

Table of spans

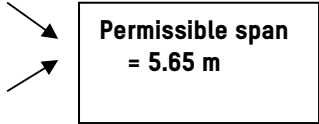
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Wall elements according to the general building authority approval Z-10.4-549	
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COMMENTS ON THE TABLES FOR WALL ELEMENTS

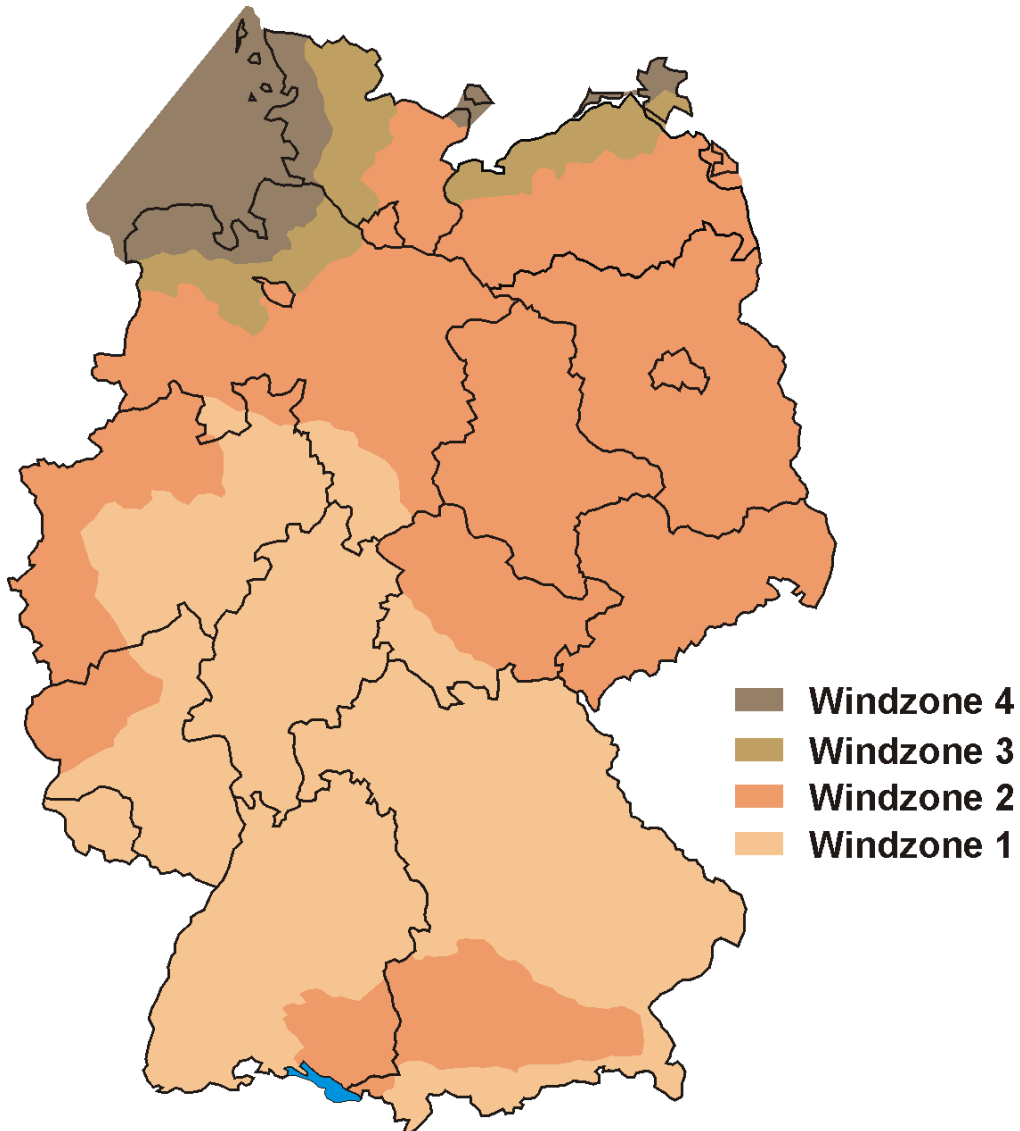
When using the tables, the following should be observed:

1. The characteristic loads must be determined in accordance with Eurocodes or, if necessary, taking account of the national appendix.
2. Values in accordance with DIN EN 1990/NA:2010-12 are the basis for load factors and combined coefficients.
3. The general building authority approval Z-10.4-549 of April 2013 serves as the basis for the load bearing capacity and the calculation parameters.
4. The relevant minimum span in the tables for wind pressure and wind uplift pressure requirements should be selected for each application case.
5. In the case of double- and triple-span girders/beams, only approximately identical span ratios are permissible (approximately $1.0 \leq \text{min.}l/\text{max.}l \leq 0.8$).
6. Application in buildings with normal interior temperatures of 20 to 25 °C.
7. At most, the deflection amounts to $l/100$ while considering all unfavourable loads.
Spans in the additional line marked with * are not relevant for calculations where deflection is restricted.
8. Spans in the "Characteristic wind uplift pressure" table do not take fasteners into consideration. Fasteners have to be verified on a case-by-case basis and can at number > 3 pieces reduce the specified span.
9. The quantity of direct fasteners was calculated using a characteristic screw load capacity of $N_{R,k} = 2.3 \text{ kN}$.
10. Interpolation between spans and numbers of screws is possible, but extrapolation is not.
11. For indirect (concealed) fastening, load capacity in accordance with approval Z-10.4-549. Appendix 2 is considered.
For thin walls ($t \leq 5 \text{ mm}$), asymmetrical substructures (no symmetrical axis parallel to the screw axis such as with Z or C profiles), a separate structural analysis must be carried out in each individual case.
12. See approval Z-10.4-549 for specific instructions related to load capacity, calculation parameters and their monitoring.
13. Please refer to the Roma color chart for information about surface colors and their category: I (very light), II (light) and III (dark).
14. Permissible spans are listed in m and the required support width in mm; see the following reading example.

READING EXAMPLE

From "Wind pressure" table	46 5.65 92	Required end support width in millimeters Permissible span based on element verification in m Required intermediate support width in mm
		
From "Wind uplift" table	6.05	Permissible span based on element verification
From "Wind uplift" table For screws	3 3.5	Number of screws per meter at support Permissible span in m with 3 screws per support

CALCULATION OF WIND LOAD



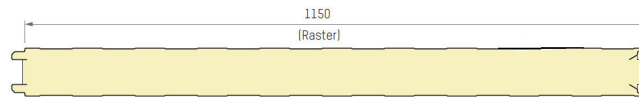
Source: <http://de.wikipedia.org/wiki/windlast>

Table 1: Characteristic wind load (kN/m²)

Building height	WIND LOAD ZONE				
		1	2	3	4
5 m	PERIPHERAL AREA	0.34/-0.58/-0.67	0.41/-0.71/-0.82	0.49/-0.85/-0.99	0.59/-1.01/-1.18
	NORMAL AREA	0.34/-0.38/-0.53	0.41/-0.47/-0.64	0.49/-0.56/-0.78	0.59/-0.67/-0.92
10 m	PERIPHERAL AREA	0.39/-0.65/-0.76	0.48/-0.80/-0.93	0.58/-0.96/-1.12	0.69/-1.14/-1.33
	NORMAL AREA	0.39/-0.44/-0.66	0.48/-0.53/-0.73	0.58/-0.64/-0.88	0.69/-0.76/-1.05
15 m	PERIPHERAL AREA	0.47/-0.76/-0.88	0.58/-0.92/-1.08	0.69/-1.11/-1.30	0.83/-1.33/-1.55
	NORMAL AREA	0.47/-0.51/-0.70	0.58/-0.62/-0.85	0.69/-0.74/-1.02	0.83/-0.88/-1.22

Note 3: Example values for buildings in the onshore terrain category
(wind pressure/general wind uplift pressure/wind uplift pressure for screws)

Permissible spans for ROMA wall elements P 45 LL/ML 0.6/0.5 LL/ML



The following spans have been verified in accordance with the general building authority approval Z-10.4-549 of April 30, 2013 as well as based on EN 14509, Annex E. The most adverse loading condition combination consisting of wind and temperature has been verified in accordance with EN 14509, Annex E, while accounting for load factors and combined coefficients specified in DIN EN 1990/NA:2010-12. The application notes (see page 2) must be observed.

Table W.1: Wind pressure

*without accounting for deflection

Structural system	Color group	Characteristic wind pressure in kN/m ²											
		0.25	0.50	0.75	1.00	1.25	1.50	1.75	2.00	2.25	2.50	2.75	3.00
1- span	I,II,III*	40	40	40	40	44	48	52	55	57	57	57	57
	I,II,III	7.98	5.64	4.61	3.99	3.57	3.26	3.02	2.82	2.56	2.30	2.10	1.92
2- span	I,II,III	40	40	40	40	44	48	52	55	57	57	57	57
		7.33	5.30	4.41	3.89	3.53	3.26	3.02	2.82	2.56	2.30	2.09	1.92
3- span	I,II,III	60	60	65	76	87	96	104	110	113	113	113	113
		40	40	40	40	44	48	52	55	57	57	57	57
		7.98	5.64	4.61	3.99	3.57	3.26	3.02	2.82	2.56	2.30	2.09	1.92
		60	60	68	78	88	96	104	110	113	113	113	113

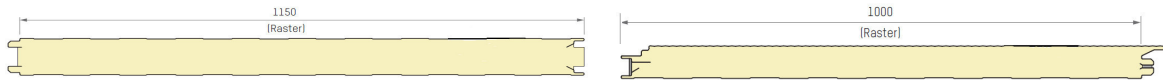
Table W.2: Wind uplift pressure (see Comments no. 8)

Structural system	Color group	Characteristic wind uplift pressure in kN/m ²											
		-0.25	-0.50	-0.75	-1.00	-1.25	-1.50	-1.75	-2.00	-2.25	-2.50	-2.75	-3.00
1- span	I,II,III	7.43	5.25	4.29	3.71	3.32	3.03	2.81	2.63	2.48	2.30	2.10	1.92
2- span	I,II	7.43	5.25	4.29	3.71	3.32	3.03	2.81	2.63	2.48	2.30	2.09	1.92
	III	5.55	4.26	3.68	3.34	3.10	2.92	2.78	2.63	2.48	2.30	2.09	1.92
3- span	I,II,III	7.43	5.25	4.29	3.71	3.32	3.03	2.81	2.63	2.48	2.30	2.09	1.92

Table W.3: Characteristic wind uplift for screws in kN/m², direct fastening with 3 screws per support (see Comments no. 9)

Structural system	Color group	Characteristic wind uplift for screws in kN/m ²											
		-0.25	-0.50	-0.75	-1.00	-1.25	-1.50	-1.75	-2.00	-2.25	-2.50	-2.75	-3.00
1- span	I,II,III	7.43	5.25	4.29	3.71	3.32	3.03	2.81	2.63	2.48	2.30	2.10	1.92
2- span	I	7.43	5.17	3.38	2.51	2.01	1.68	1.46	1.29	1.16	1.06	0.98	0.91
	II	7.43	5.02	3.23	2.38	1.89	1.58	1.37	1.22	1.10	1.00	0.93	0.87
	III	5.55	4.26	2.99	2.16	1.71	1.44	1.25	1.11	1.00	0.93	0.86	0.80
3- span	I	7.43	5.25	4.04	3.00	2.38	1.97	1.68	1.46	1.30	1.17	1.06	0.99
	II	7.43	5.25	3.98	2.94	2.32	1.92	1.63	1.42	1.26	1.13	1.02	0.95
	III	7.43	5.25	3.89	2.85	2.23	1.83	1.55	1.34	1.18	1.06	0.98	0.90

Permissible spans for ROMA wall elements P 60 LL/ML 0.6/0.5 or M 60 ML/LL 0.6/0.5



The following spans have been verified in accordance with the general building authority approval Z-10.4-549 of April 30. 2013 as well as based on EN 14509, Annex E. The most adverse loading condition combination consisting of wind and temperature has been verified in accordance with EN 14509, Annex E, while accounting for load factors and combined coefficients specified in DIN EN 1990/NA:2010-12. The application notes (see page 2) must be observed.

Table W.4: Wind pressure

*without accounting for deflection

Structural system	Color group	Characteristic wind pressure in kN/m ²											
		0.25	0.50	0.75	1.00	1.25	1.50	1.75	2.00	2.25	2.50	2.75	3.00
1- span	I.II.III*	40	40	40	46	51	56	61	65	69	70	70	70
	I.II.III	9.32	6.59	5.38	4.66	4.17	3.81	3.52	3.30	3.11	2.86	2.60	2.39
2- span	I.II.III	40	40	40	45	51	56	61	65	69	70	70	70
		8.60	6.22	5.18	4.56	4.15	3.81	3.52	3.30	3.11	2.86	2.60	2.39
3- span	I.II.III	40	40	40	46	51	56	61	65	69	70	70	70
		9.32	6.59	5.38	4.66	4.17	3.81	3.52	3.30	3.11	2.86	2.60	2.39

Table W.5: Wind uplift pressure (see Comments no. 8)

Structural system	Color group	Characteristic wind uplift pressure in kN/m ²											
		-0.25	-0.50	-0.75	-1.00	-1.25	-1.50	-1.75	-2.00	-2.25	-2.50	-2.75	-3.00
1- span	I.II.III	8.68	6.14	5.01	4.34	3.88	3.54	3.28	3.07	2.89	2.74	2.60	2.39
2- span	I.II	8.68	6.14	5.01	4.34	3.88	3.54	3.28	3.07	2.89	2.74	2.60	2.39
	III	6.56	5.03	4.34	3.94	3.65	3.44	3.27	3.07	2.89	2.74	2.60	2.39
3- span	I.II.III	8.68	6.14	5.01	4.34	3.88	3.54	3.28	3.07	2.89	2.74	2.60	2.39

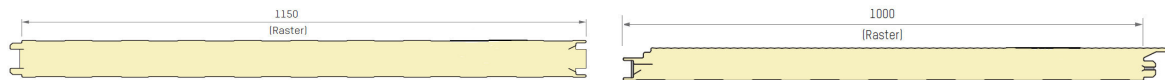
Table W.6: Characteristic wind uplift for screws in kN/m², direct fastening with 3 screws per support (see Comments no. 9)

Structural system	Color group	Characteristic wind uplift for screws in kN/m ²											
		-0.25	-0.50	-0.75	-1.00	-1.25	-1.50	-1.75	-2.00	-2.25	-2.50	-2.75	-3.00
1- span	I.II.III	8.68	6.14	5.01	4.34	3.88	3.54	3.28	3.07	2.89	2.74	2.52	2.31
2- span	I	8.68	5.06	3.29	2.45	1.97	1.66	1.44	1.28	1.16	1.06	0.99	0.92
	II	8.68	4.84	3.10	2.28	1.83	1.55	1.35	1.20	1.09	1.00	0.93	0.87
3- span	III	6.56	4.49	2.77	2.02	1.62	1.38	1.22	1.09	1.00	0.92	0.86	0.80
	I	8.68	6.07	3.99	2.95	2.34	1.93	1.65	1.44	1.28	1.15	1.05	0.98
3- span	II	8.68	5.99	3.91	2.87	2.26	1.86	1.58	1.38	1.23	1.10	1.01	0.94
	III	8.68	5.87	3.78	2.75	2.14	1.75	1.48	1.29	1.14	1.03	0.95	0.88

Table W.7: Characteristic wind uplift for screws in kN/m², indirect fastening with 2 screws per intermediate support (see Comments no. 11)

Structural system	Color group	Characteristic wind uplift for screws in kN/m ²											
		-0.25	-0.50	-0.75	-1.00	-1.25	-1.50	-1.75	-2.00	-2.25	-2.50	-2.75	-3.00
1- span	I.II.III	8.69	6.15	4.94	3.71	2.96	2.47	2.12	1.85	1.65	1.48	1.35	1.24
2- span	I	8.69	5.60	3.66	2.72	2.18	1.83	1.59	1.41	1.27	1.16	1.07	1.00
	II	8.27	5.41	3.48	2.56	2.04	1.72	1.50	1.33	1.20	1.10	1.01	0.95
3- span	III	5.68	4.48	3.18	2.31	1.84	1.55	1.35	1.21	1.10	1.01	0.94	0.88
	I	8.69	6.15	4.39	3.26	2.58	2.14	1.82	1.59	1.39	1.21	1.08	0.98
3- span	II	8.69	6.15	4.32	3.18	2.51	2.07	1.76	1.54	1.36	1.21	1.08	0.98
	III	8.16	5.90	4.20	3.07	2.40	1.97	1.66	1.44	1.28	1.15	1.05	0.98

Permissible spans for ROMA wall elements P 80 LL/ML 0.6/0.5 or M 80 ML/LL 0.6/0.5



The following spans have been verified in accordance with the general building authority approval Z-10.4-549 of April 30, 2013 as well as based on EN 14509, Annex E. The most adverse loading condition combination consisting of wind and temperature has been verified in accordance with EN 14509, Annex E, while accounting for load factors and combined coefficients specified in DIN EN 1990/NA:2010-12. The application notes (see page 2) must be observed.

Table W.8: Wind pressure

* without accounting for deflection

Structural system	Color group	Characteristic wind pressure in kN/m ²											
		0.25	0.50	0.75	1.00	1.25	1.50	1.75	2.00	2.25	2.50	2.75	3.00
1- span	I,II,III*	40	40	46	54	60	65	71	76	80	84	87	86
	I,II,III	10.88	7.69	6.28	5.44	4.87	4.44	4.11	3.85	3.63	3.44	3.21	2.94
2- span	I,II,III	40	40	45	53	60	65	71	76	80	84	87	86
		10.08	7.29	6.07	5.35	4.86	4.44	4.11	3.85	3.63	3.44	3.21	2.94
3- span	I,II,III	60	72	89	105	119	130	141	151	160	168	173	172
		40	40	46	54	60	65	71	76	80	84	87	86
		10.88	7.69	6.28	5.44	4.87	4.44	4.11	3.85	3.63	3.44	3.21	2.94
		60	75	92	107	119	130	141	151	160	168	173	172

Table W.9: Wind uplift pressure (see Comments no. 8)

Structural system	Color group	Characteristic wind uplift pressure in kN/m ²											
		-0.25	-0.50	-0.75	-1.00	-1.25	-1.50	-1.75	-2.00	-2.25	-2.50	-2.75	-3.00
1- span	I,II,III	10.12	7.16	5.84	5.06	4.53	4.13	3.82	3.58	3.37	3.20	3.05	2.92
2- span	I,II	10.12	7.16	5.84	5.06	4.53	4.13	3.82	3.58	3.37	3.20	3.05	2.92
	III	7.88	6.01	5.18	4.68	4.34	4.09	3.82	3.58	3.37	3.20	3.05	2.92
3- span	I,II,III	10.12	7.16	5.84	5.06	4.53	4.13	3.82	3.58	3.37	3.20	3.05	2.92

Table W.10: Characteristic wind uplift for screws in kN/m², direct fastening with 3 screws per support (see Comments no. 9)

Structural system	Color group	Characteristic wind uplift for screws in kN/m ²											
		-0.25	-0.50	-0.75	-1.00	-1.25	-1.50	-1.75	-2.00	-2.25	-2.50	-2.75	-3.00
1- span	I,II,III	10.12	7.16	5.84	5.06	4.53	4.13	3.82	3.46	3.08	2.77	2.52	2.31
2- span	I	10.12	4.90	3.19	2.39	1.94	1.64	1.44	1.28	1.16	1.06	0.99	0.92
	II	10.05	4.62	2.94	2.20	1.78	1.52	1.34	1.20	1.09	1.00	0.94	0.87
	III	7.88	4.12	2.54	1.88	1.56	1.35	1.20	1.08	1.00	0.92	0.86	0.80
3- span	I	10.12	6.00	3.92	2.89	2.29	1.90	1.62	1.42	1.26	1.14	1.04	0.97
	II	10.12	5.89	3.81	2.79	2.19	1.81	1.54	1.35	1.20	1.09	1.00	0.93
	III	10.12	5.72	3.64	2.62	2.04	1.67	1.42	1.24	1.11	1.01	0.93	0.86

Table W.11: Characteristic wind uplift for screws in kN/m², indirect fastening with 2 screws per intermediate support (see Comments no. 11)

Structural system	Color group	Characteristic wind uplift for screws in kN/m ²											
		-0.25	-0.50	-0.75	-1.00	-1.25	-1.50	-1.75	-2.00	-2.25	-2.50	-2.75	-3.00
1- span	I,II,III	10.14	7.17	4.94	3.71	2.96	2.47	2.12	1.85	1.65	1.48	1.35	1.24
2- span	I	10.14	5.46	3.56	2.66	2.14	1.81	1.58	1.41	1.27	1.16	1.07	1.00
	II	9.60	5.20	3.32	2.46	1.99	1.69	1.48	1.32	1.20	1.10	1.02	0.95
	III	6.62	4.76	2.94	2.16	1.76	1.50	1.33	1.20	1.09	1.00	0.94	0.88
3- span	I	10.14	6.60	4.33	3.20	2.54	2.10	1.72	1.44	1.25	1.11	1.00	0.92
	II	10.13	6.51	4.23	3.11	2.44	2.02	1.72	1.44	1.25	1.11	1.00	0.92
	III	9.46	6.35	4.08	2.96	2.30	1.88	1.60	1.39	1.24	1.11	1.00	0.92

Permissible spans for ROMA wall elements P 100 LL/ML 0.6/0.5 or M 100 ML/LL 0.6/0.5



The following spans have been verified in accordance with the general building authority approval Z-10.4-549 of April 30, 2013 as well as based on EN 14509, Annex E. The most adverse loading condition combination consisting of wind and temperature has been verified in accordance with EN 14509, Annex E, while accounting for load factors and combined coefficients specified in DIN EN 1990/NA:2010-12. The application notes (see page 2) must be observed.

Table W.12: Wind pressure

*without accounting for deflection

Structural system	Color group	Characteristic wind pressure in kN/m ²											
		0.25	0.50	0.75	1.00	1.25	1.50	1.75	2.00	2.25	2.50	2.75	3.00
1- span	I,II,III*	40	42	51	59	66	73	78	84	89	94	98	99
	I,II,III	12.07	8.53	6.97	6.03	5.40	4.93	4.56	4.27	4.02	3.82	3.64	3.36
2- span	I,II,III	40	40	50	58	66	73	78	84	89	94	98	99
		11.13	8.05	6.71	5.92	5.39	4.93	4.56	4.27	4.02	3.82	3.64	3.36
3- span	I,II,III	40	42	51	59	66	73	78	84	89	94	98	99
		12.07	8.53	6.97	6.03	5.40	4.93	4.56	4.27	4.02	3.82	3.64	3.36

Table W.5: Wind uplift pressure (see Comments no. 8)

Structural system	Color group	Characteristic wind uplift pressure in kN/m ²											
		-0.25	-0.50	-0.75	-1.00	-1.25	-1.50	-1.75	-2.00	-2.25	-2.50	-2.75	-3.00
1- span	I,II,III	11.48	8.12	6.63	5.74	5.13	4.69	4.34	4.06	3.83	3.63	3.46	3.31
2- span	I,II	11.48	8.12	6.63	5.74	5.13	4.69	4.34	4.06	3.83	3.63	3.46	3.31
	III	8.54	6.59	5.72	5.19	4.83	4.56	4.34	4.06	3.83	3.63	3.46	3.31
3- span	I,II,III	11.48	8.12	6.63	5.74	5.13	4.69	4.34	4.06	3.83	3.63	3.46	3.31

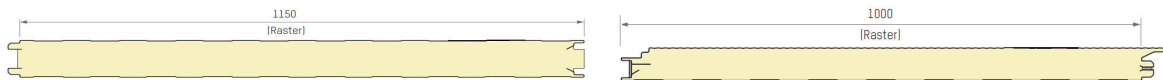
Table W.14: Characteristic wind uplift for screws in kN/m², direct fastening with 3 screws per support (see Comments no. 9)

Structural system	Color group	Characteristic wind uplift for screws in kN/m ²											
		-0.25	-0.50	-0.75	-1.00	-1.25	-1.50	-1.75	-2.00	-2.25	-2.50	-2.75	-3.00
1- span	I,II,III	11.48	8.12	6.63	5.74	5.13	4.61	3.95	3.46	3.07	2.77	2.52	2.31
2- span	I	10.10	4.73	3.08	2.33	1.91	1.63	1.43	1.28	1.16	1.06	0.99	0.92
	II	9.71	4.34	2.78	2.12	1.74	1.50	1.32	1.19	1.09	1.00	0.94	0.87
	III	8.54	3.67	1.99	1.64	1.44	1.30	1.18	1.07	1.00	0.92	0.86	0.81
3- span	I	11.48	5.91	3.84	2.83	2.24	1.86	1.59	1.40	1.25	1.13	1.04	0.96
	II	11.48	5.76	3.70	2.70	2.12	1.75	1.50	1.32	1.18	1.07	0.99	0.92
	III	11.48	5.53	3.47	2.48	1.93	1.59	1.37	1.20	1.08	1.00	0.92	0.85

Table W.15: Characteristic wind uplift for screws in kN/m², indirect fastening with 2 screws per intermediate support (see Comments no. 11)

Structural system	Color group	Characteristic wind uplift for screws in kN/m ²											
		-0.25	-0.50	-0.75	-1.00	-1.25	-1.50	-1.75	-2.00	-2.25	-2.50	-2.75	-3.00
1- span	I,II,III	11.24	7.41	4.94	3.71	2.96	2.47	2.12	1.85	1.65	1.48	1.35	1.24
2- span	I	11.24	5.33	3.47	2.61	2.12	1.80	1.58	1.41	1.28	1.17	1.08	1.00
	II	10.77	5.00	3.19	2.39	1.95	1.67	1.46	1.32	1.20	1.10	1.02	0.96
	III	7.44	4.42	2.74	2.02	1.70	1.48	1.31	1.19	1.09	1.00	0.94	0.88
3- span	I	11.24	6.54	4.27	3.15	2.47	1.90	1.55	1.32	1.16	1.04	0.96	0.88
	II	11.24	6.41	4.15	3.03	2.38	1.91	1.55	1.32	1.16	1.04	0.96	0.88
	III	10.60	6.22	3.95	2.84	2.21	1.82	1.55	1.32	1.16	1.04	0.96	0.88

Permissible spans for ROMA wall elements P 120 LL/ML 0.6/0.5 or M 120 ML/LL 0.6/0.5



The following spans have been verified in accordance with the general building authority approval Z-10.4-549 of April 30, 2013 as well as based on EN 14509, Annex E. The most adverse loading condition combination consisting of wind and temperature has been verified in accordance with EN 14509, Annex E, while accounting for load factors and combined coefficients specified in DIN EN 1990/NA:2010-12. The application notes (see page 2) must be observed.

Table W.16: Wind pressure

*without accounting for deflection

Structural system	Color group	Characteristic wind pressure in kN/m ²											
		0.25	0.50	0.75	1.00	1.25	1.50	1.75	2.00	2.25	2.50	2.75	3.00
1- span	I,II,III*	40	45	56	64	72	78	85	90	96	101	106	107
	I,II,III (f)	13.05	9.23	7.53	6.52	5.84	5.33	4.93	4.61	4.35	4.13	3.94	3.64
2- span	I,II,III	40	43	54	63	72	78	85	90	96	101	106	107
		12.02	8.71	7.27	6.42	5.84	5.33	4.93	4.61	4.35	4.13	3.94	3.64
3- span	I,II,III	60	85	107	126	143	156	169	180	191	202	212	213
		40	45	56	64	72	78	85	90	96	101	106	107
		13.05	9.23	7.53	6.52	5.84	5.33	4.93	4.61	4.35	4.13	3.94	3.64
		64	90	111	128	143	156	169	180	191	202	212	213

Table W.17: Wind uplift pressure (see Comments no. 8)

Structural system	Color group	Characteristic wind uplift pressure in kN/m ²											
		-0.25	-0.50	-0.75	-1.00	-1.25	-1.50	-1.75	-2.00	-2.25	-2.50	-2.75	-3.00
1- span	I,II,III	12.16	8.60	7.02	6.08	5.44	4.96	4.59	4.30	4.05	3.84	3.66	3.51
2- span	I,II	12.16	8.60	7.02	6.08	5.44	4.96	4.59	4.30	4.05	3.84	3.66	3.51
	III	8.99	6.97	6.07	5.52	5.14	4.86	4.59	4.30	4.05	3.84	3.66	3.51
3- span	I,II,III	12.16	8.60	7.02	6.08	5.44	4.96	4.59	4.30	4.05	3.84	3.66	3.51

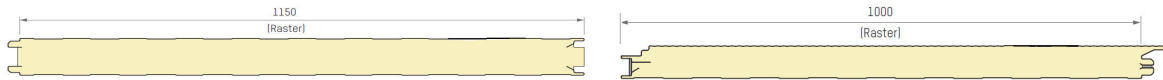
Table W.18: Characteristic wind uplift for screws in kN/m², direct fastening with 3 screws per support (see Comments no. 9)

Structural system	Color group	Characteristic wind uplift for screws in kN/m ²											
		-0.25	-0.50	-0.75	-1.00	-1.25	-1.50	-1.75	-2.00	-2.25	-2.50	-2.75	-3.00
1- span	I,II,III	12.16	8.60	7.02	6.08	5.44	4.61	3.95	3.46	3.08	2.77	2.52	2.31
2- span	I	9.96	4.62	3.03	2.31	1.90	1.63	1.44	1.28	1.17	1.07	1.00	0.93
	II	9.49	4.19	2.72	2.09	1.73	1.50	1.33	1.20	1.09	1.01	0.94	0.88
	III	8.69	2.54	1.85	1.58	1.42	1.29	1.18	1.08	1.00	0.93	0.86	0.81
3- span	I	12.12	5.85	3.80	2.79	2.21	1.84	1.58	1.39	1.24	1.13	1.03	0.96
	II	11.95	5.69	3.63	2.64	2.08	1.73	1.48	1.31	1.17	1.07	0.99	0.92
	III	11.70	5.41	3.36	2.40	1.88	1.56	1.34	1.19	1.08	0.99	0.92	0.85

Table W.19: Characteristic wind uplift for screws in kN/m², indirect fastening with 2 screws per intermediate support (see Comments no. 11)

Structural system	Color group	Characteristic wind uplift for screws in kN/m ²											
		-0.25	-0.50	-0.75	-1.00	-1.25	-1.50	-1.75	-2.00	-2.25	-2.50	-2.75	-3.00
1- span	I,II,III	12.17	7.08	4.72	3.54	2.83	2.36	2.02	1.77	1.57	1.42	1.29	1.18
2- span	I	10.96	5.14	3.36	2.54	2.08	1.78	1.54	1.36	1.22	1.11	1.02	0.95
	II	10.54	4.73	3.04	2.31	1.90	1.64	1.45	1.30	1.18	1.09	1.01	0.95
	III	8.35	4.02	2.25	1.83	1.60	1.44	1.30	1.18	1.08	1.00	0.94	0.88
3- span	I	12.17	6.40	4.16	2.82	1.82	1.41	1.24	1.12	1.02	0.95	0.88	0.81
	II	12.17	6.25	4.02	2.81	1.82	1.41	1.24	1.12	1.02	0.95	0.88	0.81
	III	11.81	6.00	3.77	2.70	1.82	1.41	1.24	1.12	1.02	0.95	0.88	0.81

Permissible spans for ROMA wall elements P 140 LL/ML 0.6/0.5 or M 140 ML/LL 0.6/0.5



The following spans have been verified in accordance with the general building authority approval Z-10.4-549 of April 30, 2013 as well as based on EN 14509, Annex E. The most adverse loading condition combination consisting of wind and temperature has been verified in accordance with EN 14509, Annex E, while accounting for load factors and combined coefficients specified in DIN EN 1990/NA:2010-12. The application notes (see page 2) must be observed.

Table W.20: Wind pressure

*without accounting for deflection

Structural system	Color group	Characteristic wind pressure in kN/m ²											
		0.25	0.50	0.75	1.00	1.25	1.50	1.75	2.00	2.25	2.50	2.75	3.00
1- span	I,II,III*	40	49	59	69	77	84	91	97	103	108	111	111
	I,II,III	13.96	9.87	8.06	6.98	6.24	5.70	5.28	4.94	4.65	4.41	4.12	3.78
2- span	I,II,III	40	45	57	67	76	84	91	97	103	108	111	111
		12.66	9.23	7.72	6.82	6.22	5.70	5.28	4.94	4.65	4.41	4.12	3.78
3- span	I,II,III	40	49	59	69	77	84	91	97	103	108	111	111
		13.96	9.87	8.06	6.98	6.24	5.70	5.28	4.94	4.65	4.41	4.12	3.78

Table W.21: Wind uplift pressure (see Comments no. 8)

Structural system	Color group	Characteristic wind uplift pressure in kN/m ²											
		-0.25	-0.50	-0.75	-1.00	-1.25	-1.50	-1.75	-2.00	-2.25	-2.50	-2.75	-3.00
1- span	I,II,III	13.01	9.20	7.51	6.50	5.82	5.31	4.92	4.60	4.34	4.11	3.92	3.76
2- span	I,II	12.98	9.20	7.51	6.50	5.82	5.31	4.92	4.60	4.34	4.11	3.92	3.76
	III	9.26	7.27	6.37	5.82	5.43	5.14	4.91	4.60	4.34	4.11	3.92	3.76
3- span	I,II,III	12.99	9.20	7.51	6.50	5.82	5.31	4.92	4.60	4.34	4.11	3.92	3.76

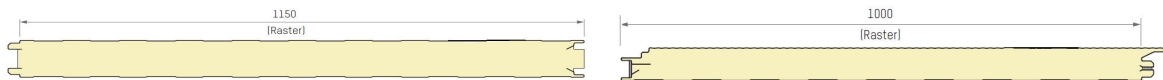
Table W.22: Characteristic wind uplift for screws in kN/m², direct fastening with 3 screws per support (see Comments no. 9)

Structural system	Color group	Characteristic wind uplift for screws in kN/m ²											
		-0.25	-0.50	-0.75	-1.00	-1.25	-1.50	-1.75	-2.00	-2.25	-2.50	-2.75	-3.00
1- span	I,II,III	13.01	9.20	7.51	6.50	5.54	4.61	3.95	3.46	3.08	2.77	2.52	2.31
2- span	I	9.77	4.51	2.98	2.29	1.90	1.63	1.44	1.29	1.17	1.08	1.00	0.93
	II	9.21	4.01	2.65	2.06	1.72	1.50	1.33	1.20	1.10	1.01	0.95	0.88
	III	8.20	2.16	1.76	1.54	1.40	1.28	1.19	1.08	1.00	0.93	0.87	0.82
3- span	I	12.04	5.78	3.74	2.75	2.18	1.82	1.57	1.38	1.24	1.12	1.03	0.96
	II	11.84	5.58	3.55	2.58	2.04	1.70	1.47	1.30	1.17	1.06	0.99	0.92
	III	11.54	5.26	3.23	2.31	1.82	1.52	1.32	1.18	1.07	0.99	0.91	0.85

Table W.23: Characteristic wind uplift for screws in kN/m², indirect fastening with 2 screws per intermediate support (see Comments no. 11)

Structural system	Color group	Characteristic wind uplift for screws in kN/m ²											
		-0.25	-0.50	-0.75	-1.00	-1.25	-1.50	-1.75	-2.00	-2.25	-2.50	-2.75	-3.00
1- span	I,II,III	13.02	6.74	4.49	3.37	2.69	2.24	1.92	1.68	1.50	1.35	1.22	1.12
2- span	I	10.60	4.92	3.24	2.42	1.92	1.62	1.41	1.26	1.14	1.04	0.96	0.89
	II	10.06	4.43	2.90	2.24	1.86	1.61	1.41	1.26	1.14	1.04	0.96	0.89
	III	9.13	2.58	1.98	1.70	1.53	1.40	1.28	1.16	1.07	1.00	0.93	0.88
3- span	I	12.95	6.25	3.47	1.44	1.25	1.12	1.03	0.97	0.91	0.86	0.81	0.76
	II	12.76	6.05	3.47	1.44	1.25	1.12	1.03	0.97	0.91	0.86	0.81	0.76
	III	12.47	5.74	3.44	1.44	1.25	1.12	1.03	0.97	0.91	0.86	0.81	0.76

Permissible spans for ROMA wall elements P 170 LL/ML 0.6/0.5 or M 170 ML/LL 0.6/0.5



The following spans have been verified in accordance with the general building authority approval Z-10.4-549 of April 30, 2013 as well as based on EN 14509, Annex E. The most adverse loading condition combination consisting of wind and temperature has been verified in accordance with EN 14509, Annex E, while accounting for load factors and combined coefficients specified in DIN EN 1990/NA:2010-12. The application notes (see page 2) must be observed.

Table W.24: Wind pressure

*without accounting for deflection

Structural system	Color group	Characteristic wind pressure in kN/m ²											
		0.25	0.50	0.75	1.00	1.25	1.50	1.75	2.00	2.25	2.50	2.75	3.00
1- span	I,II,III*	40	53	65	74	83	91	98	105	112	117	118	118
	I,II,III	15.17	10.73	8.76	7.58	6.78	6.19	5.73	5.36	5.06	4.80	4.39	4.02
2- span	I,II,III	40	49	62	73	83	91	98	105	112	117	118	118
		66	98	123	145	166	182	196	210	223	234	236	236
3- span	I,II,III	40	53	65	74	83	91	98	105	112	117	118	118
		74	105	129	148	166	182	196	210	223	234	236	236

Table W.25: Wind uplift pressure (see Comments no. 8)

Structural system	Color group	Characteristic wind uplift pressure in kN/m ²											
		-0.25	-0.50	-0.75	-1.00	-1.25	-1.50	-1.75	-2.00	-2.25	-2.50	-2.75	-3.00
1- span	I,II,III	14.10	9.97	8.14	7.05	6.31	5.76	5.33	4.98	4.70	4.46	4.25	4.02
2- span	I,II	13.88	9.97	8.14	7.05	6.31	5.76	5.33	4.98	4.70	4.46	4.25	4.02
	III	9.61	7.70	6.81	6.26	5.86	5.57	5.33	4.98	4.70	4.46	4.25	4.02
3- span	I,II,III	13.52	9.83	8.14	7.05	6.31	5.76	5.33	4.98	4.70	4.46	4.25	4.02

Table W.26: Characteristic wind uplift for screws in kN/m², direct fastening with 3 screws per support (see Comments no. 9)

Structural system	Color group	Characteristic wind uplift for screws in kN/m ²											
		-0.25	-0.50	-0.75	-1.00	-1.25	-1.50	-1.75	-2.00	-2.25	-2.50	-2.75	-3.00
1- span	I,II,III	14.10	9.97	8.14	6.92	5.54	4.61	3.95	3.46	3.08	2.77	2.52	2.31
2- span	I	9.50	4.39	2.96	2.31	1.92	1.66	1.46	1.31	1.19	1.10	1.01	0.95
	II	8.79	3.85	2.63	2.08	1.75	1.52	1.36	1.22	1.12	1.03	0.97	0.90
	III	3.26	2.12	1.79	1.59	1.45	1.34	1.22	1.11	1.02	0.96	0.89	0.84
3- span	I	11.92	5.69	3.67	2.71	2.16	1.81	1.56	1.38	1.24	1.13	1.04	0.97
	II	11.68	5.44	3.44	2.52	2.01	1.69	1.47	1.30	1.18	1.07	1.00	0.93
	III	11.30	5.03	3.08	2.23	1.79	1.52	1.33	1.19	1.08	1.00	0.93	0.86

Table W.27: Characteristic wind uplift for screws in kN/m², indirect fastening with 2 screws per intermediate support (see Comments no. 11)

Structural system	Color group	Characteristic wind uplift for screws in kN/m ²											
		-0.25	-0.50	-0.75	-1.00	-1.25	-1.50	-1.75	-2.00	-2.25	-2.50	-2.75	-3.00
1- span	I,II,III	12.43	6.21	4.14	3.11	2.48	2.07	1.78	1.55	1.38	1.24	1.13	1.04
2- span	I	10.21	4.74	2.54	2.04	1.71	1.47	1.29	1.16	1.05	0.97	0.89	0.83
	II	9.55	4.20	2.54	2.04	1.71	1.47	1.29	1.16	1.05	0.97	0.89	0.83
	III	8.36	2.40	1.96	1.72	1.56	1.43	1.29	1.16	1.05	0.97	0.89	0.83
3- span	I	12.66	1.64	1.35	1.19	1.08	1.00	0.94	0.89	0.84	0.80	0.75	0.70
	II	12.44	1.64	1.35	1.19	1.08	1.00	0.94	0.89	0.84	0.80	0.75	0.70
	III	12.08	1.64	1.35	1.19	1.08	1.00	0.94	0.89	0.84	0.80	0.75	0.70

Permissible spans for ROMA wall elements P 200 LL/ML 0.6/0.5



The following spans have been verified in accordance with the general building authority approval Z-10.4-549 of April 30, 2013 as well as based on EN 14509, Annex E. The most adverse loading condition combination consisting of wind and temperature has been verified in accordance with EN 14509, Annex E, while accounting for load factors and combined coefficients specified in DIN EN 1990/NA:2010-12. The application notes (see page 2) must be observed.

Table W.28: Wind pressure

*without accounting for deflection

Structural system	Color group	Characteristic wind pressure in kN/m ²											
		0.25	0.50	0.75	1.00	1.25	1.50	1.75	2.00	2.25	2.50	2.75	3.00
1- span	I,II,III*	40	56	68	79	88	97	104	111	118	119	119	119
	I,II,III	16.09	11.38	9.29	8.04	7.19	6.57	6.08	5.69	5.36	4.88	4.43	4.06
2- span	I,II,III	40	52	66	78	88	97	104	111	118	119	119	119
		14.01	10.51	8.94	7.94	7.19	6.57	6.08	5.69	5.36	4.88	4.43	4.06
3- span	I,II,III	40	56	68	79	88	97	104	111	118	119	119	119
		16.09	11.38	9.29	8.04	7.19	6.57	6.08	5.69	5.36	4.88	4.43	4.06

Table W.29: Wind uplift pressure (see Comments no. 8)

Structural system	Color group	Characteristic wind uplift pressure in kN/m ²											
		-0.25	-0.50	-0.75	-1.00	-1.25	-1.50	-1.75	-2.00	-2.25	-2.50	-2.75	-3.00
1- span	I,II,III	14.98	10.59	8.65	7.49	6.70	6.11	5.66	5.29	4.99	4.74	4.43	4.06
2- span	I,II	14.44	10.59	8.65	7.49	6.70	6.11	5.66	5.29	4.99	4.74	4.43	4.06
	III	9.86	8.06	7.20	6.65	6.26	5.95	5.66	5.29	4.99	4.74	4.43	4.06
3- span	I,II,III	13.79	10.11	8.52	7.48	6.70	6.11	5.66	5.29	4.99	4.74	4.43	4.06

Table W.30: Characteristic wind uplift for screws in kN/m², direct fastening with 3 screws per support (see Comments no. 9)

Structural system	Color group	Characteristic wind uplift for screws in kN/m ²											
		-0.25	-0.50	-0.75	-1.00	-1.25	-1.50	-1.75	-2.00	-2.25	-2.50	-2.75	-3.00
1- span	I,II,III	14.98	10.59	8.65	6.92	5.54	4.61	3.95	3.46	3.08	2.77	2.52	2.31
2- span	I	9.26	4.34	2.98	2.34	1.96	1.69	1.49	1.34	1.22	1.12	1.03	0.97
	II	8.40	3.76	2.65	2.12	1.79	1.56	1.39	1.26	1.14	1.06	0.99	0.92
	III	2.92	2.19	1.88	1.68	1.52	1.40	1.26	1.14	1.05	0.98	0.92	0.86
3- span	I	11.81	5.60	3.62	2.68	2.16	1.82	1.58	1.40	1.26	1.14	1.05	0.98
	II	11.52	5.31	3.37	2.49	2.00	1.70	1.48	1.32	1.19	1.09	1.00	0.94
	III	11.06	4.83	2.97	2.20	1.79	1.53	1.34	1.20	1.10	1.01	0.94	0.88

Permissible spans for ROMA wall elements P 220 LL/ML 0.6/0.5



The following spans have been verified in accordance with the general building authority approval Z-10.4-549 of April 30, 2013 as well as based on EN 14509, Annex E. The most adverse loading condition combination consisting of wind and temperature has been verified in accordance with EN 14509, Annex E, while accounting for load factors and combined coefficients specified in DIN EN 1990/NA:2010-12. The application notes (see page 2) must be observed.

Table W.31: Wind pressure

*without accounting for deflection

Structural system	Color group	Characteristic wind pressure in kN/m ²											
		0.25	0.50	0.75	1.00	1.25	1.50	1.75	2.00	2.25	2.50	2.75	3.00
1- span	I,II,III*	41	58	71	81	91	100	108	115	122	128	131	131
	I,II,III	16.61	11.74	9.59	8.30	7.43	6.78	6.28	5.87	5.54	5.25	4.88	4.47
2- span	I,II,III	41	58	71	81	91	100	108	115	122	128	131	131
		14.18	10.74	9.22	8.22	7.43	6.78	6.28	5.87	5.54	5.25	4.88	4.47
3- span	I,II,III	40	53	68	81	91	100	108	115	122	128	131	131
		70	105	135	161	182	199	215	229	244	256	262	262
3- span	I,II,III	41	58	71	81	91	100	108	115	122	128	131	131
		16.61	11.74	9.59	8.30	7.43	6.78	6.28	5.87	5.54	5.25	4.88	4.47
3- span	I,II,III	81	115	141	162	182	199	215	229	244	256	262	262
		16.61	11.74	9.59	8.30	7.43	6.78	6.28	5.87	5.54	5.25	4.88	4.47

Table W.32: Wind uplift pressure (see Comments no. 8)

Structural system	Color group	Characteristic wind uplift pressure in kN/m ²											
		-0.25	-0.50	-0.75	-1.00	-1.25	-1.50	-1.75	-2.00	-2.25	-2.50	-2.75	-3.00
1- span	I,II,III	15.48	10.94	8.94	7.74	6.92	6.32	5.85	5.47	5.16	4.89	4.67	4.47
2- span	I,II	14.69	10.94	8.94	7.74	6.92	6.32	5.85	5.47	5.16	4.89	4.67	4.47
	III	9.97	8.27	7.42	6.88	6.49	6.19	5.85	5.47	5.16	4.89	4.67	4.47
3- span	I,II,III	13.80	10.20	8.64	7.71	6.92	6.32	5.85	5.47	5.16	4.89	4.67	4.47

Table W.33: Characteristic wind uplift for screws in kN/m², direct fastening with 3 screws per support (see Comments no. 9)

Structural system	Color group	Characteristic wind uplift for screws in kN/m ²											
		-0.25	-0.50	-0.75	-1.00	-1.25	-1.50	-1.75	-2.00	-2.25	-2.50	-2.75	-3.00
1- span	I,II,III	15.48	10.94	8.94	6.92	5.54	4.61	3.95	3.46	3.08	2.77	2.52	2.31
2- span	I	9.12	4.33	3.01	2.37	1.98	1.72	1.52	1.36	1.23	1.13	1.04	0.98
	II	8.18	3.72	2.69	2.16	1.83	1.59	1.42	1.28	1.16	1.07	1.00	0.93
	III	2.98	2.29	1.96	1.75	1.59	1.43	1.28	1.17	1.07	1.00	0.93	0.87
3- span	I	11.74	5.55	3.59	2.68	2.16	1.82	1.59	1.41	1.27	1.16	1.06	0.99
	II	11.42	5.24	3.34	2.49	2.01	1.71	1.49	1.33	1.20	1.10	1.01	0.95
	III	10.91	4.72	2.94	2.20	1.80	1.54	1.36	1.22	1.11	1.02	0.96	0.89