

RELAZIONE DI CALCOLO

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STATO DI PROGETTO

## Sommario

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## Dati relativi ai nodi della struttura

### Convenzioni adottate

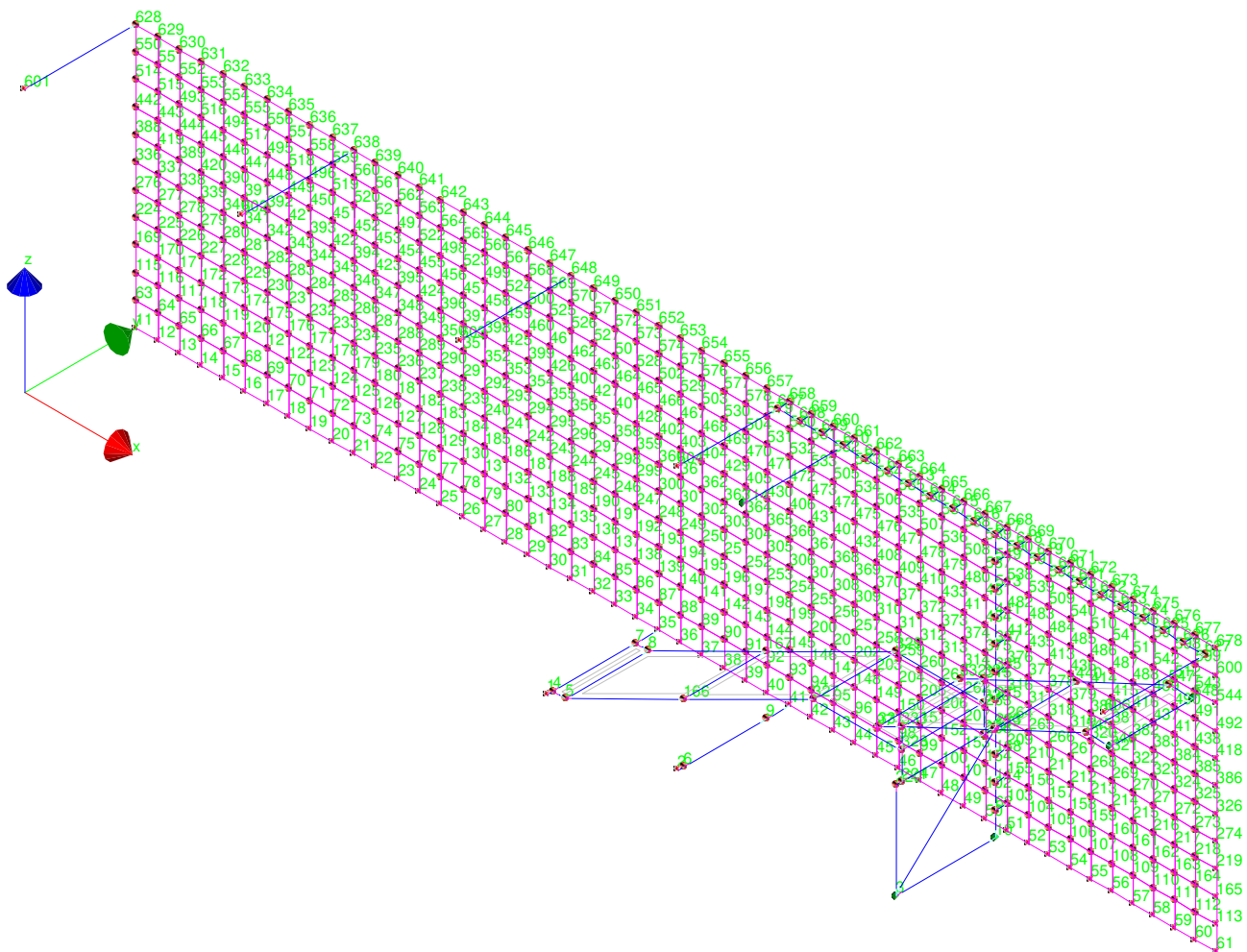
La terna di riferimento generale è destrorsa.

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	5.25	-1.92	0.00	1	1	1	1	1	1	0
2	7.50	-1.92	0.00	1	1	1	1	1	1	0
3	11.25	-1.92	0.00	1	1	1	0	0	0	0
4	5.25	-1.82	0.00	0	0	0	0	0	0	0
5	5.47	-1.82	0.00	0	0	0	0	0	0	0
6	7.50	-1.82	0.00	0	0	0	0	0	0	0
7	5.25	-0.40	0.00	0	0	0	0	0	0	0
8	5.47	-0.40	0.00	0	0	0	0	0	0	0
9	7.50	-0.40	0.00	0	0	0	0	0	0	0
10	11.25	-0.20	0.00	1	1	1	0	0	0	0
11	-3.75	0.00	0.00	1	1	1	1	1	1	0
12	-3.38	0.00	0.00	1	1	1	1	1	1	0
13	-3.00	0.00	0.00	1	1	1	1	1	1	0
14	-2.63	0.00	0.00	1	1	1	1	1	1	0
15	-2.25	0.00	0.00	1	1	1	1	1	1	0
16	-1.88	0.00	0.00	1	1	1	1	1	1	0
17	-1.50	0.00	0.00	1	1	1	1	1	1	0
18	-1.13	0.00	0.00	1	1	1	1	1	1	0
19	-0.75	0.00	0.00	1	1	1	1	1	1	0
20	-0.38	0.00	0.00	1	1	1	1	1	1	0
21	0.00	0.00	0.00	1	1	1	1	1	1	0
22	0.38	0.00	0.00	1	1	1	1	1	1	0
23	0.75	0.00	0.00	1	1	1	1	1	1	0
24	1.13	0.00	0.00	1	1	1	1	1	1	0
25	1.50	0.00	0.00	1	1	1	1	1	1	0
26	1.88	0.00	0.00	1	1	1	1	1	1	0
27	2.25	0.00	0.00	1	1	1	1	1	1	0
28	2.63	0.00	0.00	1	1	1	1	1	1	0
29	3.00	0.00	0.00	1	1	1	1	1	1	0
30	3.38	0.00	0.00	1	1	1	1	1	1	0
31	3.75	0.00	0.00	1	1	1	1	1	1	0
32	4.13	0.00	0.00	1	1	1	1	1	1	0
33	4.50	0.00	0.00	1	1	1	1	1	1	0
34	4.88	0.00	0.00	1	1	1	1	1	1	0
35	5.25	0.00	0.00	1	1	1	1	1	1	0
36	5.63	0.00	0.00	1	1	1	1	1	1	0
37	6.00	0.00	0.00	1	1	1	1	1	1	0
38	6.38	0.00	0.00	1	1	1	1	1	1	0
39	6.75	0.00	0.00	1	1	1	1	1	1	0
40	7.13	0.00	0.00	1	1	1	1	1	1	0
41	7.50	0.00	0.00	1	1	1	1	1	1	0
42	7.88	0.00	0.00	1	1	1	1	1	1	0
43	8.25	0.00	0.00	1	1	1	1	1	1	0
44	8.63	0.00	0.00	1	1	1	1	1	1	0
45	9.00	0.00	0.00	1	1	1	1	1	1	0
46	9.38	0.00	0.00	1	1	1	1	1	1	0
47	9.75	0.00	0.00	1	1	1	1	1	1	0
48	10.13	0.00	0.00	1	1	1	1	1	1	0
49	10.50	0.00	0.00	1	1	1	1	1	1	0
50	10.88	0.00	0.00	1	1	1	1	1	1	0
51	11.25	0.00	0.00	1	1	1	1	1	1	0
52	11.61	0.00	0.00	1	1	1	1	1	1	0
53	11.97	0.00	0.00	1	1	1	1	1	1	0
54	12.33	0.00	0.00	1	1	1	1	1	1	0

Nodo	x [m]	y [m]	z [m]	Ux	Uy	Uz	Rx	Ry	Rz	Solaio
55	12.69	0.00	0.00	1	1	1	1	1	1	0
56	13.05	0.00	0.00	1	1	1	1	1	1	0
57	13.41	0.00	0.00	1	1	1	1	1	1	0
58	13.77	0.00	0.00	1	1	1	1	1	1	0
59	14.13	0.00	0.00	1	1	1	1	1	1	0
60	14.49	0.00	0.00	1	1	1	1	1	1	0
61	14.85	0.00	0.00	1	1	1	1	1	0	0
62	11.25	-0.20	0.41	0	0	0	0	0	0	0
63	-3.75	0.00	0.41	0	0	0	0	0	0	0
64	-3.38	0.00	0.41	0	0	0	0	0	0	0
65	-3.00	0.00	0.41	0	0	0	0	0	0	0
66	-2.63	0.00	0.41	0	0	0	0	0	0	0
67	-2.25	0.00	0.41	0	0	0	0	0	0	0
68	-1.88	0.00	0.41	0	0	0	0	0	0	0
69	-1.50	0.00	0.41	0	0	0	0	0	0	0
70	-1.13	0.00	0.41	0	0	0	0	0	0	0
71	-0.75	0.00	0.41	0	0	0	0	0	0	0
72	-0.38	0.00	0.41	0	0	0	0	0	0	0
73	0.00	0.00	0.41	0	0	0	0	0	0	0
74	0.38	0.00	0.41	0	0	0	0	0	0	0
75	0.75	0.00	0.41	0	0	0	0	0	0	0
76	1.13	0.00	0.41	0	0	0	0	0	0	0
77	1.50	0.00	0.41	0	0	0	0	0	0	0
78	1.88	0.00	0.41	0	0	0	0	0	0	0
79	2.25	0.00	0.41	0	0	0	0	0	0	0
80	2.63	0.00	0.41	0	0	0	0	0	0	0
81	3.00	0.00	0.41	0	0	0	0	0	0	0
82	3.38	0.00	0.41	0	0	0	0	0	0	0
83	3.75	0.00	0.41	0	0	0	0	0	0	0
84	4.13	0.00	0.41	0	0	0	0	0	0	0
85	4.50	0.00	0.41	0	0	0	0	0	0	0
86	4.88	0.00	0.41	0	0	0	0	0	0	0
87	5.25	0.00	0.41	0	0	0	0	0	0	0
88	5.63	0.00	0.41	0	0	0	0	0	0	0
89	6.00	0.00	0.41	0	0	0	0	0	0	0
90	6.38	0.00	0.41	0	0	0	0	0	0	0
91	6.75	0.00	0.41	0	0	0	0	0	0	0
92	7.13	0.00	0.41	0	0	0	0	0	0	0
93	7.50	0.00	0.41	0	0	0	0	0	0	0
94	7.88	0.00	0.41	0	0	0	0	0	0	0
95	8.25	0.00	0.41	0	0	0	0	0	0	0
96	8.63	0.00	0.41	0	0	0	0	0	0	0
97	9.00	0.00	0.41	0	0	0	0	0	0	0
98	9.38	0.00	0.41	0	0	0	0	0	0	0
99	9.75	0.00	0.41	0	0	0	0	0	0	0
100	10.13	0.00	0.41	0	0	0	0	0	0	0
101	10.50	0.00	0.41	0	0	0	0	0	0	0
102	10.88	0.00	0.41	0	0	0	0	0	0	0
103	11.25	0.00	0.41	0	0	0	0	0	0	0
104	11.61	0.00	0.41	0	0	0	0	0	0	0
105	11.97	0.00	0.41	0	0	0	0	0	0	0
106	12.33	0.00	0.41	0	0	0	0	0	0	0
107	12.69	0.00	0.41	0	0	0	0	0	0	0
108	13.05	0.00	0.41	0	0	0	0	0	0	0



Nodo	x [m]	y [m]	z [m]	Ux	Uy	Uz	Rx	Ry	Rz	Solaio
109	13.41	0.00	0.41	0	0	0	0	0	0	0
110	13.77	0.00	0.41	0	0	0	0	0	0	0
111	14.13	0.00	0.41	0	0	0	0	0	0	0
112	14.49	0.00	0.41	0	0	0	0	0	0	0
113	14.85	0.00	0.41	1	1	1	1	1	0	0
114	11.25	-0.20	0.82	0	0	0	0	0	0	0
115	-3.75	0.00	0.82	0	0	0	0	0	0	0
116	-3.38	0.00	0.82	0	0	0	0	0	0	0
117	-3.00	0.00	0.82	0	0	0	0	0	0	0
118	-2.63	0.00	0.82	0	0	0	0	0	0	0
119	-2.25	0.00	0.82	0	0	0	0	0	0	0
120	-1.88	0.00	0.82	0	0	0	0	0	0	0
121	-1.50	0.00	0.82	0	0	0	0	0	0	0
122	-1.13	0.00	0.82	0	0	0	0	0	0	0
123	-0.75	0.00	0.82	0	0	0	0	0	0	0
124	-0.38	0.00	0.82	0	0	0	0	0	0	0
125	0.00	0.00	0.82	0	0	0	0	0	0	0
126	0.38	0.00	0.82	0	0	0	0	0	0	0
127	0.75	0.00	0.82	0	0	0	0	0	0	0
128	1.13	0.00	0.82	0	0	0	0	0	0	0
129	1.50	0.00	0.82	0	0	0	0	0	0	0
130	1.88	0.00	0.82	0	0	0	0	0	0	0
131	2.25	0.00	0.82	0	0	0	0	0	0	0
132	2.63	0.00	0.82	0	0	0	0	0	0	0
133	3.00	0.00	0.82	0	0	0	0	0	0	0
134	3.38	0.00	0.82	0	0	0	0	0	0	0
135	3.75	0.00	0.82	0	0	0	0	0	0	0
136	4.13	0.00	0.82	0	0	0	0	0	0	0
137	4.50	0.00	0.82	0	0	0	0	0	0	0
138	4.88	0.00	0.82	0	0	0	0	0	0	0
139	5.25	0.00	0.82	0	0	0	0	0	0	0
140	5.62	0.00	0.82	0	0	0	0	0	0	0
141	6.00	0.00	0.82	0	0	0	0	0	0	0
142	6.38	0.00	0.82	0	0	0	0	0	0	0
143	6.75	0.00	0.82	0	0	0	0	0	0	0
144	7.13	0.00	0.82	0	0	0	0	0	0	0
145	7.50	0.00	0.82	0	0	0	0	0	0	0
146	7.88	0.00	0.82	0	0	0	0	0	0	0
147	8.25	0.00	0.82	0	0	0	0	0	0	0
148	8.63	0.00	0.82	0	0	0	0	0	0	0
149	9.00	0.00	0.82	0	0	0	0	0	0	0
150	9.37	0.00	0.82	0	0	0	0	0	0	0
151	9.75	0.00	0.82	0	0	0	0	0	0	0
152	10.13	0.00	0.82	0	0	0	0	0	0	0
153	10.50	0.00	0.82	0	0	0	0	0	0	0
154	10.88	0.00	0.82	0	0	0	0	0	0	0
155	11.25	0.00	0.82	0	0	0	0	0	0	0
156	11.61	0.00	0.82	0	0	0	0	0	0	0
157	11.97	0.00	0.82	0	0	0	0	0	0	0
158	12.33	0.00	0.82	0	0	0	0	0	0	0
159	12.69	0.00	0.82	0	0	0	0	0	0	0
160	13.05	0.00	0.82	0	0	0	0	0	0	0
161	13.41	0.00	0.82	0	0	0	0	0	0	0
162	13.77	0.00	0.82	0	0	0	0	0	0	0
163	14.13	0.00	0.82	0	0	0	0	0	0	0
164	14.49	0.00	0.82	0	0	0	0	0	0	0

Nodo	x [m]	y [m]	z [m]	Ux	Uy	Uz	Rx	Ry	Rz	Solaio
165	14.85	0.00	0.82	1	1	1	1	1	0	0
166	7.50	-1.82	1.01	0	0	0	0	0	0	0
167	7.50	-0.40	1.01	0	0	0	0	0	0	0
168	11.25	-0.20	1.24	0	0	0	0	0	0	0
169	-3.75	0.00	1.24	0	0	0	0	0	0	0
170	-3.38	0.00	1.24	0	0	0	0	0	0	0
171	-3.00	0.00	1.24	0	0	0	0	0	0	0
172	-2.63	0.00	1.24	0	0	0	0	0	0	0
173	-2.25	0.00	1.24	0	0	0	0	0	0	0
174	-1.88	0.00	1.24	0	0	0	0	0	0	0
175	-1.50	0.00	1.24	0	0	0	0	0	0	0
176	-1.13	0.00	1.24	0	0	0	0	0	0	0
177	-0.75	0.00	1.24	0	0	0	0	0	0	0
178	-0.38	0.00	1.24	0	0	0	0	0	0	0
179	0.00	0.00	1.24	0	0	0	0	0	0	0
180	0.38	0.00	1.24	0	0	0	0	0	0	0
181	0.75	0.00	1.24	0	0	0	0	0	0	0
182	1.13	0.00	1.24	0	0	0	0	0	0	0
183	1.50	0.00	1.24	0	0	0	0	0	0	0
184	1.88	0.00	1.24	0	0	0	0	0	0	0
185	2.25	0.00	1.24	0	0	0	0	0	0	0
186	2.63	0.00	1.24	0	0	0	0	0	0	0
187	3.00	0.00	1.24	0	0	0	0	0	0	0
188	3.38	0.00	1.24	0	0	0	0	0	0	0
189	3.75	0.00	1.24	0	0	0	0	0	0	0
190	4.13	0.00	1.24	0	0	0	0	0	0	0
191	4.50	0.00	1.24	0	0	0	0	0	0	0
192	4.88	0.00	1.24	0	0	0	0	0	0	0
193	5.25	0.00	1.24	0	0	0	0	0	0	0
194	5.62	0.00	1.24	0	0	0	0	0	0	0
195	6.00	0.00	1.24	0	0	0	0	0	0	0
196	6.37	0.00	1.24	0	0	0	0	0	0	0
197	6.75	0.00	1.24	0	0	0	0	0	0	0
198	7.13	0.00	1.24	0	0	0	0	0	0	0
199	7.50	0.00	1.24	0	0	0	0	0	0	0
200	7.88	0.00	1.24	0	0	0	0	0	0	0
201	8.25	0.00	1.24	0	0	0	0	0	0	0
202	8.63	0.00	1.24	0	0	0	0	0	0	0
203	9.00	0.00	1.24	0	0	0	0	0	0	0
204	9.38	0.00	1.24	0	0	0	0	0	0	0
205	9.75	0.00	1.24	0	0	0	0	0	0	0
206	10.12	0.00	1.24	0	0	0	0	0	0	0
207	10.50	0.00	1.24	0	0	0	0	0	0	0
208	10.88	0.00	1.24	0	0	0	0	0	0	0
209	11.25	0.00	1.24	0	0	0	0	0	0	0
210	11.61	0.00	1.24	0	0	0	0	0	0	0
211	11.97	0.00	1.24	0	0	0	0	0	0	0
212	12.33	0.00	1.24	0	0	0	0	0	0	0
213	12.69	0.00	1.24	0	0	0	0	0	0	0
214	13.05	0.00	1.24	0	0	0	0	0	0	0
215	13.41	0.00	1.24	0	0	0	0	0	0	0
216	13.77	0.00	1.24	0	0	0	0	0	0	0
217	14.13	0.00	1.24	0	0	0	0	0	0	0
218	14.49	0.00	1.24	0	0	0	0	0	0	0
219	14.85	0.00	1.24	1	1	1	1	1	0	0
220	11.25	-1.92	1.65	0	0	0	0	0	0	0

Nodo	x [m]	y [m]	z [m]	Ux	Uy	Uz	Rx	Ry	Rz	Solaio
221	11.25	-1.82	1.65	0	0	0	0	0	0	0
222	11.25	-0.40	1.65	0	0	0	0	0	0	0
223	11.25	-0.20	1.65	0	0	0	0	0	0	0
224	-3.75	0.00	1.65	0	0	0	0	0	0	0
225	-3.38	0.00	1.65	0	0	0	0	0	0	0
226	-3.00	0.00	1.65	0	0	0	0	0	0	0
227	-2.63	0.00	1.65	0	0	0	0	0	0	0
228	-2.25	0.00	1.65	0	0	0	0	0	0	0
229	-1.88	0.00	1.65	0	0	0	0	0	0	0
230	-1.50	0.00	1.65	0	0	0	0	0	0	0
231	-1.13	0.00	1.65	0	0	0	0	0	0	0
232	-0.75	0.00	1.65	0	0	0	0	0	0	0
233	-0.38	0.00	1.65	0	0	0	0	0	0	0
234	0.00	0.00	1.65	0	0	0	0	0	0	0
235	0.38	0.00	1.65	0	0	0	0	0	0	0
236	0.75	0.00	1.65	0	0	0	0	0	0	0
237	1.13	0.00	1.65	0	0	0	0	0	0	0
238	1.50	0.00	1.65	0	0	0	0	0	0	0
239	1.88	0.00	1.65	0	0	0	0	0	0	0
240	2.25	0.00	1.65	0	0	0	0	0	0	0
241	2.63	0.00	1.65	0	0	0	0	0	0	0
242	3.00	0.00	1.65	0	0	0	0	0	0	0
243	3.38	0.00	1.65	0	0	0	0	0	0	0
244	3.75	0.00	1.65	0	0	0	0	0	0	0
245	4.13	0.00	1.65	0	0	0	0	0	0	0
246	4.50	0.00	1.65	0	0	0	0	0	0	0
247	4.87	0.00	1.65	0	0	0	0	0	0	0
248	5.25	0.00	1.65	0	0	0	0	0	0	0
249	5.63	0.00	1.65	0	0	0	0	0	0	0
250	6.00	0.00	1.65	0	0	0	0	0	0	0
251	6.38	0.00	1.65	0	0	0	0	0	0	0
252	6.75	0.00	1.65	0	0	0	0	0	0	0
253	7.13	0.00	1.65	0	0	0	0	0	0	0
254	7.50	0.00	1.65	0	0	0	0	0	0	0
255	7.88	0.00	1.65	0	0	0	0	0	0	0
256	8.25	0.00	1.65	0	0	0	0	0	0	0
257	8.63	0.00	1.65	0	0	0	0	0	0	0
258	9.00	0.00	1.65	0	0	0	0	0	0	0
259	9.38	0.00	1.65	0	0	0	0	0	0	0
260	9.75	0.00	1.65	0	0	0	0	0	0	0
261	10.13	0.00	1.65	0	0	0	0	0	0	0
262	10.50	0.00	1.65	0	0	0	0	0	0	0
263	10.88	0.00	1.65	0	0	0	0	0	0	0
264	11.25	0.00	1.65	0	0	0	0	0	0	0
265	11.61	0.00	1.65	0	0	0	0	0	0	0
266	11.97	0.00	1.65	0	0	0	0	0	0	0
267	12.33	0.00	1.65	0	0	0	0	0	0	0
268	12.69	0.00	1.65	0	0	0	0	0	0	0
269	13.05	0.00	1.65	0	0	0	0	0	0	0
270	13.41	0.00	1.65	0	0	0	0	0	0	0
271	13.77	0.00	1.65	0	0	0	0	0	0	0
272	14.13	0.00	1.65	0	0	0	0	0	0	0
273	14.49	0.00	1.65	0	0	0	0	0	0	0
274	14.85	0.00	1.65	1	1	1	1	1	0	0
275	11.25	-0.20	2.06	0	0	0	0	0	0	0
276	-3.75	0.00	2.06	0	0	0	0	0	0	0

Nodo	x [m]	y [m]	z [m]	Ux	Uy	Uz	Rx	Ry	Rz	Solaio
277	-3.38	0.00	2.06	0	0	0	0	0	0	0
278	-3.00	0.00	2.06	0	0	0	0	0	0	0
279	-2.63	0.00	2.06	0	0	0	0	0	0	0
280	-2.25	0.00	2.06	0	0	0	0	0	0	0
281	-1.88	0.00	2.06	0	0	0	0	0	0	0
282	-1.50	0.00	2.06	0	0	0	0	0	0	0
283	-1.13	0.00	2.06	0	0	0	0	0	0	0
284	-0.75	0.00	2.06	0	0	0	0	0	0	0
285	-0.38	0.00	2.06	0	0	0	0	0	0	0
286	0.00	0.00	2.06	0	0	0	0	0	0	0
287	0.38	0.00	2.06	0	0	0	0	0	0	0
288	0.75	0.00	2.06	0	0	0	0	0	0	0
289	1.13	0.00	2.06	0	0	0	0	0	0	0
290	1.50	0.00	2.06	0	0	0	0	0	0	0
291	1.88	0.00	2.06	0	0	0	0	0	0	0
292	2.25	0.00	2.06	0	0	0	0	0	0	0
293	2.63	0.00	2.06	0	0	0	0	0	0	0
294	3.00	0.00	2.06	0	0	0	0	0	0	0
295	3.38	0.00	2.06	0	0	0	0	0	0	0
296	3.75	0.00	2.06	0	0	0	0	0	0	0
297	4.13	0.00	2.06	0	0	0	0	0	0	0
298	4.50	0.00	2.06	0	0	0	0	0	0	0
299	4.88	0.00	2.06	0	0	0	0	0	0	0
300	5.25	0.00	2.06	0	0	0	0	0	0	0
301	5.63	0.00	2.06	0	0	0	0	0	0	0
302	6.00	0.00	2.06	0	0	0	0	0	0	0
303	6.37	0.00	2.06	0	0	0	0	0	0	0
304	6.75	0.00	2.06	0	0	0	0	0	0	0
305	7.13	0.00	2.06	0	0	0	0	0	0	0
306	7.50	0.00	2.06	0	0	0	0	0	0	0
307	7.88	0.00	2.06	0	0	0	0	0	0	0
308	8.25	0.00	2.06	0	0	0	0	0	0	0
309	8.63	0.00	2.06	0	0	0	0	0	0	0
310	9.00	0.00	2.06	0	0	0	0	0	0	0
311	9.38	0.00	2.06	0	0	0	0	0	0	0
312	9.75	0.00	2.06	0	0	0	0	0	0	0
313	10.12	0.00	2.06	0	0	0	0	0	0	0
314	10.50	0.00	2.06	0	0	0	0	0	0	0
315	10.88	0.00	2.06	0	0	0	0	0	0	0
316	11.25	0.00	2.06	0	0	0	0	0	0	0
317	11.61	0.00	2.06	0	0	0	0	0	0	0
318	11.97	0.00	2.06	0	0	0	0	0	0	0
319	12.33	0.00	2.06	0	0	0	0	0	0	0
320	12.69	0.00	2.06	0	0	0	0	0	0	0
321	13.05	0.00	2.06	0	0	0	0	0	0	0
322	13.41	0.00	2.06	0	0	0	0	0	0	0
323	13.77	0.00	2.06	0	0	0	0	0	0	0
324	14.13	0.00	2.06	0	0	0	0	0	0	0
325	14.49	0.00	2.06	0	0	0	0	0	0	0
326	14.85	0.00	2.06	1	1	1	1	1	0	0
327	9.73	-1.82	2.12	0	0	0	0	0	0	0
328	11.25	-1.82	2.12	0	0	0	0	0	0	0
329	9.73	-0.40	2.12	0	0	0	0	0	0	0
330	11.25	-0.40	2.12	0	0	0	0	0	0	0
331	10.84	-1.82	2.27	0	0	0	0	0	0	0
332	10.84	-0.40	2.27	0	0	0	0	0	0	0

Nodo	x [m]	y [m]	z [m]	Ux	Uy	Uz	Rx	Ry	Rz	Solaio
333	11.25	-1.82	2.47	0	0	0	0	0	0	0
334	11.25	-0.40	2.47	0	0	0	0	0	0	0
335	11.25	-0.20	2.47	0	0	0	0	0	0	0
336	-3.75	0.00	2.47	0	0	0	0	0	0	0
337	-3.38	0.00	2.47	0	0	0	0	0	0	0
338	-3.00	0.00	2.47	0	0	0	0	0	0	0
339	-2.63	0.00	2.47	0	0	0	0	0	0	0
340	-2.25	0.00	2.47	0	0	0	0	0	0	0
341	-1.88	0.00	2.47	0	0	0	0	0	0	0
342	-1.50	0.00	2.47	0	0	0	0	0	0	0
343	-1.13	0.00	2.47	0	0	0	0	0	0	0
344	-0.75	0.00	2.47	0	0	0	0	0	0	0
345	-0.38	0.00	2.47	0	0	0	0	0	0	0
346	0.00	0.00	2.47	0	0	0	0	0	0	0
347	0.38	0.00	2.47	0	0	0	0	0	0	0
348	0.75	0.00	2.47	0	0	0	0	0	0	0
349	1.13	0.00	2.47	0	0	0	0	0	0	0
350	1.50	0.00	2.47	0	0	0	0	0	0	0
351	1.88	0.00	2.47	0	0	0	0	0	0	0
352	2.25	0.00	2.47	0	0	0	0	0	0	0
353	2.63	0.00	2.47	0	0	0	0	0	0	0
354	3.00	0.00	2.47	0	0	0	0	0	0	0
355	3.38	0.00	2.47	0	0	0	0	0	0	0
356	3.75	0.00	2.47	0	0	0	0	0	0	0
357	4.13	0.00	2.47	0	0	0	0	0	0	0
358	4.50	0.00	2.47	0	0	0	0	0	0	0
359	4.88	0.00	2.47	0	0	0	0	0	0	0
360	5.25	0.00	2.47	0	0	0	0	0	0	0
361	5.63	0.00	2.47	0	0	0	0	0	0	0
362	6.00	0.00	2.47	0	0	0	0	0	0	0
363	6.38	0.00	2.47	0	0	0	0	0	0	0
364	6.75	0.00	2.47	0	0	0	0	0	0	0
365	7.13	0.00	2.47	0	0	0	0	0	0	0
366	7.50	0.00	2.47	0	0	0	0	0	0	0
367	7.88	0.00	2.47	0	0	0	0	0	0	0
368	8.25	0.00	2.47	0	0	0	0	0	0	0
369	8.63	0.00	2.47	0	0	0	0	0	0	0
370	9.00	0.00	2.47	0	0	0	0	0	0	0
371	9.38	0.00	2.47	0	0	0	0	0	0	0
372	9.75	0.00	2.47	0	0	0	0	0	0	0
373	10.13	0.00	2.47	0	0	0	0	0	0	0
374	10.50	0.00	2.47	0	0	0	0	0	0	0
375	10.88	0.00	2.47	0	0	0	0	0	0	0
376	11.25	0.00	2.47	0	0	0	0	0	0	0
377	11.61	0.00	2.47	0	0	0	0	0	0	0
378	11.97	0.00	2.47	0	0	0	0	0	0	0
379	12.33	0.00	2.47	0	0	0	0	0	0	0
380	12.69	0.00	2.47	0	0	0	0	0	0	0
381	13.05	0.00	2.47	0	0	0	0	0	0	0
382	13.41	0.00	2.47	0	0	0	0	0	0	0
383	13.77	0.00	2.47	0	0	0	0	0	0	0
384	14.13	0.00	2.47	0	0	0	0	0	0	0
385	14.49	0.00	2.47	0	0	0	0	0	0	0
386	14.85	0.00	2.47	1	1	1	1	1	0	0
387	11.25	-0.20	2.88	0	0	0	0	0	0	0
388	-3.75	0.00	2.88	0	0	0	0	0	0	0

Nodo	x [m]	y [m]	z [m]	Ux	Uy	Uz	Rx	Ry	Rz	Solaio
389	-3.00	0.00	2.88	0	0	0	0	0	0	0
390	-2.25	0.00	2.88	0	0	0	0	0	0	0
391	-1.88	0.00	2.88	0	0	0	0	0	0	0
392	-1.50	0.00	2.88	0	0	0	0	0	0	0
393	-0.75	0.00	2.88	0	0	0	0	0	0	0
394	0.00	0.00	2.88	0	0	0	0	0	0	0
395	0.75	0.00	2.88	0	0	0	0	0	0	0
396	1.50	0.00	2.88	0	0	0	0	0	0	0
397	1.88	0.00	2.88	0	0	0	0	0	0	0
398	2.25	0.00	2.88	0	0	0	0	0	0	0
399	3.00	0.00	2.88	0	0	0	0	0	0	0
400	3.75	0.00	2.88	0	0	0	0	0	0	0
401	4.50	0.00	2.88	0	0	0	0	0	0	0
402	5.25	0.00	2.88	0	0	0	0	0	0	0
403	5.63	0.00	2.88	0	0	0	0	0	0	0
404	6.00	0.00	2.88	0	0	0	0	0	0	0
405	6.75	0.00	2.88	0	0	0	0	0	0	0
406	7.50	0.00	2.88	0	0	0	0	0	0	0
407	8.25	0.00	2.88	0	0	0	0	0	0	0
408	9.00	0.00	2.88	0	0	0	0	0	0	0
409	9.38	0.00	2.88	0	0	0	0	0	0	0
410	9.75	0.00	2.88	0	0	0	0	0	0	0
411	10.50	0.00	2.88	0	0	0	0	0	0	0
412	11.25	0.00	2.88	0	0	0	0	0	0	0
413	11.97	0.00	2.88	0	0	0	0	0	0	0
414	12.69	0.00	2.88	0	0	0	0	0	0	0
415	13.05	0.00	2.88	0	0	0	0	0	0	0
416	13.41	0.00	2.88	0	0	0	0	0	0	0
417	14.13	0.00	2.88	0	0	0	0	0	0	0
418	14.85	0.00	2.88	1	1	1	1	1	0	0
419	-3.38	0.00	2.88	0	0	0	0	0	0	0
420	-2.63	0.00	2.88	0	0	0	0	0	0	0
421	-1.13	0.00	2.88	0	0	0	0	0	0	0
422	-0.38	0.00	2.88	0	0	0	0	0	0	0
423	0.38	0.00	2.88	0	0	0	0	0	0	0
424	1.13	0.00	2.88	0	0	0	0	0	0	0
425	2.63	0.00	2.88	0	0	0	0	0	0	0
426	3.38	0.00	2.88	0	0	0	0	0	0	0
427	4.13	0.00	2.88	0	0	0	0	0	0	0
428	4.88	0.00	2.88	0	0	0	0	0	0	0
429	6.38	0.00	2.88	0	0	0	0	0	0	0
430	7.13	0.00	2.88	0	0	0	0	0	0	0
431	7.88	0.00	2.88	0	0	0	0	0	0	0
432	8.63	0.00	2.88	0	0	0	0	0	0	0
433	10.13	0.00	2.88	0	0	0	0	0	0	0
434	10.88	0.00	2.88	0	0	0	0	0	0	0
435	11.61	0.00	2.88	0	0	0	0	0	0	0
436	12.33	0.00	2.88	0	0	0	0	0	0	0
437	13.77	0.00	2.88	0	0	0	0	0	0	0
438	14.49	0.00	2.88	0	0	0	0	0	0	0
439	12.84	-1.82	3.22	0	0	0	0	0	0	0
440	12.84	-0.40	3.22	0	0	0	0	0	0	0
441	11.25	-0.20	3.29	0	0	0	0	0	0	0
442	-3.75	0.00	3.29	0	0	0	0	0	0	0
443	-3.38	0.00	3.29	0	0	0	0	0	0	0
444	-3.00	0.00	3.29	0	0	0	0	0	0	0

Nodo	x [m]	y [m]	z [m]	Ux	Uy	Uz	Rx	Ry	Rz	Solaio
445	-2.63	0.00	3.29	0	0	0	0	0	0	0
446	-2.25	0.00	3.29	0	0	0	0	0	0	0
447	-1.88	0.00	3.29	0	0	0	0	0	0	0
448	-1.50	0.00	3.29	0	0	0	0	0	0	0
449	-1.13	0.00	3.29	0	0	0	0	0	0	0
450	-0.75	0.00	3.29	0	0	0	0	0	0	0
451	-0.38	0.00	3.29	0	0	0	0	0	0	0
452	0.00	0.00	3.29	0	0	0	0	0	0	0
453	0.38	0.00	3.29	0	0	0	0	0	0	0
454	0.75	0.00	3.29	0	0	0	0	0	0	0
455	1.13	0.00	3.29	0	0	0	0	0	0	0
456	1.50	0.00	3.29	0	0	0	0	0	0	0
457	1.88	0.00	3.29	0	0	0	0	0	0	0
458	2.25	0.00	3.29	0	0	0	0	0	0	0
459	2.63	0.00	3.29	0	0	0	0	0	0	0
460	3.00	0.00	3.29	0	0	0	0	0	0	0
461	3.38	0.00	3.29	0	0	0	0	0	0	0
462	3.75	0.00	3.29	0	0	0	0	0	0	0
463	4.13	0.00	3.29	0	0	0	0	0	0	0
464	4.50	0.00	3.29	0	0	0	0	0	0	0
465	4.88	0.00	3.29	0	0	0	0	0	0	0
466	5.25	0.00	3.29	0	0	0	0	0	0	0
467	5.63	0.00	3.29	0	0	0	0	0	0	0
468	6.00	0.00	3.29	0	0	0	0	0	0	0
469	6.38	0.00	3.29	0	0	0	0	0	0	0
470	6.75	0.00	3.29	0	0	0	0	0	0	0
471	7.13	0.00	3.29	0	0	0	0	0	0	0
472	7.50	0.00	3.29	0	0	0	0	0	0	0
473	7.88	0.00	3.29	0	0	0	0	0	0	0
474	8.25	0.00	3.29	0	0	0	0	0	0	0
475	8.63	0.00	3.29	0	0	0	0	0	0	0
476	9.00	0.00	3.29	0	0	0	0	0	0	0
477	9.38	0.00	3.29	0	0	0	0	0	0	0
478	9.75	0.00	3.29	0	0	0	0	0	0	0
479	10.13	0.00	3.29	0	0	0	0	0	0	0
480	10.50	0.00	3.29	0	0	0	0	0	0	0
481	10.88	0.00	3.29	0	0	0	0	0	0	0
482	11.25	0.00	3.29	0	0	0	0	0	0	0
483	11.61	0.00	3.29	0	0	0	0	0	0	0
484	11.97	0.00	3.29	0	0	0	0	0	0	0
485	12.33	0.00	3.29	0	0	0	0	0	0	0
486	12.69	0.00	3.29	0	0	0	0	0	0	0
487	13.05	0.00	3.29	0	0	0	0	0	0	0
488	13.41	0.00	3.29	0	0	0	0	0	0	0
489	13.77	0.00	3.29	0	0	0	0	0	0	0
490	14.13	0.00	3.29	0	0	0	0	0	0	0
491	14.49	0.00	3.29	0	0	0	0	0	0	0
492	14.85	0.00	3.29	1	1	1	1	1	0	0
493	-3.00	0.00	3.71	0	0	0	0	0	0	0
494	-2.25	0.00	3.71	0	0	0	0	0	0	0
495	-1.50	0.00	3.71	0	0	0	0	0	0	0
496	-0.75	0.00	3.71	0	0	0	0	0	0	0
497	0.75	0.00	3.71	0	0	0	0	0	0	0
498	1.50	0.00	3.71	0	0	0	0	0	0	0
499	2.25	0.00	3.71	0	0	0	0	0	0	0
500	3.00	0.00	3.71	0	0	0	0	0	0	0

Nodo	x [m]	y [m]	z [m]	Ux	Uy	Uz	Rx	Ry	Rz	Solaio
501	4.50	0.00	3.71	0	0	0	0	0	0	0
502	5.25	0.00	3.71	0	0	0	0	0	0	0
503	6.00	0.00	3.71	0	0	0	0	0	0	0
504	6.75	0.00	3.71	0	0	0	0	0	0	0
505	8.25	0.00	3.71	0	0	0	0	0	0	0
506	9.00	0.00	3.71	0	0	0	0	0	0	0
507	9.75	0.00	3.71	0	0	0	0	0	0	0
508	10.50	0.00	3.71	0	0	0	0	0	0	0
509	11.97	0.00	3.71	0	0	0	0	0	0	0
510	12.69	0.00	3.71	0	0	0	0	0	0	0
511	13.41	0.00	3.71	0	0	0	0	0	0	0
512	14.13	0.00	3.71	0	0	0	0	0	0	0
513	11.25	-0.20	3.71	0	0	0	0	0	0	0
514	-3.75	0.00	3.71	0	0	0	0	0	0	0
515	-3.38	0.00	3.71	0	0	0	0	0	0	0
516	-2.63	0.00	3.71	0	0	0	0	0	0	0
517	-1.88	0.00	3.71	0	0	0	0	0	0	0
518	-1.13	0.00	3.71	0	0	0	0	0	0	0
519	-0.38	0.00	3.71	0	0	0	0	0	0	0
520	0.00	0.00	3.71	0	0	0	0	0	0	0
521	0.38	0.00	3.71	0	0	0	0	0	0	0
522	1.13	0.00	3.71	0	0	0	0	0	0	0
523	1.88	0.00	3.71	0	0	0	0	0	0	0
524	2.63	0.00	3.71	0	0	0	0	0	0	0
525	3.38	0.00	3.71	0	0	0	0	0	0	0
526	3.75	0.00	3.71	0	0	0	0	0	0	0
527	4.13	0.00	3.71	0	0	0	0	0	0	0
528	4.88	0.00	3.71	0	0	0	0	0	0	0
529	5.63	0.00	3.71	0	0	0	0	0	0	0
530	6.38	0.00	3.71	0	0	0	0	0	0	0
531	7.13	0.00	3.71	0	0	0	0	0	0	0
532	7.50	0.00	3.71	0	0	0	0	0	0	0
533	7.88	0.00	3.71	0	0	0	0	0	0	0
534	8.63	0.00	3.71	0	0	0	0	0	0	0
535	9.38	0.00	3.71	0	0	0	0	0	0	0
536	10.13	0.00	3.71	0	0	0	0	0	0	0
537	10.88	0.00	3.71	0	0	0	0	0	0	0
538	11.25	0.00	3.71	0	0	0	0	0	0	0
539	11.61	0.00	3.71	0	0	0	0	0	0	0
540	12.33	0.00	3.71	0	0	0	0	0	0	0
541	13.05	0.00	3.71	0	0	0	0	0	0	0
542	13.77	0.00	3.71	0	0	0	0	0	0	0
543	14.49	0.00	3.71	0	0	0	0	0	0	0
544	14.85	0.00	3.71	1	1	1	1	1	0	0
545	14.43	-1.82	3.98	0	0	0	0	0	0	0
546	14.85	-1.82	3.98	1	1	1	0	0	0	0
547	14.43	-0.40	3.98	0	0	0	0	0	0	0
548	14.85	-0.40	3.98	1	1	1	0	0	0	0
549	11.25	-0.20	4.12	0	0	0	0	0	0	0
550	-3.75	0.00	4.12	0	0	0	0	0	0	0
551	-3.38	0.00	4.12	0	0	0	0	0	0	0
552	-3.00	0.00	4.12	0	0	0	0	0	0	0
553	-2.63	0.00	4.12	0	0	0	0	0	0	0
554	-2.25	0.00	4.12	0	0	0	0	0	0	0
555	-1.88	0.00	4.12	0	0	0	0	0	0	0
556	-1.50	0.00	4.12	0	0	0	0	0	0	0

Nodo	x [m]	y [m]	z [m]	Ux	Uy	Uz	Rx	Ry	Rz	Solaio
557	-1.13	0.00	4.12	0	0	0	0	0	0	0
558	-0.75	0.00	4.12	0	0	0	0	0	0	0
559	-0.38	0.00	4.12	0	0	0	0	0	0	0
560	0.00	0.00	4.12	0	0	0	0	0	0	0
561	0.38	0.00	4.12	0	0	0	0	0	0	0
562	0.75	0.00	4.12	0	0	0	0	0	0	0
563	1.13	0.00	4.12	0	0	0	0	0	0	0
564	1.50	0.00	4.12	0	0	0	0	0	0	0
565	1.88	0.00	4.12	0	0	0	0	0	0	0
566	2.25	0.00	4.12	0	0	0	0	0	0	0
567	2.63	0.00	4.12	0	0	0	0	0	0	0
568	3.00	0.00	4.12	0	0	0	0	0	0	0
569	3.38	0.00	4.12	0	0	0	0	0	0	0
570	3.75	0.00	4.12	0	0	0	0	0	0	0
571	4.13	0.00	4.12	0	0	0	0	0	0	0
572	4.50	0.00	4.12	0	0	0	0	0	0	0
573	4.88	0.00	4.12	0	0	0	0	0	0	0
574	5.25	0.00	4.12	0	0	0	0	0	0	0
575	5.63	0.00	4.12	0	0	0	0	0	0	0
576	6.00	0.00	4.12	0	0	0	0	0	0	0
577	6.38	0.00	4.12	0	0	0	0	0	0	0
578	6.75	0.00	4.12	0	0	0	0	0	0	0
579	7.13	0.00	4.12	0	0	0	0	0	0	0
580	7.50	0.00	4.12	0	0	0	0	0	0	0
581	7.88	0.00	4.12	0	0	0	0	0	0	0
582	8.25	0.00	4.12	0	0	0	0	0	0	0
583	8.63	0.00	4.12	0	0	0	0	0	0	0
584	9.00	0.00	4.12	0	0	0	0	0	0	0
585	9.38	0.00	4.12	0	0	0	0	0	0	0
586	9.75	0.00	4.12	0	0	0	0	0	0	0
587	10.13	0.00	4.12	0	0	0	0	0	0	0
588	10.50	0.00	4.12	0	0	0	0	0	0	0
589	10.87	0.00	4.12	0	0	0	0	0	0	0
590	11.25	0.00	4.12	0	0	0	0	0	0	0
591	11.61	0.00	4.12	0	0	0	0	0	0	0
592	11.97	0.00	4.12	0	0	0	0	0	0	0
593	12.33	0.00	4.12	0	0	0	0	0	0	0
594	12.69	0.00	4.12	0	0	0	0	0	0	0
595	13.05	0.00	4.12	0	0	0	0	0	0	0
596	13.41	0.00	4.12	0	0	0	0	0	0	0
597	13.77	0.00	4.12	0	0	0	0	0	0	0
598	14.13	0.00	4.12	0	0	0	0	0	0	0
599	14.49	0.00	4.12	0	0	0	0	0	0	0
600	14.85	0.00	4.12	1	1	1	1	1	0	0
601	-3.75	-1.92	4.53	1	1	1	1	1	1	0
602	0.00	-1.92	4.53	1	1	1	1	1	1	0
603	3.75	-1.92	4.53	1	1	1	1	1	1	0
604	7.50	-1.92	4.53	1	1	1	1	1	1	0
606	14.85	-1.92	4.53	1	1	1	1	1	1	0
607	7.50	-0.20	4.53	0	0	0	0	0	0	0
608	7.88	-0.20	4.53	0	0	0	0	0	0	0
609	8.25	-0.20	4.53	0	0	0	0	0	0	0
610	8.63	-0.20	4.53	0	0	0	0	0	0	0
611	9.00	-0.20	4.53	0	0	0	0	0	0	0
612	9.38	-0.20	4.53	0	0	0	0	0	0	0
613	9.75	-0.20	4.53	0	0	0	0	0	0	0

Nodo	x [m]	y [m]	z [m]	Ux	Uy	Uz	Rx	Ry	Rz	Solaio
614	10.13	-0.20	4.53	0	0	0	0	0	0	0
615	10.50	-0.20	4.53	0	0	0	0	0	0	0
616	10.88	-0.20	4.53	0	0	0	0	0	0	0
617	11.25	-0.20	4.53	0	0	0	0	0	0	0
618	11.61	-0.20	4.53	0	0	0	0	0	0	0
619	11.97	-0.20	4.53	0	0	0	0	0	0	0
620	12.33	-0.20	4.53	0	0	0	0	0	0	0
621	12.69	-0.20	4.53	0	0	0	0	0	0	0
622	13.05	-0.20	4.53	0	0	0	0	0	0	0
623	13.41	-0.20	4.53	0	0	0	0	0	0	0
624	13.77	-0.20	4.53	0	0	0	0	0	0	0
625	14.13	-0.20	4.53	0	0	0	0	0	0	0
626	14.49	-0.20	4.53	0	0	0	0	0	0	0
627	14.85	-0.20	4.53	0	0	0	0	0	0	0
628	-3.75	0.00	4.53	0	0	0	0	0	0	0
629	-3.38	0.00	4.53	0	0	0	0	0	0	0
630	-3.00	0.00	4.53	0	0	0	0	0	0	0
631	-2.63	0.00	4.53	0	0	0	0	0	0	0
632	-2.25	0.00	4.53	0	0	0	0	0	0	0
633	-1.88	0.00	4.53	0	0	0	0	0	0	0
634	-1.50	0.00	4.53	0	0	0	0	0	0	0
635	-1.13	0.00	4.53	0	0	0	0	0	0	0
636	-0.75	0.00	4.53	0	0	0	0	0	0	0
637	-0.38	0.00	4.53	0	0	0	0	0	0	0
638	0.00	0.00	4.53	0	0	0	0	0	0	0
639	0.38	0.00	4.53	0	0	0	0	0	0	0
640	0.75	0.00	4.53	0	0	0	0	0	0	0
641	1.13	0.00	4.53	0	0	0	0	0	0	0
642	1.50	0.00	4.53	0	0	0	0	0	0	0
643	1.88	0.00	4.53	0	0	0	0	0	0	0
644	2.25	0.00	4.53	0	0	0	0	0	0	0
645	2.63	0.00	4.53	0	0	0	0	0	0	0
646	3.00	0.00	4.53	0	0	0	0	0	0	0
647	3.38	0.00	4.53	0	0	0	0	0	0	0
648	3.75	0.00	4.53	0	0	0	0	0	0	0
649	4.13	0.00	4.53	0	0	0	0	0	0	0
650	4.50	0.00	4.53	0	0	0	0	0	0	0
651	4.88	0.00	4.53	0	0	0	0	0	0	0
652	5.25	0.00	4.53	0	0	0	0	0	0	0
653	5.63	0.00	4.53	0	0	0	0	0	0	0
654	6.00	0.00	4.53	0	0	0	0	0	0	0
655	6.38	0.00	4.53	0	0	0	0	0	0	0
656	6.75	0.00	4.53	0	0	0	0	0	0	0
657	7.13	0.00	4.53	0	0	0	0	0	0	0
658	7.50	0.00	4.53	0	0	0	0	0	0	0
659	7.88	0.00	4.53	0	0	0	0	0	0	0
660	8.25	0.00	4.53	0	0	0	0	0	0	0
661	8.63	0.00	4.53	0	0	0	0	0	0	0
662	9.00	0.00	4.53	0	0	0	0	0	0	0
663	9.38	0.00	4.53	0	0	0	0	0	0	0
664	9.75	0.00	4.53	0	0	0	0	0	0	0
665	10.13	0.00	4.53	0	0	0	0	0	0	0
666	10.50	0.00	4.53	0	0	0	0	0	0	0
667	10.88	0.00	4.53	0	0	0	0	0	0	0
668	11.25	0.00	4.53	0	0	0	0	0	0	0
669	11.61	0.00	4.53	0	0	0	0	0	0	0

Nodo	x [m]	y [m]	z [m]	Ux	Uy	Uz	Rx	Ry	Rz	Solaio
670	11.97	0.00	4.53	0	0	0	0	0	0	0
671	12.33	0.00	4.53	0	0	0	0	0	0	0
672	12.69	0.00	4.53	0	0	0	0	0	0	0
673	13.05	0.00	4.53	0	0	0	0	0	0	0
674	13.41	0.00	4.53	0	0	0	0	0	0	0

Nodo	x [m]	y [m]	z [m]	Ux	Uy	Uz	Rx	Ry	Rz	Solaio
675	13.77	0.00	4.53	0	0	0	0	0	0	0
676	14.13	0.00	4.53	0	0	0	0	0	0	0
677	14.49	0.00	4.53	0	0	0	0	0	0	0
678	14.85	0.00	4.53	1	1	1	1	1	0	0
714	8.63	-1.92	4.53	1	1	1	0	0	0	0

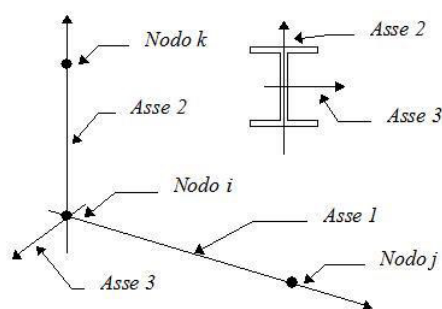
## Elementi tipo trave

### Convenzioni adottate

Ogni elemento tipo trave viene identificato da:

- Il nodo iniziale **i**;
- Il nodo finale **j**;
- Il nodo **k** che definisce l'orientamento nello spazio della terna riferimento locale dell'elemento.

La terna di riferimento locale della trave risulta essere così disposta:



Vengono riportati i valori di efficacia dei vincoli alle estremità dello elemento (variabili fra 0 e 100%), nei due piani **1-2** e **1-3** della trave in corrispondenza dei nodi, dando quindi la possibilità di considerare aste non perfettamente incastrate (coefficienti **Vi12, Vj12, Vi13, Vj13**).

### Caratteristiche dei Materiali:

Tipo	Modulo Elastico [MPa]	$\nu$	alfa [1/°C]	Peso Specifico [KN/mc]	Commento
1	30000.00	0.120	0.000012	25.00	Rbk 300
2	210000.00	0.120	0.000012	78.50	Acciaio

### Sezioni Impiegate:

Sezione	Materiale	Tipo di Sezione	Parametri Dimensionali Commenti
1	1	Rett.	B= 40 H= 28 [cm]
2	2	HEA 300	Traverso
3	2	Tubi Quadri 100x4.0	Collegamento
4	2	HEB 180	Traverso di collegamento
5	1	Rett.	B= 40 H= 28 [cm]
10	2	IPEA 160	Scala
11	2	UPN 160	Scala
12	2	UPN 220	Scala COSCIALI

Sezione	Materiale	Tipo di Sezione	Parametri Dimensionali Commenti
13	2	HEA 220	Scala

#### Caratteristiche Inerziali:

Sezione	Materiale	Area [cm^2]	Jt [cm^4]	J2 [cm^4]	J3 [cm^4]	J23 [cm^4]	Xx	Xy
1	1	1120.00	159378	73173	149333	0	1.2	1.2
2	2	112.79	85	18302	6310	0	4.3	1.4
3	2	14.66	363	219	219	0	1.9	1.9
4	2	65.33	42	3835	1363	0	4.1	1.4
5	1	1120.00	159378	73173	149333	0	1.2	1.2
10	2	16.21	2	691	54	-0	2.5	1.7
11	2	24.02	7	925	85	0	2.0	1.9
12	2	37.46	14	2692	196	0	1.9	2.0
13	2	64.46	28	5419	1955	0	4.1	1.4

Dal Nodo	Al Nodo	Nodo k	Luce [m]	Materiale	Sezione	Fixity factors								Rigid-end [m]	
						V <sub>ii2</sub>	V <sub>ji2</sub>	V <sub>ii3</sub>	V <sub>ji3</sub>	N <sub>i</sub>	N <sub>j</sub>	T <sub>i</sub>	T <sub>j</sub>	d <sub>ri</sub>	d <sub>rj</sub>
714	610	10026	1.72	2	4	100	100	100	100	100	100	100	100	0.00	0.00
335	275	10032	0.41	2	2	100	100	100	100	100	100	100	100	0.00	0.00
8	167	10033	2.27	2	12	100	100	100	100	100	100	100	100	0.00	0.00
167	329	10033	2.49	2	12	100	100	100	100	100	100	100	100	0.00	0.00
334	330	10000	0.35	2	12	100	0	100	0	100	100	100	100	0.00	0.00
333	439	10003	1.76	2	12	100	100	100	100	100	100	100	100	0.00	0.00
330	222	10000	0.47	2	13	100	100	100	100	100	100	100	100	0.00	0.00
275	223	10032	0.41	2	2	100	100	100	100	100	100	100	100	0.00	0.00
223	168	10032	0.41	2	2	100	100	100	100	100	100	100	100	0.00	0.00
513	441	10032	0.41	2	2	100	100	100	100	100	100	100	100	0.00	0.00
441	387	10032	0.41	2	2	100	100	100	100	100	100	100	100	0.00	0.00
549	513	10032	0.41	2	2	100	100	100	100	100	100	100	100	0.00	0.00
617	549	10032	0.41	2	2	100	100	100	100	100	100	100	100	0.00	0.00
62	10	10032	0.41	2	2	100	100	100	100	100	100	100	100	0.00	0.00
168	114	10032	0.41	2	2	100	100	100	100	100	100	100	100	0.00	0.00
114	62	10032	0.41	2	2	100	100	100	100	100	100	100	100	0.00	0.00
331	333	10005	0.45	2	12	100	100	100	100	100	100	100	100	0.00	0.00
166	327	10003	2.49	2	12	100	100	100	100	100	100	100	100	0.00	0.00
5	166	10003	2.27	2	12	100	100	100	100	100	100	100	100	0.00	0.00
333	328	10001	0.35	2	12	100	0	100	0	100	100	100	100	0.00	0.00
332	334	10033	0.45	2	12	100	100	100	100	100	100	100	100	0.00	0.00
328	221	10001	0.47	2	13	100	100	100	100	100	100	100	100	0.00	0.00
223	3	10006	2.38	2	2	100	100	100	100	100	100	100	100	0.00	0.00
220	3	10032	1.65	2	2	100	100	100	100	100	100	100	100	0.00	0.00
334	440	10033	1.76	2	12	100	100	100	100	100	100	100	100	0.00	0.00
440	547	10033	1.76	2	12	100	100	100	100	100	100	100	100	0.00	0.00
439	545	10003	1.76	2	12	100	100	100	100	100	100	100	100	0.00	0.00
387	335	10032	0.41	2	2	100	100	100	100	100	100	100	100	0.00	0.00
4	5	10005	0.22	2	12	0	100	0	100	100	100	100	100	0.00	0.00
7	8	10033	0.22	2	12	0	100	0	100	100	100	100	100	0.00	0.00
327	328	10003	1.52	2	12	100	0	100	0	100	100	100	100	0.00	0.00
329	330	10033	1.52	2	12	100	0	100	0	100	100	100	100	0.00	0.00

545	546	10003	0.42	2	12	100	100	100	100	100	100	100	100	0.00	0.00
547	548	10033	0.42	2	12	100	100	100	100	100	100	100	100	0.00	0.00
607	608	10028	0.38	2	2	0	100	0	100	100	100	100	100	0.00	0.00
608	609	10028	0.38	2	2	100	100	100	100	100	100	100	100	0.00	0.00
609	610	10028	0.38	2	2	100	100	100	100	100	100	100	100	0.00	0.00
610	611	10028	0.38	2	2	100	100	100	100	100	100	100	100	0.00	0.00
611	612	10028	0.38	2	2	100	100	100	100	100	100	100	100	0.00	0.00
612	613	10028	0.38	2	2	100	100	100	100	100	100	100	100	0.00	0.00
613	614	10028	0.38	2	2	100	100	100	100	100	100	100	100	0.00	0.00
614	615	10028	0.38	2	2	100	100	100	100	100	100	100	100	0.00	0.00
615	616	10028	0.38	2	2	100	100	100	100	100	100	100	100	0.00	0.00
616	617	10028	0.38	2	2	100	100	100	100	100	100	100	100	0.00	0.00
617	618	10028	0.36	2	2	100	100	100	100	100	100	100	100	0.00	0.00
618	619	10028	0.36	2	2	100	100	100	100	100	100	100	100	0.00	0.00
619	620	10028	0.36	2	2	100	100	100	100	100	100	100	100	0.00	0.00
620	621	10028	0.36	2	2	100	100	100	100	100	100	100	100	0.00	0.00
621	622	10028	0.36	2	2	100	100	100	100	100	100	100	100	0.00	0.00
622	623	10028	0.36	2	2	100	100	100	100	100	100	100	100	0.00	0.00
623	624	10028	0.36	2	2	100	100	100	100	100	100	100	100	0.00	0.00
624	625	10028	0.36	2	2	100	100	100	100	100	100	100	100	0.00	0.00
625	626	10028	0.36	2	2	100	100	100	100	100	100	100	100	0.00	0.00
626	627	10028	0.36	2	2	100	0	100	0	100	100	100	100	0.00	0.00
1	4	10004	0.10	2	13	0	100	0	100	100	100	100	100	0.00	0.00
4	7	10004	1.42	2	13	100	100	100	100	100	100	100	100	0.00	0.00
5	8	10003	1.42	2	10	100	100	100	100	100	100	100	100	0.00	0.00
7	35	10004	0.40	2	13	100	0	100	0	100	100	100	100	0.00	0.00
2	6	10028	0.10	1	5	100	100	100	100	100	100	100	100	0.00	0.00
6	9	10028	1.42	1	5	100	100	100	100	100	100	100	100	0.00	0.00
9	41	10028	0.40	1	5	100	100	100	100	100	100	100	100	0.00	0.00
3	10	10032	1.72	2	2	100	100	100	100	100	100	100	100	0.00	0.00
62	103	10032	0.20	2	3	0	0	0	0	100	100	100	100	0.00	0.00
114	155	10032	0.20	2	3	0	0	0	0	100	100	100	100	0.00	0.00
166	167	10007	1.42	2	10	100	100	100	100	100	100	100	100	0.00	0.00
168	209	10032	0.20	2	3	0	0	0	0	100	100	100	100	0.00	0.00
220	221	10032	0.10	2	2	100	100	100	100	100	100	100	100	0.00	0.00
221	222	10032	1.42	2	2	100	100	100	100	100	100	100	100	0.00	0.00
222	223	10032	0.20	2	2	100	100	100	100	100	100	100	100	0.00	0.00
223	264	10032	0.20	2	3	0	0	0	0	100	100	100	100	0.00	0.00
275	316	10032	0.20	2	3	0	0	0	0	100	100	100	100	0.00	0.00
327	329	10005	1.42	2	10	100	100	100	100	100	100	100	100	0.00	0.00
328	330	10006	1.42	2	10	100	100	100	100	100	100	100	100	0.00	0.00
331	332	10008	1.42	2	10	100	100	100	100	100	100	100	100	0.00	0.00
333	334	10006	1.42	2	10	100	100	100	100	100	100	100	100	0.00	0.00
335	376	10032	0.20	2	3	0	0	0	0	100	100	100	100	0.00	0.00
387	412	10032	0.20	2	3	0	0	0	0	100	100	100	100	0.00	0.00
439	440	10001	1.42	2	10	100	100	100	100	100	100	100	100	0.00	0.00
441	482	10006	0.20	2	3	0	0	0	0	100	100	100	100	0.00	0.00
513	538	10006	0.20	2	3	0	0	0	0	100	100	100	100	0.00	0.00
545	547	10002	1.42	2	10	100	100	100	100	100	100	100	100	0.00	0.00
546	548	10009	1.42	2	11	100	100	100	100	100	100	100	100	0.00	0.00
549	590	10006	0.20	2	3	0	0	0	0	100	100	100	100	0.00	0.00
601	628	10031	1.92	1	1	100	100	100	100	100	100	100	100	0.00	0.00
602	638	10030	1.92	1	1	100	100	100	100	100	100	100	100	0.00	0.00
603	648	10029	1.92	1	1	100	100	100	100	100	100	100	100	0.00	0.00
604	607	10007	1.72	1	1	100	100	100	100	100	100	100	100	0.00	0.00
608	659	10024	0.20	2	3	0	0	0	0	100	100	100	100	0.00	0.00
607	658	10007	0.20	1	1	100	100	100	100	100	100	100	100	0.00	0.00
610	661	10026	0.20	2	3	0	0	0	0	100	100	100	100	0.00	0.00



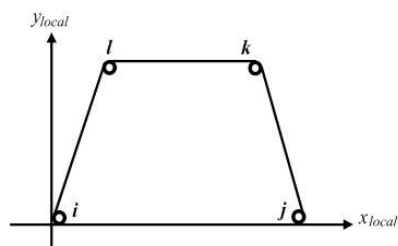
609	660	10025	0.20	2	3	0	0	0	0	100	100	100	100	0.00	0.00
612	663	10018	0.20	2	3	0	0	0	0	100	100	100	100	0.00	0.00
611	662	10027	0.20	2	3	0	0	0	0	100	100	100	100	0.00	0.00
614	665	10020	0.20	2	3	0	0	0	0	100	100	100	100	0.00	0.00
613	664	10019	0.20	2	3	0	0	0	0	100	100	100	100	0.00	0.00
617	668	10006	0.20	2	3	0	0	0	0	100	100	100	100	0.00	0.00
616	667	10022	0.20	2	3	0	0	0	0	100	100	100	100	0.00	0.00
615	666	10021	0.20	2	3	0	0	0	0	100	100	100	100	0.00	0.00
619	670	10013	0.20	2	3	0	0	0	0	100	100	100	100	0.00	0.00
618	669	10023	0.20	2	3	0	0	0	0	100	100	100	100	0.00	0.00
621	672	10015	0.20	2	3	0	0	0	0	100	100	100	100	0.00	0.00
620	671	10014	0.20	2	3	0	0	0	0	100	100	100	100	0.00	0.00
624	675	10010	0.20	2	3	0	0	0	0	100	100	100	100	0.00	0.00
623	674	10017	0.20	2	3	0	0	0	0	100	100	100	100	0.00	0.00
622	673	10016	0.20	2	3	0	0	0	0	100	100	100	100	0.00	0.00
625	676	10011	0.20	2	3	0	0	0	0	100	100	100	100	0.00	0.00
606	627	10009	1.72	2	4	100	100	100	100	100	100	100	100	0.00	0.00
626	677	10012	0.20	2	3	0	0	0	0	100	100	100	100	0.00	0.00

#### 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 [MPa]	$\nu$	alfa [1/°C]	Peso Specifico [KN/mc]	Commento
1	30000.00	0.120	0.000012	25.00	Rbk 300
2	210000.00	0.120	0.000012	78.50	Acciaio

#### Sezioni Impiegate:

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

Nodo i	Nodo j	Nodo k	Nodo l	Materiale	Sezione
11	12	64	63	1	1
12	13	65	64	1	1
13	14	66	65	1	1
14	15	67	66	1	1
15	16	68	67	1	1
16	17	69	68	1	1
17	18	70	69	1	1
18	19	71	70	1	1
19	20	72	71	1	1
20	21	73	72	1	1
72	73	125	124	1	1
71	72	124	123	1	1
70	71	123	122	1	1
21	22	74	73	1	1
73	74	126	125	1	1
22	23	75	74	1	1
74	75	127	126	1	1
75	76	128	127	1	1
76	77	129	128	1	1
77	78	130	129	1	1
69	70	122	121	1	1
60	61	113	112	1	1
59	60	112	111	1	1
58	59	111	110	1	1
57	58	110	109	1	1
56	57	109	108	1	1
55	56	108	107	1	1
52	53	105	104	1	1
53	54	106	105	1	1
54	55	107	106	1	1
51	52	104	103	1	1
48	49	101	100	1	1
49	50	102	101	1	1
47	48	100	99	1	1
45	46	98	97	1	1
44	45	97	96	1	1
46	47	99	98	1	1
36	37	89	88	1	1
38	39	91	90	1	1
37	38	90	89	1	1
40	41	93	92	1	1
39	40	92	91	1	1
41	42	94	93	1	1
42	43	95	94	1	1
43	44	96	95	1	1
23	24	76	75	1	1
24	25	77	76	1	1
25	26	78	77	1	1
26	27	79	78	1	1
27	28	80	79	1	1
28	29	81	80	1	1
29	30	82	81	1	1
30	31	83	82	1	1
32	33	85	84	1	1

Nodo i	Nodo j	Nodo k	Nodo l	Materiale	Sezione
31	32	84	83	1	1
33	34	86	85	1	1
34	35	87	86	1	1
35	36	88	87	1	1
50	51	103	102	1	1
68	69	121	120	1	1
67	68	120	119	1	1
66	67	119	118	1	1
65	66	118	117	1	1
64	65	117	116	1	1
63	64	116	115	1	1
78	79	131	130	1	1
79	80	132	131	1	1
80	81	133	132	1	1
136	137	191	190	1	1
135	136	190	189	1	1
137	138	192	191	1	1
133	134	188	187	1	1
134	135	189	188	1	1
132	133	187	186	1	1
131	132	186	185	1	1
130	131	185	184	1	1
129	130	184	183	1	1
127	128	182	181	1	1
128	129	183	182	1	1
126	127	181	180	1	1
124	125	179	178	1	1
125	126	180	179	1	1
123	124	178	177	1	1
115	116	170	169	1	1
112	113	165	164	1	1
111	112	164	163	1	1
110	111	163	162	1	1
109	110	162	161	1	1
108	109	161	160	1	1
106	107	159	158	1	1
107	108	160	159	1	1
105	106	158	157	1	1
122	123	177	176	1	1
121	122	176	175	1	1
120	121	175	174	1	1
119	120	174	173	1	1
118	119	173	172	1	1
116	117	171	170	1	1
117	118	172	171	1	1
81	82	134	133	1	1
82	83	135	134	1	1
83	84	136	135	1	1
85	86	138	137	1	1
84	85	137	136	1	1
86	87	139	138	1	1
88	89	141	140	1	1
87	88	140	139	1	1
89	90	142	141	1	1

Nodo i	Nodo j	Nodo k	Nodo l	Materiale	Sezione
91	92	144	143	1	1
92	93	145	144	1	1
90	91	143	142	1	1
93	94	146	145	1	1
94	95	147	146	1	1
96	97	149	148	1	1
95	96	148	147	1	1
97	98	150	149	1	1
98	99	151	150	1	1
99	100	152	151	1	1
100	101	153	152	1	1
101	102	154	153	1	1
103	104	156	155	1	1
104	105	157	156	1	1
102	103	155	154	1	1
138	139	193	192	1	1
141	142	196	195	1	1
140	141	195	194	1	1
139	140	194	193	1	1
195	196	251	250	1	1
194	195	250	249	1	1
193	194	249	248	1	1
192	193	248	247	1	1
191	192	247	246	1	1
190	191	246	245	1	1
142	143	197	196	1	1
143	144	198	197	1	1
198	199	254	253	1	1
197	198	253	252	1	1
196	197	252	251	1	1
187	188	243	242	1	1
189	190	245	244	1	1
188	189	244	243	1	1
186	187	242	241	1	1
185	186	241	240	1	1
184	185	240	239	1	1
181	182	237	236	1	1
182	183	238	237	1	1
183	184	239	238	1	1
179	180	235	234	1	1
180	181	236	235	1	1
144	145	199	198	1	1
145	146	200	199	1	1
146	147	201	200	1	1
147	148	202	201	1	1
148	149	203	202	1	1
149	150	204	203	1	1
150	151	205	204	1	1
151	152	206	205	1	1
152	153	207	206	1	1
153	154	208	207	1	1
154	155	209	208	1	1
155	156	210	209	1	1
178	179	234	233	1	1
170	171	226	225	1	1
176	177	232	231	1	1

Nodo i	Nodo j	Nodo k	Nodo l	Materiale	Sezione
175	176	231	230	1	1
174	175	230	229	1	1
173	174	229	228	1	1
172	173	228	227	1	1
171	172	227	226	1	1
169	170	225	224	1	1
157	158	212	211	1	1
156	157	211	210	1	1
158	159	213	212	1	1
164	165	219	218	1	1
163	164	218	217	1	1
162	163	217	216	1	1
161	162	216	215	1	1
160	161	215	214	1	1
159	160	214	213	1	1
177	178	233	232	1	1
253	254	306	305	1	1
199	200	255	254	1	1
200	201	256	255	1	1
201	202	257	256	1	1
202	203	258	257	1	1
257	258	310	309	1	1
203	204	259	258	1	1
258	259	311	310	1	1
254	255	307	306	1	1
255	256	308	307	1	1
256	257	309	308	1	1
252	253	305	304	1	1
205	206	261	260	1	1
206	207	262	261	1	1
204	205	260	259	1	1
261	262	314	313	1	1
207	208	263	262	1	1
262	263	315	314	1	1
208	209	264	263	1	1
263	264	316	315	1	1
211	212	267	266	1	1
210	211	266	265	1	1
209	210	265	264	1	1
212	213	268	267	1	1
213	214	269	268	1	1
214	215	270	269	1	1
215	216	271	270	1	1
216	217	272	271	1	1
217	218	273	272	1	1
218	219	274	273	1	1
264	265	317	316	1	1
259	260	312	311	1	1
260	261	313	312	1	1
224	225	277	276	1	1
225	226	278	277	1	1
227	228	280	279	1	1
226	227	279	278	1	1
229	230	282	281	1	1
228	229	281	280	1	1
231	232	284	283	1	1

Nodo i	Nodo j	Nodo k	Nodo l	Materiale	Sezione
230	231	283	282	1	1
233	234	286	285	1	1
232	233	285	284	1	1
234	235	287	286	1	1
235	236	288	287	1	1
240	241	293	292	1	1
236	237	289	288	1	1
237	238	290	289	1	1
238	239	291	290	1	1
239	240	292	291	1	1
241	242	294	293	1	1
242	243	295	294	1	1
243	244	296	295	1	1
245	246	298	297	1	1
244	245	297	296	1	1
251	252	304	303	1	1
250	251	303	302	1	1
249	250	302	301	1	1
248	249	301	300	1	1
247	248	300	299	1	1
246	247	299	298	1	1
316	317	377	376	1	1
276	277	337	336	1	1
268	269	321	320	1	1
267	268	320	319	1	1
266	267	319	318	1	1
265	266	318	317	1	1
273	274	326	325	1	1
272	273	325	324	1	1
271	272	324	323	1	1
270	271	323	322	1	1
269	270	322	321	1	1
286	287	347	346	1	1
287	288	348	347	1	1
292	293	353	352	1	1
293	294	354	353	1	1
294	295	355	354	1	1
295	296	356	355	1	1
296	297	357	356	1	1
288	289	349	348	1	1
289	290	350	349	1	1
290	291	351	350	1	1
291	292	352	351	1	1
285	286	346	345	1	1
297	298	358	357	1	1
277	278	338	337	1	1
278	279	339	338	1	1
279	280	340	339	1	1
284	285	345	344	1	1
283	284	344	343	1	1
282	283	343	342	1	1
281	282	342	341	1	1
280	281	341	340	1	1
381	382	416	415	1	1
384	385	438	417	1	1
383	384	417	437	1	1

Nodo i	Nodo j	Nodo k	Nodo l	Materiale	Sezione
380	381	415	414	1	1
417	438	491	490	1	1
376	377	435	412	1	1
339	340	390	420	1	1
343	344	393	421	1	1
338	339	420	389	1	1
419	389	444	443	1	1
336	337	419	388	1	1
388	419	443	442	1	1
344	345	422	393	1	1
298	299	359	358	1	1
301	302	362	361	1	1
300	301	361	360	1	1
302	303	363	362	1	1
303	304	364	363	1	1
299	300	360	359	1	1
364	365	430	405	1	1
363	364	405	429	1	1
358	359	428	401	1	1
357	358	401	427	1	1
307	308	368	367	1	1
304	305	365	364	1	1
305	306	366	365	1	1
306	307	367	366	1	1
368	369	432	407	1	1
310	311	371	370	1	1
311	312	372	371	1	1
312	313	373	372	1	1
308	309	369	368	1	1
309	310	370	369	1	1
372	373	433	410	1	1
367	368	407	431	1	1
313	314	374	373	1	1
314	315	375	374	1	1
317	318	378	377	1	1
315	316	376	375	1	1
377	378	413	435	1	1
318	319	379	378	1	1
319	320	380	379	1	1
321	322	382	381	1	1
320	321	381	380	1	1
322	323	383	382	1	1
382	383	437	416	1	1
379	380	414	436	1	1
378	379	436	413	1	1
323	324	384	383	1	1
325	326	386	385	1	1
324	325	385	384	1	1
385	386	418	438	1	1
345	346	394	422	1	1
346	347	423	394	1	1
340	341	391	390	1	1
341	342	392	391	1	1
394	423	453	452	1	1
347	348	395	423	1	1
423	395	454	453	1	1

Nodo i	Nodo j	Nodo k	Nodo l	Materiale	Sezione
348	349	424	395	1	1
395	424	455	454	1	1
349	350	396	424	1	1
350	351	397	396	1	1
424	396	456	455	1	1
373	374	411	433	1	1
374	375	434	411	1	1
422	394	452	451	1	1
393	422	451	450	1	1
421	393	450	449	1	1
342	343	421	392	1	1
392	421	449	448	1	1
391	392	448	447	1	1
390	391	447	446	1	1
420	390	446	445	1	1
337	338	389	419	1	1
389	420	445	444	1	1
352	353	425	398	1	1
353	354	399	425	1	1
354	355	426	399	1	1
355	356	400	426	1	1
351	352	398	397	1	1
426	400	462	461	1	1
360	361	403	402	1	1
403	404	468	467	1	1
402	403	467	466	1	1
359	360	402	428	1	1
428	402	466	465	1	1
401	428	465	464	1	1
427	401	464	463	1	1
356	357	427	400	1	1
400	427	463	462	1	1
361	362	404	403	1	1
405	430	471	470	1	1
429	405	470	469	1	1
362	363	429	404	1	1
404	429	469	468	1	1
365	366	406	430	1	1
430	406	472	471	1	1
366	367	431	406	1	1
406	431	473	472	1	1
431	407	474	473	1	1
407	432	475	474	1	1
375	376	412	434	1	1
396	397	457	456	1	1
397	398	458	457	1	1
398	425	459	458	1	1
425	399	460	459	1	1
399	426	461	460	1	1
369	370	408	432	1	1
370	371	409	408	1	1
371	372	410	409	1	1
432	408	476	475	1	1
408	409	477	476	1	1
409	410	478	477	1	1
410	433	479	478	1	1

Nodo i	Nodo j	Nodo k	Nodo l	Materiale	Sezione
433	411	480	479	1	1
411	434	481	480	1	1
434	412	482	481	1	1
436	414	486	485	1	1
413	436	485	484	1	1
435	413	484	483	1	1
412	435	483	482	1	1
414	415	487	486	1	1
416	437	489	488	1	1
415	416	488	487	1	1
490	491	543	512	1	1
512	543	599	598	1	1
493	516	553	552	1	1
515	493	552	551	1	1
514	515	551	550	1	1
485	486	510	540	1	1
484	485	540	509	1	1
483	484	509	539	1	1
486	487	541	510	1	1
491	492	544	543	1	1
489	490	512	542	1	1
488	489	542	511	1	1
482	483	539	538	1	1
452	453	521	520	1	1
453	454	497	521	1	1
454	455	522	497	1	1
455	456	498	522	1	1
456	457	523	498	1	1
458	459	524	499	1	1
459	460	500	524	1	1
460	461	525	500	1	1
461	462	526	525	1	1
470	471	531	504	1	1
468	469	530	503	1	1
467	468	503	529	1	1
466	467	529	502	1	1
465	466	502	528	1	1
464	465	528	501	1	1
462	463	527	526	1	1
471	472	532	531	1	1
472	473	533	532	1	1
473	474	505	533	1	1
474	475	534	505	1	1
476	477	535	506	1	1
477	478	507	535	1	1
478	479	536	507	1	1
479	480	508	536	1	1
480	481	537	508	1	1
481	482	538	537	1	1
475	476	506	534	1	1
445	446	494	516	1	1
437	417	490	489	1	1
438	418	492	491	1	1
516	494	554	553	1	1
457	458	499	523	1	1
469	470	504	530	1	1

Nodo i	Nodo j	Nodo k	Nodo l	Materiale	Sezione
443	444	493	515	1	1
444	445	516	493	1	1
451	452	520	519	1	1
446	447	517	494	1	1
442	443	515	514	1	1
447	448	495	517	1	1
450	451	519	496	1	1
449	450	496	518	1	1
448	449	518	495	1	1
463	464	501	527	1	1
487	488	511	541	1	1
495	518	557	556	1	1
517	495	556	555	1	1
494	517	555	554	1	1
496	519	559	558	1	1
518	496	558	557	1	1
599	600	678	677	1	1
559	560	638	637	1	1
558	559	637	636	1	1
557	558	636	635	1	1
556	557	635	634	1	1
555	556	634	633	1	1
554	555	633	632	1	1
553	554	632	631	1	1
552	553	631	630	1	1
551	552	630	629	1	1
550	551	629	628	1	1
519	520	560	559	1	1
520	521	561	560	1	1
560	561	639	638	1	1
521	497	562	561	1	1
561	562	640	639	1	1
497	522	563	562	1	1
562	563	641	640	1	1
522	498	564	563	1	1
563	564	642	641	1	1
498	523	565	564	1	1
564	565	643	642	1	1
523	499	566	565	1	1
565	566	644	643	1	1
499	524	567	566	1	1
566	567	645	644	1	1
524	500	568	567	1	1
567	568	646	645	1	1
500	525	569	568	1	1
568	569	647	646	1	1
525	526	570	569	1	1
569	570	648	647	1	1
503	530	577	576	1	1
529	503	576	575	1	1
502	529	575	574	1	1
528	502	574	573	1	1
501	528	573	572	1	1
527	501	572	571	1	1
526	527	571	570	1	1
530	504	578	577	1	1

Nodo i	Nodo j	Nodo k	Nodo l	Materiale	Sezione
579	580	658	657	1	1
578	579	657	656	1	1
577	578	656	655	1	1
576	577	655	654	1	1
575	576	654	653	1	1
574	575	653	652	1	1
573	574	652	651	1	1
572	573	651	650	1	1
571	572	650	649	1	1
570	571	649	648	1	1
504	531	579	578	1	1
531	532	580	579	1	1
532	533	581	580	1	1
580	581	659	658	1	1
533	505	582	581	1	1
581	582	660	659	1	1
505	534	583	582	1	1
582	583	661	660	1	1
534	506	584	583	1	1
583	584	662	661	1	1
506	535	585	584	1	1
584	585	663	662	1	1
535	507	586	585	1	1
585	586	664	663	1	1
507	536	587	586	1	1
586	587	665	664	1	1
536	508	588	587	1	1
587	588	666	665	1	1
508	537	589	588	1	1
588	589	667	666	1	1
537	538	590	589	1	1
589	590	668	667	1	1
542	512	598	597	1	1
511	542	597	596	1	1
541	511	596	595	1	1
510	541	595	594	1	1
540	510	594	593	1	1
509	540	593	592	1	1
539	509	592	591	1	1
538	539	591	590	1	1
598	599	677	676	1	1
597	598	676	675	1	1
596	597	675	674	1	1
595	596	674	673	1	1
594	595	673	672	1	1
593	594	672	671	1	1
592	593	671	670	1	1
591	592	670	669	1	1
590	591	669	668	1	1
543	544	600	599	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:

#### Condizione

1	Peso proprio
2	Terreno
3	Permanente scala
4	Variabile scala
5	Carico concentrato terreno

### Combinazioni agli Stati Limite Ultimi

#### Combinazione di carico numero

1	Terreno
---	---------

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

1	1	1.8	1.3	1.5
---	---	-----	-----	-----

### Combinazioni RARE Stati Limite di Esercizio

#### Combinazione di carico numero

2
---

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

2	1	1	1	1
---	---	---	---	---

### Combinazioni FREQUENTI Stati Limite di Esercizio

Combinazione di carico numero

3

Comb.\Cond 1 2 3 4

3 1 1 1 0.7

Combinazioni QUASI PERMANENTI Stati Limite di Esercizio

Combinazione di carico numero

4

Comb.\Cond 1 2 3 4

4 1 1 1 0.6

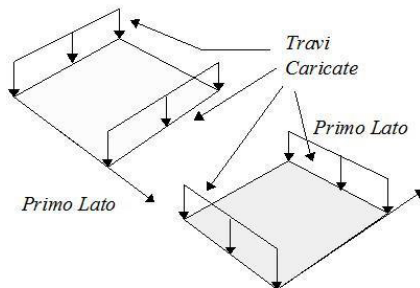
Dati relativi alle aree di carico

Convenzioni adottate

Nel seguito sono riportate le *aree di carico* definite nel progetto.

Un'*area di carico* è definita da una superficie contornata da travi di bordo ed i carichi superficiali su essa agenti vengono riportati dal programma sulle travi perimetrali in ragione dell'area di influenza relativa ad ogni trave e della direzione di orditura della superficie.

È importante rilevare che **la direzione di orditura viene assunta dal programma con riferimento al primo lato della superficie di carico e non con riferimento all'asse *x* globale della struttura.**



Esempio: *direzione* di orditura 0 gradi.

In particolare ricordiamo che le *aree di carico* fungono esclusivamente da supporto per il calcolo dei carichi di tipo superficiale in quanto i carichi definiti tramite tali *aree di carico* in effetti vengono trasferiti (sotto forma di carichi lineari o carichi nodali concentrati nei nodi) sulle travi perimetrali che contornano l'area di carico stessa.

A seguire vengono riportati per ogni tipologia definita i carichi agenti nelle varie condizioni di carico. La dizione:

Globale

indica che il carico è definito nel sistema di riferimento globale della struttura.

Globale Proiettato

indica che il carico è definito nel sistema di riferimento globale della struttura ma il valore viene computato in proiezione.

Locale

indica che il carico è definito nel sistema di riferimento locale della superficie di carico.

Area di Carico Numero Commento

1 Area 1



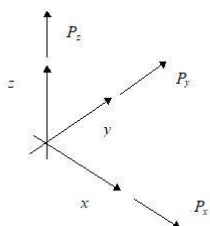
Tipo	Alfa	Condizione	Carico Trasmesso	Riferimento	qx	qy	qz
					Qx [kN]	Qy [kN]	Qz [kN]
1	0.00	3	Alle Travi	Globale	0.00	0.00	1.30
					-0.00	0.00	20.10
1	0.00	4	Alle Travi	Globale	0.00	0.00	4.00
					-0.00	0.00	61.84

Tipologia	Nodi
1	5 8 7 4 5
1	166 167 8 5 166
1	327 329 167 166 327
1	328 330 329 327 328
1	333 334 332 331 333
1	439 440 334 333 439
1	546 548 547 545 546
1	545 547 440 439 545

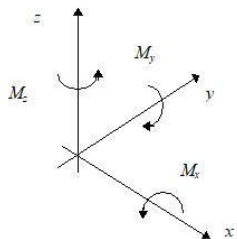
### Carichi e coppie applicati ai nodi

#### Convenzioni adottate

La terna di riferimento generale è destrorsa per cui si hanno i seguenti segni positivi per i carichi o per le coppie direttamente applicati ai nodi:



Versi positivi delle forze concentrate applicate ai nodi.



Versi positivi delle coppie concentrate applicate ai nodi.

Nel seguito vengono riportati per ogni nodo, su cui agiscono carichi concentrati, le componenti del carico ( $P_x$ ,  $P_y$ ,  $P_z$ ,  $M_x$ ,  $M_y$ ,  $M_z$ ) e la condizione di carico cui esse fanno riferimento.

Nodo	Cond.	Px [kN]	Py [kN]	Pz [kN]	Mx [KNm]	My [KNm]	Mz [KNm]
1	1	0.00	0.00	-0.00	0.00	0.00	0.00
3	1	0.00	0.00	-0.38	0.00	0.00	0.00
4	1	0.00	0.00	-0.06	0.00	0.00	0.00
5	1	0.00	0.00	-0.07	0.00	0.00	0.00
7	1	0.00	0.00	-0.07	0.00	0.00	0.00
8	1	0.00	0.00	-0.07	0.00	0.00	0.00
10	1	0.00	0.00	-0.14	0.00	0.00	0.00
35	1	0.00	0.00	-0.02	0.00	0.00	0.00
62	1	0.00	0.00	-0.06	0.00	0.00	0.00

Nodo	Cond.	Px [kN]	Py [kN]	Pz [kN]	Mx [KNm]	My [KNm]	Mz [KNm]
103	1	0.00	0.00	-0.00	0.00	0.00	0.00
114	1	0.00	0.00	-0.06	0.00	0.00	0.00
155	1	0.00	0.00	-0.00	0.00	0.00	0.00
166	1	0.00	0.00	-0.12	0.00	0.00	0.00
167	1	0.00	0.00	-0.12	0.00	0.00	0.00
168	1	0.00	0.00	-0.06	0.00	0.00	0.00
209	1	0.00	0.00	-0.00	0.00	0.00	0.00
220	1	0.00	0.00	-0.12	0.00	0.00	0.00
221	1	0.00	0.00	-0.11	0.00	0.00	0.00
222	1	0.00	0.00	-0.11	0.00	0.00	0.00
223	1	0.00	0.00	-0.23	0.00	0.00	0.00
264	1	0.00	0.00	-0.00	0.00	0.00	0.00
275	1	0.00	0.00	-0.06	0.00	0.00	0.00
316	1	0.00	0.00	-0.00	0.00	0.00	0.00
327	1	0.00	0.00	-0.10	0.00	0.00	0.00
328	1	0.00	0.00	-0.05	0.00	0.00	0.00
329	1	0.00	0.00	-0.10	0.00	0.00	0.00
330	1	0.00	0.00	-0.05	0.00	0.00	0.00
331	1	0.00	0.00	-0.02	0.00	0.00	0.00
332	1	0.00	0.00	-0.02	0.00	0.00	0.00
333	1	0.00	0.00	-0.07	0.00	0.00	0.00
334	1	0.00	0.00	-0.07	0.00	0.00	0.00
335	1	0.00	0.00	-0.06	0.00	0.00	0.00
376	1	0.00	0.00	-0.00	0.00	0.00	0.00
387	1	0.00	0.00	-0.06	0.00	0.00	0.00
412	1	0.00	0.00	-0.00	0.00	0.00	0.00
439	1	0.00	0.00	-0.09	0.00	0.00	0.00
440	1	0.00	0.00	-0.09	0.00	0.00	0.00
441	1	0.00	0.00	-0.06	0.00	0.00	0.00
482	1	0.00	0.00	-0.00	0.00	0.00	0.00
513	1	0.00	0.00	-0.06	0.00	0.00	0.00
538	1	0.00	0.00	-0.00	0.00	0.00	0.00
545	1	0.00	0.00	-0.06	0.00	0.00	0.00
546	1	0.00	0.00	-0.03	0.00	0.00	0.00
547	1	0.00	0.00	-0.06	0.00	0.00	0.00
548	1	0.00	0.00	-0.03	0.00	0.00	0.00
549	1	0.00	0.00	-0.06	0.00	0.00	0.00
590	1	0.00	0.00	-0.00	0.00	0.00	0.00
606	1	0.00	0.00	-0.07	0.00	0.00	0.00
607	1	0.00	0.00	-0.02	0.00	0.00	0.00
608	1	0.00	0.00	-0.05	0.00	0.00	0.00
609	1	0.00	0.00	-0.05	0.00	0.00	0.00
610	1	0.00	0.00	-0.05	0.00	0.00	0.00
611	1	0.00	0.00	-0.12	0.00	0.00	0.00
612	1	0.00	0.00	-0.05	0.00	0.00	0.00
613	1	0.00	0.00	-0.05	0.00	0.00	0.00
614	1	0.00	0.00	-0.05	0.00	0.00	0.00
615	1	0.00	0.00	-0.05	0.00	0.00	0.00
616	1	0.00	0.00	-0.05	0.00	0.00	0.00
617	1	0.00	0.00	-0.08	0.00	0.00	0.00
618	1	0.00	0.00	-0.05	0.00	0.00	0.00
619	1	0.00	0.00	-0.05	0.00	0.00	0.00
620	1	0.00	0.00	-0.05	0.00	0.00	0.00
621	1	0.00	0.00	-0.05	0.00	0.00	0.00
622	1	0.00	0.00	-0.05	0.00	0.00	0.00
623	1	0.00	0.00	-0.05	0.00	0.00	0.00
624	1	0.00	0.00	-0.05	0.00	0.00	0.00
625	1	0.00	0.00	-0.05	0.00	0.00	0.00
626	1	0.00	0.00	-0.05	0.00	0.00	0.00
627	1	0.00	0.00	-0.09	0.00	0.00	0.00
659	1	0.00	0.00	-0.00	0.00	0.00	0.00

Nodo	Cond.	Px [kN]	Py [kN]	Pz [kN]	Mx [KNm]	My [KNm]	Mz [KNm]
660	1	0.00	0.00	-0.00	0.00	0.00	0.00
661	1	0.00	0.00	-0.00	0.00	0.00	0.00
662	1	0.00	0.00	-0.00	0.00	0.00	0.00
663	1	0.00	0.00	-0.00	0.00	0.00	0.00
664	1	0.00	0.00	-0.00	0.00	0.00	0.00
665	1	0.00	0.00	-0.00	0.00	0.00	0.00
666	1	0.00	0.00	-0.00	0.00	0.00	0.00
667	1	0.00	0.00	-0.00	0.00	0.00	0.00
668	1	0.00	0.00	-0.00	0.00	0.00	0.00
	5	0.00	-10.00	0.00	0.00	0.00	0.00
669	1	0.00	0.00	-0.00	0.00	0.00	0.00
670	1	0.00	0.00	-0.00	0.00	0.00	0.00
671	1	0.00	0.00	-0.00	0.00	0.00	0.00
672	1	0.00	0.00	-0.00	0.00	0.00	0.00
673	1	0.00	0.00	-0.00	0.00	0.00	0.00
674	1	0.00	0.00	-0.00	0.00	0.00	0.00
675	1	0.00	0.00	-0.00	0.00	0.00	0.00
676	1	0.00	0.00	-0.00	0.00	0.00	0.00
677	1	0.00	0.00	-0.00	0.00	0.00	0.00
714	1	0.00	0.00	-0.07	0.00	0.00	0.00

### 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, NodoJ

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

L

La distanza fra i suddetti nodi.

qxi, ..., qzj

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 NodoI, dei punti di applicazione dei carichi qxi..qzj relativi a carichi distribuiti applicati su porzioni di un'asta.

Px, ..., Pz xApp

Le componenti di un Carico Concentrato applicato a distanza xApp dal NodoI.

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.

mxi, ..., mzj

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

qSx, qSy, qSz

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

Nodo I	Nodo J	L [m]	Condizione di carico	xi [m]	qxi [KN/m]	qyi [KN/m]	qzi [KN/m]	xj [m]	qxj [KN/m]	qyj [KN/m]	qzj [KN/m]
335	275	0.41	1	0.00	-0.89	0.00	0.00	0.41	-0.89	0.00	0.00
8	167	2.27	4	0.00	1.26	-2.54	0.00	2.27	1.26	-2.54	0.00
			3	0.00	0.41	-0.83	0.00	2.27	0.41	-0.83	0.00
			1	0.00	0.13	-0.26	0.00	2.27	0.13	-0.26	0.00
			3	0.00	0.13	-0.27	0.00	2.27	0.13	-0.27	0.00
167	329	2.49	4	0.00	1.26	-2.54	0.00	2.49	1.26	-2.54	0.00
			3	0.00	0.41	-0.83	0.00	2.49	0.41	-0.83	0.00
			1	0.00	0.13	-0.26	0.00	2.49	0.13	-0.26	0.00
			3	0.00	0.13	-0.27	0.00	2.49	0.13	-0.27	0.00
334	330	0.35	1	0.00	-0.13	0.00	0.00	0.35	-0.13	0.00	0.00
333	439	1.76	4	0.00	1.22	2.57	0.00	1.76	1.22	2.57	0.00
			3	0.00	0.40	0.83	0.00	1.76	0.40	0.83	0.00

			1	0.00	0.13	0.27	0.00	1.76	0.13	0.27	0.00
			3	0.00	0.13	0.27	0.00	1.76	0.13	0.27	0.00
330	222	0.47	1	0.00	-0.13	0.00	0.00	0.47	-0.13	0.00	0.00
275	223	0.41	1	0.00	-0.89	0.00	0.00	0.41	-0.89	0.00	0.00
223	168	0.41	1	0.00	-0.89	0.00	0.00	0.41	-0.89	0.00	0.00
513	441	0.41	1	0.00	-0.89	0.00	0.00	0.41	-0.89	0.00	0.00
441	387	0.41	1	0.00	-0.89	0.00	0.00	0.41	-0.89	0.00	0.00
549	513	0.41	1	0.00	-0.89	0.00	0.00	0.41	-0.89	0.00	0.00
617	549	0.41	1	0.00	-0.89	0.00	0.00	0.41	-0.89	0.00	0.00
62	10	0.41	1	0.00	-0.89	0.00	0.00	0.41	-0.89	0.00	0.00
168	114	0.41	1	0.00	-0.89	0.00	0.00	0.41	-0.89	0.00	0.00
114	62	0.41	1	0.00	-0.89	0.00	0.00	0.41	-0.89	0.00	0.00
331	333	0.45	4	0.00	1.22	2.57	0.00	0.45	1.22	2.57	0.00
			3	0.00	0.40	0.83	0.00	0.45	0.40	0.83	0.00
			1	0.00	0.13	0.27	0.00	0.45	0.13	0.27	0.00
			3	0.00	0.13	0.27	0.00	0.45	0.13	0.27	0.00
166	327	2.49	4	0.00	1.26	2.54	0.00	2.49	1.26	2.54	0.00
			3	0.00	0.41	0.83	0.00	2.49	0.41	0.83	0.00
			1	0.00	0.13	0.26	0.00	2.49	0.13	0.26	0.00
			3	0.00	0.13	0.27	0.00	2.49	0.13	0.27	0.00
5	166	2.27	4	0.00	1.26	2.54	0.00	2.27	1.26	2.54	0.00
			3	0.00	0.41	0.83	0.00	2.27	0.41	0.83	0.00
			1	0.00	0.13	0.26	0.00	2.27	0.13	0.26	0.00
			3	0.00	0.13	0.27	0.00	2.27	0.13	0.27	0.00
333	328	0.35	1	0.00	-0.13	0.00	0.00	0.35	-0.13	0.00	0.00
332	334	0.45	4	0.00	1.22	-2.57	0.00	0.45	1.22	-2.57	0.00
			3	0.00	0.40	-0.83	0.00	0.45	0.40	-0.83	0.00
			1	0.00	0.13	-0.27	0.00	0.45	0.13	-0.27	0.00
			3	0.00	0.13	-0.27	0.00	0.45	0.13	-0.27	0.00
328	221	0.47	1	0.00	-0.13	0.00	0.00	0.47	-0.13	0.00	0.00
223	3	2.38	1	0.00	-0.61	0.64	0.00	2.38	-0.61	0.64	0.00
220	3	1.65	1	0.00	-0.89	0.00	0.00	1.65	-0.89	0.00	0.00
334	440	1.76	4	0.00	1.22	-2.57	0.00	1.76	1.22	-2.57	0.00
			3	0.00	0.40	-0.83	0.00	1.76	0.40	-0.83	0.00
			1	0.00	0.13	-0.27	0.00	1.76	0.13	-0.27	0.00
			3	0.00	0.13	-0.27	0.00	1.76	0.13	-0.27	0.00
440	547	1.76	4	0.00	1.22	-2.57	0.00	1.76	1.22	-2.57	0.00
			3	0.00	0.40	-0.83	0.00	1.76	0.40	-0.83	0.00
			1	0.00	0.13	-0.27	0.00	1.76	0.13	-0.27	0.00
			3	0.00	0.13	-0.27	0.00	1.76	0.13	-0.27	0.00
439	545	1.76	4	0.00	1.22	2.57	0.00	1.76	1.22	2.57	0.00
			3	0.00	0.40	0.83	0.00	1.76	0.40	0.83	0.00
			1	0.00	0.13	0.27	0.00	1.76	0.13	0.27	0.00
			3	0.00	0.13	0.27	0.00	1.76	0.13	0.27	0.00
387	335	0.41	1	0.00	-0.89	0.00	0.00	0.41	-0.89	0.00	0.00
4	5	0.22	4	0.00	0.00	2.84	0.00	0.22	0.00	2.84	0.00
			3	0.00	0.00	0.92	0.00	0.22	0.00	0.92	0.00
			1	0.00	0.00	0.29	0.00	0.22	0.00	0.29	0.00
			3	0.00	0.00	0.30	0.00	0.22	0.00	0.30	0.00
7	8	0.22	4	0.00	0.00	-2.84	0.00	0.22	0.00	-2.84	0.00
			3	0.00	0.00	-0.92	0.00	0.22	0.00	-0.92	0.00
			1	0.00	0.00	-0.29	0.00	0.22	0.00	-0.29	0.00
			3	0.00	0.00	-0.30	0.00	0.22	0.00	-0.30	0.00
327	328	1.52	4	0.00	0.00	2.84	0.00	1.52	0.00	2.84	0.00
			3	0.00	0.00	0.92	0.00	1.52	0.00	0.92	0.00
			1	0.00	0.00	0.29	0.00	1.52	0.00	0.29	0.00
			3	0.00	0.00	0.30	0.00	1.52	0.00	0.30	0.00
329	330	1.52	4	0.00	0.00	-2.84	0.00	1.52	0.00	-2.84	0.00
			3	0.00	0.00	-0.92	0.00	1.52	0.00	-0.92	0.00
			1	0.00	0.00	-0.29	0.00	1.52	0.00	-0.29	0.00
			3	0.00	0.00	-0.30	0.00	1.52	0.00	-0.30	0.00
545	546	0.42	4	0.00	0.00	2.84	0.00	0.42	0.00	2.84	0.00
			3	0.00	0.00	0.92	0.00	0.42	0.00	0.92	0.00

		1	0.00	0.00	0.29	0.00	0.42	0.00	0.29	0.00
		3	0.00	0.00	0.30	0.00	0.42	0.00	0.30	0.00
547	548	0.42 4	0.00	0.00	-2.84	0.00	0.42	0.00	-2.84	0.00
		3	0.00	0.00	-0.92	0.00	0.42	0.00	-0.92	0.00
		1	0.00	0.00	-0.29	0.00	0.42	0.00	-0.29	0.00
		3	0.00	0.00	-0.30	0.00	0.42	0.00	-0.30	0.00
607	608	0.38 1	0.00	0.00	0.00	-0.89	0.38	0.00	0.00	-0.89
608	609	0.38 1	0.00	0.00	0.00	-0.89	0.38	0.00	0.00	-0.89
609	610	0.38 1	0.00	0.00	0.00	-0.89	0.38	0.00	0.00	-0.89
610	611	0.38 1	0.00	0.00	0.00	-0.89	0.38	0.00	0.00	-0.89
611	612	0.38 1	0.00	0.00	0.00	-0.89	0.38	0.00	0.00	-0.89
612	613	0.38 1	0.00	0.00	0.00	-0.89	0.38	0.00	0.00	-0.89
613	614	0.38 1	0.00	0.00	0.00	-0.89	0.38	0.00	0.00	-0.89
614	615	0.38 1	0.00	0.00	0.00	-0.89	0.38	0.00	0.00	-0.89
615	616	0.38 1	0.00	0.00	0.00	-0.89	0.38	0.00	0.00	-0.89
616	617	0.38 1	0.00	0.00	0.00	-0.89	0.38	0.00	0.00	-0.89
617	618	0.36 1	0.00	0.00	0.00	-0.89	0.36	0.00	0.00	-0.89
618	619	0.36 1	0.00	0.00	0.00	-0.89	0.36	0.00	0.00	-0.89
619	620	0.36 1	0.00	0.00	0.00	-0.89	0.36	0.00	0.00	-0.89
620	621	0.36 1	0.00	0.00	0.00	-0.89	0.36	0.00	0.00	-0.89
621	622	0.36 1	0.00	0.00	0.00	-0.89	0.36	0.00	0.00	-0.89
622	623	0.36 1	0.00	0.00	0.00	-0.89	0.36	0.00	0.00	-0.89
623	624	0.36 1	0.00	0.00	0.00	-0.89	0.36	0.00	0.00	-0.89
624	625	0.36 1	0.00	0.00	0.00	-0.89	0.36	0.00	0.00	-0.89
625	626	0.36 1	0.00	0.00	0.00	-0.89	0.36	0.00	0.00	-0.89
626	627	0.36 1	0.00	0.00	0.00	-0.89	0.36	0.00	0.00	-0.89
1	4	0.10 1	0.00	0.00	0.51	0.00	0.10	0.00	0.51	0.00
4	7	1.42 1	0.00	0.00	0.51	0.00	1.42	0.00	0.51	0.00
5	8	1.42 1	0.00	0.00	0.13	0.00	1.42	0.00	0.13	0.00
7	35	0.40 1	0.00	0.00	0.51	0.00	0.40	0.00	0.51	0.00
2	6	0.10 1	0.00	0.00	2.80	0.00	0.10	0.00	2.80	0.00
6	9	1.42 1	0.00	0.00	2.80	0.00	1.42	0.00	2.80	0.00
9	41	0.40 1	0.00	0.00	2.80	0.00	0.40	0.00	2.80	0.00
3	10	1.72 1	0.00	0.00	0.89	0.00	1.72	0.00	0.89	0.00
62	103	0.20 1	0.00	0.00	0.12	0.00	0.20	0.00	0.12	0.00
114	155	0.20 1	0.00	0.00	0.12	0.00	0.20	0.00	0.12	0.00
166	167	1.42 1	0.00	0.00	0.13	0.00	1.42	0.00	0.13	0.00
168	209	0.20 1	0.00	0.00	0.12	0.00	0.20	0.00	0.12	0.00
220	221	0.10 1	0.00	0.00	0.89	0.00	0.10	0.00	0.89	0.00
221	222	1.42 1	0.00	0.00	0.89	0.00	1.42	0.00	0.89	0.00
222	223	0.20 1	0.00	0.00	0.89	0.00	0.20	0.00	0.89	0.00
223	264	0.20 1	0.00	0.00	0.12	0.00	0.20	0.00	0.12	0.00
275	316	0.20 1	0.00	0.00	0.12	0.00	0.20	0.00	0.12	0.00
327	329	1.42 1	0.00	0.00	0.13	0.00	1.42	0.00	0.13	0.00
328	330	1.42 1	0.00	0.00	0.13	0.00	1.42	0.00	0.13	0.00
331	332	1.42 1	0.00	0.00	0.13	0.00	1.42	0.00	0.13	0.00
333	334	1.42 1	0.00	0.00	0.13	0.00	1.42	0.00	0.13	0.00
335	376	0.20 1	0.00	0.00	0.12	0.00	0.20	0.00	0.12	0.00
387	412	0.20 1	0.00	0.00	0.12	0.00	0.20	0.00	0.12	0.00
439	440	1.42 1	0.00	0.00	0.13	0.00	1.42	0.00	0.13	0.00
441	482	0.20 1	0.00	0.00	0.12	0.00	0.20	0.00	0.12	0.00
513	538	0.20 1	0.00	0.00	0.12	0.00	0.20	0.00	0.12	0.00
545	547	1.42 1	0.00	0.00	0.13	0.00	1.42	0.00	0.13	0.00
546	548	1.42 1	0.00	0.00	0.19	0.00	1.42	0.00	0.19	0.00
549	590	0.20 1	0.00	0.00	0.12	0.00	0.20	0.00	0.12	0.00
601	628	1.92 1	0.00	0.00	4.00	0.00	1.92	0.00	4.00	0.00
602	638	1.92 1	0.00	0.00	4.00	0.00	1.92	0.00	4.00	0.00
603	648	1.92 1	0.00	0.00	4.00	0.00	1.92	0.00	4.00	0.00
604	607	1.72 1	0.00	0.00	4.00	0.00	1.72	0.00	4.00	0.00
608	659	0.20 1	0.00	0.00	0.12	0.00	0.20	0.00	0.12	0.00
607	658	0.20 1	0.00	0.00	4.00	0.00	0.20	0.00	4.00	0.00
610	661	0.20 1	0.00	0.00	0.12	0.00	0.20	0.00	0.12	0.00
609	660	0.20 1	0.00	0.00	0.12	0.00	0.20	0.00	0.12	0.00

612	663	0.20	1	0.00	0.00	0.12	0.00	0.20	0.00	0.12	0.00
611	662	0.20	1	0.00	0.00	0.12	0.00	0.20	0.00	0.12	0.00
614	665	0.20	1	0.00	0.00	0.12	0.00	0.20	0.00	0.12	0.00
613	664	0.20	1	0.00	0.00	0.12	0.00	0.20	0.00	0.12	0.00
617	668	0.20	1	0.00	0.00	0.12	0.00	0.20	0.00	0.12	0.00
616	667	0.20	1	0.00	0.00	0.12	0.00	0.20	0.00	0.12	0.00
615	666	0.20	1	0.00	0.00	0.12	0.00	0.20	0.00	0.12	0.00
619	670	0.20	1	0.00	0.00	0.12	0.00	0.20	0.00	0.12	0.00
618	669	0.20	1	0.00	0.00	0.12	0.00	0.20	0.00	0.12	0.00
621	672	0.20	1	0.00	0.00	0.12	0.00	0.20	0.00	0.12	0.00
620	671	0.20	1	0.00	0.00	0.12	0.00	0.20	0.00	0.12	0.00
624	675	0.20	1	0.00	0.00	0.12	0.00	0.20	0.00	0.12	0.00
623	674	0.20	1	0.00	0.00	0.12	0.00	0.20	0.00	0.12	0.00
622	673	0.20	1	0.00	0.00	0.12	0.00	0.20	0.00	0.12	0.00
625	676	0.20	1	0.00	0.00	0.12	0.00	0.20	0.00	0.12	0.00
606	627	1.72	1	0.00	0.00	0.51	0.00	1.72	0.00	0.51	0.00
626	677	0.20	1	0.00	0.00	0.12	0.00	0.20	0.00	0.12	0.00

#### Carichi distribuiti

Elemento	Condizione di carico	Nodi	L [m]	xi [m]	qxi [KN/m]	qyi [KN/m]	qzi [KN/m]	xj [m]	qxj [KN/m]	qyj [KN/m]	qzj [KN/m]	qSx [KN/mq]	qSy [KN/mq]	qSz [KN/mq]
11 64	2											0.00	0.00	-95.91
	1											0.00	10.00	0.00
12 65	2											0.00	0.00	-95.91
	1											0.00	10.00	0.00
13 66	2											0.00	0.00	-95.91
	1											0.00	10.00	0.00
14 67	2											0.00	0.00	-95.91
	1											0.00	10.00	0.00
15 68	2											0.00	0.00	-95.91
	1											0.00	10.00	0.00
16 69	2											0.00	0.00	-95.91
	1											0.00	10.00	0.00
17 70	2											0.00	0.00	-95.91
	1											0.00	10.00	0.00
18 71	2											0.00	0.00	-95.91
	1											0.00	10.00	0.00
19 72	2											0.00	0.00	-95.91
	1											0.00	10.00	0.00
20 73	2											0.00	0.00	-95.91
	1											0.00	10.00	0.00
72 125	2											0.00	0.00	-87.73
	1											0.00	10.00	0.00
71 124	2											0.00	0.00	-87.73
	1											0.00	10.00	0.00
70 123	2											0.00	0.00	-87.73
	1											0.00	10.00	0.00
21 74	2											0.00	0.00	-95.91
	1											0.00	10.00	0.00
73 126	2											0.00	0.00	-87.73
	1											0.00	10.00	0.00
22 75	2											0.00	0.00	-95.91
	1											0.00	10.00	0.00
74 127	2											0.00	0.00	-87.73
	1											0.00	10.00	0.00
75 128	2											0.00	0.00	-87.73
	1											0.00	10.00	0.00
76 129	2											0.00	0.00	-87.73
	1											0.00	10.00	0.00
77 130	2											0.00	0.00	-87.73
	1											0.00	10.00	0.00
69 122	2											0.00	0.00	-87.73

	1	0.00	10.00	0.00
60 113	2	0.00	0.00	-95.91
	1	0.00	10.00	0.00
59 112	2	0.00	0.00	-95.91
	1	0.00	10.00	0.00
58 111	2	0.00	0.00	-95.91
	1	0.00	10.00	0.00
57 110	2	0.00	0.00	-95.91
	1	0.00	10.00	0.00
56 109	2	0.00	0.00	-95.91
	1	0.00	10.00	0.00
55 108	2	0.00	0.00	-95.91
	1	0.00	10.00	0.00
52 105	2	0.00	0.00	-95.91
	1	0.00	10.00	0.00
53 106	2	0.00	0.00	-95.91
	1	0.00	10.00	0.00
54 107	2	0.00	0.00	-95.91
	1	0.00	10.00	0.00
51 104	2	0.00	0.00	-95.91
	1	0.00	10.00	0.00
48 101	2	0.00	0.00	-95.91
	1	0.00	10.00	0.00
49 102	2	0.00	0.00	-95.91
	1	0.00	10.00	0.00
47 100	2	0.00	0.00	-95.91
	1	0.00	10.00	0.00
45 98	2	0.00	0.00	-95.91
	1	0.00	10.00	0.00
44 97	2	0.00	0.00	-95.91
	1	0.00	10.00	0.00
46 99	2	0.00	0.00	-95.91
	1	0.00	10.00	0.00
36 89	2	0.00	0.00	-95.91
	1	0.00	10.00	0.00
38 91	2	0.00	0.00	-95.91
	1	0.00	10.00	0.00
37 90	2	0.00	0.00	-95.91
	1	0.00	10.00	0.00
40 93	2	0.00	0.00	-95.91
	1	0.00	10.00	0.00
39 92	2	0.00	0.00	-95.91
	1	0.00	10.00	0.00
41 94	2	0.00	0.00	-95.91
	1	0.00	10.00	0.00
42 95	2	0.00	0.00	-95.91
	1	0.00	10.00	0.00
43 96	2	0.00	0.00	-95.91
	1	0.00	10.00	0.00
23 76	2	0.00	0.00	-95.91
	1	0.00	10.00	0.00
24 77	2	0.00	0.00	-95.91
	1	0.00	10.00	0.00
25 78	2	0.00	0.00	-95.91
	1	0.00	10.00	0.00
26 79	2	0.00	0.00	-95.91
	1	0.00	10.00	0.00
27 80	2	0.00	0.00	-95.91
	1	0.00	10.00	0.00
28 81	2	0.00	0.00	-95.91
	1	0.00	10.00	0.00
29 82	2	0.00	0.00	-95.91
	1	0.00	10.00	0.00

30 83	2	0.00	0.00	-95.91
	1	0.00	10.00	0.00
32 85	2	0.00	0.00	-95.91
	1	0.00	10.00	0.00
31 84	2	0.00	0.00	-95.91
	1	0.00	10.00	0.00
33 86	2	0.00	0.00	-95.91
	1	0.00	10.00	0.00
34 87	2	0.00	0.00	-95.91
	1	0.00	10.00	0.00
35 88	2	0.00	0.00	-95.91
	1	0.00	10.00	0.00
50 103	2	0.00	0.00	-95.91
	1	0.00	10.00	0.00
68 121	2	0.00	0.00	-87.73
	1	0.00	10.00	0.00
67 120	2	0.00	0.00	-87.73
	1	0.00	10.00	0.00
66 119	2	0.00	0.00	-87.73
	1	0.00	10.00	0.00
65 118	2	0.00	0.00	-87.73
	1	0.00	10.00	0.00
64 117	2	0.00	0.00	-87.73
	1	0.00	10.00	0.00
63 116	2	0.00	0.00	-87.73
	1	0.00	10.00	0.00
78 131	2	0.00	0.00	-87.73
	1	0.00	10.00	0.00
79 132	2	0.00	0.00	-87.73
	1	0.00	10.00	0.00
80 133	2	0.00	0.00	-87.73
	1	0.00	10.00	0.00
136 191	2	0.00	0.00	-79.55
	1	0.00	10.00	0.00
135 190	2	0.00	0.00	-79.55
	1	0.00	10.00	0.00
137 192	2	0.00	0.00	-79.55
	1	0.00	10.00	0.00
133 188	2	0.00	0.00	-79.55
	1	0.00	10.00	0.00
134 189	2	0.00	0.00	-79.55
	1	0.00	10.00	0.00
132 187	2	0.00	0.00	-79.55
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131 186	2	0.00	0.00	-79.55
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130 185	2	0.00	0.00	-79.55
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129 184	2	0.00	0.00	-79.55
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127 182	2	0.00	0.00	-79.55
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126 181	2	0.00	0.00	-79.55
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124 179	2	0.00	0.00	-79.55
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125 180	2	0.00	0.00	-79.55
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123 178	2	0.00	0.00	-79.55
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115 170	2	0.00	0.00	-79.55



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112 165	2	0.00	0.00	-87.73
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111 164	2	0.00	0.00	-87.73
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110 163	2	0.00	0.00	-87.73
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109 162	2	0.00	0.00	-87.73
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106 159	2	0.00	0.00	-87.73
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107 160	2	0.00	0.00	-87.73
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105 158	2	0.00	0.00	-87.73
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122 177	2	0.00	0.00	-79.55
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81 134	2	0.00	0.00	-87.73
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86 139	2	0.00	0.00	-87.73
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88 141	2	0.00	0.00	-87.73
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87 140	2	0.00	0.00	-87.73
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89 142	2	0.00	0.00	-87.73
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91 144	2	0.00	0.00	-87.73
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92 145	2	0.00	0.00	-87.73
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90 143	2	0.00	0.00	-87.73
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93 146	2	0.00	0.00	-87.73
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94 147	2	0.00	0.00	-87.73
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97 150	2	0.00	0.00	-87.73
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101 154	2	0.00	0.00	-87.73
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103 156	2	0.00	0.00	-87.73
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104 157	2	0.00	0.00	-87.73
	1	0.00	10.00	0.00
102 155	2	0.00	0.00	-87.73
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138 193	2	0.00	0.00	-79.55
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141 196	2	0.00	0.00	-79.55
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140 195	2	0.00	0.00	-79.55
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139 194	2	0.00	0.00	-79.55
	1	0.00	10.00	0.00
195 251	2	0.00	0.00	-71.36
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191 247	2	0.00	0.00	-71.36
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190 246	2	0.00	0.00	-71.36
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142 197	2	0.00	0.00	-79.55
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143 198	2	0.00	0.00	-79.55
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198 254	2	0.00	0.00	-71.36
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196 252	2	0.00	0.00	-71.36
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187 243	2	0.00	0.00	-71.36
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189 245	2	0.00	0.00	-71.36
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188 244	2	0.00	0.00	-71.36
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181 237	2	0.00	0.00	-71.36
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179 235	2	0.00	0.00	-71.36
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144 199	2	0.00	0.00	-79.55
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145 200	2	0.00	0.00	-79.55
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146 201	2	0.00	0.00	-79.55
	1	0.00	10.00	0.00
147 202	2	0.00	0.00	-79.55
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149 204	2	0.00	0.00	-79.55
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	1	0.00	10.00	0.00
178 234	2	0.00	0.00	-71.36
	1	0.00	10.00	0.00
170 226	2	0.00	0.00	-71.36
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176 232	2	0.00	0.00	-71.36
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175 231	2	0.00	0.00	-71.36
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173 229	2	0.00	0.00	-71.36
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172 228	2	0.00	0.00	-71.36
	1	0.00	10.00	0.00
171 227	2	0.00	0.00	-71.36
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169 225	2	0.00	0.00	-71.36
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157 212	2	0.00	0.00	-79.55
	1	0.00	10.00	0.00
156 211	2	0.00	0.00	-79.55
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158 213	2	0.00	0.00	-79.55
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164 219	2	0.00	0.00	-79.55
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163 218	2	0.00	0.00	-79.55
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162 217	2	0.00	0.00	-79.55
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160 215	2	0.00	0.00	-79.55
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159 214	2	0.00	0.00	-79.55
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177 233	2	0.00	0.00	-71.36
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253 306	2	0.00	0.00	-63.18
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199 255	2	0.00	0.00	-71.36
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200 256	2	0.00	0.00	-71.36
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201 257	2	0.00	0.00	-71.36
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202 258	2	0.00	0.00	-71.36
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257 310	2	0.00	0.00	-63.18
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203 259	2	0.00	0.00	-71.36
	1	0.00	10.00	0.00
258 311	2	0.00	0.00	-63.18
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254 307	2	0.00	0.00	-63.18
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255 308	2	0.00	0.00	-63.18
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256 309	2	0.00	0.00	-63.18
	1	0.00	10.00	0.00
252 305	2	0.00	0.00	-63.18
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205 261	2	0.00	0.00	-71.36
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206 262	2	0.00	0.00	-71.36
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204 260	2	0.00	0.00	-71.36
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261 314	2	0.00	0.00	-63.18
	1	0.00	10.00	0.00
207 263	2	0.00	0.00	-71.36
	1	0.00	10.00	0.00
262 315	2	0.00	0.00	-63.18
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208 264	2	0.00	0.00	-71.36
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263 316	2	0.00	0.00	-63.18
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211 267	2	0.00	0.00	-71.36
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213 269	2	0.00	0.00	-71.36
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215 271	2	0.00	0.00	-71.36
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216 272	2	0.00	0.00	-71.36
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217 273	2	0.00	0.00	-71.36
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218 274	2	0.00	0.00	-71.36

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264 317	2	0.00	0.00	-63.18
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259 312	2	0.00	0.00	-63.18
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224 277	2	0.00	0.00	-63.18
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226 279	2	0.00	0.00	-63.18
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	1	0.00	10.00	0.00
231 284	2	0.00	0.00	-63.18
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230 283	2	0.00	0.00	-63.18
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233 286	2	0.00	0.00	-63.18
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232 285	2	0.00	0.00	-63.18
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234 287	2	0.00	0.00	-63.18
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239 292	2	0.00	0.00	-63.18
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241 294	2	0.00	0.00	-63.18
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251 304	2	0.00	0.00	-63.18
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248 301	2	0.00	0.00	-63.18
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247 300	2	0.00	0.00	-63.18
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246 299	2	0.00	0.00	-63.18
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316 377	2	0.00	0.00	-55.00
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276 337	2	0.00	0.00	-55.00
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268 321	2	0.00	0.00	-63.18
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271 324	2	0.00	0.00	-63.18
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270 323	2	0.00	0.00	-63.18
	1	0.00	10.00	0.00
269 322	2	0.00	0.00	-63.18
	1	0.00	10.00	0.00
286 347	2	0.00	0.00	-55.00
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287 348	2	0.00	0.00	-55.00
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292 353	2	0.00	0.00	-55.00
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296 357	2	0.00	0.00	-55.00
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288 349	2	0.00	0.00	-55.00
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289 350	2	0.00	0.00	-55.00
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290 351	2	0.00	0.00	-55.00
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285 346	2	0.00	0.00	-55.00
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297 358	2	0.00	0.00	-55.00
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277 338	2	0.00	0.00	-55.00
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278 339	2	0.00	0.00	-55.00
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279 340	2	0.00	0.00	-55.00
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284 345	2	0.00	0.00	-55.00
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283 344	2	0.00	0.00	-55.00
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282 343	2	0.00	0.00	-55.00
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281 342	2	0.00	0.00	-55.00
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280 341	2	0.00	0.00	-55.00

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381 416	2	0.00	0.00	-46.82
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384 438	2	0.00	0.00	-46.82
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383 417	2	0.00	0.00	-46.82
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380 415	2	0.00	0.00	-46.82
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417 491	2	0.00	0.00	-38.64
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376 435	2	0.00	0.00	-46.82
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339 390	2	0.00	0.00	-46.82
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343 393	2	0.00	0.00	-46.82
	1	0.00	10.00	0.00
338 420	2	0.00	0.00	-46.82
	1	0.00	10.00	0.00
419 444	2	0.00	0.00	-38.64
	1	-0.00	10.00	0.00
336 419	2	0.00	0.00	-46.82
	1	0.00	10.00	0.00
388 443	2	0.00	0.00	-38.64
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344 422	2	0.00	0.00	-46.82
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298 359	2	0.00	0.00	-55.00
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301 362	2	0.00	0.00	-55.00
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300 361	2	0.00	0.00	-55.00
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302 363	2	0.00	0.00	-55.00
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303 364	2	0.00	0.00	-55.00
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299 360	2	0.00	0.00	-55.00
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364 430	2	0.00	0.00	-46.82
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363 405	2	0.00	0.00	-46.82
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358 428	2	0.00	0.00	-46.82
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357 401	2	0.00	0.00	-46.82
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307 368	2	0.00	0.00	-55.00
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304 365	2	0.00	0.00	-55.00
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305 366	2	0.00	0.00	-55.00
	1	0.00	10.00	0.00
306 367	2	0.00	0.00	-55.00
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368 432	2	0.00	0.00	-46.82
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310 371	2	0.00	0.00	-55.00
	1	0.00	10.00	0.00
311 372	2	0.00	0.00	-55.00
	1	0.00	10.00	0.00
312 373	2	0.00	0.00	-55.00
	1	0.00	10.00	0.00

308 369	2	0.00	0.00	-55.00
	1	0.00	10.00	0.00
309 370	2	0.00	0.00	-55.00
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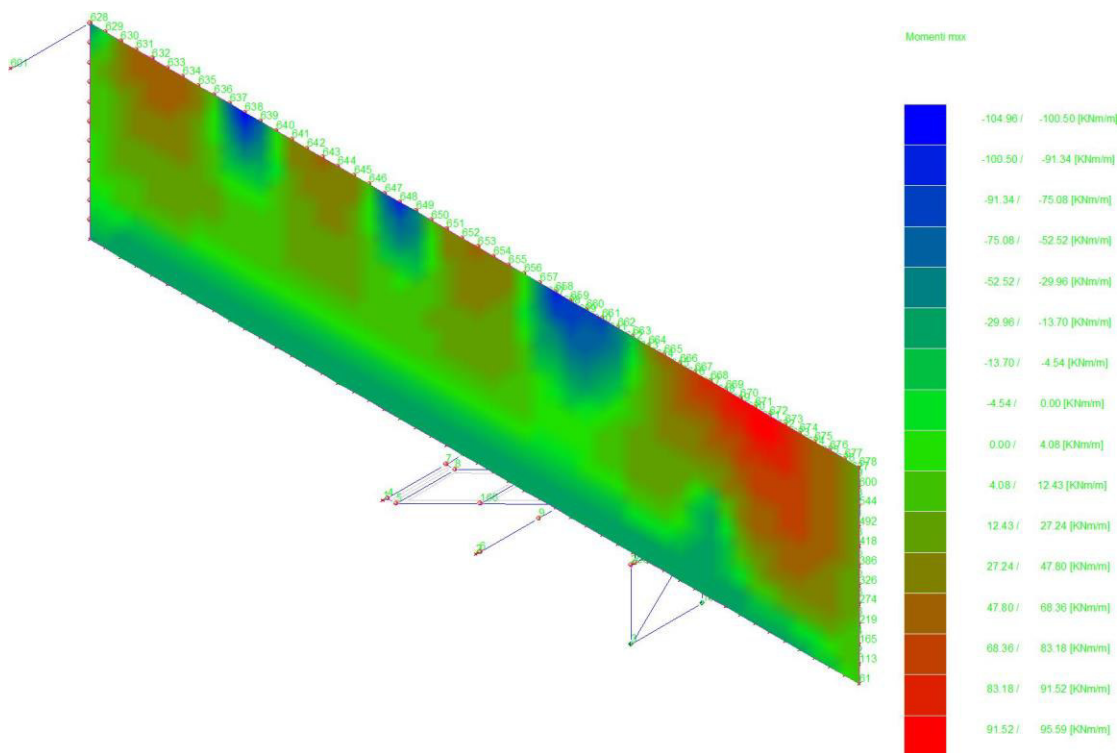
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587 666	2	0.00	0.00	-14.09
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511 597	2	0.00	0.00	-22.27
	1	0.00	10.00	0.00
541 596	2	0.00	0.00	-22.27
	1	-0.00	10.00	0.00
510 595	2	0.00	0.00	-22.27
	1	0.00	10.00	0.00
540 594	2	0.00	0.00	-22.27
	1	-0.00	10.00	0.00
509 593	2	0.00	0.00	-22.27
	1	0.00	10.00	0.00
539 592	2	0.00	0.00	-22.27
	1	-0.00	10.00	0.00
538 591	2	0.00	0.00	-22.27
	1	0.00	10.00	0.00
598 677	2	0.00	0.00	-14.09
	1	0.00	10.00	0.00
597 676	2	0.00	0.00	-14.09
	1	0.00	10.00	0.00
596 675	2	0.00	0.00	-14.09
	1	0.00	10.00	0.00
595 674	2	0.00	0.00	-14.09
	1	0.00	10.00	0.00
594 673	2	0.00	0.00	-14.09
	1	0.00	10.00	0.00
593 672	2	0.00	0.00	-14.09
	1	0.00	10.00	0.00
592 671	2	0.00	0.00	-14.09
	1	0.00	10.00	0.00
591 670	2	0.00	0.00	-14.09
	1	0.00	10.00	0.00
590 669	2	0.00	0.00	-14.09
	1	0.00	10.00	0.00
543 600	2	0.00	0.00	-22.27
	1	0.00	10.00	0.00



#### Momenti mxx

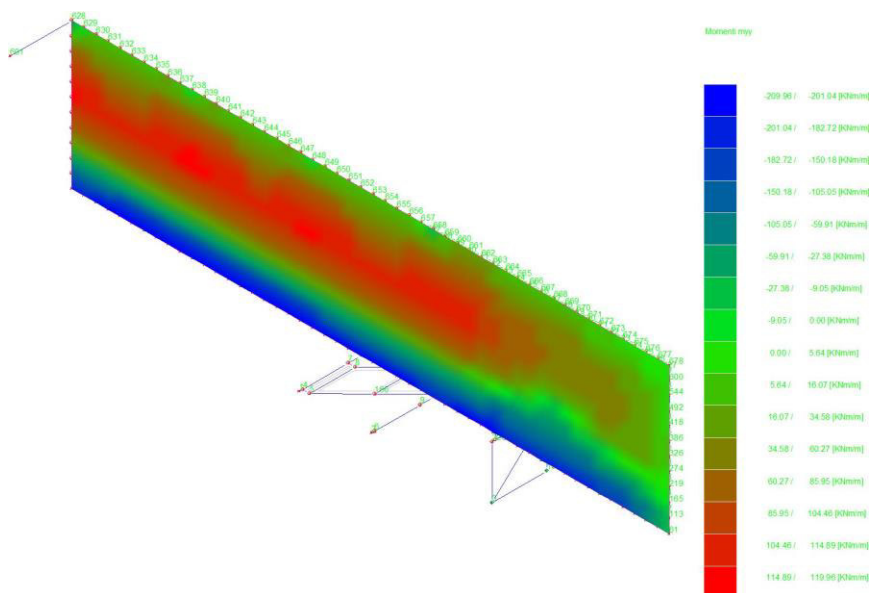
Blue	-104.96 / -100.50 [KNm/m]
Dark Blue	-100.50 / -91.34 [KNm/m]
Medium Blue	-91.34 / -75.08 [KNm/m]
Light Blue	-75.08 / -52.52 [KNm/m]
Teal	-52.52 / -29.96 [KNm/m]
Green	-29.96 / -13.70 [KNm/m]
Light Green	-13.70 / -4.54 [KNm/m]
Yellow-Green	-4.54 / 0.00 [KNm/m]
Yellow	0.00 / 4.08 [KNm/m]
Light Yellow	4.08 / 12.43 [KNm/m]
Orange	12.43 / 27.24 [KNm/m]
Dark Orange	27.24 / 47.80 [KNm/m]
Brown	47.80 / 68.36 [KNm/m]
Red-Brown	68.36 / 83.18 [KNm/m]
Red	83.18 / 91.52 [KNm/m]
Dark Red	91.52 / 95.59 [KNm/m]

#### Momenti mxx

##### Combinazione di carico : 1

	Elemento	Nodi	Sezione	Combinazione di carico	Valore
Min	Elemento a 4 nodi	369,370,408,432	1	1	0.02 [KNm/m]
Max	Elemento a 4 nodi	593,594,672,671	1	1	95.59 [KNm/m]
Medio					26.89 [KNm/m]
	Elemento	Nodi	Sezione	Combinazione di carico	Valore
Min	Elemento a 4 nodi	559,560,638,637	1	1	-104.96 [KNm/m]
Max	Elemento a 4 nodi	106,107,159,158	1	1	-0.08 [KNm/m]
Medio					-19.68 [KNm/m]





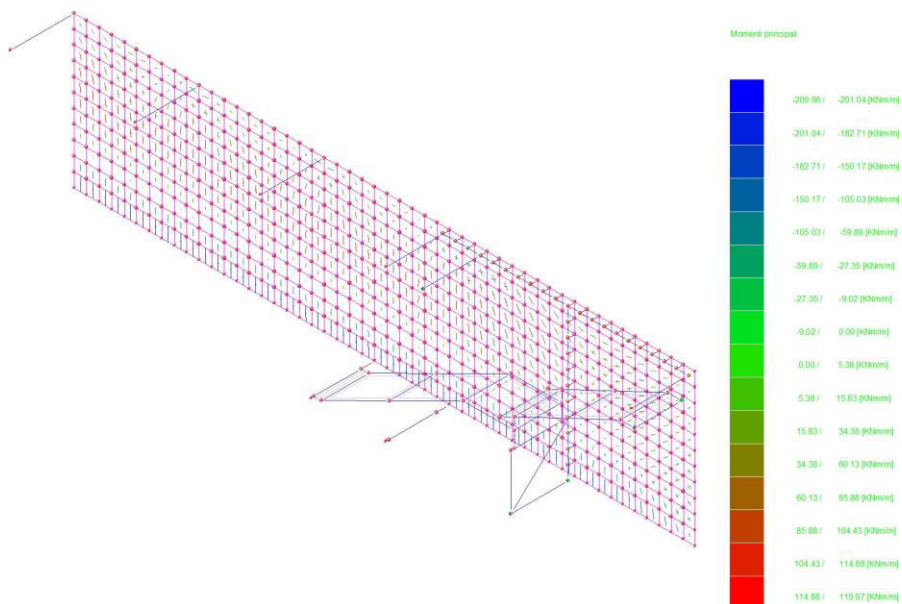
#### Momenti $m_{yy}$

	-209.96 / -201.04 [KNm/m]
	-201.04 / -182.72 [KNm/m]
	-182.72 / -150.18 [KNm/m]
	-150.18 / -105.05 [KNm/m]
	-105.05 / -59.91 [KNm/m]
	-59.91 / -27.38 [KNm/m]
	-27.38 / -9.05 [KNm/m]
	-9.05 / 0.00 [KNm/m]
	0.00 / 5.64 [KNm/m]
	5.64 / 16.07 [KNm/m]
	16.07 / 34.58 [KNm/m]
	34.58 / 60.27 [KNm/m]
	60.27 / 85.95 [KNm/m]
	85.95 / 104.46 [KNm/m]
	104.46 / 114.89 [KNm/m]
	114.89 / 119.96 [KNm/m]

#### Momenti $m_{yy}$

##### Combinazione di carico : 1

	Elemento	Nodi	Sezione	Combinazione di carico	Valore
Min	Elemento a 4 nodi	264,265,317,316	1	1	0.57 [KNm/m]
Max	Elemento a 4 nodi	346,347,423,394	1	1	119.96 [KNm/m]
Medio					64.03 [KNm/m]
	Elemento	Nodi	Sezione	Combinazione di carico	Valore
Min	Elemento a 4 nodi	17,18,70,69	1	1	-209.96 [KNm/m]
Max	Elemento a 4 nodi	164,165,219,218	1	1	-0.13 [KNm/m]
Medio					-92.21 [KNm/m]



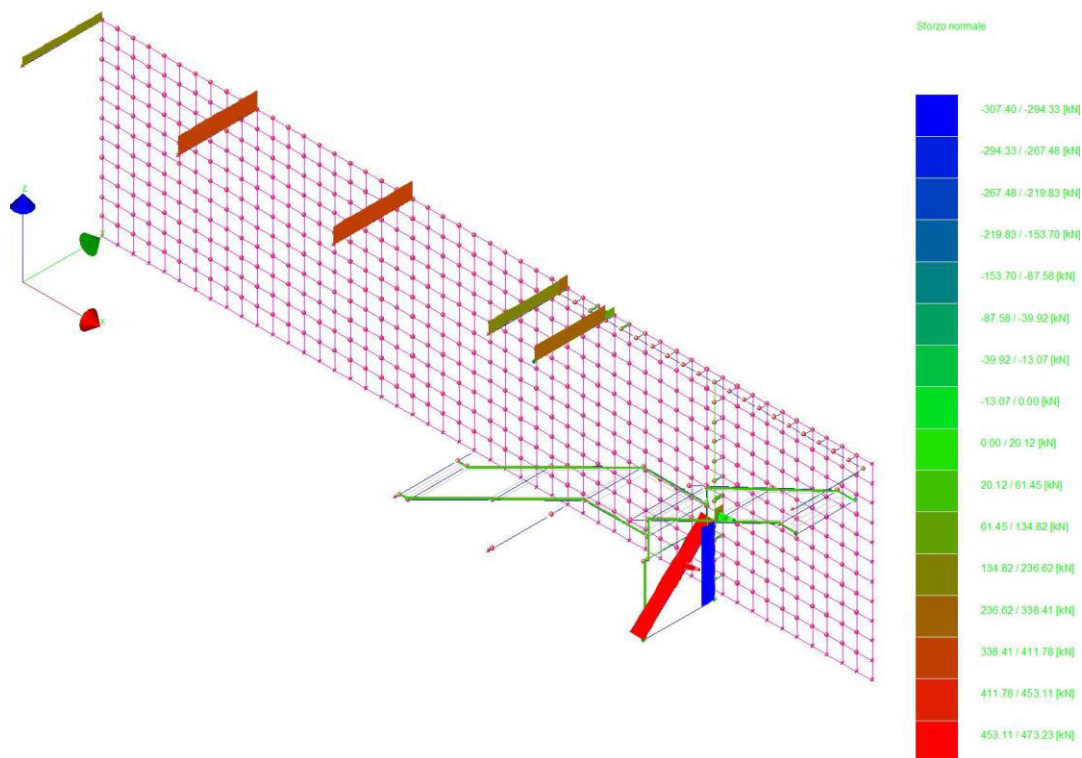
### Momenti principali

-209.96 / -201.04 [KNm/m]
-201.04 / -182.71 [KNm/m]
-182.71 / -150.17 [KNm/m]
-150.17 / -105.03 [KNm/m]
-105.03 / -59.89 [KNm/m]
-59.89 / -27.35 [KNm/m]
-27.35 / -9.02 [KNm/m]
-9.02 / 0.00 [KNm/m]
0.00 / 5.38 [KNm/m]
5.38 / 15.83 [KNm/m]
15.83 / 34.38 [KNm/m]
34.38 / 60.13 [KNm/m]
60.13 / 85.88 [KNm/m]
85.88 / 104.43 [KNm/m]
104.43 / 114.88 [KNm/m]
114.88 / 119.97 [KNm/m]

### Momenti principali

#### Combinazione di carico : 1

	Elemento	Nodi	Sezione	Combinazione di carico	Valore
Min	Elemento a 4 nodi	121,122,176,175	1	1	0.29 [KNm/m]
Max	Elemento a 4 nodi	346,347,423,394	1	1	119.97 [KNm/m]
Medio					52.08 [KNm/m]
	Elemento	Nodi	Sezione	Combinazione di carico	Valore
Min	Elemento a 4 nodi	17,18,70,69	1	1	-209.96 [KNm/m]
Max	Elemento a 4 nodi	479,480,508,536	1	1	-0.10 [KNm/m]
Medio					-50.24 [KNm/m]



#### Sforzo normale

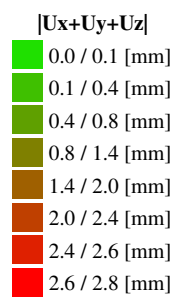
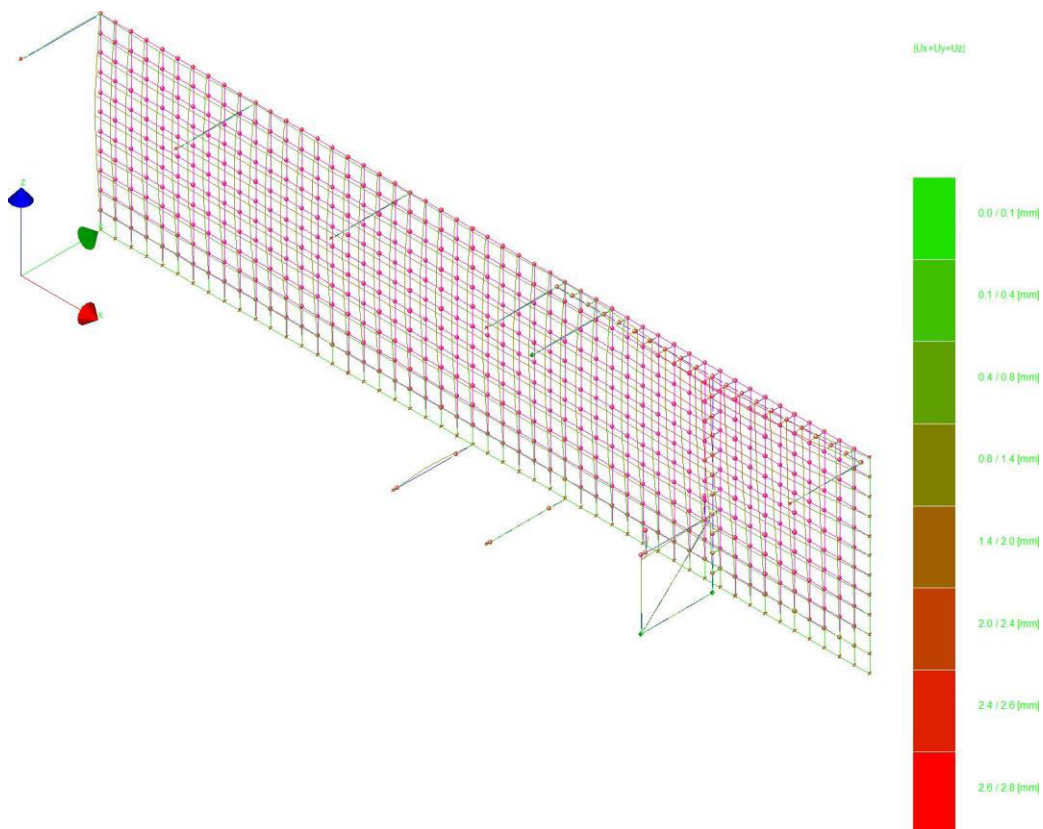
-307.40 / -294.33 [kN]
-294.33 / -267.48 [kN]
-267.48 / -219.83 [kN]
-219.83 / -153.70 [kN]
-153.70 / -87.58 [kN]
-87.58 / -39.92 [kN]
-39.92 / -13.07 [kN]
-13.07 / 0.00 [kN]
0.00 / 20.12 [kN]
20.12 / 61.45 [kN]
61.45 / 134.82 [kN]
134.82 / 236.62 [kN]
236.62 / 338.41 [kN]
338.41 / 411.78 [kN]
411.78 / 453.11 [kN]
453.11 / 473.23 [kN]

#### Sforzo normale

#### Combinazione di Carico: 1 SLU

Sez		Max [kN]	Min [kN]
1	Travi 602 638	415.30	601 628 186.39
2	Travi 223 3	473.23	223 168 -307.40
3	Travi 223 264	239.61	62 103 -21.69
4	Travi 714 610	327.55	606 627 13.55
5	Travi 9 41	0.00	9 41 0.00
10	Travi 328 330	4.84	5 8 -0.03
11	Travi 546 548	0.00	546 548 0.00
12	Travi 5 166	57.95	332 334 -1.29
13	Travi 328 221	43.39	7 35 -0.11

Max 473.23 Min -307.40 [kN]



## Spostamenti

### Combinazione di Carico: 1 SLU

Sez		Max [mm]	Min [mm]
1	Travi 602 638 0.3	601 628 0.0	
2	Travi 618 619 2.8	62 10 0.0	
3	Travi 618 669 2.7	62 103 0.1	
4	Travi 714 610 0.4	714 610 0.0	
5	Travi 6 9 0.0	2 6 0.0	
13	Travi 328 221 1.8	1 4 0.0	

Max 2.8 Min 0.0 [mm]

•

**RELAZIONE DI CALCOLO PARETI IN CARTONGESSO**  
**INTERNE ALLA PALESTRA**  
**PRESSO IL CAMPUS DI CESENA**  
**VIA DELL'UNIVERSITA', 50 CESENA (FC)**  
**CUP J15H20000070005**

**Il Tecnico**

**Dr.Ing. Guido Capito**

**Via Cavour, 92**

**40026 IMOLA (BO)**



## **DESCRIZIONE**

La presente relazione riguarda il calcolo statico delle pareti interne alla palestra da realizzarsi presso il Campus di Cesena.

L'altezza massima considerata nei calcoli è pari a  $h=4,10$  ml.

Il pacchetto considerato sulle pareti risulta essere il seguente: doppia lastra in cartongesso tipo *PregyPlac Plus BA13*, montanti in profili metallica passo  $i=600$ mm,  $s=6/10$  mm e larghezza  $s=75$  mm, doppia lastra in cartongesso tipo *PregyPlac Plus BA13*. Internamente è prevista una coibentazione in lana di roccia  $s=60$  mm avente densità di 40 kg/mc.

Le azioni considerate in progetto ai sensi delle NTC2018 sono le seguenti:

- Peso proprio
- Vento
- Carico lineare  $H_k$
- Sisma

Si sono eseguiti due differenti dimensionamenti per tenere conto di differenti spinte orizzontali  $H_k$ ; in un caso si è tenuto conto di una spinta riferita agli ambienti di Cat.A con  $H_k=1,00$  KN/ml, nell'altro di Cat C3 con  $H_k=3,00$  KN/ml.

Si allegano inoltre le certificazioni dei materiali adottati nei calcoli.

23/04/2021

Il Tecnico

Ing. Capito' Guido



# DIMENSIONAMENTO PARETE SINGOLA ORDITURA per interni



<b>SISTEMA:</b>		PREGY D125/M75/60 - 4PS Plus BA13 - LR 40/60		<b>Dati Generali</b>	
<b>DESCRIZIONE:</b>		H= 4,1 m			
<b>CANTIERE :</b>		palestra_Cesena			
<b>ALTEZZA PARETE:</b>	4,10 m	<b>Spessore parete</b>	125 mm	<b>Dati parete</b>	
<b>RESISTENZA AL FUOCO:</b>	-	<b>Tipo isolante</b>	Lana di roccia		
<b>POTERE FONOISOLANTE</b>	-	<b>Densita' isolante</b>	40 Kg/m3		
<b>DATA:</b>	23/04/2021	<b>Spessore isolante</b>	60 mm		
<b>PARAMENTI</b>				<b>STRUTTURA METALLICA</b>	
<b>Lato 1</b>		<b>Lato 2</b>		<b>Caratteristiche della lamiera</b>	
Strato	Lastra	Strato	Lastra	Modulo di Young	
1	PregyPlac Plus BA13	1	PregyPlac Plus BA13	210000 MPa	
2	PregyPlac Plus BA13	2	PregyPlac Plus BA13	Snervamento fyk	
3	-	3	-	300 N/mm²	
4	-	4	-		
<b>ACCESSORI - viti +tasselli ( tipi e interasse)</b>				<b>Caratteristiche dell'orditura</b>	
Interasse viti STN autofilettanti		25 cm		Numero montanti	
-		-		Interasse montanti	
-		-		600 mm	
-		-		Tipo montante	
-		-		M75	
-		-		Spessore lamiera montanti	
-		-		6 / 10 di mm	
-		-		Anima delle guide ad "U"	
-		-		75 mm	
-		-		Ali della guida SUPERIORE ad "U"	
-		-		40 mm	
-		-		Spessore lamiera guida SUPERIORE	
-		-		6 / 10 di mm	
-		-		Ali della guida INFERIORE ad "U"	
-		-		40 mm	
Interasse tasselli fissaggio guide		50 cm		Spessore lamiera guida INFERIORE	
				6 / 10 di mm	
<b>DATI DI CARICO (secondo NTC - DM 17/01/2018)</b>					
<b>Peso parete</b>		0,40 kN/m²		<b>Vedi foglio CALCOLO AZIONI DEL VENTO</b>	
<b>Azioni del vento</b>		Zona 2		Coefficiente di esposizione	
Zona calcolo della pressione del vento		44 m		Ce = 1,71	
Altitudine sul livello del mare		III		Coefficiente di forma	
Categoria di esposizione del sito		50 anni		Cp=0,2	
Periodo di ritorno - T <sub>R</sub>		4,1 m		Coefficiente dinamico	
Altezza parete		0,20 kN/m²		Cd=1,0	
Pressione superficiale imposta				Velocità di riferimento - v <sub>b</sub> (T <sub>R</sub> ) =	
				25,0 m/s	
				Pressione risultante	
				0,13 kN/m²	
<b>Carico lineare orizzontale</b>					
Categoria per la spinta della folla		cat. A	Hk=1,0 kN/m	a quota:	1,20 m
<b>Azioni sismiche</b>					
Vita nominale struttura		50 anni	Classe d'uso	II °- Costruzioni con normali affollamenti	
Accelerazione orizzontale SLV - a <sub>g</sub> /g		0,194	Fattore di amplificazione SLV - F <sub>o</sub>	2,411	
Fattore di comportamento della parete		qa = 2,00	Categoria sottosuolo	C	
Altezza dell'edificio		H = 10,0 m	Categoria topografica	T1	
		Quota della parete da fondazione		Z = 8,0 m	
		Z/H da quota fondazione		0,80	
		Presenza di isolatori sismici		NO	
		Forza sismica orizzontale F <sub>a,SLV</sub>		27,0 daN/m	
<b>VERIFICHE</b>					
<b>Verifiche globali</b>					
Limite di deformazione		1/250 H	corrispondente a: 16 mm		
VERIFICA ALLO STATO LIMITE DI ESERCIZIO (SLE)		f <sub>max</sub> =	11,8 mm	< = 16 mm - VERIFICATA	
VERIFICA ALLO STATO LIMITE ULTIMO (SLU)		E <sub>d</sub> /R <sub>d</sub> =	0,72	< 1 - VERIFICATA	
<b>Verifiche globali ( in presenza di azione sismica)</b>					
VERIFICA ALLO STATO LIMITE SALVAGUARDIA VITA (SLV)		E <sub>d</sub> /R <sub>d</sub> =	0,12	< 1 - VERIFICATA	
<b>Verifiche Locali</b>					
Reazione vincolare massima superiore:		T <sub>sup</sub> =	410,00 N/m		
Taglio massimo sul singolo tassello di ancoraggio superiore		V <sub>tas sup</sub> =	20,50 daN		
Verifica a flessione anima della guida superiore :		s <sub>g sup</sub> =	5,55 N/mm²	< 300 N/mm² - VERIFICATA	
Verifica a flessione sez. di incastro ala della guida superiore :		s <sub>ag sup</sub> =	68,33 N/mm²	< 300 N/mm² - VERIFICATA	
Reazione vincolare massima inferiore:		T <sub>inf</sub> =	707,32 N/m		
Taglio massimo sul singolo tassello di ancoraggio inferiore		V <sub>tas inf</sub> =	35,37 daN		
Verifica a flessione anima della guida inferiore :		s <sub>g inf</sub> =	9,58 N/mm²	< 300 N/mm² - VERIFICATA	
Verifica a flessione sez. di incastro ala della guida inferiore :		s <sub>ag inf</sub> =	117,89 N/mm²	< 300 N/mm² - VERIFICATA	
<b>ETEX BUILDING PERFORMANCE S.P.A. A SOCIO UNICO</b>					
Sede legale: Via G. Leopardi, 2 - 20123 Milano					
Sede Amministrativa: Via Perlasca, 14 - 27010 Vellezzo Bellini (PV)					
T+39 0382 4575.75 F+39 0382 4575.250					
www.siniat.it - www.promat.it					

Una valutazione da parte del tecnico incaricato della progettazione e della verifica dell'intero progetto sarà comunque necessaria.

# DIMENSIONAMENTO PARETE SINGOLA ORDITURA per interni



<b>SISTEMA:</b>		PREGY D150/M100/30 - 4PS Plus BA13 - LR 40/80		<b>Dati Generali</b>
<b>DESCRIZIONE:</b>		H= 4,1 m		
<b>CANTIERE :</b>		palestra_Cesena		
<b>ALTEZZA PARETE:</b>		4,10 m		
<b>RESISTENZA AL FUOCO:</b>		-		<b>Dati parete</b>
<b>POTERE FONOISOLANTE</b>		-		
<b>DATA:</b>		23/04/2021		
<b>Spessore parete</b>		150 mm		
<b>Tipo isolante</b>		Lana di roccia		<b>Dati di carico</b>
<b>Densita' isolante</b>		40 Kg/m3		
<b>Spessore isolante</b>		80 mm		
<b>STRUTTURA METALLICA</b>				
<b>PARAMENTI</b>				<b>Dati di carico</b>
<b>Lato 1</b>		<b>Lato 2</b>		
Strato	Lastra	Strato	Lastra	
1	PregyPlac Plus BA13	1	PregyPlac Plus BA13	
2	PregyPlac Plus BA13	2	PregyPlac Plus BA13	<b>Dati di carico</b>
3	-	3	-	
4	-	4	-	
<b>ACCESSORI - viti +tasselli ( tipi e interasse)</b>				
Interasse viti STN autofilettanti		25 cm		<b>Dati di carico</b>
-		-		
-		-		
-		-		
Interasse tasselli fissaggio guide		50 cm		<b>Dati di carico</b>
<b>DATI DI CARICO (secondo NTC - DM 17/01/2018)</b>				
<b>Peso parete</b>		0,43 kN/m <sup>2</sup>		
<b>Azioni del vento</b>		<b>Vedi foglio CALCOLO AZIONI DEL VENTO</b>		
Zona calcolo della pressione del vento		Zona 2		<b>Dati di carico</b>
Altitudine sul livello del mare		44 m		
Categoria di esposizione del sito		III		
Periodo di ritorno - T <sub>R</sub>		50 anni		
Altezza parete		4,1 m		<b>Dati di carico</b>
Pressione superficiale imposta		0,20 kN/m <sup>2</sup>		
<b>Carico lineare orizzontale</b>				
Categoria per la spinta della folla		cat. C3		
<b>Azioni sismiche</b>		<b>Hk=3,0 kN/m</b>		<b>Dati di carico</b>
Vita nominale struttura		50 anni		
Accelerazione orizzontale SLV - a <sub>g</sub> /g		0,194		
Fattore di comportamento della parete		qa = 2,00		
Altezza dell'edificio		H = 10,0 m		<b>Dati di carico</b>
<b>Classe d'uso</b>		II ° - Costruzioni con normali affollamenti		
<b>Fattore di amplificazione SLV - F<sub>o</sub></b>		2,411		
<b>Categoria sottosuolo</b>		C		
<b>Categoria topografica</b>		T1		<b>Dati di carico</b>
<b>Quota della parete da fondazione</b>		Z = 8,0 m		
<b>Z/H da quota fondazione</b>		0,80		
<b>Presenza di isolatori sismici</b>		NO		
<b>Forza sismica orizzontale F<sub>a,SLV</sub></b>		29,1 daN/m		<b>Dati di carico</b>
<b>VERIFICHE</b>				
<b>Verifiche globali</b>				
<b>Limite di deformazione</b>		1/250 H		
<b>VERIFICA ALLO STATO LIMITE DI ESERCIZIO (SLE)</b>		corrispondente a: 16 mm		
<b>VERIFICA ALLO STATO LIMITE ULTIMO (SLU)</b>		f <sub>max</sub> = 14,3 mm < = 16 mm - VERIFICATA		
<b>VERIFICHE GLOBALI ( in presenza di azione sismica)</b>		E <sub>d</sub> /R <sub>d</sub> = 0,95 < 1 - VERIFICATA		
<b>VERIFICA ALLO STATO LIMITE SALVAGUARDIA VITA (SLV)</b>		E <sub>d</sub> /R <sub>d</sub> = 0,07 < 1 - VERIFICATA		
<b>Verifiche Locali</b>				
<b>Reazione vincolare massima superiore:</b>		T <sub>sup</sub> = 878,05 N/m		
<b>Taglio massimo sul singolo tassello di ancoraggio superiore</b>		V <sub>tas sup</sub> = 43,90 daN		
<b>Verifica a flessione anima della guida superiore :</b>		s <sub>g sup</sub> = 5,00 N/mm <sup>2</sup> < 300 N/mm <sup>2</sup> - VERIFICATA		
<b>Verifica a flessione sez. di incastro ala della guida superiore :</b>		s <sub>ag sup</sub> = 52,68 N/mm <sup>2</sup> < 300 N/mm <sup>2</sup> - VERIFICATA		
<b>Reazione vincolare massima inferiore:</b>		T <sub>inf</sub> = 2121,95 N/m		
<b>Taglio massimo sul singolo tassello di ancoraggio inferiore</b>		V <sub>tas inf</sub> = 106,10 daN		
<b>Verifica a flessione anima della guida inferiore :</b>		s <sub>g inf</sub> = 12,08 N/mm <sup>2</sup> < 300 N/mm <sup>2</sup> - VERIFICATA		
<b>Verifica a flessione sez. di incastro ala della guida inferiore :</b>		s <sub>ag inf</sub> = 127,32 N/mm <sup>2</sup> < 300 N/mm <sup>2</sup> - VERIFICATA		
<b>ETEX BUILDING PERFORMANCE S.P.A. A SOCIO UNICO</b>				
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www.siniat.it - www.promat.it				
<b>etex building performance</b>				

Una valutazione da parte del tecnico incaricato della progettazione e della verifica dell'intero progetto sarà comunque necessaria.



## RAPPORTO DI PROVA N. 342224

**Luogo e data di emissione:** Bellaria-Igea Marina - Italia, 19/05/2017

**Committente:** ISOLANTI E PROFILI S.r.l. - Via Dell'Artigiano, 53/55 - 47034 FORLIMPOPOLI (FC) - Italia

**Data della richiesta della prova:** 27/03/2017

**Numero e data della commessa:** 72725, 28/03/2017

**Data del ricevimento del campione:** 30/03/2017

**Data dell'esecuzione della prova:** 02/05/2017

**Oggetto della prova:** trazione di profilati metallici secondo la norma UNI EN ISO 6892-1:2016

**Luogo della prova:** Istituto Giordano S.p.A. - Blocco 1 - Via Rossini, 2 - 47814 Bellaria-Igea Marina (RN) - Italia

**Provenienza del campione:** campionato e fornito dal Committente

**Identificazione del campione in accettazione:** n. 2017/0709

### Descrizione del campione\*.

Il campione sottoposto a prova è costituito da n. 7 tipologie di profilati metallici zincati utilizzati per il montaggio di pannelli in cartongesso. I profili, ricavati da laminati pressopiegati, spessore nominale 0,6 mm, sono identificati "Montante 150", "Montante 100", "Montante 75", "Guida 150", "Guida 75", "Guida 50" e "Guida U 15".

(\*) secondo le dichiarazioni del Committente.

Comp. FM  
Revis. MI

Il presente rapporto di prova è composto da n. 3 fogli.

Foglio  
n. 1 di 3

**Riferimenti normativi.**

La prova è stata eseguita secondo le prescrizioni della norma UNI EN ISO 6892-1:2016 del 22/09/2016 "Materiali metallici - Prova di trazione - Parte 1: Metodo di prova a temperatura ambiente".

**Descrizione delle provette.**

Da ciascuna tipologia di profilo in acciaio sono state ricavate, mediante lavorazione per asportazione di truciolo, n. 3 provette.

**Apparecchiatura di prova.**

Per l'esecuzione della prova di estrazione è stata utilizzata la seguente apparecchiatura:

- macchina di trazione modello "TC 1000" della ditta ATS Faar, dinamometro costituito da cella di carico in catena con macchina di trazione e software di acquisizione/gestione (codice di identificazione interna dell'apparecchiatura: TDL016);
- cella di carico da 10 kN modello "Type TC 4 10 kN classe 1" della ditta AEP Transducers (codice di identificazione interna dell'apparecchiatura: TDL031);
- micrometro centesimale della ditta Metrica, risoluzione 0,01 mm e campo di misura 0 ÷ 25 mm (codice di identificazione interna dell'apparecchiatura: SC270);
- calibro digitale modello "SHOP Cal 00530090" della ditta Tesa con risoluzione 0,01 mm codice di identificazione interna dell'apparecchiatura: SC430).

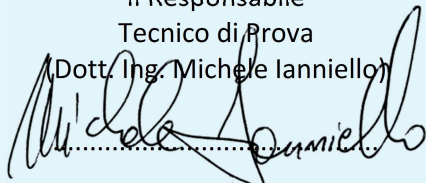
**Risultati della prova.**

Profilo	Provino	Dimensioni* (spessore × larghezza)	Area	Allungamento "A"	Tensione di snervamento "Rp"	Tensione di rottura "Rm"
	[n.]	[mm]	[mm <sup>2</sup> ]	[%]	[N/mm <sup>2</sup> ]	[N/mm <sup>2</sup> ]
Montante 150	1	(0,56 × 20,20)	11,31	21	316,9	388,7
	2	(0,56 × 20,52)	11,49	22	303,8	382,9
	3	(0,56 × 20,55)	11,51	18	309,5	385,1
Montante 100	4	(0,52 × 20,48)	10,65	20	349,3	413,3
	5	(0,53 × 20,42)	10,82	24	343,8	445,3
	6	(0,53 × 20,55)	10,89	21	298,0	383,5
Montante 75	7	(0,53 × 20,54)	10,89	28	335,1	393,9
	8	(0,53 × 20,56)	10,90	25	332,9	390,1
	9	(0,53 × 20,58)	10,91	24	324,6	387,6
Guida 150	10	(0,53 × 20,60)	10,92	21	334,3	400,8
	11	(0,54 × 20,56)	11,10	24	315,1	371,0
	12	(0,54 × 20,54)	11,09	28	313,8	370,7
Guida 75	13	(0,53 × 20,72)	10,98	22	334,4	410,0
	14	(0,53 × 20,65)	10,94	26	337,1	429,2
	15	(0,53 × 20,62)	10,93	24	292,3	380,5
Guida 50	16	(0,54 × 20,46)	11,05	20	324,5	392,3
	17	(0,53 × 20,70)	10,97	23	337,9	414,1
	18	(0,53 × 20,63)	10,93	15	324,3	387,1
Guida U 15	19	(0,56 × 20,64)	11,56	20	333,3	412,7
	20	(0,56 × 20,71)	11,60	22	323,1	407,9
	21	(0,56 × 20,65)	11,56	21	322,8	407,7

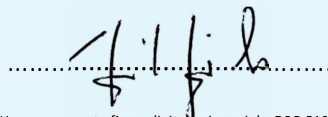
(\*) Lo strato di zincatura viene valutato in 10 µm per lato; lo spessore riportato è stato ridotto di 20 µm per il calcolo dell'area resistente.

Il Responsabile  
Tecnico di Prova

(Dott. Ing. Michele Ianniello)



Il Responsabile del Laboratorio di  
Scienza delle Costruzioni  
(Dott. Geol. Gianluca Ferraiolo)



L'Amministratore Delegato  
(Dott. Nazario Giordano)



## DICHIARAZIONE DI PRESTAZIONE

Nr. PA3-P-2013-06\_001

- 1) Codice unico d'identificazione del prodotto-tipo: **EN 520 - A**
- 2) Numero di tipo, lotto, serie o qualsiasi altro elemento che consenta l'identificazione del prodotto da costruzione ai sensi dell'art. 11, par. 4, CPR 305/2011: **PregyPlac Plus BA/BD13**
- 3) L'uso o gli usi previsti del prodotto da costruzione in accordo con l'applicabile specifica tecnica armonizzata:  
**Lastre di gesso rivestito per lavori di costruzione in accordo con EN520:2004+A1:2009**
- 4) Nome, denominazione commerciale, indirizzo e riferimenti di contatto del fabbricante:  
**Etex Building Performance S.p.A.**  
**Via G. Leopardi, 2**  
**20123 - Milano - Italia (IT)**  
**Stabilimento di Produzione - Corfinio (AQ)**
- 6) Sistema o sistemi di valutazione e verifica della costanza della prestazione del prodotto da costruzione di cui all'allegato V: **Sistema 4**
- 7) Nel caso di una dichiarazione di prestazione relativa ad un prodotto da costruzione che rientra nell'ambito di applicazione di una norma armonizzata:
- 9) Prestazioni dichiarate

Caratteristiche essenziali	Prestazione	Documento di riferimento
Reazione al fuoco – <b>R2F</b>	A2,s1-d0 (B)	EN520:2004+A1:2009
Resistenza al taglio - ↓↑	NPD	EN520:2004+A1:2009
Resistenza al vapor d'acqua - $\mu$	10	EN520:2004+A1:2009
Conducibilità termica - $\lambda$	0,21 W/(mK)	EN520:2004+A1:2009
Resistenza alla flessione - <b>F</b>	Conforme	EN520:2004+A1:2009
Isolamento acustico dai rumori aerei - <b>R</b>	Vedi documentazione tecnica Siniat su: www.siniat.it	EN520:2004+A1:2009
Assorbimento acustico - $\alpha$		
Resistenza all'impatto - → I		

Qualora sia stata usata la documentazione tecnica specifica, ai sensi dell'art. 37 o 38, i requisiti cui il prodotto risponde: **non pertinente**

- 10) La prestazione del prodotto di cui ai punti 1) e 2) è conforme alla prestazione dichiarata di cui al punto 9)

Si rilascia la presente dichiarazione di prestazione sotto la responsabilità esclusiva del fabbricante di cui al punto 4).

Corfinio, **01.01.2017**

**Ing. Cristian Palmisano**  
**Direttore di Stabilimento**



ETEX BUILDING PERFORMANCE S.P.A. a Socio Unico

Società soggetta a direzione e coordinamento di Etex Building Performance International S.A

Sede legale: Via G. Leopardi, 2 - 20123 Milano

Sede Amministrativa: Via Perlasca, 14 - 27010 Vellezzo Bellini (PV)

T+39 0382 4575.75 F+39 0382 4575.250

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Capitale Sociale € 11.352.000,00 i.v. - P.IVA 12723350158 – C.F. 01248350686 – Reg. Imprese MI REA 1531393

Spett.le

Forlimpopoli: 10 gennaio 2014

## DICHIARAZIONE DI PRESTAZIONE

n° DoP: Isoprofili rev. 01

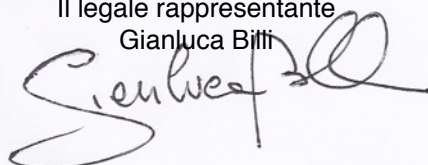
1. **Codice di identificazione unico del prodotto tipo:** Isoprofili rev. 01
2. **Identificazione e tracciabilità prodotto:**  
Montante: 50/75/100/150  
Guida: 50/75/100/150  
Profilo soffitto: 50x15/50x27  
Guida U: 30x15/30x28  
Angolare: 30x30/50x40  
Paraspigolo: 30x30  
Traversino U: 40x28  
I dati identificativi del prodotto, data e sito di produzione sono stampati su un lato del profilo.
3. **Destinazione d'uso:** profili per il montaggio di sistemi da costruzione.
4. **Fabbricante:** Isolanti e Profili srl
5. **Mandatario:** n.a.
6. **Sistema/i di valutazione e verifica della costanza della prestazione:** sistema 4 di valutazione e verifica della costanza della prestazione per tutte le proprietà.
7. **In caso di dichiarazione di prestazione relativa ad un prodotto da costruzione che rientra nell'ambito di applicazione di una Norma Armonizzata:** le prove iniziali di tipo di prodotto e il controllo della produzione di fabbrica sono eseguiti dal produttore, che esercita sorveglianza continua, in accordo alla norma di prodotto:  
**EN 14195:2005 strutture metalliche per sistemi in gesso**
8. **Nel caso di una dichiarazione di prestazione relativa ad un prodotto da costruzione per il quale è stata rilasciata una valutazione tecnica europea:** n.a.

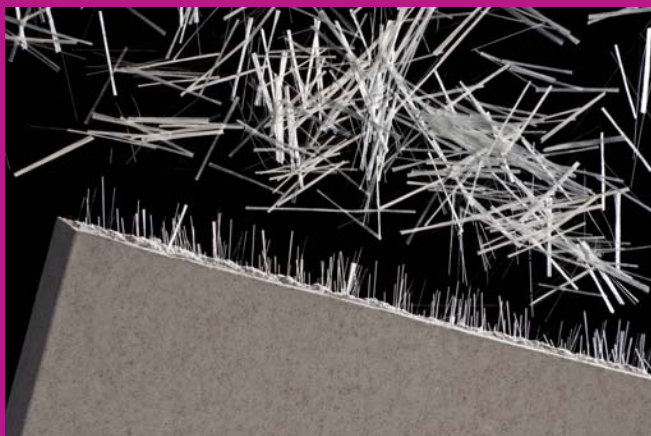
9. **Prestazioni dichiarate:**

Caratteristica essenziale	Prestazione	Norma Tecnica Armonizzata
Reazione al fuoco	Classe A1	UNI EN 14195:2005
Tensione di snervamento	300 N/mm <sup>2</sup>	
Tipologia acciaio zincato	DX51D	
Rivestimento protettivo	Z140	

10. **La prestazione di prodotto di cui ai punti 1 e 2 è conforme alla prestazione dichiarata di cui al punto 9:** si rilascia la presente dichiarazione di prestazione sotto la responsabilità esclusiva del fabbricante indicato al punto 4. Un sistema di controllo di produzione di fabbrica garantisce che il prodotto è conforme alle prestazioni dichiarate.

Il legale rappresentante  
Gianluca Billi





# Pregyplac<sup>plus</sup> BA/BD 13

*Lastra di gesso rivestito  
PREGYPLAC PLUS BA/BD 13 a  
bordi assottigliati (BA) o a bordi  
dritti (BD) dello spessore di  
12,5 mm, con aggiunta di fibra di  
vetro.*

L'Ufficio Tecnico di Siniat fornisce un supporto alle fasi di progettazione e di posa con consulenze nell'ambito della statica, dell'acustica, della termica e della protezione al fuoco ai sensi delle norme vigenti.

## Dati tecnici

LARGHEZZA (TOLLERANZA 0/-4 MM)	1200 mm
LUNGHEZZA (TOLLERANZA 0/-5 MM)	2000, 2500, 2700, 2800, 3000, 3200, 3600 mm
BORDI	BA (Bordi Assottigliati), BD (Bordi Dritti)
SPESSORE (TOLLERANZA 0/-5 MM)	12,5 mm
DENSITÀ VALORE MEDIO (*)	721 Kg/m <sup>3</sup>
PESO VALORE MEDIO (*)	9 Kg/m <sup>2</sup>
DUREZZA SUPERFICIALE	< 20 mm (Impronta della biglia)
RESISTENZA A FLESSIONE LONGITUDINALE	
VALORE MINIMO PER LA PROGETTAZIONE	550 N
VALORE MEDIO(*)	620 N
RESISTENZA A FLESSIONE TRASVERSALE	
VALORE MINIMO PER LA PROGETTAZIONE	210 N
VALORE MEDIO(*)	255 N
CONDUTTIVITÀ TERMICA (VALORE DI LETTERATURA)	$\lambda = 0,21 \text{ W/mK}$
REAZIONE AL FUOCO	A2-s1, d0(B)
IMPIEGO	controsoffitti, pareti, contropareti, rivestimenti

(\*) I valori medi sono riferiti ai valori di produzione e hanno carattere indicativo.

IMPIEGO: pareti, contropareti, controsoffitti, rivestimento o rettifica della planarità di pareti verticali o inclinate.

NORMATIVA DI RIFERIMENTO: UNI EN 520.

TIPO DI LASTRA secondo gli ITT (Initial Type Test): A.  
Additivata con fibra di vetro.



**pregy**

**Contatti**  
Siniat S.p.A.  
Via Winckelmann, 2  
20146 Milano  
Tel. +39 02 42415.1  
Fax +39 02 42415.350  
siniat.italia@siniat.com

[www.siniat.com](http://www.siniat.com)

an **etex** company



# Isolanti e Profili srl

PRODUZIONE PROFILI PER CARTONGESSO  
E VENDITA MATERIALI ISOLANTI

Via dell'Artigiano, 53/55 - 47034 FORLIMPOPOLI (FC)  
Codice Fiscale e Partita Iva 04096330404  
Iscr. Reg. Impr. di Forlì-Cesena N. 04096330404  
Iscr. R.E.A. n. 329513  
Capitale Sociale EURO 60.000 i.v.  
Telefono e Fax +39 0543 745212

e-mail: [isolantieprofili@gmail.com](mailto:isolantieprofili@gmail.com)

## SCHEDA TECNICA PROFILI

### ISOPROFILI REV. 01

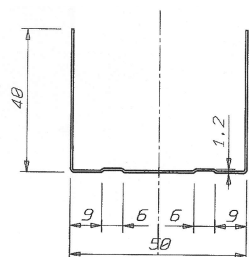
- ✓ Profili in acciaio zincato per le strutture in gesso rivestito.
- ✓ I profili sono ottenuti mediante processo di profilatura a rulli e sono conformi alla normativa UNI 14195.
- ✓ I profili sono dotati di apposite preforature per consentire il passaggio delle caverterie.
- ✓ La tipologia, qualità della lamiera e il grado di rivestimento zincato sono conformi alla normativa UNI 10327 - classificazione DX51D+Z MA-AF.

## DATI TECNICI

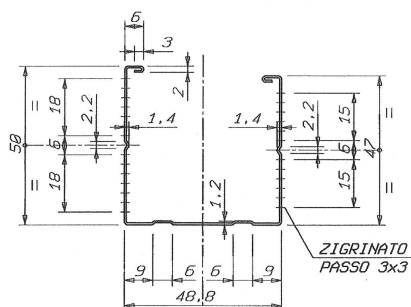
CARATTERISTICA	NORMA DI RIFERIMENTO	VALORE	UNITA' DI MISURA
TIPO	EN 14195	Struttura metallica	-
REAZIONE AL FUOCO	EN 14195	A 1	-
SPESSORE	EN 10143	0,6 - 0,8 - 1,0 - 2,0	mm.
TOLLERANZA SULLO SPESSORE	EN 10143	± 0,07	mm.
LUNGHEZZA	EN 14195	3000 - 3500 - 4000 altre a richiesta	mm.
TOLLERANZA SULLA LUNGHEZZA	EN 14195	± 4	mm.
TENSIONE DI SNERVAMENTO		300	N/mm <sup>2</sup>
RIVESTIMENTO PROTETTIVO	EN 10327	Z140	-



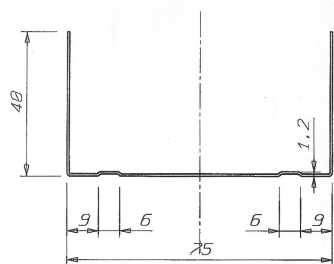
## DIMENSIONI PROFILI



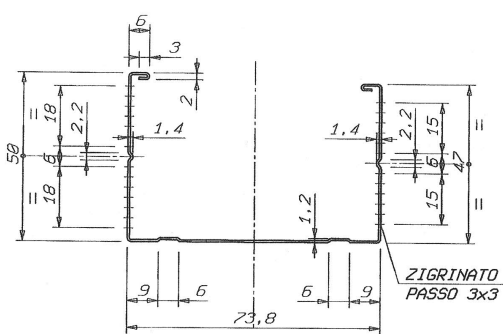
GUIDA 50



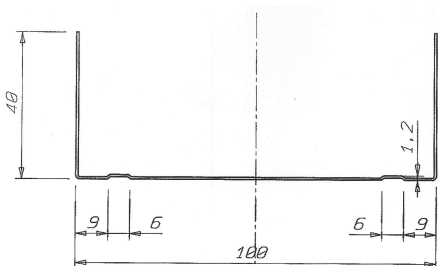
MONTANTE 50



GUIDA 75



MONTANTE 75



GUIDA 100



