Australian Standard®

Masonry in small buildings

Part 2: Construction
This Australian Standard® was prepared by Committee BD-097, Masonry Construction—Small Buildings. It was approved on behalf of the Council of Standards Australia on 9 September 2010. This Standard was published on 13 December 2010.

The following are represented on Committee BD-097:

- Association of Consulting Engineers Australia
- Australian Building Codes Board
- Australian Chamber of Commerce and Industry
- Australian Industry Group
- Australian Institute of Building Surveyors
- Building Designers Association of Australia
- Cement Concrete & Aggregates Australia
- Think Brick Australia
- Concrete Masonry Association of Australia
- Engineers Australia
- Galvanizers Association of Australia
- Housing Industry Association
- Masonry Contractors Association of NSW
- Master Builders Australia
- NSW Department of Commerce
- University of Newcastle

This Standard was issued in draft form for comment as DR 04510.

Standards Australia wishes to acknowledge the participation of the expert individuals that contributed to the development of this Standard through their representation on the Committee and through the public comment period.

Keeping Standards up-to-date
Australian Standards® are living documents that reflect progress in science, technology and systems. To maintain their currency, all Standards are periodically reviewed, and new editions are published. Between editions, amendments may be issued.

Standards may also be withdrawn. It is important that readers assure themselves they are using a current Standard, which should include any amendments that may have been published since the Standard was published.

Detailed information about Australian Standards, drafts, amendments and new projects can be found by visiting www.standards.org.au

Standards Australia welcomes suggestions for improvements, and encourages readers to notify us immediately of any apparent inaccuracies or ambiguities. Contact us via email at mail@standards.org.au, or write to Standards Australia, GPO Box 476, Sydney, NSW 2001.
Australian Standard®

Masonry in small buildings

Part 2: Construction

Originated as part of AS 3700—2001.
PREFACE

This Standard was prepared by the Standards Australia Committee BD-097, Masonry Construction—Small Buildings, to supersede, in part, AS 3700—2001.

The objective of this Standard is to provide simplified details for use by builders for the construction of masonry in small buildings such as houses and garages.

This Standard is intended as a companion document to AS 4773.1, Masonry in small buildings, Part 1: Design.

The Committee acknowledges valuable assistance given by organizations and individuals experienced in various aspects of design and construction of masonry.

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.
CONTENTS

SECTION 1 SCOPE AND GENERAL
1.1 SCOPE ..................................................................................................................... 5
1.2 GENERAL LIMITATIONS ........................................................................................ 5
1.3 NORMATIVE REFERENCES .................................................................................... 8
1.4 DEFINITIONS ............................................................................................................ 9

SECTION 2 MASONRY UNITS
2.1 MATERIALS ............................................................................................................ 11
2.2 SIZES ..................................................................................................................... 11
2.3 COMPRESSION STRENGTH ................................................................................. 12
2.4 DURABILITY ......................................................................................................... 13
2.5 EXPANSION OR CONTRACTION ...................................................................... 14

SECTION 3 MORTAR
3.1 MORTAR TYPES ..................................................................................................... 15
3.2 MORTAR COMPONENTS ....................................................................................... 17

SECTION 4 GROUT
4.1 PURPOSE ................................................................................................................. 19
4.2 COMPOSITION ........................................................................................................ 19
4.3 PLACEMENT ........................................................................................................... 19

SECTION 5 BUILT-IN COMPONENTS
5.1 GENERAL ................................................................................................................ 20
5.2 DURABILITY ......................................................................................................... 20
5.3 WALL TIES ............................................................................................................. 21
5.4 LINTELS ................................................................................................................ 22
5.5 REINFORCEMENT ................................................................................................. 22
5.6 FLASHINGS AND DAMP-PROOF COURSES ....................................................... 22

SECTION 6 SUBFLOOR CONSTRUCTION
6.1 GENERAL ................................................................................................................ 24
6.2 VENTILATION ........................................................................................................ 24
6.3 SUBFLOOR BRACING ............................................................................................ 27
6.4 SUBFLOOR PIERS ................................................................................................... 27

SECTION 7 CONTROL JOINTS
7.1 GENERAL ................................................................................................................ 32
7.2 ARTICULATION JOINTS ......................................................................................... 32
7.3 CONTRACTION JOINTS ......................................................................................... 34
7.4 EXPANSION JOINTS .............................................................................................. 35
7.5 DETAILS .................................................................................................................. 35

SECTION 8 LINTELS AND ARCHES
8.1 GENERAL ................................................................................................................ 41
8.2 STEEL LINTELS ..................................................................................................... 41
8.3 REINFORCED MASONRY LINTELS ................................................................... 44
8.4 ARCHES FOR UNREINFORCED MASONRY WALLS .............................................. 46
SECTION 9  MASONRY VENEER WALLS
9.1 GENERAL ................................................................................................................ 48
9.2 CAVITY ...................................................................................................................... 48
9.3 LEAF THICKNESS ..................................................................................................... 48
9.4 SUPPORTING FRAME ............................................................................................... 48
9.5 ALLOWANCE FOR TIMBER SHRINKAGE .................................................................. 48
9.6 DAMP-PROOF COURSES, FLASHINGS AND WEEPHOLES .................................. 49
9.7 WALL TIES ................................................................................................................ 56
9.8 ROOF ANCHORAGE ................................................................................................. 57

SECTION 10 CAVITY MASONRY WALLS
10.1 GENERAL ............................................................................................................... 61
10.2 CAVITY .................................................................................................................... 61
10.3 LEAF THICKNESS .................................................................................................. 61
10.4 BONDING ................................................................................................................ 61
10.5 DAMP-PROOF COURSES, SLIP JOINTS, FLASHINGS AND WEEPHOLES .......... 61
10.6 WALL TIES .............................................................................................................. 72
10.7 LATERAL SUPPORT ............................................................................................... 75
10.8 ROOF ANCHORAGE ............................................................................................. 76
10.9 CHASES, HOLES AND RECESSES ....................................................................... 76
10.10 PARAPETS ........................................................................................................... 76

SECTION 11 UNREINFORCED SINGLE-LEAF WALLS
11.1 GENERAL ............................................................................................................... 78
11.2 LEAF THICKNESS .................................................................................................. 78
11.3 BONDING ................................................................................................................ 78
11.4 DAMP-PROOF COURSES AND SLIP JOINTS ..................................................... 78
11.5 LATERAL SUPPORTS ............................................................................................ 79
11.6 ROOF ANCHORAGE ............................................................................................. 80
11.7 WEATHERPROOFING ......................................................................................... 81
11.8 CHASES, HOLES AND RECESSES ....................................................................... 81

SECTION 12 REINFORCED MASONRY WALLS
12.1 GENERAL ............................................................................................................... 82
12.2 ROOF TIE DOWNS ............................................................................................... 84
12.3 GROUT ..................................................................................................................... 84
12.4 WEATHERPROOFING .......................................................................................... 84

APPENDICES
A  INFORMATION ON DRAWINGS AND SPECIFICATION ....................................... 86
B  CLEANING MASONRY ............................................................................................... 88

BIBLIOGRAPHY ............................................................................................................. 92
SECTION 1 SCOPE AND GENERAL

1.1 SCOPE

This Standard provides acceptable construction practices for masonry in buildings of Class 1 and Class 10a, as defined in the BCA, and designed in accordance with AS 4773.1 and documented in drawings and specifications to be constructed from clay, concrete, or calcium silicate masonry units complying with Section 2 and the following:

(a) Leaf thicknesses are 90 mm or greater.
(b) The tops of all walls are laterally supported by a roof or floor structure acting as a diaphragm with the exception of parapets, chimneys and cantilevers in accordance with Clause 14.10 and fin walls in accordance with Table 9.1.
(c) Walls are supported on concrete slabs or footings complying with AS 2870 or suspended slabs complying with AS 3600.
(d) The geometric limitations specified in Clause 1.2.3.

The Scope of this Standard does not cover the following:

(i) Acoustics and energy efficiency.
(ii) Construction or detailing of attachments such as basketball hoops, satellite dishes, shade structures and similar structures.
(iii) Masonry constructed from autoclaved aerated concrete (AAC) units.
(iv) Structures required to be designed for earthquake actions in accordance with AS 1170.4.

NOTES:
1 For acoustic and energy efficiency requirements, see the BCA.
2 For applications outside the scope of this Standard, the masonry should be constructed in accordance with AS 3700.
3 Information that is to be provided on drawings and specifications is given in Appendix A.
4 Guidance on the cleaning of masonry is given in Appendix B.

1.2 GENERAL LIMITATIONS

1.2.1 Materials

This Standard covers buildings constructed from clay, concrete or calcium silicate masonry units complying with AS/NZS 4455.1.

NOTE: The properties required for these units are defined in Section 2.