

Rating and Regions Guidelines and Categories



Lantog Pty Ltd t/a
Advance Metal Industries
Australia

183 Orlando Street,
Coffs Harbour NSW 2450
Ph +612 6652 6955
Fax +612 6652 3676
Web www.amia.com.au
Email admin@amia.com.au

A brief summary of references:

- *Class/Rating/Wind Pressure/Water Penetration*
- *What product should be ordered*
- *What to do if there are problems*

Class/Rating/Wind Pressures/Water Penetration.

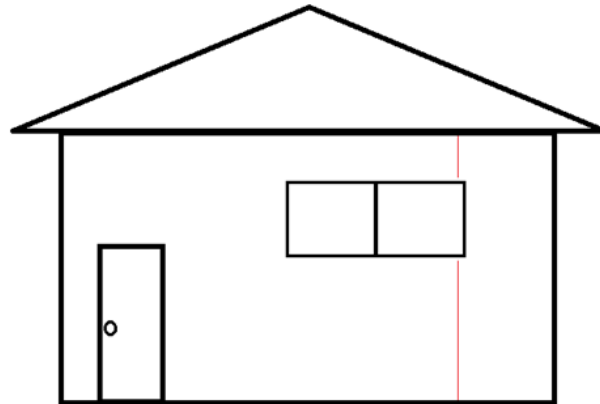
Class	Rating	Design Wind Pressure (kPa)				Water Penetration Requirements	
		Over 1200mm from corner		Within 1200mm of corner		Water Penetration (non-exposed)	Water Penetration (Exposed)
		Serviceability	Ultimate	Serviceability	Ultimate		
1	N1	-0.31	-0.53	-0.55	-0.94	150	200
1	N2	-0.31	-0.74	-0.55	-1.30	150	200
1	N3	-0.47	-1.16	-0.83	-2.03	150	300
1	N4	-0.70	-1.72	-1.23	-3.01	200	300
1	N5	-1.02	-2.53	-1.79	-4.44	300	450
1	N6	-1.40	-3.42	-2.45	-5.99	450	600
1	C1	-0.47	-1.80	-0.83	-2.7	150	300
1	C2	-0.70	-2.68	-1.23	-4.02	200	300
1	C3	-1.02	-3.94	-1.79	-5.91	300	450
1	C4	-1.40	-5.33	-2.45	-7.99	450	600
10	N1	-0.31	-0.53	-0.55	-0.94	0	0
10	N2	-0.31	-0.74	-0.55	-1.30	0	0
10	N3	-0.47	-1.16	-0.83	-2.03	0	0
10	N4	-0.70	-1.72	-1.23	-3.01	0	0
10	N5	-1.02	-2.53	-1.79	-4.44	0	0
10	N6	-1.40	-3.42	-2.45	-5.99	0	0
10	C1	-0.47	-1.80	-0.83	-2.7	0	0
10	C2	-0.70	-2.68	-1.23	-4.02	0	0
10	C3	-1.02	-3.94	-1.79	-5.91	0	0
10	C4	-1.40	-5.33	-2.45	-7.99	0	0

Sources

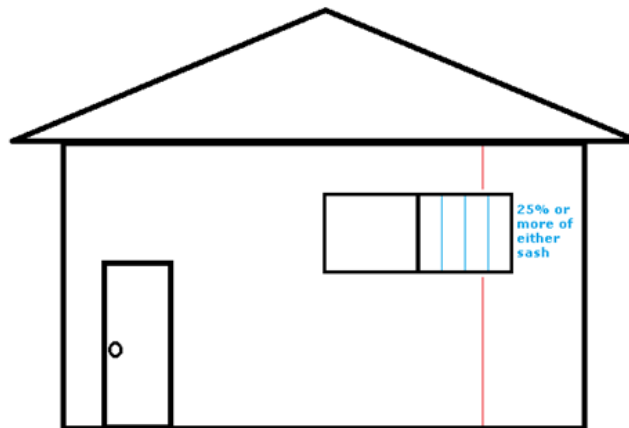
- **Ultimate Pressures** as per table 3.3 AS4055-2021
- **Serviceability Pressures** as per table 3.4 AS4055
- **Water Penetration** as per table 2.4 AS2014-2021

Notes:

1. If the building is in an exposed site and is likely to be subjected to driving rain, the exposed level of water penetration resistance should be specified in the design.
2. If the window is protected from driving rain by elements of the building such as a wide veranda, a lower level of water penetration resistance may be specified in the design as part of an alternative solution.



If the window is here or further away from the corner, no upgrades are required. **1200mm**



If the window is here, or closer to the corner, 'upgrades' may be needed depending on the size & site wind rating. **1200mm**

Window Location in respect to building corners

Pascals	Kpa	Klm/hr	m/sec.
75	0.075	40.25	11.18
100	0.100	46.48	12.91
150	0.150	56.92	15.81
200	0.200	65.73	18.26
250	0.250	73.48	20.41
300	0.300	80.50	22.36
400	0.400	92.95	25.82
500	0.500	103.92	28.87
600	0.600	113.84	31.62
700	0.700	122.69	34.16
800	0.800	131.45	36.51
900	0.900	139.43	38.73
1000	1.000	146.97	40.82
1100	1.100	154.14	42.82
1200	1.200	161.00	44.72
1300	1.300	167.57	46.55
1400	1.400	173.90	48.30
1500	1.500	180.00	50.00
1600	1.600	185.90	51.64
1700	1.700	191.62	53.23
1800	1.800	197.18	54.77
1900	1.900	202.58	56.27
2000	2.000	207.85	57.74
2100	2.100	212.98	59.16
2200	2.200	218.00	60.55
2300	2.300	222.90	61.91
2400	2.400	227.68	63.25
2500	2.500	232.38	64.55
3000	3.000	254.56	70.71
4000	4.000	293.65	81.65
5000	5.000	328.63	91.29
6000	6.000	360.00	100.00

Pressure Conversion Chart

Note: The above figures are intended as a guide only. An Engineer should always be consulted when determining site specific pressure requirements. Design pressures may vary according to factors such as air temperature, air density, façade areas that the pressure applies and the angle of wind directed at the façade are some examples that can affect these conversion numbers.

WIND CLASSIFICATIONS: WIND STANDARDS AND NCC 2022 UPDATED INFORMATION

What's involved in wind classification?

Currently, two primary standards apply:

- **AS 4055:2012:** Primarily used for residential housing, providing a wind rating.
- **AS/NZS 1170.2:2011:** Applied when the geometric limits of AS 4055 are exceeded, such as roof heights over 8.5 meters, offering a design wind speed.

Both standards consider several factors in different ways, to determine wind classifications:

Wind Region: Based on data specific to various regions in Australia (see Figure 1).

Terrain: The smoothness or roughness of the terrain due to trees and other structures. For AS 4055, this is evaluated within 500 meters in all directions. AS/NZS 1170.2 uses an averaging distance of either 500 meters or 40 times the average roof height plus a lag distance, whichever is greater.

Topography: Takes into account the cross-sections of a hill, the site's location on the hill, and its slope, all of which are critical for calculation.

Shielding: Considers the shielding of the house by nearby structures (for both standards) and trees (AS 4055 only).

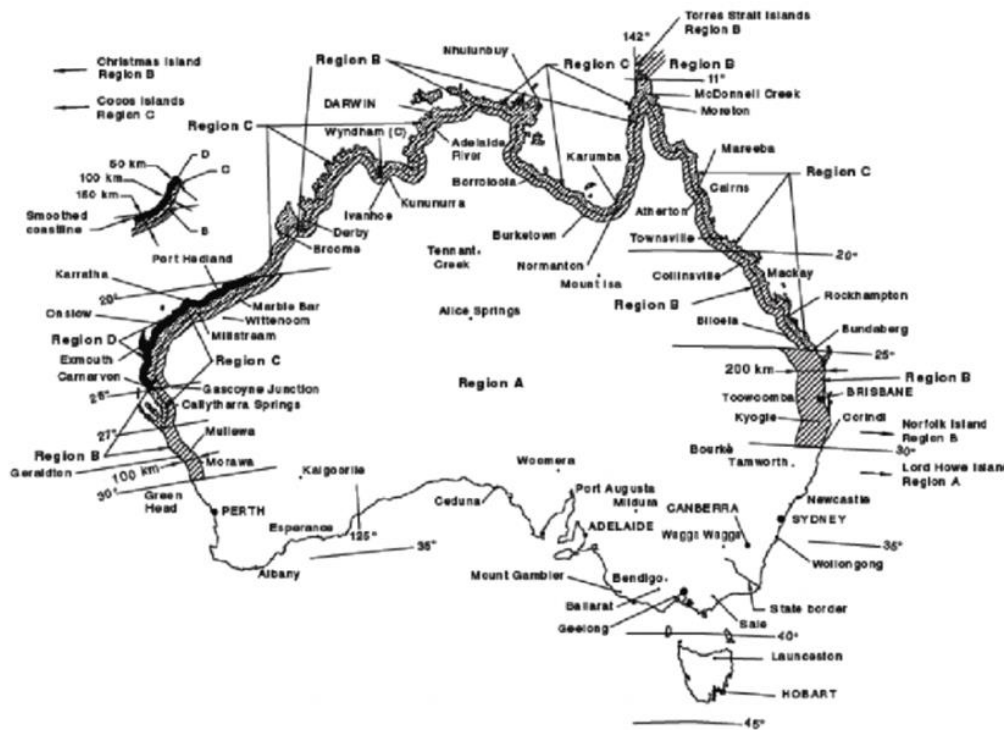


Figure 2.2 Boundaries of Regions A, B, C and D

(SOURCE: AS/NZS 1170.2)

Note: Regions are marked with the letters A, B, C and D.

Note 2: Coastal region boundaries are smooth lines set in from a smoothed coastline by 50 km, 100 km, 150 km and 200 km.

Note 3: Islands within 50 km of the coast are designated in the same region as the adjacent coast.

Table 2.2
SITE WIND CLASSIFICATION FROM WIND REGION AND SITE CONDITIONS

TABLE 2.2 - SITE WIND CLASSIFICATION FROM WIND REGION AND SITE CONDITIONS														
Wind Region	TC	Topographic Classification												
		T0	T0	T0	T1	T1	T1	T2	T2	T2	T3	T3	T4	T5
		FS	PS	NS	FS	PS	NS	FS	PS	NS	PS	NS	NS	NS
A	3	N1	N1	N1	N1	N2	N2	N2	N2	N2	N3	N3	N3	N4
	2.5	N1	N1	N2	N1	N2	N2	N3	N3	N3	N3	N3	N4	N4
	2	N1	N2	N2	N2	N2	N3	N2	N3	N3	N3	N3	N4	N4
	1	N2	N2	N3	N2	N3	N3	N3	N3	N3	N4	N4	N4	N5
B	3	N2	N2	N3	N2	N3	N3	N3	N3	N4	N4	N4	N4	N5
	2.5	N2	N3	N3	N3	N3	N3	N3	N4	N4	N4	N4	N5	N5
	2	N2	N3	N3	N3	N3	N4	N3	N4	N4	N4	N5	N5	N5
	1	N3	N3	N4	N3	N4	N4	N4	N4	N5	N5	N5	N6	N6
C	3	C1	C2 (0-10) C1 (10-50)	C2 (0-20) C1 (5-50)	C2 (0-5) C1 (5-50)	C2 (0-30) C1 (30-50)	C2 (0-40) C1 (40-50)	C2 (0-25) C1 (25-50)	C3 (0-5) C2 (20-50)	C3 (0-20) C2 (25-50)	C3 (0-20) C2 (30-50)	C3 (0-20) C2 (30-50)	C4 (0-10) C3 (10-50)	C4 (0-35) C3 (35-50)
	2.5	C1	C2 (0-25) C1 (35-50)	C2 (0-35) C1 (45-50)	C2 (0-20) C1 (20-50)	C2 (0-40) C1 (30-50)	C3 (0-10) C2 (10-50)	C2 (0-35) C1 (35-50)	C3 (0-20) C2 (20-50)	C3 (0-30) C2 (30-50)	C3 (0-30) C2 (40-50)	C3 (0-30) C2 (30-50)	C4 (0-5) C3 (5-50)	NA (0-15) NA (15-50)
	2	C2 (0-10) C1 (10-50)	C2 (0-35) C1 (35-50)	C2 (0-45) C1 (45-50)	C2 (0-30) C1 (30-50)	C3 (0-10) C2 (10-50)	C3 (0-25) C2 (25-50)	C3 (0-10) C2 (30-50)	C3 (0-30) C2 (30-50)	C3 (0-40) C2 (40-50)	C4 (0-10) C3 (10-50)	C4 (0-20) C3 (20-50)	NA (0-5) C4 (5-50)	NA (0-25) C4 (25-50)
	1	C2 (0-30) C1 (30-50)	C3 (0-10) C2 (10-50)	C3 (0-25) C2 (25-50)	C3 (0-10) C2 (10-50)	C3 (0-30) C2 (30-50)	C4 (0-5) C3 (5-50)	C3 (0-25) C2 (25-50)	C4 (0-10) C3 (10-50)	C4 (0-20) C3 (20-50)	C4 (0-30) C3 (30-50)	NA (0-5) C4 (5-50)	NA (0-25) C4 (25-50)	NA (0-45) C4 (45-50)
D	3	C2 (0-30) C1 (30-50)	C3 (0-10) C2 (10-50)	C3 (0-25) C2 (25-50)	C3 (0-5) C2 (5-50)	C3 (0-35) C2 (35-50)	C3	C3 (0-30) C2 (30-50)	C4 (0-5) C3 (5-50)	C4 (0-20) C3 (20-50)	C4 (0-30) C3 (30-50)	C4 (0-40) C3 (40-50)	NA (0-25) C4 (25-50)	NA
	2.5	C2	C3 (0-25) C2 (25-50)	C3 (0-40) C2 (40-50)	C3 (0-25) C2 (25-50)	C3	C4 (0-15) C3 (15-50)	C3 (0-45) C2 (45-50)	C4 (0-25) C3 (25-50)	C4 (0-40) C3 (40-50)	NA (0-5) C4 (5-50)	NA (0-20) C4 (20-50)	NA (0-40) C4 (40-50)	NA
	2	C3 (0-10) C2 (10-50)	C3 (0-40) C2 (40-50)	C4 (0-5) C3 (5-50)	C3 (0-35) C2 (35-50)	C4 (0-15) C3 (15-50)	C4 (0-30) C3 (30-50)	C4 (0-10) C3 (10-50)	C4 (0-40) C3 (40-50)	NA (0-15) C4 (15-50)	NA (0-20) C4 (20-50)	NA (0-35) C4 (35-50)	NA	NA
	1	C3 (0-35) C2 (35-50)	C4 (0-15) C3 (15-50)	C4 (0-30) C3 (30-50)	C4 (0-10) C3 (10-50)	C4 (0-40) C3 (40-50)	NA (0-15) C4 (15-50)	C4 (0-35) C3 (35-50)	NA (0-25) C4 (25-50)	NA (0-40) C4 (40-50)	NA (0-45) C4 (45-50)	NA	NA	NA

NOTE: For wind regions C and D, site wind classification is given according to the distance (km) from the coastline or higher wind region

A site is considered "Exposed" if it falls in any of the following: Terrain Category 2 or lower, Topographic 3 or higher, or No Shielding

LEGEND:

- FS = full shielding
- PS = partial shielding
- NS = no shielding
- N = non-cyclonic
- C = cyclonic
- N/A = not applicable, that is, beyond the scope of this Standard (use AS/NZS 1170.2)
- TC = terrain category

Note: *No shielding (NS)* – No shielding shall apply where there are no permanent obstructions or where there are less than 2.5 obstructions per hectare, such as the row of houses or single houses abutting open parklands, open water or airfields.

Note 2: For commentary on shielding class, see [Appendix A](#).

Note 3: For worked examples, see [Appendix C](#).

Note 4: In assessing shielding, a reasonable estimate should be made about infill development in the next five years as it is the anticipated development five years after construction that is assessed.

Note 5: In Regions A and B, trees or groups of trees with similar face area to houses may be considered as shielding elements.

Bushfire Requirements.

You should make yourself familiar with AS 3959-2009 – Construction of building in bushfire prone areas. This can impact on the glass requirements as well as screening for the windows and doors and will probably impact on other areas of the building as well.

Requirements in some cases are for full cover screens over both the sliding and fixed panel of the window. To this end we have standardised our full cover screens (both fly and barrier) with the following features –

- Aluminium fly mesh (option to upgrade to stainless steel)
- Metal spline in lieu of standard
- Face fixed to frame using tamper resistant fasteners

[Click the link to Download the GUIDE TO WINDOWS & DOORS IN BUSHFIRE PRONE AREAS](#)