

Table of spans

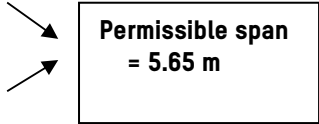
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Roof elements according to the general building authority approval Z-10.4-549	
ROMA D 72 TL/ML $t_N=0.6/0.5$ mm	5
ROMA D 82 TL/ML $t_N=0.6/0.5$ mm	7
ROMA D 102 TL/ML $t_N=0.6/0.5$ mm	9
ROMA D 122 TL/ML $t_N=0.6/0.5$ mm	11
ROMA D 142 TL/ML $t_N=0.6/0.5$ mm	13
ROMA D 162 TL/ML $t_N=0.6/0.5$ mm	15
ROMA D 182 TL/ML $t_N=0.6/0.5$ mm	17

COMMENTS ON THE TABLES FOR ROOF 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 snow load 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, including long-term behavior, and $l/200$ in the case of short-term load action.
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.
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 "Snow load" 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

CALCULATING SNOW LOAD



Source: www.schneelast.info

Table 1: Characteristic snow load (kN/m²)

SNOW LOAD ZONE	Snow load on the ground (kN/m ²)	
1	$0.19 + 0.91 * ((A+140)/760)^2$	≥ 0.65 (≤ 400 m above sea level)
2	$0.25 + 1.91 * ((A+140)/760)^2$	0.85 (≤ 285 m above sea level)
3	$0.31 + 2.91 * ((A+140)/760)^2$	≥ 1.10 (≤ 255 m above sea level)

A= height of the building site above sea level

Note 1: For zones 1a and 2a, the values for zones 1 and 2 are multiplied by 1.25.

Note 2: Accounting for the roof type coefficients: $s_1 = \mu_1 * s_k$; $\mu_1 = 0.8$

Example: 86647 Buttenwiesen snow load zone 1a: A= 425 m above sea level:

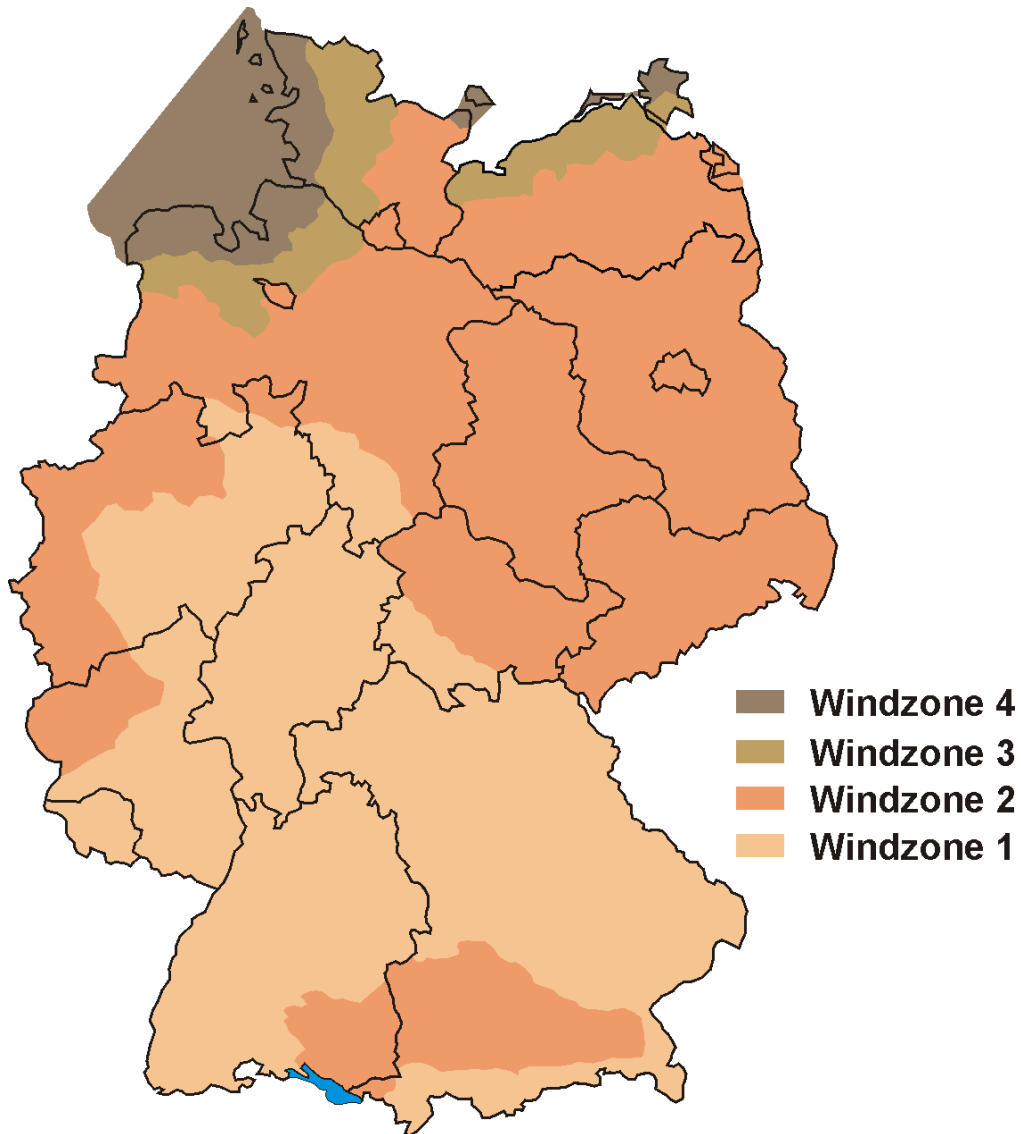
Table 1: $0.19 + 0.91 * ((425+140)/760)^2 = 0.69 \text{ kN/m}^2 \geq 0.65 \text{ kN/m}^2$

Note 1: $1.25 * 0.69 \text{ kN/m}^2 = 0.866 \text{ kN/m}^2$

Note 2: Accounting for the roof type coefficient: $0.8 * 0.66 \text{ kN/m}^2 = 0.693 \text{ kN/m}^2$

Tabulated value: = 0.693 kN/m²

CALCULATION OF WIND LOAD



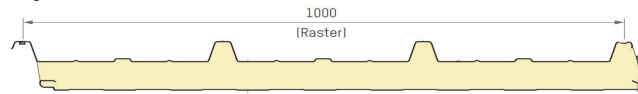
Source: <http://de.wikipedia.org/wiki/windlast>

Table 2: Characteristic wind uplift pressure load (kN/m²)

Building height	WIND LOAD ZONE				
		1	2	3	4
5 m	PERIPHERAL AREA	-1.01/-1.25	-1.32/-1.61	-1.59/-1.59	-1.89/-2.31
	NORMAL AREA	-0.29/-0.59	-0.41/-0.70	-0.49/-0.85	-0.59/-1.01
10 m	PERIPHERAL AREA	-1.22/-1.50	-1.49/-1.82	-1.80/-2.20	-2.14/-2.62
	NORMAL AREA	-0.38/-0.65	-0.46/-0.80	-0.56/-0.96	-0.67/1.14
15 m	PERIPHERAL AREA	-1.42/-1.74	-1.73/-2.12	-2.09/-2.55	-2.49/-3.04
	NORMAL AREA	-0.44/-0.76	-0.54/-0.92	-0.65/-1.11	-0.66/-0.94

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

Permissible spans for ROMA roof elements D 072 TL 0.6/0.5 (continued)



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 dead weight, snow, wind, temperature and long-term effects 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 D.1: Wind uplift pressure

*without accounting for deflection

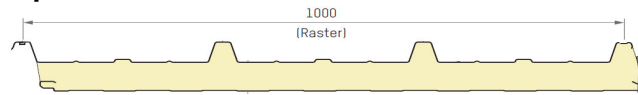
Structural system	Color group	Characteristic wind uplift pressure in kN/m ²																			
		-0.25	-0.50	-0.75	-1.00	-1.25	-1.50	-1.75	-2.00	-2.25	-2.50	-2.75	-3.00	-3.25	-3.50	-3.75	-4.00	-4.25	-4.50	-4.75	-5.00
1-span	I.II.III*	7.86	4.89	3.78	3.15	2.73	2.43	2.21	2.03	1.88	1.76	1.66	1.57	1.49	1.43	1.37	1.32	1.27	1.22	1.19	1.15
	I.II.III	4.90	4.89	3.78	3.15	2.73	2.43	2.21	2.03	1.88	1.76	1.66	1.57	1.49	1.43	1.37	1.32	1.27	1.22	1.19	1.15
2-span	I	7.83	4.89	3.78	3.15	2.73	2.43	2.21	2.03	1.88	1.76	1.66	1.57	1.49	1.43	1.37	1.32	1.27	1.22	1.19	1.15
	II	7.83	4.89	3.78	3.15	2.73	2.43	2.21	2.03	1.88	1.76	1.66	1.57	1.49	1.43	1.37	1.32	1.27	1.22	1.19	1.15
	III	7.83	4.89	3.78	3.15	2.73	2.43	2.21	2.03	1.88	1.76	1.66	1.57	1.49	1.43	1.37	1.32	1.27	1.22	1.19	1.15
3-span	I	7.00	4.89	3.78	3.15	2.73	2.43	2.21	2.03	1.88	1.76	1.66	1.57	1.49	1.43	1.37	1.32	1.27	1.22	1.19	1.15
	II	7.00	4.89	3.78	3.15	2.73	2.43	2.21	2.03	1.88	1.76	1.66	1.57	1.49	1.43	1.37	1.32	1.27	1.22	1.19	1.15
	III	7.00	4.89	3.78	3.15	2.73	2.43	2.21	2.03	1.88	1.76	1.66	1.57	1.49	1.43	1.37	1.32	1.27	1.22	1.19	1.15

Table D.2: Snow load

*without accounting for deflection

Structural system	Color group	Characteristic snow load 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	3.25	3.50	3.75	4.00	4.25	4.50	4.75	5.00
1-span	I.II.III*	40	40	40	40	40	40	40	42	44	46	47	49	51	52	54	55	56	58	59	60
		5.34	3.92	3.18	2.71	2.38	2.15	1.96	1.82	1.70	1.60	1.51	1.44	1.38	1.32	1.27	1.22	1.18	1.15	1.12	1.08
	I.II.III	40	40	40	40	40	40	40	42	44	46	47	49	51	52	54	55	56	58	59	60
2-span	I.II.III	4.49	3.92	3.18	2.71	2.38	2.15	1.96	1.82	1.70	1.60	1.51	1.44	1.38	1.32	1.27	1.22	1.18	1.15	1.12	1.08
		40	40	40	40	40	40	40	42	44	46	47	49	51	52	54	55	56	58	59	60
		5.34	3.92	3.18	2.71	2.38	2.15	1.96	1.82	1.70	1.60	1.51	1.44	1.38	1.32	1.27	1.22	1.18	1.15	1.12	1.08
3-span	I.II.III	60	60	60	65	70	75	79	84	87	91	94	97	101	104	107	109	112	115	118	120
		40	40	40	40	40	40	40	42	44	46	47	49	51	52	54	55	56	58	59	60
		5.34	3.92	3.18	2.71	2.38	2.15	1.96	1.82	1.70	1.60	1.51	1.44	1.38	1.32	1.27	1.22	1.18	1.15	1.12	1.08

Permissible spans for ROMA roof elements D 072 TL 0.6/0.5 (continued)

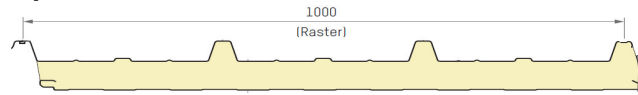


The following spans have been verified in accordance with the general building authority approval Z-10.4-549 of April 30, 2013 as well as based on EN 14509, Annex E. The most adverse loading condition combination consisting of dead weight, snow, wind, temperature and long-term effects has been verified 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 D.3: Wind uplift for screws (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	-3.25	-3.50	-3.75	-4.00	-4.25	-4.50	-4.75	-5.00
1-span	I,II,III	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
		4.90	4.89	3.78	3.15	2.73	2.43	2.21	2.03	1.88	1.76	1.66	1.57	1.49	1.43	1.37	1.32	1.27	1.22	1.19	1.15
2-span	I,II	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
		7.83	4.89	3.64	2.55	1.95	1.58	1.34	1.16	1.03	0.94	0.85	0.79	0.73	0.68	0.64	0.60	0.57	0.54	0.51	0.49
		6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
	7.83	4.89	3.78	3.15	2.73	2.43	2.21	2.03	1.88	1.76	1.66	1.57	1.49	1.42	1.32	1.23	1.16	1.09	1.03	0.99	
	III	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
		7.83	4.89	3.40	2.34	1.76	1.42	1.20	1.05	0.95	0.86	0.79	0.73	0.68	0.63	0.59	0.56	0.53	0.51	0.48	0.46
6		6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	
7.83	4.89	3.78	3.15	2.73	2.43	2.21	2.03	1.88	1.76	1.66	1.57	1.46	1.35	1.26	1.18	1.10	1.04	1.00	0.95		
3-span	I,II	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
		7.00	4.89	3.78	3.15	2.49	2.02	1.70	1.46	1.28	1.14	1.03	0.96	0.88	0.81	0.76	0.71	0.67	0.63	0.60	0.57
		6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
	7.00	4.89	3.78	3.15	2.73	2.43	2.21	2.03	1.88	1.76	1.66	1.57	1.49	1.43	1.37	1.32	1.27	1.22	1.19	1.15	
	III	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
		7.00	4.89	3.78	3.13	2.40	1.94	1.62	1.39	1.22	1.08	0.99	0.90	0.83	0.77	0.72	0.67	0.64	0.60	0.57	0.54
6		6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	
7.00	4.89	3.78	3.15	2.73	2.43	2.21	2.03	1.88	1.76	1.66	1.57	1.49	1.43	1.37	1.32	1.27	1.22	1.19	1.13		

Permissible spans for ROMA roof elements D 082 TL 0.6/0.5 (continued)



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 dead weight, snow, wind, temperature and long-term effects 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 D.4: Wind uplift pressure

* without accounting for deflection

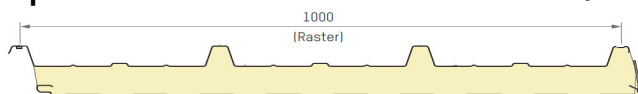
Structural system	Color group	Characteristic wind uplift pressure in kN/m ²																			
		-0.25	-0.50	-0.75	-1.00	-1.25	-1.50	-1.75	-2.00	-2.25	-2.50	-2.75	-3.00	-3.25	-3.50	-3.75	-4.00	-4.25	-4.50	-4.75	-5.00
1-span	I.II.III*	9.43	5.87	4.54	3.79	3.29	2.92	2.64	2.41	2.22	2.06	1.93	1.82	1.72	1.63	1.56	1.49	1.43	1.37	1.32	1.28
	I.II.III	5.52	5.52	4.54	3.79	3.29	2.92	2.64	2.41	2.22	2.06	1.93	1.82	1.72	1.63	1.56	1.49	1.43	1.37	1.32	1.28
2-span	I	8.82	5.87	4.54	3.79	3.29	2.92	2.64	2.41	2.22	2.06	1.93	1.82	1.72	1.63	1.56	1.49	1.43	1.37	1.32	1.28
	II	8.82	5.87	4.54	3.79	3.29	2.92	2.64	2.41	2.22	2.06	1.93	1.82	1.72	1.63	1.56	1.49	1.43	1.37	1.32	1.28
	III	8.82	5.87	4.54	3.73	3.20	2.83	2.56	2.35	2.19	2.05	1.93	1.82	1.72	1.63	1.56	1.49	1.43	1.37	1.32	1.28
3-span	I	7.89	5.87	4.54	3.79	3.29	2.92	2.64	2.41	2.22	2.06	1.93	1.82	1.72	1.63	1.56	1.49	1.43	1.37	1.32	1.28
	II	7.89	5.87	4.54	3.79	3.29	2.92	2.64	2.41	2.22	2.06	1.93	1.82	1.72	1.63	1.56	1.49	1.43	1.37	1.32	1.28
	III	7.89	5.87	4.54	3.79	3.29	2.92	2.64	2.41	2.22	2.06	1.93	1.82	1.72	1.63	1.56	1.49	1.43	1.37	1.32	1.28

Table D.5: Snow load

*without accounting for deflection

Structural system	Color group	Characteristic snow load 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	3.25	3.50	3.75	4.00	4.25	4.50	4.75	5.00
1-span	I.II.III*	40	40	40	40	40	40	41	43	44	46	47	48	50	51	52	53	54	55	56	58
	I.II.III	6.33	4.66	3.76	3.19	2.78	2.47	2.24	2.05	1.90	1.77	1.67	1.58	1.50	1.43	1.37	1.32	1.27	1.22	1.18	1.15
2-span	I.II.III	40	40	40	40	40	40	41	43	44	46	47	48	50	51	52	53	54	55	56	58
	I.II.III	5.86	4.32	3.54	3.04	2.70	2.46	2.24	2.05	1.90	1.77	1.67	1.58	1.50	1.43	1.37	1.32	1.27	1.22	1.18	1.15
3-span	I.II.III	40	40	40	40	40	40	41	43	44	46	47	48	50	51	52	53	54	55	56	58
	I.II.III	6.33	4.66	3.76	3.19	2.78	2.47	2.24	2.05	1.90	1.77	1.67	1.58	1.50	1.43	1.37	1.32	1.27	1.22	1.18	1.15

Permissible spans for ROMA roof elements D 082 TL 0.6/0.5 (continued)

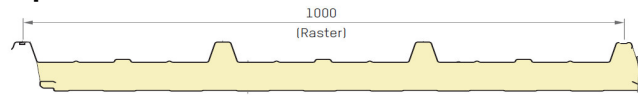


The following spans have been verified in accordance with the general building authority approval Z-10.4-549 of April 30, 2013 as well as based on EN 14509, Annex E. The most adverse loading condition combination consisting of dead weight, snow, wind, temperature and long-term effects has been verified 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 D.6: Wind uplift for screws (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	-3.25	-3.50	-3.75	-4.00	-4.25	-4.50	-4.75	-5.00
1-span	I,II,III	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
		5.52	5.52	4.54	3.79	3.29	2.92	2.64	2.41	2.22	2.06	1.93	1.82	1.72	1.63	1.56	1.49	1.43	1.37	1.32	1.28
2-span	I,II	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
		8.82	5.87	3.50	2.43	1.85	1.50	1.26	1.10	0.99	0.90	0.82	0.75	0.70	0.65	0.61	0.58	0.55	0.52	0.50	0.47
		6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
	III	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
		8.82	5.63	3.19	2.14	1.60	1.30	1.10	0.99	0.88	0.80	0.74	0.68	0.64	0.60	0.57	0.54	0.51	0.48	0.46	0.44
		6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
3-span	I,II	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
		7.89	5.87	4.44	3.16	2.44	1.98	1.65	1.42	1.24	1.11	1.00	0.92	0.85	0.79	0.74	0.69	0.65	0.61	0.58	0.55
		6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
	III	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
		7.89	5.87	4.33	3.06	2.33	1.87	1.55	1.33	1.16	1.03	0.94	0.86	0.79	0.74	0.69	0.65	0.61	0.58	0.55	0.52
		6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
		7.89	5.87	4.54	3.79	3.29	2.92	2.64	2.41	2.22	2.06	1.93	1.82	1.72	1.62	1.50	1.40	1.31	1.23	1.16	1.10

Permissible spans for ROMA roof elements D 102 TL 0.6/0.5 (continued)



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 dead weight, snow, wind, temperature and long-term effects 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 D.7: Wind uplift pressure

* without accounting for deflection

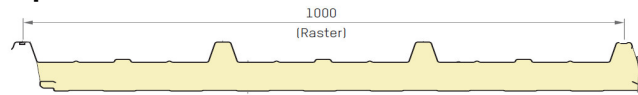
Structural system	Color group	Characteristic wind uplift pressure in kN/m ²																			
		-0.25	-0.50	-0.75	-1.00	-1.25	-1.50	-1.75	-2.00	-2.25	-2.50	-2.75	-3.00	-3.25	-3.50	-3.75	-4.00	-4.25	-4.50	-4.75	-5.00
1-span	I,II,III*	11.75	7.42	5.88	5.04	4.39	3.90	3.52	3.21	2.95	2.73	2.54	2.38	2.23	2.10	1.98	1.88	1.79	1.70	1.63	1.56
	I,II,III	6.75	6.75	5.88	5.04	4.39	3.90	3.52	3.21	2.95	2.73	2.54	2.38	2.23	2.10	1.98	1.88	1.79	1.70	1.63	1.56
2-span	I	10.39	7.42	5.88	4.73	4.00	3.50	3.14	2.85	2.63	2.45	2.29	2.16	2.05	1.95	1.87	1.79	1.72	1.66	1.61	1.56
	II	10.39	7.42	5.69	4.54	3.84	3.36	3.02	2.75	2.53	2.36	2.22	2.09	1.99	1.89	1.81	1.74	1.68	1.62	1.56	1.52
	III	10.39	7.42	5.34	4.26	3.60	3.16	2.84	2.59	2.39	2.23	2.10	1.99	1.89	1.81	1.73	1.66	1.61	1.55	1.50	1.46
3-span	I	9.54	7.42	5.88	5.04	4.39	3.90	3.52	3.21	2.95	2.73	2.54	2.38	2.23	2.10	1.98	1.88	1.79	1.70	1.63	1.56
	II	9.55	7.42	5.88	5.04	4.39	3.90	3.48	3.15	2.90	2.69	2.51	2.36	2.23	2.10	1.98	1.88	1.79	1.70	1.63	1.56
	III	9.55	7.42	5.88	5.04	4.30	3.75	3.34	3.03	2.78	2.58	2.42	2.28	2.16	2.06	1.96	1.88	1.79	1.70	1.63	1.56

Table D.8: Snow load

*without accounting for deflection

Structural system	Color group	Characteristic snow load 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	3.25	3.50	3.75	4.00	4.25	4.50	4.75	5.00
1-span	I,II,III*	40	40	42	45	48	50	51	53	54	55	56	56	57	58	59	60	61	62	63	63
		8.16	6.04	4.88	4.11	3.56	3.13	2.80	2.52	2.30	2.12	1.97	1.84	1.73	1.63	1.55	1.48	1.42	1.36	1.31	1.26
	I,II,III	40	40	42	45	48	50	51	53	54	55	56	56	57	58	59	60	61	62	63	63
2-span	I,II,III	6.19	5.79	4.88	4.11	3.56	3.13	2.80	2.52	2.30	2.12	1.97	1.84	1.73	1.63	1.55	1.48	1.42	1.36	1.31	1.26
		40	40	40	40	40	41	44	46	48	50	52	54	56	58	59	60	61	62	63	63
		6.43	4.70	3.81	3.25	2.87	2.59	2.38	2.21	2.07	1.95	1.85	1.76	1.69	1.62	1.55	1.48	1.42	1.36	1.31	1.26
3-span	I,II,III	60	60	65	71	77	82	87	92	96	100	104	107	111	115	117	119	121	123	125	126
		40	40	40	41	44	47	49	52	54	55	56	56	57	58	59	60	61	62	63	63
		7.37	5.37	4.34	3.70	3.26	2.93	2.68	2.49	2.30	2.12	1.97	1.84	1.73	1.63	1.55	1.48	1.42	1.36	1.31	1.26
3-span	I,II,III	60	65	74	81	87	93	98	103	107	109	111	112	114	115	117	119	121	123	125	126
		6.43	4.70	3.81	3.25	2.87	2.59	2.38	2.21	2.07	1.95	1.85	1.76	1.69	1.62	1.55	1.48	1.42	1.36	1.31	1.26

Permissible spans for ROMA roof elements D 102 TL 0.6/0.5 (continued)

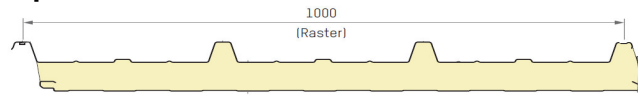


The following spans have been verified in accordance with the general building authority approval Z-10.4-549 of April 30, 2013 as well as based on EN 14509, Annex E. The most adverse loading condition combination consisting of dead weight, snow, wind, temperature and long-term effects has been verified 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 D.9: Wind uplift for screws (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	-3.25	-3.50	-3.75	-4.00	-4.25	-4.50	-4.75	-5.00
1-span	I,II,III	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
		6.75	6.75	5.88	5.04	4.39	3.90	3.52	3.21	2.95	2.73	2.54	2.37	2.19	2.03	1.89	1.77	1.66	1.57	1.48	1.41
2-span	I,II	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
		10.39	5.72	3.30	2.28	1.75	1.44	1.23	1.08	0.98	0.89	0.81	0.75	0.70	0.65	0.61	0.58	0.55	0.52	0.50	0.47
		6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
	10.39	7.42	5.69	4.54	3.84	3.36	2.88	2.48	2.18	1.95	1.76	1.61	1.48	1.37	1.28	1.20	1.13	1.07	1.01	0.97	
	III	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
		10.39	5.25	2.83	1.90	1.43	1.22	1.06	0.96	0.87	0.79	0.73	0.68	0.64	0.60	0.57	0.54	0.51	0.49	0.46	0.45
6		6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	
10.39	7.42	5.34	4.26	3.60	3.16	2.70	2.32	2.04	1.82	1.64	1.50	1.38	1.28	1.20	1.12	1.06	1.00	0.96	0.92		
3-span	I,II	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
		9.55	7.22	4.36	3.08	2.36	1.90	1.59	1.37	1.20	1.08	0.99	0.90	0.83	0.77	0.72	0.68	0.64	0.61	0.58	0.55
		6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
	9.55	7.42	5.88	5.04	4.39	3.90	3.47	3.00	2.64	2.35	2.12	1.93	1.77	1.64	1.52	1.42	1.33	1.26	1.18	1.12	
	III	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
		9.55	7.06	4.20	2.92	2.20	1.76	1.46	1.25	1.10	1.00	0.91	0.83	0.77	0.72	0.67	0.63	0.60	0.57	0.54	0.52
6		6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	
9.55	7.42	5.88	5.04	4.30	3.75	3.34	2.92	2.56	2.28	2.05	1.86	1.71	1.58	1.46	1.36	1.28	1.20	1.14	1.08		

Permissible spans for ROMA roof elements D 122 TL 0.6/0.5 (continued)



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 dead weight, snow, wind, temperature and long-term effects 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 D.10: Wind uplift pressure

* without accounting for deflection

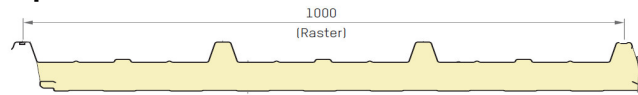
Structural system	Color group	Characteristic wind uplift pressure in kN/m ²																			
		-0.25	-0.50	-0.75	-1.00	-1.25	-1.50	-1.75	-2.00	-2.25	-2.50	-2.75	-3.00	-3.25	-3.50	-3.75	-4.00	-4.25	-4.50	-4.75	-5.00
1-span	I,II,III*	13.52	8.43	6.65	5.68	5.04	4.58	4.24	3.96	3.72	3.46	3.22	3.02	2.84	2.67	2.52	2.38	2.26	2.14	2.04	1.94
	I,II,III	7.93	7.93	6.65	5.68	5.04	4.58	4.24	3.96	3.72	3.46	3.22	3.02	2.84	2.67	2.52	2.38	2.26	2.14	2.04	1.94
2-span	I	10.98	8.43	6.65	5.31	4.45	3.87	3.44	3.12	2.86	2.66	2.48	2.33	2.21	2.10	2.00	1.91	1.84	1.77	1.70	1.65
	II	10.98	8.42	6.46	5.09	4.27	3.71	3.30	3.00	2.75	2.56	2.39	2.25	2.13	2.03	1.94	1.86	1.78	1.72	1.66	1.60
	III	10.98	8.43	6.04	4.76	3.98	3.47	3.10	2.82	2.59	2.41	2.26	2.13	2.02	1.93	1.85	1.77	1.71	1.65	1.59	1.54
3-span	I	11.06	8.43	6.65	5.68	5.04	4.41	3.91	3.52	3.22	2.97	2.77	2.60	2.45	2.32	2.21	2.11	2.02	1.94	1.88	1.81
	II	11.08	8.42	6.65	5.68	4.97	4.29	3.80	3.43	3.14	2.90	2.70	2.53	2.39	2.26	2.16	2.06	1.98	1.90	1.83	1.77
	III	11.06	8.43	6.65	5.68	4.77	4.12	3.65	3.29	3.01	2.78	2.59	2.43	2.30	2.18	2.08	1.99	1.91	1.84	1.77	1.71

Table D.11: Snow load

*without accounting for deflection

Structural system	Color group	Characteristic snow load 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	3.25	3.50	3.75	4.00	4.25	4.50	4.75	5.00
1-span	I,II,III*	40	46	52	56	57	59	61	63	65	66	66	67	67	67	68	68	68	69	69	70
		9.89	7.39	6.01	5.02	4.25	3.72	3.33	3.03	2.79	2.56	2.35	2.18	2.02	1.89	1.78	1.68	1.59	1.52	1.45	1.39
	I,II,III	40	42	52	56	57	59	61	63	65	66	66	67	67	67	68	68	68	69	69	70
2-span	I,II,III	7.28	6.81	6.01	5.02	4.25	3.72	3.33	3.03	2.79	2.56	2.35	2.18	2.02	1.89	1.78	1.68	1.59	1.52	1.45	1.39
		40	40	40	40	41	44	46	48	50	52	54	56	58	60	61	63	64	66	68	69
		6.91	5.03	4.05	3.44	3.03	2.72	2.49	2.30	2.15	2.02	1.92	1.82	1.74	1.67	1.61	1.55	1.50	1.46	1.41	1.37
3-span	I,II,III	60	62	70	76	82	87	92	96	100	104	108	111	115	119	122	125	128	132	135	137
		40	40	40	43	46	49	52	54	56	58	60	62	64	66	68	68	68	69	69	70
		7.89	5.72	4.59	3.89	3.41	3.06	2.79	2.58	2.40	2.26	2.14	2.03	1.94	1.86	1.78	1.68	1.59	1.52	1.45	1.39
3-span	I,II,III	60	70	79	86	92	97	103	107	112	116	120	124	128	132	135	136	136	138	138	139
		60	70	79	86	92	97	103	107	112	116	120	124	128	132	135	136	136	138	138	139

Permissible spans for ROMA roof elements D 122 TL 0.6/0.5 (continued)

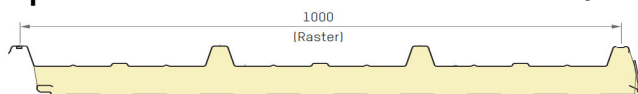


The following spans have been verified in accordance with the general building authority approval Z-10.4-549 of April 30, 2013 as well as based on EN 14509, Annex E. The most adverse loading condition combination consisting of dead weight, snow, wind, temperature and long-term effects has been verified 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 D.12: Wind uplift for screws (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	-3.25	-3.50	-3.75	-4.00	-4.25	-4.50	-4.75	-5.00
1-span	I,II,III	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
		7.93	7.93	6.65	5.68	5.04	4.58	4.18	3.63	3.21	2.88	2.60	2.38	2.19	2.03	1.89	1.77	1.66	1.57	1.49	1.41
2-span	I,II	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
		10.98	5.52	3.13	2.18	1.70	1.42	1.22	1.08	0.98	0.89	0.82	0.76	0.70	0.66	0.62	0.58	0.55	0.53	0.50	0.48
		6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
	10.98	8.42	6.46	5.09	4.13	3.36	2.83	2.45	2.16	1.94	1.76	1.60	1.48	1.38	1.28	1.20	1.13	1.07	1.02	0.98	
	III	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
		10.98	4.85	2.24	1.54	1.30	1.16	1.05	0.96	0.87	0.80	0.74	0.69	0.64	0.61	0.57	0.54	0.51	0.49	0.47	0.45
6		6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	
10.98	8.43	6.04	4.76	3.88	3.14	2.63	2.27	2.00	1.79	1.62	1.49	1.38	1.28	1.20	1.12	1.06	1.01	0.97	0.92		
3-span	I,II	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
		11.08	7.21	4.30	3.00	2.29	1.84	1.54	1.34	1.18	1.06	0.97	0.89	0.83	0.77	0.72	0.68	0.64	0.61	0.58	0.55
		6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
	11.08	8.42	6.65	5.68	4.97	4.08	3.44	2.96	2.60	2.32	2.10	1.91	1.75	1.62	1.50	1.40	1.32	1.24	1.18	1.12	
	III	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
		11.06	7.01	4.08	2.79	2.09	1.67	1.40	1.21	1.07	0.98	0.89	0.82	0.76	0.71	0.67	0.63	0.60	0.57	0.54	0.52
6		6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	
11.06	8.43	6.65	5.68	4.77	3.98	3.34	2.87	2.52	2.24	2.01	1.83	1.68	1.55	1.44	1.34	1.26	1.19	1.12	1.07		

Permissible spans for ROMA roof elements D 142 TL 0.6/0.5 (continued)



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 dead weight, snow, wind, temperature and long-term effects 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 D.13: Wind uplift pressure

* without accounting for deflection

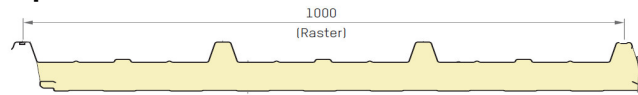
Structural system	Color group	Characteristic wind uplift pressure in kN/m ²																			
		-0.25	-0.50	-0.75	-1.00	-1.25	-1.50	-1.75	-2.00	-2.25	-2.50	-2.75	-3.00	-3.25	-3.50	-3.75	-4.00	-4.25	-4.50	-4.75	-5.00
1-span	I,II,III*	15.02	9.24	7.27	6.19	5.49	4.99	4.60	4.30	4.05	3.84	3.66	3.51	3.37	3.25	3.09	2.93	2.78	2.65	2.52	2.40
	I,II,III	9.02	9.02	7.27	6.19	5.49	4.99	4.60	4.30	4.05	3.84	3.66	3.51	3.37	3.25	3.09	2.93	2.78	2.65	2.52	2.40
2-span	I	11.42	9.24	7.27	5.86	4.88	4.22	3.74	3.37	3.09	2.86	2.66	2.50	2.36	2.24	2.13	2.03	1.95	1.87	1.80	1.74
	II	11.42	9.24	7.19	5.61	4.67	4.04	3.58	3.24	2.96	2.74	2.56	2.41	2.28	2.16	2.06	1.97	1.89	1.82	1.75	1.69
	III	11.42	9.24	6.72	5.23	4.35	3.76	3.35	3.03	2.78	2.58	2.42	2.28	2.16	2.05	1.96	1.88	1.80	1.74	1.68	1.62
3-span	I	12.46	9.24	7.27	6.19	5.49	4.80	4.23	3.80	3.46	3.18	2.96	2.76	2.60	2.46	2.34	2.23	2.13	2.05	1.97	1.90
	II	12.46	9.24	7.27	6.19	5.43	4.67	4.12	3.69	3.36	3.10	2.88	2.69	2.53	2.40	2.28	2.17	2.08	2.00	1.92	1.86
	III	12.46	9.24	7.27	6.19	5.21	4.47	3.94	3.54	3.22	2.96	2.76	2.58	2.43	2.30	2.19	2.09	2.00	1.93	1.86	1.79

Table D.14: Snow load

*without accounting for deflection

Structural system	Color group	Characteristic snow load 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	3.25	3.50	3.75	4.00	4.25	4.50	4.75	5.00
1-span	I,II,III*	43	53	55	57	58	60	62	64	66	67	69	71	72	74	76	77	78	78	78	79
	I,II,III	11.50	8.52	6.32	5.09	4.30	3.76	3.35	3.04	2.80	2.60	2.44	2.30	2.18	2.08	1.99	1.91	1.82	1.72	1.63	1.56
2-span	I,II,III	40	40	40	40	43	46	48	50	52	54	56	58	60	61	63	65	66	68	70	71
		7.32	5.32	4.27	3.62	3.18	2.85	2.60	2.40	2.23	2.10	1.98	1.88	1.80	1.72	1.66	1.60	1.54	1.49	1.45	1.41
3-span	I,II,III	60	66	74	80	86	91	96	100	104	108	112	115	119	122	126	129	132	135	139	142
		8.32	6.02	4.82	4.07	3.56	3.18	2.89	2.67	2.48	2.33	2.20	2.09	1.99	1.91	1.83	1.76	1.70	1.65	1.60	1.56
3-span	I,II,III	40	40	42	45	49	51	54	56	58	60	62	64	66	68	70	71	73	75	77	79
		63	75	84	90	97	102	107	112	116	120	124	128	132	136	139	142	146	150	153	157

Permissible spans for ROMA roof elements D 142 TL 0.6/0.5 (continued)

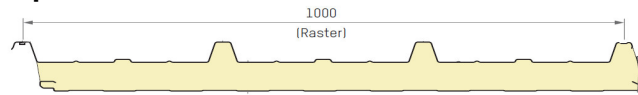


The following spans have been verified in accordance with the general building authority approval Z-10.4-549 of April 30, 2013 as well as based on EN 14509, Annex E. The most adverse loading condition combination consisting of dead weight, snow, wind, temperature and long-term effects has been verified 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 D.15: Wind uplift for screws (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	-3.25	-3.50	-3.75	-4.00	-4.25	-4.50	-4.75	-5.00
1-span	I,II,III	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
		9.02	9.02	7.27	6.19	5.49	4.94	4.19	3.64	3.22	2.88	2.61	2.38	2.20	2.03	1.90	1.77	1.67	1.57	1.49	1.41
2-span	I,II	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
		11.42	5.32	2.99	2.12	1.68	1.40	1.22	1.08	0.98	0.90	0.82	0.76	0.71	0.66	0.62	0.59	0.56	0.53	0.50	0.48
		6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
	11.42	9.24	7.19	5.28	4.07	3.32	2.80	2.43	2.15	1.93	1.75	1.60	1.48	1.38	1.29	1.21	1.14	1.08	1.02	0.98	
	III	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
		11.42	4.42	1.75	1.43	1.26	1.13	1.04	0.96	0.87	0.80	0.74	0.69	0.65	0.61	0.58	0.55	0.52	0.49	0.47	0.45
6		6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	
11.42	9.24	6.72	4.96	3.78	3.06	2.57	2.23	1.97	1.78	1.62	1.48	1.38	1.28	1.20	1.13	1.07	1.01	0.97	0.93		
3-span	I,II	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
		12.46	7.21	4.23	2.94	2.23	1.80	1.51	1.31	1.16	1.04	0.96	0.89	0.82	0.77	0.72	0.68	0.64	0.61	0.58	0.55
		6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
	12.46	9.24	7.27	6.19	4.98	4.05	3.41	2.94	2.58	2.30	2.07	1.89	1.74	1.60	1.49	1.40	1.31	1.24	1.17	1.11	
	III	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
		12.46	6.94	3.96	2.67	2.00	1.60	1.35	1.18	1.05	0.96	0.88	0.82	0.76	0.71	0.67	0.63	0.60	0.57	0.54	0.52
6		6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	
12.46	9.24	7.27	6.19	4.85	3.93	3.29	2.82	2.48	2.20	1.98	1.80	1.65	1.53	1.42	1.33	1.25	1.18	1.12	1.06		

Permissible spans for ROMA roof elements D 162 TL 0.6/0.5 (continued)



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 dead weight, snow, wind, temperature and long-term effects 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 D.16: Wind uplift pressure

* without accounting for deflection

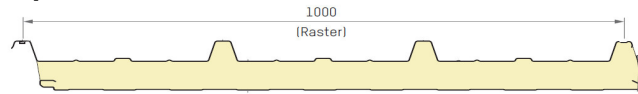
Structural system	Color group	Characteristic wind uplift pressure in kN/m ²																			
		-0.25	-0.50	-0.75	-1.00	-1.25	-1.50	-1.75	-2.00	-2.25	-2.50	-2.75	-3.00	-3.25	-3.50	-3.75	-4.00	-4.25	-4.50	-4.75	-5.00
1-span	I,II,III*	16.55	10.05	7.88	6.70	5.93	5.38	4.96	4.64	4.36	4.13	3.94	3.77	3.62	3.49	3.37	3.27	3.17	3.08	2.95	2.82
	I,II,III	10.05	10.05	7.88	6.70	5.93	5.38	4.96	4.64	4.36	4.13	3.94	3.77	3.62	3.49	3.37	3.27	3.17	3.08	2.95	2.82
2-span	I	11.72	10.05	7.88	6.37	5.27	4.54	4.01	3.61	3.30	3.04	2.83	2.65	2.50	2.37	2.25	2.15	2.06	1.97	1.90	1.83
	II	11.72	10.05	7.88	6.10	5.04	4.34	3.84	3.46	3.16	2.92	2.72	2.55	2.41	2.28	2.18	2.08	1.99	1.91	1.84	1.78
	III	11.72	10.05	7.35	5.67	4.69	4.04	3.58	3.24	2.96	2.75	2.56	2.41	2.28	2.17	2.07	1.98	1.90	1.83	1.76	1.70
3-span	I	13.76	10.05	7.88	6.70	5.93	5.16	4.53	4.05	3.68	3.38	3.13	2.92	2.74	2.59	2.46	2.34	2.24	2.14	2.06	1.98
	II	13.76	10.05	7.88	6.70	5.87	5.01	4.40	3.94	3.58	3.28	3.04	2.84	2.67	2.52	2.39	2.28	2.18	2.09	2.01	1.94
	III	13.75	10.05	7.88	6.70	5.61	4.79	4.20	3.76	3.42	3.14	2.91	2.72	2.56	2.42	2.30	2.19	2.10	2.01	1.94	1.87

Table D.17 Snow load

*without accounting for deflection

Structural system	Color group	Characteristic snow load 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	3.25	3.50	3.75	4.00	4.25	4.50	4.75	5.00
1-span	I,II,III*	50	52	54	55	57	59	60	62	64	65	67	68	70	72	73	75	77	78	80	81
	I,II,III	12.95	8.25	6.13	4.94	4.18	3.64	3.25	2.95	2.71	2.52	2.36	2.22	2.11	2.01	1.92	1.85	1.78	1.72	1.66	1.61
2-span	I,II,III	40	40	40	43	45	48	50	52	54	56	58	60	62	63	65	67	68	70	71	73
		7.65	5.57	4.47	3.78	3.31	2.96	2.70	2.48	2.31	2.17	2.04	1.94	1.85	1.77	1.70	1.64	1.58	1.53	1.48	1.44
3-span	I,II,III	60	70	78	85	90	95	100	104	108	112	116	119	123	126	129	133	136	139	142	145
		8.68	6.28	5.02	4.23	3.69	3.29	2.99	2.75	2.55	2.39	2.26	2.14	2.04	1.95	1.87	1.80	1.74	1.68	1.63	1.58
		67	79	88	95	101	106	111	115	119	124	128	132	135	139	142	146	149	153	156	159

Permissible spans for ROMA roof elements D 162 TL 0.6/0.5 (continued)

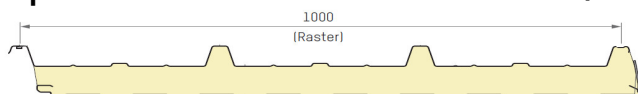


The following spans have been verified in accordance with the general building authority approval Z-10.4-549 of April 30, 2013 as well as based on EN 14509, Annex E. The most adverse loading condition combination consisting of dead weight, snow, wind, temperature and long-term effects has been verified 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 D.18: Wind uplift for screws (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	-3.25	-3.50	-3.75	-4.00	-4.25	-4.50	-4.75	-5.00
1-span	I,II,III	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
		10.05	10.05	7.88	6.70	5.93	4.96	4.21	3.65	3.23	2.89	2.62	2.39	2.20	2.04	1.90	1.78	1.67	1.57	1.49	1.41
2-span	I,II	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
		11.72	5.12	2.89	2.08	1.67	1.41	1.22	1.09	0.99	0.90	0.83	0.77	0.72	0.67	0.63	0.59	0.56	0.53	0.51	0.49
		6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
	11.72	10.05	7.40	5.22	4.02	3.28	2.78	2.42	2.14	1.93	1.76	1.61	1.49	1.38	1.30	1.22	1.15	1.08	1.03	0.99	
	III	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
		11.72	2.24	1.63	1.40	1.24	1.13	1.04	0.97	0.88	0.81	0.75	0.70	0.66	0.62	0.58	0.55	0.52	0.50	0.48	0.46
6		6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	
11.71	10.05	7.01	4.85	3.70	3.00	2.54	2.21	1.96	1.77	1.62	1.49	1.38	1.29	1.21	1.14	1.07	1.02	0.98	0.93		
3-span	I,II	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
		13.76	7.20	4.17	2.87	2.18	1.76	1.49	1.30	1.15	1.04	0.96	0.89	0.82	0.77	0.72	0.68	0.64	0.61	0.58	0.55
		6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
	13.76	10.05	7.88	6.41	4.96	4.02	3.38	2.92	2.56	2.28	2.06	1.88	1.72	1.60	1.48	1.39	1.31	1.23	1.17	1.11	
	III	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
		13.75	6.88	3.84	2.56	1.92	1.56	1.32	1.16	1.04	0.96	0.88	0.81	0.76	0.71	0.67	0.63	0.60	0.57	0.54	0.52
6		6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	
13.75	10.05	7.88	6.27	4.81	3.88	3.24	2.78	2.44	2.17	1.95	1.78	1.64	1.51	1.41	1.32	1.24	1.17	1.11	1.06		

Permissible spans for ROMA roof elements D 182 TL 0.6/0.5 (continued)



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 dead weight, snow, wind, temperature and long-term effects 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 D.19: Wind uplift pressure

* without accounting for deflection

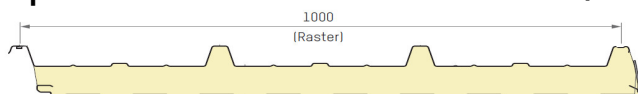
Structural system	Color group	Characteristic wind uplift pressure in kN/m ²																			
		-0.25	-0.50	-0.75	-1.00	-1.25	-1.50	-1.75	-2.00	-2.25	-2.50	-2.75	-3.00	-3.25	-3.50	-3.75	-4.00	-4.25	-4.50	-4.75	-5.00
1-span	I,II,III*	17.97	10.77	8.41	7.14	6.32	5.73	5.28	4.93	4.64	4.39	4.18	4.00	3.84	3.70	3.58	3.46	3.30	3.14	3.00	2.86
	I,II,III	11.00	10.76	8.41	7.14	6.32	5.73	5.28	4.93	4.64	4.39	4.18	4.00	3.84	3.70	3.58	3.46	3.30	3.14	3.00	2.86
2-span	I	11.90	10.76	7.64	5.86	4.83	4.15	3.66	3.29	3.00	2.77	2.58	2.42	2.28	2.16	2.05	1.96	1.87	1.80	1.73	1.66
	II	11.90	10.77	7.23	5.54	4.57	3.93	3.47	3.13	2.86	2.65	2.47	2.32	2.19	2.08	1.98	1.89	1.81	1.74	1.67	1.62
	III	11.90	10.08	6.60	5.05	4.17	3.60	3.20	2.90	2.66	2.47	2.31	2.18	2.06	1.96	1.87	1.79	1.72	1.66	1.60	1.54
3-span	I	14.32	10.76	8.41	6.78	5.54	4.72	4.12	3.68	3.34	3.06	2.83	2.64	2.48	2.34	2.22	2.12	2.02	1.94	1.86	1.80
	II	14.32	10.76	8.41	6.56	5.35	4.55	3.98	3.55	3.22	2.96	2.74	2.56	2.40	2.27	2.16	2.05	1.96	1.88	1.81	1.75
	III	14.31	10.76	8.18	6.20	5.05	4.29	3.75	3.35	3.04	2.80	2.60	2.43	2.28	2.16	2.06	1.96	1.88	1.81	1.74	1.68

Table D.18: Snow load

*without accounting for deflection

Structural system	Color group	Characteristic snow load 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	3.25	3.50	3.75	4.00	4.25	4.50	4.75	5.00
1-span	I,II,III*	48	50	52	53	55	56	58	59	61	62	64	66	67	69	70	72	73	75	76	77
		12.30	7.82	5.83	4.70	3.98	3.47	3.10	2.81	2.59	2.40	2.25	2.12	2.01	1.92	1.83	1.76	1.69	1.64	1.58	1.53
	I,II,III	40	50	52	53	55	56	58	59	61	62	64	66	67	69	70	72	73	75	76	77
2-span	I,II,III	10.18	7.82	5.83	4.70	3.98	3.47	3.10	2.81	2.59	2.40	2.25	2.12	2.01	1.92	1.83	1.76	1.69	1.64	1.58	1.53
		40	40	41	44	47	50	52	54	56	58	60	62	63	65	67	68	70	71	73	74
		7.92	5.78	4.64	3.92	3.43	3.06	2.78	2.56	2.38	2.23	2.10	1.99	1.90	1.82	1.74	1.67	1.61	1.56	1.51	1.46
3-span	I,II,III	62	74	82	88	94	99	103	108	112	116	119	123	126	130	133	136	139	142	145	147
		40	42	46	49	52	55	57	59	61	62	64	66	67	69	70	72	73	74	76	77
		8.96	6.50	5.19	4.37	3.80	3.39	3.07	2.81	2.59	2.40	2.25	2.12	2.01	1.92	1.83	1.76	1.69	1.63	1.58	1.53
		70	83	92	98	104	110	114	118	122	124	128	131	134	137	140	143	145	148	151	154

Permissible spans for ROMA roof elements D 182 TL 0.6/0.5 (continued)



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 dead weight, snow, wind, temperature and long-term effects 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 D.17: Wind uplift for screws (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	-3.25	-3.50	-3.75	-4.00	-4.25	-4.50	-4.75	-5.00
1-span	I,II,III	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
		11.00	10.76	8.41	7.14	6.07	4.98	4.22	3.66	3.24	2.90	2.62	2.40	2.20	2.04	1.90	1.78	1.67	1.58	1.49	1.42
2-span	I,II	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
		11.89	4.94	2.82	2.06	1.67	1.42	1.23	1.10	1.00	0.91	0.84	0.78	0.72	0.68	0.64	0.60	0.57	0.54	0.51	0.49
		6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
	11.90	10.77	7.23	5.17	3.99	3.26	2.77	2.42	2.14	1.94	1.76	1.62	1.50	1.40	1.30	1.22	1.16	1.09	1.04	1.00	
	III	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
		11.89	1.98	1.60	1.39	1.25	1.14	1.06	0.98	0.89	0.82	0.76	0.71	0.66	0.62	0.59	0.56	0.53	0.50	0.48	0.46
6		6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	
11.89	10.08	6.60	4.75	3.63	2.96	2.52	2.20	1.96	1.77	1.62	1.49	1.39	1.30	1.22	1.14	1.08	1.03	0.99	0.94		
3-span	I,II	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
		14.31	7.20	4.11	2.82	2.14	1.74	1.48	1.29	1.15	1.04	0.96	0.89	0.82	0.77	0.72	0.68	0.64	0.61	0.58	0.55
		6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
	14.31	10.76	8.41	6.41	4.94	4.00	3.36	2.90	2.54	2.27	2.05	1.87	1.72	1.59	1.48	1.39	1.30	1.23	1.17	1.11	
	III	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
		14.31	6.82	3.72	2.48	1.87	1.53	1.31	1.16	1.04	0.96	0.88	0.81	0.76	0.71	0.67	0.63	0.60	0.57	0.55	0.52
6		6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	
14.31	10.76	8.18	6.20	4.77	3.84	3.20	2.75	2.41	2.14	1.94	1.76	1.62	1.50	1.40	1.32	1.24	1.17	1.11	1.06		