

Wind fact sheet – France

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.

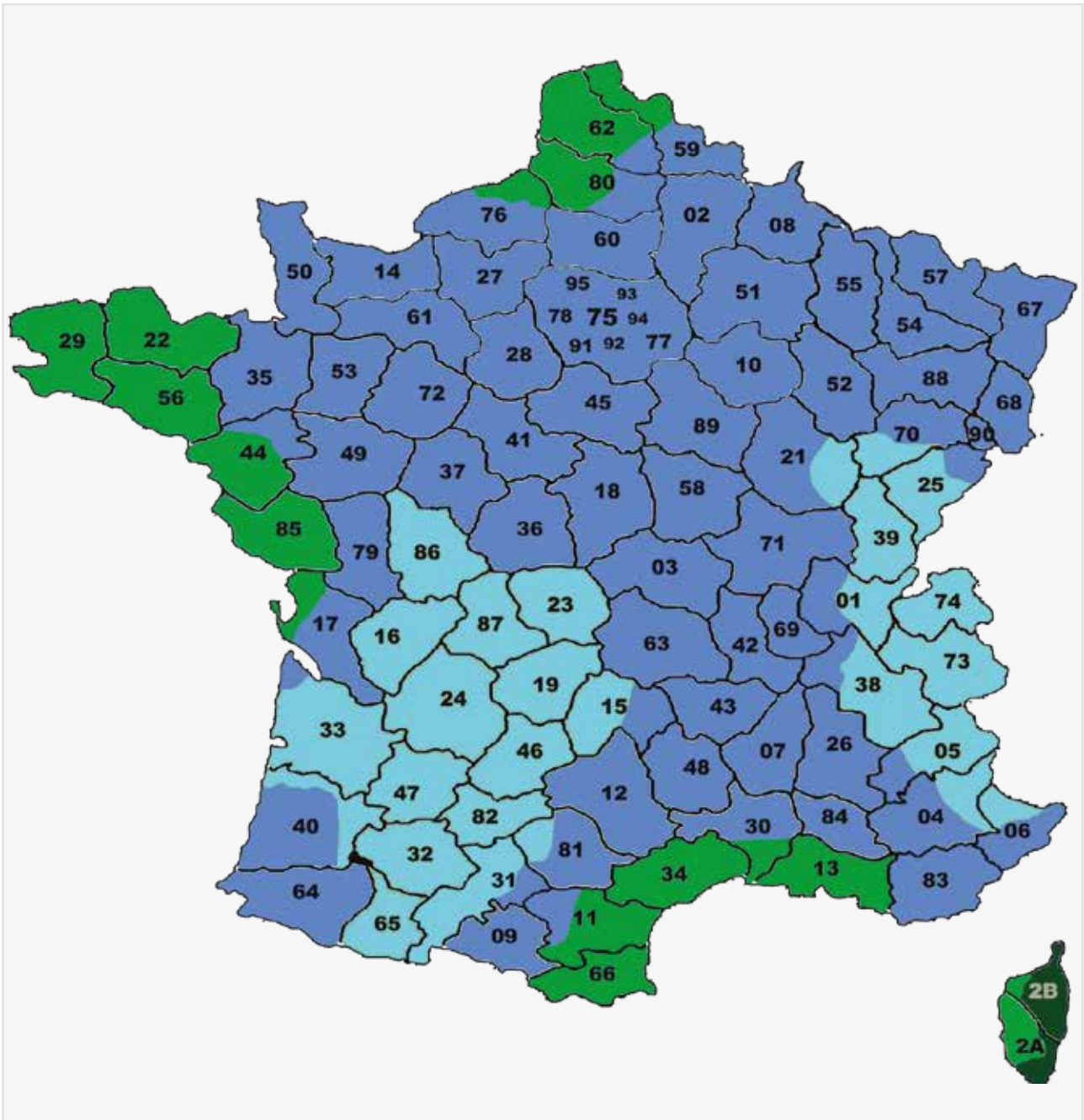
Setting values for sensors according to producer

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 (DTU 34.4 P3)



- Wind load zone 1
- Wind load zone 2
- Wind load zone 3
- Wind load zone 4

Planning Notes

Wind speed limit values [km/h] depending on the terrain category and the installation height (DTU 34.4 P3)

Wind load zone	Terrain category*	Installation height [m]					Wind load zone	Terrain category*	Installation height [m]				
		≤9	≤18	≤28	≤50	≤100			≤9	≤18	≤28	≤50	≤100
1	0	45	49	51	53	56	Guadeloupe	0	74	79	83	87	92
	II	41	44	47	50	54		II	67	73	77	82	88
	IIIa	36	40	43	46	51		IIIa	59	66	70	76	83
	IIIb	31	36	39	43	47		IIIb	51	59	64	70	78
	IV	31	32	35	39	44		IV	50	52	57	64	72
2	0	50	53	55	58	61	French Guiana	0	35	38	39	41	44
	II	44	49	51	55	59		II	31	34	36	39	42
	IIIa	39	44	47	51	55		IIIa	28	31	33	36	39
	IIIb	34	39	43	47	52		IIIb	24	28	30	33	37
	IV	33	35	38	43	48		IV	24	25	27	30	34
3	0	58	62	64	68	72	Martinique	0	66	71	74	77	82
	II	48	53	55	59	64		II	59	65	68	73	78
	IIIa	42	48	51	55	60		IIIa	52	58	62	68	74
	IIIb	37	43	46	51	56		IIIb	46	52	57	62	69
	IV	36	38	41	46	52		IV	44	47	51	57	64
4	0	58	62	64	68	72	Mayotte	0	62	66	69	73	77
	II	52	57	60	64	69		II	55	61	64	68	73
	IIIa	46	51	55	59	64		IIIa	49	55	59	63	69
	IIIb	40	46	50	55	60		IIIb	43	49	53	59	65
	IV	39	41	45	50	56		IV	42	44	48	53	60
							Réunion	0	70	75	78	82	87
								II	63	69	73	77	83
								IIIa	55	62	66	72	78
								IIIb	48	56	60	66	73
								IV	47	49	54	61	68

* Terrain categories

0 Sea or coastal area exposed to onshore winds, lakes and water bodies exposed to winds across a distance of at least 5km.

II Plain countryside with or without isolated obstacles (trees, buildings, etc.) which are separated from each other by more than 40 times their height.

IIIa Countryside with hedgerows, vineyards, hedges, dispersed housing.

IIIb Urbanized or industrial zones, dense hedges, groves.

IV Urban zones with at least 15% of the surface covered with buildings with an average height of more than 15m, forests.

Note

This clause is based on common types of buildings and can only provide general recommendations. The contractors must verify that, on the one hand, local climate conditions (in cases of construction in the mountains, above different levels of altitude, etc.) and, on the other hand, the shape of the building (in cases of non-planar facades, significant recesses, etc.) and its location in relation to other buildings (in particular in the case of heights greater than 50m), do not necessitate the use of performance closures other than those indicated below across the entire facade or on parts of the facade.

Facade awnings are not designed to withstand strong winds. The wind speeds indicated in the table above allow for a service rate of approximately 90% to be reached. If the project manager wishes to increase this service rate, a product from a higher category must be chosen.



Important!

The decision-maker must choose a product with a permissible wind speed (see p. 1) equal to or higher than the wind speed indicated in the table above and that has been adjusted to any potential characteristics of the installation site. This document is a reference sheet; please refer to DTU 34.4 for detailed instructions on the rules of application.

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