

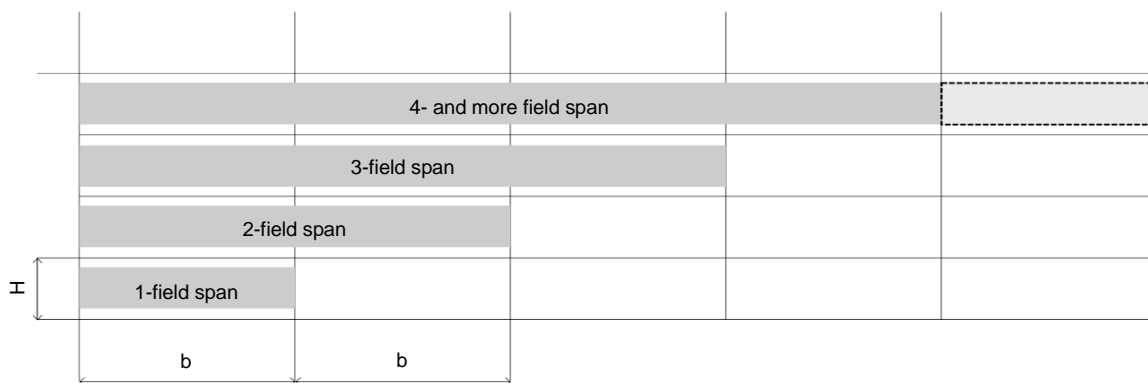
General performance

Rockpanel PlankClip System

The following table provides the ultimate performance values of the PlankClip System under wind load, expressed as the maximum allowable wind load based on varying subframe spacings and panel heights. The distances and corresponding capacities are determined in accordance with European Technical Assessment ETA-24/0911.

All wind load values shown are factored design loads, with the partial safety factor $\gamma_Q = 1.5$ according to Eurocode already included.

Span		1-field span	2-field span	3-field span	4- and more field span
600	100–145	–1.343 kN/m ²	–1.360 kN/m ²	–1.545 kN/m ²	–1.478 kN/m ²
	150–300	–1.798 kN/m ²	–1.190 kN/m ²	–1.352 kN/m ²	–1.293 kN/m ²
500	100–145	–1.594 kN/m ²	–1.632 kN/m ²		
	150–300	–2.134 kN/m ²	–1.427 kN/m ²		
400	100–145	–1.959 kN/m ²	–2.040 kN/m ²		
	150–300	–2.623 kN/m ²	–1.784 kN/m ²		
↑ Spacing subframe b mm	↑ Panel-height H mm				



H: Panel height (mm)
b: Spacing subframe (mm)

Germany – Loadtable

Rockpanel PlankClip System

The following tables show the designed wind loads acting in the respective areas and the maximum possible spacing (b) for the PlankClip System.

Wind loads are calculated for rectangular buildings with a ratio from height to width of ≤ 1 according to DIN EN 1991-1-4/NA:2010-12. The values apply to the entire façade, with wind actions determined for corner zone "A". All wind loads are factored. The partial safety factor $\gamma_Q = 1.5$ in accordance with Eurocode is already included.

OK	Combination possible
n/a	Location requires project specific check. Part of worst-case scenario does not comply
OK ^{x)}	Suitable, but with limitations (see comments at the end of the table)

The table is to be understood as a recommendation. If no combination is found in the following tables for the planned project, get in touch with your Rockpanel supplier.

- The following tables are valid, when the reduced wind load (pressure equalization) according DIN EN 1991-1-4/NA:2010-12 (NPD to 7.2.10) is considered. See Preconditions - Pressure equalization.
- The table is valid for a building at a maximum altitude of 800 meters above sea level.

For building heights (ze) ≤ 20 m

Windzone ¹⁾		Windzone 1 $v_{b,0} = 22.5$ m/s				Windzone 2 $v_{b,0} = 25$ m/s				Windzone 3 $v_{b,0} = 27.5$ m/s				Windzone 4 $v_{b,0} = 30$ m/s			
Terrain category ²⁾		I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
Designed wind-load kN/m ²		-0.99	-0.82	-0.66	-0.48	-1.22	-1.02	-0.81	-0.60	-1.47	-1.23	-0.98	-0.72	-1.75	-1.46	-1.17	-0.86
600	100–145	OK	OK	OK	OK	OK	OK	OK	OK	n/a	OK	OK	OK	n/a	n/a	OK	OK
	150–300	OK	OK	OK	OK	OK ³⁾	OK	OK	OK	n/a	OK ³⁾	OK	OK	n/a	n/a	OK	OK
500	100–145	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	n/a	OK	OK	OK
	150–300	OK	OK	OK	OK	OK	OK	OK	OK	OK ³⁾	OK	OK	OK	n/a	OK ³⁾	OK	OK
400	100–145	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
	150–300	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
↑	↑																
Spacing subframe b mm	Panel- height H mm																

¹⁾ Annex to German Loadtable – Windzone map

²⁾ Annex to German Loadtable – Terrain categories

³⁾ Only for building heights ≤ 15 m

If it's desired to take no pressure equalization according to DIN EN 1991-1-4/NA:2010-12 (NPD zu 7.2.10) into account, the following table shall be used.

→ Both tables are valid for buildings at a maximum altitude of 800 meters above sea level.

For building heights (z_e) ≤ 9 m

Windzone 1 ¹⁾		Windzone 1 $v_{b,0} = 22.5 \text{ m/s}$				Windzone 2 $v_{b,0} = 25 \text{ m/s}$				Windzone 3 $v_{b,0} = 27.5 \text{ m/s}$			Windzone 4 $v_{b,0} = 30 \text{ m/s}$	
Terrain category 2 ²⁾		I	II	III	IV	I	II	III	IV	II	III	IV	III	IV
Designed wind-load kN/m^2		-1.69	-1.36	-1.03	-0.86	-2.09	-1.68	-1.27	-1.07	-2.03	-1.54	-1.29	-1.83	-1.54
600	100–145	n/a	n/a	OK	OK	n/a	n/a	OK	OK	n/a	n/a	OK	n/a	n/a
	150–300	n/a	n/a	OK	OK	n/a	n/a	OK	OK	n/a	n/a	OK	n/a	n/a
500	100–145	n/a	OK	OK	OK	n/a	n/a	OK	OK	n/a	OK	OK	n/a	OK
	150–300	n/a	OK	OK	OK	n/a	n/a	OK	OK	n/a	n/a	OK	n/a	n/a
400	100–145	OK	OK	OK	OK	n/a	OK	OK	OK	n/a	OK	OK	OK	OK
	150–300	OK	OK	OK	OK	n/a	OK	OK	OK	n/a	OK	OK	n/a	OK
↑	↑													
Spacing subframe b mm	Panel- height H mm													

For building heights (z_e) ≤ 6 m

Windzone 1 ¹⁾		Windzone 1 $v_{b,0} = 22.5 \text{ m/s}$				Windzone 2 $v_{b,0} = 25 \text{ m/s}$				Windzone 3 $v_{b,0} = 27.5 \text{ m/s}$			Windzone 4 $v_{b,0} = 30 \text{ m/s}$	
Terrain category 2 ²⁾		I	II	III	IV	I	II	III	IV	II	III	IV	III	IV
Designed wind-load kN/m^2		-1.57	-1.23	-1.00	-0.86	-1.94	-1.52	-1.23	-1.07	-1.84	-1.49	-1.29	-1.77	-1.54
600	100–145	n/a	OK	OK	OK	n/a	n/a	OK	OK	n/a	n/a	OK	n/a	n/a
	150–300	n/a	OK	OK	OK	n/a	n/a	OK	OK	n/a	n/a	OK	n/a	n/a
500	100–145	OK	OK	OK	OK	n/a	OK	OK	OK	n/a	OK	OK	n/a	OK
	150–300	n/a	OK	OK	OK	n/a	n/a	OK	OK	n/a	n/a	OK	n/a	n/a
400	100–145	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
	150–300	OK	OK	OK	OK	n/a	OK	OK	OK	n/a	OK	OK	OK	OK
↑	↑													
Spacing subframe b mm	Panel- height H mm													

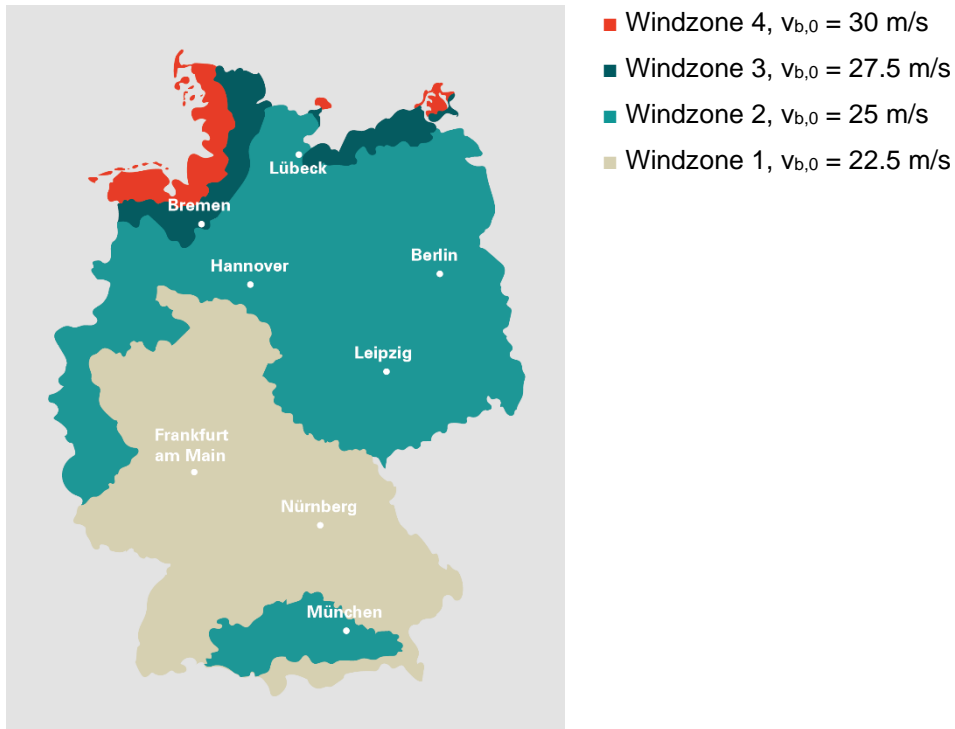
¹⁾ Annex to German Loadtable – Windzone map

²⁾ Annex to German Loadtable – Terrain categories

Annex

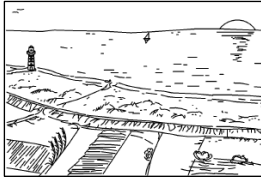
to German Loadtable

Windzone map



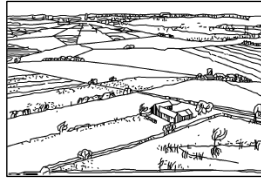
See DIN EN 1991-1-4/NA:2010-12, Bild NA.A.1 – Windzonenkarte für das Gebiet der Bundesrepublik Deutschland

Terrain categories



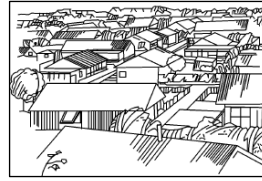
Terrain category I

Open sea; lakes with at least 5 km open area in wind direction; smooth, flat land without obstacles



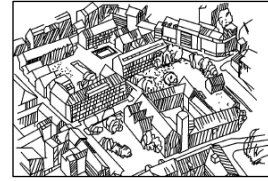
Terrain category II

Terrain with hedges, individual farmsteads, houses or trees, e.g. agricultural land



Terrain category III

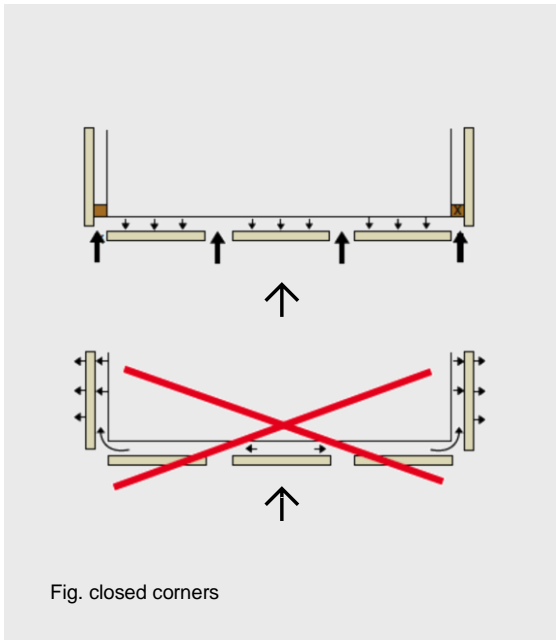
Suburbs, industrial or commercial areas; forests



Terrain category IV

Urban areas where at least 15% of the area is covered with buildings with an average height of more than 15 meters

Preconditions - Pressure equalization



If certain conditions are met, the pressure coefficient (c_{pe}) decreases, resulting in a lower windload. Pressure equalization is specified in Eurocode EN 1991-1-4, with further details in the National Annex.

The following parameters must be met:

- The ratio of open joints to panels area is $\geq 1\%$. This is achieved by all panel-heights due to the 6 mm joint width.
- The internal pressure within the ventilated cavity must remain undisturbed by air movement between different sides of the building. To ensure this, a cavity closure should separate one building side in corner areas, see figure "closed corners".
- The cavity depth must be between 40 and 100mm. The minimum of 40 mm is met by using the PlankClip system.

→ Further details are available in the national annex DIN EN 1991-1-4/NA:2010-12.