

Wind fact sheet – Austria

Window shutters

Pantograph shutter | Sliding bi-fold shutter | Sliding shutter | Wing shutter

Product	Sash width	Sash height	Shading width	Permissible wind resistance classes (WRC) limit values ¹
	max.	max.	max.	
Pantograph shutter	550	2600	3300	6 [8] ²
Sliding bi-fold shutter	600	3000	3600	6 [8] ³
Sliding shutter	2000	3000	4000	6 [8] ^{4,5}
Wing shutter	800	2500	3200	6

¹ Tests in accordance with product standard EN 13659. Product size limitations according to technical data sheet.

[] Class [8] corresponds to an internal standard. That corresponds to a safety test pressure of 800 Pa.

The tests are carried out and evaluated in accordance with the provisions of EN 1932.

² The specified wind resistance class applies for pantograph shutters with installation type S1 (bottom wall mounting).

Pantograph shutters with the installation type S2 (bottom floor mounting) achieve in their maximal sizes the WRC 5.

³ The specified wind resistance class applies for sliding bi-fold shutters with installation type S2 (bottom floor mounting). Sliding bi-fold shutters with the installation type S1 (bottom wall mounting) achieve in their maximal sizes the WRC 6.

⁴ In the case of sliding shutters in installation situations bottom S2/S4/S6 and with the maximum dimensions, the specified wind resistance class applies. In installation situations S1/S3, the following restrictions apply with regard to the wind resistance classes:

- WRC 6 for a surface area of between 2 m² and 2.5 m²
- WRC 5 for a surface area of between 2.5 m² and 3.5 m²
- WRC 4 for a surface area larger than 3.5 m²

In multi-rail systems with installation situations S5, the following restrictions apply with regard to the wind resistance classes:

- WRC 6 for a surface area of between 3.3 m² and 4.5 m²
- WRC 5 for a surface area larger than 4.5 m²

⁵ In the case of sliding shutters Vento in models A with vertical frieze, S and SL with the maximum dimensions, the specified wind resistance class applies.

For sliding shutters Vento model A without vertical frieze, the following restrictions apply with regard to the wind resistance classes:

- WRC 6 [8] for the maximum dimensions 1600 x 3300 or 1350 x 3500 (width x height)
- WRC 6 [7] up to the maximum dimensions

For sliding shutters Vento model H timber and H aluminium, the following restrictions apply with regard to the wind resistance classes:

- WRC 6 [8] for the maximum dimensions of 1100 x 3500 or 1350 x 3300 or 1600 x 3100 (width x height)
- WRC 6 [7] for the maximum dimensions of 1250 x 3500 or 1550 x 3300 (width x height)

- All WRC up to the maximum dimensions on request

The values shown in the table apply with the following qualifications:

- Product dimensions and use comply with the Griesser technical data sheet.
- Installation, fastening and operation are carried out in accordance with installation and operating instructions.
- The products should be installed in the soffit / directly on the facade, with the sashes <100 mm away from the facade.
- If the distance from the facade is between 100 and 300 mm, the value in the table must be reduced by 1 class.
- If the distance from the facade is between 300 and 500 mm, the value in the table must be reduced by 2 classes.
- In the event of a facade offset > 500 mm (e.g. for use on balconies and loggias), the system must be structurally inspected and tested in situ. Please contact us for further information.



Pantograph shutters, sliding bi-fold shutters, sliding shutters

In the event of approaching bad weather, these window shutters must be fully retracted if the wind speed corresponds to the wind resistance class. The retracted position corresponds to the parked position (the product does not shade the window area).



Wing shutters

In the event of approaching bad weather, wing shutters must be closed and locked if the wind speed corresponds to the wind resistance class.

Setting values for sensors according to producer

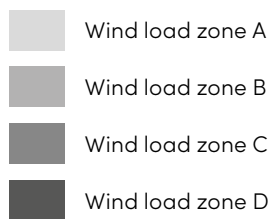
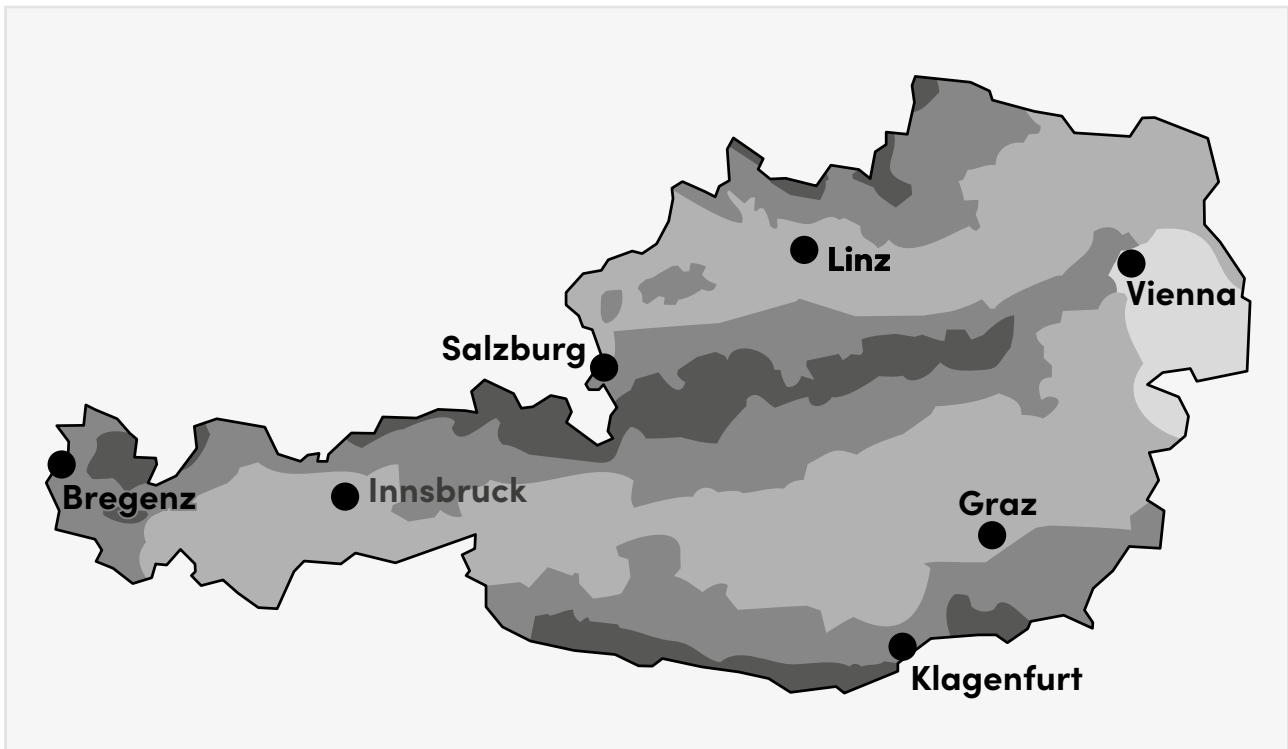
Sensors fitted next to product.

Class 0	Class 1	Class 2	Class 3	Class 4	Class 5	Class 6	Class 7	Class 8
<9,0 m/s	9,0 m/s	10,7 m/s	12,8 m/s	16,7 m/s	21,0 m/s	25,6 m/s	29,2 m/s	33,3 m/s
<32,5 km/h	32,5 km/h	38,5 km/h	46 km/h	60 km/h	76 km/h	92 km/h	105 km/h	120 km/h

Planning Notes

Wind load zones for selected locations

More detailed information on the wind load zones can be found in ÖNORM B 1991-1-4.



Planning Notes

Wind load zones (ÖNORM B 1991-1-4 / NA)

The wind load zones are location-dependent. The assignment of wind load zone to selected location is defined in the appendix. For locations not listed, the wind load zone of the next closest location can be used. If the sea level is more than 250m above the level of the next closest location, a separate calculation according to the standard is necessary.

Wind resistance classes depending on the terrain category and the installation height (ÖNORM B 1991-1-4 / NA)

Wind load zone	Terrain category*	Installation height [m]				
		≤9	≤18	≤28	≤50	≤100
A	II	2	2	3	3	3
	III	1	2	2	3	3
	IV	1	1	1	2	3
B	II	3	3	3	4	4
	III	2	3	3	3	4
	IV	1	2	2	3	4
C	II	3	4	4	4	4
	III	3	3	4	4	4
	IV	2	3	3	3	4
D	II	4	4	4	4	5
	III	3	4	4	4	5
	IV	3	3	3	4	4

* Terrain categories (ÖNORM B 1991-1-4 / NA)

– Terrain category "I" not available in Austria

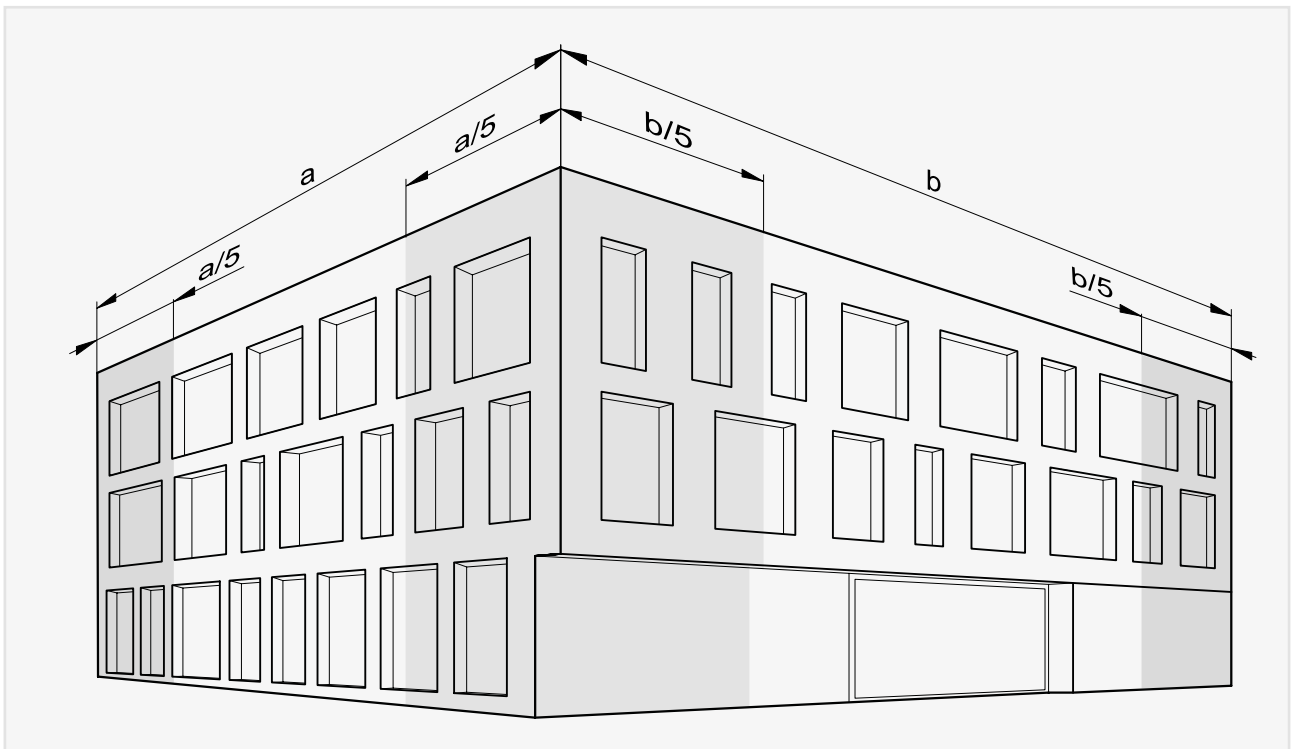
II Areas with low vegetation such as grass and individual obstacles (trees, buildings) with distances of at least 20 times the obstacle height

III Areas with uniform vegetation or building development or with individual objects with distances of less than 20 times the obstacle height (e.g. villages, suburban development, forest areas)

IV Areas in which at least 15 % of the surface area is covered by buildings with an average height greater than

Higher wind resistance class

Wind speeds can be considerably higher at building corners and should be taken into consideration. Separate proof must be submitted for buildings without a square floor plan.



Appendix

Wind load zones for selected locations

Location	Zone	Location	Zone	Location	Zone
Vienna		Velden	A	Tulln	D
Districts 10, 11, 21, 22	D	Villach	A	Waidhofen an der Thaya	C
all other districts	C	Völkermarkt	A	Waidhofen an der Ybbs	B
		Wolfsberg	A	Wilhelmsburg	D
Burgenland				Wolkersdorf	C
Andau	C	Lower Austria		Wr. Neustadt	D
Bad Tatzmannsdorf	C	Amstetten	C	Zistersdorf	C
Eisenstadt	C	Bad Vöslau	C	Zwettl	C
Güssing	C	Baden bei Wien	C		
Jennersdorf	B	Deutsch-Wagram	D	Upper Austria	
Mattersburg	B	Fischamend	D	Aigen im Mühlkreis	B
Neusiedl am See	C	Gänserndorf	D	Bad Goisern	A
Oberpullendorf	B	Gmünd in Niederösterreich	C	Bad Ischl	B
Oberwart	B	Gross-Enzersdorf	D	Bad Leonfelden	B
Pinkafeld	B	Gumpoldskirchen	C	Braunau am Inn	C
Rust am Neusiedler See	C	Hainburg	C	Ebensee	C
St. Michael im Burgenland	C	Höllabrunn	C	Eferding	C
		Horn	C	Enns	C
Carinthia		Klosterneuburg	C	Freistadt	B
Arnoldstein	A	Korneuburg	C	Gmunden	C
Bad Kleinkirchheim	B	Krems an der Donau	C	Gosau	B
Bleiburg	A	Langenlois	C	Grein	C
Eisenkappel	A	Lilienfeld	C	Grieskirchen	C
Feldkirchen in Kärnten	A	Marchegg	D	Grünau im Almtal	B
Ferlach	A	Melk an der Donau	C	Hallstatt	A
Friesach	A	Mistelbach	C	Hinterstoder	B
Gmünd an der Lieser	B	Mödling	C	Kremsmünster	D
Gurk	A	Mönichkirchen	D	Linz	D
Heiligenblut	C	Neunkirchen	D	Mattighofen	C
Hermagor	A	Perchtoldsdorf	C	Mondsee	C
Klagenfurt	A	Pottenstein	C	Obertraun	B
Kötschach	A	Poysdorf	C	Reichersberg am Inn	C
Lavamünd	A	Puchberg am Schneeberg	C	Ried im Innkreis	C
Mallnitz	C	Purkersdorf	C	Rohrbach im Mühlviertel	B
Millstatt	A	Reichenau an der Rax	C	St.Wolfgang am Wolfgangsee	C
Naßfeld	D	Retz	C	Schärding	C
Oberdrauburg	A	Scheibbs	C	Schwanenstadt	D
Obervellach	B	Schwechat	D	Spital am Pyhrn	B
Radenthein	A	Semmering	D	Steyr	C
Rennweg	C	Sollenau	D	Traun	D
St. Andrä im Lavanttal	A	St.Pölten	C	Vöcklabruck	C
St. Lorenzen im Lesachtal	B	Stockerau	C	Wels	C
St. Veit an der Glan	A	Ternitz	C	Weyer	B
Spittal an der Drau	A	Traiskirchen	C	Windischgarsten	C

Location	Zone	Location	Zone	Location	Zone
Salzburg		Friedberg	B	Matrei in Osttirol	B
Abtenau	B	Frohnleiten	B	Mayrhofen	C
Bad Gastein	C	Fürstenfeld	B	Obergurgl	D
Bad Hofgastein	C	Gleisdorf	B	Pertisau	C
Bischofshofen	C	Graz	B	Reutte in Tirol	C
Fuschl am See	C	Gröbming	B	St. Anton am Arlberg	C
Golling	C	Hartberg	B	St. Christoph am Arlberg	D
Hallein	C	Hieflau	A	St. Jakob in Deferegggen	C
Kaprun	C	Judenburg	B	St. Johann in Tirol	C
Krimml	C	Kapfenberg	B	St. Leonhard im Pitztal	C
Lofer	C	Knittelfeld	B	Schwaz in Tirol	C
Mattsee	C	Köflach	B	Seefeld in Tirol	C
Mauterndorf	B	Leibnitz	B	Serfaus	D
Mittersill	B	Leoben	B	Sillian	B
Mühlbach am Hochkönig	C	Liezen	C	Sölden	D
Oberndorf bei Salzburg	C	Mariazell	B	Steinach am Brenner	C
Obertauern	D	Murau	B	Tannheim	C
Radstadt	B	Mureck	B	Telfs	C
Rauris	B	Mürzzuschlag	B	Virgen	C
Saalbach	C	Schladming	B	Wörgl	C
Saalfelden	B	Seckau	A	Zell am Ziller	C
Salzburg	C	St. Nikolai im Sölketal	C		
St. Johann im Pongau	C	Stainz	B	Vorarlberg	
St. Michael im Lungau	B	Trieben	B	Bezau	C
Strobl	C	Voitsberg	B	Bludenz	C
Tamsweg	B	Wald am Schoberpass	C	Bregenz	C
Unken	B	Weiz	B	Dornbirn	C
Wagrain	B	Wildon	B	Egg bei Andelsbuch	B
Werfen	C	Zeltweg	C	Feldkirch	C
Zell am See	B			Gargellen	C
		Tyrol		Götzis	C
Styria		Ehrwald	C	Hohenems	C
Admont	B	Fulpmes	C	Langen am Arlberg	C
Bad Aussee	B	Hall in Tirol	D	Lech	C
Bad Gleichenberg	B	Hintertux	C	Lustenau	C
Bad Mitterndorf	B	Holzgau	C	Mittelberg	C
Bad Radkersburg	C	Imst	C	Partenen	C
Birkfeld	A	Innsbruck	D	Schruns	B
Bruck an der Mur	B	Ischgl	D	Warth	C
Deutschlandsberg	B	Jenbach	C	Zürs	C
Eibiswald	A	Kitzbühel	C		
Eisenerz	A	Kufstein	C		
Feldbach	B	Landeck	C		
Fohnsdorf	B	Lienz	B		

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