

Australian Standard™

Masonry structures

Building Code of Australia
primary referenced Standard



Standards Australia

This Australian Standard was prepared by Committee BD/4, Masonry Structures. It was approved on behalf of the Council of Standards Australia on 15 May 1998 and published on 5 June 1998.

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Australian Building Codes Board
Australian Chamber of Commerce & Industry
Australian Institute of Building Surveyors
Calcium Silicate Brick Manufacturers
Cement & Concrete Association of Australia
Clay Brick & Paver Institute
Concrete Masonry Association of Australia
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PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee BD/4, Masonry Structures, to supersede AS 3700—1988, *Masonry in buildings (known as the SAA Masonry Code)*.

This Standard incorporates Amendment No. 1 (May 1999) and Amendment No. 2 (June 2000). The changes required by the Amendments are indicated in the text by a marginal bar and amendment number against the clause, figure, or part thereof affected.

The objective of this Standard is to provide minimum requirements for the design and construction of unreinforced, reinforced and prestressed masonry, including built-in components, for use in masonry applications.

The Standard is the result of a consensus among representatives on the Joint Committee that it be produced as an Australian Standard.

In the preparation of this Standard valuable assistance was given by organizations and individuals experienced in various aspects of the design and construction of masonry, and the Committee acknowledges their help.

Acknowledgment is also made of the assistance gained from the following documents and publications:

- (a) *Australian Masonry Manual*, published by a joint committee of the Public Works Department, N.S.W. and the Association of Consulting Structural Engineers, N.S.W.
- (b) Publications of the Clay Brick and Paver Institute; the Concrete Masonry Association of Australia Co-op Limited; the CSIRO Division of Building, Construction and Engineering; and the Department of Civil, Surveying and Environmental Engineering of the University of Newcastle.

Significant new developments incorporated into the Standard include the following:

- (i) An increased use of performance-type specification of requirements, rather than prescription specification, to encourage sound continuing development in all aspects of masonry construction.
- (ii) The inclusion of the virtual work method for the design of unreinforced masonry subject to wind or earthquake loads, which addresses window and door openings of wall panels and also covers panels not fixed at one end.
- (iii) Additional requirements for structures subject to earthquake actions.
- (iv) Requirements for the design of prestressed masonry.
- (v) Requirements for the design and construction with AAC (autoclaved aerated concrete) units.
- (vi) A design method for wall ties.

Statements expressed in mandatory terms in notes to tables and figures are deemed to be requirements of this Standard.

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

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SECTION 1 SCOPE AND GENERAL

1.1 SCOPE AND APPLICATION

1.1.1 Scope This Standard sets out minimum requirements for the design and construction of masonry, including unreinforced, reinforced and prestressed, solid and hollow manufactured units of clay, calcium silicate and concrete laid in mortar, autoclaved aerated concrete (AAC) laid in thin-bed mortar, and square-dressed natural stone laid in mortar.

The Standard does not give values or material properties for the design and construction of square-dressed natural stone.

NOTES:

- 1 This Standard assumes that the structural design of masonry is entrusted to experienced structural engineers or similar appropriately qualified persons, and that the execution of such work is carried out under the direction of appropriately qualified persons who are experienced in masonry construction and who understand the structural requirements.
- 2 The Standard does not give specific requirements for prefabricated masonry panels or masonry in composite action with steel or concrete structural members. The principles of this Standard should be followed, as far as they are applicable, for such types of construction.
- 3 The provisions of this Standard do not include specification for design and construction of AAC laid in other than thin-bed mortar. However, for masonry so constructed the general principles of this Standard may be used.

1.1.2 Application This Standard will be referenced in the Building Code of Australia by way of BCA Amendment 3 to be published by 1 July 1998, thereby superseding the previous edition, AS 3700—1998, which will be withdrawn 12 months from the date of the publication of this edition.

1.2 REFERENCED DOCUMENTS The following documents are referred to in this Standard:

AS

- | | |
|--------|--|
| 1170 | Minimum design loads on structures (known as the SAA Loading Code) |
| 1170.1 | Part 1: Dead and live loads |
| 1170.2 | Part 2: Wind loads |
| 1170.3 | Part 3: Snow loads |
| 1170.4 | Part 4: Earthquake loads |
| 1202 | Steel reinforcing bars for concrete |
| 1303 | Steel reinforcing wire for concrete |
| 1304 | Welded wire reinforcing fabric for concrete |
| 1310 | Steel wire for tendons in prestressed concrete |
| 1311 | Steel tendons for prestressed concrete—7-wire stress-relieved steel strand for tendons in prestressed concrete |