

En.Ex.Sys. WinStrand

Structural Analysis & Design

Ditta produttrice:
En.Ex.Sys. s.r.l. - Via Tizzano 46/2 - Casalecchio di Reno (Bologna)
Sigla:
WinStrand
Piattaforma software:
Microsoft Windows XP Home, Microsoft Windows XP Home Professional
Documentazione in uso:
Manuale teorico - Manuale d'uso
Campo di applicazione:
Analisi statica e dinamica di strutture in campo elastico lineare.

Elementi finiti implementati

- Truss.
- Beam (Modellazione di Travi e Pilastrì).
- Travi su suolo elastico alla Winckler.
- Plinti su suolo elastico alla Winckler.
- Elementi Shear Wall per la modellazione di pareti di taglio.
- Elementi shell (lastra/piastra) equivalenti.
- Elementi Isoparametrici a 8 Nodi Shell (lastra/piastra).

Schemi di Carico

- Carichi nodali concentrati.
- Carichi applicati direttamente agli elementi.
- Carichi Superficiali.

Tipo di Risoluzione

- Analisi statica e/o dinamica in campo lineare con il metodo dell'equilibrio.
- Fattorizzazione LDL^T.
- Analisi Statica:
 - - modellazione generale 6 gradi di libertà per nodo.
 - ipotesi di solai infinitamente rigidi nel proprio piano (3 gradi di libertà per nodo + 3 per impalcato).
- Analisi dinamica. (Nel caso di analisi modale gli autovettori ed autovalori possono essere calcolati mediante *subspace iteration* oppure tramite il *metodo dei vettori di Ritz*):
 - - Via statica equivalente.
 - Modale con il metodo dello spettro di risposta.

Normativa di riferimento

La normativa italiana cui viene fatto riferimento nelle fasi di calcolo e progettazione è la seguente:

- Legge n. 1086 del 5 Novembre 1971. *"Norme per la disciplina delle opere di conglomerato cementizio armato, normale e precompresso, ed a struttura metallica"*.
- Legge n. 64 del 2 Febbraio 1974. *"Provvedimenti per le costruzioni con particolari prescrizioni per le zone sismiche"*.
- D.M. del 3 Marzo 1975. *"Approvazione delle norme tecniche per le costruzioni in zone sismiche"*.
- D.M. del 3 Marzo 1975. *"Disposizioni concernenti l'applicazione delle norme tecniche per le costruzioni in zone sismiche"*.
- D.M. del 3 Ottobre 1978. *"Criteri generali per la verifica della sicurezza delle costruzioni e dei carichi e sovraccarichi"*.
- D.M. del 14 Febbraio 1992. *"Norme Tecniche per l'esecuzione delle opere in C.A. normale e precompresso e per le strutture metalliche"*.
- Istruzioni per la valutazione delle: Azioni sulle Costruzioni. (C.N.R. 10012/85)
- D.M. del 9 Gennaio 1996. *"Norme Tecniche per il calcolo, l'esecuzione ed il collaudo delle strutture in cemento armato, normale e precompresso e per le strutture metalliche"*.
- D.M. del 16 Gennaio 1996. *"Norme tecniche relative ai «Criteri generali per la verifica di sicurezza delle costruzioni e dei carichi e sovraccarichi»"*.
- D.M. del 16 Gennaio 1996. *"Norme tecniche per le costruzioni in zone sismiche"*
- Ordinanza n. 3274 del 20 Marzo 2003. *"Primi elementi in materia di criteri generali per la classificazione sismica del territorio nazionale e di normative tecniche per le costruzioni in zona sismica"*
- Ordinanza n. 3316. *"Modifiche ed integrazioni all'ordinanza del Presidente del Consiglio dei Ministri n. 3274 del 20 Marzo 2003"*
- D.M. del 14 Gennaio 2008 *"Approvazione delle nuove norme tecniche per le costruzioni"*

Dati relativi ai nodi della struttura

Convenzioni adottate

La tema di riferimento generale è destrorsa.

I nodi vengono numerati, con riferimento a una sezione orizzontale, da sinistra a destra, dal basso verso l'alto e per quote crescenti.

L'impalcato di appartenenza di un nodo è definito, in generale, dalla prima delle tre cifre che ne definiscono il numero, possono tuttavia presentarsi casi in cui si hanno più di 100 nodi per solaio nel qual caso il solaio di appartenenza è specificato dall'ultimo valore stampato nella riga dei dati relativi al nodo.

La maschera dei vincoli è costituita dai valori 0 e 1. Il valore 1 indica che per il nodo in riferimento il grado di libertà correlativo è soppresso mentre il valore 0 indica che è libero.

Nel caso di edifici civili multipiano l'asse z generale coincide con l'asse verticale rivolto verso l'alto.

Nodi

Nodo	x [m]	y [m]	z [m]	Ux	Uy	Uz	Rx	Ry	Rz	Solaio
1	0.780	-6.170	0.000	1	1	1	1	1	1	0
2	-0.890	-6.150	0.000	1	1	1	1	1	1	0
3	3.130	-5.370	0.000	1	1	1	1	1	1	0

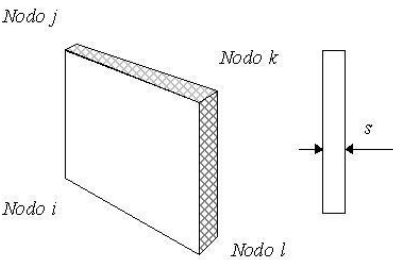
Nodo	x [m]	y [m]	z [m]	Ux	Uy	Uz	Rx	Ry	Rz	Solaio
4	-3.220	-5.310	0.000	1	1	1	1	1	1	0
5	0.660	-5.150	0.000	1	1	1	1	1	1	0
6	-0.750	-5.140	0.000	1	1	1	1	1	1	0
7	2.610	-4.480	0.000	1	1	1	1	1	1	0
8	-2.690	-4.440	0.000	1	1	1	1	1	1	0
9	4.980	-3.720	0.000	1	1	1	1	1	1	0
10	-5.040	-3.640	0.000	1	1	1	1	1	1	0
11	4.150	-3.110	0.000	1	1	1	1	1	1	0
12	-4.210	-3.040	0.000	1	1	1	1	1	1	0
13	6.030	-1.490	0.000	1	1	1	1	1	1	0
14	-6.060	-1.380	0.000	1	1	1	1	1	1	0
15	5.040	-1.240	0.000	1	1	1	1	1	1	0
16	-5.060	-1.150	0.000	1	1	1	1	1	1	0
17	5.120	0.820	0.000	1	1	1	1	1	1	0
18	-5.110	0.910	0.000	1	1	1	1	1	1	0
19	6.140	0.980	0.000	1	1	1	1	1	1	0
20	-6.120	1.090	0.000	1	1	1	1	1	1	0
21	4.400	2.760	0.000	1	1	1	1	1	1	0
22	-4.350	2.830	0.000	1	1	1	1	1	1	0
23	5.270	3.300	0.000	1	1	1	1	1	1	0
24	-5.210	3.390	0.000	1	1	1	1	1	1	0
25	2.970	4.250	0.000	1	1	1	1	1	1	0
26	-2.900	4.310	0.000	1	1	1	1	1	1	0
27	1.080	5.080	0.000	1	1	1	1	1	1	0
28	-0.990	5.090	0.000	1	1	1	1	1	1	0
29	3.560	5.090	0.000	1	1	1	1	1	1	0
30	-3.470	5.160	0.000	1	1	1	1	1	1	0
31	1.290	6.080	0.000	1	1	1	1	1	1	0
32	-1.180	6.100	0.000	1	1	1	1	1	1	0
33	0.780	-6.170	2.050	0	0	0	0	0	0	0
34	-0.890	-6.150	2.050	0	0	0	0	0	0	0
35	3.130	-5.370	2.050	0	0	0	0	0	0	0
36	-3.220	-5.310	2.050	0	0	0	0	0	0	0
37	0.660	-5.150	2.050	0	0	0	0	0	0	0
38	-0.750	-5.140	2.050	0	0	0	0	0	0	0
39	2.610	-4.480	2.050	0	0	0	0	0	0	0
40	-2.690	-4.440	2.050	0	0	0	0	0	0	0
41	4.980	-3.720	2.050	0	0	0	0	0	0	0
42	-5.040	-3.640	2.050	0	0	0	0	0	0	0
43	4.150	-3.110	2.050	0	0	0	0	0	0	0
44	-4.210	-3.040	2.050	0	0	0	0	0	0	0
45	6.030	-1.490	2.050	0	0	0	0	0	0	0
46	-6.060	-1.380	2.050	0	0	0	0	0	0	0
47	5.040	-1.240	2.050	0	0	0	0	0	0	0
48	-5.060	-1.150	2.050	0	0	0	0	0	0	0
49	5.120	0.820	2.050	0	0	0	0	0	0	0
50	-5.110	0.910	2.050	0	0	0	0	0	0	0
51	6.140	0.980	2.050	0	0	0	0	0	0	0
52	-6.120	1.090	2.050	0	0	0	0	0	0	0
53	4.400	2.760	2.050	0	0	0	0	0	0	0
54	-4.350	2.830	2.050	0	0	0	0	0	0	0
55	5.270	3.300	2.050	0	0	0	0	0	0	0
56	-5.210	3.390	2.050	0	0	0	0	0	0	0
57	2.970	4.250	2.050	0	0	0	0	0	0	0
58	-2.900	4.310	2.050	0	0	0	0	0	0	0
59	1.080	5.080	2.050	0	0	0	0	0	0	0
60	-0.990	5.090	2.050	0	0	0	0	0	0	0
61	3.560	5.090	2.050	0	0	0	0	0	0	0
62	-3.470	5.160	2.050	0	0	0	0	0	0	0
63	1.290	6.080	2.050	0	0	0	0	0	0	0
64	-1.180	6.100	2.050	0	0	0	0	0	0	0
65	0.780	-6.170	4.100	0	0	0	0	0	0	0
66	-0.890	-6.150	4.100	0	0	0	0	0	0	0
67	3.130	-5.370	4.100	0	0	0	0	0	0	0
68	-3.220	-5.310	4.100	0	0	0	0	0	0	0
69	0.660	-5.150	4.100	0	0	0	0	0	0	0
70	-0.750	-5.140	4.100	0	0	0	0	0	0	0
71	2.610	-4.480	4.100	0	0	0	0	0	0	0

Nodo	x [m]	y [m]	z [m]	Ux	Uy	Uz	Rx	Ry	Rz	Solaio
72	-2.690	-4.440	4.100	0	0	0	0	0	0	0
73	4.980	-3.720	4.100	0	0	0	0	0	0	0
74	-5.040	-3.640	4.100	0	0	0	0	0	0	0
75	4.150	-3.110	4.100	0	0	0	0	0	0	0
76	-4.210	-3.040	4.100	0	0	0	0	0	0	0
77	6.030	-1.490	4.100	0	0	0	0	0	0	0
78	-6.060	-1.380	4.100	0	0	0	0	0	0	0
79	5.040	-1.240	4.100	0	0	0	0	0	0	0
80	-5.060	-1.150	4.100	0	0	0	0	0	0	0
81	0.000	0.000	4.100	0	0	0	0	0	0	0
82	5.120	0.820	4.100	0	0	0	0	0	0	0
83	-5.110	0.910	4.100	0	0	0	0	0	0	0
84	6.140	0.980	4.100	0	0	0	0	0	0	0
85	-6.120	1.090	4.100	0	0	0	0	0	0	0
86	4.400	2.760	4.100	0	0	0	0	0	0	0
87	-4.350	2.830	4.100	0	0	0	0	0	0	0
88	5.270	3.300	4.100	0	0	0	0	0	0	0
89	-5.210	3.390	4.100	0	0	0	0	0	0	0
90	2.970	4.250	4.100	0	0	0	0	0	0	0
91	-2.900	4.310	4.100	0	0	0	0	0	0	0
92	1.080	5.080	4.100	0	0	0	0	0	0	0
93	-0.990	5.090	4.100	0	0	0	0	0	0	0
94	3.560	5.090	4.100	0	0	0	0	0	0	0
95	-3.470	5.160	4.100	0	0	0	0	0	0	0
96	1.290	6.080	4.100	0	0	0	0	0	0	0
97	-1.180	6.100	4.100	0	0	0	0	0	0	0
98	0.660	-5.150	5.350	0	0	0	0	0	0	0
99	-0.750	-5.140	5.350	0	0	0	0	0	0	0
100	2.610	-4.480	5.350	0	0	0	0	0	0	0
101	-2.690	-4.440	5.350	0	0	0	0	0	0	0
102	4.150	-3.110	5.350	0	0	0	0	0	0	0
103	-4.210	-3.040	5.350	0	0	0	0	0	0	0
104	5.040	-1.240	5.350	0	0	0	0	0	0	0
105	-5.060	-1.150	5.350	0	0	0	0	0	0	0
106	5.120	0.820	5.350	0	0	0	0	0	0	0
107	-5.110	0.910	5.350	0	0	0	0	0	0	0
108	4.400	2.760	5.350	0	0	0	0	0	0	0
109	-4.350	2.830	5.350	0	0	0	0	0	0	0
110	2.970	4.250	5.350	0	0	0	0	0	0	0
111	-2.900	4.310	5.350	0	0	0	0	0	0	0
112	1.080	5.080	5.350	0	0	0	0	0	0	0
113	-0.990	5.090	5.350	0	0	0	0	0	0	0

Elementi setto

Convenzioni adottate

L'elemento setto viene identificato mediante i quattro nodi (**i, j, k, l**) di bordo.



Numerazione dei nodi cui fa capo l'elemento

Caratteristiche dei Materiali:

Tipo	Modulo Elastico [kg/cm ²]	ν	alfa [1/°C]	Peso Specifico [kg/m ³]	Commento
1	300000.0	0.120	0.000012	2500	Calcestruzzo C20/25
2	314760.0	0.120	0.000012	2500	Calcestruzzo C25/30
3	2100000.0	0.330	0.000012	7850	Acciaio

Sezioni Impiegate:

Sezione Materiale Tipo di Sezione		Parametri Dimensionali	Commenti
1	2	Muro	$s= 25$ [cm] Setto Controcamicia

Sezione Materiale Tipo di Sezione Parametri Dimensionali
Commenti

2	1	Muro	s= 40 [cm] Setto Sebatoio
3	2	Muro	s= 25 [cm] Parapetto Serbatoio

Nodo Nodo Nodo Nodo Materiale Sezione
i j k l

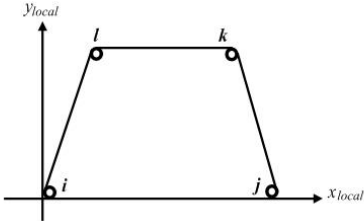
3	35	33	1	2	1
35	67	65	33	2	1
2	34	33	1	2	1
34	66	65	33	2	1
2	34	36	4	2	1
34	66	68	36	2	1
9	41	35	3	2	1
41	73	67	35	2	1
4	36	42	10	2	1
36	68	74	42	2	1
7	39	37	5	1	2
39	71	69	37	1	2
71	100	98	69	2	3
5	37	38	6	1	2
37	69	70	38	1	2
6	38	40	8	1	2
38	70	72	40	1	2
70	99	101	72	2	3
11	43	39	7	1	2
43	75	71	39	1	2
75	102	100	71	2	3
8	40	44	12	1	2
40	72	76	44	1	2
72	101	103	76	2	3
9	41	45	13	2	1
41	73	77	45	2	1
10	42	46	14	2	1
42	74	78	46	2	1
15	47	43	11	1	2
47	79	75	43	1	2
79	104	102	75	2	3
12	44	48	16	1	2
44	76	80	48	1	2
76	103	105	80	2	3
13	45	51	19	2	1
45	77	84	51	2	1
14	46	52	20	2	1
46	78	85	52	2	1
17	49	47	15	1	2
49	82	79	47	1	2
82	106	104	79	2	3
16	48	50	18	1	2
48	80	83	50	1	2
80	105	107	83	2	3
21	53	49	17	1	2
53	86	82	49	1	2
82	106	108	86	2	3
18	50	54	22	1	2
50	83	87	54	1	2
83	107	109	87	2	3
19	51	55	23	2	1
51	84	88	55	2	1
20	52	56	24	2	1
52	85	89	56	2	1
25	57	53	21	1	2
57	90	86	53	1	2
86	108	110	90	2	3
22	54	58	26	1	2
54	87	91	58	1	2
87	109	111	91	2	3
23	55	61	29	2	1
55	88	94	61	2	1

Nodo				Materiale	Sezione
i	j	k	l		
24	56	62	30	2	1
56	89	95	62	2	1
27	59	57	25	1	2
59	92	90	57	1	2
92	112	110	90	2	3
26	58	60	28	1	2
58	91	93	60	1	2
91	111	113	93	2	3
28	60	59	27	1	2
60	93	92	59	1	2
93	113	112	92	2	3
29	61	63	31	2	1
61	94	96	63	2	1
30	62	64	32	2	1
62	95	97	64	2	1
32	64	63	31	2	1
64	97	96	63	2	1

Elementi a 4 nodi

Convenzioni adottate

L'elemento a 4 nodi è individuato tramite il numero dei quattro nodi di vertice dello stesso.
Gli assi del sistema di riferimento locale risultano così disposti:



- L'asse x_{locale} ha direzione parallela alla retta congiungente i nodi i e j , è passante per i medesimi nodi ed ha verso positivo da i a j .
- L'asse y_{locale} è ortogonale all'asse x_{locale} , passa per il nodo i ed ha verso positivo dalla parte del nodo l .
- L'asse z_{locale} è ottenuto per prodotto vettoriale fra x_{locale} e y_{locale} .

Caratteristiche dei Materiali:

Tipo	Modulo Elastico [kg/cm ²]	ν	alfa [1/°C]	Peso Specifico [kg/m ³]	Commento
1	300000.0	0.120	0.000012	2500	Calcestruzzo C20/25
2	314760.0	0.120	0.000012	2500	Calcestruzzo C25/30
3	2100000.0	0.330	0.000012	7850	Acciaio

Sezioni Impiegate:

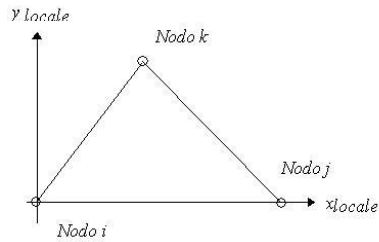
Sezione			Parametri Dimensionali
Materiale Tipo di Sezione			Commenti
1	2	Mesh isotropa	s= 20 [cm] Soletta

Nodo				Materiale	Sezione
i	j	k	l		
65	69	71	67	2	1
76	74	78	80	2	1
71	75	73	67	2	1
66	68	72	70	2	1
72	68	74	76	2	1
80	78	85	83	2	1
75	79	77	73	2	1
83	85	89	87	2	1
79	82	84	77	2	1
87	89	95	91	2	1
86	88	84	82	2	1
91	95	97	93	2	1
93	97	96	92	2	1
92	96	94	90	2	1
90	94	88	86	2	1

Elementi triangolari

Convenzioni adottate

L'elemento trinangolare è individuato tramite il numero dei nodi di vertice dello stesso.
Gli assi del sistema di riferimento locale risultano così disposti:



- L'asse x_{locale} ha direzione parallela alla retta congiungente i nodi **i** e **j**, è passante per i medesimi nodi ed ha verso positivo da **i** a **j**.
- L'asse y_{locale} è ortogonale all'asse x_{locale} , passa per il nodo **i** ed ha verso positivo dalla parte del nodo **k**.
- L'asse z_{locale} è ottenuto per prodotto vettoriale fra x_{locale} e y_{locale} .

Caratteristiche dei Materiali:

Tipo	Modulo Elastico [kg/cm ²]	ν	alfa [1/°C]	Peso Specifico [kg/m ³]	Commento
1	300000.0	0.120	0.000012	2500	Calcestruzzo C20/25
2	314760.0	0.120	0.000012	2500	Calcestruzzo C25/30
3	2100000.0	0.330	0.000012	7850	Acciaio

Sezioni Impiegate:

Sezione	Materiale	Tipo di Sezione	Parametri Dimensionali Commenti
1	1	Mesh isotropa	s= 40 [cm] Soletta serbatoio

Nodo Nodo Nodo Materiale Sezione

1	2	3	Materiale	Sezione
81	79	75	1	1
81	82	79	1	1
81	75	71	1	1
81	71	69	1	1
81	69	70	1	1
81	70	72	1	1
81	72	76	1	1
81	76	80	1	1
81	86	82	1	1
81	80	83	1	1
81	87	91	1	1
81	90	86	1	1
81	83	87	1	1
81	91	93	1	1
81	92	90	1	1
81	93	92	1	1

Condizioni e combinazioni di carico

Convenzioni adottate

Nel seguito vengono riportate il numero di condizioni di carico statiche e dinamiche che sollecitano la struttura. Si noti che:

- Per quanto riguarda le condizioni di carico dinamiche, il programma assimila ogni direzione di ingresso del sisma, definita dal progettista, ad una condizione di carico. Pertanto qualora agiscano sulla struttura n condizioni di carico statiche e il progettista abbia supposto che la struttura venga sollecitata da un sisma entrante in m direzioni, la struttura stessa viene considerata del programma come soggetta ad $n + m$ condizioni di carico.
- Le combinazioni di carico, definite dal progettista, combinano fra loro le $n + m$ condizioni di carico ognuna partecipante alla combinazione i -esima secondo i fattori di partecipazione nel seguito riportati. N.B.: se la condizione j -esima ha fattore di partecipazione unitario, allora partecipa per intero alla combinazione i -esima.
- Le prime n condizioni sono sempre statiche mentre sono di origine dinamica le (eventuali) condizioni da $n+1$ a $n+m$.

Condizioni di carico definite:

- Cond. 1 Peso Proprio
- Cond. 2 Carichi Permanenti
- Cond. 3 Neve
- Cond. 4 Termica

Combinazioni agli Stati Limite Ultimi

Combinazione di carico numero

1	SLU_Neve
2	SLU_Termica

Comb.\Cond	1	2	3	4
1	1.3000	1.5000	1.5000	0.9000
2	1.3000	1.5000	0.7500	1.5000

Combinazioni RARE Stati Limite di Esercizio

Combinazione di carico numero

3	Rare_Neve
4	Rare_Termica

Comb.\Cond	1	2	3	4
------------	---	---	---	---

3	1.0000	1.0000	1.0000	0.6000
4	1.0000	1.0000	0.5000	1.0000

Combinazioni FREQUENTI Stati Limite di Esercizio

Combinazione di carico numero

5	Freq_Neve
6	Freq_Termica

Comb.\Cond	1	2	3	4
------------	---	---	---	---

5	1.0000	1.0000	0.2000	0.0000
6	1.0000	1.0000	0.0000	0.5000

Combinazioni QUASI PERMANENTI Stati Limite di Esercizio

Combinazione di carico numero

7	Qperm
---	-------

Comb.\Cond	1	2
------------	---	---

7	1.0000	1.0000
---	--------	--------

Carichi applicati agli elementi

Convenzioni adottate

I carichi applicati vengono raccolti nella tabella riportata alla fine del paragrafo e si intendono applicati nel sistema di riferimento locale dell'elemento. Per la lettura della tabella si definiscono:

NodoI, NodeJ

I nodi iniziale/finale dell'asta o lato dell'elemento cui afferisce il carico

L

La distanza fra i suddetti nodi.

 q_{xi}, \dots, q_{zj}

Le componenti di un carico distribuito costante o variabile linearmente iniziali (indice i) e finale (indice j).

xi, xj

Le distanze, misurate a partire dal Nodo I, dei punti di applicazione dei carichi $q_{xi}..q_{xj}$ relativi a carichi distribuiti applicati su porzioni di un'asta.

Px, ..., Pz xApp

Le componenti di un Carico Concentrato applicato a distanza x App dal Nodo I.

Mx, ..., Mz xApp

Le componenti di una Coppia Concentrata applicata a distanza xApp dal NodoI.

Var Termica Assiale, ..., Var Termica Farfalla 13

Le variazioni termiche (Assiali ed a Farfalla) misurate in gradi Celsius.

 m_{xi}, \dots, m_{zj}

Le componenti di coppie distribuite costanti o variabili linearmente iniziali (indice i) e finale (indice j).

 qS_x, qS_v, q

carichi, per unità di superficie, applicati su elementi superficiali o facce di elementi solidi

Peso Proprio

Il valore del carico derivante dal peso proprio dell'elemento

Carichi distribuiti

Elemento	Condizione di carico	Nodi	L [m]	xi [m]	qxi [kg/m]	qyi [kg/m]	qzi [kg/m]	xj [m]	qxj [kg/m]	qyj [kg/m]	qzj [kg/m]	qSx [kg/m ²]	qSy [kg/m ²]	qSz [kg/m ²]
81 79 75		3										0	0	-306
		2										0	0	-1400
65 71		1										0	0	-500
		3										0	0	-306
3 33		2	33 1	2.050	0.000	0	0	-1500	2.050	0	0	-3000		
		2	3 35	2.050	0.000	0	0	-3000	2.050	0	0	-1500		
		1										0	625	0
81 82 79		3										0	0	-306
		2										0	0	-1400
76 78		1										0	0	-500
		3										0	0	-306
35 65		2	65 33	2.050	0.000	0	0	0	2.050	0	0	-1500		
		2	35 67	2.050	0.000	0	0	-1500	2.050	0	0	0		
		1										0	625	0
81 75 71		3										0	0	-306
		2										0	0	-1400
71 73		1										0	0	-500
		3										0	0	-306
2 33		1										0	625	0
81 71 69		3										0	0	-306
		2										0	0	-1400
66 72		1										0	0	-500

	3												0	0	-306
34 65	1												0	625	0
81 69 70	3												0	0	-306
	2												0	0	-1400
72 74	1												0	0	-500
	3												0	0	-306
2 36	2	2 34	2.050	0.000	0	0	-3000	2.050	0	0	-1500				
	1												0	625	0
81 70 72	3												0	0	-306
	2												0	0	-1400
80 85	1												0	0	-500
	3												0	0	-306
34 68	2	34 66	2.050	0.000	0	0	-1500	2.050	0	0	0				
	1												0	625	0
81 72 76	3												0	0	-306
	2												0	0	-1400
75 77	1												0	0	-500
	3												0	0	-306
9 35	2	9 41	2.050	0.000	0	0	-3000	2.050	0	0	-1500				
	1												0	625	0
81 76 80	3												0	0	-306
	2												0	0	-1400
83 89	1												0	0	-500
	3												0	0	-306
41 67	2	41 73	2.050	0.000	0	0	-1500	2.050	0	0	0				
	1												0	625	0
81 86 82	3												0	0	-306
	2												0	0	-1400
79 84	1												0	0	-500
	3												0	0	-306
4 42	1												0	625	0
81 80 83	3												0	0	-306
	2												0	0	-1400
87 95	1												0	0	-500
	3												0	0	-306
36 74	1												0	625	0
81 87 91	3												0	0	-306
	2												0	0	-1400
86 84	1												0	0	-500
	3												0	0	-306
81 90 86	3												0	0	-306
	2												0	0	-1400
91 97	1												0	0	-500
	3												0	0	-306
81 83 87	3												0	0	-306
	2												0	0	-1400
93 96	1												0	0	-500
	3												0	0	-306
71 98	1												0	625	0
81 91 93	3												0	0	-306
	2												0	0	-1400
92 94	1												0	0	-500
	3												0	0	-306
81 92 90	3												0	0	-306
	2												0	0	-1400
90 88	1												0	0	-500
	3												0	0	-306
81 93 92	3												0	0	-306
	2												0	0	-1400
70 101	1												0	625	0
75 100	1												0	625	0
72 103	1												0	625	0
9 45	2	45 13	2.050	0.000	0	0	1500	2.050	0	0	3000				
	1												0	625	0
41 77	2	77 45	2.050	0.000	0	0	0	2.050	0	0	1500				
	1												0	625	0
10 46	1												0	625	0
42 78	1												0	625	0
79 102	1												0	625	0

76 105	1											0	625	0
13 51	2	51 19	2.050	0.000	0	0	1500	2.050	0	0	3000			
	1											0	625	0
45 84	2	84 51	2.050	0.000	0	0	0	2.050	0	0	1500			
	1											0	625	0
14 52	1											0	625	0
46 85	1											0	625	0
82 104	1											0	625	0
80 107	1											0	625	0
82 108	1											0	625	0
83 109	1											0	625	0
19 55	2	55 23	2.050	0.000	0	0	1500	2.050	0	0	3000			
	1											0	625	0
51 88	2	88 55	2.050	0.000	0	0	0	2.050	0	0	1500			
	1											0	625	0
20 56	1											0	625	0
52 89	1											0	625	0
86 110	1											0	625	0
87 111	1											0	625	0
23 61	2	61 29	2.050	0.000	0	0	1500	2.050	0	0	3000			
	1											0	625	0
55 94	2	94 61	2.050	0.000	0	0	0	2.050	0	0	1500			
	1											0	625	0
24 62	1											0	625	0
56 95	1											0	625	0
92 110	1											0	625	0
91 113	1											0	625	0
93 112	1											0	625	0
29 63	2	63 31	2.050	0.000	0	0	1500	2.050	0	0	3000			
	1											0	625	0
61 96	2	96 63	2.050	0.000	0	0	0	2.050	0	0	1500			
	1											0	625	0
30 64	2	64 32	2.050	0.000	0	0	-1500	2.050	0	0	-3000			
	1											0	625	0
62 97	2	97 64	2.050	0.000	0	0	0	2.050	0	0	-1500			
	1											0	625	0
32 63	1											0	625	0
64 96	1											0	625	0

Variazioni Termiche

Condizione Var Termica Assiale
Elemento di carico [°C]

81 79 75	4	15.0
65 71	4	15.0
3 33	4	15.0
81 82 79	4	15.0
76 78	4	15.0
35 65	4	15.0
81 75 71	4	15.0
71 73	4	15.0
2 33	4	15.0
81 71 69	4	15.0
66 72	4	15.0
34 65	4	15.0
81 69 70	4	15.0
72 74	4	15.0
2 36	4	15.0
81 70 72	4	15.0
80 85	4	15.0
34 68	4	15.0
81 72 76	4	15.0
75 77	4	15.0
9 35	4	15.0
81 76 80	4	15.0
83 89	4	15.0
41 67	4	15.0
81 86 82	4	15.0
79 84	4	15.0
4 42	4	15.0
81 80 83	4	15.0
87 95	4	15.0

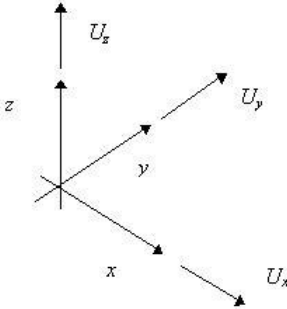
36 74	4	15.0
81 87 91	4	15.0
86 84	4	15.0
7 37	4	15.0
81 90 86	4	15.0
91 97	4	15.0
39 69	4	15.0
81 83 87	4	15.0
93 96	4	15.0
71 98	4	15.0
81 91 93	4	15.0
92 94	4	15.0
5 38	4	15.0
81 92 90	4	15.0
90 88	4	15.0
37 70	4	15.0
81 93 92	4	15.0
6 40	4	15.0
38 72	4	15.0
70 101	4	15.0
11 39	4	15.0
43 71	4	15.0
75 100	4	15.0
8 44	4	15.0
40 76	4	15.0
72 103	4	15.0
9 45	4	15.0
41 77	4	15.0
10 46	4	15.0
42 78	4	15.0
15 43	4	15.0
47 75	4	15.0
79 102	4	15.0
12 48	4	15.0
44 80	4	15.0
76 105	4	15.0
13 51	4	15.0
45 84	4	15.0
14 52	4	15.0
46 85	4	15.0
17 47	4	15.0
49 79	4	15.0
82 104	4	15.0
16 50	4	15.0
48 83	4	15.0
80 107	4	15.0
21 49	4	15.0
53 82	4	15.0
82 108	4	15.0
18 54	4	15.0
50 87	4	15.0
83 109	4	15.0
19 55	4	15.0
51 88	4	15.0
20 56	4	15.0
52 89	4	15.0
25 53	4	15.0
57 86	4	15.0
86 110	4	15.0
22 58	4	15.0
54 91	4	15.0
87 111	4	15.0
23 61	4	15.0
55 94	4	15.0
24 62	4	15.0
56 95	4	15.0
27 57	4	15.0
59 90	4	15.0
92 110	4	15.0

26 60	4	15.0
58 93	4	15.0
91 113	4	15.0
28 59	4	15.0
60 92	4	15.0
93 112	4	15.0
29 63	4	15.0
61 96	4	15.0
30 64	4	15.0
62 97	4	15.0
32 63	4	15.0
64 96	4	15.0

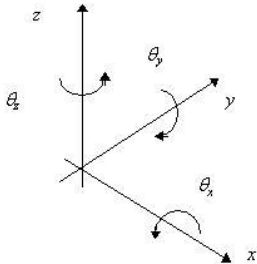
Spostamenti nodali

Convenzioni adottate

La terna di riferimento generale è destrorsa per cui si hanno i seguenti segni positivi per le componenti di spostamento nodale:



e per quanto riguarda le rotazioni:



Nel seguito vengono riportate, per ogni nodo (con esclusione dei nodi K che definiscono l'orientamento delle aste e quindi, essendo bloccati, hanno componenti di spostamento nulle), le componenti di spostamento in tutte le combinazioni di carico definite.

Nodo	Comb.	Ux [cm]	Uy [cm]	Uz [cm]	Rx [°]	Ry [°]	Rz [°]
1	1	0.000	0.000	0.000	0.00	0.00	0.00
	2	0.000	0.000	0.000	0.00	0.00	0.00
	3	0.000	0.000	0.000	0.00	0.00	0.00
	4	0.000	0.000	0.000	0.00	0.00	0.00
	5	0.000	0.000	0.000	0.00	0.00	0.00
	6	0.000	0.000	0.000	0.00	0.00	0.00
	7	0.000	0.000	0.000	0.00	0.00	0.00
2	1	0.000	0.000	0.000	0.00	0.00	0.00
	2	0.000	0.000	0.000	0.00	0.00	0.00
	3	0.000	0.000	0.000	0.00	0.00	0.00
	4	0.000	0.000	0.000	0.00	0.00	0.00
	5	0.000	0.000	0.000	0.00	0.00	0.00
	6	0.000	0.000	0.000	0.00	0.00	0.00
	7	0.000	0.000	0.000	0.00	0.00	0.00
3	1	0.000	0.000	0.000	0.00	0.00	0.00
	2	0.000	0.000	0.000	0.00	0.00	0.00
	3	0.000	0.000	0.000	0.00	0.00	0.00
	4	0.000	0.000	0.000	0.00	0.00	0.00
	5	0.000	0.000	0.000	0.00	0.00	0.00
	6	0.000	0.000	0.000	0.00	0.00	0.00
	7	0.000	0.000	0.000	0.00	0.00	0.00
4	1	0.000	0.000	0.000	0.00	0.00	0.00
	2	0.000	0.000	0.000	0.00	0.00	0.00
	3	0.000	0.000	0.000	0.00	0.00	0.00
	4	0.000	0.000	0.000	0.00	0.00	0.00
	5	0.000	0.000	0.000	0.00	0.00	0.00
	6	0.000	0.000	0.000	0.00	0.00	0.00

[illegible]

[illegible]

[illegible]

Nodo	Comb.	Ux [cm]	Uy [cm]	Uz [cm]	Rx [°]	Ry [°]	Rz [°]
34	1	-0.009	-0.061	0.034	0.03	-0.00	-0.00
	2	-0.015	-0.104	0.057	0.05	-0.01	-0.00
	3	-0.006	-0.041	0.023	0.02	-0.00	-0.00
	4	-0.010	-0.070	0.038	0.03	-0.01	-0.00
	5	0.000	0.002	-0.000	-0.00	0.00	0.00
	6	-0.005	-0.034	0.019	0.02	-0.00	0.00
	7	0.000	0.002	-0.000	-0.00	0.00	0.00
35	1	0.031	-0.052	0.033	0.03	0.01	0.00
	2	0.052	-0.089	0.055	0.04	0.02	0.00
	3	0.020	-0.035	0.022	0.02	0.01	0.00
	4	0.035	-0.059	0.037	0.03	0.02	0.00
	5	-0.001	0.002	-0.000	-0.00	-0.00	0.00
	6	0.017	-0.029	0.018	0.01	0.01	0.00
	7	-0.001	0.002	-0.000	-0.00	-0.00	0.00
36	1	-0.033	-0.054	0.033	0.03	-0.02	0.00
	2	-0.055	-0.090	0.055	0.04	-0.03	0.00
	3	-0.022	-0.036	0.022	0.02	-0.01	0.00
	4	-0.037	-0.060	0.037	0.03	-0.02	0.00
	5	0.000	0.000	-0.000	-0.00	0.00	0.00
	6	-0.018	-0.030	0.018	0.01	-0.01	0.00
	7	0.000	0.000	-0.000	-0.00	0.00	0.00
37	1	0.007	-0.057	0.031	0.03	0.00	0.00
	2	0.011	-0.092	0.053	0.04	0.01	0.00
	3	0.004	-0.038	0.021	0.02	0.00	0.00
	4	0.008	-0.062	0.036	0.03	0.00	0.00
	5	-0.000	-0.002	-0.001	0.00	-0.00	0.00
	6	0.004	-0.032	0.017	0.01	0.00	0.00
	7	-0.000	-0.002	-0.001	0.00	-0.00	0.00
38	1	-0.009	-0.057	0.031	0.03	-0.00	-0.00
	2	-0.014	-0.092	0.053	0.04	-0.01	-0.00
	3	-0.006	-0.038	0.021	0.02	-0.00	-0.00
	4	-0.009	-0.062	0.035	0.03	-0.00	-0.00
	5	-0.001	-0.002	-0.001	0.00	-0.00	-0.00
	6	-0.005	-0.032	0.017	0.01	-0.00	-0.00
	7	-0.001	-0.002	-0.001	0.00	-0.00	-0.00
39	1	0.028	-0.049	0.031	0.02	0.01	0.00
	2	0.046	-0.080	0.052	0.04	0.02	0.00
	3	0.019	-0.033	0.020	0.01	0.01	0.00
	4	0.031	-0.053	0.035	0.02	0.01	0.00
	5	0.001	-0.002	-0.001	0.00	0.00	-0.00
	6	0.016	-0.027	0.017	0.01	0.01	0.00
	7	0.001	-0.002	-0.001	0.00	0.00	-0.00
40	1	-0.030	-0.049	0.030	0.02	-0.01	-0.00
	2	-0.049	-0.079	0.052	0.04	-0.02	-0.00
	3	-0.020	-0.032	0.020	0.01	-0.01	-0.00
	4	-0.032	-0.053	0.035	0.02	-0.01	-0.00
	5	-0.001	-0.001	-0.001	0.00	-0.00	-0.00
	6	-0.017	-0.027	0.017	0.01	-0.01	-0.00
	7	-0.001	-0.001	-0.001	0.00	-0.00	-0.00
41	1	0.049	-0.036	0.033	0.02	0.02	-0.00
	2	0.084	-0.062	0.055	0.03	0.04	-0.00
	3	0.033	-0.024	0.022	0.01	0.02	-0.00
	4	0.056	-0.041	0.037	0.02	0.03	-0.00
	5	-0.001	0.001	-0.000	-0.00	-0.00	-0.00
	6	0.027	-0.020	0.018	0.01	0.01	-0.00
	7	-0.001	0.001	-0.000	-0.00	-0.00	-0.00
42	1	-0.052	-0.037	0.033	0.02	-0.02	-0.00
	2	-0.087	-0.062	0.055	0.03	-0.04	-0.00
	3	-0.034	-0.025	0.022	0.01	-0.02	-0.00
	4	-0.058	-0.042	0.037	0.02	-0.03	-0.00
	5	0.000	0.000	-0.000	-0.00	0.00	-0.00
	6	-0.029	-0.021	0.018	0.01	-0.01	-0.00
	7	0.000	0.000	-0.000	-0.00	0.00	-0.00
43	1	0.045	-0.034	0.031	0.02	0.02	-0.00
	2	0.074	-0.056	0.052	0.02	0.03	-0.00
	3	0.030	-0.023	0.020	0.01	0.01	-0.00
	4	0.049	-0.037	0.035	0.02	0.02	-0.00
	5	0.001	-0.001	-0.001	0.00	0.00	0.00

Nodo	Comb.	Ux [cm]	Uy [cm]	Uz [cm]	Rx [°]	Ry [°]	Rz [°]
	6	0.025	-0.019	0.017	0.01	0.01	-0.00
	7	0.001	-0.001	-0.001	0.00	0.00	0.00
44	1	-0.046	-0.033	0.030	0.01	-0.02	-0.00
	2	-0.075	-0.054	0.052	0.02	-0.03	-0.00
	3	-0.031	-0.022	0.020	0.01	-0.01	-0.00
	4	-0.050	-0.036	0.035	0.02	-0.02	-0.00
	5	-0.002	-0.001	-0.001	0.00	-0.00	-0.00
	6	-0.026	-0.018	0.017	0.01	-0.01	-0.00
	7	-0.002	-0.001	-0.001	0.00	-0.00	-0.00
45	1	0.060	-0.014	0.033	0.01	0.03	0.00
	2	0.101	-0.025	0.055	0.01	0.05	0.00
	3	0.040	-0.010	0.022	0.00	0.02	0.00
	4	0.067	-0.016	0.037	0.01	0.03	0.00
	5	-0.002	0.001	-0.000	-0.00	-0.00	0.00
	6	0.033	-0.008	0.018	0.00	0.02	0.00
	7	-0.002	0.001	-0.000	-0.00	-0.00	0.00
46	1	-0.062	-0.014	0.033	0.01	-0.03	0.00
	2	-0.104	-0.024	0.055	0.01	-0.05	0.00
	3	-0.041	-0.009	0.022	0.00	-0.02	0.00
	4	-0.069	-0.016	0.037	0.01	-0.03	0.00
	5	0.000	0.000	-0.000	-0.00	0.00	0.00
	6	-0.034	-0.008	0.018	0.00	-0.02	0.00
	7	0.000	0.000	-0.000	-0.00	0.00	0.00
47	1	0.055	-0.014	0.030	0.01	0.02	0.00
	2	0.090	-0.022	0.052	0.01	0.04	0.00
	3	0.037	-0.009	0.020	0.00	0.02	0.00
	4	0.060	-0.015	0.035	0.01	0.03	0.00
	5	0.002	-0.001	-0.001	0.00	0.00	-0.00
	6	0.031	-0.008	0.017	0.00	0.01	0.00
	7	0.002	-0.001	-0.001	0.00	0.00	-0.00
48	1	-0.056	-0.012	0.030	0.01	-0.03	0.00
	2	-0.090	-0.020	0.052	0.01	-0.04	0.00
	3	-0.037	-0.008	0.020	0.00	-0.02	0.00
	4	-0.060	-0.013	0.035	0.01	-0.03	0.00
	5	-0.002	-0.000	-0.001	0.00	-0.00	-0.00
	6	-0.031	-0.007	0.017	0.00	-0.01	0.00
	7	-0.002	-0.000	-0.001	0.00	-0.00	-0.00
49	1	0.056	0.009	0.031	-0.00	0.03	-0.00
	2	0.091	0.014	0.052	-0.01	0.04	-0.00
	3	0.037	0.006	0.020	-0.00	0.02	-0.00
	4	0.061	0.010	0.035	-0.00	0.03	-0.00
	5	0.002	0.000	-0.001	-0.00	0.00	0.00
	6	0.031	0.005	0.017	-0.00	0.01	-0.00
	7	0.002	0.000	-0.001	-0.00	0.00	0.00
50	1	-0.056	0.010	0.030	-0.00	-0.03	-0.00
	2	-0.091	0.017	0.052	-0.01	-0.04	-0.00
	3	-0.037	0.007	0.020	-0.00	-0.02	-0.00
	4	-0.061	0.011	0.035	-0.00	-0.03	-0.00
	5	-0.002	0.001	-0.001	-0.00	-0.00	-0.00
	6	-0.031	0.006	0.017	-0.00	-0.01	-0.00
	7	-0.002	0.000	-0.001	-0.00	-0.00	-0.00
51	1	0.061	0.010	0.033	-0.00	0.03	-0.00
	2	0.103	0.017	0.055	-0.01	0.05	-0.00
	3	0.040	0.007	0.022	-0.00	0.02	-0.00
	4	0.069	0.011	0.037	-0.01	0.03	-0.00
	5	-0.002	-0.000	-0.000	0.00	-0.00	-0.00
	6	0.033	0.006	0.018	-0.00	0.02	-0.00
	7	-0.002	-0.000	-0.000	0.00	-0.00	-0.00
52	1	-0.063	0.011	0.033	-0.01	-0.03	-0.00
	2	-0.105	0.019	0.055	-0.01	-0.05	-0.00
	3	-0.042	0.007	0.022	-0.00	-0.02	-0.00
	4	-0.070	0.012	0.037	-0.01	-0.03	-0.00
	5	0.000	-0.000	-0.000	0.00	0.00	-0.00
	6	-0.035	0.006	0.018	-0.00	-0.02	-0.00
	7	0.000	-0.000	-0.000	0.00	0.00	-0.00
53	1	0.048	0.030	0.030	-0.01	0.02	0.00
	2	0.079	0.049	0.052	-0.02	0.03	0.00
	3	0.032	0.020	0.020	-0.01	0.01	0.00

Nodo	Comb.	Ux [cm]	Uy [cm]	Uz [cm]	Rx [°]	Ry [°]	Rz [°]
	4	0.052	0.033	0.035	-0.01	0.02	0.00
	5	0.001	0.001	-0.001	-0.00	0.00	-0.00
	6	0.027	0.017	0.017	-0.01	0.01	0.00
	7	0.001	0.001	-0.001	-0.00	0.00	-0.00
54	1	-0.048	0.031	0.030	-0.01	-0.02	0.00
	2	-0.078	0.051	0.052	-0.02	-0.03	0.00
	3	-0.032	0.021	0.020	-0.01	-0.01	0.00
	4	-0.052	0.034	0.035	-0.02	-0.02	0.00
	5	-0.002	0.001	-0.001	-0.00	-0.00	-0.00
	6	-0.027	0.017	0.017	-0.01	-0.01	0.00
	7	-0.001	0.001	-0.001	-0.00	-0.00	-0.00
55	1	0.052	0.033	0.033	-0.02	0.03	0.00
	2	0.088	0.056	0.055	-0.03	0.04	0.00
	3	0.035	0.022	0.022	-0.01	0.02	0.00
	4	0.059	0.037	0.037	-0.02	0.03	0.00
	5	-0.002	-0.001	-0.000	0.00	-0.00	0.00
	6	0.029	0.018	0.018	-0.01	0.01	0.00
	7	-0.002	-0.001	-0.000	0.00	-0.00	0.00
56	1	-0.054	0.035	0.033	-0.02	-0.03	0.00
	2	-0.090	0.058	0.055	-0.03	-0.04	0.00
	3	-0.036	0.023	0.022	-0.01	-0.02	0.00
	4	-0.060	0.039	0.037	-0.02	-0.03	0.00
	5	0.000	-0.000	-0.000	0.00	0.00	0.00
	6	-0.030	0.019	0.018	-0.01	-0.01	0.00
	7	0.000	-0.000	-0.000	0.00	0.00	0.00
57	1	0.033	0.047	0.031	-0.02	0.01	-0.00
	2	0.053	0.076	0.052	-0.03	0.02	-0.00
	3	0.022	0.031	0.020	-0.01	0.01	-0.00
	4	0.035	0.050	0.035	-0.02	0.02	-0.00
	5	0.001	0.001	-0.001	-0.00	0.00	-0.00
	6	0.018	0.026	0.017	-0.01	0.01	-0.00
	7	0.001	0.001	-0.001	-0.00	0.00	-0.00
58	1	-0.032	0.048	0.030	-0.02	-0.01	-0.00
	2	-0.052	0.077	0.052	-0.03	-0.02	-0.00
	3	-0.021	0.032	0.020	-0.01	-0.01	-0.00
	4	-0.034	0.051	0.035	-0.02	-0.02	-0.00
	5	-0.001	0.002	-0.001	-0.00	-0.00	0.00
	6	-0.018	0.026	0.017	-0.01	-0.01	-0.00
	7	-0.001	0.002	-0.001	-0.00	-0.00	0.00
59	1	0.012	0.056	0.030	-0.03	0.01	-0.00
	2	0.019	0.091	0.052	-0.04	0.01	-0.00
	3	0.008	0.037	0.020	-0.02	0.00	-0.00
	4	0.013	0.061	0.035	-0.03	0.01	-0.00
	5	0.000	0.002	-0.001	-0.00	0.00	-0.00
	6	0.007	0.031	0.017	-0.01	0.00	-0.00
	7	0.000	0.002	-0.001	-0.00	0.00	-0.00
60	1	-0.011	0.056	0.031	-0.03	-0.00	0.00
	2	-0.018	0.091	0.052	-0.04	-0.01	0.00
	3	-0.007	0.037	0.020	-0.02	-0.00	0.00
	4	-0.012	0.061	0.035	-0.03	-0.01	0.00
	5	-0.000	0.002	-0.001	-0.00	-0.00	-0.00
	6	-0.006	0.031	0.017	-0.01	-0.00	0.00
	7	-0.000	0.002	-0.001	-0.00	-0.00	-0.00
61	1	0.035	0.051	0.033	-0.02	0.02	-0.00
	2	0.059	0.086	0.055	-0.04	0.03	-0.00
	3	0.023	0.034	0.022	-0.02	0.01	-0.00
	4	0.040	0.057	0.037	-0.03	0.02	-0.00
	5	-0.001	-0.001	-0.000	0.00	-0.00	-0.00
	6	0.019	0.028	0.018	-0.01	0.01	-0.00
	7	-0.001	-0.001	-0.000	0.00	-0.00	-0.00
62	1	-0.036	0.053	0.033	-0.03	-0.02	-0.00
	2	-0.060	0.089	0.055	-0.04	-0.03	-0.00
	3	-0.024	0.035	0.022	-0.02	-0.01	-0.00
	4	-0.040	0.059	0.037	-0.03	-0.02	-0.00
	5	-0.000	-0.000	-0.000	0.00	0.00	-0.00
	6	-0.020	0.029	0.018	-0.01	-0.01	-0.00
	7	-0.000	-0.000	-0.000	0.00	0.00	-0.00
63	1	0.012	0.060	0.033	-0.03	0.01	0.00

Nodo	Comb.	Ux [cm]	Uy [cm]	Uz [cm]	Rx [°]	Ry [°]	Rz [°]
	2	0.021	0.102	0.055	-0.05	0.01	0.00
	3	0.008	0.040	0.022	-0.02	0.00	0.00
	4	0.014	0.068	0.037	-0.03	0.01	0.00
	5	-0.001	-0.002	-0.000	0.00	-0.00	0.00
	6	0.007	0.033	0.018	-0.02	0.00	0.00
	7	-0.001	-0.002	-0.000	0.00	-0.00	0.00
64	1	-0.012	0.060	0.033	-0.03	-0.01	-0.00
	2	-0.020	0.102	0.055	-0.05	-0.01	-0.00
	3	-0.008	0.040	0.022	-0.02	-0.00	-0.00
	4	-0.013	0.068	0.037	-0.03	-0.01	-0.00
	5	0.000	-0.002	-0.000	0.00	0.00	-0.00
	6	-0.007	0.033	0.018	-0.02	-0.00	-0.00
	7	0.000	-0.002	-0.000	0.00	0.00	-0.00
65	1	0.013	-0.104	0.072	-0.00	-0.00	0.00
	2	0.021	-0.174	0.120	-0.01	-0.00	0.00
	3	0.008	-0.069	0.048	-0.00	-0.00	0.00
	4	0.014	-0.116	0.080	-0.01	-0.00	0.00
	5	-0.000	0.001	-0.001	0.00	0.00	-0.00
	6	0.007	-0.057	0.040	-0.00	-0.00	0.00
	7	-0.000	0.001	-0.001	0.00	0.00	-0.00
66	1	-0.015	-0.103	0.072	-0.00	0.00	-0.00
	2	-0.025	-0.173	0.120	-0.01	0.00	-0.00
	3	-0.010	-0.069	0.048	-0.00	0.00	-0.00
	4	-0.017	-0.116	0.080	-0.01	0.00	-0.00
	5	-0.000	0.001	-0.001	0.00	-0.00	0.00
	6	-0.008	-0.057	0.040	-0.00	0.00	-0.00
	7	-0.000	0.001	-0.001	0.00	-0.00	0.00
67	1	0.052	-0.089	0.073	-0.00	-0.00	-0.00
	2	0.087	-0.150	0.122	-0.01	-0.00	-0.00
	3	0.035	-0.060	0.049	-0.00	-0.00	-0.00
	4	0.058	-0.100	0.081	-0.00	-0.00	-0.00
	5	-0.000	0.001	-0.001	0.00	0.00	0.00
	6	0.029	-0.050	0.040	-0.00	-0.00	-0.00
	7	-0.000	0.001	-0.001	0.00	0.00	0.00
68	1	-0.054	-0.089	0.073	-0.00	0.00	0.00
	2	-0.091	-0.149	0.123	-0.01	0.00	0.00
	3	-0.036	-0.059	0.049	-0.00	0.00	0.00
	4	-0.060	-0.099	0.082	-0.01	0.00	0.00
	5	-0.000	0.000	-0.000	0.00	-0.00	0.00
	6	-0.030	-0.049	0.041	-0.00	0.00	0.00
	7	-0.000	0.000	-0.000	0.00	-0.00	0.00
69	1	0.010	-0.086	0.065	-0.01	-0.00	-0.00
	2	0.018	-0.144	0.110	-0.01	-0.00	-0.00
	3	0.007	-0.057	0.043	-0.01	-0.00	-0.00
	4	0.012	-0.096	0.074	-0.01	-0.00	-0.00
	5	-0.000	0.001	-0.002	-0.00	-0.00	-0.00
	6	0.006	-0.048	0.036	-0.00	-0.00	-0.00
	7	-0.000	0.001	-0.001	-0.00	-0.00	-0.00
70	1	-0.013	-0.086	0.065	-0.01	0.00	0.00
	2	-0.021	-0.144	0.110	-0.01	0.00	0.00
	3	-0.008	-0.057	0.043	-0.01	0.00	0.00
	4	-0.014	-0.096	0.073	-0.01	0.00	0.00
	5	-0.000	0.001	-0.002	-0.00	0.00	0.00
	6	-0.007	-0.048	0.036	-0.00	0.00	0.00
	7	-0.000	0.001	-0.002	-0.00	0.00	0.00
71	1	0.043	-0.075	0.065	-0.01	-0.00	-0.00
	2	0.073	-0.125	0.111	-0.01	-0.00	-0.00
	3	0.029	-0.050	0.044	-0.00	-0.00	-0.00
	4	0.049	-0.083	0.074	-0.01	-0.00	-0.00
	5	-0.001	0.001	-0.001	-0.00	-0.00	-0.00
	6	0.024	-0.041	0.036	-0.00	-0.00	-0.00
	7	-0.001	0.001	-0.001	-0.00	-0.00	-0.00
72	1	-0.045	-0.075	0.065	-0.01	0.00	0.00
	2	-0.076	-0.125	0.111	-0.01	0.01	0.00
	3	-0.030	-0.050	0.043	-0.00	0.00	0.00
	4	-0.051	-0.083	0.074	-0.01	0.00	0.00
	5	-0.000	0.000	-0.002	-0.00	0.00	0.00
	6	-0.025	-0.041	0.036	-0.00	0.00	0.00

Nodo	Comb.	Ux [cm]	Uy [cm]	Uz [cm]	Rx [°]	Ry [°]	Rz [°]
	7	-0.000	0.000	-0.002	-0.00	0.00	0.00
73	1	0.083	-0.062	0.073	-0.00	-0.00	0.00
	2	0.139	-0.104	0.122	-0.01	-0.01	0.00
	3	0.055	-0.041	0.048	-0.00	-0.00	0.00
	4	0.093	-0.069	0.081	-0.00	-0.00	0.00
	5	-0.001	0.001	-0.001	0.00	0.00	0.00
	6	0.046	-0.034	0.040	-0.00	-0.00	0.00
	7	-0.001	0.001	-0.001	0.00	0.00	0.00
74	1	-0.085	-0.061	0.073	-0.00	0.00	0.00
	2	-0.142	-0.102	0.122	-0.01	0.01	0.00
	3	-0.057	-0.041	0.049	-0.00	0.00	0.00
	4	-0.095	-0.068	0.081	-0.00	0.01	0.00
	5	-0.000	0.000	-0.000	0.00	-0.00	0.00
	6	-0.047	-0.034	0.040	-0.00	0.00	0.00
	7	-0.000	0.000	-0.000	0.00	-0.00	0.00
75	1	0.069	-0.052	0.065	-0.01	-0.01	-0.00
	2	0.116	-0.087	0.111	-0.01	-0.01	-0.00
	3	0.046	-0.035	0.043	-0.00	-0.00	-0.00
	4	0.077	-0.058	0.074	-0.00	-0.00	-0.00
	5	-0.001	0.001	-0.002	-0.00	-0.00	0.00
	6	0.038	-0.029	0.036	-0.00	-0.00	0.00
	7	-0.001	0.000	-0.001	-0.00	-0.00	0.00
76	1	-0.071	-0.051	0.065	-0.00	0.01	0.00
	2	-0.119	-0.085	0.110	-0.00	0.01	0.00
	3	-0.048	-0.034	0.043	-0.00	0.00	0.00
	4	-0.079	-0.057	0.073	-0.00	0.00	0.00
	5	-0.000	0.000	-0.002	-0.00	0.00	0.00
	6	-0.040	-0.028	0.036	-0.00	0.00	0.00
	7	-0.000	0.000	-0.002	-0.00	0.00	0.00
77	1	0.101	-0.025	0.073	-0.00	-0.00	0.00
	2	0.169	-0.041	0.122	-0.00	-0.01	-0.00
	3	0.067	-0.016	0.048	-0.00	-0.00	0.00
	4	0.112	-0.028	0.081	-0.00	-0.01	-0.00
	5	-0.001	0.000	-0.001	0.00	0.00	0.00
	6	0.056	-0.014	0.040	-0.00	-0.00	0.00
	7	-0.001	0.000	-0.001	0.00	0.00	0.00
78	1	-0.103	-0.023	0.073	-0.00	0.01	0.00
	2	-0.171	-0.039	0.122	-0.00	0.01	0.00
	3	-0.068	-0.016	0.049	-0.00	0.00	0.00
	4	-0.114	-0.026	0.081	-0.00	0.01	0.00
	5	-0.000	-0.000	-0.001	0.00	-0.00	0.00
	6	-0.057	-0.013	0.040	-0.00	0.00	0.00
	7	-0.000	-0.000	-0.001	0.00	-0.00	0.00
79	1	0.084	-0.020	0.065	-0.00	-0.01	-0.00
	2	0.141	-0.034	0.111	-0.00	-0.01	-0.00
	3	0.056	-0.014	0.043	-0.00	-0.00	-0.00
	4	0.094	-0.023	0.074	-0.00	-0.01	-0.00
	5	-0.001	0.000	-0.002	-0.00	-0.00	0.00
	6	0.047	-0.011	0.036	-0.00	-0.00	-0.00
	7	-0.001	0.000	-0.001	-0.00	-0.00	0.00
80	1	-0.086	-0.019	0.065	-0.00	0.01	0.00
	2	-0.143	-0.032	0.110	-0.00	0.01	0.00
	3	-0.057	-0.013	0.043	-0.00	0.00	0.00
	4	-0.095	-0.022	0.073	-0.00	0.01	0.00
	5	-0.000	0.000	-0.002	-0.00	0.00	0.00
	6	-0.048	-0.011	0.036	-0.00	0.00	0.00
	7	-0.000	0.000	-0.002	-0.00	0.00	0.00
81	1	-0.001	0.000	-0.133	0.00	0.00	0.00
	2	-0.001	0.001	-0.080	0.00	0.00	0.00
	3	-0.000	0.000	-0.089	0.00	0.00	0.00
	4	-0.000	0.000	-0.053	0.00	0.00	0.00
	5	-0.000	0.000	-0.107	0.00	0.00	0.00
	6	-0.000	0.000	-0.072	0.00	0.00	0.00
	7	-0.000	0.000	-0.103	0.00	0.00	0.00
82	1	0.086	0.014	0.065	0.00	-0.01	-0.00
	2	0.143	0.023	0.111	0.00	-0.01	-0.00
	3	0.057	0.009	0.043	0.00	-0.00	-0.00
	4	0.096	0.016	0.074	0.00	-0.01	-0.00

Nodo	Comb.	Ux [cm]	Uy [cm]	Uz [cm]	Rx [°]	Ry [°]	Rz [°]
	5	-0.001	0.000	-0.002	0.00	-0.00	-0.00
	6	0.047	0.008	0.036	0.00	-0.00	-0.00
	7	-0.001	0.000	-0.001	0.00	-0.00	-0.00
83	1	-0.087	0.015	0.065	0.00	0.01	0.00
	2	-0.145	0.026	0.110	0.00	0.01	0.00
	3	-0.058	0.010	0.043	0.00	0.00	0.00
	4	-0.096	0.017	0.073	0.00	0.01	0.00
	5	-0.000	-0.000	-0.002	0.00	0.00	0.00
	6	-0.048	0.009	0.036	0.00	0.00	0.00
	7	-0.000	-0.000	-0.002	0.00	0.00	0.00
84	1	0.103	0.017	0.073	0.00	-0.00	0.00
	2	0.172	0.028	0.122	0.00	-0.01	0.00
	3	0.068	0.011	0.048	0.00	-0.00	0.00
	4	0.114	0.019	0.081	0.00	-0.01	0.00
	5	-0.001	0.000	-0.001	-0.00	0.00	0.00
	6	0.057	0.009	0.040	0.00	-0.00	0.00
	7	-0.001	0.000	-0.001	-0.00	0.00	0.00
85	1	-0.104	0.018	0.073	0.00	0.01	0.00
	2	-0.173	0.031	0.122	0.00	0.01	0.00
	3	-0.069	0.012	0.048	0.00	0.00	0.00
	4	-0.115	0.020	0.081	0.00	0.01	0.00
	5	-0.000	-0.000	-0.001	-0.00	-0.00	0.00
	6	-0.058	0.010	0.040	0.00	0.00	0.00
	7	-0.000	-0.000	-0.001	-0.00	-0.00	0.00
86	1	0.073	0.047	0.065	0.00	-0.01	-0.00
	2	0.123	0.078	0.110	0.00	-0.01	-0.00
	3	0.049	0.031	0.043	0.00	-0.00	-0.00
	4	0.082	0.052	0.074	0.00	-0.01	-0.00
	5	-0.001	-0.000	-0.002	0.00	-0.00	-0.00
	6	0.041	0.026	0.036	0.00	-0.00	-0.00
	7	-0.001	-0.000	-0.001	0.00	-0.00	-0.00
87	1	-0.074	0.048	0.065	0.00	0.01	0.00
	2	-0.123	0.080	0.110	0.01	0.01	0.00
	3	-0.049	0.032	0.043	0.00	0.00	0.00
	4	-0.082	0.053	0.073	0.00	0.00	0.00
	5	-0.000	-0.000	-0.002	0.00	0.00	-0.00
	6	-0.041	0.027	0.036	0.00	0.00	-0.00
	7	-0.000	-0.000	-0.002	0.00	0.00	-0.00
88	1	0.088	0.056	0.073	0.00	-0.00	0.00
	2	0.147	0.093	0.122	0.00	-0.01	0.00
	3	0.059	0.037	0.048	0.00	-0.00	0.00
	4	0.098	0.062	0.081	0.00	-0.00	0.00
	5	-0.001	-0.000	-0.001	-0.00	0.00	0.00
	6	0.049	0.031	0.040	0.00	-0.00	0.00
	7	-0.001	-0.000	-0.001	-0.00	0.00	0.00
89	1	-0.088	0.057	0.073	0.00	0.00	-0.00
	2	-0.147	0.096	0.122	0.01	0.01	-0.00
	3	-0.059	0.038	0.049	0.00	0.00	-0.00
	4	-0.098	0.064	0.081	0.00	0.01	-0.00
	5	-0.000	-0.000	-0.001	-0.00	-0.00	-0.00
	6	-0.049	0.032	0.040	0.00	0.00	-0.00
	7	-0.000	-0.000	-0.001	-0.00	-0.00	-0.00
90	1	0.049	0.072	0.065	0.01	-0.00	-0.00
	2	0.083	0.120	0.111	0.01	-0.01	-0.00
	3	0.033	0.048	0.043	0.00	-0.00	-0.00
	4	0.055	0.080	0.074	0.00	-0.00	-0.00
	5	-0.001	-0.000	-0.002	0.00	-0.00	-0.00
	6	0.027	0.040	0.036	0.00	-0.00	-0.00
	7	-0.001	-0.000	-0.001	0.00	-0.00	-0.00
91	1	-0.050	0.073	0.065	0.01	0.00	-0.00
	2	-0.082	0.122	0.110	0.01	0.00	-0.00
	3	-0.033	0.049	0.043	0.00	0.00	-0.00
	4	-0.055	0.081	0.073	0.00	0.00	-0.00
	5	-0.000	-0.000	-0.002	0.00	0.00	-0.00
	6	-0.028	0.040	0.036	0.00	0.00	-0.00
	7	-0.000	-0.000	-0.002	0.00	0.00	-0.00
92	1	0.018	0.086	0.065	0.01	-0.00	-0.00
	2	0.030	0.143	0.111	0.01	-0.00	-0.00

Nodo	Comb.	Ux [cm]	Uy [cm]	Uz [cm]	Rx [°]	Ry [°]	Rz [°]
	3	0.012	0.057	0.043	0.00	-0.00	-0.00
	4	0.020	0.095	0.074	0.01	-0.00	-0.00
	5	-0.000	-0.000	-0.002	0.00	-0.00	-0.00
	6	0.010	0.048	0.036	0.00	-0.00	-0.00
	7	-0.000	-0.000	-0.001	0.00	-0.00	-0.00
93	1	-0.017	0.086	0.065	0.01	0.00	-0.00
	2	-0.028	0.143	0.110	0.01	0.00	-0.00
	3	-0.012	0.057	0.043	0.00	0.00	-0.00
	4	-0.019	0.096	0.074	0.01	0.00	-0.00
	5	-0.000	-0.000	-0.002	0.00	0.00	-0.00
	6	-0.010	0.048	0.036	0.00	0.00	-0.00
	7	-0.000	-0.000	-0.002	0.00	0.00	-0.00
94	1	0.059	0.086	0.073	0.00	-0.00	0.00
	2	0.099	0.143	0.122	0.01	-0.01	0.00
	3	0.039	0.057	0.048	0.00	-0.00	0.00
	4	0.066	0.095	0.081	0.00	-0.00	0.00
	5	-0.001	-0.000	-0.001	-0.00	0.00	0.00
	6	0.033	0.048	0.040	0.00	-0.00	0.00
	7	-0.001	-0.000	-0.001	-0.00	0.00	0.00
95	1	-0.059	0.087	0.073	0.00	0.00	-0.00
	2	-0.098	0.145	0.122	0.01	0.01	-0.00
	3	-0.039	0.058	0.049	0.00	0.00	-0.00
	4	-0.065	0.097	0.081	0.01	0.00	-0.00
	5	-0.000	-0.000	-0.000	-0.00	-0.00	-0.00
	6	-0.033	0.048	0.040	0.00	0.00	-0.00
	7	-0.000	-0.000	-0.000	-0.00	-0.00	-0.00
96	1	0.021	0.102	0.073	0.00	-0.00	-0.00
	2	0.036	0.171	0.122	0.01	-0.00	-0.00
	3	0.014	0.068	0.048	0.00	-0.00	-0.00
	4	0.024	0.114	0.081	0.01	-0.00	-0.00
	5	-0.000	-0.000	-0.001	-0.00	0.00	-0.00
	6	0.012	0.057	0.040	0.00	-0.00	-0.00
	7	-0.000	-0.000	-0.001	-0.00	0.00	-0.00
97	1	-0.020	0.103	0.073	0.00	0.00	-0.00
	2	-0.034	0.171	0.122	0.01	0.00	-0.00
	3	-0.014	0.068	0.048	0.00	0.00	-0.00
	4	-0.022	0.114	0.081	0.01	0.00	-0.00
	5	-0.000	-0.000	-0.001	-0.00	-0.00	-0.00
	6	-0.011	0.057	0.040	0.00	0.00	-0.00
	7	-0.000	-0.000	-0.001	-0.00	-0.00	-0.00
98	1	0.005	-0.069	0.084	-0.01	-0.00	-0.00
	2	0.012	-0.123	0.143	-0.01	-0.00	-0.00
	3	0.003	-0.046	0.056	-0.00	-0.00	-0.00
	4	0.008	-0.082	0.095	-0.01	-0.00	-0.00
	5	-0.003	0.006	-0.002	-0.00	-0.00	-0.00
	6	0.003	-0.038	0.047	-0.00	-0.00	-0.00
	7	-0.002	0.006	-0.002	-0.00	-0.00	-0.00
99	1	-0.007	-0.069	0.084	-0.01	0.00	0.00
	2	-0.014	-0.123	0.143	-0.01	0.00	0.00
	3	-0.005	-0.046	0.056	-0.00	0.00	0.00
	4	-0.010	-0.082	0.095	-0.01	0.00	0.00
	5	0.002	0.006	-0.002	-0.00	0.00	0.00
	6	-0.004	-0.038	0.047	-0.00	0.00	0.00
	7	0.002	0.006	-0.002	-0.00	0.00	0.00
100	1	0.038	-0.065	0.085	-0.00	-0.00	-0.00
	2	0.065	-0.113	0.144	-0.00	-0.00	-0.00
	3	0.025	-0.043	0.057	-0.00	-0.00	-0.00
	4	0.044	-0.075	0.096	-0.00	-0.00	-0.00
	5	-0.002	0.003	-0.002	0.00	-0.00	-0.00
	6	0.021	-0.036	0.047	-0.00	-0.00	-0.00
	7	-0.002	0.003	-0.002	0.00	-0.00	-0.00
101	1	-0.040	-0.065	0.085	-0.00	0.00	0.00
	2	-0.068	-0.112	0.144	-0.00	0.00	0.00
	3	-0.026	-0.043	0.057	-0.00	0.00	0.00
	4	-0.045	-0.075	0.096	-0.00	0.00	0.00
	5	0.001	0.003	-0.002	-0.00	-0.00	0.00
	6	-0.022	-0.036	0.047	-0.00	0.00	0.00
	7	0.001	0.003	-0.002	-0.00	-0.00	0.00

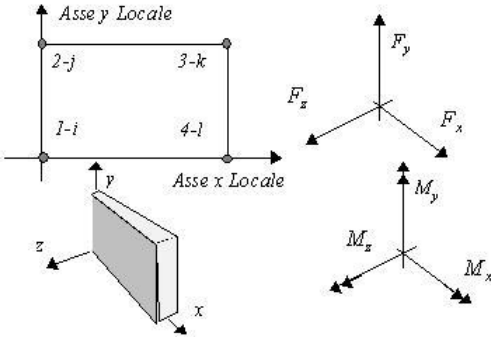
Nodo	Comb.	Ux [cm]	Uy [cm]	Uz [cm]	Rx [°]	Ry [°]	Rz [°]
102	1	0.062	-0.046	0.085	-0.00	-0.00	0.00
	2	0.106	-0.079	0.144	-0.00	-0.00	-0.00
	3	0.041	-0.031	0.056	-0.00	-0.00	0.00
	4	0.071	-0.053	0.096	-0.00	-0.00	-0.00
	5	-0.002	0.002	-0.002	0.00	0.00	0.00
	6	0.034	-0.026	0.047	-0.00	-0.00	0.00
	7	-0.002	0.002	-0.002	0.00	0.00	0.00
103	1	-0.064	-0.046	0.084	-0.00	0.00	-0.00
	2	-0.109	-0.078	0.143	-0.00	0.00	-0.00
	3	-0.043	-0.031	0.056	-0.00	0.00	-0.00
	4	-0.072	-0.052	0.095	-0.00	0.00	-0.00
	5	0.002	0.001	-0.002	-0.00	-0.00	-0.00
	6	-0.036	-0.025	0.047	-0.00	0.00	-0.00
	7	0.001	0.001	-0.002	-0.00	-0.00	-0.00
104	1	0.075	-0.018	0.085	0.00	-0.00	0.00
	2	0.129	-0.031	0.144	-0.00	-0.00	0.00
	3	0.050	-0.012	0.056	0.00	-0.00	0.00
	4	0.086	-0.021	0.096	-0.00	-0.00	0.00
	5	-0.003	0.001	-0.002	0.00	0.00	-0.00
	6	0.042	-0.010	0.047	0.00	-0.00	0.00
	7	-0.003	0.001	-0.002	0.00	0.00	-0.00
105	1	-0.077	-0.017	0.084	-0.00	0.00	0.00
	2	-0.130	-0.030	0.143	-0.00	0.00	0.00
	3	-0.051	-0.012	0.056	-0.00	0.00	0.00
	4	-0.087	-0.020	0.095	-0.00	0.00	0.00
	5	0.002	0.000	-0.002	-0.00	-0.00	0.00
	6	-0.043	-0.010	0.047	-0.00	0.00	0.00
	7	0.002	0.000	-0.002	-0.00	-0.00	0.00
106	1	0.076	0.013	0.085	0.00	-0.00	-0.00
	2	0.131	0.022	0.144	0.00	-0.00	-0.00
	3	0.051	0.009	0.056	0.00	-0.00	-0.00
	4	0.087	0.014	0.096	0.00	-0.00	-0.00
	5	-0.003	-0.000	-0.002	0.00	0.00	0.00
	6	0.042	0.007	0.047	0.00	-0.00	-0.00
	7	-0.003	-0.000	-0.002	0.00	0.00	0.00
107	1	-0.077	0.014	0.084	-0.00	0.00	-0.00
	2	-0.132	0.023	0.143	0.00	0.00	-0.00
	3	-0.052	0.009	0.056	-0.00	0.00	-0.00
	4	-0.088	0.016	0.095	0.00	0.00	-0.00
	5	0.002	-0.000	-0.002	-0.00	-0.00	0.00
	6	-0.043	0.008	0.047	-0.00	0.00	-0.00
	7	0.002	-0.000	-0.002	-0.00	-0.00	0.00
108	1	0.065	0.042	0.085	0.00	-0.00	0.00
	2	0.112	0.071	0.144	0.00	-0.00	0.00
	3	0.044	0.028	0.056	0.00	-0.00	0.00
	4	0.075	0.047	0.096	0.00	-0.00	0.00
	5	-0.003	-0.001	-0.002	0.00	0.00	0.00
	6	0.036	0.023	0.047	0.00	-0.00	0.00
	7	-0.002	-0.001	-0.002	0.00	0.00	0.00
109	1	-0.066	0.043	0.084	0.00	0.00	0.00
	2	-0.113	0.073	0.143	0.00	0.00	0.00
	3	-0.044	0.028	0.056	0.00	0.00	0.00
	4	-0.075	0.049	0.095	0.00	0.00	0.00
	5	0.001	-0.001	-0.002	-0.00	-0.00	0.00
	6	-0.037	0.024	0.047	0.00	0.00	0.00
	7	0.001	-0.001	-0.002	-0.00	-0.00	0.00
110	1	0.044	0.064	0.085	0.00	-0.00	0.00
	2	0.075	0.109	0.144	0.00	-0.00	0.00
	3	0.029	0.043	0.056	0.00	-0.00	0.00
	4	0.050	0.073	0.096	0.00	-0.00	0.00
	5	-0.002	-0.002	-0.002	-0.00	0.00	0.00
	6	0.024	0.036	0.047	0.00	-0.00	0.00
	7	-0.002	-0.002	-0.002	-0.00	0.00	0.00
111	1	-0.045	0.065	0.084	0.00	0.00	-0.00
	2	-0.075	0.111	0.143	0.00	0.00	-0.00
	3	-0.030	0.043	0.056	0.00	0.00	-0.00
	4	-0.050	0.074	0.095	0.00	0.00	-0.00
	5	0.001	-0.002	-0.002	-0.00	0.00	-0.00

Nodo Comb.	Ux [cm]	Uy [cm]	Uz [cm]	Rx [°]	Ry [°]	Rz [°]
	6	-0.025	0.036	0.047	0.00	0.00
	7	0.001	-0.002	-0.002	0.00	0.00
112	1	0.015	0.076	0.085	0.00	0.00
	2	0.027	0.130	0.144	0.00	-0.00
	3	0.010	0.051	0.056	0.00	0.00
	4	0.018	0.087	0.096	0.00	-0.00
	5	-0.001	-0.003	-0.002	0.00	0.00
	6	0.009	0.042	0.047	0.00	0.00
	7	-0.001	-0.002	-0.002	0.00	0.00
113	1	-0.016	0.076	0.085	0.00	0.00
	2	-0.026	0.130	0.143	0.00	0.00
	3	-0.010	0.051	0.056	0.00	0.00
	4	-0.017	0.087	0.096	0.00	-0.00
	5	-0.000	-0.003	-0.002	0.00	-0.00
	6	-0.009	0.042	0.047	0.00	-0.00
	7	-0.000	-0.002	-0.002	0.00	-0.00

Sollecitazioni nei setti

Convenzioni adottate

L'elemento parete viene individuato tramite il numero dei due nodi a numerazione più bassa cui fa capo l'elemento. La numerazione dei nodi e le convenzioni sulle sollecitazioni agenti nel setto sono le seguenti:



Dove:

F_x, F_y, F_z
forze, agenti nel generico nodo, in direzione degli assi locali **x, y, z**.

M_x, M_y, M_z
momenti agenti nel generico nodo ed aventi asse vettore concorde con gli assi locali **x, y, z**.

Comb. Nodo	F _x [kg]	F _y [kg]	F _z [kg]	M _x [kgm]	M _y [kgm]	M _z [kgm]
1	3	113532.0	-4636.1	11576.4	16189.3	-263.9
	35	87789.2	5282.2	-18188.5	13656.7	-362.1
	33	-84685.3	7920.9	-18135.1	13142.7	-120.9
	1	-116635.8	-4432.3	10909.8	15715.5	-14.2
2	3	188378.3	-10262.4	21820.4	27546.3	-418.1
	35	144987.3	9737.5	-28304.8	23230.2	-552.0
	33	-139556.5	14508.5	-28194.0	22449.9	-121.1
	1	-193809.2	-9848.8	20841.0	26836.8	13.0
3	3	75732.4	-2659.8	7722.6	10797.5	-176.1
	35	58557.7	3298.6	-12130.2	9109.9	-241.8
	33	-56485.9	5064.3	-12095.6	8767.4	-81.0
	1	-77804.2	-2522.5	7278.2	10481.9	-9.8
4	3	125629.9	-6410.7	14552.0	18368.8	-279.0
	35	96689.8	6268.8	-18874.4	15492.2	-368.4
	33	-93066.7	9456.0	-18801.5	14972.3	-81.1
	1	-129253.1	-6133.5	13899.0	17896.1	8.4
5	3	848.1	2969.0	-2552.4	-581.2	-13.9
	35	1246.0	-1173.8	-2000.9	-494.7	-38.1
	33	-1503.2	-1507.2	-2000.1	-567.8	-66.7
	1	-591.0	2892.7	-2671.6	-660.4	-28.4
6	3	63230.5	-1720.3	5992.8	8888.9	-144.6
	35	48942.3	2543.6	-10434.7	7491.8	-200.1
	33	-47259.7	3978.0	-10392.6	7195.9	-70.8
	1	-64913.0	-1620.7	5609.5	8613.1	-8.1
7	3	843.2	2969.3	-2556.3	-584.0	-12.9
	35	1231.3	-1176.0	-1999.2	-498.7	-36.3
	33	-1488.8	-1505.2	-1995.4	-571.4	-64.9
	1	-585.8	2892.5	-2674.0	-663.1	-27.3

Comb. Nudo		F _x [kg]	F _y [kg]	F _z [kg]	M _x [kgm]	M _y [kgm]	M _z [kgm]
1	35	18380.3	-5413.0	-5476.0	-6251.7	162.8	-1679.5
	67	1386.3	7293.1	2822.3	-3372.1	538.4	4116.3
	65	-497.8	4650.1	3262.1	-3088.8	288.0	-3280.7
	33	-19268.8	-2395.4	-5220.9	-6064.1	-126.7	2200.2
2	35	27797.1	-9887.7	-8759.0	-10696.9	270.5	-2009.4
	67	-292.0	12153.5	5966.1	-5655.2	796.3	5786.9
	65	1332.9	7046.0	6605.1	-5255.3	359.1	-4069.3
	33	-28838.1	-5176.9	-8424.7	-10467.3	-217.7	2918.0
3	35	12293.3	-3387.2	-3660.6	-4176.4	108.4	-1050.0
	67	937.5	4848.1	1890.8	-2259.8	359.5	2743.5
	65	-343.9	3097.8	2184.6	-2070.2	193.1	-2189.8
	33	-12886.9	-1378.1	-3489.7	-4050.6	-84.2	1392.1
4	35	18571.1	-6370.3	-5849.3	-7139.9	180.2	-1269.9
	67	-181.3	8088.3	3986.7	-3781.8	531.4	3857.2
	65	876.6	4695.1	4413.3	-3514.5	240.5	-2715.5
	33	-19266.4	-3232.5	-5625.6	-6986.2	-144.8	1870.6
5	35	2611.4	1107.1	-311.1	320.2	-3.3	-577.6
	67	2348.9	40.4	-1288.2	99.7	71.4	994.6
	65	-1924.2	599.9	-1238.7	160.2	86.2	-1232.0
	33	-3036.1	1433.2	-237.0	397.6	-1.0	586.3
6	35	10531.4	-2627.2	-3065.2	-3398.2	87.5	-891.6
	67	1023.5	4076.2	1341.3	-1823.8	294.6	2408.2
	65	-467.3	2624.5	1569.2	-1662.7	155.3	-1935.6
	33	-11087.7	-892.9	-2920.3	-3284.2	-74.7	1208.6
7	35	2577.3	1109.6	-302.5	326.8	-3.8	-559.2
	67	2314.5	47.2	-1292.8	109.6	67.5	984.5
	65	-1891.9	586.7	-1249.1	168.4	81.6	-1210.2
	33	-2999.8	1437.1	-230.7	403.4	-2.0	575.0
1	2	117506.2	1552.9	-9633.6	-10680.6	187.1	-36292.4
	34	90871.4	-8.0	9418.6	-8918.5	247.5	37118.0
	33	-91200.8	-296.5	9815.3	-9036.1	-5.6	-37327.8
	1	-117176.8	1533.4	-9600.2	-10794.3	-69.8	36084.0
2	2	194986.3	779.0	-16524.5	-18358.6	271.9	-60481.2
	34	150249.5	544.2	16299.7	-15359.9	321.4	61918.7
	33	-150362.8	422.6	16754.0	-15524.0	-68.5	-62117.0
	1	-194873.0	1036.1	-16529.2	-18517.6	-149.3	60334.1
3	2	78379.8	1322.9	-6425.9	-7123.6	124.6	-24134.1
	34	60613.0	-150.2	6282.5	-5949.4	164.9	24710.2
	33	-60832.7	-342.7	6547.0	-6027.9	-3.6	-24850.0
	1	-78160.1	1309.9	-6403.6	-7199.5	-46.4	23995.1
4	2	130033.1	807.0	-11019.8	-12242.3	181.2	-40259.9
	34	100198.5	217.9	10869.9	-10243.7	214.2	41244.0
	33	-100274.0	136.7	11172.8	-10353.1	-45.5	-41376.2
	1	-129957.6	978.3	-11022.9	-12348.4	-99.4	40161.9
5	2	884.5	2134.4	483.0	569.1	39.5	80.8
	34	1111.3	-677.6	-612.0	511.2	90.6	-101.6
	33	-1585.5	-1104.9	-410.4	478.0	54.6	-28.9
	1	-410.2	1788.0	539.4	537.6	30.7	-276.4
6	2	65455.3	1479.2	-5264.3	-5833.3	110.3	-20083.6
	34	50626.9	-224.3	5125.9	-4861.9	152.3	20568.7
	33	-50910.5	-493.9	5377.0	-4933.5	3.5	-20695.3
	1	-65171.8	1378.8	-5238.6	-5902.3	-34.9	19937.9
7	2	882.5	2139.3	485.3	571.0	39.5	84.2
	34	1095.3	-674.5	-613.7	513.7	90.6	-103.0
	33	-1574.5	-1110.5	-412.8	480.3	54.0	-24.8
	1	-403.3	1785.5	541.2	539.4	30.3	-279.2
1	34	14652.2	-4902.8	2623.8	3819.4	-92.5	-1333.3
	66	-2664.8	6514.9	-2700.4	1760.9	-215.7	2594.0
	65	2602.7	6398.8	-2766.6	1786.7	183.0	-2442.2
	33	-14590.1	-5229.1	2843.2	3840.3	253.1	1423.7
2	34	20607.3	-9507.0	4647.0	6675.6	-236.0	-1253.8
	66	-7533.0	11034.8	-4733.5	3066.0	-366.3	3087.1
	65	7527.4	11008.1	-4810.7	3110.7	339.5	-2911.7
	33	-20601.7	-9754.1	4897.2	6713.3	407.2	1295.6
3	34	9807.0	-3126.0	1755.2	2551.5	-61.7	-864.6
	66	-1774.1	4343.5	-1806.4	1181.1	-143.8	1732.1

Comb.	Nodo	F _x [kg]	F _y [kg]	F _z [kg]	M _x [kgm]	M _y [kgm]	M _z [kgm]
	65	1732.7	4265.8	-1850.4	1198.3	122.1	-1630.9
	33	-9765.5	-3343.5	1901.5	2565.5	168.8	924.9
4	34	13777.1	-6195.4	3104.0	4455.6	-157.3	-811.6
	66	-5019.6	7356.7	-3161.7	2051.2	-244.3	2060.8
	65	5015.8	7338.7	-3213.2	2081.0	226.5	-1943.9
	33	-13773.3	-6360.2	3270.9	4480.8	271.5	839.4
5	34	3568.7	1492.6	-302.8	-334.5	85.1	-835.3
	66	2772.5	-177.4	254.1	-164.1	15.6	1105.2
	65	-2901.2	-354.3	233.2	-164.1	-32.4	-1064.0
	33	-3440.1	1178.9	-184.4	-336.2	13.2	940.0
6	34	8609.0	-2348.2	1392.7	2053.8	-35.3	-798.9
	66	-1196.2	3589.5	-1447.6	934.5	-112.4	1552.8
	65	1123.0	3489.8	-1481.1	949.8	97.5	-1482.0
	33	-8535.8	-2591.2	1536.0	2065.8	142.0	864.2
7	34	3532.2	1494.5	-307.4	-338.4	85.6	-821.2
	66	2731.0	-177.5	257.6	-169.3	16.7	1088.0
	65	-2863.6	-355.7	238.3	-169.0	-32.2	-1051.5
	33	-3399.6	1178.6	-188.5	-339.9	13.0	925.4
1	2	115321.1	-5584.4	10996.0	15777.5	-76.8	-40075.9
	34	85317.6	7800.3	-18061.2	13174.8	-18.8	38139.1
	36	-86204.4	6366.2	-14892.5	14063.9	268.7	-38921.9
	4	-114434.3	-4456.6	15038.9	16659.2	189.7	39420.1
2	2	192447.8	-11227.2	20745.4	26709.1	-109.4	-67783.3
	34	140222.0	14563.9	-27928.9	22293.4	-28.7	63593.6
	36	-143377.9	11025.1	-24880.9	23500.0	453.6	-65242.3
	4	-189291.9	-10236.4	25145.7	27877.9	340.3	66117.8
3	2	76927.7	-3291.9	7335.6	10523.1	-51.0	-26559.6
	34	56907.6	4984.7	-12046.2	8788.8	-12.1	25341.3
	36	-57501.3	4022.2	-9932.8	9381.3	179.5	-25860.1
	4	-76334.0	-2541.6	10030.9	11110.7	126.6	26124.2
4	2	128345.4	-7053.7	13835.2	17810.8	-72.7	-45031.2
	34	93510.5	9493.8	-18624.7	14867.9	-18.7	42310.9
	36	-95616.9	7128.1	-16591.7	15672.0	302.8	-43407.0
	4	-126239.0	-6394.8	16768.8	18589.8	227.1	43922.7
5	2	-290.3	2293.0	-2431.2	-428.6	-27.2	1154.7
	34	1946.5	-1849.5	-2141.9	-357.5	-17.1	-167.0
	36	-164.0	-578.3	69.2	-87.1	-20.9	443.5
	4	-1492.3	3308.2	-108.6	-131.0	-32.4	-608.5
6	2	64007.0	-2393.4	5698.0	8686.6	-51.9	-21936.7
	34	47715.7	3806.2	-10375.0	7249.0	-21.3	21059.8
	36	-47853.5	3288.1	-8258.2	7785.2	137.4	-21485.5
	4	-63869.2	-1527.5	8322.7	9224.2	95.5	21649.2
7	2	-302.1	2285.5	-2433.5	-431.2	-28.4	1155.6
	34	1939.2	-1858.6	-2137.1	-361.0	-19.0	-173.9
	36	-142.9	-570.8	70.9	-91.2	-22.9	441.3
	4	-1494.3	3317.3	-112.8	-133.9	-33.5	-613.1
1	34	18321.5	-2889.5	-5158.8	-6259.7	-136.1	-2660.5
	66	-183.8	4156.5	3674.7	-3222.9	-626.9	2594.7
	68	-653.8	8569.7	4508.5	-3705.4	-877.3	-4494.6
	36	-17484.0	-5711.3	-5330.7	-6739.5	-396.1	872.7
2	34	28058.6	-5601.1	-8299.0	-10608.2	-56.7	-3434.6
	66	-1998.8	6604.2	6970.2	-5332.7	-708.2	3464.6
	68	926.3	13380.5	7604.0	-5943.8	-1144.7	-6141.7
	36	-26986.1	-10258.2	-8581.5	-11144.4	-511.2	1288.8
3	34	12255.4	-1708.5	-3448.2	-4180.9	-91.1	-1699.6
	66	-110.6	2769.0	2459.6	-2159.4	-419.0	1732.5
	68	-449.1	5699.8	3014.8	-2481.9	-585.4	-2995.9
	36	-11695.7	-3586.9	-3563.7	-4501.4	-263.9	512.6
4	34	18746.7	-3516.2	-5541.7	-7079.9	-38.1	-2215.7
	66	-1320.6	4400.8	4656.6	-3566.0	-473.2	2312.4
	68	604.3	8907.0	5078.5	-3974.2	-763.7	-4094.0
	36	-18030.5	-6618.2	-5730.9	-7438.1	-340.7	790.0
5	34	2174.8	1034.5	-256.8	217.2	-158.7	-776.0
	66	1482.8	278.7	-928.8	20.8	-292.6	794.5
	68	-1696.7	868.0	-106.5	-169.3	-278.7	-1134.2
	36	-1961.0	992.2	-245.5	-47.7	-141.7	-0.1

Comb.	Nodo	F _x [kg]	F _y [kg]	F _z [kg]	M _x [kgm]	M _y [kgm]	M _z [kgm]
6	34	10383.2	-1233.7	-2887.7	-3420.1	-95.7	-1462.1
	66	31.1	2330.1	1842.9	-1756.7	-372.7	1538.0
	68	-471.1	4882.8	2480.2	-2055.0	-512.3	-2565.6
	36	-9943.2	-2805.7	-2972.9	-3731.8	-239.6	373.1
7	34	2130.5	1038.6	-250.2	223.6	-157.1	-756.7
	66	1454.2	273.1	-940.8	29.9	-286.8	785.7
	68	-1653.8	865.3	-109.8	-159.7	-273.6	-1106.5
	36	-1930.9	996.3	-236.8	-41.4	-140.8	-12.6
1	9	116249.3	-3501.5	11607.8	16370.2	-54.4	-39629.5
	41	87523.1	6173.6	-18698.7	13839.3	-5.5	39064.2
	35	-88543.2	5548.7	-14839.1	14074.5	280.5	-39287.4
	3	-115229.2	-4092.0	15011.2	16588.8	206.1	39267.8
2	9	192905.1	-8364.7	21883.6	27825.2	-95.5	-66734.5
	41	144636.2	11076.7	-29084.8	23520.2	-11.7	65198.0
	35	-146015.3	10424.2	-25181.6	23871.3	463.0	-65752.1
	3	-191526.0	-9007.2	25464.0	28149.7	344.3	66066.5
3	9	77545.1	-1894.0	7742.9	10917.8	-35.9	-26258.6
	41	58377.9	3888.3	-12470.8	9231.2	-3.1	25952.7
	35	-59057.6	3472.1	-9896.6	9387.8	187.5	-26099.4
	3	-76865.4	-2290.3	10012.0	11063.2	137.7	26019.0
4	9	128649.0	-5136.1	14593.4	18554.4	-63.3	-44328.6
	41	96453.3	7157.0	-19394.9	15685.2	-7.2	43375.2
	35	-97372.3	6722.4	-16791.6	15919.1	309.2	-43742.5
	3	-127730.0	-5567.1	16980.6	18770.5	229.8	43884.8
5	9	849.8	2926.1	-2548.1	-550.8	1.1	831.3
	41	1175.2	-1040.8	-2060.9	-472.6	-3.5	-229.4
	35	-1484.3	-1361.8	459.4	-433.9	-2.2	325.6
	3	-540.8	2652.6	-462.9	-512.7	-4.1	-824.1
6	9	64740.5	-1114.8	6019.2	8998.7	-32.0	-21752.1
	41	48794.0	3052.2	-10722.5	7601.1	-6.8	21562.0
	35	-49405.4	2689.7	-8163.1	7737.0	151.8	-21717.4
	3	-64129.1	-1451.0	8253.9	9125.6	112.1	21520.3
7	9	844.7	2920.6	-2550.1	-552.6	0.6	829.4
	41	1163.6	-1044.1	-2057.8	-475.5	-4.3	-235.6
	35	-1471.2	-1356.5	461.1	-437.1	-3.1	320.5
	3	-537.2	2656.1	-465.7	-514.6	-4.6	-829.9
1	41	18079.1	-5964.2	-5473.6	-6223.5	169.7	-2366.1
	73	986.1	7115.3	3226.9	-3340.7	23.5	3694.6
	67	-608.3	8395.7	4670.5	-3469.3	-259.6	-4739.4
	35	-18456.9	-5417.9	-4730.0	-6307.9	-81.2	1921.3
2	41	27243.0	-10805.4	-8728.2	-10632.3	270.3	-3121.4
	73	-810.9	11874.9	6588.9	-5600.1	-2.3	5213.6
	67	1124.4	13333.4	7833.2	-5761.1	-500.2	-6418.2
	35	-27556.5	-10273.9	-8000.1	-10723.5	-181.4	2502.1
3	41	12096.5	-3746.8	-3659.0	-4157.8	112.8	-1503.3
	73	671.4	4726.9	2162.1	-2238.8	14.5	2460.7
	67	-420.7	5579.6	3123.2	-2325.1	-174.0	-3157.6
	35	-12347.2	-3383.6	-3163.9	-4214.5	-54.1	1207.1
4	41	18205.7	-6974.3	-5828.7	-7097.0	179.9	-2006.8
	73	-526.6	7900.0	4403.4	-3745.1	-2.7	3473.4
	67	734.4	8871.4	5231.7	-3853.0	-334.4	-4276.8
	35	-18413.6	-6620.9	-5343.9	-7158.2	-120.9	1594.3
5	41	2659.5	1110.3	-349.3	294.5	13.7	-615.1
	73	2236.8	43.1	-1262.1	88.9	50.9	907.9
	67	-1927.2	594.1	-93.2	43.0	75.0	-1290.5
	35	-2969.1	1428.5	167.1	250.7	43.6	555.2
6	41	10371.0	-2928.4	-3076.6	-3391.5	97.1	-1280.9
	73	802.8	3988.7	1556.6	-1812.7	26.5	2183.0
	67	-545.3	4721.9	2557.1	-1887.8	-127.9	-2741.2
	35	-10628.5	-2606.1	-2574.7	-3442.6	-39.3	1058.7
7	41	2624.3	1112.4	-342.2	300.1	13.9	-598.0
	73	2206.9	52.9	-1270.1	97.7	52.2	903.5
	67	-1898.0	587.9	-100.1	52.8	76.0	-1266.2
	35	-2933.2	1422.9	174.9	257.1	43.2	546.0
1	4	114497.2	-4650.1	15920.1	17612.5	-133.5	-38946.5

Comb.	Nodo	F _x [kg]	F _y [kg]	F _z [kg]	M _x [kgm]	M _y [kgm]	M _z [kgm]
	36	87822.4	5909.8	-15909.6	15027.1	-108.9	39481.4
	42	-86133.7	6473.4	-15686.1	14763.3	104.3	-38813.9
	10	-116185.9	-3618.8	15675.5	17368.2	112.0	39771.0
2	4	190659.8	-9746.4	26320.0	29117.5	-268.9	-65717.7
	36	145459.3	10690.7	-26201.9	24772.5	-285.6	65892.1
	42	-143137.5	11452.7	-26039.1	24415.5	109.0	-64999.2
	10	-192981.6	-8282.7	25921.1	28788.5	153.9	66835.6
3	4	76377.3	-2664.4	10617.9	11745.6	-89.2	-25806.2
	36	58577.1	3714.1	-10610.2	10022.9	-73.1	26229.6
	42	-57451.6	4089.4	-10462.4	9847.2	69.0	-25786.7
	10	-77502.8	-1974.2	10454.7	11583.1	74.4	26354.5
4	4	127152.4	-6062.0	17551.1	19415.7	-179.5	-43653.7
	36	97001.7	6901.3	-17471.8	16519.8	-190.9	43836.7
	42	-95454.1	7408.9	-17364.4	16282.1	72.1	-43243.5
	10	-128699.9	-5083.5	17285.1	19196.6	102.3	44397.5
5	4	135.7	2396.8	197.3	225.5	48.1	979.9
	36	885.8	-1121.1	-301.4	252.3	106.6	-205.1
	42	-304.0	-832.6	-87.6	171.5	67.5	390.8
	10	-717.4	2721.7	191.8	148.3	35.1	-730.7
6	4	63626.1	-1840.5	8869.5	9817.2	-65.3	-21333.5
	36	48931.4	2877.9	-8882.9	8380.3	-41.4	21810.4
	42	-47846.6	3301.1	-8721.1	8221.5	70.5	-21428.1
	10	-64711.0	-1173.6	8734.5	9669.2	69.2	21828.8
7	4	125.4	2392.3	194.6	223.6	48.3	981.8
	36	878.7	-1128.1	-299.3	249.0	107.0	-208.2
	42	-285.5	-825.2	-84.8	168.5	67.9	389.8
	10	-718.7	2725.9	189.6	146.5	35.4	-733.3
1	36	15633.1	-6564.6	-5473.0	-7091.5	236.3	-1554.9
	68	-1186.5	8495.9	5322.4	-4034.7	291.3	3510.7
	74	1179.4	8398.8	5411.2	-3887.4	-37.4	-3567.2
	42	-15626.0	-6215.8	-5260.7	-6990.3	-118.2	1286.2
2	36	24612.8	-11457.5	-8713.7	-11475.5	343.3	-2127.7
	68	-2858.6	13425.4	8451.3	-6292.5	535.5	5267.5
	74	3066.9	13192.6	8757.9	-6130.1	-10.6	-4981.1
	42	-24821.1	-11046.2	-8495.6	-11380.8	-220.2	2047.9
3	36	10464.7	-4149.3	-3659.1	-4736.8	157.5	-963.6
	68	-775.9	5647.0	3557.8	-2702.0	195.1	2338.7
	74	772.3	5582.9	3618.3	-2603.3	-23.8	-2375.9
	42	-10461.0	-3915.9	-3517.0	-4669.0	-78.5	784.1
4	36	16451.2	-7411.3	-5819.6	-7659.5	228.8	-1345.5
	68	-1890.7	8933.3	5643.7	-4207.2	357.9	3509.9
	74	2030.6	8778.8	5849.4	-4098.4	-5.9	-3318.5
	42	-16591.1	-7136.1	-5673.6	-7596.0	-146.5	1291.9
5	36	1142.5	707.3	-356.5	-299.2	56.0	-255.9
	68	730.6	719.8	361.5	-363.8	-45.3	529.1
	74	-824.1	808.0	222.5	-296.2	-48.7	-795.5
	42	-1049.0	929.7	-227.5	-238.0	25.7	-53.0
6	36	8719.5	-3360.2	-3074.0	-3967.2	143.6	-770.2
	68	-617.4	4827.1	2987.4	-2267.3	157.2	2007.6
	74	669.0	4797.7	3024.9	-2182.8	-26.9	-2019.4
	42	-8771.1	-3099.8	-2938.2	-3907.8	-59.9	602.4
7	36	1098.3	702.5	-348.5	-292.2	56.6	-238.5
	68	709.2	720.1	352.8	-353.5	-44.8	522.3
	74	-786.5	810.5	216.2	-287.9	-48.5	-774.0
	42	-1021.0	931.6	-220.5	-232.7	26.0	-62.8
1	7	171566.4	11985.8	24099.5	28325.6	-434.1	-50016.8
	39	129064.4	-17439.7	-24135.7	21131.6	-397.0	47381.7
	37	-124090.8	-10361.5	-23960.1	20954.1	475.2	-48603.4
	5	-176540.0	15815.4	23996.3	28185.1	430.4	50189.0
2	7	286844.8	14585.8	40383.5	47216.5	-710.4	-85419.3
	39	216790.9	-20985.2	-40400.7	35625.8	-661.6	82471.0
	37	-209741.2	-12183.2	-40167.7	35336.5	729.7	-82564.8
	5	-293894.5	18582.5	40184.9	46986.4	677.7	86770.1
3	7	114388.9	8126.9	16070.9	18887.4	-289.9	-33302.2
	39	86076.2	-11777.1	-16093.7	14092.7	-265.5	31547.2
	37	-82744.1	-7035.7	-15978.3	13974.0	316.0	-32361.2

Comb.	Nodo	F _x [kg]	F _y [kg]	F _z [kg]	M _x [kgm]	M _y [kgm]	M _z [kgm]
	5	-117721.0	10686.0	16001.1	18793.6	286.4	33420.5
4	7	191241.2	9860.2	26927.0	31481.4	-474.1	-56903.9
	39	144560.5	-14140.8	-26937.1	23755.5	-441.9	54940.1
	37	-139844.4	-8250.1	-26783.4	23562.3	485.7	-55002.1
	5	-195957.4	12530.7	26793.5	31327.8	451.2	57807.9
5	7	-763.6	4066.4	-156.7	-2.2	-14.0	1593.5
	39	-1185.8	-6248.9	134.9	-301.0	-7.0	-2663.0
	37	2295.6	-3813.4	169.1	-311.1	40.3	1201.2
	5	-346.2	5995.9	-147.2	-8.9	25.8	-2356.6
6	7	95267.2	6633.5	13397.8	15739.9	-244.2	-27769.6
	39	71792.3	-9747.1	-13409.3	11750.0	-225.8	26337.1
	37	-68912.3	-5715.5	-13320.8	11647.6	258.2	-26990.6
	5	-98147.2	8829.1	13332.2	15659.2	235.5	27907.2
7	7	-747.4	3877.9	-149.5	-2.0	-14.0	1528.2
	39	-1125.9	-5993.0	130.2	-288.0	-7.8	-2549.6
	37	2216.8	-3632.7	161.3	-298.5	37.6	1149.7
	5	-343.6	5747.7	-142.0	-9.0	24.1	-2252.9
1	39	18083.1	16175.3	-5118.8	-9985.6	580.8	7797.9
	71	-2722.4	-14424.5	5154.1	-545.0	511.4	-3062.8
	69	3929.8	-19685.0	5044.6	-410.4	-622.7	7914.7
	37	-19290.6	17934.1	-5079.9	-9966.5	-542.4	-6564.6
2	39	36413.5	19630.2	-10036.9	-17474.5	876.1	7783.9
	71	-920.4	-19360.0	10077.4	-3171.3	799.0	-2808.9
	69	2704.8	-24073.5	9959.5	-2973.7	-921.0	6542.7
	37	-38198.0	23803.4	-10000.0	-17456.2	-837.7	-7302.4
3	39	12071.8	10917.7	-3420.1	-6662.5	386.6	5235.7
	71	-1781.5	-9780.6	3443.1	-374.1	341.4	-2080.4
	69	2617.2	-13236.7	3373.0	-285.2	-414.0	5315.8
	37	-12907.5	12099.7	-3396.0	-6651.2	-361.4	-4413.3
4	39	24292.0	13221.0	-6698.9	-11655.1	583.4	5226.4
	71	-580.1	-13071.0	6725.3	-2125.0	533.1	-1911.2
	69	1800.5	-16162.5	6649.6	-1994.2	-612.8	4401.1
	37	-25512.4	16012.5	-6676.0	-11644.3	-558.3	-4905.2
5	39	-4831.1	5540.8	1132.8	626.6	74.4	3954.6
	71	-2628.9	-3724.5	-1145.6	1714.1	62.9	-1768.0
	69	2986.9	-6581.0	-1146.8	1729.2	-65.7	5070.1
	37	4473.1	4764.7	1159.5	629.4	-45.3	-2777.9
6	39	10052.8	8946.9	-2865.5	-5559.4	325.1	4298.1
	71	-1389.0	-8144.8	2865.4	-327.0	300.0	-1711.7
	69	2200.6	-10859.8	2840.6	-256.4	-328.0	4370.3
	37	-10864.4	10057.6	-2840.6	-5554.7	-297.1	-3638.9
7	39	-4646.9	5292.8	1085.7	600.8	72.2	3787.5
	71	-2505.8	-3580.0	-1102.4	1644.6	64.0	-1695.0
	69	2876.5	-6288.4	-1095.8	1658.3	-59.3	4861.3
	37	4276.1	4575.6	1112.4	602.5	-42.6	-2662.0
1	71	-1439.9	503.6	486.6	498.9	124.6	695.9
	100	3644.0	-347.9	-634.1	48.3	39.9	644.0
	98	0.0	-0.0	0.0	0.0	-0.0	0.0
	69	-2204.2	1938.4	147.4	245.4	139.5	1377.2
2	71	-2720.0	461.2	423.9	457.9	133.6	730.9
	100	3182.6	-383.7	-580.4	12.1	40.6	367.5
	98	0.0	-0.0	0.0	0.0	-0.0	0.0
	69	-462.7	2016.7	156.6	255.5	148.6	880.7
3	71	-955.2	442.7	322.3	331.2	83.3	497.2
	100	2417.5	-230.3	-420.9	31.6	26.7	424.2
	98	0.0	-0.0	0.0	0.0	-0.0	0.0
	69	-1462.3	1398.5	98.6	163.4	93.2	877.6
4	71	-1808.6	414.4	280.5	303.9	89.3	520.5
	100	2109.9	-254.2	-385.1	7.4	27.2	239.9
	98	0.0	-0.0	0.0	0.0	-0.0	0.0
	69	-301.3	1450.6	104.7	170.1	99.3	546.6
5	71	278.0	543.9	291.3	288.8	65.5	401.3
	100	2235.7	-150.6	-368.3	52.4	20.1	543.9
	98	0.0	0.0	-0.0	0.0	-0.0	0.0
	69	-2513.7	1217.5	77.0	119.2	73.2	999.6
6	71	-775.9	492.4	264.7	277.5	75.4	447.1

Comb.	Nodo	F _x [kg]	F _y [kg]	F _z [kg]	M _x [kgm]	M _y [kgm]	M _z [kgm]
	100	2027.5	-192.5	-352.7	26.4	22.3	356.5
	98	0.0	-0.0	0.0	0.0	-0.0	0.0
	69	-1251.7	1310.9	88.0	137.0	83.8	688.5
7	71	272.0	551.5	279.2	278.0	64.4	393.4
	100	2152.7	-144.9	-354.6	50.4	19.3	523.7
	98	0.0	0.0	-0.0	0.0	-0.0	0.0
	69	-2424.7	1204.3	75.4	114.8	71.8	951.3
1	5	176694.3	12601.2	16921.5	19801.3	-463.1	-51723.2
	37	132788.7	-17133.4	-16769.4	14794.2	-473.1	50091.8
	38	-131826.0	-11870.5	-16911.5	14715.1	337.2	-52916.6
	6	-177657.1	16402.8	16759.4	19735.2	384.5	50131.1
2	5	294588.4	17358.0	28317.8	33000.7	-726.0	-86959.6
	37	222812.6	-21705.7	-28154.1	24947.5	-733.3	85827.8
	38	-221727.2	-16694.9	-28308.7	24867.7	585.2	-88360.5
	6	-295673.8	21042.7	28145.0	32933.0	643.3	85587.0
3	5	117817.2	8487.1	11284.4	13204.0	-308.6	-34469.9
	37	88553.9	-11508.6	-11183.0	9866.7	-315.0	33382.9
	38	-87912.0	-8000.0	-11277.8	9814.0	224.4	-35266.1
	6	-118459.1	11021.5	11176.3	13159.9	256.1	33408.5
4	5	196413.3	11658.3	18882.0	22003.6	-483.8	-57960.9
	37	148569.8	-14556.8	-18772.8	16635.5	-488.4	57206.9
	38	-147846.2	-11216.2	-18875.9	16582.3	389.7	-58895.4
	6	-197136.9	14114.8	18766.8	21958.4	428.6	57045.7
5	5	-101.6	2738.3	-81.2	5.7	-35.1	585.0
	37	-1063.3	-5279.4	153.2	-214.6	-42.2	-1768.8
	38	1549.0	-2313.7	88.9	-257.6	-20.8	125.9
	6	-384.2	4854.8	-160.8	-29.7	-3.4	-1529.3
6	5	98150.3	6974.3	9407.3	11004.9	-257.1	-28728.9
	37	73845.1	-9544.0	-9320.8	8226.7	-262.5	27851.0
	38	-73248.0	-6570.3	-9400.4	8180.7	185.1	-29396.5
	6	-98747.4	9140.0	9313.9	10966.3	212.4	27875.2
7	5	-104.7	2610.3	-77.3	5.8	-33.7	561.6
	37	-1010.8	-5065.6	146.9	-205.4	-40.6	-1693.4
	38	1492.2	-2202.5	84.9	-247.2	-20.4	119.2
	6	-376.6	4657.7	-154.6	-28.6	-3.5	-1462.5
1	37	12108.9	9560.8	-3385.6	-6863.9	540.3	5598.0
	69	-8560.7	-3616.3	3456.3	-218.8	560.4	-89.5
	70	9432.0	-12786.9	3448.1	-201.9	-548.3	7354.9
	38	-12980.2	6842.4	-3518.7	-6869.4	-652.0	-2695.3
2	37	27732.3	10085.5	-6744.8	-12012.0	841.2	4883.3
	69	-10473.3	-4970.9	6825.7	-1971.1	856.3	812.5
	70	11425.1	-13008.5	6802.4	-1946.4	-847.9	5758.3
	38	-28684.0	7893.9	-6883.4	-12008.2	-963.7	-2291.3
3	37	8109.6	6444.6	-2261.4	-4579.0	360.4	3739.0
	69	-5687.1	-2481.7	2308.5	-151.7	373.7	-61.7
	70	6268.1	-8595.4	2303.1	-140.4	-365.6	4905.4
	38	-8690.6	4632.4	-2350.2	-4582.7	-434.8	-1803.8
4	37	18525.2	6794.5	-4500.9	-8011.1	561.0	3262.5
	69	-6962.2	-3384.7	4554.8	-1319.9	570.9	539.6
	70	7596.8	-8743.1	4539.3	-1303.5	-565.3	3841.0
	38	-19159.8	5333.4	-4593.3	-8008.5	-642.7	-1534.4
5	37	-5763.0	4328.1	838.2	437.2	47.2	3361.9
	69	-2820.3	-874.2	-819.3	1226.0	66.3	-718.1
	70	3313.4	-6192.6	-795.7	1223.9	-45.5	4907.6
	38	5270.0	2738.6	776.7	423.5	-94.8	-1670.4
6	37	6776.4	5201.8	-1889.9	-3816.7	301.3	3065.6
	69	-4675.8	-2072.3	1922.4	-131.5	316.0	-33.8
	70	5237.9	-6975.4	1929.5	-125.6	-300.8	4014.3
	38	-7338.6	3845.8	-1961.9	-3822.5	-362.3	-1481.0
7	37	-5537.1	4122.7	804.7	420.2	45.6	3221.0
	69	-2697.2	-841.5	-788.1	1177.7	64.8	-686.4
	70	3189.3	-5911.1	-762.7	1174.8	-42.8	4701.9
	38	5045.0	2629.9	746.1	406.4	-91.1	-1601.0
1	6	175209.9	13144.9	23853.9	28115.9	-358.7	-51929.3
	38	125472.5	-15708.9	-23979.8	20815.9	-363.9	44906.6

Comb.	Nodo	F _x [kg]	F _y [kg]	F _z [kg]	M _x [kgm]	M _y [kgm]	M _z [kgm]
	40	-127666.0	-13851.5	-24127.1	21232.9	482.0	-50470.6
	8	-173016.5	16415.5	24253.0	28454.5	500.4	47708.7
2	6	292482.5	16128.6	40076.4	46965.1	-603.6	-88233.7
	38	211221.0	-17382.5	-40248.8	35245.5	-606.5	79183.6
	40	-215297.4	-17720.6	-40422.9	35770.3	779.2	-85220.3
	8	-288406.2	18974.5	40595.2	47396.1	786.4	83327.7
3	6	116834.3	8905.6	15906.2	18747.5	-238.6	-34580.8
	38	83665.3	-10600.7	-15991.5	13881.9	-241.8	29896.6
	40	-85143.9	-9384.9	-16088.0	14160.4	322.2	-33606.6
	8	-115355.6	11080.0	16173.4	18973.4	334.1	31763.4
4	6	195016.0	10894.7	26721.2	31313.6	-401.8	-58783.7
	38	140831.0	-11716.5	-26837.5	23501.6	-403.5	52747.9
	40	-143564.9	-11964.3	-26951.9	23851.9	520.3	-56773.0
	8	-192282.1	12786.1	27068.1	31601.1	524.8	55509.4
5	6	-378.7	4464.2	-241.4	-76.3	8.0	1330.8
	38	-1520.3	-6822.0	203.9	-414.9	5.3	-3322.1
	40	1929.3	-4183.2	162.7	-284.8	24.1	881.0
	8	-30.3	6541.1	-125.2	24.4	39.9	-2914.1
6	6	97332.1	7350.3	13256.9	15624.4	-196.5	-28815.2
	38	69782.5	-8793.9	-13333.4	11573.3	-198.1	24951.8
	40	-70943.8	-7772.9	-13404.8	11804.4	272.0	-28005.2
	8	-96170.7	9216.5	13481.3	15811.1	280.5	26510.3
7	6	-371.1	4276.1	-231.7	-73.0	8.3	1280.1
	38	-1447.6	-6550.4	194.4	-397.8	5.9	-3185.6
	40	1857.3	-4011.3	156.9	-272.9	24.0	847.2
	8	-38.6	6285.7	-119.6	23.5	38.8	-2792.6
1	38	17880.7	20737.0	-4934.8	-9711.0	678.8	10147.2
	70	-2537.1	-14619.1	4625.3	-2.3	801.6	-364.9
	72	4148.2	-20950.4	5445.0	-759.5	-356.6	10926.4
	40	-19491.9	14832.5	-5135.5	-10171.3	-485.4	-4788.3
2	38	36631.9	26183.6	-9882.6	-17210.1	985.0	10581.9
	70	-1433.8	-19616.3	9544.3	-2585.6	1099.5	250.2
	72	2468.2	-25181.6	10400.5	-3403.5	-637.3	10003.6
	40	-37666.3	18614.4	-10062.2	-17687.6	-749.3	-5170.9
3	38	11967.6	13968.2	-3299.2	-6480.9	452.3	6801.8
	70	-1688.6	-9859.3	3093.4	-13.2	533.3	-282.3
	72	2732.0	-14131.3	3637.1	-517.1	-238.1	7323.0
	40	-13011.0	10022.4	-3431.3	-6786.4	-323.0	-3229.2
4	38	24468.4	17599.3	-6597.8	-11480.3	656.5	7091.6
	70	-953.1	-13190.7	6372.8	-1735.4	731.8	127.8
	72	1612.0	-16952.2	6940.8	-2279.9	-425.3	6707.8
	40	-25127.3	12543.6	-6715.7	-11797.2	-498.9	-3484.3
5	38	-5198.2	6397.1	1248.7	772.4	110.3	4833.8
	70	-2061.0	-3747.3	-1379.4	1952.2	175.1	-701.2
	72	3411.7	-7513.0	-996.0	1599.9	29.0	6268.2
	40	3847.5	4863.2	1126.7	545.0	-44.9	-2167.0
6	38	9993.1	11518.5	-2764.9	-5409.4	375.3	5616.5
	70	-1342.0	-8217.3	2597.5	-31.2	439.8	-242.4
	72	2285.9	-11693.5	3045.2	-459.0	-201.2	6041.5
	40	-10937.1	8392.4	-2877.8	-5667.8	-268.7	-2672.2
7	38	-4993.6	6123.0	1197.1	740.7	105.7	4636.0
	70	-1966.7	-3603.5	-1321.8	1872.4	167.3	-675.8
	72	3282.6	-7204.9	-954.4	1531.9	27.3	6013.0
	40	3677.7	4685.5	1079.1	521.1	-43.0	-2079.3
1	70	1683.7	3354.0	136.2	264.8	-127.7	403.5
	99	0.0	0.0	0.0	0.0	0.0	-0.0
	101	-3260.7	-489.1	-586.8	33.0	-38.6	-521.8
	72	1577.0	-770.2	450.6	435.7	-114.6	799.7
2	70	-4.6	3298.6	144.1	273.2	-137.1	725.7
	99	0.0	0.0	0.0	0.0	0.0	-0.0
	101	-2844.4	-503.9	-545.7	2.2	-36.7	-267.2
	72	2849.1	-700.1	401.6	406.7	-123.4	629.1
3	70	1115.2	2342.2	91.1	176.3	-85.3	309.6
	99	0.0	0.0	0.0	0.0	0.0	-0.0
	101	-2161.9	-324.4	-389.4	21.4	-25.8	-342.7
	72	1046.6	-406.5	298.3	289.1	-76.7	499.9

Comb. Nodo		F _x [kg]	F _y [kg]	F _z [kg]	M _x [kgm]	M _y [kgm]	M _z [kgm]
4	70	-10.4	2305.3	96.3	181.9	-91.6	524.4
	99	0.0	0.0	0.0	0.0	0.0	-0.0
	101	-1884.3	-334.2	-362.0	0.8	-24.6	-173.0
	72	1894.7	-359.8	265.7	269.8	-82.5	386.2
5	70	2149.7	2011.5	67.1	129.8	-61.4	42.9
	99	-0.0	-0.0	-0.0	-0.0	-0.0	0.0
	101	-1956.4	-225.9	-327.5	38.5	-21.7	-450.7
	72	-193.3	-174.4	260.3	241.0	-55.4	449.3
6	70	922.0	2071.3	78.1	147.3	-73.2	296.2
	99	0.0	0.0	0.0	0.0	0.0	-0.0
	101	-1780.0	-261.1	-321.5	16.6	-21.8	-278.7
	72	858.0	-198.9	243.3	238.0	-66.1	367.8
7	70	2065.3	1961.7	65.1	124.9	-59.5	50.1
	99	-0.0	-0.0	-0.0	-0.0	-0.0	0.0
	101	-1876.2	-215.1	-314.2	36.8	-20.9	-431.8
	72	-189.1	-135.4	249.1	231.1	-53.8	420.8
1	11	174551.8	14000.9	24257.7	28405.8	-461.0	-50915.8
	43	128896.3	-17415.0	-24169.7	21259.3	-505.7	46679.9
	39	-128016.8	-13307.9	-24280.8	21256.8	381.6	-49889.6
	7	-175431.3	16722.0	24192.8	28401.7	403.7	48891.4
2	11	291549.7	17849.5	40634.5	47374.3	-738.6	-86697.7
	43	216494.4	-20868.2	-40512.9	35837.7	-807.7	81482.2
	39	-215871.7	-17121.3	-40669.0	35839.1	634.9	-84485.3
	7	-292172.5	20140.0	40547.4	47371.9	660.7	84755.4
3	11	116382.2	9490.9	16174.9	18939.8	-307.0	-33895.5
	43	85955.6	-11774.3	-16116.8	14176.7	-336.9	31071.4
	39	-85360.3	-9023.4	-16189.7	14174.9	254.8	-33210.2
	7	-116977.4	11306.7	16131.6	18936.8	269.3	32548.2
4	11	194380.8	12056.7	27092.7	31585.5	-492.1	-57750.1
	43	144354.3	-14076.4	-27012.2	23895.7	-538.2	54272.9
	39	-143930.3	-11565.7	-27115.2	23896.5	423.6	-56274.0
	7	-194804.8	13585.4	27034.7	31583.6	440.7	56457.5
5	11	-529.4	4190.4	-151.5	-24.3	-24.1	1431.7
	43	-1220.2	-6293.8	175.4	-302.3	-30.1	-2811.1
	39	1962.8	-3853.5	151.0	-311.0	-2.3	1049.5
	7	-213.1	5956.9	-174.9	-31.7	7.3	-2483.3
6	11	96945.2	7795.7	13482.0	15781.6	-256.9	-28261.9
	43	71662.4	-9727.3	-13429.9	11819.1	-283.0	25938.6
	39	-71103.9	-7403.3	-13492.8	11814.5	209.8	-27688.1
	7	-97503.8	9334.9	13440.8	15776.3	222.8	27175.1
7	11	-518.3	4003.1	-145.0	-23.7	-23.4	1373.0
	43	-1165.7	-6032.2	168.8	-289.5	-29.5	-2692.4
	39	1894.1	-3678.5	144.9	-298.5	-2.8	1006.2
	7	-210.2	5707.6	-168.7	-31.5	6.6	-2375.9
1	43	17737.0	16956.3	-5356.7	-10158.8	510.7	8631.4
	75	-3908.2	-13047.5	5348.3	-876.7	588.5	-1990.1
	71	5196.0	-18481.1	5510.0	-973.5	-516.3	9373.6
	39	-19024.8	14572.3	-5501.6	-10250.7	-565.5	-5318.1
2	43	35835.8	20596.9	-10353.2	-17706.8	772.2	8872.2
	75	-3033.5	-17171.5	10346.7	-3597.7	881.5	-1497.4
	71	4385.9	-21901.7	10495.4	-3658.4	-790.9	8242.8
	39	-37188.2	18476.3	-10488.8	-17763.2	-849.4	-5784.7
3	43	11857.7	11469.3	-3579.2	-6777.4	340.6	5799.1
	75	-2578.6	-8864.3	3572.0	-594.5	392.9	-1370.9
	71	3438.2	-12487.8	3681.5	-659.3	-342.9	6295.0
	39	-12717.4	9882.8	-3674.3	-6838.5	-375.9	-3591.6
4	43	23923.6	13896.4	-6910.2	-11809.4	515.0	5959.6
	75	-1995.5	-11613.7	6904.3	-2408.6	588.3	-1042.5
	71	2898.2	-14768.1	7005.0	-2449.3	-525.9	5541.1
	39	-24826.3	12485.5	-6999.1	-11846.8	-565.2	-3902.7
5	43	-4739.2	5874.5	1068.3	581.0	64.2	4175.8
	75	-2518.9	-3624.9	-1094.6	1613.3	91.2	-1411.0
	71	3180.7	-6811.1	-974.5	1538.6	-36.0	5595.6
	39	4077.4	4561.5	1000.9	508.9	-65.1	-2366.8
6	43	9931.3	9444.2	-2999.8	-5657.0	286.2	4755.5
	75	-2046.2	-7367.5	2979.7	-513.6	337.7	-1124.6

Comb.	Nodo	F _x [kg]	F _y [kg]	F _z [kg]	M _x [kgm]	M _y [kgm]	M _z [kgm]
	71	2798.4	-10280.2	3089.6	-565.3	-273.7	5155.1
	39	-10683.5	8203.5	-3069.6	-5706.3	-309.1	-2963.5
7	43	-4545.4	5622.3	1023.2	556.5	62.3	3997.4
	75	-2398.3	-3481.0	-1051.8	1547.0	90.0	-1352.6
	71	3043.0	-6520.0	-932.0	1475.8	-31.8	5359.5
	39	3900.8	4378.6	960.6	487.6	-61.6	-2269.0
1	75	953.5	1707.4	847.8	862.3	10.9	177.9
	102	4146.7	12.9	-834.4	180.8	-49.4	925.3
	100	-3606.5	347.9	-820.9	203.9	-39.9	-612.8
	71	-1493.7	25.2	807.6	822.1	51.0	1573.1
2	75	-483.1	1648.9	771.2	815.3	21.6	305.3
	102	3910.5	-16.0	-767.3	138.1	-49.9	779.0
	100	-3160.1	383.7	-692.4	130.6	-40.6	-343.7
	71	-267.3	76.8	688.5	740.5	60.8	1405.7
3	75	634.7	1247.7	562.2	572.4	7.3	156.7
	102	2750.1	8.8	-553.2	119.6	-33.0	612.4
	100	-2392.7	230.3	-544.4	134.6	-26.7	-403.6
	71	-992.1	123.5	535.4	545.4	33.9	1011.5
4	75	-323.0	1208.7	511.1	541.1	14.4	241.6
	102	2592.6	-10.5	-508.5	91.1	-33.3	514.8
	100	-2095.1	254.2	-458.7	85.7	-27.2	-224.2
	71	-174.5	157.9	456.0	491.0	40.5	899.9
5	75	1643.3	1183.0	491.8	481.6	2.5	65.5
	102	2325.0	25.3	-482.7	126.3	-25.2	590.6
	100	-2204.7	150.6	-522.8	161.5	-20.1	-522.0
	71	-1763.6	251.3	513.7	487.5	24.0	847.4
6	75	563.5	1168.0	468.3	480.2	9.8	161.7
	102	2309.5	4.7	-464.5	100.6	-27.6	514.7
	100	-2006.6	192.5	-456.8	113.2	-22.3	-339.1
	71	-866.3	245.1	453.1	457.8	32.2	798.8
7	75	1588.1	1167.1	472.8	463.8	3.3	70.2
	102	2239.6	23.8	-465.0	121.6	-24.2	568.9
	100	-2122.8	144.9	-503.4	155.6	-19.3	-502.6
	71	-1704.9	274.5	495.6	469.5	24.0	804.7
1	8	174655.9	15029.8	24565.2	28753.5	-437.3	-50540.9
	40	129162.4	-18736.5	-24513.0	21540.2	-495.7	46188.1
	44	-128111.8	-14743.6	-24578.0	21580.4	394.3	-49594.6
	12	-175706.5	18450.3	24525.9	28762.6	430.9	48441.2
2	8	291474.7	18846.8	41075.7	47861.6	-712.4	-86169.2
	40	216885.2	-22328.5	-40981.3	36249.5	-783.5	81022.4
	44	-215732.6	-18721.0	-41123.3	36311.7	623.6	-84046.0
	12	-292627.3	22202.6	41028.9	47891.8	677.2	84360.9
3	8	116460.5	10179.0	16380.0	19171.4	-291.7	-33647.6
	40	86124.0	-12642.9	-16344.6	14363.9	-330.9	30742.2
	44	-85432.6	-9993.7	-16389.0	14390.9	262.5	-33014.3
	12	-117151.9	12457.6	16353.6	19177.7	287.0	32245.5
4	8	194339.7	12723.6	27387.0	31910.1	-475.1	-57399.8
	40	144605.9	-15037.5	-27323.5	24170.1	-522.8	53965.1
	44	-143846.5	-12645.3	-27419.2	24211.7	415.4	-55981.9
	12	-195099.1	14959.2	27355.7	31930.5	451.2	56191.9
5	8	-321.5	4884.3	-93.2	53.0	-14.4	1553.9
	40	-1140.2	-7025.5	91.6	-257.0	-35.7	-3137.7
	44	1710.1	-4632.9	115.4	-258.0	23.8	1132.4
	12	-248.4	6774.1	-113.8	37.6	29.6	-2805.1
6	8	97017.4	8470.3	13655.4	15979.2	-244.3	-28019.4
	40	71836.4	-10574.1	-13623.2	11976.6	-277.6	25629.2
	44	-71176.2	-8326.7	-13661.2	11995.5	217.5	-27493.6
	12	-97677.6	10430.6	13629.0	15981.6	237.9	26889.6
7	8	-316.7	4693.6	-88.3	51.7	-14.1	1498.8
	40	-1081.0	-6764.1	87.4	-245.6	-34.8	-3014.6
	44	1648.4	-4454.4	110.1	-247.4	22.5	1093.0
	12	-250.6	6524.9	-109.2	36.2	28.2	-2693.0
1	40	17833.5	17755.5	-5552.2	-10318.0	499.1	9038.4
	72	-4512.4	-13220.7	5520.9	-1020.2	620.0	-2206.0
	76	5269.4	-19973.7	5591.9	-1134.6	-482.3	9864.5

Comb.	Nodo	F _x [kg]	F _y [kg]	F _z [kg]	M _x [kgm]	M _y [kgm]	M _z [kgm]
	44	-18590.5	15438.9	-5560.6	-10308.5	-572.1	-5774.1
2	40	35871.0	21434.7	-10532.3	-17881.8	753.7	9311.3
	72	-3823.9	-17234.8	10565.8	-3737.8	880.7	-1777.4
	76	4448.4	-23513.9	10560.9	-3835.6	-802.4	8781.8
	44	-36495.6	19314.1	-10594.5	-17854.6	-901.3	-6356.5
3	40	11923.3	12005.4	-3708.1	-6883.4	331.6	6072.1
	72	-2982.5	-8981.1	3688.8	-690.5	412.0	-1516.7
	76	3486.0	-13482.4	3734.5	-766.6	-322.1	6620.9
	44	-12426.8	10458.1	-3715.2	-6877.2	-381.6	-3894.4
4	40	23948.3	14458.2	-7028.1	-11926.0	501.3	6254.0
	72	-2523.5	-11657.1	7052.1	-2502.2	585.7	-1230.9
	76	2938.7	-15842.6	7047.1	-2567.3	-535.6	5899.1
	44	-24363.5	13041.5	-7071.1	-11908.0	-601.1	-4282.7
5	40	-4684.7	6345.5	958.9	515.5	56.5	4424.1
	72	-2654.7	-3972.1	-1026.9	1528.0	118.9	-1498.4
	76	3308.8	-7578.0	-920.7	1449.8	4.0	5862.3
	44	4030.7	5204.6	988.6	499.2	-39.0	-2542.6
6	40	9954.6	9954.6	-3105.3	-5742.5	274.3	5028.5
	72	-2359.6	-7590.0	3087.0	-599.8	345.0	-1263.8
	76	2898.3	-11176.5	3134.1	-668.1	-264.4	5464.9
	44	-10493.3	8811.9	-3115.8	-5742.7	-317.1	-3238.9
7	40	-4500.3	6090.0	918.6	494.3	53.8	4246.6
	72	-2523.6	-3843.8	-984.4	1463.6	114.8	-1440.7
	76	3180.0	-7273.0	-880.2	1387.3	4.8	5624.7
	44	3843.9	5026.8	946.0	477.3	-37.3	-2443.3
1	72	1062.1	1349.3	692.6	749.8	-18.3	84.5
	101	3233.3	489.1	-723.0	171.8	38.6	493.9
	103	-3676.0	-106.4	-714.6	144.7	28.6	-782.6
	76	-619.4	366.8	744.9	730.6	13.8	1281.3
2	72	-144.3	1298.1	581.8	675.3	-27.7	110.3
	101	2833.6	503.9	-599.5	101.5	36.7	247.1
	103	-3462.0	-104.9	-648.6	98.2	23.8	-628.4
	76	772.7	401.7	666.2	685.0	3.6	1040.4
3	72	704.4	1006.6	458.7	497.2	-12.1	93.8
	101	2143.8	324.4	-479.0	113.2	25.8	324.2
	103	-2436.3	-70.8	-473.3	95.5	19.1	-517.2
	76	-411.9	354.2	493.6	484.5	9.1	816.0
4	72	-99.9	972.5	384.9	447.5	-18.4	111.1
	101	1877.3	334.2	-396.7	66.3	24.6	159.8
	103	-2293.6	-69.7	-429.3	64.5	15.9	-414.4
	76	516.2	377.5	441.1	454.2	2.3	655.3
5	72	1442.0	991.3	429.3	432.1	0.1	116.6
	101	1930.4	225.9	-456.5	139.2	21.7	430.4
	103	-1984.3	-50.5	-404.5	106.5	18.0	-500.2
	76	-1388.1	447.8	431.7	398.4	16.5	732.9
6	72	565.2	966.8	375.4	408.3	-8.5	124.8
	101	1765.4	261.1	-393.6	92.7	21.8	263.3
	103	-1988.6	-55.1	-386.4	77.5	15.6	-418.6
	76	-342.0	441.6	404.7	396.5	8.8	620.9
7	72	1381.5	982.7	411.1	414.1	0.4	122.9
	101	1851.3	215.1	-437.6	133.5	20.9	412.3
	103	-1898.4	-47.6	-387.1	101.9	17.2	-478.1
	76	-1334.4	464.3	413.5	381.4	16.2	691.0
1	9	115304.3	-3792.6	-14403.2	-16059.2	82.1	-39254.4
	41	88286.9	5182.2	14498.7	-13534.3	26.7	38878.9
	45	-87510.4	6025.5	18150.7	-13465.3	-185.7	-38989.5
	13	-116080.8	-3309.6	-11327.5	-15992.9	-158.6	39322.5
2	9	191806.5	-8462.1	-24505.7	-27316.4	147.9	-66118.3
	41	145432.2	9959.2	24651.6	-23022.5	64.9	65047.6
	45	-144776.2	10798.7	28206.3	-22921.1	-307.8	-65130.0
	13	-192462.5	-8190.3	-21433.5	-27219.0	-264.7	66175.9
3	9	76914.6	-2090.8	-9607.1	-10710.9	54.6	-26010.3
	41	58889.6	3226.3	9671.0	-9028.4	17.6	25829.6
	45	-58369.5	3790.0	12105.3	-8982.3	-123.9	-25902.8
	13	-77434.8	-1767.5	-7556.7	-10666.6	-105.8	26056.6
4	9	127916.1	-5203.8	-16342.1	-18215.7	98.5	-43919.6

Comb.	Nodo	F _x [kg]	F _y [kg]	F _z [kg]	M _x [kgm]	M _y [kgm]	M _z [kgm]
	41	96986.5	6410.9	16439.6	-15353.9	43.0	43275.3
	45	-96546.7	6972.2	18809.0	-15286.2	-205.3	-43329.8
	13	-128355.9	-5021.2	-14294.0	-18150.7	-176.5	43958.8
5	9	402.9	2589.3	513.2	561.3	-9.4	875.1
	41	1622.3	-1480.7	-502.7	483.5	-16.7	-307.9
	45	-1033.2	-993.4	2032.4	497.4	-0.5	266.9
	13	-992.0	3042.9	2569.6	575.1	0.8	-786.2
6	9	64157.4	-1304.9	-7910.4	-8823.8	44.9	-21517.4
	41	49276.8	2480.9	7963.8	-7429.9	14.0	21490.8
	45	-48774.0	2987.1	10416.8	-7389.0	-102.6	-21524.9
	13	-64660.1	-1005.0	-5857.6	-8784.3	-87.8	21588.7
7	9	401.7	2590.7	515.5	563.3	-9.2	877.9
	41	1606.5	-1471.7	-505.3	486.5	-16.2	-303.8
	45	-1024.1	-994.7	2030.1	500.5	-0.4	270.6
	13	-984.1	3033.8	2572.3	577.1	0.8	-784.8
1	41	18346.3	-5391.7	4618.7	6169.0	-190.9	-2129.8
	73	630.5	7726.3	-4653.4	3259.2	-81.6	4215.0
	77	-711.4	7184.4	-2992.4	3240.8	218.9	-3713.1
	45	-18265.4	-5413.5	5333.3	6156.6	139.1	2156.7
2	41	27525.9	-10230.5	7871.9	10568.8	-323.5	-2882.5
	73	-1234.2	12479.6	-7916.6	5501.6	-161.7	5648.9
	77	1142.5	11987.7	-6194.1	5466.2	357.8	-5315.1
	45	-27434.2	-10131.3	8545.1	10542.3	237.8	2844.6
3	41	12272.1	-3367.8	3088.8	4121.0	-127.3	-1346.3
	73	436.1	5132.3	-3111.7	2184.0	-54.3	2807.8
	77	-487.3	4773.6	-2004.8	2172.1	145.7	-2473.3
	45	-12221.0	-3380.1	3565.3	4113.1	92.4	1364.2
4	41	18391.9	-6593.6	5257.6	7054.2	-215.7	-1848.1
	73	-807.0	8301.1	-5287.2	3678.9	-107.7	3763.7
	77	748.7	7975.8	-4139.3	3655.7	238.3	-3541.2
	45	-18333.6	-6525.3	5706.5	7036.9	158.3	1822.8
5	41	2850.1	1411.2	-213.1	-316.6	6.5	-538.9
	73	2067.6	388.9	200.2	-118.5	23.7	1223.1
	77	-2138.8	54.0	1247.2	-116.6	6.4	-853.7
	45	-2778.9	1304.0	303.2	-314.4	-4.8	568.2
6	41	10566.2	-2604.7	2511.2	3360.3	-104.4	-1181.1
	73	577.6	4347.2	-2532.5	1766.6	-42.5	2459.4
	77	-649.4	4033.8	-1434.7	1755.2	122.3	-2193.5
	45	-10494.5	-2618.3	2993.5	3351.8	77.1	1171.1
7	41	2818.8	1403.4	-219.4	-321.5	6.6	-531.8
	73	2037.5	390.1	206.5	-126.2	23.4	1203.7
	77	-2112.7	64.8	1253.7	-124.8	6.4	-851.4
	45	-2743.6	1299.7	296.7	-319.7	-4.6	554.2
1	10	115180.5	-3655.4	15487.5	17207.4	-116.2	-39091.9
	42	86467.6	5909.3	-15532.5	14571.7	-110.5	38926.2
	46	-86434.4	5708.7	-15449.9	14550.2	183.7	-38615.9
	14	-115213.7	-3832.7	15494.8	17184.5	154.6	39318.2
2	10	191599.7	-8399.5	25701.8	28586.4	-180.3	-65998.7
	42	143601.5	10617.8	-25802.9	24170.6	-148.1	65063.8
	46	-143551.0	10527.9	-25644.8	24148.2	314.3	-64783.9
	14	-191650.2	-8616.4	25745.9	28562.5	264.7	66202.6
3	10	76832.2	-1997.0	10330.0	11476.5	-77.3	-25899.9
	42	57676.6	3710.0	-10360.2	9720.1	-73.5	25860.0
	46	-57652.1	3577.7	-10304.8	9705.7	122.6	-25652.7
	14	-76856.7	-2113.8	10335.0	11461.1	103.1	26051.7
4	10	127778.3	-5159.7	17139.6	19062.5	-120.0	-43837.8
	42	95765.9	6849.0	-17207.2	16119.4	-98.5	43285.1
	46	-95729.9	6790.5	-17101.4	16104.4	209.6	-43098.0
	14	-127814.3	-5302.9	17169.0	19046.4	176.5	43974.6
5	10	350.3	2690.3	100.2	83.1	-16.7	997.9
	42	474.9	-1024.3	-66.8	98.2	-43.3	-307.7
	46	-412.0	-1164.9	-93.4	81.7	-13.5	486.5
	14	-413.2	2675.8	60.0	65.4	-9.3	-855.4
6	10	64050.2	-1247.6	8616.4	9569.6	-69.1	-21422.0
	42	48105.1	2906.5	-8631.8	8103.6	-72.5	21481.9
	46	-48043.1	2830.1	-8593.6	8087.1	96.8	-21312.3

Comb. Nudo		F _x [kg]	F _y [kg]	F _z [kg]	M _x [kgm]	M _y [kgm]	M _z [kgm]
	14	-64112.2	-1312.2	8609.1	9551.9	83.1	21554.5
7	10	342.2	2682.9	98.2	81.3	-17.2	996.8
	42	466.2	-1027.6	-63.8	95.2	-44.2	-311.6
	46	-396.1	-1155.0	-91.2	78.3	-14.2	482.8
	14	-412.3	2676.6	56.9	63.1	-9.6	-858.4
1	42	15326.0	-6167.0	-5248.9	-6952.0	124.5	-1367.0
	74	-1703.0	7772.0	5321.7	-3823.2	73.4	2713.9
	78	1656.5	8143.7	5174.6	-3811.7	-226.1	-3520.5
	46	-15279.5	-5618.8	-5247.5	-6930.6	-152.4	938.0
2	42	24397.8	-11024.3	-8533.3	-11385.0	259.3	-2061.4
	74	-3537.9	12528.1	8606.5	-6085.2	158.2	4190.1
	78	3574.0	12947.1	8428.0	-6080.9	-357.9	-5043.1
	46	-24433.9	-10321.0	-8501.3	-11369.7	-241.0	1597.0
3	42	10258.6	-3883.5	-3509.0	-4643.1	83.0	-836.7
	74	-1119.6	5163.2	3557.4	-2560.1	48.8	1807.2
	78	1091.3	5413.2	3459.8	-2552.8	-150.5	-2344.8
	46	-10230.3	-3516.0	-3508.2	-4629.3	-101.3	550.8
4	42	16306.4	-7121.8	-5698.6	-7598.5	172.9	-1299.7
	74	-2342.9	8333.9	5747.3	-4068.1	105.3	2791.4
	78	2369.7	8615.4	5628.7	-4065.6	-238.4	-3359.9
	46	-16333.2	-6650.7	-5677.4	-7588.6	-160.4	990.1
5	42	893.0	927.2	-175.8	-170.0	-49.9	-29.0
	74	533.9	469.6	213.0	-235.7	-22.8	309.7
	78	-570.0	630.1	166.0	-221.5	-7.6	-669.0
	46	-856.8	1149.9	-203.2	-149.7	-11.9	-160.9
6	42	8533.3	-3107.8	-2926.2	-3875.2	61.9	-638.7
	74	-945.5	4415.9	2966.7	-2137.8	44.2	1545.7
	78	957.7	4627.4	2888.2	-2129.6	-120.5	-1979.8
	46	-8545.5	-2758.6	-2928.7	-3860.0	-86.0	402.7
7	42	855.0	921.2	-169.5	-164.8	-49.7	-14.3
	74	510.5	477.7	205.3	-227.7	-21.1	306.9
	78	-537.0	632.8	160.8	-213.5	-6.1	-649.2
	46	-828.5	1145.2	-196.6	-144.5	-11.8	-167.7
1	15	174982.9	14899.8	24557.5	28787.8	-375.8	-50906.9
	47	128201.4	-17689.4	-24677.8	21632.8	-328.7	46276.1
	43	-128254.6	-14151.6	-24424.2	21543.0	490.2	-49749.2
	11	-174929.7	16941.1	24544.5	28695.6	463.4	48493.7
2	15	292015.7	19090.1	41137.0	48012.0	-604.1	-86607.4
	47	215563.2	-21333.2	-41339.7	36456.4	-512.3	80956.8
	43	-216016.5	-18274.0	-40898.0	36279.6	791.2	-84190.2
	11	-291562.3	20517.2	41100.7	47839.3	745.0	84265.8
3	15	116677.1	10100.5	16375.9	19195.5	-250.4	-33888.5
	47	85491.3	-11959.1	-16455.9	14426.7	-219.2	30800.2
	43	-85528.2	-9601.1	-16286.8	14366.6	326.4	-33115.8
	11	-116640.2	11459.6	16366.8	19133.8	308.8	32279.2
4	15	194699.0	12894.0	27428.9	32011.6	-402.7	-57688.8
	47	143732.4	-14388.3	-27563.8	24309.1	-341.5	53920.6
	43	-144036.1	-12349.3	-27269.4	24191.0	527.1	-56076.4
	11	-194395.3	13843.7	27404.3	31896.3	496.5	56127.3
5	15	-288.6	4434.1	-152.9	-24.3	-17.6	1366.5
	47	-1425.9	-6262.5	158.5	-298.2	-29.1	-2929.5
	43	1717.2	-4104.7	140.2	-278.8	16.1	1003.4
	11	-2.6	5933.1	-145.8	-11.1	19.0	-2629.8
6	15	97220.3	8330.7	13649.4	15994.7	-209.1	-28261.8
	47	71253.6	-9861.9	-13713.4	12027.7	-183.8	25710.3
	43	-71276.1	-7916.8	-13575.2	11976.7	269.5	-27609.2
	11	-97197.9	9447.9	13639.1	15942.4	255.9	26943.6
7	15	-280.0	4243.6	-146.3	-23.7	-17.0	1309.0
	47	-1368.6	-5997.6	152.4	-285.5	-28.3	-2806.8
	43	1650.5	-3927.4	134.2	-267.0	14.9	961.9
	11	-2.0	5681.4	-140.2	-11.2	18.0	-2518.5
1	47	18309.8	17941.0	-5496.4	-10187.7	635.2	8915.5
	79	-4184.2	-12653.2	5397.3	-918.6	587.5	-2015.2
	75	4189.9	-19898.1	5513.5	-1007.3	-522.2	9586.1
	43	-18315.5	14610.3	-5414.4	-10253.4	-495.1	-5523.8

Comb.	Nodo	F _x [kg]	F _y [kg]	F _z [kg]	M _x [kgm]	M _y [kgm]	M _z [kgm]	
	2	47	36396.6	21735.6	-10569.5	-17765.3	989.3	9237.8
		79	-3415.7	-16740.1	10418.7	-3650.2	889.0	-1605.5
		75	3246.0	-23540.6	10547.9	-3730.8	-810.1	8466.0
		43	-36226.9	18545.2	-10397.0	-17835.1	-755.8	-6100.7
	3	47	12241.6	12129.0	-3672.0	-6797.5	423.1	5990.1
		79	-2764.3	-8601.5	3606.2	-622.9	391.4	-1388.5
		75	2765.6	-13433.6	3683.1	-681.8	-347.9	6435.7
		43	-12243.0	9906.1	-3617.2	-6840.8	-330.1	-3729.1
	4	47	24299.5	14658.8	-7054.2	-11849.2	659.2	6204.9
		79	-2251.9	-11326.1	6953.8	-2444.0	592.4	-1115.3
		75	2136.3	-15862.0	7039.4	-2497.5	-539.8	5689.0
		43	-24183.9	12529.3	-6939.0	-11895.3	-503.9	-4113.7
	5	47	-4390.8	6302.4	1053.3	583.4	55.6	4265.2
		79	-2589.1	-3419.8	-1077.3	1595.5	79.1	-1351.2
		75	2723.2	-7406.6	-1008.3	1543.5	-34.9	5699.9
		43	4256.7	4524.0	1032.2	552.9	-50.2	-2369.0
	6	47	10282.8	10021.7	-3079.0	-5677.3	354.4	4918.3
		79	-2207.4	-7125.7	3014.6	-540.2	333.3	-1132.4
		75	2207.1	-11095.9	3093.0	-589.5	-281.7	5275.3
		43	-10282.4	8199.9	-3028.6	-5713.7	-272.7	-3064.5
		7	47	-4203.1	6040.2	1008.4	558.1	53.9
		79	-2467.3	-3278.5	-1033.6	1529.2	77.7	-1293.5
		75	2595.9	-7099.0	-964.0	1479.2	-31.7	5460.4
	43	4074.5	4337.3	989.2	528.7	-47.7	-2268.0	
	1	79	1412.7	1642.8	840.5	884.2	-19.4	76.0
		104	4125.9	107.4	-869.6	176.3	-1.3	819.6
		102	-4144.6	-12.9	-844.3	193.4	49.4	-922.8
		75	-1394.0	366.0	873.5	888.6	31.5	1450.4
	2	79	105.0	1547.0	792.2	852.3	-22.8	133.9
		104	3874.9	105.5	-820.5	141.4	3.9	634.2
		102	-3901.0	16.0	-814.3	175.8	49.9	-771.3
		75	-78.9	434.9	842.6	874.1	27.6	1214.8
		3	79	938.6	1202.9	557.3	586.7	-12.9
		104	2735.7	71.7	-576.8	116.6	-0.8	541.5
		102	-2748.7	-8.8	-560.1	128.0	33.0	-610.7
		75	-925.6	352.1	579.6	589.8	20.9	928.7
	4	79	66.8	1139.1	525.1	565.4	-15.2	127.3
		104	2568.4	70.5	-544.0	93.3	2.7	417.9
		102	-2586.2	10.5	-540.1	116.3	33.3	-509.7
		75	-48.9	398.0	559.0	580.1	18.3	771.7
		5	79	1788.6	1178.7	469.1	482.3	-3.9
		104	2330.9	55.1	-488.1	118.3	-4.8	568.8
		102	-2329.6	-25.3	-459.7	113.4	25.2	-593.2
		75	-1789.9	409.6	478.7	470.7	22.9	840.9
	6	79	824.3	1131.8	466.3	493.1	-8.3	103.7
		104	2301.5	58.6	-485.0	98.4	-0.8	457.7
		102	-2308.3	-4.7	-470.4	107.6	27.6	-513.3
		75	-817.6	432.3	489.1	495.3	20.2	733.2
		7	79	1729.5	1163.2	451.5	464.7	-3.2
		104	2246.3	52.7	-470.3	114.1	-4.7	548.4
		102	-2244.1	-23.8	-442.9	109.3	24.2	-571.4
	75	-1731.7	425.9	461.7	453.5	22.6	799.1	
	1	12	174863.2	15722.0	24474.8	28704.0	-420.3	-50449.5
		44	128904.5	-18986.2	-24503.0	21488.0	-414.9	46085.4
		48	-128257.4	-15172.0	-24394.9	21415.2	453.3	-49389.1
		16	-175510.4	18436.1	24423.2	28633.6	440.4	48315.4
	2	12	291801.1	19765.1	40980.0	47846.8	-665.9	-86143.8
		44	216363.8	-22631.9	-41061.9	36219.6	-642.3	80787.4
		48	-215931.4	-19192.3	-40829.9	36089.1	757.1	-83834.2
		16	-292233.5	22059.1	40911.9	47722.7	721.1	84136.0
		3	12	116595.9	10646.9	16320.3	19139.4	-280.0
		44	85961.5	-12824.2	-16339.5	14330.0	-276.1	30673.2
		48	-85528.6	-10280.9	-16267.2	14281.6	302.3	-32875.4
		16	-117028.8	12458.2	16286.4	19092.7	293.6	32160.7
	4	12	194554.5	13342.3	27323.8	31901.3	-443.8	-57379.2
		44	144267.6	-15254.7	-27378.7	24151.0	-427.7	53807.8

Comb. Nudo		F _x [kg]	F _y [kg]	F _z [kg]	M _x [kgm]	M _y [kgm]	M _z [kgm]
	48	-143977.9	-12961.1	-27223.9	24064.2	504.8	-55838.9
	16	-194844.2	14873.5	27278.9	31818.8	480.7	56041.1
5	12	-288.5	5118.7	-131.9	6.6	-27.4	1661.0
	44	-1042.0	-7157.2	160.7	-297.6	-38.0	-3087.5
	48	1644.0	-4854.4	120.6	-294.6	-2.6	1237.3
	16	-313.5	6893.0	-149.3	9.0	8.4	-2801.4
6	12	97145.1	8895.1	13607.9	15956.2	-234.0	-27960.8
	44	71715.7	-10749.6	-13622.3	11950.2	-230.4	25572.8
	48	-71280.2	-8590.2	-13562.3	11906.8	250.8	-27375.9
	16	-97580.6	10444.7	13576.7	15915.1	243.6	26813.7
7	12	-281.6	4927.0	-125.1	7.9	-26.5	1602.9
	44	-983.2	-6896.4	153.1	-284.1	-36.6	-2966.0
	48	1579.3	-4673.0	114.5	-282.0	-2.8	1194.4
	16	-314.5	6642.4	-142.5	9.7	7.9	-2690.6
1	44	17840.0	18290.9	-5429.3	-10096.1	592.7	9258.8
	76	-3972.6	-14227.8	5270.3	-879.5	660.7	-2397.7
	80	5106.6	-20147.6	5611.6	-1072.9	-433.7	9791.5
	48	-18974.0	16084.5	-5452.5	-10259.3	-490.1	-5907.8
2	44	35897.7	22038.8	-10493.4	-17668.4	920.1	9595.8
	76	-3057.9	-18412.4	10261.6	-3600.7	980.0	-1956.6
	80	4209.1	-23815.3	10676.2	-3805.4	-688.1	8704.0
	48	-37048.9	20188.9	-10444.4	-17848.0	-731.6	-6468.1
3	44	11926.1	12359.9	-3627.3	-6736.0	395.2	6219.1
	76	-2620.7	-9653.6	3521.0	-596.6	440.3	-1643.5
	80	3379.1	-13597.7	3749.1	-725.8	-288.8	6572.7
	48	-12684.5	10891.4	-3642.7	-6845.2	-326.3	-3985.0
4	44	23964.5	14858.5	-7003.3	-11784.2	613.5	6443.8
	76	-2010.9	-12443.3	6848.5	-2410.7	653.1	-1349.5
	80	2780.8	-16042.9	7125.5	-2547.4	-458.4	5847.7
	48	-24734.5	13627.7	-6970.6	-11904.4	-487.3	-4358.5
5	44	-4670.8	6585.5	1080.0	629.9	53.2	4479.0
	76	-2608.1	-4336.4	-1112.9	1599.2	97.9	-1619.5
	80	3280.1	-7573.9	-982.7	1509.7	-20.1	5821.6
	48	3998.8	5324.8	1015.6	557.1	-62.8	-2642.7
6	44	9976.7	10264.4	-3042.2	-5623.7	330.1	5144.6
	76	-2100.1	-8134.1	2948.5	-524.3	370.3	-1379.4
	80	2805.5	-11276.4	3146.5	-631.1	-236.0	5419.5
	48	-10682.1	9146.1	-3052.8	-5715.7	-270.1	-3324.0
7	44	-4482.3	6324.0	1034.0	603.3	51.3	4298.0
	76	-2488.5	-4190.2	-1066.8	1531.5	95.0	-1559.4
	80	3151.5	-7269.9	-939.8	1445.6	-18.3	5584.4
	48	3819.2	5136.1	972.6	533.0	-60.0	-2541.8
1	76	635.5	1641.8	760.7	806.0	7.6	313.1
	103	3661.1	106.4	-787.4	174.4	-28.6	776.5
	105	-3429.7	-49.8	-715.6	146.5	24.0	-650.0
	80	-866.9	406.3	742.3	751.7	52.4	1291.8
2	76	-720.7	1549.7	727.7	790.2	13.2	402.9
	103	3438.4	104.9	-764.0	156.6	-23.8	616.4
	105	-3145.3	-37.7	-669.2	117.7	27.6	-475.1
	80	427.6	487.8	705.5	727.0	58.1	1070.1
3	76	419.9	1202.6	504.4	534.7	5.1	247.0
	103	2426.3	70.8	-522.1	115.4	-19.1	513.1
	105	-2271.5	-33.1	-474.1	96.8	15.9	-428.4
	80	-574.7	378.8	491.9	498.4	34.9	823.1
4	76	-484.3	1141.2	482.4	524.1	8.9	306.8
	103	2277.8	69.7	-506.5	103.5	-15.9	406.4
	105	-2081.9	-25.0	-443.2	77.5	18.3	-311.8
	80	288.3	433.1	467.3	481.9	38.7	675.3
5	76	1327.9	1171.9	398.7	411.3	2.6	187.2
	103	1983.6	50.5	-407.8	98.6	-18.0	501.8
	105	-1899.3	-32.4	-387.0	93.1	9.4	-446.1
	80	-1412.3	429.1	396.1	390.4	24.8	718.1
6	76	320.6	1128.8	409.3	436.3	6.5	253.8
	103	1980.5	55.1	-426.1	93.3	-15.6	415.4
	105	-1842.3	-25.8	-384.9	78.0	13.2	-343.5
	80	-458.8	460.9	401.8	406.2	30.8	622.9

Comb.	Nodo	F _x [kg]	F _y [kg]	F _z [kg]	M _x [kgm]	M _y [kgm]	M _z [kgm]
7	76	1270.1	1156.0	380.8	393.4	3.1	191.1
	103	1897.8	47.6	-390.1	94.2	-17.2	479.7
	105	-1814.6	-30.7	-369.8	88.9	9.0	-425.8
	80	-1353.3	446.1	379.0	373.3	24.2	675.9
1	13	114799.1	-4250.3	-14525.6	-16155.7	136.5	-39142.0
	45	88701.3	4921.6	14511.7	-13610.7	157.0	38863.7
	51	-86941.4	6172.5	18440.7	-13682.3	-132.4	-38972.6
	19	-116559.0	-2725.7	-11508.1	-16224.0	-127.0	39427.5
2	13	191077.3	-9236.7	-24683.2	-27449.7	233.7	-65997.1
	45	146016.2	9682.5	24651.4	-23126.6	268.1	65030.9
	51	-143949.5	11017.0	28661.8	-23259.4	-212.6	-65139.1
	19	-193143.9	-7344.7	-21711.2	-27576.7	-210.7	66353.2
3	13	76578.3	-2394.3	-9688.7	-10775.2	91.1	-25934.5
	45	59165.6	3051.9	9679.3	-9079.3	104.8	25818.6
	51	-57990.6	3887.3	12298.8	-9126.9	-88.1	-25891.1
	19	-77753.2	-1377.0	-7676.9	-10820.6	-84.5	26125.2
4	13	127430.4	-5718.7	-16460.5	-18304.5	155.9	-43837.9
	45	97375.5	6225.8	16439.1	-15423.2	178.9	43263.4
	51	-95996.1	7116.9	19112.8	-15511.6	-141.6	-43335.4
	19	-128809.9	-4456.3	-14479.0	-18389.1	-140.3	44075.7
5	13	293.8	2584.1	491.0	536.8	-6.7	932.9
	45	1725.7	-1618.7	-480.4	462.3	-8.2	-314.6
	51	-916.9	-956.1	2056.7	474.3	-9.5	296.2
	19	-1102.6	3158.6	2545.2	548.4	-1.8	-785.6
6	13	63860.6	-1569.1	-7979.8	-8879.8	74.5	-21449.8
	45	49522.4	2324.0	7974.8	-7474.6	84.9	21482.0
	51	-48441.6	3080.7	10580.0	-7513.2	-75.9	-21514.9
	19	-64941.4	-667.7	-5962.6	-8916.7	-71.3	21648.4
7	13	293.0	2583.1	493.9	539.1	-6.8	934.4
	45	1709.6	-1607.1	-483.0	465.7	-8.5	-310.2
	51	-908.4	-956.0	2053.9	477.4	-9.7	298.9
	19	-1094.1	3147.8	2547.7	550.5	-1.9	-783.7
1	45	17955.7	-5533.5	4575.0	6162.7	-110.4	-2058.8
	77	915.1	7517.9	-4599.4	3240.9	-126.5	4403.5
	84	-445.4	7396.3	-3109.0	3319.2	153.6	-3624.3
	51	-18425.4	-5262.5	5439.6	6231.3	143.5	2057.8
2	45	27057.6	-10349.9	7790.9	10549.9	-198.1	-2785.1
	77	-895.9	12240.2	-7826.8	5465.7	-230.4	5960.9
	84	1454.6	12235.0	-6355.4	5570.6	260.8	-5160.9
	51	-27616.3	-10007.2	8697.4	10639.1	256.3	2713.0
3	45	12012.4	-3461.8	3060.0	4117.3	-73.4	-1298.6
	77	624.8	4994.7	-3076.2	2172.3	-84.3	2933.8
	84	-310.1	4914.4	-2082.8	2224.5	102.2	-2414.0
	51	-12327.1	-3279.5	3636.5	4163.0	95.6	1298.0
4	45	18080.3	-6672.7	5204.0	7042.1	-131.8	-1782.8
	77	-582.5	8142.9	-5227.8	3655.5	-153.6	3972.1
	84	956.6	8140.2	-4247.0	3725.4	173.6	-3438.4
	51	-18454.4	-6442.6	5808.3	7101.5	170.8	1734.7
5	45	2692.0	1308.1	-205.9	-309.5	13.6	-526.5
	77	2188.8	291.2	196.5	-113.4	23.3	1224.9
	84	-2023.8	154.3	1220.3	-92.3	1.1	-859.2
	51	-2857.0	1414.2	326.6	-288.1	-14.7	537.0
6	45	10336.8	-2692.8	2487.7	3357.4	-59.3	-1144.3
	77	747.3	4221.3	-2505.4	1757.3	-64.3	2564.3
	84	-491.6	4165.1	-1500.6	1801.8	88.7	-2144.7
	51	-10592.6	-2525.7	3055.7	3396.9	78.6	1112.0
7	45	2663.8	1302.1	-212.4	-314.6	13.5	-520.6
	77	2156.9	293.6	202.4	-121.2	23.8	1205.4
	84	-1999.8	164.5	1227.6	-100.7	1.9	-856.9
	51	-2820.9	1407.6	319.9	-293.7	-14.4	523.4
1	14	115216.7	-3498.9	15432.2	17107.5	-148.0	-38984.1
	46	86495.7	5779.7	-15377.1	14490.4	-159.6	38856.4
	52	-86501.1	5465.3	-15439.7	14479.8	68.1	-38542.1
	20	-115211.3	-3630.9	15384.5	17096.8	103.2	39210.1
2	14	191586.7	-8314.2	25650.3	28453.1	-253.8	-65841.9

Comb. Nudo		F _x [kg]	F _y [kg]	F _z [kg]	M _x [kgm]	M _y [kgm]	M _z [kgm]
	46	143735.9	10483.1	-25552.9	24061.7	-286.1	65004.3
	52	-143607.2	10274.4	-25665.9	24046.7	123.7	-64707.0
	20	-191715.4	-8327.9	25568.5	28436.9	175.6	66083.3
3	14	76856.8	-1893.8	10293.2	11409.7	-98.7	-25829.6
	46	57695.0	3624.3	-10256.2	9665.7	-106.6	25813.8
	52	-57697.2	3416.0	-10298.1	9658.5	45.2	-25604.3
	20	-76854.6	-1980.9	10261.1	11402.4	68.7	25980.5
4	14	127770.1	-5104.0	17105.2	18973.5	-169.2	-43734.8
	46	95855.2	6759.9	-17040.1	16046.6	-190.9	43245.8
	52	-95767.9	6622.0	-17115.5	16036.4	82.3	-43047.6
	20	-127857.4	-5112.3	17050.4	18962.5	116.9	43896.0
5	14	427.8	2847.4	54.3	46.8	7.1	1012.4
	46	383.9	-1078.9	-60.2	69.2	20.3	-355.8
	52	-473.2	-1306.2	-52.7	68.5	-9.8	526.6
	20	-338.4	2703.3	58.6	47.0	-3.1	-907.5
6	14	64085.6	-1145.0	8575.0	9506.2	-81.1	-21364.7
	46	48103.5	2840.5	-8545.5	8052.2	-85.3	21440.1
	52	-48093.9	2677.5	-8579.8	8047.2	36.4	-21268.2
	20	-64095.2	-1207.4	8550.3	9501.3	57.1	21490.9
7	14	420.1	2837.9	51.6	44.6	7.1	1010.4
	46	374.7	-1078.9	-57.6	66.0	20.3	-358.6
	52	-458.0	-1295.0	-50.3	65.5	-9.7	522.2
	20	-336.9	2701.6	56.2	45.0	-3.0	-909.5
1	46	15255.7	-5869.6	-5135.2	-6848.4	128.3	-1183.0
	78	-1738.6	7622.9	5180.6	-3745.1	146.5	2829.7
	85	1717.4	7978.5	5128.8	-3719.8	-173.3	-3386.6
	52	-15234.4	-5616.5	-5174.2	-6820.8	-213.8	944.4
2	46	24296.7	-10690.0	-8357.6	-11246.2	212.9	-1824.9
	78	-3545.6	12412.5	8407.7	-5984.2	267.6	4427.5
	85	3656.2	12750.4	8370.5	-5954.2	-265.7	-4855.9
	52	-24407.3	-10357.5	-8420.6	-11210.7	-338.5	1651.8
3	46	10212.4	-3686.0	-3433.5	-4574.5	85.3	-714.9
	78	-1144.3	5064.6	3463.7	-2508.5	97.7	1884.5
	85	1131.8	5302.8	3429.3	-2491.5	-115.2	-2255.7
	52	-10199.9	-3515.7	-3459.5	-4556.0	-142.4	555.8
4	46	16239.7	-6899.7	-5581.8	-7506.4	141.7	-1142.8
	78	-2348.9	8257.6	5615.1	-4001.3	178.4	2949.7
	85	2424.3	8484.0	5590.4	-3981.1	-176.8	-3235.2
	52	-16315.1	-6676.4	-5623.7	-7482.6	-225.6	1027.4
5	46	900.4	1093.9	-160.4	-133.2	5.1	29.4
	78	467.3	350.8	179.1	-204.1	-16.9	263.5
	85	-569.1	552.1	143.3	-196.5	-18.6	-640.5
	52	-798.5	1168.7	-162.0	-127.0	-15.9	-202.2
6	46	8508.9	-2912.0	-2859.6	-3810.0	74.4	-533.6
	78	-984.9	4321.4	2884.1	-2088.0	82.2	1601.4
	85	981.3	4522.9	2856.9	-2075.1	-96.7	-1904.9
	52	-8505.3	-2766.6	-2881.3	-3796.0	-120.4	401.2
7	46	865.4	1088.7	-153.8	-127.6	5.7	42.6
	78	442.1	360.6	171.7	-195.7	-16.1	260.5
	85	-538.4	554.9	137.6	-188.7	-18.0	-621.7
	52	-769.1	1161.4	-155.4	-122.0	-15.7	-208.7
1	17	174924.8	14725.0	24115.1	28242.6	-466.7	-50763.1
	49	128606.7	-17615.3	-23983.9	21084.7	-540.7	46442.1
	47	-128344.6	-14496.3	-24477.4	21447.5	341.2	-49697.7
	15	-175186.8	17386.7	24346.1	28570.6	395.6	48597.4
2	17	291676.6	18577.7	40441.0	47130.6	-778.6	-86329.5
	49	216372.6	-21346.4	-40179.5	35573.9	-910.6	81223.4
	47	-215890.6	-18560.7	-41013.3	36113.6	530.3	-84096.8
	15	-292158.6	21329.4	40751.8	47627.2	619.9	84483.2
3	17	116638.9	9984.6	16080.9	18832.1	-311.1	-33792.6
	49	85761.9	-11909.5	-15993.4	14061.3	-360.4	30911.4
	47	-85588.9	-9832.2	-16322.6	14303.4	227.5	-33081.4
	15	-116811.8	11757.2	16235.1	19051.0	263.7	32348.7
4	17	194473.4	12553.0	26964.8	31424.2	-519.0	-57503.5
	49	144272.5	-14396.9	-26790.6	23720.7	-607.0	54099.0
	47	-143952.9	-12541.8	-27346.5	24080.7	353.5	-56014.1

Comb. Nudo		F _x [kg]	F _y [kg]	F _z [kg]	M _x [kgm]	M _y [kgm]	M _z [kgm]
	15	-194793.0	14385.6	27172.3	31755.4	413.3	56272.6
5	17	-65.7	4634.2	-184.9	-44.5	0.5	1328.4
	49	-1560.1	-6131.5	153.9	-321.5	6.7	-2925.6
	47	1466.8	-4362.5	159.1	-270.7	27.8	994.3
	15	159.0	5859.8	-128.0	-5.0	29.0	-2675.1
6	17	97214.5	8255.5	13403.5	15692.4	-259.4	-28188.1
	49	71456.4	-9802.0	-13329.2	11723.7	-300.8	25799.9
	47	-71353.8	-8134.8	-13606.0	11925.8	188.3	-27582.9
	15	-97317.2	9681.3	13531.7	15875.4	218.8	26993.4
7	17	-59.7	4441.0	-177.2	-43.0	0.4	1270.9
	49	-1502.8	-5867.4	147.6	-307.7	6.3	-2803.7
	47	1403.5	-4181.2	152.1	-258.8	26.5	952.6
	15	158.9	5607.6	-122.6	-4.9	27.6	-2563.9
1	49	18709.5	18409.7	-5289.4	-10154.8	422.2	8759.6
	82	-4408.4	-12680.7	5475.7	-898.4	465.1	-1986.7
	79	3890.4	-19973.7	5389.4	-1021.9	-623.9	9510.1
	47	-18191.5	14244.7	-5575.7	-10198.3	-647.6	-5534.2
2	49	36858.9	22331.8	-10202.6	-17701.1	603.8	9011.3
	82	-3689.7	-16875.4	10528.8	-3616.3	692.2	-1546.8
	79	2949.7	-23614.7	10327.3	-3719.3	-961.2	8425.9
	47	-36118.9	18158.3	-10653.5	-17718.5	-1007.3	-6158.7
3	49	12507.8	12440.9	-3534.0	-6775.5	281.1	5885.8
	82	-2914.4	-8619.9	3658.3	-609.2	309.7	-1369.7
	79	2567.1	-13483.3	3600.7	-691.8	-415.8	6384.6
	47	-12160.4	9662.3	-3725.1	-6804.7	-431.4	-3735.6
4	49	24607.4	15055.6	-6809.5	-11806.3	402.2	6053.7
	82	-2435.3	-11416.3	7027.1	-2421.1	461.0	-1076.4
	79	1940.0	-15910.6	6892.7	-2490.0	-640.6	5661.8
	47	-24112.1	12271.4	-7110.4	-11818.2	-671.2	-4152.0
5	49	-4201.8	6478.1	1038.1	574.6	76.0	4241.4
	82	-2685.5	-3329.1	-1052.2	1593.6	64.8	-1360.3
	79	2531.0	-7471.6	-1007.3	1518.4	-57.6	5628.1
	47	4356.4	4322.6	1021.4	535.3	-54.4	-2334.2
6	49	10527.9	10306.1	-2962.7	-5660.2	233.8	4833.1
	82	-2346.4	-7125.2	3064.8	-530.1	258.9	-1116.9
	79	2014.9	-11155.8	3017.2	-595.8	-344.4	5229.4
	47	-10196.4	7974.9	-3119.3	-5682.1	-358.9	-3067.6
7	49	-4016.0	6214.8	994.1	549.3	73.0	4061.7
	82	-2563.3	-3187.7	-1007.9	1527.1	62.5	-1302.3
	79	2404.9	-7165.7	-964.8	1455.5	-54.9	5390.6
	47	4174.3	4138.6	978.6	512.1	-52.1	-2234.0
1	82	1450.4	1824.6	859.7	876.5	-50.7	161.8
	106	4023.1	115.6	-811.1	170.1	-50.7	856.9
	104	-4134.5	-107.4	-828.0	161.2	1.3	-822.7
	79	-1339.0	261.0	779.4	841.2	0.0	1506.5
2	82	139.9	1822.6	811.4	843.1	-57.7	268.1
	106	3707.3	115.7	-749.8	137.1	-59.1	689.4
	104	-3884.4	-105.5	-774.2	120.2	-3.9	-638.6
	79	37.2	261.0	712.5	804.5	-6.4	1297.4
3	82	963.2	1323.9	570.1	581.5	-33.8	145.6
	106	2666.8	77.1	-537.7	112.4	-33.7	566.3
	104	-2741.4	-71.7	-548.9	106.4	0.8	-543.6
	79	-888.6	281.3	516.4	557.9	-0.1	966.4
4	82	89.5	1322.5	537.9	559.2	-38.5	216.5
	106	2456.3	77.2	-496.8	90.4	-39.3	454.7
	104	-2574.7	-70.5	-513.0	79.1	-2.7	-420.8
	79	28.9	281.4	471.8	533.4	-4.4	827.1
5	82	1815.6	1197.2	481.5	479.5	-19.8	69.2
	106	2329.1	58.9	-467.7	113.6	-19.4	573.4
	104	-2334.5	-55.1	-470.7	115.6	4.8	-569.4
	79	-1810.2	409.5	456.9	464.4	6.1	849.6
6	82	849.1	1230.8	478.8	488.8	-27.6	149.6
	106	2245.2	64.0	-452.6	94.9	-28.0	477.8
	104	-2306.2	-58.6	-462.0	90.1	0.8	-459.4
	79	-788.0	374.4	435.8	469.5	0.8	764.7
7	82	1756.5	1180.6	463.9	462.0	-18.9	73.0

Comb.	Nodo	F _x [kg]	F _y [kg]	F _z [kg]	M _x [kgm]	M _y [kgm]	M _z [kgm]
	106	2244.8	56.6	-450.8	109.6	-18.7	552.7
	104	-2249.7	-52.7	-453.7	111.5	4.7	-549.0
	79	-1751.6	426.1	440.6	447.6	6.0	807.5
1	16	174845.9	15741.8	24311.6	28483.8	-447.6	-50344.1
	48	129307.3	-19149.0	-24230.2	21287.7	-480.7	46232.2
	50	-128395.3	-15319.7	-24431.0	21402.0	357.1	-49405.6
	18	-175757.9	18726.9	24349.6	28581.9	403.5	48366.4
2	16	291625.8	19651.4	40708.7	47456.5	-734.0	-85938.9
	48	217062.2	-22932.1	-40547.4	35872.5	-792.6	80996.1
	50	-215980.7	-19312.4	-40879.7	36015.3	557.4	-83832.3
	18	-292707.2	22593.1	40718.4	47581.2	636.9	84231.9
3	16	116584.5	10660.6	16212.2	18993.1	-298.4	-33513.1
	48	86230.8	-12933.7	-16157.7	14196.8	-320.6	30771.3
	50	-85621.0	-10379.2	-16291.6	14272.8	237.8	-32887.1
	18	-117194.4	12652.3	16237.1	19058.3	268.9	32195.0
4	16	194437.7	13267.0	27143.6	31641.6	-489.4	-57243.0
	48	144734.0	-15455.8	-27035.8	23920.0	-528.6	53947.2
	50	-144011.2	-13041.0	-27257.4	24014.9	371.4	-55838.2
	18	-195160.5	15229.8	27149.6	31724.5	424.5	56105.3
5	16	-127.1	5268.8	-131.1	26.8	-9.5	1626.2
	48	-1098.9	-7098.7	112.3	-287.2	-6.8	-3058.7
	50	1452.5	-4992.2	110.7	-252.1	28.3	1207.4
	18	-226.6	6822.1	-91.8	55.4	26.9	-2820.7
6	16	97170.7	8933.2	13518.3	15835.7	-248.9	-27911.3
	48	71913.6	-10813.9	-13472.4	11839.2	-267.3	25655.2
	50	-71394.9	-8701.7	-13583.8	11901.4	197.8	-27390.4
	18	-97689.4	10582.5	13537.9	15889.1	223.8	26834.2
7	16	-118.3	5077.5	-124.2	27.6	-9.2	1567.4
	48	-1044.0	-6834.0	106.2	-274.2	-6.6	-2938.2
	50	1386.4	-4812.2	104.7	-240.7	27.2	1164.5
	18	-224.2	6568.7	-86.7	54.9	25.8	-2711.0
1	48	17973.4	18236.4	-5372.5	-10119.7	517.5	9062.3
	80	-4324.2	-13906.5	5378.5	-933.2	586.9	-2341.3
	83	5091.2	-19980.4	5489.2	-1047.4	-518.6	9658.2
	50	-18740.5	15650.5	-5495.2	-10178.4	-598.1	-5884.5
2	48	35998.7	21935.4	-10327.8	-17655.7	767.2	9311.2
	80	-3428.1	-18178.4	10383.2	-3644.6	870.0	-1895.7
	83	4284.9	-23481.7	10442.7	-3718.1	-815.6	8541.8
	50	-36855.5	19724.7	-10498.1	-17674.6	-935.8	-6459.2
3	48	12015.2	12323.2	-3589.6	-6752.3	344.6	6087.5
	80	-2856.3	-9438.5	3593.5	-632.7	391.0	-1605.7
	83	3369.5	-13486.1	3667.3	-708.5	-345.4	6483.7
	50	-12528.4	10601.4	-3671.3	-6791.3	-398.5	-3969.3
4	48	24032.0	14789.2	-6893.1	-11776.3	511.1	6253.4
	80	-2258.9	-12286.4	6930.0	-2440.3	579.8	-1308.6
	83	2832.0	-15820.3	6969.6	-2489.0	-543.4	5739.4
	50	-24605.0	13317.6	-7006.6	-11788.7	-623.7	-4352.3
5	48	-4542.8	6628.4	1029.4	590.4	72.3	4455.8
	80	-2836.4	-4034.6	-1065.4	1568.4	83.2	-1587.8
	83	3173.9	-7658.0	-967.7	1479.4	-35.6	5780.5
	50	4205.3	5064.1	1003.7	529.7	-45.7	-2611.8
6	48	10075.9	10258.1	-3007.8	-5636.6	286.6	5042.4
	80	-2340.8	-7904.8	3010.4	-551.2	325.9	-1343.5
	83	2776.7	-11213.7	3072.9	-613.9	-286.6	5349.1
	50	-10511.8	8860.5	-3075.5	-5669.0	-331.3	-3305.3
7	48	-4353.5	6370.9	986.0	565.4	69.4	4277.4
	80	-2718.2	-3888.5	-1020.8	1502.6	80.0	-1528.0
	83	3044.6	-7357.7	-926.7	1417.1	-34.0	5545.7
	50	4027.1	4875.3	961.4	507.1	-43.8	-2510.7
1	80	691.6	1725.7	662.9	727.3	-7.8	293.5
	105	3438.7	49.8	-670.8	117.1	-24.0	656.0
	107	-3403.6	-78.2	-668.6	122.4	14.1	-643.6
	83	-726.7	395.4	676.6	707.4	34.0	1240.6
2	80	-645.0	1676.9	593.5	686.6	-2.0	382.1
	105	3158.6	37.7	-603.3	75.8	-27.6	483.5

Comb.	Nodo	F _x [kg]	F _y [kg]	F _z [kg]	M _x [kgm]	M _y [kgm]	M _z [kgm]
	107	-3118.3	-65.6	-606.5	82.3	10.1	-457.2
	83	604.7	443.8	616.3	667.6	39.8	1018.7
3	80	457.0	1257.8	438.7	482.0	-5.0	233.5
	105	2277.5	33.1	-444.1	77.0	-15.9	432.4
	107	-2253.9	-52.1	-442.6	80.6	9.4	-424.2
	83	-480.6	371.0	448.0	468.8	22.7	789.2
4	80	-434.0	1225.3	392.5	454.9	-1.2	292.5
	105	2090.8	25.0	-399.1	49.5	-18.3	317.5
	107	-2063.7	-43.7	-401.2	53.8	6.7	-299.9
	83	406.9	403.3	407.9	442.2	26.5	641.3
5	80	1339.4	1185.9	377.2	389.1	-7.6	180.8
	105	1900.7	32.4	-380.1	87.2	-9.4	447.3
	107	-1885.8	-49.8	-374.5	88.9	9.9	-450.6
	83	-1354.2	441.3	377.4	378.1	13.0	692.9
6	80	350.1	1178.3	355.3	391.8	-3.7	244.8
	105	1847.4	25.8	-359.9	61.3	-13.2	346.8
	107	-1827.3	-43.4	-358.5	64.1	7.5	-339.1
	83	-370.3	449.1	363.1	380.7	18.9	595.3
7	80	1280.8	1170.3	360.3	371.8	-7.2	185.4
	105	1815.9	30.7	-363.1	83.2	-9.0	427.0
	107	-1801.5	-47.8	-357.7	84.7	9.4	-430.0
	83	-1295.1	456.6	360.5	361.2	12.5	651.8
1	21	175893.1	15879.7	24573.7	28847.3	-341.6	-51070.2
	53	127558.0	-17389.1	-24807.6	21689.4	-252.5	46131.7
	49	-129243.1	-15111.1	-24177.2	21355.5	576.0	-49803.3
	17	-174208.0	16620.5	24411.1	28526.5	502.1	48164.1
2	21	293106.3	20311.4	41146.4	48097.0	-539.7	-86815.5
	53	214791.3	-21063.1	-41560.1	36541.2	-376.3	80753.5
	49	-217200.8	-19363.2	-40465.0	35965.6	952.4	-84275.6
	17	-290696.8	20114.9	40878.7	47547.7	819.7	83842.4
3	21	117284.5	10754.9	16386.6	19235.3	-227.6	-33997.1
	53	85062.9	-11759.7	-16542.7	14464.4	-168.1	30703.8
	49	-86188.0	-10242.6	-16122.2	14241.8	384.0	-33151.7
	17	-116159.4	11247.4	16278.2	19021.4	334.7	32059.2
4	21	195426.6	13709.3	27435.1	32068.4	-359.7	-57827.3
	53	143218.3	-14209.0	-27711.0	24365.6	-250.7	53785.0
	49	-144826.5	-13077.3	-26980.7	23981.8	635.0	-56133.2
	17	-193818.5	13577.1	27256.7	31702.2	546.4	55844.7
5	21	106.8	4808.0	-143.1	-14.3	-21.3	1302.3
	53	-1717.5	-6035.5	158.8	-292.8	-31.6	-2964.4
	49	1291.9	-4565.6	124.3	-274.0	7.0	995.9
	17	318.8	5793.1	-140.0	0.7	13.5	-2746.5
6	21	97774.7	8916.5	13655.7	16027.1	-188.7	-28363.1
	53	70852.7	-9659.3	-13787.6	12057.8	-138.3	25625.6
	49	-71875.2	-8499.7	-13437.5	11875.2	320.9	-27642.0
	17	-96752.3	9242.6	13569.5	15851.6	279.1	26746.2
7	21	111.4	4612.5	-137.6	-14.3	-20.3	1244.8
	53	-1659.0	-5771.0	152.2	-280.5	-30.0	-2841.3
	49	1230.2	-4381.7	119.0	-261.9	6.9	954.0
	17	317.4	5540.2	-133.6	0.8	13.0	-2633.8
1	53	18730.6	18413.8	-5564.5	-10207.2	664.1	9116.6
	86	-4561.4	-12220.2	5477.4	-965.9	539.8	-2001.3
	82	3848.5	-20510.3	5460.5	-1003.1	-566.0	9602.3
	49	-18017.8	14316.7	-5373.3	-10246.4	-457.6	-5362.6
2	53	36766.3	22197.6	-10693.0	-17766.2	1075.4	9525.7
	86	-3802.6	-16297.0	10454.4	-3688.7	876.9	-1596.8
	82	2995.8	-24278.3	10512.1	-3714.5	-813.0	8530.2
	49	-35959.5	18377.8	-10273.5	-17811.9	-645.6	-5903.0
3	53	12521.0	12444.0	-3717.4	-6810.4	442.5	6124.6
	86	-3016.3	-8314.0	3659.4	-654.1	359.5	-1379.7
	82	2540.1	-13841.2	3647.8	-678.8	-377.1	6446.8
	49	-12044.9	9711.3	-3589.7	-6836.4	-304.8	-3621.7
4	53	24544.8	14966.4	-7136.4	-11849.8	716.7	6397.3
	86	-2510.5	-11031.9	6977.5	-2469.3	584.2	-1110.1
	82	1971.7	-16353.2	7015.5	-2486.4	-541.8	5732.1
	49	-24006.0	12418.7	-6856.6	-11880.0	-430.2	-3982.0

Comb.	Nodo	F _x [kg]	F _y [kg]	F _z [kg]	M _x [kgm]	M _y [kgm]	M _z [kgm]
5	53	-4082.2	6616.5	1064.0	557.9	23.1	4311.0
	86	-2826.5	-3157.6	-988.0	1564.1	12.7	-1342.1
	82	2422.8	-7677.9	-1064.0	1539.1	-103.4	5669.2
	49	4485.9	4219.0	988.0	545.6	-89.7	-2308.1
6	53	10554.8	10330.0	-3114.5	-5689.0	368.1	5037.0
	86	-2454.2	-6850.9	3069.1	-566.6	296.3	-1126.3
	82	1978.2	-11474.7	3052.5	-585.1	-316.6	5283.0
	49	-10078.7	7995.6	-3007.1	-5708.6	-253.9	-2970.4
7	53	-3897.4	6352.8	1019.3	533.3	22.1	4129.8
	86	-2704.1	-3018.3	-945.5	1499.0	11.5	-1285.1
	82	2297.6	-7368.9	-1020.2	1475.4	-99.9	5430.6
	49	4303.8	4034.3	946.4	521.9	-86.3	-2208.3
1	82	1295.7	441.1	-805.1	-853.6	6.2	-1411.4
	106	4026.1	-115.6	796.2	-172.1	50.7	856.5
	108	-3993.8	108.5	840.5	-165.9	4.6	-782.3
	86	-1328.0	1667.6	-831.6	-854.4	-43.1	-123.4
2	82	-37.7	575.0	-749.1	-819.1	5.6	-1154.4
	106	3710.9	-115.7	731.6	-138.1	59.1	689.2
	108	-3722.9	100.6	781.7	-123.4	14.9	-579.9
	86	49.7	1541.7	-764.2	-810.9	-43.4	-193.7
3	82	859.6	402.0	-533.7	-566.2	4.0	-902.6
	106	2668.8	-77.1	527.8	-113.7	33.7	566.1
	108	-2647.3	72.4	557.2	-109.5	3.1	-516.5
	86	-881.1	1219.4	-551.3	-566.7	-28.7	-120.5
4	82	-29.4	491.3	-496.3	-543.3	3.6	-731.3
	106	2458.7	-77.2	484.7	-91.1	39.3	454.5
	108	-2466.7	67.1	518.0	-81.2	10.0	-381.6
	86	37.4	1135.4	-506.4	-537.7	-28.9	-167.3
5	82	1748.8	396.1	-458.8	-468.5	2.1	-837.0
	106	2330.1	-58.9	462.7	-115.3	19.4	573.1
	108	-2273.7	63.0	479.8	-118.7	-6.0	-561.5
	86	-1805.2	1216.5	-483.7	-475.6	-23.7	-79.0
6	82	759.4	472.6	-447.9	-476.0	2.3	-711.3
	106	2246.8	-64.0	444.4	-95.9	28.0	477.6
	108	-2224.7	61.1	468.2	-92.5	2.3	-436.0
	86	-781.5	1146.8	-464.6	-476.3	-25.3	-129.6
7	82	1691.4	412.6	-441.8	-451.4	1.8	-795.4
	106	2245.8	-56.6	445.9	-111.1	18.7	552.4
	108	-2190.5	60.8	462.3	-114.4	-5.8	-541.2
	86	-1746.7	1199.8	-466.3	-458.3	-23.1	-82.7
1	18	175246.5	16120.5	24327.4	28578.9	-388.7	-50499.6
	50	128845.3	-18965.0	-24445.3	21365.7	-362.1	46077.4
	54	-128763.2	-15583.3	-24213.1	21299.0	517.0	-49468.1
	22	-175328.6	18427.8	24330.9	28506.0	477.1	48185.0
2	18	292089.0	20088.6	40718.8	47613.6	-625.5	-86148.3
	50	216506.2	-22753.1	-40929.1	36001.7	-569.0	80795.6
	54	-216392.1	-19547.7	-40524.5	35876.1	856.5	-83930.1
	22	-292203.0	22212.2	40734.8	47488.5	772.3	84014.6
3	18	116851.7	10913.7	16222.4	19056.3	-259.1	-33616.5
	50	85922.8	-12811.5	-16301.0	14248.5	-241.3	30668.0
	54	-85866.3	-10555.4	-16146.2	14204.1	344.7	-32928.4
	22	-116908.2	12453.2	16224.8	19007.8	318.0	32073.8
4	18	194746.7	13559.1	27149.9	31746.1	-416.9	-57382.3
	50	144363.4	-15336.9	-27290.2	24005.9	-379.2	53813.5
	54	-144285.7	-13198.3	-27020.4	23922.2	571.0	-55903.1
	22	-194824.4	14976.2	27160.7	31662.7	514.8	55960.2
5	18	73.5	5453.3	-123.2	23.9	-16.0	1576.2
	50	-1317.0	-6959.2	131.5	-290.3	-24.8	-3110.0
	54	1257.6	-5189.3	119.6	-276.8	5.1	1202.0
	22	-14.0	6695.2	-127.9	28.5	18.5	-2899.7
6	18	97424.6	9169.2	13523.7	15885.5	-215.0	-28006.0
	50	71618.3	-10682.0	-13591.0	11879.7	-199.8	25564.1
	54	-71628.1	-8877.3	-13460.8	11844.4	288.0	-27425.4
	22	-97414.8	10390.0	13528.0	15846.3	265.7	26723.6
7	18	81.7	5260.8	-117.3	24.2	-15.2	1517.3
	50	-1262.7	-6692.9	124.9	-277.8	-23.5	-2988.6

Comb.	Nodo	F _x [kg]	F _y [kg]	F _z [kg]	M _x [kgm]	M _y [kgm]	M _z [kgm]
	54	1192.4	-5008.4	113.7	-264.4	5.1	1159.2
	22	-11.5	6440.5	-121.3	28.9	17.9	-2789.2
1	50	18294.4	18634.2	-5461.4	-10107.2	603.1	9205.7
	83	-4551.2	-13641.9	5357.3	-916.4	587.1	-2331.4
	87	4781.1	-20569.4	5527.5	-1071.2	-504.1	9769.1
	54	-18524.3	15577.1	-5423.4	-10219.1	-471.1	-5863.4
2	50	36318.5	22340.8	-10505.4	-17627.2	947.4	9488.9
	83	-3678.7	-17890.6	10300.2	-3605.3	908.7	-1901.6
	87	3978.6	-24167.2	10579.3	-3790.2	-751.4	8677.4
	54	-36618.4	19717.0	-10374.2	-17780.4	-681.1	-6460.5
3	50	12229.2	12589.3	-3648.6	-6743.6	401.9	6183.6
	83	-3008.6	-9262.1	3578.9	-621.0	391.3	-1599.3
	87	3163.0	-13879.6	3692.8	-724.3	-335.7	6558.1
	54	-12383.6	10552.4	-3623.2	-6818.3	-313.7	-3955.5
4	50	24245.2	15060.3	-7011.2	-11756.9	631.4	6372.4
	83	-2426.9	-12094.5	6874.2	-2413.6	605.7	-1312.7
	87	2628.0	-16278.1	7060.7	-2536.9	-500.5	5830.4
	54	-24446.3	13312.3	-6923.7	-11859.2	-453.7	-4353.6
5	50	-4326.8	6887.3	1052.0	583.1	42.2	4511.3
	83	-2973.6	-3875.6	-1021.2	1557.8	47.3	-1570.3
	87	2957.5	-7950.9	-1030.8	1504.3	-72.7	5823.2
	54	4342.9	4939.2	1000.0	561.3	-80.3	-2578.2
6	50	10290.7	10523.2	-3057.2	-5630.5	333.3	5128.2
	83	-2495.3	-7728.1	3003.9	-543.1	321.5	-1337.9
	87	2565.2	-11588.1	3089.1	-627.0	-283.1	5414.3
	54	-10360.6	8793.1	-3035.8	-5689.9	-261.7	-3289.8
7	50	-4137.3	6629.8	1007.7	558.2	40.2	4332.0
	83	-2856.5	-3728.8	-977.0	1492.0	44.4	-1511.1
	87	2827.5	-7650.1	-988.5	1441.1	-70.7	5587.5
	54	4166.4	4749.1	957.8	537.9	-77.3	-2477.6
1	83	649.5	1699.2	703.7	747.1	-24.0	315.3
	107	3394.5	78.2	-713.6	138.6	-14.1	640.3
	109	-3384.2	-92.1	-685.7	135.0	38.5	-666.8
	87	-659.8	411.9	695.6	728.4	20.0	1228.9
2	83	-723.2	1621.2	640.6	709.1	-19.8	406.9
	107	3107.6	65.6	-659.4	102.8	-10.1	453.0
	109	-3074.5	-84.0	-628.2	101.7	44.4	-491.5
	87	690.2	494.5	647.0	695.8	24.4	990.7
3	83	428.7	1240.4	466.0	495.2	-15.9	248.3
	107	2247.8	52.1	-472.7	91.4	-9.4	422.0
	109	-2240.8	-61.3	-454.1	89.0	25.6	-439.5
	87	-435.7	382.1	460.7	482.8	13.3	781.3
4	83	-486.4	1188.4	424.0	469.9	-13.1	309.4
	107	2056.5	43.7	-436.5	67.5	-6.7	297.1
	109	-2034.3	-56.0	-415.7	66.8	29.5	-322.6
	87	464.2	437.1	428.3	461.0	16.2	622.5
5	83	1354.5	1197.2	395.4	397.4	-17.4	189.5
	107	1882.4	49.8	-391.6	94.2	-9.9	449.5
	109	-1903.8	-55.4	-382.0	90.7	15.3	-457.1
	87	-1333.1	421.7	378.2	384.7	4.2	700.5
6	83	333.1	1165.4	379.5	403.0	-14.6	256.9
	107	1822.2	43.4	-383.6	73.4	-7.5	337.2
	109	-1823.0	-52.5	-369.6	71.6	21.4	-354.2
	87	-332.3	457.0	373.7	393.4	9.2	589.4
7	83	1296.8	1181.5	378.1	379.9	-17.0	193.8
	107	1798.2	47.8	-374.2	89.9	-9.4	428.9
	109	-1820.3	-53.6	-365.3	86.6	14.7	-436.7
	87	-1274.7	437.5	361.3	367.9	3.6	659.3
1	19	114904.0	-3764.6	-14778.6	-16408.6	133.8	-39056.2
	51	88594.9	4551.3	14747.1	-13865.8	133.8	38754.6
	55	-87004.4	5890.2	18564.4	-13795.3	-81.6	-38883.1
	23	-116494.5	-2549.9	-11614.1	-16339.2	-108.1	39281.7
2	19	191314.6	-8434.3	-25093.8	-27870.5	220.5	-65884.9
	51	145759.2	9190.6	25063.0	-23551.3	214.8	64884.3
	55	-144114.1	10541.7	28886.9	-23487.2	-164.6	-64998.6

Comb. Nudo		F _x [kg]	F _y [kg]	F _z [kg]	M _x [kgm]	M _y [kgm]	M _z [kgm]
	23	-192959.6	-7171.0	-21937.4	-27808.6	-194.3	66132.5
3	19	76648.4	-2069.7	-9857.3	-10943.7	89.1	-25876.6
	51	59094.3	2805.0	9836.4	-9249.3	89.1	25745.5
	55	-58032.8	3698.5	12381.2	-9202.3	-54.3	-25831.0
	23	-77710.0	-1259.2	-7747.7	-10897.5	-72.0	26027.3
4	19	127588.8	-5182.8	-16734.1	-18585.0	146.9	-43762.4
	51	97203.8	5897.8	16713.6	-15706.3	143.1	43165.3
	55	-96105.9	6799.5	19262.9	-15663.6	-109.7	-43241.4
	23	-128686.7	-4339.9	-14629.9	-18543.8	-129.5	43927.8
5	19	235.2	2588.4	478.5	534.7	1.9	963.1
	51	1800.1	-1727.0	-497.6	460.4	7.0	-341.5
	55	-861.4	-949.3	2038.8	511.9	25.9	306.3
	23	-1173.9	3262.5	2592.8	586.7	12.6	-802.1
6	19	63911.4	-1299.8	-8123.1	-9021.4	74.3	-21397.2
	51	49472.6	2109.7	8103.9	-7617.5	74.8	21421.6
	55	-48469.8	2926.0	10646.4	-7570.8	-42.5	-21462.6
	23	-64914.3	-561.2	-6014.6	-8975.2	-58.8	21567.7
7	19	234.8	2586.9	481.2	536.8	1.8	964.5
	51	1783.4	-1713.1	-500.0	463.5	6.8	-336.0
	55	-853.5	-948.8	2036.3	514.8	25.6	309.1
	23	-1164.7	3249.6	2595.0	588.6	12.4	-799.4
1	51	17690.9	-5461.4	4637.6	6232.5	-145.0	-1877.0
	84	821.0	7367.7	-4651.6	3305.4	-152.3	4243.4
	88	-239.0	7287.8	-3093.2	3280.6	148.9	-3490.6
	55	-18272.9	-5067.2	5413.4	6210.3	182.8	1928.0
2	51	26704.7	-10200.5	7902.8	10661.2	-258.5	-2513.4
	84	-1092.4	12054.8	-7918.9	5572.4	-258.7	5688.4
	88	1681.6	12069.3	-6351.2	5538.4	260.6	-4995.4
	55	-27294.0	-9796.6	8673.5	10633.5	296.4	2510.0
3	51	11836.1	-3412.8	3101.8	4163.8	-96.6	-1177.2
	84	561.7	4894.3	-3110.9	2215.2	-101.4	2826.7
	88	-172.6	4842.3	-2072.3	2198.8	99.1	-2325.1
	55	-12225.2	-3149.1	3619.0	4149.1	121.7	1210.8
4	51	17845.4	-6572.2	5278.6	7116.2	-172.3	-1601.4
	84	-713.9	8019.0	-5289.2	3726.6	-172.4	3790.1
	88	1107.8	8029.9	-4244.2	3704.0	173.5	-3328.3
	55	-18239.2	-6302.1	5792.3	7097.9	197.5	1598.8
5	51	2606.3	1268.9	-213.5	-304.7	17.3	-498.0
	84	2233.6	234.6	201.6	-113.0	9.1	1231.2
	88	-1913.1	146.5	1240.3	-121.4	-6.7	-811.8
	55	-2926.8	1524.6	309.1	-315.5	9.7	528.0
6	51	10177.0	-2664.6	2521.2	3396.8	-77.4	-1040.0
	84	705.3	4133.0	-2533.5	1793.0	-80.8	2476.7
	88	-362.0	4107.6	-1489.6	1777.2	84.7	-2068.1
	55	-10520.4	-2401.3	3039.4	3381.9	104.0	1040.6
7	51	2578.4	1261.5	-220.0	-309.9	17.3	-492.4
	84	2202.4	238.2	207.5	-120.9	9.6	1211.8
	88	-1889.9	157.6	1247.3	-129.5	-6.0	-810.6
	55	-2891.0	1517.4	302.7	-320.8	9.9	514.9
1	20	115408.1	-3329.7	15382.3	17125.8	-91.2	-39036.6
	52	86330.5	5848.0	-15502.2	14495.5	-50.6	38837.9
	56	-86696.8	5328.6	-15359.1	14503.7	255.1	-38572.3
	24	-115041.9	-3727.0	15479.0	17140.7	183.2	39153.8
2	20	191815.5	-8121.9	25570.3	28467.0	-167.2	-65923.8
	52	143532.4	10555.9	-25720.9	24061.7	-112.1	64968.9
	56	-143835.9	10128.2	-25525.9	24056.8	368.4	-64757.0
	24	-191512.0	-8442.4	25676.4	28470.3	283.3	66015.3
3	20	76984.5	-1780.6	10259.7	11421.8	-60.7	-25864.2
	52	57584.8	3669.8	-10339.7	9669.0	-33.6	25801.4
	56	-57827.7	3324.6	-10244.3	9674.5	170.1	-25624.2
	24	-76741.6	-2044.7	10324.2	11431.7	122.1	25942.7
4	20	127922.7	-4975.4	17051.7	18982.6	-111.4	-43789.1
	52	95719.4	6808.5	-17152.2	16046.5	-74.6	43222.0
	56	-95920.4	6524.4	-17022.1	16043.3	245.6	-43080.7
	24	-127721.7	-5188.3	17122.5	18984.8	188.9	43850.4
5	20	524.4	2931.8	54.9	65.9	13.5	1001.5

Comb. Nudo		F _x [kg]	F _y [kg]	F _z [kg]	M _x [kgm]	M _y [kgm]	M _z [kgm]
	52	303.6	-1021.6	-100.5	80.3	24.2	-348.0
	56	-577.0	-1383.5	-59.4	96.7	54.0	522.6
	24	-251.1	2642.5	105.1	85.0	21.1	-931.2
6	20	64211.6	-1039.8	8549.5	9520.9	-49.4	-21398.7
	52	47993.6	2897.2	-8621.7	8058.3	-26.0	21432.9
	56	-48223.5	2591.1	-8536.7	8064.4	149.2	-21287.6
	24	-63981.8	-1279.3	8608.9	9531.1	104.8	21456.8
7	20	517.6	2921.5	52.8	64.0	13.3	998.7
	52	293.4	-1019.5	-97.9	77.4	23.7	-350.3
	56	-562.6	-1371.7	-57.1	93.5	53.7	517.7
	24	-248.4	2638.9	102.3	82.8	21.0	-932.8
1	52	15380.1	-5696.8	-5234.6	-6869.5	196.3	-1233.5
	85	-1951.0	7580.0	5207.9	-3766.1	118.7	2686.6
	89	1609.6	8052.4	5187.6	-3776.8	-179.4	-3455.3
	56	-15038.8	-5815.8	-5161.0	-6898.4	-69.8	865.5
2	52	24457.6	-10472.8	-8486.0	-11264.1	326.9	-1905.9
	85	-3799.1	12304.7	8437.3	-6001.5	231.6	4217.5
	89	3533.1	12846.6	8439.1	-6023.6	-282.1	-4949.8
	56	-24191.6	-10558.6	-8390.5	-11307.5	-156.1	15288.8
3	52	10295.7	-3570.1	-3499.7	-4588.4	130.9	-748.4
	85	-1286.3	5036.0	3481.8	-2522.3	79.1	1789.0
	89	1059.8	5351.9	3468.4	-2529.6	-119.4	-2301.5
	56	-10069.2	-3648.6	-3450.5	-4607.7	-46.3	502.9
4	52	16347.3	-6754.1	-5667.3	-7518.0	217.9	-1196.7
	85	-2518.4	8185.8	5634.7	-4012.6	154.3	2809.6
	89	2342.1	8548.0	5636.1	-4027.4	-187.8	-3297.8
	56	-16171.0	-6810.5	-5603.5	-7547.1	-103.8	945.1
5	52	951.0	1159.1	-198.2	-153.1	1.6	26.4
	85	371.5	399.6	197.9	-224.3	-27.5	241.9
	89	-631.4	579.3	172.0	-221.9	-12.5	-662.6
	56	-691.2	1031.2	-171.6	-158.9	39.3	-202.3
6	52	8588.9	-2808.1	-2921.4	-3826.3	110.0	-562.0
	85	-1116.4	4312.6	2904.0	-2104.4	64.8	1522.0
	89	907.8	4568.5	2893.9	-2110.9	-99.2	-1947.6
	56	-8380.3	-2903.9	-2876.4	-3844.0	-32.4	361.9
7	52	916.6	1153.1	-191.8	-147.8	1.7	39.7
	85	347.0	411.0	190.8	-216.3	-26.7	239.8
	89	-601.4	582.0	166.2	-214.1	-12.0	-644.0
	56	-662.1	1023.0	-165.3	-153.7	39.2	-207.8
1	25	175101.5	14941.9	24164.2	28295.9	-474.7	-50715.5
	57	128452.5	-17488.8	-23996.5	21103.0	-559.2	46426.5
	53	-128499.7	-14959.4	-24732.0	21675.1	304.9	-49610.8
	21	-175054.3	17506.3	24564.3	28819.4	382.6	48543.2
2	25	291697.8	18669.2	40550.1	47225.1	-806.0	-86216.9
	57	216342.6	-21314.8	-40181.1	35623.1	-967.4	81216.8
	53	-215865.7	-19003.1	-41439.2	36467.1	432.0	-83961.4
	21	-292174.7	21648.8	41070.2	48006.3	579.5	84475.5
3	25	116756.2	10129.0	16113.7	18867.7	-316.5	-33760.6
	57	85659.5	-11825.9	-16001.8	14073.4	-372.8	30900.8
	53	-85691.8	-10140.8	-16492.3	14455.0	203.1	-33023.4
	21	-116723.9	11837.7	16380.4	19216.8	255.0	32312.4
4	25	194487.1	12613.9	27037.6	31487.1	-537.3	-57428.2
	57	144252.9	-14376.6	-26791.5	23753.5	-645.0	54094.3
	53	-143935.8	-12836.7	-27630.4	24316.2	287.9	-55923.8
	21	-194804.2	14599.4	27384.4	32008.0	386.3	56267.3
5	25	202.6	4891.5	-210.0	-50.7	12.5	1290.0
	57	-1792.8	-5948.3	138.9	-339.6	29.6	-2946.4
	53	1192.0	-4675.0	162.1	-250.7	59.8	998.8
	21	398.2	5731.7	-91.0	24.0	45.0	-2756.5
6	25	97354.5	8411.7	13427.8	15720.6	-262.9	-28170.9
	57	71328.9	-9699.2	-13336.2	11731.1	-309.0	25786.9
	53	-71480.8	-8434.7	-13746.1	12052.2	170.2	-27536.6
	21	-97202.6	9722.2	13654.5	16014.7	212.6	26950.3
7	25	208.2	4696.7	-202.0	-49.3	12.2	1231.9
	57	-1736.4	-5683.5	133.2	-325.8	28.8	-2824.8
	53	1129.7	-4491.5	155.3	-239.6	57.7	956.4

Comb. Nodo		F _x [kg]	F _y [kg]	F _z [kg]	M _x [kgm]	M _y [kgm]	M _z [kgm]
	21	398.5	5478.4	-86.5	23.3	43.3	-2645.1
1	57	18797.2	18675.7	-5218.0	-10158.5	372.8	8836.9
	90	-4899.1	-12534.8	5544.7	-873.0	382.1	-2103.7
	86	3889.0	-20075.5	5321.8	-1032.6	-713.2	9519.9
	53	-17787.2	13934.6	-5648.5	-10212.2	-716.5	-5641.5
2	57	36858.4	22552.5	-10098.5	-17723.3	523.5	9075.7
	90	-4192.0	-16799.7	10620.6	-3593.2	598.7	-1687.5
	86	3032.6	-23621.6	10257.8	-3736.9	-1069.2	8444.9
	53	-35699.0	17868.7	-10779.8	-17747.2	-1131.1	-6329.2
3	57	12565.1	12617.8	-3486.2	-6777.9	248.2	5937.9
	90	-3241.8	-8523.3	3704.2	-592.1	254.3	-1448.1
	86	2567.7	-13551.0	3555.4	-698.6	-475.3	6391.6
	53	-11890.9	9456.6	-3773.5	-6813.7	-477.5	-3807.7
4	57	24605.9	15202.3	-6739.8	-11821.1	348.6	6097.1
	90	-2770.5	-11366.5	7088.1	-2405.5	398.7	-1170.7
	86	1996.7	-15915.0	6846.1	-2501.5	-712.7	5675.0
	53	-23832.1	12079.3	-7194.4	-11837.1	-753.9	-4266.2
5	57	-4057.2	6705.6	1056.1	588.7	70.9	4306.8
	90	-3000.3	-3153.7	-1024.6	1611.0	17.3	-1409.2
	86	2442.4	-7645.9	-1056.6	1523.2	-102.0	5633.7
	53	4615.1	4094.0	1025.1	543.6	-51.3	-2339.7
6	57	10599.2	10494.3	-2918.3	-5661.0	203.7	4887.6
	90	-2671.2	-7010.7	3110.1	-514.0	203.4	-1187.2
	86	1997.9	-11247.7	2967.9	-598.1	-403.4	5240.5
	53	-9925.9	7764.1	-3159.7	-5686.9	-400.0	-3126.7
7	57	-3871.5	6442.9	1012.4	563.1	67.4	4127.2
	90	-2877.9	-3011.1	-979.8	1544.3	14.7	-1350.5
	86	2315.7	-7341.4	-1014.9	1461.0	-99.7	5397.2
	53	4433.7	3909.6	982.2	520.7	-49.8	-2239.0
1	86	1143.9	251.2	-738.3	-819.0	-28.9	-1455.9
	108	3998.3	-108.5	819.0	-159.3	-4.6	783.7
	110	-3856.1	119.0	780.3	-166.6	-55.0	-813.2
	90	-1286.1	1835.8	-861.0	-854.3	-78.2	-208.0
2	86	-253.0	227.6	-668.7	-778.1	-34.4	-1251.1
	108	3726.3	-100.6	765.1	-117.7	-14.9	581.1
	110	-3522.5	112.6	714.1	-134.2	-66.1	-647.9
	90	49.2	1857.8	-810.5	-819.1	-83.7	-330.8
3	86	758.1	274.9	-489.0	-543.1	-19.4	-932.5
	108	2650.3	-72.4	542.9	-105.2	-3.1	517.4
	110	-2555.3	79.3	517.1	-110.1	-36.6	-537.1
	90	-853.1	1331.5	-570.9	-566.7	-52.1	-176.7
4	86	-173.1	259.2	-442.6	-515.8	-23.0	-795.9
	108	2469.0	-67.1	506.9	-77.4	-10.0	382.4
	110	-2332.9	75.1	473.0	-88.5	-44.0	-426.9
	90	37.0	1346.2	-537.3	-543.2	-55.8	-258.6
5	86	1709.0	421.7	-432.6	-454.9	-14.0	-817.0
	108	2276.8	-63.0	465.1	-114.6	6.0	562.3
	110	-2242.9	68.8	453.5	-111.1	-19.5	-544.9
	90	-1742.9	1185.9	-486.0	-467.6	-39.5	-83.2
6	86	667.2	368.3	-409.1	-456.2	-18.5	-734.1
	108	2227.1	-61.1	456.2	-88.7	-2.3	436.8
	110	-2142.0	68.1	434.0	-92.7	-30.4	-450.4
	90	-752.3	1238.1	-481.1	-475.1	-46.1	-177.5
7	86	1651.4	437.6	-416.3	-438.3	-14.0	-775.7
	108	2193.5	-60.8	448.1	-110.5	5.8	542.0
	110	-2159.5	66.6	436.8	-107.0	-18.8	-524.6
	90	-1685.4	1170.0	-468.6	-450.3	-38.6	-87.0
1	22	174958.0	16020.4	24522.0	28700.0	-457.7	-50293.6
	54	128852.2	-18986.5	-24400.3	21468.1	-512.8	46123.4
	58	-128334.8	-15710.6	-24847.3	21795.4	325.6	-49207.9
	26	-175475.3	18676.7	24725.6	28994.1	392.7	48293.3
2	22	291599.3	19903.2	41100.3	47850.5	-761.5	-85809.7
	54	216639.6	-22913.2	-40838.1	36203.9	-859.0	80856.9
	58	-215702.1	-19778.4	-41597.1	36666.0	474.4	-83543.7
	26	-292536.8	22788.3	41334.9	48271.9	602.8	84181.8

Comb.	Nodo	F _x [kg]	F _y [kg]	F _z [kg]	M _x [kgm]	M _y [kgm]	M _z [kgm]
3	22	116659.7	10847.8	16352.3	19137.2	-305.1	-33478.8
	54	85926.8	-12825.9	-16271.1	14316.9	-341.9	30698.2
	58	-85581.0	-10641.1	-16569.1	14535.1	216.9	-32754.5
	26	-117005.5	12619.3	16487.9	19333.2	261.7	32145.5
4	22	194420.6	13436.3	27404.5	31904.2	-507.7	-57156.2
	54	144451.7	-15443.8	-27229.5	24140.8	-572.7	53853.9
	58	-143825.8	-13353.0	-27735.7	24448.8	316.1	-55645.0
	26	-195046.5	15360.4	27560.8	32185.0	401.7	56071.2
5	22	88.6	5468.3	-170.1	-6.5	-0.1	1573.3
	54	-1449.4	-6826.2	121.7	-316.4	4.7	-3095.9
	58	1276.7	-5167.0	132.9	-248.8	54.9	1242.6
	26	84.0	6524.9	-84.5	49.6	40.8	-2887.3
6	22	97270.5	9114.4	13629.8	15950.4	-253.6	-27896.2
	54	71594.1	-10666.9	-13564.1	11935.4	-283.9	25591.1
	58	-71389.6	-8942.5	-13812.2	12119.6	182.5	-27277.7
	26	-97474.9	10495.0	13746.5	16116.0	218.8	26785.2
7	22	97.7	5275.2	-162.9	-5.6	0.0	1513.4
	54	-1396.3	-6558.7	115.9	-303.2	4.7	-2974.7
	58	1211.0	-4985.6	126.8	-237.6	53.2	1198.9
	26	87.6	6269.1	-79.8	48.9	39.4	-2776.9
1	54	18401.9	18992.6	-5401.4	-10223.0	466.8	9174.8
	87	-4842.7	-13665.2	5523.8	-1009.4	511.8	-2466.3
	91	4527.9	-20529.8	5520.9	-1136.2	-589.4	9748.8
	58	-18087.0	15202.4	-5643.3	-10273.2	-642.8	-6064.6
2	54	36309.4	22743.9	-10365.5	-17829.3	683.6	9477.5
	87	-4055.1	-17962.1	10601.9	-3757.5	772.7	-2068.2
	91	3782.5	-24028.0	10511.6	-3853.3	-914.8	8694.6
	58	-36036.8	19246.2	-10748.0	-17842.5	-1031.2	-6755.1
3	54	12300.8	12828.9	-3608.6	-6821.0	310.9	6163.5
	87	-3203.5	-9277.8	3690.2	-683.1	341.0	-1689.8
	91	2994.2	-13854.0	3688.4	-767.6	-392.6	6544.9
	58	-12091.5	10302.8	-3770.0	-6854.4	-428.3	-4090.1
4	54	24239.2	15329.8	-6918.0	-11891.8	455.4	6365.3
	87	-2678.5	-12142.4	7075.6	-2515.2	514.9	-1424.4
	91	2497.3	-16186.1	7015.5	-2579.0	-609.6	5842.1
	58	-24058.0	12998.7	-7173.1	-11900.6	-687.2	-4550.5
5	54	-4147.0	7076.3	1018.2	587.8	70.5	4474.8
	87	-3074.5	-3836.8	-1037.7	1551.2	54.9	-1620.8
	91	2738.0	-8030.9	-984.7	1468.5	-56.1	5777.7
	58	4483.6	4791.4	1004.2	538.4	-29.0	-2609.6
6	54	10375.7	10751.1	-3026.1	-5696.6	257.6	5107.1
	87	-2669.5	-7731.3	3098.1	-598.1	279.2	-1417.2
	91	2391.5	-11583.5	3087.1	-663.9	-330.3	5398.6
	58	-10097.7	8563.7	-3159.1	-5721.0	-355.6	-3401.6
7	54	-3958.7	6818.0	974.7	562.3	67.5	4296.0
	87	-2956.2	-3689.2	-992.5	1484.9	51.6	-1560.6
	91	2608.7	-7730.9	-943.7	1406.5	-54.7	5542.7
	58	4306.2	4602.0	961.5	515.6	-27.6	-2507.7
1	87	799.7	1839.4	717.7	748.8	-34.5	328.5
	109	3385.3	92.1	-680.4	134.2	-38.5	667.0
	111	-3546.3	-134.1	-709.1	131.7	-10.3	-639.3
	91	-638.7	307.0	671.7	722.1	5.9	1264.4
2	87	-537.5	1824.2	655.6	711.0	-32.4	433.3
	109	3077.5	84.0	-613.3	96.8	-44.4	492.5
	111	-3272.8	-125.9	-650.2	89.9	-18.5	-443.0
	91	732.7	322.0	607.9	681.7	7.7	1047.0
3	87	528.8	1334.3	475.3	496.3	-22.9	257.4
	109	2241.5	61.3	-450.5	88.4	-25.6	439.7
	111	-2348.9	-89.4	-469.5	86.8	-6.9	-421.2
	91	-421.4	312.5	444.7	478.5	3.9	804.6
4	87	-362.7	1324.1	433.9	471.1	-21.5	327.2
	109	2036.3	56.0	-405.8	63.5	-29.5	323.3
	111	-2166.5	-83.9	-430.3	58.9	-12.4	-290.3
	91	492.8	322.5	402.1	451.5	5.1	659.6
5	87	1424.6	1228.7	404.4	400.2	-20.9	184.4
	109	1902.9	55.4	-386.2	93.7	-15.3	456.5

Comb.	Nodo	F _x [kg]	F _y [kg]	F _z [kg]	M _x [kgm]	M _y [kgm]	M _z [kgm]
	111	-1981.1	-81.5	-397.2	95.9	-0.7	-460.5
	91	-1346.4	416.0	379.0	389.5	-0.9	705.7
6	87	431.3	1249.2	389.1	405.4	-20.3	263.0
	109	1823.7	52.5	-366.3	71.3	-21.4	354.3
	111	-1929.0	-79.0	-384.1	70.0	-7.0	-340.0
	91	-326.0	396.0	361.3	391.3	1.4	611.2
7	87	1367.7	1213.2	387.2	382.9	-20.4	188.5
	109	1819.5	53.6	-369.2	89.5	-14.7	436.1
	111	-1898.3	-79.4	-380.3	91.7	-0.9	-440.3
	91	-1288.8	431.3	362.3	372.8	-1.3	664.8
1	23	115056.1	-3638.8	-14599.0	-16267.1	101.4	-39104.0
	55	88498.1	4691.8	14674.8	-13713.1	83.2	38844.9
	61	-87198.2	5971.1	18295.6	-13586.6	-208.8	-38890.5
	29	-116356.0	-2900.7	-11452.6	-16142.7	-163.4	39317.4
2	23	191659.3	-8216.7	-24822.8	-27640.7	184.9	-66015.3
	55	145505.8	9537.6	24913.3	-23308.0	164.3	65034.3
	61	-144533.2	10668.8	28433.5	-23098.3	-313.8	-65041.8
	29	-192631.9	-7866.3	-21605.2	-27434.1	-259.4	66182.8
3	23	76750.1	-1986.2	-9737.7	-10849.4	67.6	-25909.0
	55	59029.5	2899.2	9788.2	-9147.6	55.5	25805.9
	61	-58162.3	3752.6	12201.9	-9063.1	-139.2	-25836.3
	29	-77617.3	-1493.9	-7639.9	-10766.4	-108.9	26051.4
4	23	127819.0	-5038.1	-16553.5	-18431.8	123.2	-43849.9
	55	97034.6	6129.8	16613.8	-15544.1	109.5	43265.5
	61	-96385.7	6884.4	18960.5	-15404.3	-209.2	-43270.5
	29	-128467.9	-4804.3	-14408.3	-18294.0	-172.9	43961.7
5	23	142.4	2570.1	506.3	541.2	-15.6	1007.9
	55	1893.1	-1838.5	-470.4	471.4	-25.7	-344.8
	61	-764.0	-932.2	2044.1	472.7	-34.5	330.5
	29	-1271.4	3372.4	2532.5	541.7	-13.2	-793.9
6	23	63979.7	-1238.9	-8019.0	-8941.5	53.9	-21419.7
	55	49434.7	2170.0	8067.2	-7530.9	41.9	21469.1
	61	-48560.6	2979.0	10497.8	-7460.3	-121.9	-21466.5
	29	-64853.8	-738.4	-5933.5	-8872.4	-93.1	21588.4
7	23	141.8	2567.3	508.9	543.4	-15.5	1008.7
	55	1876.4	-1824.5	-473.0	474.6	-25.7	-339.8
	61	-755.9	-930.6	2041.5	475.8	-34.6	332.5
	29	-1262.4	3359.5	2535.0	543.8	-13.2	-791.3
1	55	17733.9	-5514.8	4638.2	6168.8	-184.5	-1881.5
	88	790.0	7356.2	-4571.0	3240.2	-165.2	4186.6
	94	-167.5	7313.9	-3120.3	3290.5	114.8	-3562.8
	61	-18356.4	-5032.0	5359.4	6219.6	68.4	1988.6
2	55	26875.7	-10282.7	7891.6	10576.8	-296.1	-2520.6
	88	-1130.2	12150.2	-7816.0	5484.7	-273.0	5648.9
	94	1698.4	12045.2	-6352.1	5521.2	219.5	-5123.3
	61	-27443.8	-9789.4	8582.7	10613.8	162.4	2679.0
3	55	11864.9	-3448.6	3102.2	4121.4	-122.9	-1180.2
	88	540.7	4887.2	-3057.2	2171.8	-110.0	2789.1
	94	-125.0	4859.3	-2090.2	2205.3	76.3	-2373.0
	61	-12280.6	-3126.2	3582.8	4155.1	45.4	1251.7
4	55	17959.5	-6627.2	5271.1	7060.0	-197.3	-1606.2
	88	-739.4	8083.2	-5220.6	3668.2	-181.9	3764.0
	94	1118.9	8013.6	-4244.7	3692.4	146.1	-3413.4
	61	-18338.9	-6297.8	5731.7	7084.6	108.1	1712.0
5	55	2513.0	1263.2	-200.4	-324.3	-9.9	-499.6
	88	2223.5	127.9	230.2	-131.0	2.4	1186.1
	94	-1816.0	210.7	1197.5	-89.0	-21.5	-799.2
	61	-2920.4	1570.0	310.1	-281.3	-44.8	465.6
6	55	10188.8	-2694.7	2524.3	3359.3	-103.3	-1043.6
	88	688.4	4113.4	-2485.6	1755.4	-88.7	2443.3
	94	-309.1	4130.8	-1511.0	1787.3	63.8	-2103.3
	61	-10568.1	-2377.7	3009.8	3392.1	32.5	1067.2
7	55	2485.9	1255.9	-206.7	-329.2	-9.8	-494.3
	88	2192.9	132.3	235.7	-138.5	3.0	1167.9
	94	-1793.5	221.4	1204.7	-97.2	-20.6	-797.4
	61	-2885.2	1562.1	303.8	-286.7	-44.4	453.3

Comb.	Nodo		F _x [kg]	F _y [kg]	F _z [kg]	M _x [kgm]	M _y [kgm]	M _z [kgm]
	1	24	115776.4	-3182.7	15682.5	17338.4	-188.9	-39169.9
		56	86110.2	6129.2	-15522.7	14700.9	-237.0	38868.3
		62	-87120.9	5039.4	-15897.6	14868.6	-28.2	-38691.4
		30	-114765.8	-3851.8	15737.9	17503.8	57.4	39104.0
	2	24	192115.1	-8046.2	25955.4	28748.6	-289.7	-66059.6
		56	143337.4	10826.9	-25764.3	24328.1	-351.5	65012.9
		62	-144158.5	9840.7	-26226.2	24543.6	33.8	-64874.0
		30	-191293.9	-8487.3	26035.1	28960.2	133.2	66008.6
	3	24	77230.4	-1681.0	10460.0	11563.7	-125.9	-25952.0
		56	57437.6	3857.0	-10353.4	9806.1	-158.0	25821.1
		62	-58110.8	3130.9	-10603.4	9917.8	-18.9	-25703.1
		30	-76557.2	-2126.8	10496.8	11673.9	38.2	25908.2
	4	24	128122.8	-4923.4	17308.6	19170.5	-193.2	-43878.4
		56	95589.0	6988.8	-17181.1	16224.2	-234.4	43250.8
		62	-96135.9	6331.8	-17489.1	16367.8	22.4	-43158.1
		30	-127575.9	-5217.1	17361.6	19311.5	88.7	43844.6
	5	24	835.6	3093.7	166.5	136.2	-25.3	914.5
		56	133.8	-818.2	-91.5	154.1	-43.7	-339.1
		62	-958.3	-1571.6	-255.9	220.1	-80.2	440.3
		30	-11.1	2476.2	180.9	201.8	-37.0	-1004.7
	6	24	64466.5	-934.9	8732.9	9649.4	-109.3	-21487.2
		56	47844.1	3090.4	-8631.7	8183.6	-139.1	21452.3
		62	-48521.2	2402.4	-8868.2	8288.8	-28.8	-21367.8
		30	-63789.4	-1377.8	8767.0	9753.1	26.0	21418.1
	7	24	828.3	3082.2	163.9	133.9	-25.3	911.5
		56	124.0	-815.3	-88.9	150.9	-43.8	-341.1
		62	-943.5	-1558.8	-253.4	217.1	-80.2	435.2
		30	-8.8	2472.0	178.5	199.8	-36.9	-1005.8
	1	56	15583.3	-5642.1	-5204.8	-7018.3	51.7	-1177.2
		89	-1883.4	7824.0	5363.2	-3870.8	97.3	2779.9
		95	1305.6	7982.7	5264.9	-3875.9	-229.4	-3486.8
		62	-15005.5	-6030.5	-5423.2	-7022.5	-312.7	984.8
	2	56	24630.4	-10396.5	-8446.3	-11442.5	139.2	-1812.2
		89	-3751.6	12578.2	8621.7	-6124.5	203.7	4326.7
		95	3229.6	12737.9	8517.0	-6126.3	-338.0	-4925.0
		62	-24108.4	-10785.4	-8692.4	-11440.8	-440.3	1624.7
	3	56	10431.2	-3533.0	-3479.9	-4687.7	34.2	-710.3
		89	-1241.6	5199.1	3585.5	-2592.3	64.8	1851.2
		95	857.0	5305.4	3520.0	-2595.6	-152.7	-2322.6
		62	-10046.7	-3791.3	-3625.6	-4690.5	-208.4	581.9
	4	56	16462.6	-6702.7	-5640.8	-7637.2	92.6	-1133.6
		89	-2487.0	8368.5	5757.8	-4094.8	135.6	2882.5
		95	2139.7	8475.6	5688.0	-4095.9	-225.1	-3281.4
		62	-16115.2	-6961.3	-5805.0	-7636.0	-293.4	1008.6
	5	56	1124.2	1170.5	-189.6	-221.6	-49.5	19.9
		89	440.1	535.3	271.6	-275.6	-35.2	289.8
		95	-842.0	579.9	225.4	-287.1	-39.8	-747.7
		62	-722.3	894.4	-307.3	-234.5	-78.9	-98.7
	6	56	8734.7	-2777.6	-2904.2	-3919.9	22.4	-535.4
		89	-1065.6	4472.3	3002.2	-2171.0	51.6	1582.9
		95	699.6	4534.4	2947.1	-2178.4	-131.5	-1983.7
		62	-8368.7	-3049.1	-3045.1	-3926.7	-185.7	445.7
	7	56	1090.7	1163.9	-183.3	-216.2	-49.0	32.2
		89	416.0	547.0	264.5	-267.5	-34.4	287.9
		95	-813.0	583.7	219.9	-279.6	-39.2	-730.0
		62	-693.7	885.5	-301.0	-229.6	-78.7	-104.0
	1	27	176120.8	16006.4	24446.9	28739.4	-334.3	-51127.7
		59	127506.6	-17210.1	-24722.8	21565.5	-241.5	46212.1
		57	-129544.9	-15231.8	-23986.1	21180.1	621.3	-49888.8
		25	-174082.5	16435.5	24262.0	28368.2	523.9	48141.2
	2	27	293293.0	20357.2	40934.7	47910.0	-527.1	-86874.9
		59	214841.2	-20896.5	-41421.1	36344.8	-355.8	80869.2
		57	-217498.9	-19374.7	-40151.0	35686.3	1031.4	-84397.7
		25	-290635.3	19914.0	40637.4	47281.7	855.4	83841.9
	3	27	117435.5	10838.2	16302.0	19163.3	-222.8	-34035.6

Comb.	Nodo	F _x [kg]	F _y [kg]	F _z [kg]	M _x [kgm]	M _y [kgm]	M _z [kgm]
	59	85029.0	-11640.4	-16486.1	14381.8	-160.8	30757.7
	57	-86388.4	-10321.8	-15994.8	14124.8	414.2	-33209.0
	25	-116076.2	11124.0	16178.8	18915.9	349.2	32044.4
4	27	195550.3	13738.7	27293.9	31943.7	-351.3	-57867.1
	59	143252.1	-14098.0	-27618.3	24234.7	-237.0	53862.4
	57	-145024.4	-13083.7	-26771.4	23795.6	687.7	-56214.9
	25	-193778.1	13443.0	27095.8	31524.8	570.3	55844.8
5	27	302.1	4976.7	-145.1	-8.5	-20.6	1264.6
	59	-1865.1	-5901.5	159.4	-303.7	-32.0	-2953.4
	57	1087.8	-4758.2	128.9	-284.2	7.2	976.1
	25	475.3	5683.0	-143.3	5.2	15.7	-2790.0
6	27	97935.0	9016.6	13583.6	15967.4	-183.8	-28402.1
	59	70792.9	-9536.3	-13741.4	11986.7	-131.2	25668.1
	57	-72076.2	-8600.1	-13330.5	11777.7	348.2	-27692.5
	25	-96651.7	9119.8	13488.3	15765.7	292.6	26723.0
7	27	307.1	4781.8	-139.8	-8.6	-19.4	1207.0
	59	-1808.3	-5636.7	152.6	-291.6	-30.1	-2831.3
	57	1026.1	-4574.8	123.6	-271.6	7.6	934.3
	25	475.1	5429.7	-136.4	5.6	15.5	-2678.2
1	59	18650.8	18332.9	-5513.0	-10145.6	659.1	9147.9
	92	-5089.8	-11893.8	5440.6	-902.7	511.3	-2052.6
	90	4131.3	-20483.9	5364.1	-927.8	-586.1	9593.6
	57	-17692.3	14044.9	-5291.8	-10173.6	-435.0	-5362.3
2	59	36638.8	22002.7	-10637.1	-17670.6	1082.9	9528.7
	92	-4300.6	-15967.0	10372.7	-3601.4	862.2	-1625.7
	90	3359.2	-24172.6	10416.9	-3626.5	-811.8	8507.7
	57	-35697.4	18136.9	-10152.4	-17720.0	-587.5	-5881.6
3	59	12466.9	12389.1	-3683.0	-6769.3	439.2	6145.3
	92	-3368.8	-8096.2	3634.7	-611.9	340.6	-1413.7
	90	2729.7	-13822.8	3583.6	-628.5	-390.5	6441.1
	57	-11827.8	9530.0	-3535.3	-6787.8	-289.6	-3621.5
4	59	24458.9	14835.6	-7099.1	-11785.9	721.8	6399.1
	92	-2842.7	-10811.7	6922.7	-2411.0	574.6	-1129.1
	90	2215.0	-16282.0	6952.1	-2427.7	-540.9	5717.2
	57	-23831.2	12258.0	-6775.7	-11818.8	-391.3	-3967.7
5	59	-4074.4	6699.1	1093.7	565.4	7.7	4366.6
	92	-3211.6	-2935.9	-966.7	1582.8	-22.5	-1393.8
	90	2511.1	-7764.0	-1129.5	1575.2	-139.7	5687.6
	57	4774.9	4000.9	1002.6	574.0	-107.7	-2328.4
6	59	10518.9	10311.2	-3081.2	-5653.2	363.0	5067.2
	92	-2813.4	-6628.3	3052.7	-527.9	273.3	-1160.6
	90	2139.3	-11487.8	2988.0	-538.1	-334.6	5287.0
	57	-9844.8	7805.0	-2959.5	-5664.1	-242.8	-2973.3
7	59	-3887.8	6438.4	1048.8	540.8	6.7	4186.2
	92	-3089.5	-2795.6	-924.0	1517.7	-24.0	-1336.2
	90	2383.3	-7458.2	-1085.7	1511.3	-136.4	5450.2
	57	4593.9	3815.4	960.9	550.1	-103.9	-2228.5
1	92	1136.4	1648.1	792.4	810.7	-54.9	158.1
	112	3785.2	126.4	-793.5	150.4	9.1	714.2
	110	-3861.6	-119.0	-752.6	156.8	55.0	-815.1
	90	-1060.1	440.9	753.7	814.7	-7.0	1346.8
2	92	-257.5	1508.3	720.6	765.3	-52.3	225.7
	112	3502.4	122.0	-734.8	107.7	20.0	507.9
	110	-3528.0	-112.6	-686.3	123.6	66.1	-650.0
	90	283.1	578.8	700.5	779.8	-4.5	1086.0
3	92	753.1	1206.1	525.2	537.6	-36.6	143.4
	112	2508.2	84.3	-525.8	99.2	6.1	471.1
	110	-2558.9	-79.3	-498.7	103.6	36.6	-538.4
	90	-702.4	401.5	499.3	540.3	-4.8	859.8
4	92	-176.1	1112.9	477.3	507.3	-34.8	188.5
	112	2319.6	81.3	-486.7	70.8	13.4	333.5
	110	-2336.6	-75.1	-454.5	81.4	44.0	-428.3
	90	193.1	493.5	463.9	517.0	-3.1	685.9
5	92	1700.6	1218.6	464.9	450.0	-35.6	104.5
	112	2150.7	71.9	-450.1	109.4	-3.5	521.1
	110	-2246.0	-68.8	-438.1	105.6	19.5	-546.0

Comb. Nodo		F _x [kg]	F _y [kg]	F _z [kg]	M _x [kgm]	M _y [kgm]	M _z [kgm]
	90	-1605.3	390.9	423.3	445.2	-10.9	800.9
6	92	661.4	1137.0	441.2	448.6	-34.4	153.0
	112	2090.6	72.9	-438.1	82.7	5.3	392.0
	110	-2145.3	-68.1	-417.6	86.5	30.4	-451.6
	90	-606.7	470.9	414.5	451.7	-7.8	671.3
7	92	1643.0	1202.2	447.8	432.9	-35.1	108.2
	112	2068.1	69.8	-432.8	105.2	-3.3	500.9
	110	-2162.6	-66.6	-421.7	101.6	18.8	-525.7
	90	-1548.5	407.3	406.6	428.4	-11.3	759.7
1	26	175886.8	16399.3	24417.1	28680.1	-383.4	-50839.5
	58	128041.0	-18090.1	-24576.3	21493.1	-327.4	46172.6
	60	-129378.0	-15490.4	-24023.1	21121.9	555.8	-49678.2
	28	-174549.8	17181.2	24182.3	28333.7	483.5	48115.8
2	26	293063.6	20752.0	40857.9	47790.3	-592.2	-86579.9
	58	215392.0	-21767.6	-41191.2	36210.1	-479.4	80842.1
	60	-217346.3	-19649.0	-40186.4	35602.7	951.8	-84184.7
	28	-291109.3	20664.6	40519.7	47221.0	807.4	83820.9
3	26	117279.1	11099.7	16282.2	19123.8	-255.5	-33843.4
	58	85385.8	-12227.5	-16388.4	14333.5	-218.1	30731.4
	60	-86276.7	-10493.6	-16019.4	14086.0	370.5	-33068.7
	28	-116388.2	11621.4	16125.7	18892.9	322.3	32027.6
4	26	195396.9	14001.5	27242.7	31863.9	-394.7	-57670.4
	58	143619.8	-14679.1	-27465.0	24144.8	-319.5	53844.4
	60	-144922.2	-13266.1	-26795.0	23739.9	634.5	-56073.0
	28	-194094.5	13943.7	27017.3	31484.4	538.2	55831.0
5	26	157.3	5248.7	-116.4	13.9	-37.8	1444.7
	58	-1543.2	-6486.6	172.6	-288.5	-53.0	-2997.2
	60	1198.7	-4927.7	101.5	-296.7	-21.9	1111.1
	28	187.3	6165.5	-157.7	9.5	-3.3	-2818.7
6	26	97789.5	9286.8	13572.7	15939.0	-214.2	-28215.0
	58	71133.6	-10116.9	-13658.4	11949.7	-183.2	25636.1
	60	-71973.0	-8779.1	-13356.3	11743.8	307.1	-27554.7
	28	-96950.0	9609.2	13442.0	15747.8	267.1	26700.1
7	26	164.3	5055.4	-110.9	14.0	-36.6	1386.4
	58	-14888.8	-6220.3	165.6	-276.2	-51.3	-2875.8
	60	1135.1	-4746.1	96.0	-284.0	-21.5	1069.0
	28	189.3	5911.0	-150.7	10.0	-3.5	-2707.9
1	58	18461.9	18598.3	-5522.1	-10142.7	644.6	9135.5
	91	-5047.1	-12937.0	5369.9	-966.6	594.5	-2373.3
	93	4522.1	-20282.0	5436.4	-908.6	-496.5	9543.2
	60	-17936.9	14620.8	-5284.3	-10135.2	-428.6	-5701.7
2	58	36456.1	22299.8	-10626.2	-17666.6	1036.1	9514.6
	91	-4262.3	-17056.9	10305.3	-3666.3	937.7	-1964.7
	93	3751.3	-23966.0	10479.3	-3603.8	-721.7	8450.9
	60	-35945.1	18723.0	-10158.4	-17671.7	-590.0	-6231.2
3	58	12340.8	12565.7	-3689.1	-6767.3	429.5	6136.9
	91	-3340.2	-8791.8	3587.4	-654.4	396.1	-1627.4
	93	2990.5	-13688.1	3631.9	-615.7	-330.6	6407.6
	60	-11991.2	9914.1	-3530.3	-6762.2	-285.4	-3847.7
4	58	24336.9	15033.4	-7091.8	-11783.2	690.6	6389.6
	91	-2816.9	-11538.3	6877.7	-2454.3	625.0	-1355.0
	93	2476.7	-16144.1	6993.8	-2412.5	-480.8	5679.4
	60	-23996.6	12649.0	-6779.7	-11786.6	-393.0	-4200.7
5	58	-4195.5	6862.2	1068.8	564.9	27.1	4366.9
	91	-3193.7	-3564.4	-1012.0	1540.1	36.0	-1583.8
	93	2757.7	-7655.3	-1076.0	1585.1	-84.3	5667.5
	60	4631.5	4357.6	1019.2	590.3	-96.0	-2540.7
6	58	10399.9	10495.7	-3089.7	-5652.4	356.4	5064.2
	91	-2795.0	-7301.3	3008.7	-571.2	326.7	-1367.3
	93	2390.6	-11369.3	3034.5	-525.4	-277.8	5259.7
	60	-9995.4	8174.9	-2953.6	-5639.7	-238.1	-3195.2
7	58	-4007.4	6603.8	1024.1	540.2	25.7	4187.4
	91	-3073.6	-3421.5	-968.6	1474.9	33.8	-1525.5
	93	2628.3	-7352.3	-1032.8	1521.3	-81.6	5431.1
	60	4452.7	4170.0	977.3	566.5	-92.3	-2440.4

Comb.	Nodo	F _x [kg]	F _y [kg]	F _z [kg]	M _x [kgm]	M _y [kgm]	M _z [kgm]
1	91	821.3	1566.2	697.4	755.5	1.9	202.5
	111	3536.6	134.1	-756.0	132.7	10.3	639.1
	113	-3559.0	-127.3	-688.9	147.9	61.1	-750.2
	93	-798.9	522.4	747.5	770.0	47.6	1227.1
2	91	-581.0	1431.9	629.7	714.1	6.5	273.0
	111	3262.1	125.9	-701.5	93.2	18.5	442.4
	113	-3219.6	-114.3	-624.3	114.9	71.0	-579.9
	93	538.5	651.9	696.1	735.0	52.2	970.0
3	91	543.1	1151.5	461.8	500.8	1.4	173.0
	111	2342.4	89.4	-500.8	87.4	6.9	421.0
	113	-2357.2	-84.9	-456.2	97.6	40.7	-495.2
	93	-528.3	455.8	495.3	510.5	31.7	780.1
4	91	-391.8	1062.0	416.7	473.2	4.4	220.1
	111	2159.4	83.9	-464.5	61.1	12.4	289.9
	113	-2131.0	-76.2	-413.1	75.6	47.2	-381.6
	93	363.3	542.1	461.0	487.1	34.7	608.7
5	91	1499.8	1159.4	398.4	409.3	-0.8	132.5
	111	1976.1	81.5	-421.3	94.6	0.7	460.8
	113	-2051.6	-82.6	-394.2	99.6	25.1	-508.6
	93	-1424.3	453.5	417.1	415.8	22.2	718.3
6	91	453.4	1082.2	378.0	411.2	2.3	183.1
	111	1923.1	79.0	-412.7	70.6	7.0	339.9
	113	-1945.7	-76.0	-375.1	80.6	34.9	-409.7
	93	-430.8	526.6	409.8	422.2	27.4	591.5
7	91	1442.3	1143.1	381.5	392.1	-0.5	136.4
	111	1893.4	79.4	-404.0	90.5	0.9	440.5
	113	-1968.4	-80.6	-377.9	95.6	24.4	-488.4
	93	-1367.3	470.0	400.4	399.1	21.5	677.2
1	28	175080.6	15120.8	24246.8	28403.9	-469.9	-50633.6
	60	128646.8	-17724.3	-24082.0	21166.3	-542.6	46482.5
	59	-128517.5	-15012.9	-24799.2	21723.3	291.7	-49546.7
	27	-175209.9	17616.3	24634.4	28912.9	379.5	48573.7
2	28	291646.3	18799.9	40670.8	47375.2	-798.4	-86151.0
	60	216534.2	-21531.3	-40302.5	35721.6	-941.2	81277.5
	59	-215839.5	-18983.3	-41534.2	36537.9	406.0	-83892.5
	27	-292340.9	21714.6	41166.0	48130.7	571.2	84536.1
3	28	116741.8	10248.1	16168.7	18939.7	-313.3	-33705.7
	60	85789.4	-11983.7	-16058.7	14115.6	-361.8	30937.9
	59	-85703.1	-10176.2	-16537.1	14487.0	194.3	-32980.4
	27	-116828.1	11911.8	16427.0	19279.0	252.9	32332.6
4	28	194452.3	12700.9	27118.1	31587.2	-532.2	-57384.0
	60	144381.0	-14521.7	-26872.4	23819.1	-627.5	54134.5
	59	-143917.8	-12823.2	-27693.7	24363.4	270.5	-55877.7
	27	-194915.4	14644.0	27448.1	32090.9	380.7	56307.5
5	28	233.8	5063.5	-195.7	-23.7	13.6	1352.2
	60	-1674.9	-6111.3	119.5	-334.6	32.2	-2915.8
	59	1121.7	-4789.4	147.8	-242.7	63.7	1030.1
	27	319.4	5837.3	-71.6	53.1	48.1	-2769.8
6	28	97356.1	8542.2	13474.6	15783.5	-259.6	-28119.6
	60	71448.5	-9850.2	-13386.0	11766.0	-298.7	25821.9
	59	-71510.4	-8486.5	-13784.3	12079.5	163.4	-27499.5
	27	-97294.3	9794.4	13695.7	16070.1	211.5	26963.0
7	28	241.3	4869.2	-188.1	-22.7	13.4	1292.9
	60	-1620.3	-5844.8	114.1	-321.1	31.6	-2794.3
	59	1057.5	-4606.7	141.3	-231.8	61.6	986.9
	27	321.5	5582.3	-67.3	52.0	46.5	-2658.8
1	60	18674.6	18593.9	-5192.8	-10132.6	415.5	8888.0
	93	-5283.6	-12520.3	5455.1	-805.3	429.9	-2242.4
	92	4219.2	-19963.7	5317.4	-958.8	-678.8	9534.1
	59	-17610.3	13890.2	-5579.7	-10186.9	-709.4	-5789.2
2	60	36750.9	22457.2	-10074.6	-17701.6	579.4	9120.7
	93	-4510.5	-16845.2	10523.0	-3519.1	657.3	-1835.8
	92	3362.7	-23489.2	10256.1	-3652.2	-1031.7	8455.5
	59	-35603.0	17877.2	-10704.5	-17724.3	-1133.1	-6476.4
3	60	12482.7	12563.2	-3469.3	-6760.5	276.6	5972.3
	93	-3498.1	-8514.1	3644.3	-546.9	286.3	-1540.7

Comb.	Nodo	F _x [kg]	F _y [kg]	F _z [kg]	M _x [kgm]	M _y [kgm]	M _z [kgm]
	92	2788.4	-13476.6	3552.5	-649.3	-452.3	6401.7
	59	-11773.1	9427.6	-3727.5	-6796.8	-472.7	-3906.4
4	60	24533.6	15138.8	-6723.9	-11806.5	385.9	6127.4
	93	-2982.7	-11397.4	7022.9	-2356.1	437.9	-1269.6
	92	2217.3	-15827.0	6845.0	-2444.9	-687.6	5682.6
	59	-23768.2	12085.6	-7144.1	-11821.8	-755.2	-4364.6
5	60	-4140.5	6681.4	1075.3	610.2	85.7	4348.9
	93	-3333.6	-3061.6	-1072.9	1649.1	34.9	-1483.3
	92	2647.8	-7611.7	-1066.8	1562.4	-86.2	5652.6
	59	4826.4	3991.8	1064.4	564.6	-39.4	-2430.9
6	60	10524.6	10454.3	-2900.4	-5642.9	229.7	4924.2
	93	-2946.4	-6974.8	3054.2	-470.4	231.0	-1271.7
	92	2207.4	-11191.1	2961.2	-550.0	-383.9	5254.9
	59	-9785.5	7711.6	-3115.0	-5668.3	-395.1	-3219.7
7	60	-3953.1	6421.0	1031.8	584.7	82.2	4169.5
	93	-3212.6	-2916.1	-1027.6	1582.3	31.8	-1423.5
	92	2519.1	-7309.9	-1025.6	1500.2	-84.5	5416.7
	59	4646.6	3804.9	1021.4	541.9	-38.2	-2329.2
1	93	1050.2	1876.6	799.7	805.6	-66.1	272.5
	113	3551.8	127.3	-724.9	150.4	-61.1	749.7
	112	-3788.6	-126.4	-777.2	146.0	-9.1	-715.1
	92	-813.4	225.0	702.4	775.8	-18.5	1368.9
2	93	-296.5	1897.4	741.8	766.3	-68.2	397.1
	113	3213.6	114.3	-654.8	115.6	-71.0	579.7
	112	-3505.8	-122.0	-718.6	103.1	-20.0	-508.8
	92	588.7	212.6	631.6	731.7	-20.9	1155.1
3	93	695.7	1359.0	530.0	534.2	-44.0	220.0
	113	2352.4	84.9	-480.2	99.2	-40.7	494.8
	112	-2510.4	-84.3	-515.0	96.3	-6.1	-471.7
	92	-537.7	257.7	465.1	514.3	-12.4	874.3
4	93	-202.0	1372.9	491.5	508.0	-45.4	303.0
	113	2126.9	76.2	-433.5	76.1	-47.2	381.5
	112	-2321.9	-81.3	-475.9	67.7	-13.4	-334.2
	92	397.0	249.5	417.9	484.9	-14.0	731.8
5	93	1602.8	1216.3	454.0	439.6	-36.2	125.2
	113	2046.3	82.6	-420.6	102.5	-25.1	508.0
	112	-2152.3	-71.9	-442.2	106.8	3.5	-521.6
	92	-1496.9	390.2	408.9	429.6	-11.3	770.9
6	93	601.2	1267.1	442.5	443.6	-39.5	220.8
	113	1941.2	76.0	-397.7	82.2	-34.9	409.4
	112	-2092.4	-72.9	-429.4	80.0	-5.3	-392.6
	92	-449.9	347.0	384.6	428.2	-13.0	679.7
7	93	1546.1	1200.6	436.7	422.3	-35.4	129.0
	113	1963.2	80.6	-403.9	98.5	-24.4	487.8
	112	-2069.6	-69.8	-425.3	102.7	3.3	-501.4
	92	-1439.7	405.7	392.4	413.0	-11.5	730.0
1	29	114725.9	-4024.8	-14609.1	-16202.8	174.6	-39033.6
	61	88813.9	4554.6	14474.2	-13650.7	218.9	38793.6
	63	-86854.9	6018.8	18537.6	-13696.4	7.4	-38897.7
	31	-116684.9	-2423.8	-11484.0	-16244.7	-66.8	39358.3
2	29	191053.7	-8955.5	-24773.7	-27503.4	271.4	-65907.9
	61	146065.6	9353.7	24616.7	-23172.7	322.4	64981.9
	63	-143901.8	10847.3	28804.6	-23316.0	-60.1	-65058.6
	31	-193217.5	-7120.6	-21728.9	-27641.8	-145.0	66299.1
3	29	76530.1	-2243.4	-9744.3	-10806.5	116.4	-25862.0
	61	59239.9	2808.0	9654.3	-9105.9	145.9	25771.7
	63	-57933.6	3784.3	12363.3	-9136.3	5.1	-25841.0
	31	-77836.5	-1175.9	-7660.8	-10834.4	-44.4	26078.6
4	29	127415.3	-5530.5	-16520.6	-18340.2	180.9	-43778.2
	61	97407.7	6007.4	16416.0	-15453.8	214.9	43230.6
	63	-95964.8	7003.3	19208.0	-15549.4	-40.0	-43281.6
	31	-128858.2	-4307.1	-14490.8	-18432.5	-96.6	44039.1
5	29	193.7	2662.1	441.8	511.3	18.5	1020.2
	61	1863.0	-1879.8	-506.1	440.6	39.8	-372.9
	63	-819.2	-1028.3	2076.2	505.2	69.0	338.4
	31	-1237.5	3419.0	2600.6	577.4	31.9	-837.4

Comb. Nodo		F _x [kg]	F _y [kg]	F _z [kg]	M _x [kgm]	M _y [kgm]	M _z [kgm]
6	29	63802.5	-1439.9	-8034.5	-8910.5	99.4	-21377.2
	61	49607.1	2088.9	7950.9	-7501.1	126.8	21438.7
	63	-48376.8	2991.1	10637.5	-7517.2	13.7	-21467.4
	31	-65032.8	-467.1	-5941.3	-8924.3	-32.8	21606.5
7	29	192.5	2658.9	444.6	513.6	18.3	1021.2
	61	1846.9	-1865.5	-508.4	443.8	39.5	-367.3
	63	-810.5	-1026.3	2073.6	508.0	68.6	340.8
	31	-1228.9	3405.8	2602.7	579.3	31.6	-834.2
1	61	17677.5	-5493.7	4523.4	6176.6	-78.5	-1913.2
	94	798.1	7272.0	-4598.6	3237.6	-146.4	4241.3
	96	-93.7	7286.2	-3031.8	3224.9	156.4	-3475.5
	63	-18381.9	-4939.6	5413.3	6155.2	254.7	1887.8
2	61	26848.4	-10233.0	7741.1	10573.7	-171.0	-2642.2
	94	-1099.7	12006.5	-7839.6	5469.2	-243.7	5744.3
	96	1745.7	12085.8	-6262.9	5461.7	275.8	-5014.7
	63	-27494.4	-9734.4	8667.7	10557.4	382.9	2521.3
3	61	11827.6	-3434.4	3025.4	4126.5	-52.2	-1201.4
	94	545.8	4831.1	-3075.6	2170.0	-97.4	2825.4
	96	-76.0	4841.1	-2031.2	2161.6	104.2	-2315.2
	63	-12297.4	-3064.8	3618.9	4112.2	169.7	1184.3
4	61	17941.5	-6594.0	5170.6	7057.8	-113.8	-1687.4
	94	-719.4	7987.5	-5236.3	3657.7	-162.3	3827.4
	96	1150.2	8040.8	-4185.2	3652.8	183.8	-3341.3
	63	-18372.4	-6261.3	5788.5	7047.1	255.2	1606.6
5	61	2445.2	1242.0	-240.4	-309.4	39.5	-435.3
	94	2212.3	126.1	209.6	-121.4	3.7	1177.6
	96	-1740.4	132.6	1252.7	-135.8	-9.4	-769.8
	63	-2917.1	1672.2	315.6	-329.8	42.5	454.1
6	61	10145.6	-2690.2	2454.2	3365.5	-37.3	-1053.0
	94	694.3	4063.5	-2503.4	1754.7	-78.4	2469.8
	96	-255.6	4107.3	-1454.3	1744.8	88.5	-2054.1
	63	-10584.3	-2307.6	3041.0	3349.7	149.1	1008.5
7	61	2417.9	1233.9	-246.6	-314.4	39.4	-430.5
	94	2182.5	130.0	215.3	-129.1	4.2	1159.0
	96	-1717.8	144.4	1259.5	-143.7	-8.7	-769.0
	63	-2882.5	1664.8	309.3	-334.9	42.7	441.6
1	30	116873.7	-2034.6	15201.2	16925.2	-50.9	-39235.2
	62	85603.0	6536.3	-15354.5	14315.9	-21.6	38904.5
	64	-88492.2	4125.6	-18507.0	13858.1	243.1	-38493.8
	32	-113984.5	-4504.1	11741.6	16437.3	208.9	38941.9
2	30	193390.0	-6654.2	25441.5	28319.9	-127.4	-66124.0
	62	142684.6	11281.1	-25623.8	23933.8	-85.7	65067.6
	64	-145731.2	8864.9	-28658.1	23393.4	355.4	-64641.6
	32	-190343.4	-9368.8	21921.7	27751.0	309.0	65802.8
3	30	77962.0	-916.8	10139.0	11288.1	-33.8	-25996.6
	62	57099.2	4129.1	-10241.2	9549.3	-14.3	25845.6
	64	-59025.1	2522.2	-12342.9	9244.1	162.0	-25571.9
	32	-76036.1	-2562.9	7832.6	10962.8	139.3	25801.1
4	30	128972.9	-3996.5	16965.8	18884.6	-84.8	-43922.4
	62	95153.6	7292.4	-17087.4	15961.2	-57.1	43287.7
	64	-97184.5	5681.8	-19110.2	15601.0	236.9	-43003.8
	32	-126942.0	-5806.0	14619.3	18505.3	206.0	43708.3
5	30	1387.3	3607.2	-118.1	-121.6	40.8	866.0
	62	-57.3	-594.0	48.6	-90.8	46.4	-335.6
	64	-1669.3	-2112.0	-2173.7	-315.9	46.9	532.5
	32	339.2	2270.4	-2369.3	-368.4	38.0	-1069.1
6	30	65166.9	-216.3	8420.1	9378.1	-22.5	-21534.2
	62	47531.2	3354.1	-8514.8	7930.2	-6.1	21472.0
	64	-49400.5	1808.7	-10637.9	7636.9	141.3	-21245.5
	32	-63297.7	-1774.9	6120.1	9064.5	121.7	21317.5
7	30	1379.8	3594.9	-120.3	-123.5	40.5	862.6
	62	-67.0	-591.2	51.3	-93.6	45.9	-337.9
	64	-1654.2	-2098.4	-2171.4	-319.1	46.5	526.9
	32	341.4	2266.4	-2372.1	-370.6	37.8	-1070.3
1	62	16674.1	-5545.2	-5231.5	-6691.4	362.5	-1152.4

Comb.	Nodo	F _x [kg]	F _y [kg]	F _z [kg]	M _x [kgm]	M _y [kgm]	M _z [kgm]
	95	-1121.2	7857.5	4824.6	-3624.8	437.5	2924.9
	97	567.1	7170.6	3391.9	-3351.5	138.5	-3878.7
	64	-16119.9	-5359.7	-5291.2	-6327.9	68.8	1590.7
2	62	25747.8	-10336.4	-8487.9	-11090.9	492.3	-1765.0
	95	-3004.9	12658.0	8055.0	-5862.5	555.1	4440.8
	97	2489.0	11888.2	6641.7	-5593.4	40.9	-5377.0
	64	-25231.8	-10086.7	-8515.0	-10733.3	-16.5	2287.3
3	62	11158.6	-3468.7	-3497.7	-4469.7	241.6	-694.1
	95	-733.7	5221.6	3226.3	-2428.2	291.6	1948.0
	97	364.5	4763.7	2271.2	-2246.0	92.6	-2583.7
	64	-10789.4	-3344.9	-3537.3	-4227.4	46.1	986.4
4	62	17207.8	-6662.9	-5668.6	-7402.7	328.1	-1102.6
	95	-1989.5	8421.9	5379.9	-3920.0	370.0	2958.6
	97	1645.7	7908.8	4437.8	-3740.6	27.5	-3582.6
	64	-16864.0	-6496.2	-5686.5	-7164.3	-10.8	1450.8
5	62	1824.0	1271.2	-192.2	-30.4	112.8	15.9
	95	967.9	516.6	-56.6	-129.8	179.4	424.2
	97	-1332.9	70.8	-1023.8	56.4	193.4	-941.3
	64	-1459.0	1313.0	-264.9	217.3	130.3	253.1
6	62	9457.0	-2707.4	-2919.3	-3707.6	220.7	-521.4
	95	-551.9	4490.9	2649.8	-2011.2	275.9	1689.6
	97	207.2	3995.4	1696.8	-1828.4	111.2	-2229.4
	64	-9112.2	-2607.2	-2964.8	-3464.6	59.5	843.7
7	62	1790.3	1264.6	-185.8	-25.3	112.9	28.4
	95	944.4	529.0	-63.4	-122.0	180.1	423.2
	97	-1303.9	74.0	-1029.6	64.3	193.8	-922.7
	64	-1430.8	1304.0	-258.7	222.4	130.1	248.4
1	32	116501.0	-2511.9	14374.0	15951.0	-205.4	-39188.2
	64	87176.4	5798.7	-14200.3	13398.0	-290.7	38841.8
	63	-88686.8	4318.8	-14656.9	13628.1	6.1	-38706.5
	31	-114990.7	-3491.4	14483.3	16180.2	61.1	38994.1
2	32	192856.9	-7368.1	24541.9	27250.8	-306.1	-66043.4
	64	144430.4	10499.3	-24339.1	22922.7	-404.2	64966.5
	63	-145777.8	9096.2	-24920.9	23241.9	71.5	-64882.6
	31	-191509.6	-8113.2	24718.1	27567.7	137.7	65850.5
3	32	77713.7	-1235.8	9587.6	10638.7	-136.9	-25966.0
	64	58148.0	3638.1	-9471.8	8937.4	-193.8	25804.3
	63	-59154.9	2651.4	-9776.2	9090.8	4.0	-25714.0
	31	-76706.8	-1888.9	9660.4	10791.4	40.6	25836.7
4	32	128617.6	-4473.3	16366.2	18171.8	-204.0	-43869.5
	64	96317.4	6771.8	-16230.9	15287.2	-269.5	43220.8
	63	-97215.6	5836.3	-16618.9	15500.0	47.6	-43164.8
	31	-127719.4	-4970.1	16483.6	18383.1	91.7	43741.0
5	32	1295.1	3523.4	-600.6	-678.0	-36.2	866.6
	64	823.2	-1040.3	686.7	-611.5	-80.2	-334.1
	63	-1942.6	-2019.8	507.1	-545.8	-60.9	422.6
	31	-175.7	2701.5	-593.2	-611.9	-35.3	-1025.1
6	32	64942.2	-496.8	7878.3	8743.1	-120.1	-21506.6
	64	48554.3	2870.8	-7767.7	7332.4	-174.9	21440.2
	63	-49551.7	1932.3	-8051.5	7471.9	-6.5	-21380.0
	31	-63944.8	-1141.4	7941.0	8882.0	28.4	21356.7
7	32	1287.0	3510.9	-603.2	-680.2	-36.2	863.7
	64	814.1	-1037.4	689.2	-614.7	-80.2	-335.9
	63	-1927.0	-2006.1	509.6	-548.8	-60.8	417.5
	31	-174.1	2697.4	-595.6	-614.0	-35.2	-1025.7
1	64	18490.0	-4564.5	-4364.9	-6051.5	-21.2	-1901.8
	97	-251.8	7031.3	4550.3	-3147.0	54.4	3290.9
	96	-728.8	7045.5	4414.0	-3133.5	-222.7	-4092.6
	63	-17509.4	-5398.0	-4599.3	-6044.8	-268.2	1705.2
2	64	27589.8	-9277.5	-7586.5	-10451.0	65.3	-2574.3
	97	-2167.8	11797.6	7792.5	-5387.0	155.8	4843.9
	96	1156.3	11803.2	7647.9	-5372.4	-335.5	-5553.2
	63	-26578.3	-10209.1	-7853.9	-10442.6	-394.4	2353.5
3	64	12369.3	-2815.4	-2919.8	-4043.1	-14.4	-1194.2
	97	-154.1	4670.7	3043.5	-2109.6	36.1	2191.8
	96	-499.5	4680.5	2952.6	-2100.6	-148.4	-2726.5

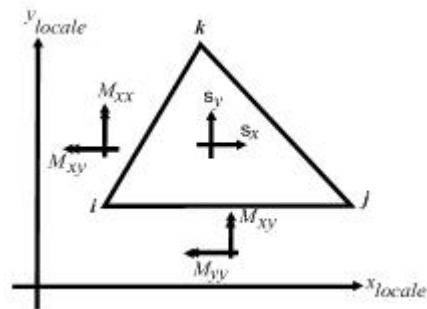
Comb.	Nodo	F_x [kg]	F_y [kg]	F_z [kg]	M_x [kgm]	M_y [kgm]	M_z [kgm]
	63	-11715.6	-3371.0	-3076.2	-4038.7	-178.7	1063.0
4	64	18435.9	-5957.4	-5067.6	-6976.0	43.3	-1642.5
	97	-1431.5	7848.2	5205.0	-3603.0	103.7	3227.1
	96	757.2	7852.3	5108.6	-3593.2	-223.6	-3700.3
	63	-17761.5	-6578.3	-5246.0	-6970.5	-262.8	1495.2
5	64	3005.3	1839.3	350.4	398.2	-96.9	-428.4
	97	1584.7	-7.2	-254.3	193.7	-58.8	625.4
	96	-2157.6	-43.2	-323.2	195.8	-31.1	-1129.7
	63	-2432.5	1375.9	227.1	396.2	-50.7	375.2
6	64	10660.9	-2072.2	-2347.6	-3279.5	-25.9	-1014.4
	97	36.6	3940.5	2462.8	-1690.4	23.9	1923.2
	96	-648.9	3912.2	2383.2	-1685.7	-126.3	-2384.2
	63	-10048.6	-2615.7	-2498.5	-3278.8	-156.4	926.3
7	64	2971.2	1831.8	356.7	403.6	-96.4	-416.3
	97	1561.9	4.3	-261.5	201.8	-58.0	623.7
	96	-2128.3	-38.8	-328.6	203.2	-30.5	-1112.1
	63	-2404.8	1367.6	233.4	401.0	-50.5	370.1

Sollecitazioni negli elementi triangolari

Convenzioni adottate

Nel seguito sono riportate le sollecitazioni indotte negli elementi triangolari come tensioni, momenti e tagli medi valutati nel centro dell'elemento. Per una dettagliata spiegazione sui presupposti teorici, il campo di applicazione e le modalità di impiego si rimanda all'apposito capitolo del manuale teorico in dotazione al programma.

Il sistema di riferimento locale dell'elemento risulta essere così disposto:



- L'asse x_{locale} ha direzione parallela alla retta congiungente i nodi i e j , è passante per i medesimi nodi ed ha verso positivo da i a j .
- L'asse y_{locale} è ortogonale all'asse x_{locale} , passa per il nodo i ed ha verso positivo dalla parte del nodo k .
- L'asse z_{locale} è ottenuto per prodotto vettoriale fra x_{locale} e y_{locale} .

Nodi Ni - Nj - Nk	Comb.	σ_x [kg/cm ²]	σ_y [kg/cm ²]	τ_{xy} [kg/cm ²]	σ_1 [kg/cm ²]	σ_2 [kg/cm ²]	Angolo [°]
81 79 75	1	2.2	2.0	0.0	2.2	2.0	6.23
81 79 75	2	3.9	3.7	0.0	3.9	3.7	9.13
81 79 75	3	1.5	1.3	0.0	1.5	1.3	6.21
81 79 75	4	2.6	2.5	0.0	2.6	2.4	9.09
81 79 75	5	-0.2	-0.3	-0.0	-0.2	-0.3	-1.91
81 79 75	6	1.2	1.1	0.0	1.2	1.1	3.95
81 79 75	7	-0.2	-0.3	-0.0	-0.2	-0.3	-2.17
81 82 79	1	2.2	2.0	0.1	2.2	2.0	19.46
81 82 79	2	3.9	3.7	0.1	3.9	3.7	20.72
81 82 79	3	1.4	1.3	0.0	1.5	1.3	19.46
81 82 79	4	2.6	2.5	0.1	2.6	2.5	20.71
81 82 79	5	-0.2	-0.3	0.0	-0.2	-0.3	14.83
81 82 79	6	1.2	1.1	0.0	1.2	1.1	17.65
81 82 79	7	-0.2	-0.3	0.0	-0.2	-0.3	14.54
81 75 71	1	2.1	2.0	-0.1	2.2	1.9	-22.19
81 75 71	2	3.9	3.6	-0.1	3.9	3.6	-21.02
81 75 71	3	1.4	1.3	-0.1	1.5	1.3	-22.16
81 75 71	4	2.6	2.4	-0.1	2.6	2.4	-21.00
81 75 71	5	-0.2	-0.3	-0.0	-0.2	-0.3	-25.09
81 75 71	6	1.2	1.1	-0.1	1.2	1.1	-22.37
81 75 71	7	-0.2	-0.3	-0.0	-0.2	-0.3	-25.04
81 71 69	1	2.0	2.0	-0.1	2.1	1.9	-38.89
81 71 69	2	3.7	3.6	-0.1	3.8	3.5	-40.83
81 71 69	3	1.3	1.3	-0.1	1.4	1.3	-39.02
81 71 69	4	2.5	2.4	-0.1	2.5	2.4	-40.93

Nodi		Comb.	σ_x	σ_y	τ_{xy}	σ_1	σ_2	Angolo
Ni	Nj - Nk		[kg/cm ²]	[kg/cm ²]	[kg/cm ²]	[kg/cm ²]	[kg/cm ²]	[°]
81 71 69	5		-0.3	-0.3	-0.0	-0.3	-0.3	-36.99
81 71 69	6		1.1	1.1	-0.1	1.2	1.0	-40.09
81 71 69	7		-0.3	-0.3	-0.0	-0.2	-0.3	-37.43
81 69 70	1		1.8	1.5	0.0	1.8	1.5	5.67
81 69 70	2		3.5	3.1	0.0	3.5	3.1	5.40
81 69 70	3		1.2	1.0	0.0	1.2	1.0	5.64
81 69 70	4		2.3	2.1	0.0	2.3	2.1	5.37
81 69 70	5		-0.4	-0.5	0.0	-0.4	-0.5	5.24
81 69 70	6		1.0	0.8	0.0	1.0	0.8	5.08
81 69 70	7		-0.4	-0.5	0.0	-0.3	-0.5	5.06
81 70 72	1		2.0	2.1	0.1	1.9	2.1	-22.73
81 70 72	2		3.6	3.8	0.1	3.6	3.8	-21.57
81 70 72	3		1.3	1.4	0.0	1.3	1.4	-22.63
81 70 72	4		2.4	2.5	0.1	2.4	2.6	-21.49
81 70 72	5		-0.3	-0.2	0.0	-0.3	-0.2	-22.48
81 70 72	6		1.1	1.2	0.0	1.1	1.2	-21.25
81 70 72	7		-0.3	-0.2	0.0	-0.3	-0.2	-21.97
81 72 76	1		2.1	2.2	0.0	2.1	2.2	-35.14
81 72 76	2		3.8	3.9	0.1	3.8	3.9	-40.72
81 72 76	3		1.4	1.5	0.0	1.4	1.5	-35.37
81 72 76	4		2.6	2.6	0.0	2.5	2.6	-40.82
81 72 76	5		-0.2	-0.2	0.0	-0.2	-0.2	-7.90
81 72 76	6		1.2	1.2	0.0	1.2	1.2	-34.08
81 72 76	7		-0.2	-0.2	0.0	-0.2	-0.2	-8.01
81 76 80	1		2.2	2.2	-0.0	2.3	2.2	-36.04
81 76 80	2		3.9	3.9	-0.0	4.0	3.9	-24.02
81 76 80	3		1.5	1.5	-0.0	1.5	1.5	-35.54
81 76 80	4		2.6	2.6	-0.0	2.6	2.6	-23.55
81 76 80	5		-0.2	-0.2	-0.0	-0.2	-0.1	33.14
81 76 80	6		1.2	1.2	-0.0	1.3	1.2	-38.88
81 76 80	7		-0.2	-0.1	-0.0	-0.2	-0.1	32.81
81 86 82	1		2.1	2.1	0.1	2.2	2.0	37.80
81 86 82	2		3.8	3.8	0.1	3.9	3.7	40.38
81 86 82	3		1.4	1.4	0.1	1.5	1.3	37.79
81 86 82	4		2.5	2.5	0.1	2.6	2.5	40.37
81 86 82	5		-0.2	-0.3	0.1	-0.2	-0.3	30.41
81 86 82	6		1.2	1.1	0.1	1.2	1.1	35.64
81 86 82	7		-0.2	-0.3	0.1	-0.2	-0.3	30.11
81 80 83	1		2.2	2.3	-0.0	2.2	2.3	40.44
81 80 83	2		4.0	3.9	-0.1	4.0	3.9	-42.22
81 80 83	3		1.5	1.5	-0.0	1.5	1.5	40.67
81 80 83	4		2.6	2.6	-0.0	2.7	2.6	-42.01
81 80 83	5		-0.2	-0.1	-0.0	-0.2	-0.1	24.77
81 80 83	6		1.2	1.3	-0.0	1.2	1.3	37.83
81 80 83	7		-0.2	-0.1	-0.0	-0.2	-0.1	24.47
81 87 91	1		2.2	2.2	-0.1	2.1	2.3	33.15
81 87 91	2		3.9	3.9	-0.1	3.8	4.0	35.27
81 87 91	3		1.5	1.5	-0.0	1.4	1.5	33.20
81 87 91	4		2.6	2.6	-0.1	2.5	2.7	35.31
81 87 91	5		-0.2	-0.2	-0.0	-0.2	-0.1	27.

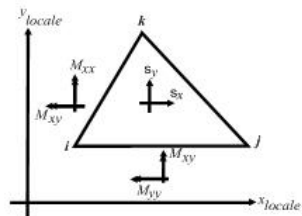
Nodi Ni - Nj - Nk	Comb.	σ_x [kg/cm ²]	σ_y [kg/cm ²]	τ_{xy} [kg/cm ²]	σ_1 [kg/cm ²]	σ_2 [kg/cm ²]	Angolo [°]
81 83 87	1	2.2	2.3	-0.0	2.2	2.3	30.43
81 83 87	2	3.9	4.0	-0.1	3.9	4.0	34.09
81 83 87	3	1.5	1.5	-0.0	1.5	1.5	30.57
81 83 87	4	2.6	2.6	-0.0	2.6	2.7	34.22
81 83 87	5	-0.2	-0.1	-0.0	-0.2	-0.1	21.20
81 83 87	6	1.2	1.3	-0.0	1.2	1.3	28.42
81 83 87	7	-0.2	-0.1	-0.0	-0.2	-0.1	20.82
81 91 93	1	2.1	2.2	-0.1	2.1	2.3	24.68
81 91 93	2	3.8	3.9	-0.1	3.8	4.0	24.05
81 91 93	3	1.4	1.5	-0.0	1.4	1.5	24.70
81 91 93	4	2.5	2.6	-0.1	2.5	2.6	24.07
81 91 93	5	-0.2	-0.2	-0.0	-0.3	-0.2	26.47
81 91 93	6	1.2	1.2	-0.0	1.1	1.3	25.13
81 91 93	7	-0.2	-0.2	-0.0	-0.2	-0.1	26.55
81 92 90	1	2.0	2.2	0.1	2.0	2.2	-18.39
81 92 90	2	3.7	3.9	0.1	3.7	3.9	-17.28
81 92 90	3	1.3	1.5	0.0	1.3	1.5	-18.38
81 92 90	4	2.5	2.6	0.0	2.5	2.6	-17.27
81 92 90	5	-0.3	-0.2	0.0	-0.3	-0.2	-22.65
81 92 90	6	1.1	1.2	0.0	1.1	1.2	-19.81
81 92 90	7	-0.3	-0.2	0.0	-0.3	-0.2	-22.93
81 93 92	1	2.0	2.2	-0.0	2.0	2.2	5.52
81 93 92	2	3.7	3.9	-0.0	3.7	3.9	7.54
81 93 92	3	1.4	1.5	-0.0	1.4	1.5	5.52
81 93 92	4	2.5	2.6	-0.0	2.5	2.6	7.55
81 93 92	5	-0.3	-0.2	-0.0	-0.3	-0.2	0.91
81 93 92	6	1.1	1.2	-0.0	1.1	1.2	4.76
81 93 92	7	-0.3	-0.2	-0.0	-0.3	-0.2	0.82

Sollecitazioni negli elementi triangolari

Convenzioni adottate

Nel seguito sono riportate le sollecitazioni indotte negli elementi triangolari come tensioni, momenti e tagli medi valutati nel centro dell'elemento. Per una dettagliata spiegazione sui presupposti teorici, il campo di applicazione e le modalità di impiego si rimanda all'apposito capitolo del manuale teorico in dotazione al programma.

Il sistema di riferimento locale dell'elemento risulta essere così disposto:



- L'asse x_{locale} ha direzione parallela alla retta congiungente i nodi i e j , è passante per i medesimi nodi ed ha verso positivo da i a j .
- L'asse y_{locale} è ortogonale all'asse x_{locale} , passa per il nodo i ed ha verso positivo dalla parte del nodo k .
- L'asse z_{locale} è ottenuto per prodotto vettoriale fra x_{locale} e y_{locale} .

Nodi Ni - Nj - Nk	Comb.	m_x [kgm/m]	m_y [kgm/m]	m_{xy} [kgm/m]	t_x [kg/m]	t_y [kg/m]	m_1 [kgm/m]	m_2 [kgm/m]	Angolo [°]
81 - 79 - 75	1	469.2	465.4	15.8	-3691	-3955	483.2	451.4	41.55
81 - 79 - 75	2	565.1	562.8	17.8	-3366	-3611	581.7	546.2	43.19
81 - 79 - 75	3	312.0	309.5	10.4	-2460	-2637	321.2	300.2	41.52
81 - 79 - 75	4	375.9	374.4	11.8	-2244	-2407	386.9	363.4	43.17
81 - 79 - 75	5	167.3	162.8	6.2	-2103	-2250	171.6	158.5	35.10
81 - 79 - 75	6	260.6	257.5	8.4	-2019	-2163	267.6	250.5	39.89
81 - 79 - 75	7	161.0	156.5	5.9	-2015	-2156	165.0	152.4	34.56
81 - 82 - 79	1	464.5	461.2	5.9	-3680	-3932	469.0	456.8	37.18
81 - 82 - 79	2	559.7	557.8	6.4	-3354	-3584	565.2	552.3	40.68
81 - 82 - 79	3	308.9	306.7	3.9	-2453	-2621	311.9	303.8	37.06
81 - 82 - 79	4	372.4	371.1	4.2	-2236	-2389	376.0	367.5	40.59
81 - 82 - 79	5	165.5	161.7	2.9	-2098	-2240	167.0	160.1	28.03
81 - 82 - 79	6	258.0	255.4	3.4	-2013	-2150	260.3	253.1	34.42
81 - 82 - 79	7	159.3	155.4	2.8	-2010	-2146	160.7	153.9	27.56
81 - 75 - 71	1	481.9	470.1	21.3	-3690	-3902	498.1	454.0	37.30
81 - 75 - 71	2	579.7	568.6	22.0	-3365	-3569	596.9	551.5	37.94

Nodi		Comb.	m_x	m_y	m_{xy}	t_x	t_y	m_1	m_2	Angolo
Ni - Nj - Nk			[kgm/m]	[kgm/m]	[kgm/m]	[kg/m]	[kg/m]	[kgm/m]	[kgm/m]	[°]
81 - 75 - 71	3		320.4	312.7	14.0	-2460	-2602	331.1	302.0	37.32
81 - 75 - 71	4		385.6	378.3	14.5	-2243	-2380	396.9	367.0	37.96
81 - 75 - 71	5		171.6	164.1	9.9	-2102	-2212	178.4	157.3	34.56
81 - 75 - 71	6		267.1	259.9	11.4	-2018	-2133	275.5	251.5	36.23
81 - 75 - 71	7		165.1	157.6	9.4	-2013	-2119	171.5	151.2	34.26
81 - 71 - 69	1		491.4	424.1	58.9	-3641	-3539	525.7	389.9	30.13
81 - 71 - 69	2		587.7	503.9	79.3	-3305	-3081	635.5	456.1	31.06
81 - 71 - 69	3		326.7	282.3	39.4	-2427	-2360	349.7	259.2	30.30
81 - 71 - 69	4		390.9	335.4	53.0	-2204	-2054	423.0	303.3	31.19
81 - 71 - 69	5		177.3	156.2	14.1	-2084	-2121	184.4	149.2	26.58
81 - 71 - 69	6		272.1	235.4	32.4	-1991	-1931	291.0	216.5	30.22
81 - 71 - 69	7		170.5	150.2	13.5	-1997	-2031	177.2	143.5	26.51
81 - 69 - 70	1		577.4	840.9	-16.7	-3416	-3678	576.3	841.9	3.61
81 - 69 - 70	2		700.7	1032.9	-28.5	-3081	-3311	698.3	1035.3	4.87
81 - 69 - 70	3		384.0	558.4	-10.9	-2277	-2452	383.3	559.1	3.58
81 - 69 - 70	4		466.2	686.4	-18.8	-2054	-2207	464.6	688.0	4.85
81 - 69 - 70	5		199.4	275.5	-0.6	-1970	-2133	199.4	275.5	0.42
81 - 69 - 70	6		319.0	460.5	-10.0	-1867	-2015	318.3	461.2	4.03
81 - 69 - 70	7		191.5	263.8	-0.7	-1887	-2044	191.5	263.8	0.59
81 - 70 - 72	1		531.0	356.8	-52.1	-3597	-4270	545.4	342.4	-15.46
81 - 70 - 72	2		638.7	429.7	-58.2	-3260	-3994	653.8	414.5	-14.56
81 - 70 - 72	3		353.2	237.3	-35.0	-2398	-2847	363.0	227.5	-15.56
81 - 70 - 72	4		425.0	285.8	-39.1	-2174	-2663	435.2	275.6	-14.65
81 - 70 - 72	5		187.1	124.1	-25.5	-2065	-2372	196.1	115.0	-19.53
81 - 70 - 72	6		292.9	195.9	-31.5	-1968	-2348	302.2	186.5	-16.52
81 - 70 - 72	7		179.5	118.9	-25.1	-1978	-2275	188.6	109.9	-19.82
81 - 72 - 76	1		468.7	432.7	-32.3	-3678	-3983	487.7	413.6	-30.46
81 - 72 - 76	2		568.8	532.6	-34.7	-3354	-3641	589.9	511.6	-31.24
81 - 72 - 76	3		311.5	287.7	-21.5	-2452	-2655	324.2	275.0	-30.55
81 - 72 - 76	4		378.3	354.4	-23.1	-2236	-2427	392.3	340.3	-31.33
81 - 72 - 76	5		157.8	140.4	-15.7	-2097	-2267	167.1	131.1	-30.52
81 - 72 - 76	6		256.0	236.7	-18.6	-2014	-2182	267.3	225.4	-31.34
81 - 72 - 76	7		150.9	134.3	-15.3	-2010	-2173	160.0	125.2	-30.74
81 - 76 - 80	1		435.9	427.4	-9.0	-3686	-3902	441.6	421.7	-32.45
81 - 76 - 80	2		533.5	522.2	-10.1	-3363	-3562	539.4	516.3	-30.36
81 - 76 - 80	3		289.7	284.2	-6.0	-2457	-2601	293.5	280.4	-32.58
81 - 76 - 80	4		354.8	347.4	-6.7	-2242	-2374	358.7	343.5	-30.45
81 - 76 - 80	5		142.4	141.9	-3.8	-2101	-2219	145.9	138.4	-43.23
81 - 76 - 80	6		237.4	233.9	-5.0	-2018	-2134	240.9	230.4	-35.45
81 - 76 - 80	7		136.0	135.8	-3.6	-2013	-2126	139.5	132.2	-44.28
81 - 86 - 82	1		445.9	461.9	19.9	-3664	-3972	432.5	475.3	-34.05
81 - 86 - 82	2		539.9	557.9	20.8	-3338	-3630	526.2	571.5	-33.31
81 - 86 - 82	3		296.5	307.1	13.2	-2443	-2648	287.6	316.1	-34.07
81 - 86 - 82	4		359.2	371.1	13.9	-2225	-2420	350.1	380.2	-33.33
81 - 86 - 82	5		156.8	162.4	9.7	-2090	-2257	149.5	169.7	-36.99
81 - 86 - 82	6		247.7	255.7	11.2	-2005	-2173	239.8	263.6	-35.07
81 - 86 - 82	7		150.9	156.1	9.4	-2003	-2162	143.8	163.2	-37.27
81 - 80 - 83	1		427.2	427.6	-13.2	-3674	-3861	414.1	440.6	44.57
81 - 80 - 83	2		523.6	523.7	-14.1	-3350	-3515	509.5	537.8	44.90
81 - 80 - 83	3		284.0	284.3	-8.8	-2449	-2574	275.4	292.9	44.49
81 - 80 - 83	4		348.3	348.4	-9.4	-2233	-2344	338.9	357.7	44.82
81 - 80 - 83	5		139.1	140.8	-6.2	-2094	-2205	133.7	146.2	41.19
81 - 80 - 83	6		232.8	233.9	-7.4	-2010	-2113	225.9	240.8	42.83
81 - 80 - 83	7		132.9	134.7	-6.0	-2006	-2113	127.7	139.8	40.74
81 - 87 - 91	1		409.1	424.6	-11.1	-3657	-3822	403.3	430.4	27.56
81 - 87 - 91	2		504.6	520.1	-12.6	-3330	-3474	497.5	527.1	29.25
81 - 87 - 91	3		272.0	282.3	-7.4	-2438	-2548	268.1	286.1	27.54
81 - 87 - 91	4		335.7	346.0	-8.4	-2220	-2316	331.0	350.6	29.23
81 - 87 - 91	5		130.8	140.6	-3.7	-2088	-2186	129.5	141.8	18.37
81 - 87 - 91	6		222.9	232.8	-5.5	-2002	-2090	220.4	235.3	24.01

Nodi Ni - Nj - Nk	Comb.	m_x [kgm/m]	m_y [kgm/m]	m_{xy} [kgm/m]	t_x [kg/m]	t_y [kg/m]	m_1 [kgm/m]	m_2 [kgm/m]	Angolo [°]
81 - 87 - 91	7	124.9	134.6	-3.4	-2001	-2094	123.8	135.7	17.36
81 - 90 - 86	1	445.1	451.3	-1.9	-3652	-3894	444.6	451.8	15.81
81 - 90 - 86	2	539.8	546.5	-3.1	-3325	-3550	538.6	547.7	21.25
81 - 90 - 86	3	296.0	300.1	-1.3	-2435	-2596	295.6	300.4	16.11
81 - 90 - 86	4	359.2	363.6	-2.1	-2216	-2366	358.4	364.4	21.51
81 - 90 - 86	5	155.3	157.6	0.7	-2085	-2219	155.1	157.8	-15.13
81 - 90 - 86	6	246.9	249.9	-0.5	-1998	-2130	246.8	250.0	9.44
81 - 90 - 86	7	149.4	151.5	0.8	-1998	-2126	149.2	151.8	-17.94
81 - 83 - 87	1	416.2	424.3	-10.6	-3663	-3860	408.9	431.6	34.65
81 - 83 - 87	2	511.8	519.6	-10.6	-3338	-3505	504.3	527.0	34.93
81 - 83 - 87	3	276.7	282.1	-7.1	-2442	-2574	271.8	286.9	34.59
81 - 83 - 87	4	340.4	345.6	-7.1	-2225	-2337	335.5	350.5	34.86
81 - 83 - 87	5	134.3	139.7	-5.7	-2090	-2215	130.7	143.3	32.19
81 - 83 - 87	6	226.8	232.1	-6.0	-2005	-2115	222.8	236.0	33.20
81 - 83 - 87	7	128.2	133.7	-5.5	-2003	-2123	124.8	137.1	31.87
81 - 91 - 93	1	405.6	448.2	22.4	-3638	-3811	396.0	457.8	-23.21
81 - 91 - 93	2	500.0	544.0	22.2	-3312	-3464	490.7	553.2	-22.60
81 - 91 - 93	3	269.7	298.1	14.9	-2426	-2541	263.3	304.5	-23.25
81 - 91 - 93	4	332.6	361.9	14.8	-2208	-2310	326.4	368.1	-22.63
81 - 91 - 93	5	131.2	154.6	14.6	-2078	-2167	124.2	161.6	-25.60
81 - 91 - 93	6	221.9	247.5	14.5	-1991	-2076	215.3	254.1	-24.34
81 - 91 - 93	7	125.5	148.4	14.5	-1991	-2074	118.5	155.4	-25.80
81 - 92 - 90	1	429.5	456.1	14.4	-3636	-3927	423.2	462.4	-23.72
81 - 92 - 90	2	523.3	552.1	15.3	-3308	-3577	516.7	558.7	-23.33
81 - 92 - 90	3	285.7	303.3	9.6	-2424	-2618	281.4	307.5	-23.77
81 - 92 - 90	4	348.2	367.3	10.2	-2206	-2385	343.8	371.7	-23.37
81 - 92 - 90	5	147.8	159.1	7.1	-2076	-2242	144.4	162.6	-25.91
81 - 92 - 90	6	238.1	252.3	8.3	-1989	-2149	234.3	256.1	-24.64
81 - 92 - 90	7	142.2	152.9	6.9	-1989	-2148	138.8	156.3	-26.16
81 - 93 - 92	1	430.1	441.8	-5.3	-3633	-3828	428.0	443.8	20.96
81 - 93 - 92	2	524.3	536.3	-6.2	-3306	-3478	521.7	538.9	22.91
81 - 93 - 92	3	286.0	293.8	-3.5	-2422	-2552	284.7	295.1	21.01
81 - 93 - 92	4	348.8	356.8	-4.1	-2204	-2319	347.1	358.5	22.96
81 - 93 - 92	5	146.6	152.9	-0.8	-2074	-2188	146.6	153.0	6.81
81 - 93 - 92	6	237.6	244.3	-2.0	-1987	-2092	237.0	244.9	15.30
81 - 93 - 92	7	140.8	146.9	-0.5	-1987	-2096	140.8	146.9	4.83

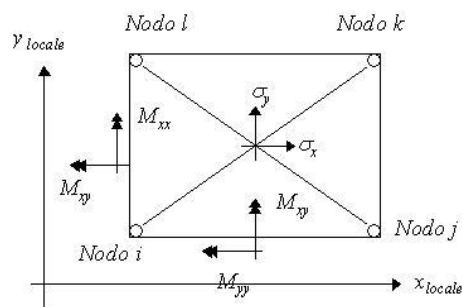
Sollecitazioni negli elementi a 4 nodi

Convenzioni adottate

Nel seguito sono riportate le sollecitazioni indotte negli elementi a 4 nodi sia come sollecitazioni in corrispondenza dei nodi che come tensioni e momenti medi valutati nel centro dell'elemento. Per una dettagliata spiegazione sui presupposti teorici, il campo di applicazione e le modalità di impiego si rimanda all'apposito capitolo del manuale teorico in dotazione al programma.

Il sistema di riferimento locale dell'elemento risulta essere così diposto:

- L'asse **x** locale sulla congiungente i nodi **i** e **j** da **i** verso **j**.
- L'asse **y** locale sulla congiungente i nodi **i** e **k** da **i** verso **k**.
- L'asse **z** locale è ottenuto per prodotto vettoriale fra **x_{locale}** e **y_{locale}**.
- Le tensioni medie nell'elemento (σ_x , σ_y , τ_{xy}) e i momenti medi (**M_x**, **M_y**, **M_{xy}**) sono anch'essi da intendersi diretti lungo le direzioni sopra citate.



Nodi Ni - Nk	Comb.	σ_x [kg/cm ²]	σ_y [kg/cm ²]	τ_{xy} [kg/cm ²]	σ_1 [kg/cm ²]	σ_2 [kg/cm ²]	Angolo [°]
65 71	1	1.5	2.4	0.4	1.3	2.5	-20.86
65 71	2	2.7	4.2	0.9	2.3	4.6	-24.31

Nodi	Comb.	σ_x	σ_y	τ_{xy}	σ_1	σ_2	Angolo
Ni - Nk		[kg/cm ²]	[kg/cm ²]	[kg/cm ²]	[kg/cm ²]	[kg/cm ²]	[°]
65 71	3	1.0	1.6	0.3	0.9	1.7	-20.92
65 71	4	1.8	2.8	0.6	1.5	3.1	-24.33
65 71	5	-0.2	-0.2	-0.2	-0.0	-0.4	-44.67
65 71	6	0.8	1.3	0.2	0.7	1.4	-18.45
65 71	7	-0.2	-0.2	-0.2	-0.4	-0.0	44.87
76 78	1	1.9	2.3	-0.1	1.8	2.3	9.03
76 78	2	3.0	3.9	-0.2	2.9	4.0	11.16
76 78	3	1.2	1.6	-0.1	1.2	1.6	9.06
76 78	4	2.0	2.6	-0.1	1.9	2.6	11.18
76 78	5	0.1	-0.0	0.0	0.1	-0.0	16.53
76 78	6	1.0	1.3	-0.0	1.0	1.3	10.09
76 78	7	0.1	-0.0	0.0	0.1	-0.0	16.22
71 73	1	2.0	1.8	0.2	2.1	1.7	33.67
71 73	2	3.6	3.1	0.2	3.7	3.0	22.91
71 73	3	1.3	1.2	0.1	1.4	1.1	33.87
71 73	4	2.4	2.1	0.2	2.5	2.0	23.00
71 73	5	-0.2	-0.1	0.1	-0.3	-0.1	-27.56
71 73	6	1.1	1.0	0.1	1.2	0.9	32.52
71 73	7	-0.2	-0.1	0.1	-0.3	-0.1	-28.67
66 72	1	2.7	1.6	-0.1	2.7	1.6	-4.10
66 72	2	4.7	2.6	0.2	4.7	2.6	6.03
66 72	3	1.8	1.1	-0.0	1.8	1.1	-4.00
66 72	4	3.1	1.7	0.1	3.1	1.7	6.06
66 72	5	-0.2	0.0	-0.3	-0.4	0.3	35.01
66 72	6	1.5	0.9	-0.1	1.5	0.9	-7.86
66 72	7	-0.2	0.0	-0.3	-0.4	0.2	35.21
72 74	1	2.1	2.3	0.2	2.0	2.4	-33.75
72 74	2	3.4	3.9	0.2	3.3	3.9	-20.13
72 74	3	1.4	1.5	0.1	1.3	1.6	-33.96
72 74	4	2.3	2.6	0.1	2.2	2.6	-20.26
72 74	5	0.1	-0.0	0.1	0.2	-0.1	32.83
72 74	6	1.2	1.3	0.1	1.1	1.4	-33.03
72 74	7	0.1	-0.0	0.1	0.2	-0.1	33.05
80 85	1	1.9	2.4	-0.1	1.9	2.4	10.04
80 85	2	3.1	4.0	-0.2	3.1	4.0	12.40
80 85	3	1.3	1.6	-0.1	1.3	1.6	10.09
80 85	4	2.1	2.7	-0.1	2.0	2.7	12.43
80 85	5	0.1	-0.0	0.0	0.1	-0.0	21.87
80 85	6	1.1	1.3	-0.0	1.1	1.3	10.34
80 85	7	0.1	0.0	0.0	0.1	-0.0	22.13
75 77	1	1.9	1.5	0.0	1.9	1.5	6.48
75 77	2	3.5	2.6	0.0	3.5	2.6	2.75
75 77	3	1.3	1.0	0.0	1.3	1.0	6.44
75 77	4	2.4	1.7	0.0	2.4	1.7	2.73
75 77	5	-0.3	-0.1	0.0	-0.3	-0.1	-10.95
75 77	6	1.0	0.8	0.0	1.0	0.8	8.80
75 77	7	-0.3	-0.1	0.0	-0.3	-0.1	-11.61
83 89	1	1.9	2.4	-0.0	1.9	2.4	3.29
83 89	2	3.1	4.0	-0.1	3.0	4.1	7.95
83 89	3	1.3	1.6	-0.0	1.3	1.6	3.31
83 89	4	2.0	2.7	-0.1	2.0	2.7	7.96
83 89	5	0.1	0.0	0.1	0.1	-0.0	27.14
83 89	6	1.1	1.4	-0.0	1.1	1.4	3.17
83 89	7	0.1	0.0	0.1	0.1	-0.0	27.62
79 84	1	1.9	1.6	0.0	1.9	1.6	0.48
79 84	2	3.6	2.7	0.0	3.6	2.7	0.11
79 84	3	1.3	1.1	0.0	1.3	1.1	0.41
79 84	4	2.4	1.8	0.0	2.4	1.8	0.08
79 84	5	-0.3	-0.1	0.0	-0.3	-0.1	-3.44
79 84	6	1.0	0.9	0.0	1.0	0.9	2.71

Nodi	Comb.	σ_x	σ_y	τ_{xy}	σ_1	σ_2	Angolo
Ni - Nk		[kg/cm ²]	[kg/cm ²]	[kg/cm ²]	[kg/cm ²]	[kg/cm ²]	[°]
79 84	7	-0.3	-0.1	0.0	-0.3	-0.1	-3.95
87 95	1	1.9	2.3	-0.1	1.9	2.3	10.78
87 95	2	3.1	3.9	-0.2	3.0	4.0	12.01
87 95	3	1.3	1.5	-0.0	1.3	1.6	10.80
87 95	4	2.1	2.6	-0.1	2.0	2.7	12.02
87 95	5	0.1	-0.1	0.0	0.1	-0.1	13.85
87 95	6	1.1	1.3	-0.0	1.1	1.3	11.55
87 95	7	0.1	-0.1	0.0	0.1	-0.1	13.67
86 84	1	1.6	2.0	-0.0	1.6	2.0	5.74
86 84	2	2.7	3.6	-0.1	2.7	3.6	8.88
86 84	3	1.0	1.3	-0.0	1.0	1.3	5.70
86 84	4	1.8	2.4	-0.1	1.8	2.4	8.86
86 84	5	-0.1	-0.3	0.1	-0.1	-0.3	15.58
86 84	6	0.8	1.1	-0.0	0.8	1.1	6.70
86 84	7	-0.1	-0.3	0.0	-0.1	-0.3	15.37
91 97	1	1.8	2.2	-0.2	1.7	2.3	21.72
91 97	2	2.9	3.9	-0.3	2.8	4.0	16.96
91 97	3	1.2	1.5	-0.1	1.1	1.6	21.73
91 97	4	2.0	2.6	-0.2	1.9	2.7	16.96
91 97	5	0.0	-0.1	-0.1	0.0	-0.1	-17.97
91 97	6	1.0	1.2	-0.1	0.9	1.3	23.77
91 97	7	0.0	-0.1	-0.1	0.0	-0.1	-19.25
93 96	1	1.5	2.2	-0.1	1.5	2.2	8.35
93 96	2	2.6	3.8	-0.2	2.6	3.8	9.93
93 96	3	1.0	1.4	-0.1	1.0	1.5	8.35
93 96	4	1.8	2.5	-0.1	1.7	2.6	9.93
93 96	5	-0.2	-0.2	0.0	-0.2	-0.1	-40.62
93 96	6	0.8	1.2	-0.1	0.8	1.2	8.78
93 96	7	-0.2	-0.2	0.0	-0.2	-0.1	-35.34
92 94	1	1.5	2.1	-0.0	1.5	2.1	3.57
92 94	2	2.7	3.7	-0.1	2.6	3.8	7.74
92 94	3	1.0	1.4	-0.0	1.0	1.4	3.56
92 94	4	1.8	2.5	-0.1	1.8	2.5	7.73
92 94	5	-0.2	-0.2	0.1	-0.1	-0.3	32.43
92 94	6	0.8	1.1	-0.0	0.8	1.1	3.59
92 94	7	-0.2	-0.2	0.1	-0.1	-0.3	33.16
90 88	1	1.6	2.0	-0.0	1.6	2.0	5.40
90 88	2	2.7	3.7	-0.2	2.7	3.7	8.75
90 88	3	1.0	1.4	-0.0	1.0	1.4	5.38
90 88	4	1.8	2.5	-0.1	1.8	2.5	8.74
90 88	5	-0.1	-0.3	0.1	-0.1	-0.3	20.05
90 88	6	0.8	1.1	-0.0	0.8	1.1	5.92
90 88	7	-0.1	-0.3	0.1	-0.1	-0.3	20.04

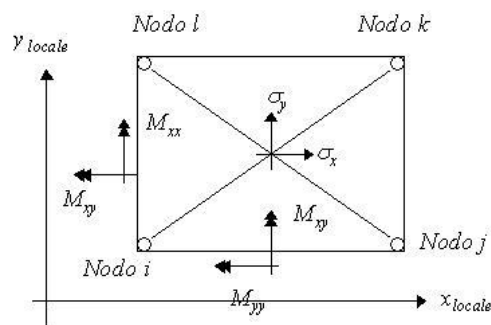
Sollecitazioni negli elementi a 4 nodi

Convenzioni adottate

Nel seguito sono riportate le sollecitazioni indotte negli elementi a 4 nodi sia come sollecitazioni in corrispondenza dei nodi che come tensioni e momenti medi valutati nel centro dell'elemento. Per una dettagliata spiegazione sui presupposti teorici, il campo di applicazione e le modalità di impiego si rimanda all'apposito capitolo del manuale teorico in dotazione al programma.

Il sistema di riferimento locale dell'elemento risulta essere così disposto:

- L'asse **x** locale sulla congiungente i nodi **i** e **j** da **i** verso **j**.
- L'asse **y** locale sulla congiungente i nodi **i** e **l** da **i** verso **l**.
- L'asse **z** locale è ottenuto per prodotto vettoriale fra **x_{locale}** e **y_{locale}**.
- Le tensioni medie nell'elemento (σ_x , σ_y , τ_{xy}) e i momenti medi (**M_x**, **M_y**, **M_{xy}**) sono anch'essi da intendersi diretti lungo le direzioni sopra citate.



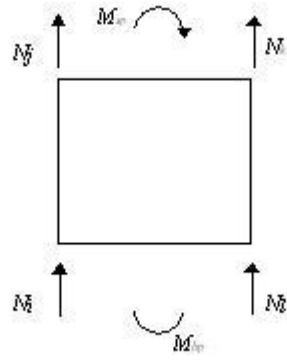
Nodi	Comb.	m_x	m_y	m_{xy}	t_x	t_y	m_1	m_2	Angolo
Ni - Nk		[kgm/m]	[kgm/m]	[kgm/m]	[kg/m]	[kg/m]	[kgm/m]	[kgm/m]	[°]
65 71	1	-128.18	7.14	30.08	-9223	859	-134.56	13.52	-11.99
65 71	2	-19.83	35.87	19.68	-14490	1925	-26.08	42.12	-17.62
65 71	3	-85.90	4.60	20.10	-6176	581	-90.17	8.86	-11.98
65 71	4	-13.67	23.75	13.16	-9687	1291	-17.84	27.92	-17.56
65 71	5	-158.78	-20.50	24.41	-584	-373	-162.96	-16.31	-9.72
65 71	6	-78.21	2.45	17.41	-5063	485	-81.81	6.05	-11.68
65 71	7	-154.20	-20.03	23.63	-542	-358	-158.24	-15.99	-9.70
76 78	1	-34.47	27.84	-27.44	7279	2551	-44.83	38.21	20.69
76 78	2	71.34	63.98	-11.58	11388	3260	79.82	55.51	-36.19
76 78	3	-23.37	18.39	-18.34	4872	1704	-30.28	25.30	20.65
76 78	4	47.17	42.48	-7.77	7612	2177	52.94	36.72	-36.60
76 78	5	-97.19	-13.51	-25.88	606	755	-104.54	-6.16	15.87
76 78	6	-17.78	15.44	-14.94	4073	1411	-23.52	21.17	20.99
76 78	7	-93.06	-12.97	-24.81	586	723	-100.12	-5.91	15.89
71 73	1	22.05	-127.67	14.81	-912	6889	23.50	-129.12	5.59
71 73	2	53.53	-27.61	15.42	-776	10732	56.36	-30.44	10.40
71 73	3	14.54	-85.51	9.90	-608	4610	15.51	-86.48	5.60
71 73	4	35.53	-18.80	10.30	-518	7172	37.41	-20.69	10.39
71 73	5	-14.54	-149.71	7.01	-555	553	-14.17	-150.08	2.96
71 73	6	11.04	-76.16	8.14	-493	3814	11.79	-76.91	5.29
71 73	7	-14.23	-145.09	6.72	-530	525	-13.88	-145.43	2.93
66 72	1	17.13	-106.83	16.29	1363	-9509	19.24	-108.94	7.36
66 72	2	45.70	6.03	20.19	1095	-14841	54.17	-2.44	22.76
66 72	3	11.27	-71.69	10.85	911	-6368	12.66	-73.09	7.33
66 72	4	30.31	3.55	13.45	732	-9923	35.90	-2.04	22.57
66 72	5	-14.21	-145.79	3.17	929	-731	-14.14	-145.86	1.38
66 72	6	8.75	-62.36	7.46	774	-5258	9.52	-63.14	5.92
66 72	7	-13.81	-140.78	2.68	896	-692	-13.76	-140.84	1.21
72 74	1	-51.21	27.42	-27.04	7093	2788	-59.61	35.82	17.26
72 74	2	48.28	63.34	-11.45	10855	3491	42.10	69.52	28.33
72 74	3	-34.54	18.12	-18.04	4746	1862	-40.13	23.71	17.21
72 74	4	31.78	42.07	-7.65	7254	2331	27.71	46.15	28.04
72 74	5	-99.99	-13.27	-25.10	817	894	-106.73	-6.53	15.04
72 74	6	-26.41	15.42	-14.45	3998	1553	-30.92	19.93	17.32
72 74	7	-95.59	-12.68	-24.00	795	860	-102.04	-6.24	15.04
80 85	1	-39.87	26.75	-27.58	7067	2568	-49.81	36.69	19.81
80 85	2	64.90	62.55	-11.90	11077	3290	75.69	51.77	-42.18
80 85	3	-27.01	17.65	-18.44	4730	1716	-33.64	24.28	19.78
80 85	4	42.84	41.52	-7.99	7404	2197	50.20	34.17	-42.63
80 85	5	-99.99	-13.93	-25.80	565	755	-107.13	-6.79	15.47
80 85	6	-21.39	14.75	-15.02	3949	1423	-26.82	20.17	19.86
80 85	7	-95.88	-13.38	-24.73	545	725	-102.73	-6.54	15.47
75 77	1	26.11	-105.58	13.02	-1108	7117	27.38	-106.86	5.59
75 77	2	58.93	3.26	12.40	-1016	11251	61.57	0.62	12.01
75 77	3	17.24	-70.79	8.68	-739	4764	18.09	-71.64	5.58
75 77	4	39.12	1.77	8.27	-678	7521	40.87	0.02	11.94
75 77	5	-13.55	-145.55	7.05	-620	430	-13.17	-145.92	3.05
75 77	6	13.25	-64.19	7.15	-602	3930	13.90	-64.85	5.23

Nodi	Comb.	m _x	m _y	m _{xy}	t _x	t _y	m ₁	m ₂	Angolo
Ni - Nk		[kgm/m]	[kgm/m]	[kgm/m]	[kg/m]	[kg/m]	[kgm/m]	[kgm/m]	[°]
75 77	7	-13.28	-141.15	6.77	-593	404	-12.93	-141.51	3.02
83 89	1	-36.26	28.27	-25.24	7111	2576	-44.96	36.97	19.02
83 89	2	68.13	64.15	-9.26	11130	3285	75.61	56.67	-38.93
83 89	3	-24.61	18.66	-16.88	4760	1721	-30.42	24.47	18.98
83 89	4	44.99	42.58	-6.23	7439	2194	50.13	37.44	-39.54
83 89	5	-97.26	-13.04	-24.67	589	773	-103.95	-6.35	15.18
83 89	6	-18.97	15.71	-13.60	3980	1430	-23.66	20.41	19.05
83 89	7	-93.16	-12.51	-23.61	569	742	-99.56	-6.10	15.17
79 84	1	25.29	-104.58	12.65	-1124	7068	26.51	-105.80	5.51
79 84	2	57.56	3.73	10.90	-1032	11139	59.68	1.60	11.03
79 84	3	16.69	-70.16	8.43	-749	4732	17.50	-70.97	5.50
79 84	4	38.20	2.05	7.27	-688	7446	39.61	0.64	10.96
79 84	5	-13.51	-144.53	7.84	-630	460	-13.04	-145.00	3.41
79 84	6	12.81	-63.58	7.03	-611	3908	13.46	-64.22	5.22
79 84	7	-13.24	-140.15	7.54	-603	434	-12.79	-140.60	3.39
87 95	1	-29.17	28.99	-25.97	7240	2606	-39.07	38.90	20.88
87 95	2	76.00	64.88	-10.31	11251	3344	82.15	58.73	-30.83
87 95	3	-19.88	19.14	-17.37	4846	1742	-26.49	25.75	20.83
87 95	4	50.23	43.07	-6.92	7520	2234	54.45	38.85	-31.33
87 95	5	-93.72	-12.63	-24.88	687	767	-100.75	-5.61	15.77
87 95	6	-14.67	16.15	-14.06	4071	1447	-20.13	21.60	21.19
87 95	7	-89.68	-12.10	-23.83	668	736	-96.42	-5.37	15.78
86 84	1	-93.92	15.91	-36.60	6699	2447	-105.00	26.99	16.84
86 84	2	10.49	51.61	-21.49	10733	3129	1.31	60.79	23.13
86 84	3	-63.05	10.42	-24.45	4486	1635	-70.44	17.82	16.82
86 84	4	6.57	34.23	-14.38	7174	2090	0.45	40.35	23.05
86 84	5	-135.91	-21.15	-31.40	302	709	-143.94	-13.12	14.34
86 84	6	-57.55	7.47	-21.04	3704	1344	-63.76	13.69	16.46
86 84	7	-131.84	-20.62	-30.34	282	678	-139.58	-12.88	14.31
91 97	1	-62.22	17.76	-39.53	6875	2268	-78.46	34.00	22.33
91 97	2	42.52	53.60	-23.73	10897	2933	23.69	72.43	38.43
91 97	3	-41.92	11.66	-26.41	4603	1516	-52.75	22.48	22.29
91 97	4	27.91	35.55	-15.88	7284	1959	15.40	48.06	38.24
91 97	5	-115.08	-19.99	-33.98	432	613	-125.98	-9.09	17.78
91 97	6	-36.45	8.73	-23.07	3824	1232	-46.16	18.43	22.80
91 97	7	-111.01	-19.45	-32.92	412	582	-121.62	-8.84	17.86
93 96	1	-98.59	14.98	-36.30	6426	2434	-109.21	25.59	16.30
93 96	2	6.74	50.78	-20.80	10439	3165	-1.53	59.05	21.69
93 96	3	-66.17	9.80	-24.26	4303	1627	-73.26	16.89	16.28
93 96	4	4.05	33.67	-13.92	6979	2114	-1.46	39.19	21.61
93 96	5	-139.83	-21.94	-31.73	141	657	-147.82	-13.94	14.15
93 96	6	-60.73	6.78	-21.01	3526	1331	-66.74	12.79	15.95
93 96	7	-135.74	-21.41	-30.69	122	626	-143.46	-13.69	14.12
92 94	1	-94.39	15.07	-36.31	6610	2460	-105.33	26.02	16.78
92 94	2	10.79	51.03	-20.23	10623	3143	2.38	59.44	22.58
92 94	3	-63.37	9.86	-24.26	4426	1644	-70.68	17.17	16.76
92 94	4	6.75	33.83	-13.54	7101	2100	1.14	39.44	22.50
92 94	5	-136.98	-21.84	-32.01	267	719	-145.28	-13.54	14.54
92 94	6	-57.99	6.96	-20.89	3651	1355	-64.13	13.10	16.38
92 94	7	-132.90	-21.29	-30.93	248	688	-140.90	-13.29	14.50
90 88	1	-92.43	15.82	-36.58	6639	2525	-103.63	27.02	17.02
90 88	2	12.87	51.53	-21.07	10642	3272	3.60	60.80	23.73
90 88	3	-62.06	10.36	-24.44	4446	1687	-69.54	17.83	17.00
90 88	4	8.14	34.17	-14.10	7114	2185	1.97	40.34	23.64
90 88	5	-135.74	-21.25	-31.81	294	697	-143.99	-13.01	14.53
90 88	6	-56.66	7.39	-21.12	3670	1386	-63.00	13.72	16.70
90 88	7	-131.66	-20.72	-30.76	274	666	-139.62	-12.76	14.51

Verifiche setti in c.a.

Modalità di verifica

I setti in c.a. vengono verificati, in ottemperanza al punto **5.3.4.** del *D.M. 27 luglio 1985*, come setti o pareti.



Viene calcolato lo sforzo normale medio agente sul setto e il momento ad esso associato.

La sezione viene armata rispettando gli interassi minimi da regolamento e la verifica procede a presso-flessione retta via via incrementando il diametro dei ferri di parete.

Quando necessario vengono inoltre introdotti ferri laterali di completamento da disporsi sulle estremità del setto stesso.

Nelle verifiche vengono riportate, nelle sezioni di base e di sommità del setto, le tensioni massima e media dovuta al solo sforzo normale nel calcestruzzo (e la combinazione di carico che le produce) e le tensioni nei ferri tesi e compressi (nonché indicazione della combinazione di carico che le produce).

Sezioni Impiegate:

Sez. Num.	Info	Dimensioni	Criterio	Calcestruzzo	f_{ck} [kg/cm ²]	f_{ed} [kg/cm ²]	σ_{RARE} [kg/cm ²]	σ_{FREQ} [kg/cm ²]	σ_{QP} [kg/cm ²]	Acciaio	f_{yk} [kg/cm ²]	f_{yd} [kg/cm ²]	σ_{YRARE} [kg/cm ²]	σ_{YFREQ} [kg/cm ²]	σ_{YQP} [kg/cm ²]	Copriferro [cm]
1	Muro Setto Controcamicia	s 25 [cm]	Verset	C25/30	250.0	141.7	150.0	250.0	112.5	B 450 C	4500.0	3913.0	3600.0	4500.0	4500.0	3.000
3	Muro Parapetto Serbatoio	s 25 [cm]	Verset	C25/30	250.0	141.7	150.0	250.0	112.5	B 450 C	4500.0	3913.0	3600.0	4500.0	4500.0	3.000

Taglio di progetto pari a 1.5 taglio di calcolo

EC2. 4.3.2.4.4. Verifica a taglio con il metodo dell'inclinazione variabile del traliccio. $\cotg \theta = 1.00$

Verifiche Setti:

Setto : 3 35 33 1 / Sezione 1

Armature su ogni faccia: Verticali : $\varnothing 14$ 15' [cm], Orizzontali : $\varnothing 10$ 20' [cm]

Sezione Comb. N_{Ed} M_{12} M_{13} Sd/Sr

		N_{Ed} [kg]	M_{12} [kgm]	M_{13} [kgm]	Sd/Sr
Base	2	20111.2	0.0	3022.3	0.12
Sommità	2	24246.0	0.0	8111.0	0.16

S.L.E. Combinazione N M_{12} M_{13} σ

		N [kg]	M_{12} [kgm]	M_{13} [kgm]	σ [kg/cm ²]
Base					
sc Max	5	-5861.7	0.0	-128.2	-0.9
sc Med	3	5182.3	0.0	1166.6	0.0
st	7	-5861.8	0.0	-131.1	-12.0
sc	5	-5861.7	0.0	-128.2	-13.3
Sommità					
sc Max	5	-5861.7	0.0	-128.2	-0.9
sc Med	3	5182.3	0.0	1166.6	0.0
st	7	-5861.8	0.0	-131.1	-12.0
sc	5	-5861.7	0.0	-128.2	-13.3

Verifiche a Taglio

Nodi Comb. V_d α V_{Ed} N_{Ed} M_{Ed} V_{Rcd} V_{Rsd} $V_{Rd,scorrimento}$ V_s/V_R

		V_d [kg]	α	V_{Ed} [kg]	N_{Ed} [kg]	M_{Ed} [kg]	V_{Rcd} [kg]	V_{Rsd} [kg]	$V_{Rd,scorrimento}$ [kg]	V_s/V_R
3 33	2	-5430.8	1.00	-5430.8	0.0	0.0	161810.3	84094.0	55372.6	0.10

Setto : 35 67 65 33 / Sezione 1

Armature su ogni faccia: Verticali : $\varnothing 14$ 15' [cm], Orizzontali : $\varnothing 10$ 20' [cm]

Sezione Comb. N_{Ed} M_{12} M_{13} Sd/Sr

		N_{Ed} [kg]	M_{12} [kgm]	M_{13} [kgm]	Sd/Sr
Base	2	15064.6	0.0	6755.8	0.11
Sommità	2	19199.5	0.0	-4621.9	0.12

S.L.E. Combinazione N M_{12} M_{13} σ

		N [kg]	M_{12} [kgm]	M_{13} [kgm]	σ [kg/cm ²]
Base					
sc Max	7	-2546.7	0.0	422.2	-0.5
sc Med	3	4765.3	0.0	2835.7	0.0
st	7	-2546.7	0.0	422.2	-3.4
sc	7	-2546.7	0.0	422.2	-7.6
Sommità					
sc Max	7	-2546.7	0.0	422.2	-0.5

sc Med	3	4765.3	0.0	2835.7	0.0
st	7	-2546.7	0.0	422.2	-3.4
sc	7	-2546.7	0.0	422.2	-7.6

Verifiche a Taglio

Nodi Comb.	V_d [kg]	α	V_{Ed} [kg]	N_{Ed} [kg]	M_{Ed} [kg]	V_{Rcd} [kg]	V_{Rsd} [kg]	$V_{Rd,scorrimento}$ [kg]	V_S/V_R	
35 65	2	1040.9	1.00	1040.9	0.0	0.0	161810.3	84094.0	61068.2	0.02

Setto : 2 34 33 1 / Sezione 1

Armature su ogni faccia: Verticali : \emptyset 14 15' [cm], Orizzontali : \emptyset 10 20' [cm]

Sezione	Comb.	N _{Ed} [kg]	M ₁₂ [kgm]	M ₁₃ [kgm]	Sd/Sr
Base	1	-3086.3	0.0	-224.7	0.00
Sommità	2	966.7	0.0	-299.8	0.01

S.L.E.	Combinazione	N [kg]	M_{12} [kgm]	M_{13} [kgm]	σ [kg/cm ²]
Base					
sc Max	3	-2632.8	0.0	-149.8	-0.7
sc Med	3	-2632.8	0.0	-149.8	-0.6
st	4	-1785.3	0.0	45.1	-5.2
sc	3	-2632.8	0.0	-149.8	-10.0
Sommità					
sc Max	3	-2632.8	0.0	-149.8	-0.7
sc Med	3	-2632.8	0.0	-149.8	-0.6
st	4	-1785.3	0.0	45.1	-5.2
sc	3	-2632.8	0.0	-149.8	-10.0

Verifiche a Taglio

Nodi Comb.	V_d [kg]	α	V_{Ed} [kg]	N_{Ed} [kg]	M_{Ed} [kg]	V_{Rcd} [kg]	V_{Rsd} [kg]	$V_{Rd,scorrimento}$ [kg]	V_s/V_R
2 33	1329.5	1.00	329.5	0.0	0.0	108861.8	56673.0	184073.3	0.01

Setto : 34 66 65 33 / Sezione 1

Armature su ogni faccia: Verticali : \emptyset 14 15' [cm], Orizzontali : \emptyset 10 20' [cm]

Sezione Comb.	N _{Ed} [kg]	M ₁₂ [kgm]	M ₁₃ [kgm]	Sd/Sr
Base	219261.1	0.0	-164.6	0.15
Sommità	222042.9	0.0	153.1	0.17

S.L.E.	Combinazione	N [kg]	M_{12} [kgm]	M_{13} [kgm]	σ [kg/cm ²]
Base					
sc Max	5	-2671.5	0.0	-157.2	-0.7
sc Med	3	6469.5	0.0	-121.4	0.0
st	7	-2673.0	0.0	-159.6	-6.8
sc	5	-2671.5	0.0	-157.2	-10.3
Sommità					
sc Max	5	-2671.5	0.0	-157.2	-0.7
sc Med	3	6469.5	0.0	-121.4	0.0
st	7	-2673.0	0.0	-159.6	-6.8
sc	5	-2671.5	0.0	-157.2	-10.3

Verifiche a Taglio

Nodi Comb.	V_d [kg]	α	V_{Ed} [kg]	N_{Ed} [kg]	M_{Ed} [kg]	V_{Rcd} [kg]	V_{Rsd} [kg]	$V_{Rd,scorrimento}$ [kg]	V_s/V_R	
34 65	1	62.1	1.00	62.1	0.0	0.0	108861.8	56673.0	36163.3	0.00

Setto : 2 34 36 4 / Sezione 1

Armature su ogni faccia: Verticali : \emptyset 14 15' [cm], Orizzontali : \emptyset 10 20' [cm]

Sezione	Comb.	N_{Ed} [kg]	M_{12} [kgm]	M_{13} [kgm]	Sd/Sr
Base	2	21463.6	0.0	-438.5	0.11
Sommità	2	25589.0	0.0	-6031.1	0.16

S.L.E.	Combinazione	N [kg]	M_{12} [kgm]	M_{13} [kgm]	σ [kg/cm ²]
Base					
sc Max	5	-5601.2	0.0	1803.4	-1.4
sc Med	3	5833.5	0.0	493.8	0.0
st	7	-5602.8	0.0	1820.2	-3.0
sc	5	-5601.2	0.0	1803.4	-21.2
Sommità					
sc Max	5	-5601.2	0.0	1803.4	-1.4

sc Med		3	5833.5	0.0	493.8	0.0
st		7	-5602.8	0.0	1820.2	-3.0
sc		5	-5601.2	0.0	1803.4	-21.2

Verifiche a Taglio

Nodi Comb.	V _d [kg]	α	V _{Ed} [kg]	N _{Ed} [kg]	M _{Ed} [kg]	V _{Rcd} [kg]	V _{Rsd} [kg]	V _{Rd,scorrimento} [kg]	V _S / V _R	
2 36	2	3155.9	1.00	3155.9	0.0	0.0	161442.3	83903.4	52190.8	0.06

Setto : 34 66 68 36 / Sezione 1

Armature su ogni faccia: Verticali : ø 14 15' [cm], Orizzontali : ø 10 20' [cm]

Sezione Comb.		N _{Ed} [kg]	M ₁₂ [kgm]	M ₁₃ [kgm]	Sd/Sr
Base	2	15859.3	0.0	-7913.2	0.12
Sommità	2	19984.7	0.0	5714.5	0.13

S.L.E.	Combinazione	N [kg]	M ₁₂ [kgm]	M ₁₃ [kgm]	σ [kg/cm ²]
Base					
sc Max	7	-2034.9	0.0	-821.7	-0.6
sc Med	3	5295.4	0.0	-3513.3	0.0
st	7	-2034.9	0.0	-821.7	-0.3
sc	7	-2034.9	0.0	-821.7	-8.5
Sommita					
sc Max	7	-2034.9	0.0	-821.7	-0.6
sc Med	3	5295.4	0.0	-3513.3	0.0
st	7	-2034.9	0.0	-821.7	-0.3
sc	7	-2034.9	0.0	-821.7	-8.5

Verifiche a Taglio

Nodi Comb.	V _d [kg]	α	V _{Ed} [kg]	N _{Ed} [kg]	M _{Ed} [kg]	V _{Rcd} [kg]	V _{Rsd} [kg]	V _{Rd,scorrimento} [kg]	V _S / V _R	
34 68	2	-1072.5	1.00	-1072.5	0.0	0.0	161442.3	83903.4	62780.9	0.02

Setto : 9 41 35 3 / Sezione 1

Armature su ogni faccia: Verticali : ø 14 15' [cm], Orizzontali : ø 10 20' [cm]

Sezione	Comb.	N _{Ed} [kg]	M ₁₂ [kgm]	M ₁₃ [kgm]	Sd/Sr
Base	2	17371.9	0.0	-1464.3	0.10
Sommità	2	21500.9	0.0	-1362.8	0.12

S.L.E.	Combinazione	N [kg]	M ₁₂ [kgm]	M ₁₃ [kgm]	σ [kg/cm ²]
Base					
sc Max	7	-5576.7	0.0	-328.2	-0.9
sc Med	3	4184.3	0.0	-730.9	0.0
st	7	-5576.7	0.0	-328.2	-10.4
sc	7	-5576.7	0.0	-328.2	-13.7
Sommita					
sc Max	7	-5576.7	0.0	-328.2	-0.9
sc Med	3	4184.3	0.0	-730.9	0.0
st	7	-5576.7	0.0	-328.2	-10.4
sc	7	-5576.7	0.0	-328.2	-13.7

Verifiche a Taglio

Nodi Comb.	V _d [kg]	α	V _{Ed} [kg]	N _{Ed} [kg]	M _{Ed} [kg]	V _{Rcd} [kg]	V _{Rsd} [kg]	V _{Rd,scorrimento} [kg]	V _S / V _R	
9 35	2	1379.1	1.00	1379.1	0.0	0.0	161580.4	83975.0	52232.9	0.03

Setto : 41 73 67 35 / Sezione 1

Armature su ogni faccia: Verticali : ø 14 15' [cm], Orizzontali : ø 10 20' [cm]

Sezione	Comb.	N _{Ed} [kg]	M ₁₂ [kgm]	M ₁₃ [kgm]	Sd/Sr
Base	2	21079.3	0.0	39.4	0.11
Sommità	2	25208.3	0.0	603.3	0.13

S.L.E.	Combinazione	N [kg]	M ₁₂ [kgm]	M ₁₃ [kgm]	σ [kg/cm²]
Base					
sc Max	7	-2535.3	0.0	332.9	-0.5
sc Med	3	7130.4	0.0	154.1	0.0
st	7	-2535.3	0.0	332.9	-3.8
sc	7	-2535.3	0.0	332.9	-7.2
Sommità					
sc Max	7	-2535.3	0.0	332.9	-0.5

sc Med	3	7130.4	0.0	154.1	0.0
st	7	-2535.3	0.0	332.9	-3.8
sc	7	-2535.3	0.0	332.9	-7.2

Verifiche a Taglio

Nodi Comb.	V_d [kg]	α	V_{Ed} [kg]	N_{Ed} [kg]	M_{Ed} [kg]	V_{Rcd} [kg]	V_{Rsd} [kg]	$V_{Rd,scorrimento}$ [kg]	V_s/V_R
41 67	1	-377.8	1.00	-377.8	0.0	0.0	161580.4	83975.0	52232.9/0.01

Setto : 4 36 42 10 / Sezione 1

Armature su ogni faccia: Verticali : \varnothing 14 15' [cm], Orizzontali : \varnothing 10 20' [cm]

Sezione Comb.		N_{Ed} [kg]	M_{12} [kgm]	M_{13} [kgm]	Sd/Sr
Base	2	18029.1	0.0	2925.7	0.11
Sommità	2	22143.4	0.0	1834.1	0.12

S.L.E.	Combinazione	N [kg]	M_{12} [kgm]	M_{13} [kgm]	σ [kg/cm ²]
Base					
sc Max	5	-5118.5	0.0	650.6	-1.0
sc Med	3	4638.7	0.0	1400.8	0.0
st	7	-5118.1	0.0	660.5	-7.8
sc	5	-5118.5	0.0	650.6	-14.4
Sommità					
sc Max	5	-5118.5	0.0	650.6	-1.0
sc Med	3	4638.7	0.0	1400.8	0.0
st	7	-5118.1	0.0	660.5	-7.8
sc	5	-5118.5	0.0	650.6	-14.4

Verifiche a Taglio

Nodi Comb.	V_d [kg]	α	V_{Ed} [kg]	N_{Ed} [kg]	M_{Ed} [kg]	V_{Rcd} [kg]	V_{Rsd} [kg]	$V_{Rd,scorrimento}$ [kg]	V_s/V_R
4 42	2	2321.8	1.00	2321.8	0.0	0.0	161004.8	83676.9	52057.4/0.04

Setto : 36 68 74 42 / Sezione 1

Armature su ogni faccia: Verticali : \varnothing 14 15' [cm], Orizzontali : \varnothing 10 20' [cm]

Sezione	Comb.	N _{Ed} [kg]	M ₁₂ [kgm]	M ₁₃ [kgm]	Sd/Sr
Base	2	22503.8	0.0	428.1	0.12
Sommità	2	26618.0	0.0	-1.1	0.14

S.L.E.	Combinazione	N [kg]	M_{12} [kgm]	M_{13} [kgm]	σ [kg/cm ²]
Base					
sc Max	7	-1634.2	0.0	-18.3	-0.2
sc Med	3	8065.1	0.0	108.8	0.0
st	7	-1634.2	0.0	-18.3	-3.5
sc	7	-1634.2	0.0	-18.3	-3.6
Sommità					
sc Max	7	-1634.2	0.0	-18.3	-0.2
sc Med	3	8065.1	0.0	108.8	0.0
st	7	-1634.2	0.0	-18.3	-3.5
sc	7	-1634.2	0.0	-18.3	-3.6

Verifiche a Taglio

Nodi Comb.	V_d [kg]	α	V_{Ed} [kg]	N_{Ed} [kg]	M_{Ed} [kg]	V_{Rcd} [kg]	V_{Rsd} [kg]	$V_{Rd,scorrimento}$ [kg]	V_s/V_R
36 74	2	-208.3	1.00	-208.3	0.0	0.0	161004.8	83676.9	52057.4/0.00

Setto : 71 100 98 69 / Sezione 3

Armature su ogni faccia: Verticali : \varnothing 14 15' [cm], Orizzontali : \varnothing 10 20' [cm]

Sezione	Comb.	N_{Ed} [kg]	M_{12} [kgm]	M_{13} [kgm]	Sd/Sr
Base	1	-2442.0	0.0	3552.3	0.02
Sommità	1	-347.9	0.0	1002.7	0.01

S.L.E.	Combinazione	N [kg]	M_{12} [kgm]	M_{13} [kgm]	σ [kg/cm ²]
Base					
sc Max	7	-1755.8	0.0	2017.7	-1.9
sc Med	7	-1755.8	0.0	2017.7	-0.9
st	7	-1755.8	0.0	2017.7	37.9
sc	7	-1755.8	0.0	2017.7	-26.5
Sommità					
sc Max	7	-1755.8	0.0	2017.7	-1.9

sc Med	7	-1755.8	0.0	2017.7	-0.9
st	7	-1755.8	0.0	2017.7	37.9
sc	7	-1755.8	0.0	2017.7	-26.5

Verifiche a Taglio

Nodi Comb.	V_d [kg]	α	V_{Ed} [kg]	N_{Ed} [kg]	M_{Ed} [kg]	V_{Rcd} [kg]	V_{Rsd} [kg]	$V_{Rd,scorrimento}$ [kg]	V_s/V_R	
71 98	1	-3644.0	1.00	-3644.0	0.0	0.0	134398.3	69897.9	107839.0	0.05

Setto : 70 99 101 72 / Sezione 3

Armature su ogni faccia: Verticali : ø 14 15' [cm], Orizzontali : ø 10 20' [cm]

Sezione Comb.		N _{Ed} [kg]	M ₁₂ [kgm]	M ₁₃ [kgm]	Sd/Sr
Base	1	-2583.8	0.0	-3049.7	0.01
Sommità	1	-489.1	0.0	-1026.2	0.01

S.L.E.	Combinazione	N [kg]	M ₁₂ [kgm]	M ₁₃ [kgm]	σ [kg/cm²]
Base					
sc Max	7	-1826.3	0.0	-1691.7	-1.5
sc Med	7	-1826.3	0.0	-1691.7	-0.8
st	7	-1826.3	0.0	-1691.7	24.0
sc	7	-1826.3	0.0	-1691.7	-21.8
Sommità					
sc Max	7	-1826.3	0.0	-1691.7	-1.5
sc Med	7	-1826.3	0.0	-1691.7	-0.8
st	7	-1826.3	0.0	-1691.7	24.0
sc	7	-1826.3	0.0	-1691.7	-21.8

Verifiche a Taglio

Nodi	Comb.	V_d [kg]	α	V_{Ed} [kg]	N_{Ed} [kg]	M_{Ed} [kg]	V_{Rcd} [kg]	V_{Rsd} [kg]	$V_{Rd,scorrimento}$ [kg]	V_s/V_R	
70 101		1	3260.7	1.00	3260.7	0.0	0.0	134433.0	69915.9	117718.8	0.05

Setto : 75 102 100 71 / Sezione 3

Armature su ogni faccia: Verticali : ø 14 15' [cm], Orizzontali : ø 10 20' [cm]

Sezione	Comb.	N _{Ed} [kg]	M ₁₂ [kgm]	M ₁₃ [kgm]	Sd/Sr
Base	2	-1725.7	0.0	90.8	0.00
Sommità	2	367.7	0.0	847.2	0.01

S.L.E.	Combinazione	N [kg]	M ₁₂ [kgm]	M ₁₃ [kgm]	σ [kg/cm²]
Base					
sc Max	4	-1366.6	0.0	58.6	-0.3
sc Med	3	-1371.2	0.0	9.6	-0.2
st	4	-1366.6	0.0	58.6	-3.1
sc	4	-1366.6	0.0	58.6	-4.0
Sommità					
sc Max	4	-1366.6	0.0	58.6	-0.3
sc Med	3	-1371.2	0.0	9.6	-0.2
st	4	-1366.6	0.0	58.6	-3.1
sc	4	-1366.6	0.0	58.6	-4.0

Verifiche a Taglio

Nodi	Comb.	V_d [kg]	α	V_{Ed} [kg]	N_{Ed} [kg]	M_{Ed} [kg]	V_{Rcd} [kg]	V_{Rsd} [kg]	$V_{Rd,scorrimento}$ [kg]	V_s/V_R	
75	100	2	-750.4	1.00	-750.4	0.0	0.0	134352.4	69874.1	226477.3	0.01

Setto : 72 101 103 76 / Sezione 3

Armature su ogni faccia: Verticali : ø 14 15' [cm], Orizzontali : ø 10 20' [cm]

Sezione	Comb.	N _{Ed} [kg]	M ₁₂ [kgm]	M ₁₃ [kgm]	Sd/Sr
Base	1	-1716.1	0.0	350.7	0.00
Sommità	2	399.0	0.0	-1010.2	0.01

S.L.E.	Combinazione	N [kg]	M ₁₂ [kgm]	M ₁₃ [kgm]	σ [kg/cm²]
Base					
sc Max	3	-1360.8	0.0	235.7	-0.4
sc Med	3	-1360.8	0.0	235.7	-0.2
st	5	-1439.0	0.0	287.9	-1.7
sc	3	-1360.8	0.0	235.7	-5.2
Sommità					
sc Max	3	-1360.8	0.0	235.7	-0.4

sc Med		3	-1360.8	0.0	235.7	-0.2
st		5	-1439.0	0.0	287.9	-1.7
sc		3	-1360.8	0.0	235.7	-5.2

Verifiche a Taglio

Nodi	Comb.	V _d [kg]	α	V _{Ed} [kg]	N _{Ed} [kg]	M _{Ed} [kg]	V _{Rcd} [kg]	V _{Rsd} [kg]	V _{Rd,scorrimento} [kg]	V _s / V _R
72 103	2	628.4	1.00	628.4	0.0	0.0	134698.3	70053.2	227052.7	0.01

Setto : 9 41 45 13 / Sezione 1

Armature su ogni faccia: Verticali : ø 14 15' [cm], Orizzontali : ø 10 20' [cm]

Sezione	Comb.	N _{Ed} [kg]	M ₁₂ [kgm]	M ₁₃ [kgm]	Sd/Sr
Base	2	16652.4	0.0	392.6	0.09
Sommità	2	20757.9	0.0	952.3	0.11

S.L.E.	Combinazione	N [kg]	M ₁₂ [kgm]	M ₁₃ [kgm]	σ [kg/cm²]
Base					
sc Max	7	-5624.5	0.0	639.2	-1.0
sc Med	3	3858.3	0.0	444.7	0.0
st	7	-5624.5	0.0	639.2	-9.0
sc	7	-5624.5	0.0	639.2	-15.5
Sommità					
sc Max	7	-5624.5	0.0	639.2	-1.0
sc Med	3	3858.3	0.0	444.7	0.0
st	7	-5624.5	0.0	639.2	-9.0
sc	7	-5624.5	0.0	639.2	-15.5

Verifiche a Taglio

Nodi	Comb.	V _d [kg]	α	V _{Ed} [kg]	N _{Ed} [kg]	M _{Ed} [kg]	V _{Rcd} [kg]	V _{Rsd} [kg]	V _{Rd,scorrimento} [kg]	V _s / V _R
9 45	1	-776.5	1.00	-776.5	0.0	0.0	160662.7	83499.7	51953.1	0.01

Setto : 41 73 77 45 / Sezione 1

Armature su ogni faccia: Verticali : ø 14 15' [cm], Orizzontali : ø 10 20' [cm]

Sezione	Comb.	N _{Ed} [kg]	M ₁₂ [kgm]	M ₁₃ [kgm]	Sd/Sr
Base	2	20361.8	0.0	84.3	0.11
Sommità	2	24467.3	0.0	-272.4	0.13

S.L.E.	Combinazione	N [kg]	M ₁₂ [kgm]	M ₁₃ [kgm]	σ [kg/cm²]
Base					
sc Max	7	-2703.1	0.0	-105.5	-0.4
sc Med	3	6747.9	0.0	2.7	0.0
st	7	-2703.1	0.0	-105.5	-5.3
sc	7	-2703.1	0.0	-105.5	-6.4
Sommità					
sc Max	7	-2703.1	0.0	-105.5	-0.4
sc Med	3	6747.9	0.0	2.7	0.0
st	7	-2703.1	0.0	-105.5	-5.3
sc	7	-2703.1	0.0	-105.5	-6.4

Verifiche a Taglio

Nodi	Comb.	V _d [kg]	α	V _{Ed} [kg]	N _{Ed} [kg]	M _{Ed} [kg]	V _{Rcd} [kg]	V _{Rsd} [kg]	V _{Rd,scorrimento} [kg]	V _s / V _R
41 77	2	91.7	1.00	91.7	0.0	0.0	160662.7	83499.7	51953.1	0.00

Setto : 10 42 46 14 / Sezione 1

Armature su ogni faccia: Verticali : ø 14 15' [cm], Orizzontali : ø 10 20' [cm]

Sezione	Comb.	N _{Ed} [kg]	M ₁₂ [kgm]	M ₁₃ [kgm]	Sd/Sr
Base	2	17015.8	0.0	-65.0	0.09
Sommità	2	21145.8	0.0	168.4	0.11

S.L.E.	Combinazione	N [kg]	M ₁₂ [kgm]	M ₁₃ [kgm]	σ [kg/cm²]
Base					
sc Max	5	-5366.1	0.0	124.6	-0.8
sc Med	3	4110.8	0.0	6.9	0.0
st	7	-5359.5	0.0	130.5	-10.9
sc	5	-5366.1	0.0	124.6	-12.2
Sommità					
sc Max	5	-5366.1	0.0	124.6	-0.8

sc Med	3	4110.8	0.0	6.9	0.0
st	7	-5359.5	0.0	130.5	-10.9
sc	5	-5366.1	0.0	124.6	-12.2

Verifiche a Taglio

Nodi Comb.	V _d [kg]	α	V _{Ed} [kg]	N _{Ed} [kg]	M _{Ed} [kg]	V _{Rcd} [kg]	V _{Rsd} [kg]	V _{Rd,scorrimento} [kg]	V _s / V _R	
10 46	2	-50.5	1.00	-50.5	0.0	0.0	161619.8	83995.4	52244.9	0.00

Setto : 42 74 78 46 / Sezione 1

Armature su ogni faccia: Verticali : ø 14 15' [cm], Orizzontali : ø 10 20' [cm]

Sezione Comb.	N _{Ed} [kg]	M ₁₂ [kgm]	M ₁₃ [kgm]	Sd/Sr	
Base	2	21345.3	0.0	407.5	0.11
Sommità	2	25475.2	0.0	-333.6	0.13

S.L.E.	Combinazione	N [kg]	M ₁₂ [kgm]	M ₁₃ [kgm]	σ [kg/cm²]
Base					
sc Max	5	-2077.1	0.0	86.2	-0.3
sc Med	3	7399.5	0.0	169.8	0.0
st	7	-2066.4	0.0	95.7	-4.0
sc	5	-2077.1	0.0	86.2	-4.9
Sommità					
sc Max	5	-2077.1	0.0	86.2	-0.3
sc Med	3	7399.5	0.0	169.8	0.0
st	7	-2066.4	0.0	95.7	-4.0
sc	5	-2077.1	0.0	86.2	-4.9

Verifiche a Taglio

Nodi Comb.	V_d [kg]	α	V_{Ed} [kg]	N_{Ed} [kg]	M_{Ed} [kg]	V_{Rcd} [kg]	V_{Rsd} [kg]	$V_{Rd,scorrimento}$ [kg]	V_s/V_R	
42 78	1	46.5	1.00	46.5	0.0	0.0	161619.8	83995.4	52244.9	0.00

Setto : 79 104 102 75 / Sezione 3

Armature su ogni faccia: Verticali : ø 14 15' [cm], Orizzontali : ø 10 20' [cm]

Sezione	Comb.	N _{Ed} [kg]	M ₁₂ [kgm]	M ₁₃ [kgm]	Sd/Sr
Base	1	-2008.8	0.0	204.4	0.00
Sommità	2	121.5	0.0	-229.8	0.00

S.L.E.	Combinazione	N [kg]	M ₁₂ [kgm]	M ₁₃ [kgm]	σ [kg/cm²]
Base					
sc Max	7	-1589.0	0.0	104.8	-0.3
sc Med	3	-1555.0	0.0	136.4	-0.3
st	4	-1537.0	0.0	131.6	-3.0
sc	7	-1589.0	0.0	104.8	-4.8
Sommità					
sc Max	7	-1589.0	0.0	104.8	-0.3
sc Med	3	-1555.0	0.0	136.4	-0.3
st	4	-1537.0	0.0	131.6	-3.0
sc	7	-1589.0	0.0	104.8	-4.8

Verifiche a Taglio

Nodi	Comb.	V_d [kg]	α	V_{Ed} [kg]	N_{Ed} [kg]	M_{Ed} [kg]	V_{Rcd} [kg]	V_{Rsd} [kg]	$V_{Rd,scorrimento}$ [kg]	V_s/V_R	
79 102		2	-26.1	1.00	-26.1	0.0	0.0	134991.3	70205.0	70201.9	0.00

Setto : 76 103 105 80 / Sezione 3

Armature su ogni faccia: Verticali : ø 14 15' [cm], Orizzontali : ø 10 20' [cm]

Sezione	Comb.	N _{Ed} [kg]	M ₁₂ [kgm]	M ₁₃ [kgm]	Sd/Sr
Base	2	-2037.5	0.0	372.7	0.00
Sommità	1	56.6	0.0	-35.4	0.00

S.L.E.	Combinazione	N [kg]	M ₁₂ [kgm]	M ₁₃ [kgm]	σ [kg/cm²]
Base					
sc Max	7	-1602.1	0.0	131.4	-0.3
sc Med	3	-1581.4	0.0	216.5	-0.3
st	4	-1574.3	0.0	248.5	-2.3
sc	7	-1602.1	0.0	131.4	-5.1
Sommità					
sc Max	7	-1602.1	0.0	131.4	-0.3

sc Med		3	-1581.4	0.0	216.5	-0.3
st		4	-1574.3	0.0	248.5	-2.3
sc		7	-1602.1	0.0	131.4	-5.1

Verifiche a Taglio

Nodi	Comb.	V _d [kg]	α	V _{Ed} [kg]	N _{Ed} [kg]	M _{Ed} [kg]	V _{Rcd} [kg]	V _{Rsd} [kg]	V _{Rd,scorrimento} [kg]	V _s / V _R
76 105	2	293.1	1.00	293.1	0.0	0.0	135079.4	70250.6	44154.9	0.01

Setto : 13 45 51 19 / Sezione 1

Armature su ogni faccia: Verticali : ø 14 15' [cm], Orizzontali : ø 10 20' [cm]

Sezione	Comb.	N _{Ed} [kg]	M ₁₂ [kgm]	M ₁₃ [kgm]	Sd/Sr
Base	2	16581.4	0.0	2695.1	0.10
Sommità	2	20699.6	0.0	1541.6	0.11

S.L.E.	Combinazione	N [kg]	M ₁₂ [kgm]	M ₁₃ [kgm]	σ [kg/cm²]
Base					
sc Max	3	3771.3	0.0	1448.4	0.6
sc Med	3	3771.3	0.0	1448.4	0.0
st	7	-5730.9	0.0	848.8	-8.1
sc	3	3771.3	0.0	1448.4	11.1
Sommità					
sc Max	3	3771.3	0.0	1448.4	0.6
sc Med	3	3771.3	0.0	1448.4	0.0
st	7	-5730.9	0.0	848.8	-8.1
sc	3	3771.3	0.0	1448.4	11.1

Verifiche a Taglio

Nodi	Comb.	V _d [kg]	α	V _{Ed} [kg]	N _{Ed} [kg]	M _{Ed} [kg]	V _{Rcd} [kg]	V _{Rsd} [kg]	V _{Rd,scorrimento} [kg]	V _s / V _R
13 51	2	2066.7	1.00	2066.7	0.0	0.0	161159.1	83756.8	52104.4	0.04

Setto : 45 77 84 51 / Sezione 1

Armature su ogni faccia: Verticali : ø 14 15' [cm], Orizzontali : ø 10 20' [cm]

Sezione	Comb.	N _{Ed} [kg]	M ₁₂ [kgm]	M ₁₃ [kgm]	Sd/Sr
Base	2	20357.1	0.0	351.6	0.11
Sommità	2	24475.3	0.0	793.6	0.13

S.L.E.	Combinazione	N [kg]	M ₁₂ [kgm]	M ₁₃ [kgm]	σ [kg/cm²]
Base					
sc Max	7	-2709.7	0.0	133.2	-0.4
sc Med	3	6741.3	0.0	224.8	0.0
st	7	-2709.7	0.0	133.2	-5.2
sc	7	-2709.7	0.0	133.2	-6.5
Sommità					
sc Max	7	-2709.7	0.0	133.2	-0.4
sc Med	3	6741.3	0.0	224.8	0.0
st	7	-2709.7	0.0	133.2	-5.2
sc	7	-2709.7	0.0	133.2	-6.5

Verifiche a Taglio

Nodi	Comb.	V _d [kg]	α	V _{Ed} [kg]	N _{Ed} [kg]	M _{Ed} [kg]	V _{Rcd} [kg]	V _{Rsd} [kg]	V _{Rd,scorrimento} [kg]	V _s / V _R
45 84	2	-558.6	1.00	-558.6	0.0	0.0	161159.1	83756.8	52104.4	0.01

Setto : 14 46 52 20 / Sezione 1

Armature su ogni faccia: Verticali : ø 14 15' [cm], Orizzontali : ø 10 20' [cm]

Sezione	Comb.	N _{Ed} [kg]	M ₁₂ [kgm]	M ₁₃ [kgm]	Sd/Sr
Base	2	16642.1	0.0	224.3	0.09
Sommità	2	20757.4	0.0	39.5	0.11

S.L.E.	Combinazione	N [kg]	M ₁₂ [kgm]	M ₁₃ [kgm]	σ [kg/cm²]
Base					
sc Max	7	-5539.5	0.0	-67.4	-0.8
sc Med	3	3874.7	0.0	43.4	0.0
st	7	-5539.5	0.0	-67.4	-11.7
sc	7	-5539.5	0.0	-67.4	-12.4
Sommità					
sc Max	7	-5539.5	0.0	-67.4	-0.8

sc Med		3	3874.7	0.0	43.4	0.0
st		7	-5539.5	0.0	-67.4	-11.7
sc		7	-5539.5	0.0	-67.4	-12.4

Verifiche a Taglio

Nodi Comb.	V _d [kg]	α	V _{Ed} [kg]	N _{Ed} [kg]	M _{Ed} [kg]	V _{Rcd} [kg]	V _{Rsd} [kg]	V _{Rd,scorrimento} [kg]	V _s / V _R	
14 52	2	-128.7	1.00	-128.7	0.0	0.0	161047.0	83698.7	52070.3	0.00

Setto : 46 78 85 52 / Sezione 1

Armature su ogni faccia: Verticali : ø 14 15' [cm], Orizzontali : ø 10 20' [cm]

Sezione Comb.		N _{Ed} [kg]	M ₁₂ [kgm]	M ₁₃ [kgm]	Sd/Sr
Base	2	21047.6	0.0	237.7	0.11
Sommità	2	25162.9	0.0	-10.9	0.13

S.L.E.	Combinazione	N [kg]	M ₁₂ [kgm]	M ₁₃ [kgm]	σ [kg/cm²]
Base					
sc Max	7	-2250.1	0.0	-76.3	-0.4
sc Med	3	7201.7	0.0	51.3	0.0
st	7	-2250.1	0.0	-76.3	-4.5
sc	7	-2250.1	0.0	-76.3	-5.3
Sommità					
sc Max	7	-2250.1	0.0	-76.3	-0.4
sc Med	3	7201.7	0.0	51.3	0.0
st	7	-2250.1	0.0	-76.3	-4.5
sc	7	-2250.1	0.0	-76.3	-5.3

Verifiche a Taglio

Nodi Comb.	V_d [kg]	α	V_{Ed} [kg]	N_{Ed} [kg]	M_{Ed} [kg]	V_{Rcd} [kg]	V_{Rsd} [kg]	$V_{Rd,scorrimento}$ [kg]	V_s/V_R	
46 85	2	-110.6	1.00	-110.6	0.0	0.0	161047.0	83698.7	52070.3	0.00

Setto : 82 106 104 79 / Sezione 3

Armature su ogni faccia: Verticali : ø 14 15' [cm], Orizzontali : ø 10 20' [cm]

Sezione	Comb.	N _{Ed} [kg]	M ₁₂ [kgm]	M ₁₃ [kgm]	Sd/Sr
Base	1	-2085.6	0.0	56.5	0.00
Sommità	1	8.2	0.0	-195.7	0.00

S.L.E.	Combinazione	N [kg]	M ₁₂ [kgm]	M ₁₃ [kgm]	σ [kg/cm²]
Base					
sc Max	3	-1605.2	0.0	37.4	-0.3
sc Med	3	-1605.2	0.0	37.4	-0.3
st	5	-1606.7	0.0	106.8	-3.4
sc	3	-1605.2	0.0	37.4	-4.4
Sommità					
sc Max	3	-1605.2	0.0	37.4	-0.3
sc Med	3	-1605.2	0.0	37.4	-0.3
st	5	-1606.7	0.0	106.8	-3.4
sc	3	-1605.2	0.0	37.4	-4.4

Verifiche a Taglio

Nodi	Comb.	V_d [kg]	α	V_{Ed} [kg]	N_{Ed} [kg]	M_{Ed} [kg]	V_{Rcd} [kg]	V_{Rsd} [kg]	$V_{Rd,scorrimento}$ [kg]	V_s/V_R	
82 104		2	177.1	1.00	177.1	0.0	0.0	134376.1	69886.4	226516.8	0.00

Setto : 80 105 107 83 / Sezione 3

Armature su ogni faccia: Verticali : ø 14 15' [cm], Orizzontali : ø 10 20' [cm]

Sezione	Comb.	N _{Ed} [kg]	M ₁₂ [kgm]	M ₁₃ [kgm]	Sd/Sr
Base	1	-2121.1	0.0	163.4	0.00
Sommità	1	-28.3	0.0	-119.5	0.00

S.L.E.	Combinazione	N [kg]	M ₁₂ [kgm]	M ₁₃ [kgm]	σ [kg/cm²]
Base					
sc Max	7	-1627.0	0.0	101.9	-0.3
sc Med	7	-1627.0	0.0	101.9	-0.3
st	3	-1628.8	0.0	109.1	-3.4
sc	7	-1627.0	0.0	101.9	-4.9
Sommità					
sc Max	7	-1627.0	0.0	101.9	-0.3

sc Med		7	-1627.0	0.0	101.9	-0.3
st		3	-1628.8	0.0	109.1	-3.4
sc		7	-1627.0	0.0	101.9	-4.9

Verifiche a Taglio

Nodi	Comb.	V _d [kg]	α	V _{Ed} [kg]	N _{Ed} [kg]	M _{Ed} [kg]	V _{Rcd} [kg]	V _{Rsd} [kg]	V _{Rd,scorrimento} [kg]	V _s / V _R
80 107	2	-40.3	1.00	-40.3	0.0	0.0	134314.5	69854.5	226414.2	0.00

Setto : 82 106 108 86 / Sezione 3

Armature su ogni faccia: Verticali : ø 14 15' [cm], Orizzontali : ø 10 20' [cm]

Sezione	Comb.	N _{Ed} [kg]	M ₁₂ [kgm]	M ₁₃ [kgm]	Sd/Sr
Base	2	-2116.7	0.0	-348.0	0.00
Sommità	2	-15.1	0.0	333.0	0.00

S.L.E.	Combinazione	N [kg]	M ₁₂ [kgm]	M ₁₃ [kgm]	σ [kg/cm²]
Base					
sc Max	7	-1612.5	0.0	-63.6	-0.3
sc Med	7	-1612.5	0.0	-63.6	-0.3
st	4	-1626.7	0.0	-232.2	-2.5
sc	7	-1612.5	0.0	-63.6	-4.6
Sommità					
sc Max	7	-1612.5	0.0	-63.6	-0.3
sc Med	7	-1612.5	0.0	-63.6	-0.3
st	4	-1626.7	0.0	-232.2	-2.5
sc	7	-1612.5	0.0	-63.6	-4.6

Verifiche a Taglio

Nodi	Comb.	V _d [kg]	α	V _{Ed} [kg]	N _{Ed} [kg]	M _{Ed} [kg]	V _{Rcd} [kg]	V _{Rsd} [kg]	V _{Rd,scorrimento} [kg]	V _s / V _R
82 108	1	-32.2	1.00	-32.2	0.0	0.0	134881.1	70147.9	227356.8	0.00

Setto : 83 107 109 87 / Sezione 3

Armature su ogni faccia: Verticali : ø 14 15' [cm], Orizzontali : ø 10 20' [cm]

Sezione	Comb.	N _{Ed} [kg]	M ₁₂ [kgm]	M ₁₃ [kgm]	Sd/Sr
Base	2	-2115.6	0.0	234.3	0.00
Sommità	1	-13.9	0.0	-202.3	0.00

S.L.E.	Combinazione	N [kg]	M ₁₂ [kgm]	M ₁₃ [kgm]	σ [kg/cm²]
Base					
sc Max	7	-1619.0	0.0	84.9	-0.3
sc Med	7	-1619.0	0.0	84.9	-0.3
st	4	-1625.5	0.0	156.2	-3.1
sc	7	-1619.0	0.0	84.9	-4.8
Sommità					
sc Max	7	-1619.0	0.0	84.9	-0.3
sc Med	7	-1619.0	0.0	84.9	-0.3
st	4	-1625.5	0.0	156.2	-3.1
sc	7	-1619.0	0.0	84.9	-4.8

Verifiche a Taglio

Nodi	Comb.	V _d [kg]	α	V _{Ed} [kg]	N _{Ed} [kg]	M _{Ed} [kg]	V _{Rcd} [kg]	V _{Rsd} [kg]	V _{Rd,scorrimento} [kg]	V _s / V _R
83 109	2	-33.0	1.00	-33.0	0.0	0.0	134597.3	70000.9	226884.7	0.00

Setto : 19 51 55 23 / Sezione 1

Armature su ogni faccia: Verticali : ø 14 15' [cm], Orizzontali : ø 10 20' [cm]

Sezione	Comb.	N _{Ed} [kg]	M ₁₂ [kgm]	M ₁₃ [kgm]	Sd/Sr
Base	2	15605.3	0.0	1812.7	0.09
Sommità	2	19732.3	0.0	1559.6	0.11

S.L.E.	Combinazione	N [kg]	M ₁₂ [kgm]	M ₁₃ [kgm]	σ [kg/cm²]
Base					
sc Max	3	3328.8	0.0	1154.8	0.9
sc Med	3	3328.8	0.0	1154.8	0.0
st	7	-5836.5	0.0	986.1	-7.7
sc	3	3328.8	0.0	1154.8	15.5
Sommità					
sc Max	3	3328.8	0.0	1154.8	0.9

sc Med	3	3328.8	0.0	1154.8	0.0
st	7	-5836.5	0.0	986.1	-7.7
sc	3	3328.8	0.0	1154.8	15.5

Verifiche a Taglio

Nodi Comb.	V_d [kg]	α	V_{Ed} [kg]	N_{Ed} [kg]	M_{Ed} [kg]	V_{Rcd} [kg]	V_{Rsd} [kg]	$V_{Rd,scorrimento}$ [kg]	V_S/V_R	
19 55	2	-1645.0	1.00	-1645.0	0.0	0.0	161505.4	83936.1	52210.0	0.03

Setto : 51 84 88 55 / Sezione 1

Armature su ogni faccia: Verticali : ø 14 15' [cm], Orizzontali : ø 10 20' [cm]

Sezione Comb.		N _{Ed} [kg]	M ₁₂ [kgm]	M ₁₃ [kgm]	Sd/Sr
Base	2	19997.1	0.0	497.0	0.11
Sommità	2	24124.1	0.0	711.0	0.13

S.L.E.	Combinazione	N [kg]	M ₁₂ [kgm]	M ₁₃ [kgm]	σ [kg/cm²]
Base					
sc Max	7	-2778.9	0.0	339.5	-0.5
sc Med	3	6561.9	0.0	360.3	0.0
st	7	-2778.9	0.0	339.5	-4.3
sc	7	-2778.9	0.0	339.5	-7.7
Sommità					
sc Max	7	-2778.9	0.0	339.5	-0.5
sc Med	3	6561.9	0.0	360.3	0.0
st	7	-2778.9	0.0	339.5	-4.3
sc	7	-2778.9	0.0	339.5	-7.7

Verifiche a Taglio

Nodi Comb.	V _d [kg]	α	V _{Ed} [kg]	N _{Ed} [kg]	M _{Ed} [kg]	V _{Rcd} [kg]	V _{Rsd} [kg]	V _{Rd,scorrimento} [kg]	V _S / V _R	
51 88	2	-589.3	1.00	-589.3	0.0	0.0	161505.4	83936.1	52210.0	0.01

Setto : 20 52 56 24 / Sezione 1

Armature su ogni faccia: Verticali : ø 14 15' [cm], Orizzontali : ø 10 20' [cm]

Sezione	Comb.	N _{Ed} [kg]	M ₁₂ [kgm]	M ₁₃ [kgm]	Sd/Sr
Base	2	16564.3	0.0	-304.9	0.09
Sommità	2	20684.2	0.0	-317.2	0.11

S.L.E.	Combinazione	N [kg]	M ₁₂ [kgm]	M ₁₃ [kgm]	σ [kg/cm²]
Base					
sc Max	7	-5560.3	0.0	-283.6	-0.9
sc Med	3	3825.3	0.0	-248.2	0.0
st	7	-5560.3	0.0	-283.6	-10.6
sc	7	-5560.3	0.0	-283.6	-13.5
Sommità					
sc Max	7	-5560.3	0.0	-283.6	-0.9
sc Med	3	3825.3	0.0	-248.2	0.0
st	7	-5560.3	0.0	-283.6	-10.6
sc	7	-5560.3	0.0	-283.6	-13.5

Verifiche a Taglio

Nodi Comb.	V _d [kg]	α	V _{Ed} [kg]	N _{Ed} [kg]	M _{Ed} [kg]	V _{Rcd} [kg]	V _{Rsd} [kg]	V _{Rd,scorrimento} [kg]	V _S / V _R	
20 56	1	366.3	1.00	366.3	0.0	0.0	161226.3	83791.6	52124.9	0.01

Setto : 52 85 89 56 / Sezione 1

Armature su ogni faccia: Verticali : ø 14 15' [cm], Orizzontali : ø 10 20' [cm]

Sezione Comb.	N _{Ed} [kg]	M ₁₂ [kgm]	M ₁₃ [kgm]	Sd/Sr	
Base	2	21031.4	0.0	-483.2	0.11
Sommità	2	25151.3	0.0	-62.1	0.13

S.L.E.	Combinazione	N [kg]	M ₁₂ [kgm]	M ₁₃ [kgm]	σ [kg/cm²]
Base					
sc Max	7	-2176.1	0.0	-328.9	-0.4
sc Med	3	7218.7	0.0	-342.5	0.0
st	7	-2176.1	0.0	-328.9	-3.1
sc	7	-2176.1	0.0	-328.9	-6.4
Sommità					
sc Max	7	-2176.1	0.0	-328.9	-0.4

sc Med		3	7218.7	0.0	-342.5	0.0
st		7	-2176.1	0.0	-328.9	-3.1
sc		7	-2176.1	0.0	-328.9	-6.4

Verifiche a Taglio

Nodi Comb.	V_d [kg]	α	V_{Ed} [kg]	N_{Ed} [kg]	M_{Ed} [kg]	V_{Rcd} [kg]	V_{Rsd} [kg]	$V_{Rd,scorrimento}$ [kg]	V_s/V_R	
52 89	1	341.3	1.00	341.3	0.0	0.0	161226.3	83791.6	52124.9	0.01

Setto : 86 108 110 90 / Sezione 3

Armature su ogni faccia: Verticali : \varnothing 14 15' [cm], Orizzontali : \varnothing 10 20' [cm]

Sezione	Comb.	N_{Ed} [kg]	M_{12} [kgm]	M_{13} [kgm]	Sd/Sr
Base	2	-2085.4	0.0	101.4	0.00
Sommità	1	10.5	0.0	205.4	0.00

S.L.E.	Combinazione	N [kg]	M_{12} [kgm]	M_{13} [kgm]	σ [kg/cm ²]
Base					
sc Max	4	-1605.4	0.0	67.9	-0.3
sc Med	3	-1606.5	0.0	-18.1	-0.3
st	5	-1607.7	0.0	-111.1	-3.4
sc	4	-1605.4	0.0	67.9	-4.6
Sommità					
sc Max	4	-1605.4	0.0	67.9	-0.3
sc Med	3	-1606.5	0.0	-18.1	-0.3
st	5	-1607.7	0.0	-111.1	-3.4
sc	4	-1605.4	0.0	67.9	-4.6

Verifiche a Taglio

Nodi	Comb.	V_d [kg]	α	V_{Ed} [kg]	N_{Ed} [kg]	M_{Ed} [kg]	V_{Rcd} [kg]	V_{Rsd} [kg]	$V_{Rd,scorrimento}$ [kg]	V_s/V_R
86 110	2	-203.8	1.00	-203.8	0.0	0.0	134613.1	70009.1	226910.9	0.00

Setto : 87 109 111 91 / Sezione 3

Armature su ogni faccia: Verticali : \varnothing 14 15' [cm], Orizzontali : \varnothing 10 20' [cm]

Sezione	Comb.	N_{Ed} [kg]	M_{12} [kgm]	M_{13} [kgm]	Sd/Sr
Base	2	-2146.1	0.0	-76.0	0.00
Sommità	1	-42.0	0.0	-206.6	0.00

S.L.E.	Combinazione	N [kg]	M_{12} [kgm]	M_{13} [kgm]	σ [kg/cm ²]
Base					
sc Max	7	-1644.4	0.0	43.4	-0.3
sc Med	7	-1644.4	0.0	43.4	-0.3
st	4	-1646.7	0.0	-50.8	-3.9
sc	7	-1644.4	0.0	43.4	-4.5
Sommità					
sc Max	7	-1644.4	0.0	43.4	-0.3
sc Med	7	-1644.4	0.0	43.4	-0.3
st	4	-1646.7	0.0	-50.8	-3.9
sc	7	-1644.4	0.0	43.4	-4.5

Verifiche a Taglio

Nodi	Comb.	V_d [kg]	α	V_{Ed} [kg]	N_{Ed} [kg]	M_{Ed} [kg]	V_{Rcd} [kg]	V_{Rsd} [kg]	$V_{Rd,scorrimento}$ [kg]	V_S/V_R	
87 111		2	195.2	1.00	195.2	0.0	0.0	135052.6	70236.7	227642.1	0.00

Setto : 23 55 61 29 / Sezione 1

Armature su ogni faccia: Verticali : \varnothing 14 15' [cm], Orizzontali : \varnothing 10 20' [cm]

Sezione Comb.		N_{Ed} [kg]	M_{12} [kgm]	M_{13} [kgm]	Sd/Sr
Base	2	16083.0	0.0	601.1	0.09
Sommità	2	20206.3	0.0	1392.6	0.11

S.L.E.	Combinazione	N [kg]	M_{12} [kgm]	M_{13} [kgm]	σ [kg/cm ²]
Base					
sc Max	7	-5926.9	0.0	1197.9	-1.3
sc Med	3	3480.1	0.0	751.8	0.0
st	7	-5926.9	0.0	1197.9	-6.8
sc	7	-5926.9	0.0	1197.9	-18.8
Sommità					
sc Max	7	-5926.9	0.0	1197.9	-1.3

sc Med	3	3480.1	0.0	751.8	0.0
st	7	-5926.9	0.0	1197.9	-6.8
sc	7	-5926.9	0.0	1197.9	-18.8

Verifiche a Taglio

Nodi Comb.	V _d [kg]	α	V _{Ed} [kg]	N _{Ed} [kg]	M _{Ed} [kg]	V _{Rcd} [kg]	V _{Rsd} [kg]	V _{Rd,scorrimento} [kg]	V _S / V _R	
23 61	1	1299.9	1.00	1299.9	0.0	0.0	161359.4	83860.5	54673.6	0.02

Setto : 55 88 94 61 / Sezione 1

Armature su ogni faccia: Verticali : ø 14 15' [cm], Orizzontali : ø 10 20' [cm]

Sezione Comb.		N _{Ed} [kg]	M ₁₂ [kgm]	M ₁₃ [kgm]	Sd/Sr
Base	2	20072.1	0.0	769.0	0.11
Sommità	2	24195.4	0.0	395.7	0.13

S.L.E.	Combinazione	N [kg]	M ₁₂ [kgm]	M ₁₃ [kgm]	σ [kg/cm ²]	
Base						
sc	Max	7	-2818.1	0.0	338.1	-0.5
sc	Med	3	6574.8	0.0	470.5	0.0
	st	7	-2818.1	0.0	338.1	-4.4
	sc	7	-2818.1	0.0	338.1	-7.8
Sommità						
sc	Max	7	-2818.1	0.0	338.1	-0.5
sc	Med	3	6574.8	0.0	470.5	0.0
	st	7	-2818.1	0.0	338.1	-4.4
	sc	7	-2818.1	0.0	338.1	-7.8

Verifiche a Taglio

Nodi Comb.	V _d [kg]	α	V _{Ed} [kg]	N _{Ed} [kg]	M _{Ed} [kg]	V _{Rcd} [kg]	V _{Rsd} [kg]	V _{Rd,scorrimento} [kg]	V _s / V _R	
55 94	1	-622.5	1.00	-622.5	0.0	0.0	161359.4	83860.5	52165.5	0.01

Setto : 24 56 62 30 / Sezione 1

Armature su ogni faccia: Verticali : ø 14 15' [cm], Orizzontali : ø 10 20' [cm]

Sezione	Comb.	N _{Ed} [kg]	M ₁₂ [kgm]	M ₁₃ [kgm]	Sd/Sr
Base	2	16533.5	0.0	-598.3	0.09
Sommità	2	20667.6	0.0	-1085.1	0.11

S.L.E.	Combinazione	N [kg]	M ₁₂ [kgm]	M ₁₃ [kgm]	σ [kg/cm ²]
Base					
sc Max	7	-5554.2	0.0	-851.5	-1.1
sc Med	3	3807.8	0.0	-596.9	0.0
st	7	-5554.2	0.0	-851.5	-7.7
sc	7	-5554.2	0.0	-851.5	-16.3
Sommità					
sc Max	7	-5554.2	0.0	-851.5	-1.1
sc Med	3	3807.8	0.0	-596.9	0.0
st	7	-5554.2	0.0	-851.5	-7.7
sc	7	-5554.2	0.0	-851.5	-16.3

Verifiche a Taglio

Nodi Comb.	V_d [kg]	α	V_{Ed} [kg]	N_{Ed} [kg]	M_{Ed} [kg]	V_{Rcd} [kg]	V_{Rsd} [kg]	$V_{Rd,scorrimento}$ [kg]	V_s/V_R	
24 62	1	-1010.6	1.00	-1010.6	0.0	0.0	161784.0	84080.4	52294.9	0.02

Setto : 56 89 95 62 / Sezione 1

Armature su ogni faccia: Verticali : ø 14 15' [cm], Orizzontali : ø 10 20' [cm]

Sezione	Comb.	N _{Ed} [kg]	M ₁₂ [kgm]	M ₁₃ [kgm]	Sd/Sr
Base	2	21181.9	0.0	-670.1	0.11
Sommità	2	25316.1	0.0	-400.1	0.13

S.L.E.	Combinazione	N [kg]	M ₁₂ [kgm]	M ₁₃ [kgm]	σ [kg/cm ²]	
	Base					
	sc Max	7	-2049.4	0.0	-417.3	-0.4
	sc Med	3	7324.4	0.0	-448.9	0.0
	st	7	-2049.4	0.0	-417.3	-2.3
	sc	7	-2049.4	0.0	-417.3	-6.5
	Sommità					
	sc Max	7	-2049.4	0.0	-417.3	-0.4

sc Med	3	7324.4	0.0	-448.9	0.0
st	7	-2049.4	0.0	-417.3	-2.3
sc	7	-2049.4	0.0	-417.3	-6.5

Verifiche a Taglio

Nodi Comb.	V_d [kg]	α	V_{Ed} [kg]	N_{Ed} [kg]	M_{Ed} [kg]	V_{Rcd} [kg]	V_{Rsd} [kg]	$V_{Rd,scorrimento}$ [kg]	V_S/V_R	
56 95	1	577.8	1.00	577.8	0.0	0.0	161784.0	84080.4	52294.9	0.01

Setto : 92 112 110 90 / Sezione 3

Armature su ogni faccia: Verticali : \varnothing 14 15' [cm], Orizzontali : \varnothing 10 20' [cm]

Sezione	Comb.	N _{Ed} [kg]	M ₁₂ [kgm]	M ₁₃ [kgm]	Sd/Sr
Base	2	-2087.1	0.0	352.3	0.00
Sommità	2	9.4	0.0	-384.3	0.00

S.L.E.	Combinazione	N [kg]	M_{12} [kgm]	M_{13} [kgm]	σ [kg/cm ²]
Base					
sc Max	7	-1609.5	0.0	47.4	-0.3
sc Med	3	-1607.7	0.0	172.8	-0.3
st	4	-1606.4	0.0	235.1	-2.5
sc	7	-1609.5	0.0	47.4	-4.5
Sommità					
sc Max	7	-1609.5	0.0	47.4	-0.3
sc Med	3	-1607.7	0.0	172.8	-0.3
st	4	-1606.4	0.0	235.1	-2.5
sc	7	-1609.5	0.0	47.4	-4.5

Verifiche a Taglio

Nodi Comb.	V_d [kg]	α	V_{Ed} [kg]	N_{Ed} [kg]	M_{Ed} [kg]	V_{Rcd} [kg]	V_{Rsd} [kg]	$V_{Rd,scorrimento}$ [kg]	V_s/V_R
92 110	176.3	1.00	76.3	0.0	0.0	134549.9	69976.4	226805.9	0.00

Setto : 91 111 113 93 / Sezione 3

Armature su ogni faccia: Verticali : \varnothing 14 15' [cm], Orizzontali : \varnothing 10 20' [cm]

Sezione	Comb.	N _{Ed} [kg]	M ₁₂ [kgm]	M ₁₃ [kgm]	Sd/Sr
Base	2	-2083.8	0.0	438.4	0.00
Sommità	2	11.5	0.0	-385.3	0.00

S.L.E.	Combinazione	N [kg]	M_{12} [kgm]	M_{13} [kgm]	σ [kg/cm ²]
Base					
sc Max	7	-1613.1	0.0	119.2	-0.3
sc Med	3	-1607.2	0.0	235.4	-0.3
st	4	-1604.1	0.0	292.5	-2.1
sc	7	-1613.1	0.0	119.2	-5.0
Sommità					
sc Max	7	-1613.1	0.0	119.2	-0.3
sc Med	3	-1607.2	0.0	235.4	-0.3
st	4	-1604.1	0.0	292.5	-2.1
sc	7	-1613.1	0.0	119.2	-5.0

Verifiche a Taglio

Nodi Comb.	V_d [kg]	α	V_{Ed} [kg]	N_{Ed} [kg]	M_{Ed} [kg]	V_{Rcd} [kg]	V_{Rsd} [kg]	$V_{Rd,scorrimento}$ [kg]	V_s/V_R	
91 113	2	-42.5	1.00	-42.5	0.0	0.0	134478.9	69939.6	221819.9	0.00

Setto : 93 113 112 92 / Sezione 3

Armature su ogni faccia: Verticali : \varnothing 14 15' [cm], Orizzontali : \varnothing 10 20' [cm]

Sezione	Comb.	N_{Ed} [kg]	M_{12} [kgm]	M_{13} [kgm]	Sd/Sr
Base	2	-2110.1	0.0	-191.6	0.00
Sommità	1	0.9	0.0	-228.0	0.00

S.L.E.	Combinazione	N [kg]	M_{12} [kgm]	M_{13} [kgm]	σ [kg/cm ²]
Base					
sc Max	7	-1606.4	0.0	36.3	-0.3
sc Med	7	-1606.4	0.0	36.3	-0.3
st	4	-1622.3	0.0	-128.0	-3.3
sc	7	-1606.4	0.0	36.3	-4.4
Sommità					
sc Max	7	-1606.4	0.0	36.3	-0.3

sc Med		7	-1606.4	0.0	36.3	-0.3
st		4	-1622.3	0.0	-128.0	-3.3
sc		7	-1606.4	0.0	36.3	-4.4

Verifiche a Taglio

Nodi	Comb.	V _d [kg]	α	V _{Ed} [kg]	N _{Ed} [kg]	M _{Ed} [kg]	V _{Rcd} [kg]	V _{Rsd} [kg]	V _{Rd,scorrimento} [kg]	V _S / V _R
93 112	2	292.2	1.00	292.2	0.0	0.0	134928.3	70172.4	227435.3	0.00

Setto : 29 61 63 31 / Sezione 1

Armature su ogni faccia: Verticali : ø 14 15' [cm], Orizzontali : ø 10 20' [cm]

Sezione	Comb.	N _{Ed} [kg]	M ₁₂ [kgm]	M ₁₃ [kgm]	Sd/Sr
Base	2	16076.1	0.0	2663.2	0.10
Sommità	2	20201.0	0.0	1772.8	0.11

S.L.E.	Combinazione	N [kg]	M ₁₂ [kgm]	M ₁₃ [kgm]	σ [kg/cm²]
Base					
sc Max	3	3419.3	0.0	1538.4	-0.1
sc Med	3	3419.3	0.0	1538.4	0.0
st	7	-6064.7	0.0	1112.0	-7.5
sc	3	3419.3	0.0	1538.4	0.5
Sommità					
sc Max	3	3419.3	0.0	1538.4	-0.1
sc Med	3	3419.3	0.0	1538.4	0.0
st	7	-6064.7	0.0	1112.0	-7.5
sc	3	3419.3	0.0	1538.4	0.5

Verifiche a Taglio

Nodi	Comb.	V _d [kg]	α	V _{Ed} [kg]	N _{Ed} [kg]	M _{Ed} [kg]	V _{Rcd} [kg]	V _{Rsd} [kg]	V _{Rd,scorrimento} [kg]	V _S / V _R
29 63	2	2163.9	1.00	2163.9	0.0	0.0	161422.5	83893.2	52184.7	0.04

Setto : 61 94 96 63 / Sezione 1

Armature su ogni faccia: Verticali : ø 14 15' [cm], Orizzontali : ø 10 20' [cm]

Sezione	Comb.	N _{Ed} [kg]	M ₁₂ [kgm]	M ₁₃ [kgm]	Sd/Sr
Base	2	19967.4	0.0	496.5	0.11
Sommità	2	24092.3	0.0	827.8	0.13

S.L.E.	Combinazione	N [kg]	M ₁₂ [kgm]	M ₁₃ [kgm]	σ [kg/cm²]
Base					
sc Max	7	-2898.6	0.0	544.7	-0.6
sc Med	3	6499.2	0.0	440.5	0.0
st	7	-2898.6	0.0	544.7	-3.5
sc	7	-2898.6	0.0	544.7	-9.0
Sommità					
sc Max	7	-2898.6	0.0	544.7	-0.6
sc Med	3	6499.2	0.0	440.5	0.0
st	7	-2898.6	0.0	544.7	-3.5
sc	7	-2898.6	0.0	544.7	-9.0

Verifiche a Taglio

Nodi	Comb.	V _d [kg]	α	V _{Ed} [kg]	N _{Ed} [kg]	M _{Ed} [kg]	V _{Rcd} [kg]	V _{Rsd} [kg]	V _{Rd,scorrimento} [kg]	V _S / V _R
61 96	1	-704.4	1.00	-704.4	0.0	0.0	161422.5	83893.2	52184.7	0.01

Setto : 30 62 64 32 / Sezione 1

Armature su ogni faccia: Verticali : ø 14 15' [cm], Orizzontali : ø 10 20' [cm]

Sezione	Comb.	N _{Ed} [kg]	M ₁₂ [kgm]	M ₁₃ [kgm]	Sd/Sr
Base	2	16023.0	0.0	-3681.0	0.10
Sommità	2	20146.1	0.0	-2564.5	0.12

S.L.E.	Combinazione	N [kg]	M ₁₂ [kgm]	M ₁₃ [kgm]	σ [kg/cm²]
Base					
sc Max	3	3479.7	0.0	-2233.0	-1.0
sc Med	3	3479.7	0.0	-2233.0	0.0
st	7	-5861.2	0.0	-1852.0	-3.4
sc	3	3479.7	0.0	-2233.0	-11.5
Sommità					
sc Max	3	3479.7	0.0	-2233.0	-1.0

sc Med		3	3479.7	0.0	-2233.0	0.0
st		7	-5861.2	0.0	-1852.0	-3.4
sc		3	3479.7	0.0	-2233.0	-11.5

Verifiche a Taglio

Nodi Comb.	V_d [kg]	α	V_{Ed} [kg]	N_{Ed} [kg]	M_{Ed} [kg]	V_{Rcd} [kg]	V_{Rsd} [kg]	$V_{Rd,scorrimento}$ [kg]	V_s/V_R
30 64	2-3046.6	1.00	-3046.6	0.0	0.0	161352.8	83857.1	52509.9	0.06

Setto : 62 95 97 64 / Sezione 1

Armature su ogni faccia: Verticali : \varnothing 14 15' [cm], Orizzontali : \varnothing 10 20' [cm]

Sezione	Comb.	N_{Ed} [kg]	M_{12} [kgm]	M_{13} [kgm]	Sd/Sr
Base	2	20423.1	0.0	831.4	0.11
Sommità	2	24546.3	0.0	-1889.1	0.14

S.L.E.	Combinazione	N [kg]	M ₁₂ [kgm]	M ₁₃ [kgm]	σ [kg/cm ²]
Base					
sc Max	7	-2568.6	0.0	325.6	-0.5
sc Med	3	6813.7	0.0	445.5	0.0
st	7	-2568.6	0.0	325.6	-3.9
sc	7	-2568.6	0.0	325.6	-7.2
Sommita					
sc Max	7	-2568.6	0.0	325.6	-0.5
sc Med	3	6813.7	0.0	445.5	0.0
st	7	-2568.6	0.0	325.6	-3.9
sc	7	-2568.6	0.0	325.6	-7.2

Verifiche a Taglio

Nodi Comb.	V_d [kg]	α	V_{Ed} [kg]	N_{Ed} [kg]	M_{Ed} [kg]	V_{Rcd} [kg]	V_{Rsd} [kg]	$V_{Rd,scorrimento}$ [kg]	V_s/V_R	
62 97	1	554.2	1.00	554.2	0.0	0.0	161352.8	83857.1	52163.5	0.01

Setto : 32 64 63 31 / Sezione 1

Armature su ogni faccia: Verticali : \varnothing 14 15' [cm], Orizzontali : \varnothing 10 20' [cm]

Sezione	Comb.	N _{Ed} [kg]	M ₁₂ [kgm]	M ₁₃ [kgm]	Sd/Sr
Base	2	15481.2	0.0	-1113.2	0.09
Sommità	2	19595.4	0.0	-1648.9	0.11

S.L.E.	Combinazione	N [kg]	M ₁₂ [kgm]	M ₁₃ [kgm]	σ [kg/cm ²]
Base					
sc Max	3	3124.7	0.0	-935.9	1.3
sc Med	3	3124.7	0.0	-935.9	0.0
st	7	-6208.3	0.0	-1166.7	-7.6
sc	7	-6208.3	0.0	-1166.7	-19.4
Sommita					
sc Max	3	3124.7	0.0	-935.9	1.3
sc Med	3	3124.7	0.0	-935.9	0.0
st	7	-6208.3	0.0	-1166.7	-7.6
sc	7	-6208.3	0.0	-1166.7	-19.4

Verifiche a Taglio

Nodi Comb.	V_d [kg]	α	V_{Ed} [kg]	N_{Ed} [kg]	M_{Ed} [kg]	V_{Rcd} [kg]	V_{Rsd} [kg]	$V_{Rd,scorrimento}$ [kg]	V_s/V_R	
32 63	1	-1510.4	1.00	-1510.4	0.0	0.0	161004.8	83676.9	56636.0	0.03

Setto : 64 97 96 63 / Sezione 1

Armature su ogni faccia: Verticali : \varnothing 14 15' [cm], Orizzontali : \varnothing 10 20' [cm]

Sezione	Comb.	N _{Ed} [kg]	M ₁₂ [kgm]	M ₁₃ [kgm]	Sd/Sr
Base	2	19486.6	0.0	-1371.3	0.11
Sommità	2	23600.8	0.0	-702.4	0.13

S.L.E.	Combinazione	N [kg]	M ₁₂ [kgm]	M ₁₃ [kgm]	σ [kg/cm ²]
Base					
sc Max	7	-3199.3	0.0	-619.5	-0.7
sc Med	3	6186.3	0.0	-817.4	0.0
st	7	-3199.3	0.0	-619.5	-3.8
sc	7	-3199.3	0.0	-619.5	-10.1
Sommità					
sc Max	7	-3199.3	0.0	-619.5	-0.7

sc Med	3	6186.3	0.0	-817.4	0.0
st	7	-3199.3	0.0	-619.5	-3.8
sc	7	-3199.3	0.0	-619.5	-10.1

Verifiche a Taglio

Nodi Comb.	V_d [kg]	α	V_{Ed} [kg]	N_{Ed} [kg]	M_{Ed} [kg]	V_{Rcd} [kg]	V_{Rsd} [kg]	$V_{Rd,scorrimento}$ [kg]	V_s/V_R
64 96	21011.5	1.00	1011.5	0.0	0.0	161004.8	83676.9	52057.4	0.02

Verifiche lastre/piastre

Modalità di verifica

Gli elementi lastra/piastra possono essere distinti in due categorie in funzione dello stato di sollecitazione:

- elementi soggetti ad uno stato di sollecitazione semplice (flessione o tensionale a membrana);
- elementi soggetti ad uno stato di sollecitazione misto (flessionale e tensionale a membrana).

Le verifiche per stato di sollecitazione semplice sono svolte proiettando le armature lungo le direzioni principali e effettuando la verifica a flessione retta/membrana lungo tali direzioni.

Per gli elementi soggetti ad uno stato di sollecitazione misto, le direzioni principali variano, lungo lo sviluppo z dell'elemento, in modo continuo. Il codice di verifica procede a:

- suddivisione dell'elemento in strati di 1 cm di spessore;
- valutazione, per ogni strato, del corrispondente stato di deformazione e tensione membranale;
- ricostruzione, per sovrapposizione dei vari strati membranali, del comportamento globale dell'elemento soggetto allo stato misto di presso-flessione.

L'Utente può definire delle sezioni trasversali, per le quali le sollecitazioni sono valutate mediando integrazione sulla lunghezza della sezione

Nella determinazione della matrice di rigidezza degli strati di cls, si assume:

- Metodo T.A.: il calcestruzzo in compressione è assunto indefinitamente elastico lineare mentre, in trazione, si può assumere (opzionalmente) che sia in grado di assumere una trazione compresa fra 0 e f_{ct} , essendo f_{ct} la resistenza a trazione del calcestruzzo definita dall'EC2;
- Metodo S.L.U.: il metodo impiegato è quello noto come MCFT acronimo di "Modified Compression Field Method", sviluppato presso l'Università di Toronto da Collins e Del Vecchio a partire dagli anni '80. Il metodo, nella forma implementata, assume per la curva monoassiale tensione-deformazioni del cls quanto previsto dall'EC2;

La verifica a punzonamento può essere condotta considerando o non considerando autoequilibrate le tensioni nel terreno sotto il cono di punzonamento. L'angolo di diffusione è fissato dall'utente.

I copriferri indicati sono da intendersi riferiti al centro delle barre resistenti.

Simbologia utilizzata T.A.:

σ_{amm}	Tensione ammissibile
$\sigma_{amm,Trazione}$	Tensione ammissibile di trazione cls
$\sigma_{cls,1}$	Tensione cls direzione 1
$\sigma_{cls,2}$	Tensione cls direzione 2
$\sigma_{acciaio,1}$	Tensione acciaio direzione 1
$\sigma_{acciaio,2}$	Tensione acciaio direzione 2
$c_{f_x,Eq}$	Copriferro in direzione x
A_{f_x}	Armatura in direzione x
$c_{f_y,Eq}$	Copriferro in direzione y
A_{f_y}	Armatura in direzione y
$N_x, N_y, N_{xy}, M_{xx}, M_{yy}, M_{xy}$	Componenti di sollecitazione esterna
$N_{11}, N_{22}, M_{11}, M_{22}, M_{12}$	Componenti di sollecitazione principali
α	Angolo direzioni principali
d	Distanza a cui è calcolato il perimetro critico
$\tau_{b,0}$	Tensione ammissibile a taglio elementi privi di armatura a taglio
$\tau_{b,1}$	Tensione ammissibile a taglio elementi con armatura a taglio
N, M_x, M_y	Sollecitazione esterna verifica a punzonamento
τ	Tensione tangenziale massima

Simbologia utilizzata S.L.:

f_{yd}	Tensione di snervamento di progetto barre armatura
ϵ_{ud}	Deformazione uniforme ultima
ϵ_{yd}	Deformazione al limite di snervamento
f_{ck}	Resistenza cilindrica caratteristica
f_{cd}	Tensione di calcolo a compressione di base
ϵ_{c2}	Deformazione limite elastico

ϵ_y	Deformazione limite ultimo
f_{ctd}	Tensione di calcolo a trazione di progetto
ϵ_{ctd}	Deformazione al limite di trazione
E_{cm}	Modulo elastico
$cf_{x,Eq}$	Copriferro in direzione x
Af_x	Armatura in direzione x
$cf_{y,Eq}$	Copriferro in direzione y
Af_y	Armatura in direzione y
$N_x, N_y, N_{xy}, M_{xx}, M_{yy}, M_{xy}$	Componenti di sollecitazione esterna
$N_{11}, N_{22}, M_{11}, M_{22}, M_{12}$	Componenti di sollecitazione principali
α	Angolo direzioni principali
Cr	Coefficiente rottura S_D/S_R
ϵ_x	Deformazione acciaio direzione x
ϵ_y	Deformazione acciaio direzione y
ϵ_{min}	Deformazione minima cls
ϵ_{max}	Deformazione massima cls
θ_{max}	Angolo direzioni principali di deformazione
σ_{amm}	Tensione ammissibile S.L.E. di riferimento
σ_x	Tensione nelle barre nello S.L.E. di riferimento in direzione x
σ_y	Tensione nelle barre nello S.L.E. di riferimento in direzione y
$\sigma_{c,Max}$	Tensione massima nel cls nello S.L.E. di riferimento
d	Distanza a cui è calcolato il perimetro critico
$C_{Rd,c}$	Coefficiente taglio resistente elementi privi di armatura a taglio
$V_{Ed}, M_{x,Ed}, M_{y,Ed}$	Sollecitazione esterna verifica a punzonamento
B_x, B_y	Dimensioni perimetro critico
β	Angolo diffusione tensioni
v_{Ed}	Tensione tangenziale sull'area critica
ρ	Rapporto meccanico di armatura
$V_{Rd,c}$	Taglio resistente elementi privi di armatura

Elementi più sollecitati per tipologia di sezione

Verifiche SLU ***Flessione*** elemento nodi 65 71

Proprietà dei materiali

Acciaio

- f_{yd} 3913.0 [kg/cm²]
- ϵ_{ud} 67.50 ‰
- ϵ_{yd} 1.86 ‰

Calcestruzzo

- f_{cd} 141.7 [kg/cm²]
- ϵ_{c2} -2.00 ‰
- ϵ_{cu} -3.50 ‰
- f_{ctd} 12.0 [kg/cm²]
- ϵ_{ctd} 0.08 ‰
- E_{cm} 141666.7 [kg/cm²]

Sezione

- sezione 1 H=20.000 [cm]

Estradosso				Intradosso			
Af_x	$cf_{x,Eq}$	Af_y	$cf_{y,Eq}$	Af_x	$cf_{x,Eq}$	Af_y	$cf_{y,Eq}$
[cm ²] / m	[cm]	[cm ²] / m	[cm]	[cm ²] / m	[cm]	[cm ²] / m	[cm]
5.65	3.000	3.93	3.000	5.65	3.000	3.93	3.000

Azioni di verifica combinazione 1 (0.753 1.111 [m])

M_{xx}	-128.18	[kgm/m]	M_{11}	-134.56	[kgm/m]
M_y	7.14	[kgm/m]	M_{22}	13.52	[kgm/m]
M_{xy}	30.08	[kgm/m]	α	-11.99	[°]

Verifiche

Cr=S _D /S _R	Posizione	Acciaio		Calcestruzzo		
		ε _x ‰	ε _y ‰	ε _{min} ‰	ε _{max} ‰	θ [°]
0.04	Estradosso	0.404	0.174	0.076	-3.500	14.98
	Intradosso	15.907	1.599	21.693	-0.185	-71.86

Verifiche SLE Rare Flessione elemento nodi 65 71

Proprietà dei materiali

Acciaio

- σ 3600.0 [kg/cm²]

Calcestruzzo

- σ 150.0 [kg/cm²]

Sezione

- sezione 1 H=20.000 [cm]

Estradosso				Intradosso			
Af _x	cf _{x,Eq}	Af _y	cf _{y,Eq}	Af _x	cf _{x,Eq}	Af _y	cf _{y,Eq}
[cm ²] / m	[cm]	[cm ²] / m	[cm]	[cm ²] / m	[cm]	[cm ²] / m	[cm]
5.65	3.000	3.93	3.000	5.65	3.000	3.93	3.000

Azioni di verifica combinazione 3 (0.753 1.111 [m])

M_{xx}	-85.90	[kgm/m]	M_{11}	-90.17	[kgm/m]
M_y	4.60	[kgm/m]	M_{22}	8.86	[kgm/m]
M_{xy}	20.10	[kgm/m]	α	-11.98	[°]

Verifiche

Cr=S _D /S _R	Posizione	Acciaio		Calcestruzzo		Stato	Ampiezza Fessure mm
		σ _x	σ _y	σ _{c,Max}	θ		
		[kg/cm ²]	[kg/cm ²]	[kg/cm ²]	[°]		
0.03	Estradosso	-11.3	0.6	-1.2	13.06	NON Fessurato	0.000
	Intradosso	11.3	-0.6	-0.1	-76.95	NON Fessurato	0.000

Verifiche SLE Frequenti Flessione elemento nodi 65 71

Proprietà dei materiali

Acciaio

- σ 4500.0 [kg/cm²]

Calcestruzzo

- σ 250.0 [kg/cm²]

Sezione

- sezione 1 H=20.000 [cm]

Estradosso				Intradosso			
Af _x	cf _{x,Eq}	Af _y	cf _{y,Eq}	Af _x	cf _{x,Eq}	Af _y	cf _{y,Eq}
[cm ²] / m	[cm]	[cm ²] / m	[cm]	[cm ²] / m	[cm]	[cm ²] / m	[cm]
5.65	3.000	3.93	3.000	5.65	3.000	3.93	3.000

Azioni di verifica combinazione 5 (0.753 1.111 [m])

M_{xx}	-158.78	[kgm/m]	M_{11}	-162.96	[kgm/m]
M_y	-20.50	[kgm/m]	M_{22}	-16.31	[kgm/m]
M_{xy}	24.41	[kgm/m]	α	-9.72	[°]

Verifiche

Cr=S _D /S _R	Posizione	Acciaio		Calcestruzzo		Stato	Ampiezza Fessure mm
		σ _x	σ _y	σ _{c,Max}	θ		
		[kg/cm ²]	[kg/cm ²]	[kg/cm ²]	[°]		
0.05	Estradosso	-20.8	-2.8	-2.4	10.70	NON Fessurato	0.000
	Intradosso	20.8	2.8	0.0	-79.30	NON Fessurato	0.000

Verifiche SLE Quasi Permanenti Flessione elemento nodi 65 71

Proprietà dei materiali

Acciaio

- σ 4500.0 [kg/cm²]

Calcestruzzo

- σ 112.5 [kg/cm²]

Sezione

- sezione 1 H=20.000 [cm]

Estradosso				Intradosso			
Af _x	cf _{x,Eq}	Af _y	cf _{y,Eq}	Af _x	cf _{x,Eq}	Af _y	cf _{y,Eq}
[cm ²] / m	[cm]	[cm ²] / m	[cm]	[cm ²] / m	[cm]	[cm ²] / m	[cm]
5.65	3.000	3.93	3.000	5.65	3.000	3.93	3.000

Azioni di verifica combinazione 7 (0.753 1.111 [m])

M_{xx}	-154.20	[kgm/m]	M_{11}	-158.24	[kgm/m]
M_y	-20.03	[kgm/m]	M_{22}	-15.99	[kgm/m]
M_{xy}	23.63	[kgm/m]	α	-9.70	[°]

Verifiche

Cr=S _D /S _R	Posizione	Acciaio		Calcestruzzo		Stato	Ampiezza Fessure mm
		σ _x	σ _y	σ _{c,Max}	θ		
		[kg/cm ²]	[kg/cm ²]	[kg/cm ²]	[°]		
0.05	Estradosso	-20.2	-2.7	-2.3	10.67	NON Fessurato	0.000

	Intradosso	20.2	2.7	0.0	-79.33	NON Fessurato	0.000
--	------------	------	-----	-----	--------	---------------	-------

Elementi più sollecitati per tipologia di sezione

Verifiche SLU **Flessione** elemento nodi 93 96

Proprietà dei materiali

Acciaio

- f_{yd} 3913.0 [kg/cm²]
- ϵ_{ud} 67.50 ‰
- ϵ_{yd} 1.86 ‰

Calcestruzzo

- f_{cd} 141.7 [kg/cm²]
- ϵ_{c2} -2.00 ‰
- ϵ_{cu} -3.50 ‰
- f_{ctd} 12.0 [kg/cm²]
- ϵ_{ctd} 0.08 ‰
- E_{cm} 141666.7 [kg/cm²]

Sezione

- sezione 1 H=20.000 [cm]

Estradosso				Intradosso			
Af_x [cm ²] / m	$cf_{x,Eq}$ [cm] [cm ²] / m	Af_y [cm ²] / m	$cf_{y,Eq}$ [cm] [cm ²] / m	Af_x [cm ²] / m	$cf_{x,Eq}$ [cm] [cm ²] / m	Af_y [cm ²] / m	$cf_{y,Eq}$ [cm] [cm ²] / m
5.65	3.000	3.93	3.000	5.65	3.000	3.93	3.000

Azioni di verifica combinazione 1 (0.689 1.114 [m])

M_{xx}	-98.59 [kgm/m]	M_{11}	-109.21 [kgm/m]
M_y	14.98 [kgm/m]	M_{22}	25.59 [kgm/m]
M_{xy}	-36.30 [kgm/m]	α	16.30 [°]

Verifiche

Cr=S _D /S _R	Posizione	Acciaio		Calcestruzzo		θ [°]
		ϵ_x ‰	ϵ_y ‰	ϵ_{min} ‰	ϵ_{max} ‰	
0.04	Estradosso	0.426	0.397	0.190	-3.500	-20.01
	Intradosso	15.204	3.102	22.690	-0.250	65.34

Verifiche SLE Rare **Flessione** elemento nodi 93 96

Proprietà dei materiali

Acciaio

- σ 3600.0 [kg/cm²]

Calcestruzzo

- σ 150.0 [kg/cm²]

Sezione

- sezione 1 H=20.000 [cm]

Estradosso				Intradosso			
Af_x [cm ²] / m	$cf_{x,Eq}$ [cm] [cm ²] / m	Af_y [cm ²] / m	$cf_{y,Eq}$ [cm] [cm ²] / m	Af_x [cm ²] / m	$cf_{x,Eq}$ [cm] [cm ²] / m	Af_y [cm ²] / m	$cf_{y,Eq}$ [cm] [cm ²] / m
5.65	3.000	3.93	3.000	5.65	3.000	3.93	3.000

Azioni di verifica combinazione 3 (0.689 1.114 [m])

M_{xx}	-66.17 [kgm/m]	M_{11}	-73.26 [kgm/m]
M_y	9.80 [kgm/m]	M_{22}	16.89 [kgm/m]
M_{xy}	-24.26 [kgm/m]	α	16.28 [°]

Verifiche

Cr=S _D /S _R	Posizione	Acciaio		Calcestruzzo		θ [°]	Stato	Ampiezza Fessure mm
		σ_x [kg/cm ²]	σ_y [kg/cm ²]	$\sigma_{c,Max}$ [kg/cm ²]	θ			
0.02	Estradosso	-8.7	1.3	-1.0	-17.55	NON Fessurato		0.000
	Intradosso	8.7	-1.3	-0.2	72.45	NON Fessurato		0.000

Verifiche SLE Frequenti **Flessione** elemento nodi 93 96

Proprietà dei materiali

Acciaio

- σ 4500.0 [kg/cm²]

Calcestruzzo

- σ 250.0 [kg/cm²]

Sezione

- sezione 1 H=20.000 [cm]

Estradosso				Intradosso			
Af_x [cm ²] / m	$cf_{x,Eq}$ [cm] [cm ²] / m	Af_y [cm ²] / m	$cf_{y,Eq}$ [cm] [cm ²] / m	Af_x [cm ²] / m	$cf_{x,Eq}$ [cm] [cm ²] / m	Af_y [cm ²] / m	$cf_{y,Eq}$ [cm] [cm ²] / m
5.65	3.000	3.93	3.000	5.65	3.000	3.93	3.000

Azioni di verifica combinazione 5 (0.689 1.114 [m])

M_{xx}	-139.83 [kgm/m]	M_{11}	-147.82 [kgm/m]
M_y	-21.94 [kgm/m]	M_{22}	-13.94 [kgm/m]
M_{xy}	-31.73 [kgm/m]	α	14.15 [°]

Verifiche

Cr=S _D /S _R	Posizione	Acciaio		Calcestruzzo		θ	Stato	Ampiezza Fessure mm
		σ_x	σ_y	$\sigma_{c,Max}$	θ			

		[kg/cm ²]	[kg/cm ²]	[kg/cm ²]	[°]		
0.05	Estradosso	-18.3	-3.0	-2.2	-15.44	NON Fessurato	0.000
	Intradosso	18.3	3.0	0.0	74.56	NON Fessurato	0.000

Verifiche SLE Quasi Permanenti ***Flessione*** elemento nodi 93 96

Proprietà dei materiali

Acciaio

- σ 4500.0 [kg/cm²]

Calcestruzzo

- σ 112.5 [kg/cm²]

Sezione

- sezione 1 H=20.000 [cm]

Estradosso				Intradosso			
Af _x	cf _{x,Eq}	Af _y	cf _{y,Eq}	Af _x	cf _{x,Eq}	Af _y	cf _{y,Eq}
[cm ²] / m	[cm]	[cm ²] / m	[cm]	[cm ²] / m	[cm]	[cm ²] / m	[cm]
5.65	3.000	3.93	3.000	5.65	3.000	3.93	3.000

Azioni di verifica combinazione 7 (0.689 1.114 [m])

M _{xx}	-135.74	[kgm/m]	M ₁₁	-143.46	[kgm/m]
M _{yy}	-21.41	[kgm/m]	M ₂₂	-13.69	[kgm/m]
M _{xy}	-30.69	[kgm/m]	α	14.12	[°]

Verifiche

		Acciaio		Calcestruzzo		Stato	Ampiezza Fessure mm
Cr=S _D /S _R	Posizione	σ_x	σ_y	$\sigma_{c,Max}$	θ		
		[kg/cm ²]	[kg/cm ²]	[kg/cm ²]	[°]		
0.04	Estradosso	-17.8	-2.9	-2.1	-15.41	NON Fessurato	0.000
	Intradosso	17.8	2.9	0.0	74.59	NON Fessurato	0.000

Elementi più sollecitati per tipologia di sezione

Verifiche SLU ***Flessione*** elemento nodi 80 85

Proprietà dei materiali

Acciaio

- f_{yd} 3913.0 [kg/cm²]
- ϵ_{ud} 67.50 ‰
- ϵ_{yd} 1.86 ‰

Calcestruzzo

- f_{cd} 141.7 [kg/cm²]
- ϵ_{c2} -2.00 ‰
- ϵ_{cu} -3.50 ‰
- f_{ctd} 12.0 [kg/cm²]
- ϵ_{ctd} 0.08 ‰
- E_{cm} 141666.7 [kg/cm²]

Sezione

- sezione 1 H=20.000 [cm]

Estradosso				Intradosso			
Af _x	cf _{x,Eq}	Af _y	cf _{y,Eq}	Af _x	cf _{x,Eq}	Af _y	cf _{y,Eq}
[cm ²] / m	[cm]	[cm ²] / m	[cm]	[cm ²] / m	[cm]	[cm ²] / m	[cm]
5.65	3.000	3.93	3.000	5.65	3.000	3.93	3.000

Azioni di verifica combinazione 2 (0.699 1.110 [m])

M _{xx}	64.90	[kgm/m]	M ₁₁	75.69	[kgm/m]
M _{yy}	62.55	[kgm/m]	M ₂₂	51.77	[kgm/m]
M _{xy}	-11.90	[kgm/m]	α	-42.18	[°]

Verifiche

		Acciaio		Calcestruzzo		Stato	Ampiezza Fessure mm
Cr=S _D /S _R	Posizione	ϵ_x ‰	ϵ_y ‰	ϵ_{min} ‰	ϵ_{max} ‰		
0.03	Estradosso	4.001	18.861	27.930	0.009	-24.77	
	Intradosso	0.159	1.231	-0.186	-3.500	65.66	

Verifiche SLE Rare ***Flessione*** elemento nodi 80 85

Proprietà dei materiali

Acciaio

- σ 3600.0 [kg/cm²]

Calcestruzzo

- σ 150.0 [kg/cm²]

Sezione

- sezione 1 H=20.000 [cm]

Estradosso				Intradosso			
Af _x	cf _{x,Eq}	Af _y	cf _{y,Eq}	Af _x	cf _{x,Eq}	Af _y	cf _{y,Eq}
[cm ²] / m	[cm]	[cm ²] / m	[cm]	[cm ²] / m	[cm]	[cm ²] / m	[cm]
5.65	3.000	3.93	3.000	5.65	3.000	3.93	3.000

Azioni di verifica combinazione 4 (0.699 1.110 [m])

M _{xx}	42.84	[kgm/m]	M ₁₁	50.20	[kgm/m]
M _{yy}	41.52	[kgm/m]	M ₂₂	34.17	[kgm/m]
M _{xy}	-7.99	[kgm/m]	α	-42.63	[°]

Verifiche

Cr=S _D /S _R	Posizione	Acciaio		Calcestruzzo		Stato	Ampiezza Fessure mm
		σ _x	σ _y	σ _{c,Max}	θ		
		[kg/cm ²]	[kg/cm ²]	[kg/cm ²]	[°]		
0.02	Estradosso	5.6	5.6	0.0	-45.13	NON Fessurato	0.000
	Intradosso	-5.6	-5.6	-0.8	44.87	NON Fessurato	0.000

Verifiche SLE Frequenti **Flessione** elemento nodi 80 85

Proprietà dei materiali

Acciaio

- σ 4500.0 [kg/cm²]

Calcestruzzo

- σ 250.0 [kg/cm²]

Sezione

- sezione 1 H=20.000 [cm]

Estradosso				Intradosso			
Af _x	cf _{x,Eq}	Af _y	cf _{y,Eq}	Af _x	cf _{x,Eq}	Af _y	cf _{y,Eq}
[cm ²] / m	[cm]	[cm ²] / m	[cm]	[cm ²] / m	[cm]	[cm ²] / m	[cm]
5.65	3.000	3.93	3.000	5.65	3.000	3.93	3.000

Azioni di verifica combinazione 5 (0.699 1.110 [m])

M _{x0}	-99.99	[kgm/m]	M ₁₁	-107.13	[kgm/m]
M _y	-13.93	[kgm/m]	M ₂₂	-6.79	[kgm/m]
M _{xy}	-25.80	[kgm/m]	α	15.47	[°]

Verifiche

Cr=S _D /S _R	Posizione	Acciaio		Calcestruzzo		Stato	Ampiezza Fessure mm
		σ _x	σ _y	σ _{c,Max}	θ		
		[kg/cm ²]	[kg/cm ²]	[kg/cm ²]	[°]		
0.03	Estradosso	-13.1	-1.9	-1.5	-16.83	NON Fessurato	0.000
	Intradosso	13.1	1.9	0.0	73.17	NON Fessurato	0.000

Verifiche SLE Quasi Permanenti **Flessione** elemento nodi 80 85

Proprietà dei materiali

Acciaio

- σ 4500.0 [kg/cm²]

Calcestruzzo

- σ 112.5 [kg/cm²]

Sezione

- sezione 1 H=20.000 [cm]

Estradosso				Intradosso			
Af _x	cf _{x,Eq}	Af _y	cf _{y,Eq}	Af _x	cf _{x,Eq}	Af _y	cf _{y,Eq}
[cm ²] / m	[cm]	[cm ²] / m	[cm]	[cm ²] / m	[cm]	[cm ²] / m	[cm]
5.65	3.000	3.93	3.000	5.65	3.000	3.93	3.000

Azioni di verifica combinazione 7 (0.699 1.110 [m])

M _{x0}	-95.88	[kgm/m]	M ₁₁	-102.73	[kgm/m]
M _y	-13.38	[kgm/m]	M ₂₂	-6.54	[kgm/m]
M _{xy}	-24.73	[kgm/m]	α	15.47	[°]

Verifiche

Cr=S _D /S _R	Posizione	Acciaio		Calcestruzzo		Stato	Ampiezza Fessure mm
		σ _x	σ _y	σ _{c,Max}	θ		
		[kg/cm ²]	[kg/cm ²]	[kg/cm ²]	[°]		
0.03	Estradosso	-12.6	-1.8	-1.5	-16.82	NON Fessurato	0.000
	Intradosso	12.6	1.8	0.0	73.18	NON Fessurato	0.000

Elementi più sollecitati per tipologia di sezione

Verifiche SLU **Flessione** elemento nodi 79 84

Proprietà dei materiali

Acciaio

- f_{yd} 3913.0 [kg/cm²]
- ε_{ud} 67.50 ‰
- ε_{yd} 1.86 ‰

Calcestruzzo

- f_{cd} 141.7 [kg/cm²]
- ε_{c2} -2.00 ‰
- ε_{cu} -3.50 ‰
- f_{ctd} 12.0 [kg/cm²]
- ε_{ctd} 0.08 ‰
- E_{cm} 141666.7 [kg/cm²]

Sezione

- sezione 1 H=20.000 [cm]

Estradosso				Intradosso			
Af _x	cf _{x,Eq}	Af _y	cf _{y,Eq}	Af _x	cf _{x,Eq}	Af _y	cf _{y,Eq}
[cm ²] / m	[cm]	[cm ²] / m	[cm]	[cm ²] / m	[cm]	[cm ²] / m	[cm]
5.65	3.000	3.93	3.000	5.65	3.000	3.93	3.000

Azioni di verifica combinazione 1 (0.706 1.110 [m])

M _{x0}	104.14	[kgm/m]	M ₁₁	26.51	[kgm/m]
-----------------	--------	---------	-----------------	-------	---------

M_{xy}	-24.85	[kgm/m]	M_{22}	-105.80	[kgm/m]
M_{xy}	14.74	[kgm/m]	α	5.51	[°]

Verifiche

Cr=S _D /S _R	Posizione	Acciaio		Calcestruzzo		
		ε _x ‰	ε _y ‰	ε _{min} ‰	ε _{max} ‰	θ [°]
0.03	Estradosso	16.209	0.840	21.146	-0.207	76.37
	Intradosso	0.346	0.253	0.210	-3.501	-9.26

Verifiche SLE Rare Flessione elemento nodi 79 84

Proprietà dei materiali

Acciaio

- σ 3600.0 [kg/cm²]

Calcestruzzo

- σ 150.0 [kg/cm²]

Sezione

- sezione 1 H=20.000 [cm]

Estradosso				Intradosso			
Af_x	$cf_{x,Eq}$	Af_y	$cf_{y,Eq}$	Af_x	$cf_{x,Eq}$	Af_y	$cf_{y,Eq}$
[cm ²] / m	[cm]	[cm ²] / m	[cm]	[cm ²] / m	[cm]	[cm ²] / m	[cm]
5.65	3.000	3.93	3.000	5.65	3.000	3.93	3.000

Azioni di verifica combinazione 3 (0.706 1.110 [m])

M_{xx}	69.85	[kgm/m]	M_{11}	17.50	[kgm/m]
M_{yy}	-16.38	[kgm/m]	M_{22}	-70.97	[kgm/m]
M_{xy}	9.88	[kgm/m]	α	5.50	[°]

Verifiche

Cr=S _D /S _R	Posizione	Acciaio		Calcestruzzo		Stato	Ampiezza Fessure mm
		σ_x	σ_y	$\sigma_{c,Max}$	θ		
		[kg/cm ²]	[kg/cm ²]	[kg/cm ²]	[°]		
0.02	Estradosso	9.2	-2.2	-0.2	82.94	NON Fessurato	0.000
	Intradosso	-9.2	2.2	-0.9	-7.06	NON Fessurato	0.000

Verifiche SLE Frequenti Flessione elemento nodi 79 84

Proprietà dei materiali

Acciaio

- σ 4500.0 [kg/cm²]

Calcestruzzo

- σ 250.0 [kg/cm²]

Sezione

- sezione 1 H=20.000 [cm]

Estradosso				Intradosso			
Af_x	$cf_{x,Eq}$	Af_y	$cf_{y,Eq}$	Af_x	$cf_{x,Eq}$	Af_y	$cf_{y,Eq}$
[cm ²] / m	[cm]	[cm ²] / m	[cm]	[cm ²] / m	[cm]	[cm ²] / m	[cm]
5.65	3.000	3.93	3.000	5.65	3.000	3.93	3.000

Azioni di verifica combinazione 5 (0.706 1.110 [m])

M_{xx}	142.09	[kgm/m]	M_{11}	-13.04	[kgm/m]
M_{yy}	15.94	[kgm/m]	M_{22}	-145.00	[kgm/m]
M_{xy}	19.37	[kgm/m]	α	3.41	[°]

Verifiche

Cr=S _D /S _R	Posizione	Acciaio		Calcestruzzo		Stato	Ampiezza Fessure mm
		σ_x	σ_y	$\sigma_{c,Max}$	θ		
		[kg/cm ²]	[kg/cm ²]	[kg/cm ²]	[°]		
0.04	Estradosso	18.6	2.2	0.0	80.60	NON Fessurato	0.000
	Intradosso	-18.6	-2.2	-2.1	-9.40	NON Fessurato	0.000

Verifiche SLE Quasi Permanenti Flessione elemento nodi 79 84

Proprietà dei materiali

Acciaio

- σ 4500.0 [kg/cm²]

Calcestruzzo

- σ 112.5 [kg/cm²]

Sezione

- sezione 1 H=20.000 [cm]

Estradosso				Intradosso			
Af_x	$cf_{x,Eq}$	Af_y	$cf_{y,Eq}$	Af_x	$cf_{x,Eq}$	Af_y	$cf_{y,Eq}$
[cm ²] / m	[cm]	[cm ²] / m	[cm]	[cm ²] / m	[cm]	[cm ²] / m	[cm]
5.65	3.000	3.93	3.000	5.65	3.000	3.93	3.000

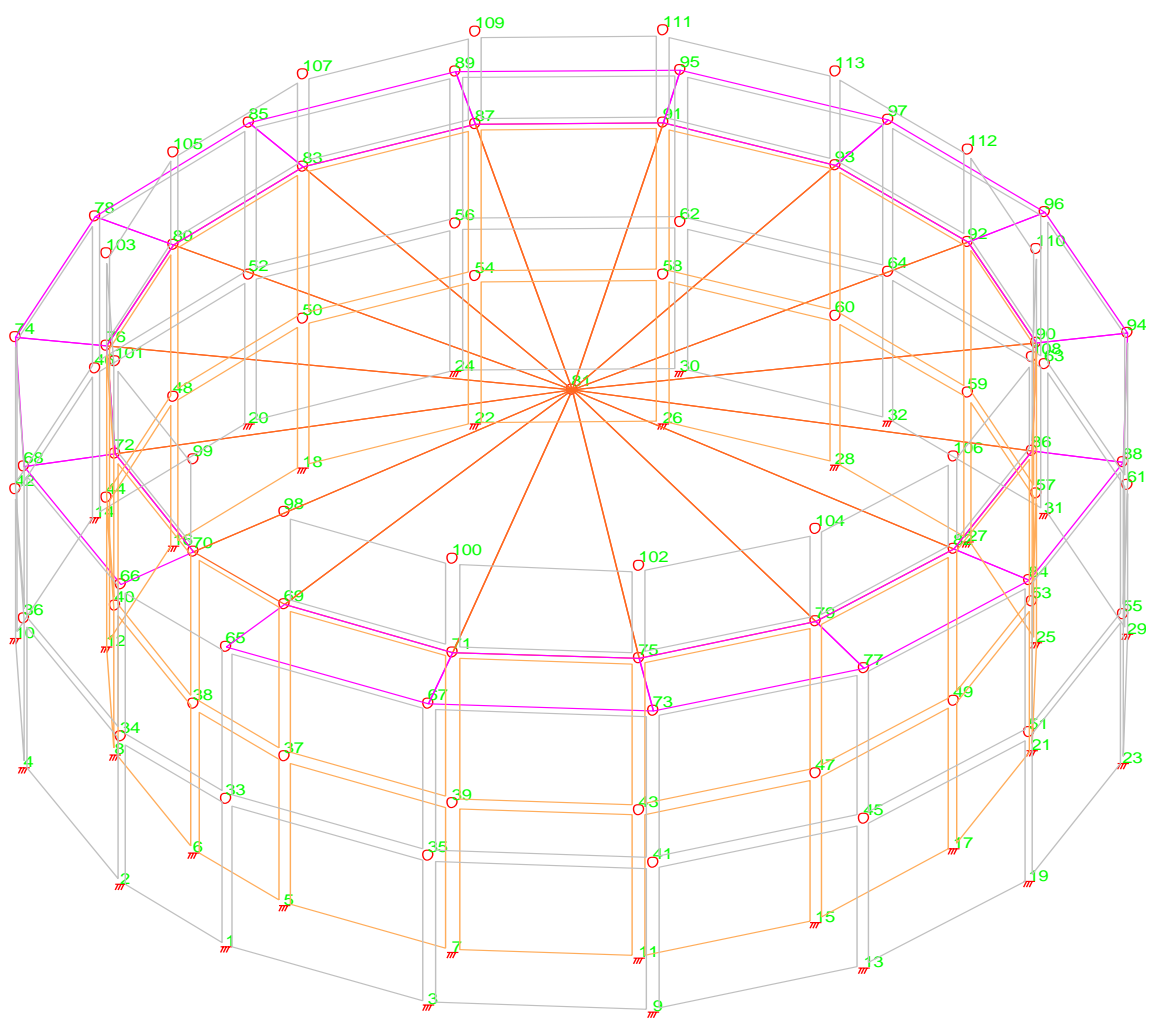
Azioni di verifica combinazione 7 (0.706 1.110 [m])

M_{xx}	137.77	[kgm/m]	M_{11}	-12.79	[kgm/m]
M_{yy}	15.62	[kgm/m]	M_{22}	-140.60	[kgm/m]
M_{xy}	18.81	[kgm/m]	α	3.39	[°]

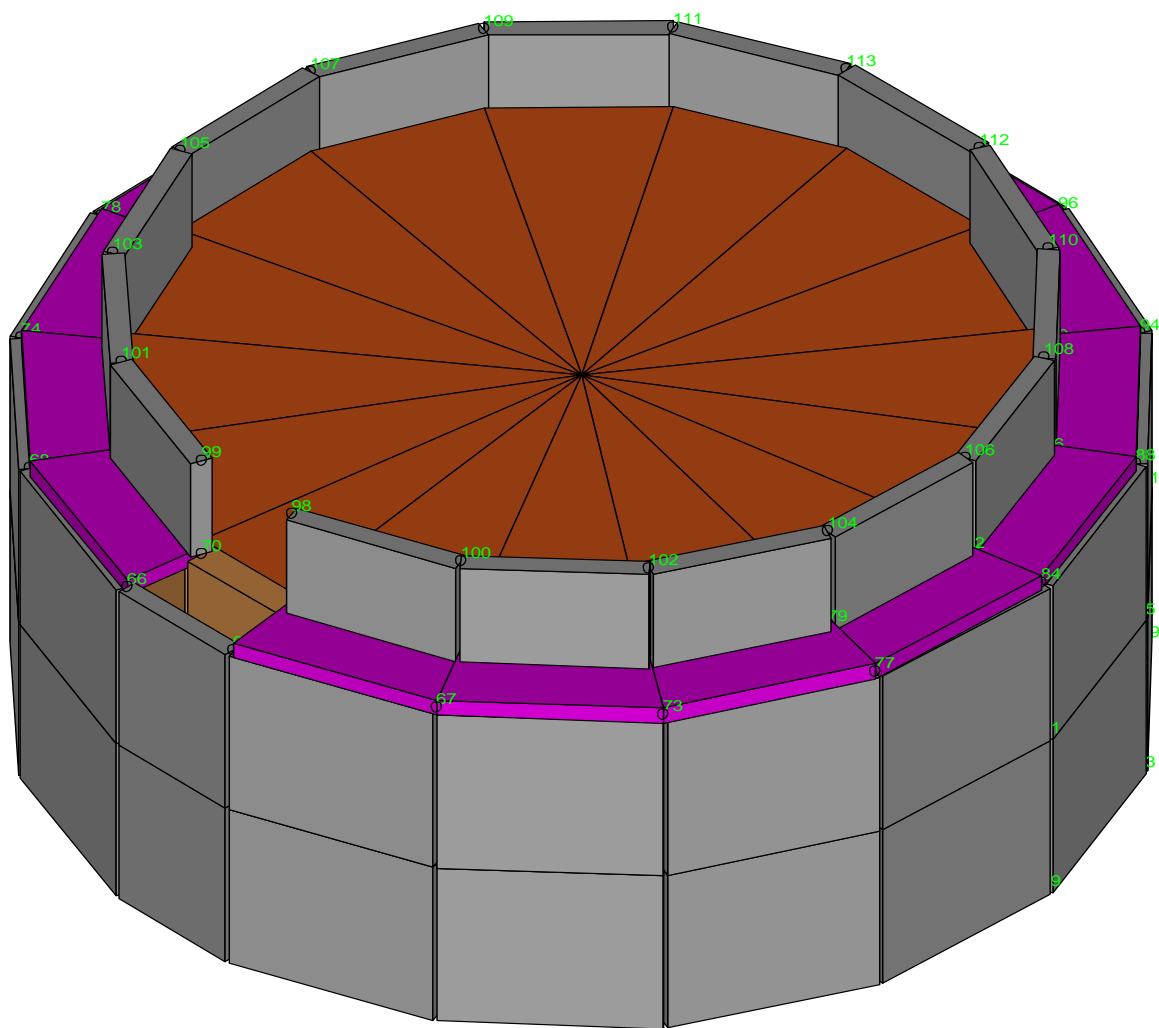
Verifiche

Cr=S _D /S _R	Posizione	Acciaio		Calcestruzzo		Stato	Ampiezza Fessure mm
		σ_x	σ_y	$\sigma_{c,Max}$	θ		
		[kg/cm ²]	[kg/cm ²]	[kg/cm ²]	[°]		
0.04	Estradosso	18.1	2.1	0.0	80.57	NON Fessurato	0.000
	Intradosso	-18.1	-2.1	-2.1	-9.43	NON Fessurato	0.000

Modello di Calcolo



Modello 3d – fil di ferro



Modello 3d – render

Tossicia, lì 18/04/2013

I Progettisti

Dott. Ing. Giuseppe D'ANTONIO

Geom. Sabatino BELLINI