.3| 1925| 2337.5|SI'|
S31| 0| 568.2| 41.5| 569.7| 41.5| 1925| 2337.5|SI'|
S32| 365.6| 445.1| 41.5| 577.5| 407.1| 1925| 2337.5|SI'|
S33| 365.6| 445.1| 0| 576| 365.6| 1925| 2337.5|SI'|
S34| 365.6| 445.1| 99.1| 584.5| 464.7| 1925| 2337.5|SI'|
S35| 365.6| 445.1| 0| 576| 365.6| 1925| 2337.5|SI'|
S36| 0| 1354.9| 99.1| 1358.5| 99.1| 1925| 2337.5|SI'|
S37| 83.8| 182.2| 99.1| 223.7| 182.9| 1925| 2337.5|SI'|
S38| 0| 55.9| 99.1| 113.8| 99.1| 1925| 2337.5|SI'|
S39| 83.8| 95.2| 0| 126.8| 83.8| 1925| 2337.5|SI'|
S40| 83.8| 95.2| 0| 126.8| 83.8| 1925| 2337.5|SI'|

Verifica piastra

Smax| fd|Ver|

1003.8| 2619|SI'|

Verifica nervature

Posizione| Smax| fd|Ver|

Z | 931.7| 2619|SI'|

Y | 1673.9| 2619|SI'|

Verifica pressione sul calcestruzzo

Smax| fcd|Ver|

99.7| 117.6|SI'|

NODO VERIFICATO IN BASE ALLA COMB. DI SOLLECITAZIONI AGENTI Caso 5 As. 8 Nd. 157

Combinazione di sollecitazioni agenti Caso 5 As. 8 Nd. 157

N: -10906.9 Ty: -519.7 Tz: -851.9
Mt: 0 My: -314638 Mz: 192296

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	249.5	3240.5	32761.9	197.4	4860.7	46686.6	5259.1	0.11	0.04	0.04	SI'
2	249.5	3240.5	32761.9	2180.9	4860.7	46686.6	5259.1	0.4	0.45	0.41	SI'
3	249.5	3240.5	32761.9	-689	4860.7	46686.6	5259.1	0.08	0.14	0.13	SI'
4	249.5	3240.5	32761.9	1294.5	4860.7	46686.6	5259.1	0.27	0.27	0.25	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	98	4.5	0	98.1	98	1925	2337.5	SI'
S2	97.9	7.3	0	98.2	97.9	1925	2337.5	SI'
S3	121.4	7.3	0	121.6	121.4	1925	2337.5	SI'
S4	108.1	7.3	0	108.4	108.1	1925	2337.5	SI'
S5	82.5	4.5	0	82.6	82.5	1925	2337.5	SI'
S6	77.2	7.3	0	77.6	77.2	1925	2337.5	SI'
S7	214.8	7.3	0	214.9	214.8	1925	2337.5	SI'
S8	201.6	7.3	0	201.7	201.6	1925	2337.5	SI'
S10	124.8	4.5	0	124.9	124.8	1925	2337.5	SI'
S11	181.9	4.5	0	182	181.9	1925	2337.5	SI'
S12	194.1	4.5	0	194.2	194.1	1925	2337.5	SI'
S13	75.9	4.5	0	76	75.9	1925	2337.5	SI'
S14	63.7	4.5	0	63.8	63.7	1925	2337.5	SI'
S15	221.6	7.3	0	221.7	221.6	1925	2337.5	SI'
S16	229.1	7.3	0	229.2	229.1	1925	2337.5	SI'
S17	106.5	7.3	0	106.7	106.5	1925	2337.5	SI'
S18	99	7.3	0	99.2	99	1925	2337.5	SI'
S20	218.3	4.5	0	218.3	218.3	1925	2337.5	SI'
S21	83.4	4.5	0	83.5	83.4	1925	2337.5	SI'
S22	95.7	4.5	0	95.8	95.7	1925	2337.5	SI'
S23	275.3	4.5	0	275.4	275.3	1925	2337.5	SI'
S24	287.6	4.5	0	287.6	287.6	1925	2337.5	SI'
S25	199.9	7.3	0	200	199.9	1925	2337.5	SI'
S26	192.4	7.3	0	192.6	192.4	1925	2337.5	SI'
S27	315	7.3	0	315.1	315	1925	2337.5	SI'
S28	322.5	7.3	0	322.6	322.5	1925	2337.5	SI'
S29	0	568.2	41.5	569.7	41.5	1925	2337.5	SI'
S30	224.1	445.1	41.5	500	265.6	1925	2337.5	SI'
S31	0	842.6	41.5	843.6	41.5	1925	2337.5	SI'
S32	83.8	95.2	41.5	133.5	125.3	1925	2337.5	SI'
S33	83.8	95.2	0	126.8	83.8	1925	2337.5	SI'
S34	83.8	182.2	99.1	223.7	182.9	1925	2337.5	SI'
S35	83.8	95.2	0	126.8	83.8	1925	2337.5	SI'
S36	0	55.9	99.1	113.8	99.1	1925	2337.5	SI'
S37	224.1	445.1	99.1	508.1	323.2	1925	2337.5	SI'
S38	0	1354.9	99.1	1358.5	99.1	1925	2337.5	SI'
S39	224.1	445.1	0	498.3	224.1	1925	2337.5	SI'
S40	224.1	445.1	0	498.3	224.1	1925	2337.5	SI'

Verifica piastra

Smax| fd|Ver|
998.3| 2619|SI'

Verifica nervature

Posizione| Smax| fd|Ver|
Z | 931.7| 2619|SI'
Y | 1549.7| 2619|SI'

Verifica pressione sul calcestruzzo

Smax| fcd|Ver|
99.7| 117.6|SI'

NODO VERIFICATO IN BASE ALLA COMB. DI SOLLECITAZIONI AGENTI Caso 5 As. 8 Nd. 157

VERIFICA TRAVI DI FONDAZIONE ESISTENTE VI AMPLIAMENTO:

VERIFICA TRAVATA IN CEMENTO ARMATO

Nome travata : TRAVATA tr 85b_BLOCCO A
Metodo di verifica : stati limite (NTC08).
Unità di misura : cm; daN; daN/cm; daNcm; daN/cm2; deform. %.
Unità particolari : fessure [Wk]:mm - ferri:mm e cm2 - sezioni:cm e derivate.
Copri ferri (assi) : longitudinali= 3 ; staffe= 2

MATERIALI

CLS : Rck =250. ; fck=207.5; fctk= 15.9; fctm= 22.7; Ec= 302005. ;
gc =1.5 ; fcd=117.6; fbd= 23.8; fctd= 10.6; Eud=.35%
ACCIAIO: B450C; ftk=5175. ; fyk=4500. ; Es=2100000. ;
gs =1.15; fyd=3913. ; ftd(k*fyd)=4500. ; fud=4439.8; Eud=6.75%

TENSIONI E FESSURE MASSIME IN ESERCIZIO

GRUPPO : ordinario.
CLS : σ_c (rara)=124.5; σ_c (quasi permanente)= 93.4; fbd(esercizio)= 23.8
ACCIAIO: σ_f (rara)=3600. ; Coeff.Omogenein.= 15
FESSURE: Wdmax(fre.)=.4 ; Wdmax(q.p.)=.3 [4.1.2.2.4.5];
kt=.4 [EN 1992-1 7.3.4].

SEZIONI UTILIZZATE

3) Sezione a L (1): largh.=25.; alt.=134.; sp.al=24.; sp.an.=30.; Acls=3900. .

DESCRIZIONE CAMPATE

Cam.	Descriz.	S.ini	Sez.	S.fin	Incl.	L.assi	L.net.	lambda	K	r.Ar.	lam.max
1	TR85	3	3	3	0	550.	380.	4.104	1.3	1.402	36.768
2	TR85b	3	3	3	0	585.	415.	4.366	1.5	1.744	49.522
3	TR91	3	3	3	0	550.	380.	4.104	1.3	1.402	36.768

CONDIZIONI DI CARICO

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

CARICHI APPLICATI

Nro	Con	Camp.	Tipo	Sistema	carico 1	carico 2	dist. 1	dist. 2
1	1	1	Forza distribuita	Globale	-8.25	-	-	-
2	1	2	Forza distribuita	Globale	-8.25	-	-	-
3	1	3	Forza distribuita	Globale	-8.25	-	-	-
4	2	1	Forza distribuita	Globale	-91.8	-	-	-
5	2	2	Forza distribuita	Globale	-91.8	-	-	-
6	2	3	Forza distribuita	Globale	-91.8	-	-	-
7	3	1	Forza distribuita	Globale	-24.8	-	-	-
8	3	2	Forza distribuita	Globale	-24.8	-	-	-
9	3	3	Forza distribuita	Globale	-24.8	-	-	-

VERIFICHE ALLO STATO LIMITE ULTIMO

FLESSIONE:

Progressi ve	SE	Ar	Msd	Epscl	Epsac	Mrd	Epscl	Epsac	Cam	x/d	Mr/Ms	VE	
> 0.	0.	3.	1.	-3493302.	-.049	.142	-6777064.	-.35	3.627	3.	.088	1.94	SI
0.	0.	3.	1.	527231.	-.008	.021	5672699.	-.35	1.576	3.	.182	10.76	SI
29.	29.	3.	2.	1333140.	-.015	.029	9568086.	-.35	1.171	3.	.23	7.177	SI
256.	256.	3.	3.	4002276.	-.064	.159	5611368.	-.35	1.94	3.	.153	1.402	SI
356.	356.	3.	3.	-30346.	-.001	.003	-3002592.	-.301	6.75	2.	.043	98.95	SI
491.	491.	3.	5.	-3586581.	-.04	.121	-8423879.	-.35	5.798	3.	.057	2.349	SI
550.	550.	3.	4.	-3586581.	-.048	.125	-7881776.	-.35	2.588	3.	.119	2.198	SI
> 550.	0.	3.	4.	-3219046.	-.043	.112	-7881776.	-.35	2.588	3.	.119	2.448	SI
719.	169.	3.	7.	-368708.	-.006	.033	-3002978.	-.283	6.75	2.	.04	8.145	SI
842.	292.	3.	7.	3991760.	-.057	.123	6961652.	-.35	1.581	3.	.181	1.744	SI
1076.	526.	3.	8.	-3219046.	-.034	.107	-8501595.	-.35	6.376	3.	.052	2.641	SI
1076.	526.	3.	8.	1166091.	-.012	.022	10842064.	-.35	1.083	3.	.244	9.298	SI
1106.	556.	3.	4.	287697.	-.004	.011	5680074.	-.35	1.532	3.	.186	19.74	SI
1135.	585.	3.	4.	-3219046.	-.043	.112	-7881776.	-.35	2.588	3.	.119	2.448	SI
> 1135.	0.	3.	4.	-3586581.	-.048	.125	-7881776.	-.35	2.588	3.	.119	2.198	SI
1164.	29.	3.	5.	-3586581.	-.04	.121	-8423879.	-.35	5.798	3.	.057	2.349	SI
1304.	169.	3.	3.	-707114.	-.013	.064	-3002592.	-.301	6.75	2.	.043	4.246	SI
1329.	194.	3.	3.	-30346.	-.001	.003	-3002592.	-.301	6.75	2.	.043	98.95	SI
1429.	294.	3.	3.	4002276.	-.064	.159	5611368.	-.35	1.94	3.	.153	1.402	SI
1626.	491.	3.	2.	2151950.	-.024	.046	9568086.	-.35	1.171	3.	.23	4.446	SI
1685.	550.	3.	1.	-3493302.	-.049	.142	-6777064.	-.35	3.627	3.	.088	1.94	SI
1685.	550.	3.	1.	527231.	-.008	.021	5672699.	-.35	1.576	3.	.182	10.76	SI

VERIFICHE A TAGLIO

TAGLIO:

Progressive	Se	Vsd	VRd	VRcd	VRsd	Asw	s	ctgT	Ve	
> 0.	0.	3.	48927.	10276.	86987.	89378.	1.57	15.	1.85	SI

194.	194.	3.	12919.	11943.	86987.	89378.	1.57	15.	1.85	SI
550.	550.	3.	-42609.	10276.	86987.	89378.	1.57	15.	1.85	SI
> 550.	0.	3.	54577.	10276.	86987.	89378.	1.57	15.	1.85	SI
769.	219.	3.	13925.	12949.	86987.	89378.	1.57	15.	1.85	SI
1135.	585.	3.	-43133.	10276.	86987.	89378.	1.57	15.	1.85	SI
> 1135.	0.	3.	55618.	10276.	86987.	89378.	1.57	15.	1.85	SI
1354.	219.	3.	14966.	11943.	86987.	89378.	1.57	15.	1.85	SI
1685.	550.	3.	-48927.	10276.	86987.	89378.	1.57	15.	1.85	SI

VERIFICHE ALLO STATO LIMITE DI ESERCIZIO

TENSIONI DI ESERCIZIO E FESSURAZIONE - RARE:

Progressive	Se	Ar	Momento	σ_c	σ_f	As	hc, ef	Eps%	Sr, max	Wd	Ve	
> 0.	0.	3.	1.	-2349570.	-40.8	1983.3	13.95	34.37	.0649	25.38	.165	SI
59.	59.	3.	2.	-679254.	-10.3	560.5	13.95	35.21	.016	25.8	.041	SI
59.	59.	3.	2.	353324.	-5.	157.3	18.85	10.	.0045	15.61	.007	SI
72.	72.	3.	1.	-368720.	-6.4	311.2	13.95	34.37	.0089	25.38	.023	SI
256.	256.	3.	3.	2691706.	-51.4	2213.4	9.42	10.	.0887	21.02	.186	SI
550.	550.	3.	4.	-2412362.	-39.6	1734.4	17.09	33.52	.0584	22.33	.13	SI
> 550.	0.	3.	4.	-2164909.	-35.5	1556.5	17.09	33.52	.05	22.33	.112	SI
842.	292.	3.	7.	2684388.	-45.9	1713.2	12.57	10.	.0683	18.32	.125	SI
1135.	585.	3.	4.	-2164909.	-35.5	1556.5	17.09	33.52	.05	22.33	.112	SI
> 1135.	0.	3.	4.	-2412362.	-39.6	1734.4	17.09	33.52	.0584	22.33	.13	SI
1429.	294.	3.	3.	2691706.	-51.4	2213.4	9.42	10.	.0887	21.02	.186	SI
1685.	550.	3.	1.	-2349570.	-40.8	1983.3	13.95	34.37	.0649	25.38	.165	SI

TENSIONI DI ESERCIZIO E FESSURAZIONE - FREQUENTI:

Progressive	Se	Ar	Momento	σ_c	σ_f	As	hc, ef	Eps%	Sr, max	Wd	Ve	
> 0.	0.	3.	1.	-2116212.	-36.8	1786.3	13.95	34.37	.0555	25.38	.141	SI
59.	59.	3.	2.	-617635.	-9.4	509.7	13.95	35.21	.0146	25.8	.038	SI
59.	59.	3.	2.	260190.	-3.7	115.8	18.85	10.	.0033	15.61	.005	SI
72.	72.	3.	1.	-339234.	-5.9	286.3	13.95	34.37	.0082	25.38	.021	SI
256.	256.	3.	3.	2415545.	-46.1	1986.3	9.42	10.	.0779	21.02	.164	SI
550.	550.	3.	4.	-2175236.	-35.7	1564.	17.09	33.52	.0503	22.33	.112	SI
> 550.	0.	3.	4.	-1941008.	-31.9	1395.5	17.09	33.52	.0423	22.33	.094	SI
842.	292.	3.	7.	2429163.	-41.5	1550.3	12.57	10.	.0605	18.32	.111	SI
1135.	585.	3.	4.	-1941008.	-31.9	1395.5	17.09	33.52	.0423	22.33	.094	SI
> 1135.	0.	3.	4.	-2175236.	-35.7	1564.	17.09	33.52	.0503	22.33	.112	SI
1429.	294.	3.	3.	2415545.	-46.1	1986.3	9.42	10.	.0779	21.02	.164	SI
1685.	550.	3.	1.	-2116212.	-36.8	1786.3	13.95	34.37	.0555	25.38	.141	SI

TENSIONI DI ESERCIZIO E FESSURAZIONE - QUASI PERMANENTI:

Progressive	Se	Ar	Momento	σ_c	σ_f	As	hc, ef	Eps%	Sr, max	Wd	Ve	
> 0.	0.	3.	1.	-2022869.	-35.1	1707.5	13.95	34.37	.0517	25.38	.131	SI
59.	59.	3.	2.	-592987.	-9.	489.3	13.95	35.21	.014	25.8	.036	SI
59.	59.	3.	2.	242321.	-3.4	107.9	18.85	10.	.0031	15.61	.005	SI
72.	72.	3.	1.	-327439.	-5.7	276.4	13.95	34.37	.0079	25.38	.02	SI
256.	256.	3.	3.	2329690.	-44.5	1915.7	9.42	10.	.0745	21.02	.157	SI
550.	550.	3.	4.	-2080386.	-34.2	1495.8	17.09	33.52	.0471	22.33	.105	SI
> 550.	0.	3.	4.	-1851448.	-30.4	1331.2	17.09	33.52	.0392	22.33	.088	SI
842.	292.	3.	7.	2313196.	-39.5	1476.3	12.57	10.	.057	18.32	.104	SI
1135.	585.	3.	4.	-1851448.	-30.4	1331.2	17.09	33.52	.0392	22.33	.088	SI
> 1135.	0.	3.	4.	-2080386.	-34.2	1495.8	17.09	33.52	.0471	22.33	.105	SI
1429.	294.	3.	3.	2329690.	-44.5	1915.7	9.42	10.	.0745	21.02	.157	SI
1685.	550.	3.	1.	-2022869.	-35.1	1707.5	13.95	34.37	.0517	25.38	.131	SI

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

Nro	Totale	%	Super.	%	Barre	Infer.	%	Barre
1	26.39	.677	14.95	.383	3d20 +2d8 +2d12 ...	11.44	.293	2d8 +3d20 +2d8
2	35.81	.918	14.95	.383	3d20 +2d8 +2d12 ...	20.86	.535	2d8 +3d20 +3d20 ...
3	16.96	.435	5.53	.142	2d8 +2d12 +2d12	11.44	.293	2d8 +3d20 +2d8
4	29.53	.757	18.1	.464	4d20 +2d8 +2d12 ...	11.44	.293	2d8 +3d20 +2d8
5	38.96	.999	18.1	.464	4d20 +2d8 +2d12 ...	20.86	.535	2d8 +3d20 +3d20 ...
6	32.67	.838	18.1	.464	4d20 +2d8 +2d12 ...	14.58	.374	2d8 +4d20 +2d8
7	20.11	.516	5.53	.142	2d8 +2d12 +2d12	14.58	.374	2d8 +4d20 +2d8
8	42.1	1.079	18.1	.464	4d20 +2d8 +2d12 ...	24.	.615	2d8 +4d20 +3d20 ...

VERIFICA TRAVATA IN CEMENTO ARMATO

Nome travata : TRAVATA tr 108b_BLOCCO B
 Metodo di verifica : stati limite (NTC08).
 Unità di misura : cm; daN/cm; daN/cm2; deform. %.
 Unità particolari : fessure [Wk]:mm - ferri:mm e cm2 - sezioni:cm e derivate.
 Copri ferri (assi) : longitudinali= 3 ; staffe= 2

MATERIALI

CLS : Rck =250. ; fck=207.5; fctk= 15.9; fctm= 22.7; Ec= 302005. ;

gc =1.5 ; fcd=117.6; fbd= 23.8; fctd= 10.6; Ecd=.35%
 ACCIAIO: B450C; ftk=5175. ; fyk=4500. ; Es=2100000. ;
 gs =1.15; fyd=3913. ; ftd(k*fyd)=4500. ; fud=4439.8; Eud=6.75%

TENSIONI E FESSURE MASSIME IN ESERCIZIO

GRUPPO : ordinario.

CLS : σ_c (rara)=124.5; σ_c (quasi permanente)= 93.4; fbd(esercizio)= 23.8

ACCIAIO: σ_f (rara)=3600.; Coeff.Omogenein.= 15

FESSURE: Wdmax(fre.)=.4 ; Wdmax(q.p.)=.3 [4.1.2.2.4.5];
 kt=.4 [EN 1992-1 7.3.4].

SEZIONI UTILIZZATE

3) Sezione a L (1): largh.=25.; alt.=134.; sp.ala=24.; sp.an.=30.; Acl s=3900. .

DESCRIZIONE CAMPATE

Cam.	Descriz.	S. ini	Sez.	S. fin	Incl.	L. assi	L. net.	lambda	K	r. Ar.	I am. max
1	TR108	3	3	3	0	550.	380.	4.104	1.3	1.402	36.773
2	TR108b	3	3	3	0	720.	550.	5.373	1.5	1.605	41.722
3	TR91	3	3	3	0	550.	380.	4.104	1.3	1.745	42.942

CONDIZIONI DI CARICO

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

CARICHI APPLICATI

Nro	Con	Camp.	Tipo	Sistema	carico 1	carico 2	di st. 1	di st. 2
1	1	1	Forza distribuita	Globale	-8.25	-	-	-
2	1	2	Forza distribuita	Globale	-8.25	-	-	-
3	1	3	Forza distribuita	Globale	-8.25	-	-	-
4	2	1	Forza distribuita	Globale	-91.24	-	-	-
5	2	2	Forza distribuita	Globale	-91.24	-	-	-
6	2	3	Forza distribuita	Globale	-91.24	-	-	-
7	3	1	Forza distribuita	Globale	-24.8	-	-	-
8	3	2	Forza distribuita	Globale	-24.8	-	-	-
9	3	3	Forza distribuita	Globale	-24.8	-	-	-

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.	-3477494.	-.039	.116	-8455376.	-.35	5.797	3.	.057	2.431	SI
0.	0.	3.	1.	771258.	-.008	.017	9578763.	-.35	1.198	3.	.226	12.42	SI
144.	144.	3.	2.	-196569.	-.002	.007	-7910441.	-.35	2.587	3.	.119	40.24	SI
256.	256.	3.	3.	3984901.	-.063	.159	5587827.	-.35	2.024	3.	.147	1.402	SI
356.	356.	3.	3.	-505411.	-.009	.045	-3035120.	-.301	6.75	2.	.043	6.005	SI
550.	550.	3.	6.	-4165699.	-.038	.106	-11232161.	-.35	6.026	3.	.055	2.696	SI
> 550.	0.	3.	6.	-5173993.	-.047	.131	-11232161.	-.35	6.026	3.	.055	2.171	SI
609.	59.	3.	7.	-5173993.	-.055	.135	-10732626.	-.35	3.434	3.	.093	2.074	SI
719.	169.	3.	8.	-1463203.	-.022	.128	-3035499.	-.263	6.75	2.	.038	2.075	SI
930.	380.	3.	8.	5969895.	-.075	.129	9580009.	-.35	1.129	3.	.237	1.605	SI
1211.	661.	3.	6.	766904.	-.007	.011	13377542.	-.35	.976	3.	.264	17.44	SI
1270.	720.	3.	6.	-5173993.	-.047	.131	-11232161.	-.35	6.026	3.	.055	2.171	SI
>1270.	0.	3.	6.	-4165699.	-.038	.106	-11232161.	-.35	6.026	3.	.055	2.696	SI
1329.	59.	3.	9.	1104564.	-.011	.021	10858140.	-.35	1.129	3.	.237	9.83	SI
1439.	169.	3.	11	-1212061.	-.02	.107	-3035503.	-.283	6.75	2.	.04	2.504	SI
1564.	294.	3.	11	3984901.	-.056	.123	6953427.	-.35	1.636	3.	.176	1.745	SI
1676.	406.	3.	12	-196569.	-.002	.007	-8117291.	-.35	3.557	3.	.09	41.3	SI
1761.	491.	3.	13	2306629.	-.024	.043	10856624.	-.35	1.095	3.	.242	4.707	SI
1820.	550.	3.	13	-3477494.	-.037	.115	-8533607.	-.35	6.375	3.	.052	2.454	SI
1820.	550.	3.	13	771258.	-.008	.014	10856624.	-.35	1.095	3.	.242	14.08	SI

VERIFICHE A TAGLIO

TAGLIO:

Progressive	Se	Vsd	VRd	VRcd	VRsd	Asw	s	ctgT	Ve	
> 0.	0.	3.	48398.	10276.	86987.	89378.	1.57	15.	1.85	SI
169.	169.	3.	17176.	11943.	86987.	89378.	1.57	15.	1.85	SI
550.	550.	3.	-42697.	10276.	86987.	89378.	1.57	15.	1.85	SI
> 550.	0.	3.	51027.	10276.	86987.	89378.	1.57	15.	1.85	SI
769.	219.	3.	26265.	14593.	86987.	89378.	1.57	15.	1.85	SI
1270.	720.	3.	-51027.	10276.	86987.	89378.	1.57	15.	1.85	SI
> 1270.	0.	3.	57301.	10276.	86987.	89378.	1.57	15.	1.85	SI
1489.	219.	3.	16833.	12949.	86987.	89378.	1.57	15.	1.85	SI
1820.	550.	3.	-48398.	10276.	86987.	89378.	1.57	15.	1.85	SI

VERIFICHE ALLO STATO LIMITE DI ESERCIZIO

TENSIONI DI ESERCIZIO E FESSURAZIONE - RARE:

Progressive	Se	Ar	Momento	σ_c	σ_f	As	hc, ef	Eps%	Sr, max	Wd	Ve	
> 0.	0.	3.	1.	-2339031.	-33.6	1628.1	17.09	34.35	.0528	22.68	.12	SI
59.	59.	3.	1.	-713326.	-10.2	496.5	17.09	34.35	.0142	22.68	.032	SI
59.	59.	3.	1.	517447.	-7.2	230.6	18.85	10.	.0066	15.61	.01	SI
72.	72.	3.	2.	-412385.	-6.7	294.1	17.09	33.5	.0084	22.32	.019	SI
72.	72.	3.	2.	751864.	-14.	621.4	9.42	10.	.0178	21.02	.037	SI

256.	256.	3.	3.	2680022.	-51.	2203.8	9.42	10.	.0882	21.02	.185	SI
550.	550.	3.	6.	-2802026.	-33.3	1484.6	23.37	33.68	.0522	19.01	.099	SI
> 550.	0.	3.	6.	-3479916.	-41.3	1843.7	23.37	33.68	.0693	19.01	.132	SI
930.	380.	3.	8.	4015097.	-58.8	1779.3	18.85	10.	.0749	15.61	.117	SI
1270.	720.	3.	6.	-3479916.	-41.3	1843.7	23.37	33.68	.0693	19.01	.132	SI
>1270.	0.	3.	6.	-2802026.	-33.3	1484.6	23.37	33.68	.0522	19.01	.099	SI
1564.	294.	3.	11	2680022.	-45.7	1710.	12.57	10.	.0681	18.32	.125	SI
1820.	550.	3.	13	-2339031.	-32.3	1617.4	17.09	34.61	.0522	22.79	.119	SI

TENSIONI DI ESERCIZIO E FESSURAZIONE - FREQUENTI :

Progressive	Se	Ar	Momento	σ_c	σ_f	As	hc, ef	Eps%	Sr, max	Wd	Ve	
> 0.	0.	3.	1.	-2105674.	-30. 2	1465. 6	17. 09	34. 35	.0451	22. 68	.102	SI
59.	59.	3.	1.	-651945.	-9. 4	453. 8	17. 09	34. 35	.013	22. 68	.029	SI
59.	59.	3.	1.	425194.	-5. 9	189. 5	18. 85	10.	.0054	15. 61	.008	SI
72.	72.	3.	2.	-383191.	-6. 3	273. 3	17. 09	33. 5	.0078	22. 32	.017	SI
72.	72.	3.	2.	662761.	-12. 3	547. 8	9. 42	10.	.0157	21. 02	.033	SI
256.	256.	3.	3.	2425326. !	-46. 2	1994. 4	9. 42	10.	.0782	21. 02	.164	SI
550.	550.	3.	6.	-2526756. !	-30. 1	1338. 7	23. 37	33. 68	.0452	19. 01	.086	SI
> 550.	0.	3.	6.	-3123198.	-37. 1	1654. 7	23. 37	33. 68	.0603	19. 01	.115	SI
890.	340.	3.	8.	3644099. !	-53. 4	1614. 9	18. 85	10.	.067	15. 61	.105	SI
930.	380.	3.	8.	3644099. !	-53. 4	1614. 9	18. 85	10.	.067	15. 61	.105	SI
1270.	720.	3.	6.	-3123198. !	-37. 1	1654. 7	23. 37	33. 68	.0603	19. 01	.115	SI
>1270.	0.	3.	6.	-2526756. !	-30. 1	1338. 7	23. 37	33. 68	.0452	19. 01	.086	SI
1564.	294.	3.	11	2425326. !	-41. 3	1547. 5	12. 57	10.	.0604	18. 32	.111	SI
1820.	550.	3.	13	-2105674.	-29. 1	1456. 1	17. 09	34. 61	.0445	22. 79	.101	SI

TENSIONI DI ESERCIZIO E FESSURAZIONE - QUASI PERMANENTI :

Progressive	Se	Ar	Momento	σ_c	σ_f	As	hc, ef	Eps%	Sr, max	Wd	Ve	
> 0.	0.	3.	1.	-2012330.	-28.9	1400.7	17.09	34.35	.042	22.68	.095	SI
59.	59.	3.	1.	-627393.	-9.	436.7	17.09	34.35	.0125	22.68	.028	SI
59.	59.	3.	1.	380128.	-5.3	169.4	18.85	10.	.0048	15.61	.008	SI
72.	72.	3.	2.	-371513.	-6.1	264.9	17.09	33.5	.0076	22.32	.017	SI
72.	72.	3.	2.	618728.	-11.5	511.4	9.42	10.	.0146	21.02	.031	SI
256.	256.	3.	3.	2311839.	-44.	1901.1	9.42	10.	.0738	21.02	.155	SI
550.	550.	3.	6.	-2416648.	-28.7	1280.4	23.37	33.68	.0424	19.01	.081	SI
> 550.	0.	3.	6.	-2980511.	-35.4	1579.1	23.37	33.68	.0567	19.01	.108	SI
930.	380.	3.	8.	3475168.	-50.9	1540.	18.85	10.	.0635	15.61	.099	SI
1270.	720.	3.	6.	-2980511.	-35.4	1579.1	23.37	33.68	.0567	19.01	.108	SI
>1270.	0.	3.	6.	-2416648.	-28.7	1280.4	23.37	33.68	.0424	19.01	.081	SI
1564.	294.	3.	11	2311839.	-39.4	1475.1	12.57	10.	.0569	18.32	.104	SI
1820.	550.	3.	13	-2012330.	-27.8	1391.5	17.09	34.61	.0414	22.79	.094	SI

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

Nro	Totale	%	Super.	%	Barre	Infer.	%	Barre
1	38.96	.999	18.1	.464	4d20 +2d8 +2d12 ...	20.86	.535	2d8 +3d20 +3d20 ...
2	29.53	.757	18.1	.464	4d20 +2d8 +2d12 ...	11.44	.293	2d8 +3d20 +2d8
3	16.96	.435	5.53	.142	2d8 +2d12 +2d12	11.44	.293	2d8 +3d20 +2d8
4	35.81	.918	24.38	.625	6d20 +2d8 +2d12 ...	11.44	.293	2d8 +3d20 +2d8
5	45.24	1.16	24.38	.625	6d20 +2d8 +2d12 ...	20.86	.535	2d8 +3d20 +3d20 ...
6	54.66	1.402	24.38	.625	6d20 +2d8 +2d12 ...	30.28	.777	2d8 +6d20 +3d20 ...
7	45.24	1.16	24.38	.625	6d20 +2d8 +2d12 ...	20.86	.535	2d8 +6d20 +2d8
8	26.39	.677	5.53	.142	2d8 +2d12 +2d12	20.86	.535	2d8 +6d20 +2d8
9	48.38	1.241	24.38	.625	6d20 +2d8 +2d12 ...	24.	.615	2d8 +4d20 +3d20 ...
10	38.96	.999	24.38	.625	6d20 +2d8 +2d12 ...	14.58	.374	2d8 +4d20 +2d8
11	20.11	.516	5.53	.142	2d8 +2d12 +2d12	14.58	.374	2d8 +4d20 +2d8
12	32.67	.838	18.1	.464	4d20 +2d8 +2d12 ...	14.58	.374	2d8 +4d20 +2d8
13	42.1	1.079	18.1	.464	4d20 +2d8 +2d12 ...	24.	.615	2d8 +4d20 +3d20 ...