

AS 4055:2021



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Wind loads for housing



AS 4055:2021

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- Concrete Masonry Association of Australia
- Cyclone Testing Station
- Forest and Wood Products Australia
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Wind loads for housing

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Preface

This Standard was prepared by the Standards Australia Committee BD-099, Wind loads for housing, to supersede AS 4055:2012.

The objective of this document is to provide designers, builders and manufacturers of building products that are affected by wind loading with a range of wind speed classes that can be used to design and specify such products for use in housing that are within the limits of this document.

This revision aims to improve modelling of topographic effects and also to harmonize with recent changes to AS/NZS 1170.2.

The major changes in this edition are as follows:

- (a) The scope has been revised to include the limitation to NCC Class 1 and 10a buildings. This has always been the intention of this document as reflected in the definition of *house* (1.4.4), but the limitation is more obvious when presented in the Scope.
- (b) The wind speeds for each wind classification remain unchanged.
- (c) [Table 2.2](#) has been updated to include revision to AS/NZS 1170.2 which allows interpolation of wind speed between the boundaries of cyclonic regions C and D.
- (d) [Figure 1.2](#) has been modified to clarify definition of height of house when house site has batters (e.g. retaining walls) adjacent to the house.
- (e) Definitions for terrain categories (see [Clause 2.3](#)) have been revised to align with those in AS/NZS 1170.2 and to clarify the differences between the categories.
- (f) The calculation of topographic class (see [Clause 2.4](#)) had previously used the maximum slope of the topographic feature. The revision has been made to explicitly use the derived maximum slope that runs through the house site. The diagram of the cross-section of a hill better shows the measurements required to assess topographic class.
- (g) The example of topographic classes in [Appendix B](#) has been changed to reflect the definition of topographic classes.
- (h) The example of terrain categories and shielding in [Appendix C](#) has been changed to reflect the definition of terrain categories and shielding.
- (i) Nomenclature of “r” and “w” has been added to the wind classifications (see [Clause 2.6](#)) which is used to evaluate roof and wall pressures, including elements on openings such as windows and doors. No change has been made to the pressures used for each classification.
- (j) [Tables 5.2\(B\)](#) to [5.2\(M\)](#) have been amended to address minor discrepancies between values in the previous edition and those calculated from the formulae in [Appendix A](#).

The figures in [Appendix A](#) have been reproduced with permission from Department of Resources, Queensland © State of Queensland 2021.

The term “informative” has been used in this Standard to define the application of the Appendix to which it applies. An “informative” appendix is only for information and guidance.

Notes to the text contain information and guidance only and are not an integral part of the document.

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NOTES

Australian Standard®

Wind loads for housing

Section 1 Scope and general

1.1 Scope

This document specifies site wind speed classes for determining design wind speeds and wind loads for NCC Class 1 and 10a buildings within the geometric limits given in [Clause 1.2](#). The classes are for use in the design of housing and for design, manufacturing and specifying of building products and systems used for housing.

Wind loads for NCC Class 1 and 10a buildings that are not within the geometric limits given in [Clause 1.2](#) and other NCC building classes, i.e. Class 2 to 9 buildings, are outside the scope of this document.

NOTE 1 Commentary on the clauses of this document is given in [Appendix A](#).

NOTE 2 A worked example for the determination of topography is given in [Appendix B](#).

NOTE 3 Worked examples for the determination of terrain category and shielding class are given in [Appendix C](#).

NOTE 4 A worked example for racking forces is given in [Appendix D](#).

NOTE 5 Refer to AS/NZS 1170.2 for buildings that are outside the geometric and other limitations of this document.

1.2 Geometric limits

For the purpose of this document, the following conditions (geometric limits) shall apply (see [Figure 1.2](#)):

- (a) The distance from averaged ground level to the underside of eaves shall not exceed 6.0 m.
- (b) The distance from averaged ground level to the highest point of the roof, not including chimneys, shall not exceed 8.5 m.
- (c) The width (W) including roofed verandas, excluding eaves up to a maximum of 0.9 m, shall not exceed 16.0 m. The length (L) shall not exceed five times the width.
- (d) The roof pitch shall not exceed 35°.

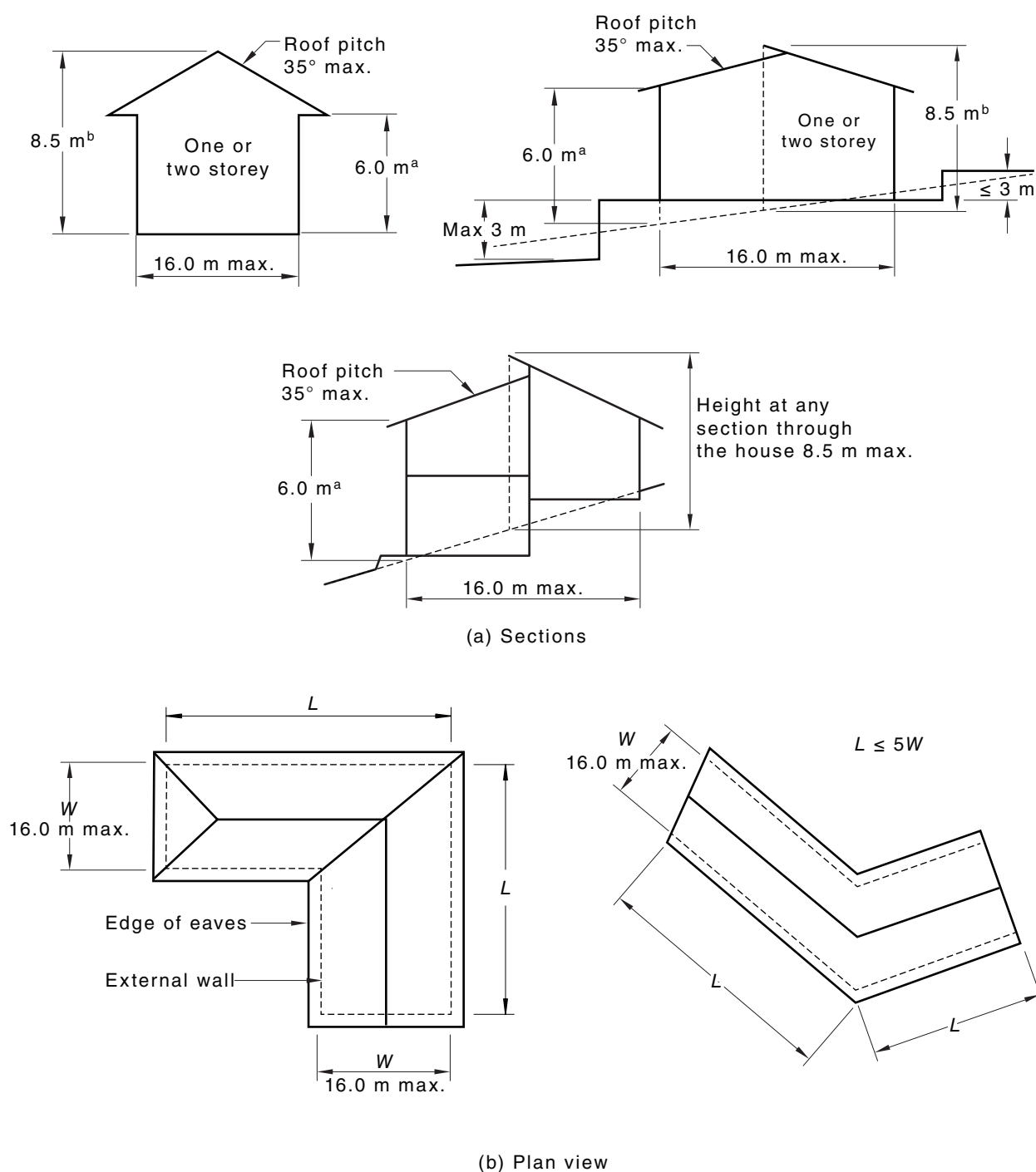
NOTE 1 The tables in [Section 5](#) are based on a floor to ceiling height of 2.4 m and a floor depth of 0.3 m (floor level down to ceiling below).

Where wind loads on houses are determined using this document, design parameters shall be derived from this document only. Where wind loads on buildings are determined using AS/NZS 1170.2, design parameters in that Standard only shall be used.

NOTE 2 [Clause 3.2.3](#) refers to pressures on solar panels given in AS/NZS 1170.2. These parameters are referenced in this document.

Dimensions in metres

Eaves 0.9 m max.



NOTE The averaged ground level (1.4.1) is represented by the dashed ground lines in the cross-sections.

Figure 1.2 — Geometry

1.3 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document.

NOTE Documents referenced for informative purposes are listed in the Bibliography.

AS/NZS 1170.2, *Structural design actions, Part 2: Wind actions*

1.4 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

1.4.1

averaged ground level

natural ground level excluding earthworks where earthworks are minor, or averaged ground level through modified land where the earthworks are major

Note 1 to entry: Where minor earthworks have changed the level of the land over less than 50 m², see lower cross-section in [Figure 1.2\(a\)](#).

Note 2 to entry: Where major earthworks have changed the level of the land over more than 50 m², see upper right cross-section in [Figure 1.2\(a\)](#).

1.4.2

bottom of hill, ridge or escarpment

area at the base of the hill, ridge or escarpment, where the average slope is less than 1 in 20

1.4.3

height

distance from ground level to the underside of eaves or to the highest point of the roof neglecting chimneys; or the height of each storey at external walls

Note 1 to entry: See [Figure 1.2](#).

1.4.4

house

NCC Class 1 or 10a building with the geometric limitations specified in [Clause 1.2](#)

1.4.5

length

maximum overall distance between outside edges of the external walls of a house or shape

Note 1 to entry: See [Figure 1.2](#).

1.4.6

may

indicates the existence of an option

1.4.7

obstruction

natural or man-made objects that generate turbulent wind flow, ranging from single trees to forests and from isolated small structures to closely spaced multi-storey buildings

1.4.8

plan

basic rectangular, square or L-shaped layout, or simple combinations of these layouts

Note 1 to entry: See [Figure 1.2](#).

1.4.9**racking forces**

forces that occur in walls parallel to the wind direction

1.4.10**shall**

indicates that a statement is mandatory

1.4.11**should**

indicates a recommendation

1.4.12**width**

maximum distance from wall to wall in the direction perpendicular to the length, including roofed verandas but excluding eaves

Note 1 to entry: See [Figure 1.2](#).

1.5 Notation

Unless otherwise stated, the notation used in this document shall have the following meaning:

$C1$ to $C4$	=	cyclonic wind classes
$C1_{serv}$ to $C4_{serv}$	=	cyclonic wind classes for serviceability
C_p	=	pressure coefficient (external, internal or net, as appropriate)
$C_{p,e}$	=	external pressure coefficient
$C_{p,i}$	=	internal pressure coefficient
$C_{p,n}$	=	net pressure coefficient
d	=	average horizontal distance measured from the crest of the escarpment or hill to the near top-third zone, in metres
FS, PS, NS	=	shielding classes, full shielding, partial shielding and no shielding
G	=	dead load; or permanent action (self-weight), in kilopascals
G	=	wind pressure zone more than 1 200 mm from edges of roofs or external corners of walls
H	=	height of a hill, ridge or escarpment, in metres
H_0	=	maximum distance from the ground to the underside of the bearer in the lower floor, in metres
h	=	average roof height, in metres
h_0	=	half the height of the wall (half of the floor to ceiling height) in metres
K_c	=	combination factor
K_l	=	local pressure factor
L, M, T	=	lower, middle and top third of hill, ridge or escarpment

L	=	length of a house; or lower part of a hill, ridge or escarpment, in metres
L_u	=	horizontal distance upwind from the crest of the hill, ridge or escarpment to a level half the height below the crest
M_s	=	shielding multiplier
M_t	=	topographic multiplier
$M_{6.5,cat}$	=	terrain category multiplier at height (h)
N1 to N6	=	non-cyclonic wind classes
N1 _{serv} to N6 _{serv}	=	non-cyclonic wind classes for serviceability
p	=	design wind pressure acting normal to a surface, in kilopascals
q_u	=	free stream dynamic gust pressure, in kilopascals
NA	=	not applicable
RC	=	pressure zone on roofs within 1 200 mm of external corners
RE	=	pressure zone on roofs within 1 200 mm of roof panel edges
SC	=	pressure zone on walls within 1 200 mm of external corners of the house
TC1 to TC3	=	terrain categories
T0 to T5	=	topographic classes
V_h	=	design gust wind speed at height (h), in metres per second
$V_{h,s}$	=	design gust wind speed at height (h) for serviceability limit state, in metres per second
$V_{h,u}$	=	design gust wind speed at height (h) for ultimate strength limit state, in metres per second
W	=	width of a house, in metres
W_s	=	serviceability wind action, in kilopascals
W_u	=	ultimate wind action in kilopascals
α	=	angle of roof pitch
ϕ_a	=	maximum slope through the top half of the hill, ridge or escarpment
γ	=	load factor
ρ_{air}	=	density of air

Section 2 Wind loads

2.1 Site wind classification

The system of 10 site wind classifications is set out in [Tables 2.1\(A\)](#) and [2.1\(B\)](#) together with the associated site design gust wind speeds (V_h) for the serviceability and ultimate limit states. This incorporates both non-cyclonic (N) and cyclonic (C) winds.

Table 2.1(A) — Design gust wind speed (V_h) for non-cyclonic Regions A and B

Site wind classification	Design gust wind speed (V_h) at height (h) m/s	
	Serviceability limit state ($V_{h,s}$)	Ultimate limit state ($V_{h,u}$)
N1	26	34
N2	26	40
N3	32	50
N4	39	61
N5	47	74
N6	55	86

Table 2.1(B) — Design gust wind speed (V_h) for cyclonic Regions C and D

Site wind classification	Design gust wind speed (V_h) at height (h) m/s	
	Serviceability limit state ($V_{h,s}$)	Ultimate limit state ($V_{h,u}$)
C1	32	50
C2	39	61
C3	47	74
C4	55	86

NOTE [Section 3](#) may present different pressures for the same wind speed depending on classification.

2.2 Relationship to wind region and site conditions

The selection of site wind classification for a house depends on the conditions at the site of the house. The classification shall be determined from [Table 2.2](#) using the following site conditions determined as stated:

- Geographic wind region of the site as defined in [Figure 2.2](#) (Region A, B, C or Region D, as given in AS/NZS 1170.2).
- The terrain category that surrounds or is likely to surround the site within the next five years, as defined in [Clause 2.3](#), e.g. TC1, TC2, TC2.5 or TC3.
- The topographic class of the site, as defined in [Clause 2.4](#), e.g. T0, T1, T2, T3, T4 or T5.
- The shielding class of the house, as defined in [Clause 2.5](#), e.g. FS, PS or NS.

For cyclonic wind Regions C and D, the site wind classification is a function of the distance (km) from the coast or wind region boundary closest to the coast.

For wind Region C in Western Australia, inland from wind Region D, the distance given in [Table 2.4](#) is the distance (km) to the boundary between wind Region C and wind Region D, elsewhere in wind Region C, it is the distance to the smoothed coast line.

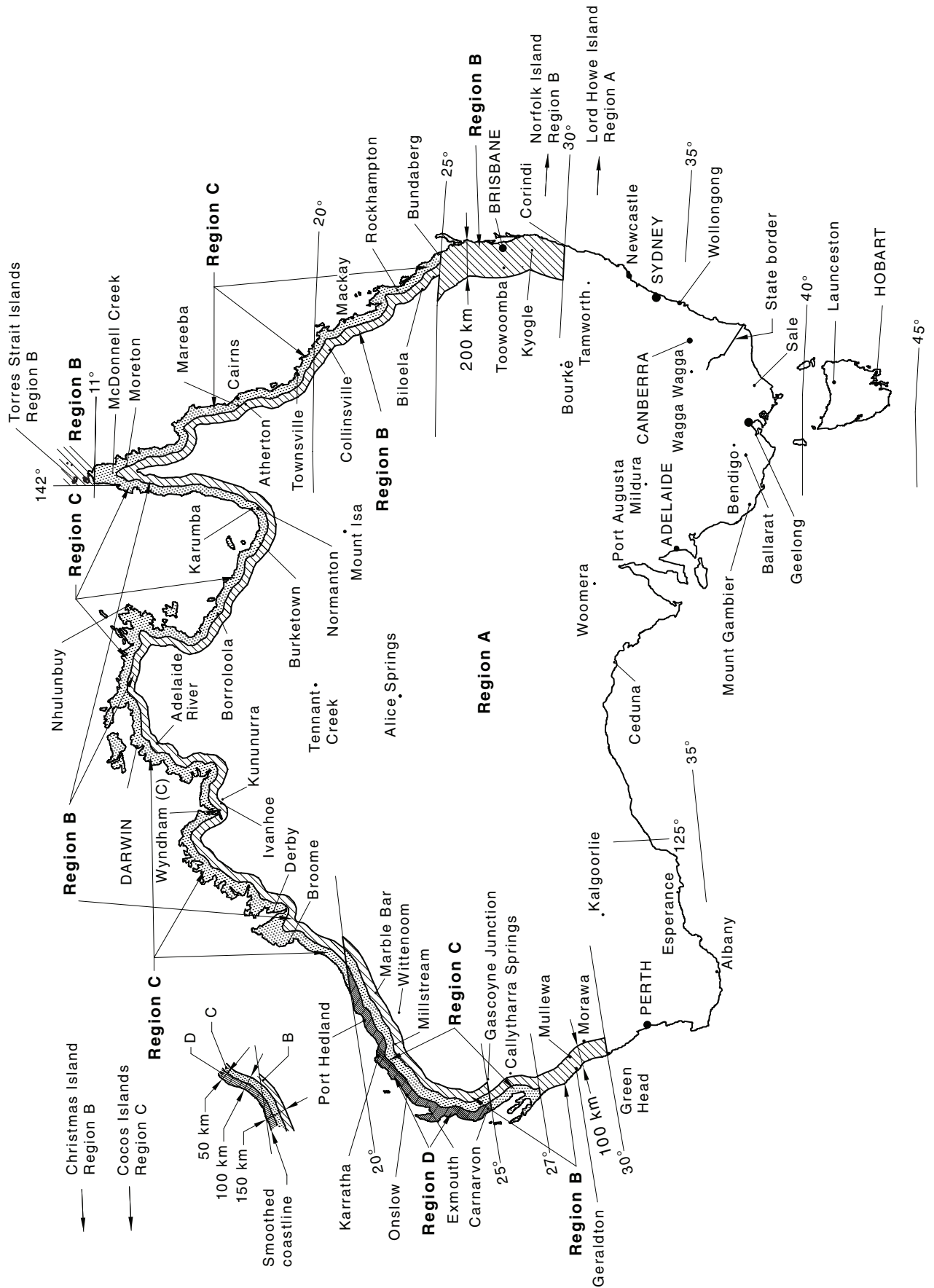


Figure 2.2 — Boundaries of Regions A, B, C and D

[SOURCE: AS/NZS 1170.2.]

NOTE 1 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

Wind region	TC	Topographic classification													
		T0	T0	T0	T1	T1	T1	T1	T2	T2	T2	T2	T3	T3	T5
		FS	PS	NS	FS	PS	NS	NS	FS	PS	NS	NS	PS	NS	NS
A	3	N1	N1	N1	N1	N2	N2	N2	N2	N2	N2	N2	N3	N3	N4
	2.5	N1	N1	N2	N2	N2	N2	N2	N2	N2	N2	N2	N3	N3	N4
	2	N1	N2	N2	N2	N2	N2	N2	N2	N2	N2	N2	N3	N3	N4
	1	N2	N2	N3	N2	N2	N2	N2	N2	N2	N2	N2	N3	N3	N4
B	3	N2	N2	N3	N2	N2	N2	N2	N2	N2	N2	N2	N3	N3	N4
	2.5	N2	N3	N3	N2	N2	N2	N2	N2	N2	N2	N2	N3	N3	N4
	2	N2	N3	N3	N2	N2	N2	N2	N2	N2	N2	N2	N3	N3	N4
	1	N3	N3	N4	N2	N2	N2	N2	N2	N2	N2	N2	N3	N3	N4
C	3	C1 (0-50)	C2 (0-10) C1 (10-50)	C2 (0-20) C1 (20-50)	C2 (0-5) C1 (5-50)	C2 (0-30) C1 (30-50)	C2 (0-40) C1 (40-50)	C2 (0-40) C1 (40-50)	C2 (0-5) C1 (5-50)	C3 (0-5) C2 (5-50)	C3 (0-20) C2 (20-50)	C3 (0-30) C2 (30-50)	C3 (0-30) C2 (30-50)	C3 (0-30) C2 (30-50)	C4 (0-35) C3 (35-50)
	2.5	C1 (0-50)	C2 (0-25) C1 (25-50)	C2 (0-35) C1 (35-50)	C2 (0-20) C1 (20-50)	C2 (0-40) C1 (40-50)	C2 (0-40) C1 (40-50)	C2 (0-40) C1 (40-50)	C2 (0-5) C1 (5-50)	C2 (0-25) C1 (25-50)	C3 (0-30) C2 (30-50)	C3 (0-30) C2 (30-50)	C3 (0-30) C2 (30-50)	C3 (0-30) C2 (30-50)	C4 (0-25) C3 (25-50)
	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)	C2 (0-40) C1 (40-50)	C2 (0-40) C1 (40-50)	C2 (0-40) C1 (40-50)	C2 (0-5) C1 (5-50)	C2 (0-25) C1 (25-50)	C3 (0-30) C2 (30-50)	C3 (0-30) C2 (30-50)	C3 (0-30) C2 (30-50)	C3 (0-30) C2 (30-50)	C4 (0-25) C3 (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)	C3 (0-30) C2 (30-50)	C3 (0-30) C2 (30-50)	C3 (0-5) C2 (5-50)	C3 (0-25) C2 (25-50)	C4 (0-10) C3 (10-50)	C4 (0-10) C3 (10-50)	C4 (0-30) C3 (30-50)	C4 (0-30) C3 (30-50)	C4 (0-45) C3 (45-50)

Table 2.2 (continued)

Wind region	TC	Topographic classification														
		T0	T0	T0	T1	T1	T1	T2	T2	T2	T2	T2	T2	T3	T3	T4
		FS	PS	NS	FS	PS	NS	FS	PS	NS	FS	PS	NS	PS	NS	NS
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 (0-50)	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 (0-40) C4 (40-50)	NA (0-50)	NA (0-50)
	2.5	C2 (0-50)	C3 (0-25) C2 (25-50)	C3 (0-40) C2 (40-50)	C3 (0-25) C2 (25-50)	C3 (0-50)	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 (0-50)	NA (0-50)	NA (0-50)
	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 (0-50)	NA (0-50)	NA (0-50)	NA (0-50)
	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 (0-50)	NA (0-50)	NA (0-50)	NA (0-50)	NA (0-50)
Key		FS = Full shielding PS = Partial shielding NS = No shielding NOTE For wind Regions C and D, site wind classification is given according to the distance (km) from the smoothed boundary (coastline or higher wind region).														

2.3 Selection of terrain category

The terrain category (TC) for a housing site is a measure of the lowest effective surface roughness from any radial direction within a distance of 500 m of the proposed housing site. It may be based on the likely terrain five years after design. Substantial well-established trees may be considered as obstructions for evaluation of terrain category in all wind regions.

NOTE 1 In assessing the terrain category, 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.

The terrain category for a housing site shall be identified by the notation TC1, TC2, TC2.5 or TC3 and be determined as follows:

- (a) *Terrain Category 1 (TC1)* — Very exposed open terrain with very few or no obstructions, and all water surfaces, e.g. flat, treeless, poorly grassed plains; open ocean, rivers, canals, bays and lakes.
- (b) *Terrain Category 2 (TC2)* — Open terrain including grassland with well-scattered obstructions having heights generally from 1.5 m to 5 m with no more than two obstructions per hectare, e.g. farmland and cleared subdivisions with isolated trees or clumps of trees, equivalent to at least house size, and uncut grass.
- (c) *Terrain Category 2.5 (TC2.5)* — Terrain with a few trees or isolated obstructions. This category is intermediate between TC2 and TC3 and represents the terrain in developing outer urban areas with scattered houses or clumps of trees equivalent to house size, or large acreage developments with fewer than 10 house-size obstructions per hectare.
- (d) *Terrain Category 3 (TC3)* — Terrain with numerous closely spaced obstructions having heights generally from 3 m to 10 m. The minimum density of obstructions shall be at least the equivalent of 10 house-size obstructions per hectare, e.g. suburban housing, light industrial estates or clumps of trees greater than house size.

In urban situations, roads, rivers, small lakes or canals less than 200 m wide shall be deemed to form part of normal “Terrain Category 3” terrain. Parks and other open spaces less than 250 000 m² in area shall also be deemed to form part of normal “Terrain Category 3” terrain provided they are not within 500 m of each other or not within 500 m of open country.

Housing sites less than 500 m from the edge of a development shall be classified as the applicable terrain that adjoins the development, i.e. TC1, TC2, TC2.5 or TC3, as applicable.

NOTE 2 Shielding provisions may still apply to these sites.

NOTE 3 For commentary on terrain categories, see [Appendix A](#).

NOTE 4 For worked examples, see [Appendix C](#).

NOTE 5 Terrain Category 4, as defined in AS/NZS 1170.2, is not applicable to this document.

NOTE 6 Terrain categories are the same as those in AS/NZS 1170.2.

NOTE 7 Vegetation is considered differently for terrain categories in this clause and for shielding classes in [Clause 2.5](#).

2.4 Selection of topographic class

The topographic class is a measure of the effect of wind on a house on rising ground.

The topographic class for a housing site shall be identified by the notation T0, T1, T2, T3, T4 or T5 and be determined from [Table 2.4](#).

NOTE For a worked example to determine topographic class, see [Appendix B](#).

The slope (ϕ_a) shall be the steepest measured slope in the top half of the cross-section through the site.

The bottom of the cross-section shall be that area at the bottom of the hill, ridge or escarpment where the average slope is less than 1 in 20 (e.g. creek, river valley or flat area) and does not continue further downwards at an average slope of more than 1 in 20 for at least 200 m, see [Figure 2.4\(A\)](#).

The top of the cross-section shall be that area at the crest of the hill, ridge or escarpment where the average slope is less than 1 in 20 (e.g. saddle, peak or plateau) and does not continue upwards for at least 200 m, see [Figure 2.4\(A\)](#).

The top-third zone (T) extends for an equal distance (d) either side of the crest of an escarpment as shown in [Figure 2.4\(B\)](#). The value of d shall be the average horizontal distance measured from the crest of the escarpment to the near top-third zone.

A rise in terrain shall be deemed an escarpment where the maximum slope on one side of the ridge is greater than 1 in 10 and on the other side is less than 1 in 20.

Table 2.4 — Topographic classification for hills, ridges or escarpments

Maximum slope	Site location, see Figures 2.4(A) and 2.4(B)				
	Lower-third zone	Mid-third zone	Top-third zone		
			(T)		
(ϕ_a)	(L)	(M)	$H \leq 10$ m	$10 \text{ m} < H \leq 30$ m	$H > 30$ m
$< 1:20$ ($< 2.9^\circ$)	T0	T0	T0	T0	T0
$\geq 1:20$ ($\geq 2.9^\circ$) $< 1:10$ ($< 5.7^\circ$)	T0	T0	T1	T1	T1
$\geq 1:10$ ($\geq 5.7^\circ$) $< 1:7.5$ ($< 7.6^\circ$)	T0	T1	T1	T2	T2
$\geq 1:7.5$ ($\geq 7.6^\circ$) $< 1:5$ ($< 11.3^\circ$)	T0	T1	T2	T2	T3
$\geq 1:5$ ($\geq 11.3^\circ$) $< 1:3$ ($< 18.4^\circ$)	T0	T2	T2	T3	T4
$\geq 1:3$ ($\geq 18.4^\circ$)	T0	T2	T3	T4	T5

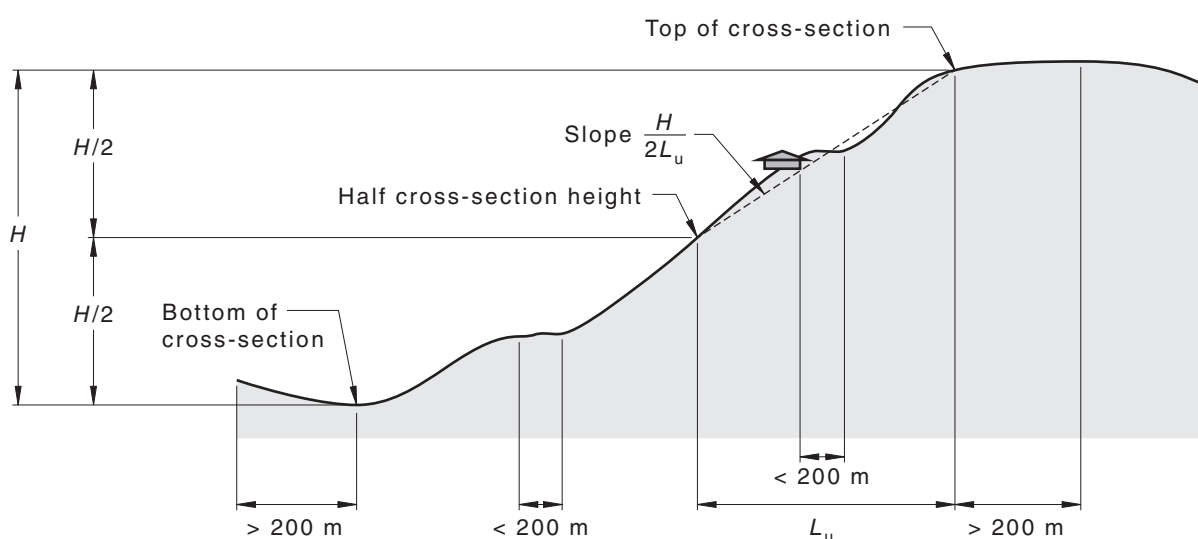


Figure 2.4(A) — Topographic zones for top and bottom of slope

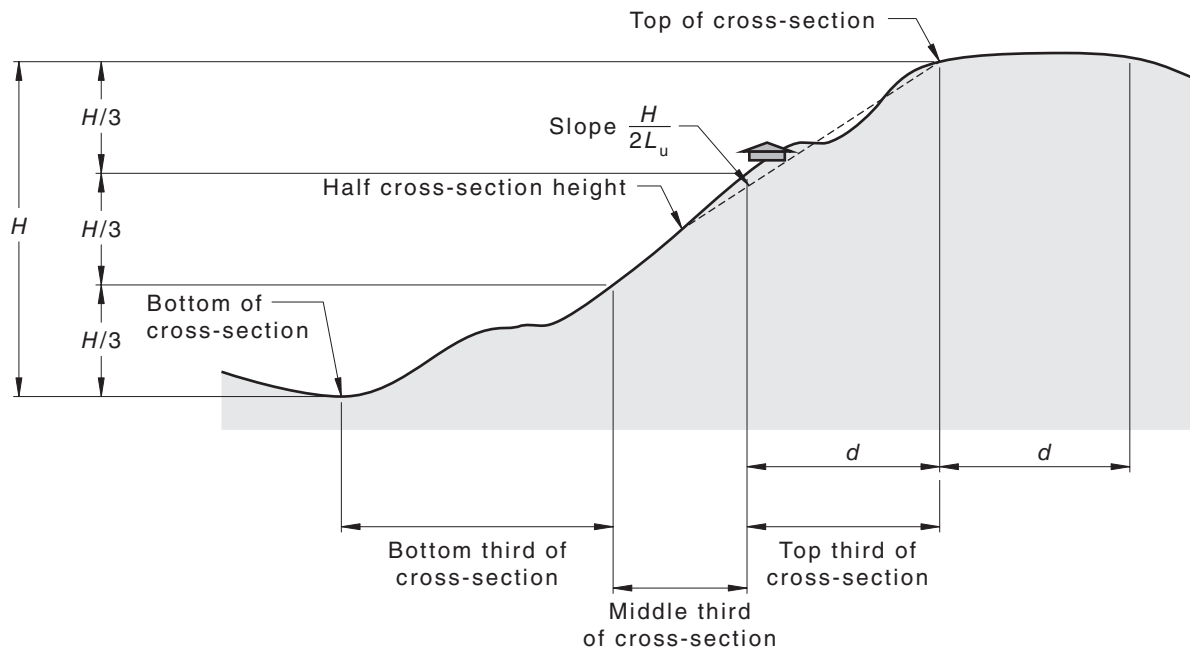


Figure 2.4(B) — Topographic zones for average slope

2.5 Selection of shielding class

The shielding class is a measure of the effect of surrounding buildings, or similar size obstructions, on the wind speed at the site. It may be based on the anticipated shielding five years after design.

NOTE 1 In Regions A and B, trees or groups of trees with similar face area to houses may be considered as shielding elements.

In Regions C and D, trees and vegetation shall not be used as shielding elements.

The shielding class for a housing site shall be identified by the notation FS, PS or NS, and be determined as follows:

- (a) **Full shielding (FS)** — Full shielding shall apply where there are no open areas within 100 m of the site and at least two rows of houses or similar-sized permanent obstructions surround the house being considered. In Regions A and B, permanent, closely spaced trees with a height greater than the proposed house and extending equivalent to three rows of houses, shall be determined to provide full shielding. Full shielding shall be only for houses within Topographic Classes T0, T1 and T2.

The application of full shielding shall be appropriate for typical suburban development greater than or equal to 10 houses, or similar size obstructions per hectare.

NOTE 2 The effects of road reserves or other small open areas with a width of less than 20 m adjacent to the house site may be ignored.

- (b) **Partial shielding (PS)** — Partial shielding shall apply to intermediate situations where there are at least 2.5 houses or sheds per hectare, such as acreage type suburban development. Partial shielding shall be only for houses within Topographic Classes T0, T1, T2 and T3.

NOTE 3 The second row of houses abutting open parkland, open water or airfields may be classified as having partial shielding.

NOTE 4 In Regions A and B, permanent, closely spaced trees with a height greater than the proposed house and extending equivalent to two rows of houses provide partial shielding.

- (c) *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 5 For commentary on shielding class, see [Appendix A](#).

NOTE 6 For worked examples, see [Appendix C](#).

NOTE 7 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.

2.6 Wall and roof wind classifications

2.6.1 General

The wall and roof wind classifications shall be determined using [Table 2.6.1\(A\)](#) or [Table 2.6.1\(B\)](#) from the site wind classification, taking into account the features of the house to be placed on the site.

Table 2.6.1(A) — Wall and roof classifications for houses in wind Regions A and B

Site wind classification	Wall classification	Roof classification
N1	N1w	N1r
N2	N2w	N2r
N3	N3w	N3r
N4	N4w	N4r
N5	N5w	N5r
N6	N6w	N6r

NOTE For the purpose of this version, nomenclature of “r” and “w” has been added to the wind classifications which is used to evaluate roof and wall pressures, including elements on openings such as windows and doors. No change has been made to pressures for each classification. For example, a N1r rating for roofing means N1 rated roofing and similarly a N1w rating for windows means N1 rated windows.

Table 2.6.1(B) — Wall and roof classifications for houses in wind Regions C and D

Site wind classification	Wall classification	Roof classification
C1	C1w	C1r
C2	C2w	C2r
C3	C3w	C3r
C4	C4w	C4r

NOTE For the purpose of this version, nomenclature of “r” and “w” has been added to the wind classifications which is used to evaluate roof and wall pressures, including elements on openings such as windows and doors. No change has been made to pressures for each classification. For example, a C1r rating for roofing means C1 rated roofing and similarly a C1w rating for windows means C1 rated windows.

2.6.2 Use of wind classifications

The elements shall be classified as follows:

- (a) Wall cladding and structural elements shall be specified using the wall classification given in [Tables 2.6.1\(A\)](#) and [2.6.1\(B\)](#).
- (b) Roof cladding and structural elements shall be specified using the roof classification given in [Tables 2.6.1\(A\)](#) and [2.6.1\(B\)](#).
- (c) Other items on the site shall be specified using the site classification given in [Tables 2.6.1\(A\)](#) and [2.6.1\(B\)](#).

- (d) Bracing forces shall be specified using the site classification, see [Section 5](#).

Section 3 Calculation of pressures and forces

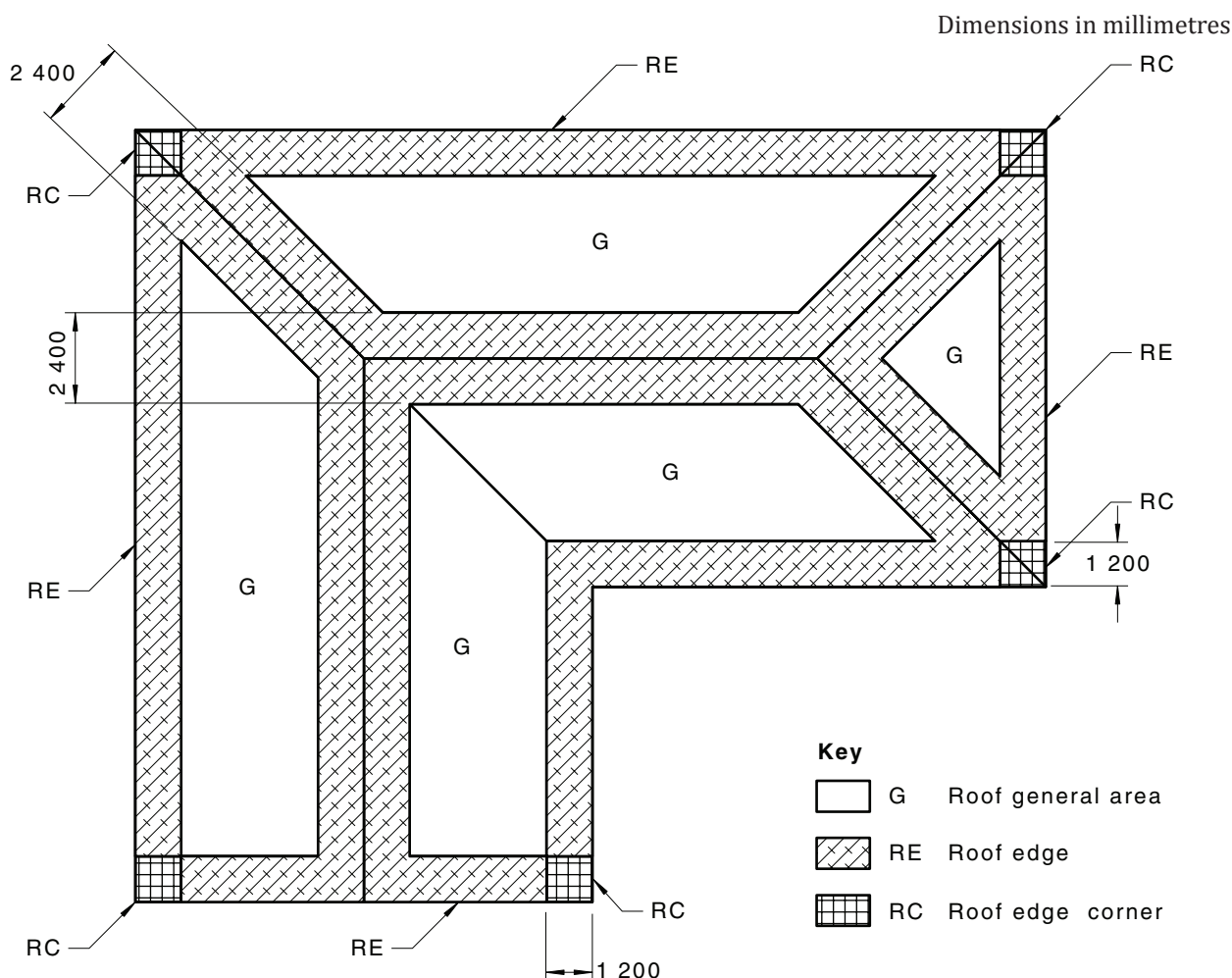
3.1 Pressure zones

The following external pressure zones [see [Figures 3.1\(A\)](#) and [3.1\(B\)](#)] shall be used in evaluating wind loads on houses:

- (a) *General (G)* — Areas of roofs more than 1 200 mm from edges, and areas of walls (including windows and doors) more than 1 200 mm from external corners.
- (b) *Roof edge (RE)* — Areas of roofs within 1 200 mm of all edges except the external corners of the roof.
- (c) *Roof corners (RC)* — Areas of the external corners of roofs within 1 200 mm of two adjacent edges.

NOTE This is the overlap area between two RE zones.

- (d) *Walls near corners (SC)* — Walls (including windows and doors) at external corners of the house within 1 200 mm of the corner.



NOTE Indicated plan width varies to suit roof pitch.

Figure 3.1(A) — Pressure zones on housing — Roofs (plan view)

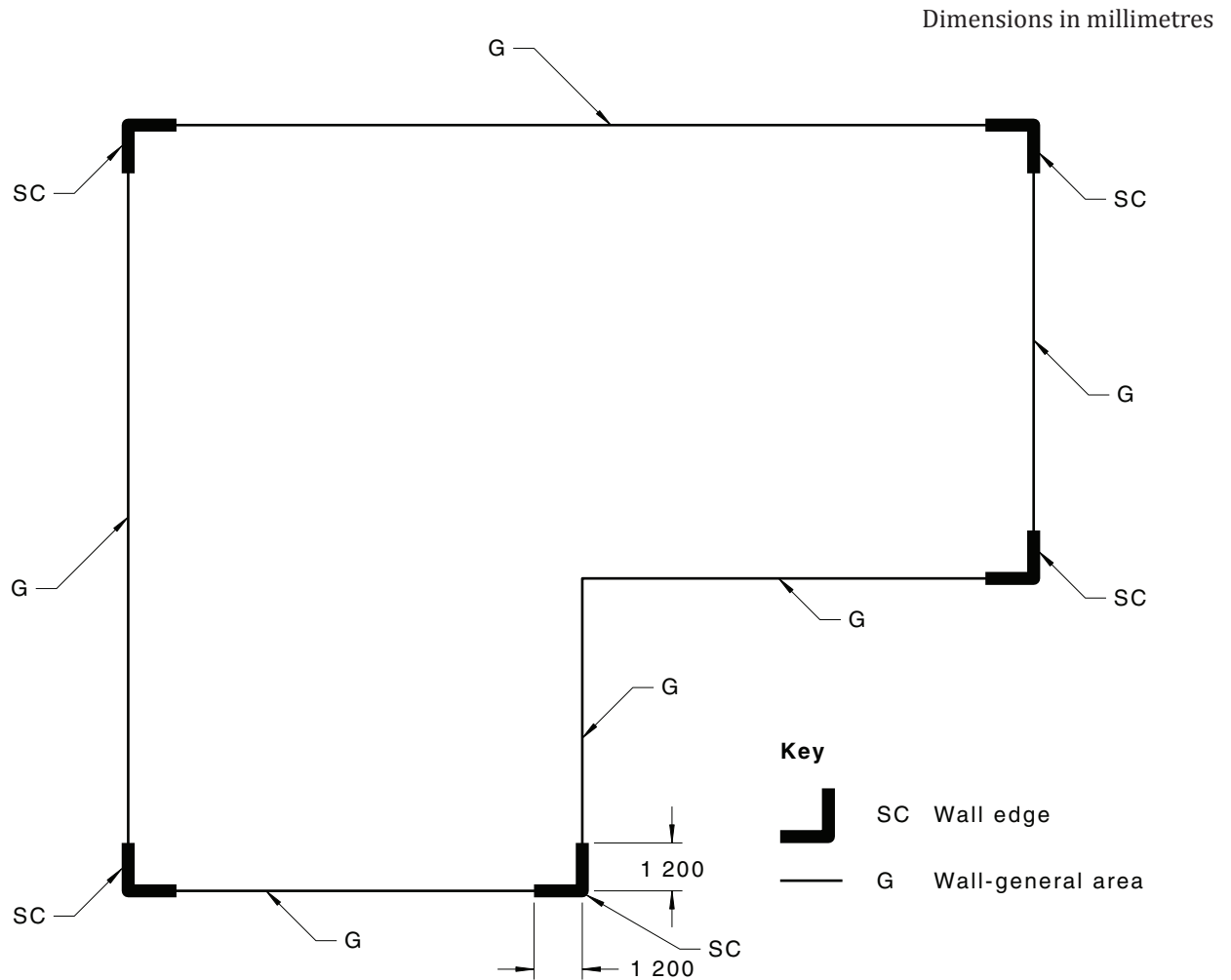


Figure 3.1(B) — Pressure zones on housing — Walls (plan view)

3.2 Pressure coefficients

3.2.1 Roof and wall wind classifications N1 to N6 (non-cyclonic)

For houses with roof and wall wind classifications N1 to N6 (in Regions A and B), the pressure coefficients in [Table 3.2.1](#) shall be used.