AS 4055:2021
(Incorporating Amendment No. 1)

Australian STANDARD®

STANDARDS Australia

Wind loads for housing



AS 4055:2021

This Australian Standard® was prepared by BD-099, Wind Loads for Housing. It was approved on behalf of the Council of Standards Australia on 1 June 2021.

This Standard was published on 25 June 2021.

The following are represented on Committee BD-099:

Australian Building Codes Board
Australian Glass and Window Association
Australian Institute of Building Surveyors
Australian Roofing Tile Association
Concrete Masonry Association of Australia
Cyclone Testing Station
Forest and Wood Products Australia
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This Standard was issued in draft form for comment as DR AS 4055:2021.

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ISBN 978 1 76113 383 1

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Originated as AS 4055—1992.
Third edition 2012.
Fourth edition 2021.
Reissued incorporating Amendment No 1 (June 2024).

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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.

A1 *This Standard incorporates Amendment No. 1 (June 2024). The start and end of changes introduced by the Amendment are indicated in the text by tags including the Amendment number 1.* A1

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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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.

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