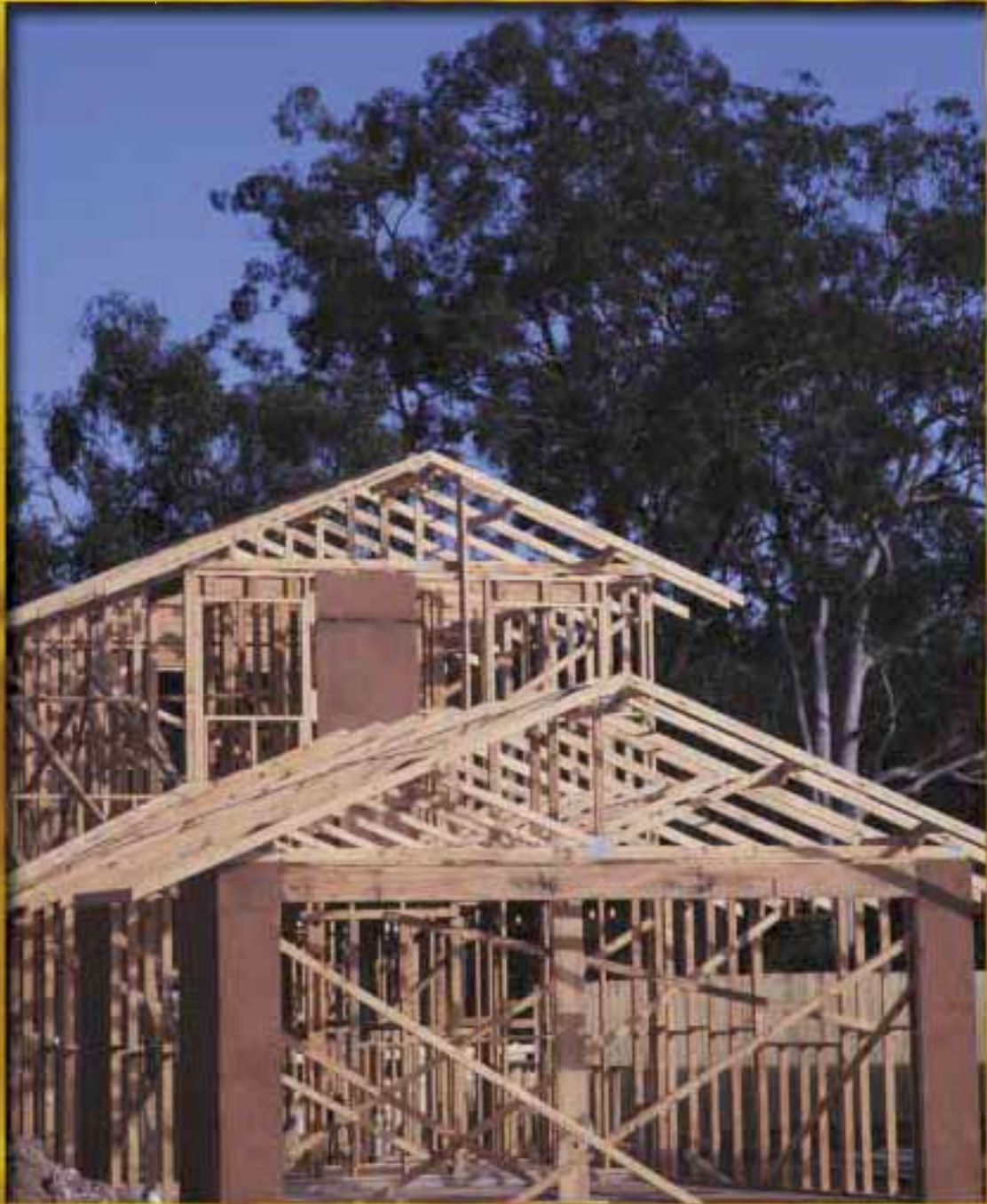


AS 1684.2—1999 Residential timber-framed construction

Building Code of Australia
primary referenced Standard



Part 2

Non-cyclonic areas

(Incorporating Amendment Nos. 1, 2, 3 and 4)



This Australian Standard was prepared by Committee TM/2, Timber Framing. It was approved on behalf of the Council of Standards Australia on 5 November 1999 and published on 5 December 1999.

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Australian Institute of Building
Australian Institute of Building Surveyors
Building Research Association of New Zealand
CSIRO, Division of Building, Construction and Engineering
Housing Industry Association
Institution of Engineers, Australia
James Cook University
Master Builders, Australia
New Zealand Forest Research Institute
New Zealand Timber Industry Federation
New Zealand Timber Suppliers Group
Pine Australia
Plywood Association of Australia
South Australian Housing Trust
Structural Engineered Timber Manufacturers Association, New Zealand
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AS 1684.2—1999
(Incorporating Amendment Nos 1, 2, 3 and 4)

Australian Standard™

Residential timber-framed construction

Part 2: Non-cyclonic areas

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PREFACE

This Standard was prepared by the Joint Standards Australian/Standards New Zealand Committee TM/2, Timber Framing, to supersede (in part) AS 1684—1992, *The National Timber Framing Code*.

This Standard incorporates Amendments No. 1 (April 2000), No. 2 (October 2000), No. 3 (May 2001) and No. 4 (May 2002). The changes required by the Amendments are indicated in the text by a marginal bar and amendment number against the clause, note, table, figure, or part thereof affected.

This Standard is the result of a consensus among Australian and New Zealand representatives on the Joint Committee to produce it as an Australian Standard.

A2 | The objective of this Standard is to provide the building industry with procedures that can be used to determine building practice, to design or check construction details, and to determine member sizes, and bracing and fixing requirements for timber-framed construction in non-cyclonic areas.

The continued development of timber framing systems and the need to cater for a widening variety of materials and design conditions have led to a total revision of structural framing design. These developments include—

- (a) provision for limit state design methods;
- (b) revised/new structural grades for timber;
- (c) provisions catering for open plan living—larger spans, wider openings and bigger rooms, which need more rational approach to bracing design;
- (d) special ‘engineered’ and fabricated timber products;
- (e) recognition of a wider range of high wind and cyclonic design; and
- (f) computer-aided design software for member sizes, bracing and tie-down.

The increased scope and application of this Standard to cater for these conditions has also led to the need to perform a more rigorous design check on a wider range of members and construction practices including window sill trimmers and roof bracing.

This Standard is a companion publication to the following:

AS	
1684	Residential timber-framed construction
1684.1	Part 1: Design criteria
1684.3	Part 3 Cyclonic areas
1684.4	Part 4 Simplified—Non-cyclonic areas

This Standard provides detailed design, bracing and connection procedures for wind classifications N1 to N4.

Prior to using this Standard, it is necessary to establish the design gust wind speed and wind classification (see Clause 1.6).

Alternatively, for wind classifications N1 and N2, AS 1684.4 provides a more simple set of design solutions derived from this Standard. It should be noted that a more economical design may be obtained by following the design procedures given in this Standard.

This Part of the AS 1684 series differs from AS 1684—1992 in a number of areas including—

- (i) input values required to use the Span Tables in the Supplements are assessed as load width (e.g. roof load width (*RLW*), floor load width (*FLW*), etc.) in lieu of ‘*EL*’ or spacing;
- (ii) wind speeds up to N4 (50 m/s) are catered for;
- (iii) bracing design uses individually rated (kN/m) bracing system capacities; and
- (iv) some building geometric limits have been removed.

It should be noted that Part 4 of the AS 1684 series also contains additional differences to Parts 2 and 3 and to the 1992 edition of AS 1684.

The following Supplements form an integral part of, and must be used in conjunction with, this Standard:

	Supplement	0	General introduction and index
	N1/N2 Supp.	1	Wind classification N1/N2—Seasoned softwood—Stress grade F5
	N1/N2 Supp.	2	Wind classification N1/N2—Seasoned softwood—Stress grade F7
	N1/N2 Supp.	3	Wind classification N1/N2—Seasoned softwood—Stress grade F8
	N1/N2 Supp.	4	Wind classification N1/N2—Seasoned softwood—Stress grade MGP 10
	N1/N2 Supp.	5	Wind classification N1/N2—Seasoned softwood—Stress grade MGP 12
	N1/N2 Supp.	6	Wind classification N1/N2—Seasoned softwood—Stress grade MGP 15
	N1/N2 Supp.	7	Wind classification N1/N2—WA seasoned hardwood—Stress grade F14
	N1/N2 Supp.	8	Wind classification N1/N2—Seasoned hardwood—Stress grade F17
	N1/N2 Supp.	9	Wind classification N1/N2—Seasoned hardwood—Stress grade F27
	N1/N2 Supp.	10	Wind classification N1/N2—Unseasoned softwood—Stress grade F5
	N1/N2 Supp.	11	Wind classification N1/N2—Unseasoned softwood—Stress grade F7
A3	N1/N2 Supp.	12	Wind classification N1/N2—Unseasoned hardwood—Stress grade F8
	N1/N2 Supp.	13	Wind classification N1/N2—Unseasoned hardwood—Stress grade F11
	N1/N2 Supp.	14	Wind classification N1/N2—Unseasoned hardwood—Stress grade F14
	N1/N2 Supp.	15	Wind classification N1/N2—Unseasoned hardwood—Stress grade F17
	N3 Supp.	1	Wind classification N3—Seasoned softwood—Stress grade F5
	N3 Supp.	2	Wind classification N3—Seasoned softwood—Stress grade F7
	N3 Supp.	3	Wind classification N3—Seasoned softwood—Stress grade F8
	N3 Supp.	4	Wind classification N3—Seasoned softwood—Stress grade MGP 10
	N3 Supp.	5	Wind classification N3—Seasoned softwood—Stress grade MGP 12
	N3 Supp.	6	Wind classification N3—Seasoned softwood—Stress grade MGP 15
	N3 Supp.	7	Wind classification N3—WA seasoned hardwood—Stress grade F14
	N3 Supp.	8	Wind classification N3—Seasoned hardwood—Stress grade F17
	N3 Supp.	9	Wind classification N3—Seasoned hardwood—Stress grade F27
	N3 Supp.	10	Wind classification N3—Unseasoned softwood—Stress grade F5
	N3 Supp.	11	Wind classification N3—Unseasoned softwood—Stress grade F7
A3	N3 Supp.	12	Wind classification N3—Unseasoned hardwood—Stress grade F8
	N3 Supp.	13	Wind classification N3—Unseasoned hardwood—Stress grade F11
	N3 Supp.	14	Wind classification N3—Unseasoned hardwood—Stress grade F14
	N3 Supp.	15	Wind classification N3—Unseasoned hardwood—Stress grade F17
	N4 Supp.	1	Wind classification N4—Seasoned softwood—Stress grade F5
	N4 Supp.	2	Wind classification N4—Seasoned softwood—Stress grade F7
	N4 Supp.	3	Wind classification N4—Seasoned softwood—Stress grade F8
	N4 Supp.	4	Wind classification N4—Seasoned softwood—Stress grade MGP 10
	N4 Supp.	5	Wind classification N4—Seasoned softwood—Stress grade MGP 12
	N4 Supp.	6	Wind classification N4—Seasoned softwood—Stress grade MGP 15
	N4 Supp.	7	Wind classification N4—WA seasoned hardwood—Stress grade F14
	N4 Supp.	8	Wind classification N4—Seasoned hardwood—Stress grade F17
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N4 Supp.	13	Wind classification N4—Unseasoned hardwood—Stress grade F11
N4 Supp.	14	Wind classification N4—Unseasoned hardwood—Stress grade F14
N4 Supp.	15	Wind classification N4—Unseasoned hardwood—Stress grade F17

A CD-ROM, which contains the above Supplements, is attached to this Standard.

Statements expressed in mandatory terms in Notes to the Span Tables are deemed to be requirements of this Standard.

This Standard is based on the 1992 edition of AS 1684 and various timber-framing manuals in use in the States and Territory, which will be superseded after the industry has had time to adjust to the new edition of AS 1684 series. The timber-framing manuals include the following:

- (A) Timber framing manual (Timber Promotion Council, Victoria).
- (B) Timber framing manual—Supplementary tables (Timber Promotion Council, Victoria).
- (C) Timber framing manual—W33N–W41N (Timber Research and Development Advisory Council, Queensland).
- (D) New South Wales timber framing manual (State Forests of NSW).

The terms ‘normative’ and ‘informative’ have been used in this Standard to define the application of the appendix to which they apply. A ‘normative’ appendix is an integral part of a Standard, whereas an ‘informative’ appendix is only for information and guidance.

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STANDARDS AUSTRALIA

Australian Standard Residential timber-framed construction

Part 2: Non-cyclonic areas

SECTION 1 SCOPE AND GENERAL

1.1 SCOPE

This Standard specifies requirements for building practice and the selection, placement and fixing of the various structural elements used in the construction of timber-framed Class 1 and Class 10 Buildings as defined by the Building Code of Australia and within the limitations given in Clause 1.6. The Standard also applies to alterations and additions to these buildings.

A2 | This Standard also provides building practice and procedures, which assist in the correct specification and determination of timber members, bracing and connections, thereby minimizing the risk of creating an environment which might adversely affect the ultimate performance of the structure.

Reference is made to the Span Tables in the Supplements throughout this Standard. The Supplements are an integral part of, and shall be used in conjunction with, this Standard.

This Standard may also be applicable to the design and construction of other classes of buildings where the design criteria, loadings and other parameters applicable to those classes of building are within the limitations of this Standard.

NOTES:

- 1 See AS 1684.1 for details of design criteria, loadings and other parameters.
- 2 Whilst this Standard can be used to design Class 10 buildings, less conservative levels of design for this building class may be permitted by building regulations and other Australian Standards.

1.2 APPLICATION

This Standard will be referenced in the Building Code of Australia by way of BCA Amendment No. 6 to be published by 1 January 2000.

1.3 USE OF ALTERNATIVE MATERIALS OR METHODS

A4 | This Standard does not preclude the use of framing, fastening or bracing methods or materials other than those specified. Alternatives may be used, provided they satisfy the requirements of the Building Code of Australia.

1.4 COMPANION DOCUMENTS

This Standard is a companion publication to the following:

AS	
1684	Residential timber-framed construction
1684.1	Part 1: Design criteria
1684.3	Part 3: Cyclonic wind areas
1684.4	Part 4: Simplified—Non-cyclonic areas