



Masonry structures



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Australian Standard[®]

Masonry structures

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PREFACE

This Standard was prepared by the Standards Australia Committee BD-004, Masonry Structures, to supersede AS 3700—2011.

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.

The principal changes from the 2011 edition of the Standard include the following:

- (a) Increased capacity reduction factor for compression in hollow masonry with wide spaced reinforcement.
- (b) Inclusion of provisions for stack bonded masonry.
- (c) Compressive strength of grouted masonry.
- (d) Compression design of reinforced masonry.
- (e) Concentrated loads in reinforced masonry.
- (f) Minor changes to ensure consistency with AS 4773.
- (g) New Appendix I on the relationship between ISO 9223 compressive strength categories and durability class. Also includes solutions for wall ties, connectors and accessories, and lintels and shelf angles, as provided in AS/NZS 2699.1, AS/NZS 2699.2 and AS/NZS 2699.3 respectively.
- (h) Changes to Table 10.3 to align with changes made to AS 1170.4.

The following are excluded:

- (i) Thermal performance.
- (ii) Acoustic insulation.

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

	<i>Page</i>
SECTION 1 SCOPE AND GENERAL	
1.1 SCOPE.....	6
1.2 NORMATIVE REFERENCES	6
1.3 USE OF ALTERNATIVE MATERIALS OR METHODS	8
1.4 INFORMATION TO BE PROVIDED ON DOCUMENTS	8
1.5 DEFINITIONS.....	9
1.6 NOTATION.....	11
1.7 EXISTING STRUCTURES	14
SECTION 2 REQUIREMENTS FOR DESIGN	
2.1 SCOPE OF SECTION	25
2.2 AIM.....	25
2.3 GENERAL REQUIREMENTS.....	25
2.4 DESIGN REQUIREMENTS.....	25
2.5 SERVICEABILITY, STRENGTH AND STABILITY	26
2.6 LOADS AND LOAD COMBINATIONS	27
2.7 LATERAL SUPPORT	28
2.8 OTHER DESIGN REQUIREMENTS.....	28
SECTION 3 DESIGN PROPERTIES	
3.1 SCOPE OF SECTION	30
3.2 MASONRY UNITS	30
3.3 MASONRY	30
3.4 TIES AND ACCESSORIES	34
3.5 GROUT	34
3.6 REINFORCEMENT	34
3.7 TENDONS.....	35
SECTION 4 GENERAL DESIGN ASPECTS	
4.1 SCOPE OF SECTION	37
4.2 MEMBERS OF COMPLEX CONSTRUCTION	37
4.3 CHASES, HOLES AND RECESSES	37
4.4 CAPACITY REDUCTION FACTORS.....	37
4.5 CROSS-SECTION PROPERTIES.....	38
4.6 DESIGN FOR ROBUSTNESS	40
4.7 PREVENTION OF MOISTURE PENETRATION.....	41
4.8 CONTROL JOINTS	42
4.9 MORTAR JOINTS	46
4.10 WALL TIES	46
4.11 BONDING, TYING AND SUPPORTING.....	47
4.12 STACK BONDED MASONRY.....	48
4.13 ARCHES AND LINTELS	49
4.14 INTERACTION BETWEEN MASONRY MEMBERS AND SLABS, BEAMS OR COLUMNS	50
4.15 CORBELLING	50
4.16 ATTACHMENT TO FACE OF WALLS.....	51
SECTION 5 DESIGN FOR DURABILITY	
5.1 SCOPE OF SECTION	52
5.2 GENERAL.....	52

	<i>Page</i>
5.3 EXPOSURE ENVIRONMENTS	52
5.4 LOCATIONS.....	53
5.5 MASONRY UNITS	54
5.6 MORTAR.....	54
5.7 BUILT-IN COMPONENTS.....	54
5.8 GROUT	54
5.9 REINFORCEMENT AND TENDONS.....	56
SECTION 6 DESIGN FOR FIRE RESISTANCE	
6.1 GENERAL.....	58
6.2 FIRE-RESISTANCE LEVELS	58
6.3 STRUCTURAL ADEQUACY.....	58
6.4 INTEGRITY	52
6.5 INSULATION	63
6.6 RECESSES FOR SERVICES	64
6.7 CHASES.....	65
6.8 PROTECTION OF STRUCTURAL STEELWORK.....	66
SECTION 7 STRUCTURAL DESIGN OF UNREINFORCED MASONRY	
7.1 GENERAL.....	67
7.2 GENERAL BASIS OF DESIGN	67
7.3 DESIGN FOR MEMBERS IN COMPRESSION.....	67
7.4 DESIGN FOR MEMBERS IN BENDING.....	83
7.5 DESIGN FOR MEMBERS IN SHEAR	90
7.6 DESIGN OF MASONRY VENEER WALLS.....	93
7.7 DESIGN OF CAVITY WALLS.....	94
7.8 DESIGN OF DIAPHRAGM WALLS.....	95
SECTION 8 STRUCTURAL DESIGN OF REINFORCED MASONRY	
8.1 SCOPE OF SECTION	96
8.2 EXCLUSIONS.....	96
8.3 GENERAL BASIS OF DESIGN	96
8.4 GENERAL REINFORCEMENT REQUIREMENT	97
8.5 DESIGN OF MEMBERS IN COMPRESSION	97
8.6 DESIGN OF MEMBERS IN BENDING	101
8.7 DESIGN OF WALLS FOR IN-PLANE SHEAR	102
8.8 DESIGN OF WALLS FOR OUT-OF-PLANE SHEAR.....	103
8.9 DESIGN OF BEAMS IN SHEAR	104
8.10 DESIGN OF MEMBERS IN TENSION.....	104
8.11 DESIGN FOR COMBINED LOADING.....	104
SECTION 9 STRUCTURAL DESIGN OF PRESTRESSED MASONRY	
9.1 SCOPE OF SECTION	105
9.2 GENERAL BASIS OF DESIGN	105
9.3 DESIGN CRITERIA FOR PRESTRESSING TENDONS	106
9.4 DESIGN OF MEMBERS IN COMPRESSION	107
9.5 DESIGN OF MEMBERS IN BENDING	108
9.6 DESIGN OF MEMBERS IN SHEAR.....	110
9.7 DESIGN OF MEMBERS IN TENSION.....	110
9.8 DESIGN FOR COMBINED LOADING.....	111
9.9 DESIGN OF ANCHORAGE ZONES.....	111

	<i>Page</i>
SECTION 10 DESIGN FOR EARTHQUAKE ACTIONS	
10.1 SCOPE OF SECTION	112
10.2 GENERAL DESIGN CRITERIA.....	112
10.3 DETAILING MASONRY STRUCTURES FOR EARTHQUAKE LOADS.....	113
10.4 RESTRICTIONS ON THE USE OF LOADBEARING UNREINFORCED MASONRY	121
SECTION 11 MATERIALS	
11.1 SCOPE OF SECTION	123
11.2 MASONRY	123
11.3 MASONRY UNITS.....	123
11.4 MORTAR.....	123
11.5 WALL TIES, CONNECTORS, ACCESSORIES AND LINTELS.....	125
11.6 DAMP-PROOF COURSES (DPCs), FLASHINGS AND WEATHERINGS.....	126
11.7 GROUT	126
11.8 REINFORCEMENT AND TENDONS.....	127
SECTION 12 CONSTRUCTION	
12.1 SCOPE OF SECTION	128
12.2 GENERAL.....	128
12.3 MATERIALS.....	128
12.4 WORKMANSHIP	129
12.5 TOLERANCES IN MASONRY	132
12.6 SITE CONTROL	133
12.7 ADDITIONAL SITE CONTROL OF SPECIAL MASONRY	134
12.8 GROUTED MASONRY.....	135
12.9 MASONRY UNDER CONSTRUCTION.....	135
12.10 CLEANING.....	136
12.11 TESTING OF IN SITU MASONRY.....	136
APPENDICES	
A ASSESSMENT OF STRENGTH VALUES FROM TEST RESULTS	137
B DETERMINATION OF CHARACTERISTIC VALUE	139
C METHOD OF TEST FOR COMPRESSIVE STRENGTH	141
D METHOD OF TEST FOR FLEXURAL STRENGTH.....	145
E DURABILITY TESTING.....	152
F METHOD OF MEASUREMENT OF BOW.....	156
G STRENGTH TESTING OF IN SITU MASONRY	157
H GUIDANCE ON THE USE OF MASONRY IN RESTORATION WORK ONLINE MASONRY CONSTRUCTED USING SQUARE-DRESSED NATURAL STONE.....	158
I ISO 9223 CORROSIVITY CATEGORIES AND RELATIONSHIP TO DURABILITY CLASS.....	159
BIBLIOGRAPHY.....	165

STANDARDS AUSTRALIA

Australian Standard
Masonry structures

SECTION 1 SCOPE AND GENERAL

1.1 SCOPE

This Standard sets out minimum requirements for the design and construction of masonry of the following types:

- (a) Unreinforced, reinforced and prestressed masonry using manufactured units or clay or concrete laid in mortar.
- (b) Unreinforced masonry using manufactured calcium silicate units laid in mortar.
- (c) Autoclaved aerated concrete (AAC) masonry laid in thin-bed mortar.
- (d) Square-dressed natural stone laid in mortar.

This Standard does not provide for the following:

- (i) Design values or material properties for the design and construction of masonry incorporating square-dressed natural stone. The wide variations in properties of natural stone require that each case be considered individually for the determination of relevant design values.
- (ii) Specific requirements for prefabricated masonry panels or masonry in composite action with steel or concrete structural members; however, the principles of this Standard may be used for such types of construction.
- (iii) Specification for design and construction of AAC laid in other than thin-bed mortar; however, for masonry so constructed the principles of this Standard may be used.

NOTE: This Standard assumes 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 specified herein.

1.2 NORMATIVE REFERENCES

The following are the normative documents referenced in this Standard:

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

AS	
1170	Structural design actions
1170.4	Part 4: Earthquake actions in Australia
1310	Masonry cement
1391	Metallic materials—Tensile testing at ambient temperature
1478	Chemical admixtures for concrete, mortar and grout
1478.1	Part 1: Admixtures for concrete
1530	Methods for fire tests on building materials, components and structures
1530.4	Part 4: Fire-resistance tests of elements of building construction