Test report

Wind Force

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Beaufort Grade	**Description**	**Velocity of Wind**	**Description of Effect on Land**
0	Still air, calm	< 1 kn < 0.51 m/s ⩾ 1.85 km/h	No air movement, smoke rising vertically
1	Quiet draught	1 – 4 kn 0.51 – 2.06 m/s 1.85 – 7.41 km/h	Hardly noticeable, smoke drifting slightly, fans and wind vanes not moving
2	Light breeze	4 – 7 kn 2.06 – 3.60 m/s 7.41 – 12.96 km/h	Leaves rustling, wind palpable in face
3	Slight breeze	7 – 11 kn 3.60 – 5.66 m/s 12.96 – 20.37 km/h	Leaves and branches moving, burgees being stretched
4	Moderate breeze	11 – 16 kn 5.66 – 8.23 m/s 20.37 – 29.63 km/h	Branches moving, loose paper picked up from ground
5	Fresh breeze, fresh wind	16 – 22 kn 8.23 – 11.32 m/s 29.63 – 40.74 km/h	Larger branches and trees moving, wind clearly audible
6	Strong wind	22 – 28 kn 11.32 – 14.40 m/s 40.74 – 51.86 km/h	Thick branches moving, audible whistling on steel cables and telephone lines
7	Stiff wind	28 – 34 kn 14.40 – 17.49 m/s 51.86 – 62.97 km/h	Trees swaying, resistance when walking against the wind
8	Stormy wind	34 – 41 kn 17.49 – 21.09 m/s 62.97 – 75.93 km/h	Large trees moving, window shutters opening, branches breaking off trees, significant impairment while walking
9	Storm	41 – 48 kn 21.09 – 24.69 m/s 75.93 – 88.90 km/h	Branches breaking, smaller damage to houses, tiles and smoke hoods lifted off roofs, outdoor furniture falling over and blowing away, serious impairment while walking
10	Heavy storm	48 – 56 kn 24.69 – 28.81 m/s 88.90 – 103.71 km/h	Trees uprooting, trunks cracking, outdoor furniture blowing away, serious damage to houses; very rare inland
11	Hurricane-like storm	56 – 64 kn 28.81 – 32.92 m/s 103.71 – 118.53 km/h	Strong gusts, serious storm damage, significant damage in forests (rolled lumber), unroofing, cars thrown from their lanes, thick walls damaged, walking impossible; very rare inland
12	Hurricane	⩾ 64 kn ⩾ 32.92 m/s ⩾ 118.53 km/h	Serious storm damage and devastation; very rare inland

Wind classes as per DIN EN 13561 currently do not allow for conclusions regarding the usability (insert/retract, intermediate positions) with actual wind loads, which is why heroal has determined a max. speed above which the awning blind must be retracted with consideration of the reduction factors also defined. Another use of the classification as per EN 13561:2009-01 is not permitted.
The conditions to be met in order to fulfil the performance requirement are based on static loads and do not take into consideration the dynamic impact of repeatedly applied loads (turbulences) to which the zip-guided textile and element from guide rail and box system are actually submitted when used. That is why the static pressure cannot be used to determine the anchorage of the heroal VS Z on the building.
The surface / distance to the façade / height / corner situation impact the max. possible wind speed and are not taken into consideration in the standard (DIN EN 1932:2013-09 completions and awning blinds - resistance against wind load - test process and verification criteria) even though these influencing factors have significant impact on the resistance to wind loads of the product.

The following application recommendations specify the permitted wind speeds in m/s as well.

Test report

Wind Limit Values

Wind Limit Values [m/s] (Beaufort grade in parentheses)									
W [mm] / **H** [mm]	**1000**	**1500**	**2000**	**2500**	**3000**	**3500**	**4000**	**4500**	**5000**
1000	28.81 – 32.92 (11)	28.81 – 32.92 (11)	28.81 – 32.92 (11)	28.81 – 32.92 (11)	21.09 – 24.69 (9)	21.09 – 24.69 (9)	21.09 – 24.69 (9)	21.09 – 24.69 (9)	21.09 – 24.69 (9)
1500	28.81 – 32.92 (11)	28.81 – 32.92 (11)	28.81 – 32.92 (11)	28.81 – 32.92 (11)	21.09 – 24.69 (9)	21.09 – 24.69 (9)	21.09 – 24.69 (9)	21.09 – 24.69 (9)	21.09 – 24.69 (9)
2000	28.81 – 32.92 (11)	28.81 – 32.92 (11)	28.81 – 32.92 (11)	28.81 – 32.92 (11)	21.09 – 24.69 (9)	21.09 – 24.69 (9)	21.09 – 24.69 (9)	21.09 – 24.69 (9)	21.09 – 24.69 (9)
2500	21.09 – 24.69 (9)	21.09 – 24.69 (9)	21.09 – 24.69 (9)	21.09 – 24.69 (9)	21.09 – 24.69 (9)	21.09 – 24.69 (9)	21.09 – 24.69 (9)	21.09 – 24.69 (9)	21.09 – 24.69 (9)
3000	21.09 – 24.69 (9)	21.09 – 24.69 (9)	21.09 – 24.69 (9)	21.09 – 24.69 (9)	21.09 – 24.69 (9)	21.09 – 24.69 (9)	21.09 – 24.69 (9)	21.09 – 24.69 (9)	21.09 – 24.69 (9)
3500	21.09 – 24.69 (9)	21.09 – 24.69 (9)	21.09 – 24.69 (9)	21.09 – 24.69 (9)	21.09 – 24.69 (9)	21.09 – 24.69 (9)	21.09 – 24.69 (9)	21.09 – 24.69 (9)	–
4000	21.09 – 24.69 (9)	21.09 – 24.69 (9)	21.09 – 24.69 (9)	21.09 – 24.69 (9)	21.09 – 24.69 (9)	21.09 – 24.69 (9)	21.09 – 24.69 (9)	–	–
4500	21.09 – 24.69 (9)	21.09 – 24.69 (9)	21.09 – 24.69 (9)	21.09 – 24.69 (9)	21.09 – 24.69 (9)	21.09 – 24.69 (9)	–	–	–
5000	21.09 – 24.69 (9)	21.09 – 24.69 (9)	21.09 – 24.69 (9)	21.09 – 24.69 (9)	21.09 – 24.69 (9)	–	–	–	–

The table is valid with consideration of the following criteria:

» Distance curtain VS Z to glass surface ⩽ 100 mm.

The table values must be reduced for the following cases:

» At a distance of curtain VS Z to glass surface >100 mm and ⩽ 200 mm, the table value must be reduced by 2 levels (for example, from 28 m/s to 21 m/s).

» At a distance of curtain VS Z to glass surface >200 mm and ⩽ 300 mm, the table value must be reduced by 3 levels (for example, from 28 m/s to 17 m/s).

Do not apply the table in case of larger distances of the curtain to the glass surface or free-standing systems!

» The wind speeds used in the table only apply with closed windows and not in case of corner situations. In addition to the position and the number of wind guards used, the building geometry and position is significant for the selection of suitable wind speeds. In such situations, always consult with the expert planner!