BUILDING CODE OF AUSTRALIA

1990

HOUSING EXTRACT

1993

AUBRCC

AUSTRALIAN UNIFORM BUILDING REGULATIONS CO-ORDINATING COUNCIL

PURPOSE OF AMENDMENT

This amendment is issued to clarify that the information contained on the durable notice relating to the protection against termites covers the inspection for termite activity rather than the maintenance and inspection of the system which may be impracticable.

Provisions affected by this amendment are:

Part B1

B1.3(j)(ii)

NT Appendix

NT B1.3(j)(iii)

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ABOUT THE HOUSING EXTRACT ý

This publication contains extracts from the Building Code of Australia 1990 (BCA) and is referred to as the Building Code of Australia 1990 Housing Extract. Being an extract only, the publication is not suitable for legal reference.

The Housing Extract includes those provisions applicable to the design and construction of most Class 1 and 10 buildings. In some special situations it may be necessary to refer directly to the BCA to identify all relevant requirements. Provisions in the Extract have been modified as necessary to delete reference to other building classifications. Those parts shown as having "No BCA provisions" have been included to allow reference of additional provisions in State and Territory Appendices.

The Housing Extract is published by the Australian Building Codes Committee (ABCB) for use by designers, engineers, builders, owners and other interested persons in the building industry.

The BCA has been adopted by all mainland States and Territories.

STATE AND TERRITORY VARIATIONS ý

The Housing Extract includes individual State and Territory Appendices setting out variations to the provisions for Class 1 and Class10 buildings which are considered necessary for the application of the Extract in those States and Territories.

State and Territory variations to Clauses and Tables in the Housing Extract are identified in the margin. Additional Clauses and Specifications to a Part of the Housing Extract are included at the end of that Part and identified in the Section Content of each Appendix.

AMENDMENTS ý

The Housing Extract will be updated as amendments to the BCA are issued. This edition of the Housing Extract includes the relevant provisions of Amendments No 1, 2, 3, 4 and 5.

Users of the Housing Extract should be aware that amendment No 5 may not necessarily be in operation in each State or Territory at the time of issue.

STRUCTURE OF THE BCA ý

The BCA is generally based on a 3 level system:

Level 1	Objectives
Level 2	Performance requirements
Level 3	Deemed-to-satisfy provisions or Prescriptive provisions - where no (Level 2) Performance requirements are yet stipulated.

OBJECTIVES

These are broad statements of intent included at the beginning of each Section and deal with the basic concepts applying to all buildings and structures. They provide an indication of what the clauses in the relevant Parts are meant to achieve. Objectives are not intended to be used as controls in their own right. Their role is simply to assist in the interpretation or application of the Parts to which they refer.

PERFORMANCE REQUIREMENTS

Some of the requirements of the BCA are expressed in performance terms. As an alternative to any deemed-to-satisfy provisions, Accreditation Certificates, test reports or other documentary evidence may be used as evidence to prove that a proposed alternative or innovative material, component, design or construction method meets the performance requirements of the BCA.

DEEMED-TO-SATISFY PROVISIONS

Compliance with any referenced Australian Standard or any particular material, component, design or construction method set out in a deemed-to-satisfy provision, is conclusive proof that the relevant performance requirement of the BCA has been met.

There is of course no obligation for the applicant to use the deemed-to-satisfy provision and an alternative may be used if sufficient evidence is provided to confirm that the relevant performance requirement has been satisfied. The BCA allows for *StandardsMark* product certification by Standards Australia to be used as evidence of compliance with particular requirements or Standards.

PRESCRIPTIVE PROVISIONS

In some instances the provisions of the BCA are expressed as prescriptive requirements and there is no performance requirement against which a proposed material, component, design or construction method can be assessed. If it is proposed to vary from a prescriptive requirement the matter may then be resolved by an appropriate resolution process.

PROFESSIONAL CERTIFICATION

The BCA allows for certificates from professional consultants to be used as evidence of ý compliance with particular requirements or standards. ý

The enabling legislation will determine the extent of the use of professional certification ý and the procedures for the submission of certificates, reports or other documentation to ý Approval Authorities as evidence of compliance. ý

ACCREDITATION

The BCA provides for certificates of accreditation as evidence that the properties and performance of a material, product, method of construction or design meets a particular requirement.

A National Accreditation Scheme is administered by AUBRCC to facilitate the acceptance of new and innovative products and systems.

DEFINITIONS

The words printed in italics have special meanings and are defined in clause A1.1. Definitions and terminology used in the BCA are as far as possible consistent with that used in State and Territory legislation, however where there is any conflict, the requirements of the legislation take precedence.

ADMINISTRATIVE ARRANGEMENTS

The BCA is brought into effect by building control legislation in each State and Territory which adopts the BCA as the technical requirements which have to be satisfied in order to gain building approval. The Housing Extract does not alter or supersede the provisions of the BCA. In the event of any discrepancy between the Housing Extract and the BCA, the BCA in effect at the time in accordance with the relevant State or Territory legislation will take precedence.

COMMENTS

Comments in writing on any matter concerning the text, presentation or further development of the BCA are invited from building and other authorities, industry organisations, professional operatives and the public generally. These should be addressed to-

Executive Dirrector ý
Australian Building Codes Board ý
GPO Box 9839 ý
CANBERRA ACT 2601. ý

AUSTRALIAN BUILDING CODES BOARD

ABCB is established by agreement between the governments of the Commonwealth and the States and Territories with provision for local Government and building industry representation.

The ABCB is responsible to the Planning, Housing and Local Government Ministerial Council with a mission to provide for proficiency and cost effectiveness in meeting community expectations for health, safety and amenity in design, construction and use of buildings through the creation of nationally consistent building codes, standards, regulatory requirements and regulatory systems.

The Board - The Board comprises the following members:

(a) ý The principal officer of each State and Territory Administration responsible for building regulatory matters.

(b) ý A representative of the Commonwealth

(c) ý A representative of the Australian Local Government Association (ALGA)

(d) ý Three representatives of the building and construction industry

Building Codes Committee (BCC) - The BCC is the peak advisory body to the ABCB with responsibility for technical matters associated with the BCA

The BBC comprises the Executive Director, one nominee each of the Commonwealth, State, Territory and ALGA members of the ABCB and three industry members appointed by the ABCB. Observers representing CSIRO, Standards Australia and the Australian Fire Authorities Council also attend BCC meetings.

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SECTION A GENERAL PROVISIONS

CONTENTS

PART A1 INTERPRETATION

A1.1 Definitions

Alpine area means land-

(a) ý likely to be subject to significant snowfalls;

(b) ý in New South Wales, ACT or Victoria more than 1200 m above the Australian Height Datum; and

(c) ý in Tasmania more than 900 m above the Australian Height Datum.

Alteration, in relation to a building, includes an addition or extension to a building.

Certificate of Accreditation means a certificate issued by AUBRCC or a State or Territory accreditation authority stating that the properties and performance of a building material or method of construction or design fulfil specific requirements of the BCA.

Combustible -

(a) ý applied to a material - means *combustible* under AS 1530.1.

(b) ý applied to construction or part of a building -means constructed wholly or in part of *combustible* materials.

(See definition of *non-combustible*).

NSW A1.1

Designated bushfire prone area means land which has been declared by appropriate legislation to be likely to be subject to bushfires.

Exit means-

(a) ý Any, or any combination of the following if they provide egress to a road or *open space*:

(i) An internal or external stairway.

(ii) A ramp complying with Section D.

(iii) A *fire-isolated passageway*.

(iv) A doorway opening to a road or *open space*.

(b) * * *

External wall means an outer wall of a building which is not a *common wall*.

Fire-resistance level (FRL) means the grading periods in minutes determined in accordance with Specification A2.3, for-

(a) ý *structural adequacy*;

(b) ý *integrity*; and

(c) *insulation*,

and expressed in that order.

Note: A dash, for examples 90/-/- or -/-/-, means there is no requirement for an FRL for that criterion.

Fire-resisting, applied to a *structural member* or other part of a building, means having the FRL *required* for that *structural member* or other part.

Flammability Index means the index number determined under AS 1530.2.

Floor area means-

(a) ý in relation to a *storey* - the area of that *storey* measured over the enclosing walls (if any) and that part of any *common wall* located within the allotment; and

(b) ý in relation to a room - the area of the room measured within the finished surfaces of the walls, and includes the area occupied by any cupboard or other built-in furniture, fixture or fitting.

Foundation means the ground which supports the building.

Habitable room means a room used for normal domestic activities, and-

(a) ý includes a bedroom, living room, lounge room, music room, television room, kitchen, dining room, sewing room, study, playroom, family room and sunroom; but

(b) ý excludes a bathroom, laundry, water closet, pantry, walk-in wardrobe, corridor, hallway, lobby, photographic darkroom, clothes-drying room, and other spaces of a specialised nature occupied neither frequently nor for extended periods.

Insulation, in relation to an FRL, means the ability to maintain a temperature on the surface not exposed to the furnace below the limits specified in AS 1530.4.

Integrity, in relation to an FRL, means the ability to resist the passage of flames and hot gases specified in AS 1530.4.

SA A1.1 Ministers Specification

Lightweight construction means construction which incorporates or comprises-

(a) ý sheet or board material, plaster, render, sprayed application, or other material similarly susceptible to damage by impact, pressure or abrasion; or

(b) ý concrete and concrete products containing pumice, perlite, vermiculite, or other soft material similarly susceptible to damage by impact, pressure or abrasion; or

(c) ý masonry having a thickness less than 70 mm.

Non-combustible -

(a) ý applied to a material - means not deemed *combustible* under AS1530.1 - Combustibility Tests for Materials; and

(b) ý applied to construction or part of a building - means constructed wholly of materials that are not deemed *combustible*.

Open space means a space on an allotment, or a roof or similar part of a building complying with D2.12, open to the sky and connected directly with a public road.

Private garage means-

(a) ý any garage associated with a Class 1 building.

(b) * * *

(c) * * *

Professional engineer means a person who is-

(a) ý if legislation is applicable - a registered *professional engineer* in the relevant discipline who has appropriate experience and competence in the relevant field; or

(b) ý if legislation is not applicable-

(i) ý a Corporate Member of the Institution of Engineers, Australia; or

(ii) ý eligible to become a Corporate Member of the Institution of Engineers, Australia, and has appropriate experience and competence in the relevant field.

Registered Testing Authority means -

(a) ý the National Building Technology Centre (NBTC);

(b) ý the CSIRO Division of Building, Construction and Engineering (CSIRO-DBC&E);

(c) ý an authority registered by the National Association of Testing Authorities (NATA) to test in the relevant field; or

(d) ý an organisation outside Australia recognised by NATA through a mutual recognition agreement.

Required means *required* by the BCA.

Sanitary compartment means a room or space containing a toilet fixture, closet pan, soil pan, chemical toilet, or the like.

Sarking-type material means a material such as a reflective foil or other flexible membrane of a type normally used for a purpose such as water-proofing, vapour proofing or thermal reflectance.

Site means the part of the allotment of land on which a building stands or is to be erected.

NSW A1.1

Smoke-Developed Index means the index number for smoke developed under AS 1530.3.

Sole-occupancy unit means a room or other part of a building for occupation by one owner, lessee, tenant, or other occupier to the exclusion of any other owner, lessee, tenant, or other occupier.

Spread-of-Flame Index means the index number for spread of flame under AS 1530.3

Standard Fire Test means the Fire-resistance Tests of Elements of Building Construction as described in AS1530.4.

Structural adequacy, in relation to an FRL means the ability to maintain stability and adequate *loadbearing* capacity under AS 1530.4.

Structural member means a component or part of an assembly which provides vertical or lateral support to a building or structure.

QLD A1.1

SA A1.1

Swimming pool means any excavation or structure containing water and used for swimming, wading, paddling, or the like, including a bathing or wading pool, or spa.

Window includes a roof light, glass panel, glass brick, glass louvre, glazed sash, glazed door, or other device which transmits natural light directly from outside a building to the room concerned when in the closed position.

Additional provisions in State/Territory Appendices:

Additional relevant BCA definitions are reprinted in the, South Australia, Tasmania, Victoria and Western Australia Appendices.

A1.2 Adoption of Standards and other references

The adoption of a Standard, rule, specification or provision included in any document issued by the Standards Association of Australia or other body, does not include a provision-

(a) ý specifying or defining the respective rights, responsibilities or obligations as between themselves of any manufacturer, supplier or purchaser;

(b) ý specifying the responsibilities of any trades person or other building operative, architect, engineer, authority, or other person or body;

(c) ý requiring the submission for approval of any material, building component, form or method of construction, to any person, authority or body other than a person or body empowered under State or Territory legislation to give that approval;

(d) ý specifying that a material, building component, form or method of construction, must be submitted to Standards Australia or a committee of Standards Australia for expression of opinion; or

(e) ý permitting a departure from the code, rule, specification or provision at the sole discretion of the manufacturer or purchaser, or by arrangement or agreement between the manufacturer and purchaser.

A1.3 ý Referenced Standards, etc

A reference to a document under A1.2 refers to the edition or issue together with any amendment listed in Specification A1.3 and only so much as is relevant in the context in which the document is quoted.

A1.4 ý Differences between referenced documents and the BCA

The BCA overrules in any difference arising between it and any Standard, rule, specification or provision in a document listed in Specification A1.3.

A1.5 ý Application of the BCA to a particular State or Territory

For application within a particular State or Territory, the BCA comprises-

(a) ý Sections A to H; and

(b) ý the variations, deletions and additions to Sections A to H applicable to that State or Territory specified in the relevant Appendix.

PART A2 ý ACCEPTANCE OF DESIGN AND CONSTRUCTION

A2.1 ý Suitability of materials

Every part of a building must be constructed in a proper and workmanlike manner to achieve the *required* level of performance, using materials that are not faulty or unsuitable for the purpose for which they are intended.

A2.2 ý Evidence of suitability

Subject to A2.3, evidence to support the use of a material, form of construction or design may be submitted or may be *required* to be submitted. That evidence may be in the form of-

(a) ý a report issued by a *Registered Testing Authority*, showing that the material or form of construction has been submitted to the tests listed in the report, and setting out the results of those tests and any other relevant information that demonstrates its suitability for use in the building;

(b) ý a current *Certificate of Accreditation*;

(c) ý a certificate from a *professional engineer* or other appropriately qualified person which-

  (i) ý certifies that a material, design or form of construction complies with the requirements of the BCA; and

  (ii) ý sets out the basis on which it is given and the extent to which relevant specifications, rules, codes of practice or other publications have been relied upon;

(d) ý a StandardsMark Certificate issued by Standards Australia; or

(e) ý a current SSL Product Listing Data Sheet and listing in the latest issue of the Scientific Services Laboratory Register of Accredited Products - Fire Protection Equipment; or

(f) ý any other form of documentary evidence that correctly describes the properties and performance of the material or form of construction and adequately demonstrates its suitability for use in the building,

and any copy of documentary evidence submitted under the BCA must be a complete copy of the original report or document.

A2.3 ý Fire-resistance of building elements

The FRL of a building element must be determined in accordance with Specification A2.3.

Additional provisions in State/Territory Appendices:

ACT A2.101 ý Hazardous materials

PART A3 ý CLASSIFICATION OF BUILDINGS AND STRUCTURES

A3.1 ý Principles of classification

The classification of a building or part of a building is determined by the purpose for which it is designed, constructed or adapted to be used.

A3.2 ý Classifications

Buildings are classified as follows:

NSW A3.2

Class 1: one or more buildings which in association constitute-

(a) ý **Class 1a** - a single dwelling being-

(i) ý a detached house; or

(ii) ý one of two or more attached dwellings, each being a building, separated by a *fire-resisting* wall and includes a row house, terrace house, town house or villa unit; or

(b) ý **Class 1b** - a boarding house, guest house, hostel or the like with a total floor area not exceeding 300 m^2 and in which not more than 12 persons would ordinarily be resident,

which is not located above or below another dwelling or another Class of building other than a *private garage*

Class 10: a non-habitable building or structure-

(a) ý Class 10a - a non-habital building being *private garage*, carport, shed, or the like; or

(b) ý Class 10b - a structure being a fence, mast, antenna, retaining or free-standing wall, *swimming pool*, or the like.

A3.3 ý Multiple classification

Each part of a building must be classified separately, and-

(a) * * *

(b) Classes 1a, 1b, 10a and 10b are separate classifications; and

(c) a reference to-

(i) Class 1 - is to Class 1a and 1b; and

(ii) * * * ; and

(iii) Class 10 - is to Class 10a or 10b.

SPECIFICATION A1.3 ý STANDARDS ADOPTED BY REFERENCE

ACT Spec A1.3

NT Spec A1.3

QLD Spec A1.3

SA Spec A1.3

VIC Spec A1.3

1. ý Schedule of referenced documents

The Standards and other documents listed in Table 1 are referred to in the BCA.

Table 1 SCHEDULE OF REFERENCED DOCUMENTS ý

No.	Date	Title	BCA Clause(s)
AS 1170		Minimum design loads on structures (SAA Loading Code)	B1.2
Part 1	1989	Dead and live loads and load combinations Amdt 1, Jan 1993	
Part 2	1989	Wind loads Amdt 1, Jan 1991 Amdt 2, Jan 1993 Amdt 3, Dec 1993	
Part 3	1990	Snow loads	
Part 4	1993	Earthquake loads	
AS 1250	1981	The use of steel in structures (SAA Steel Structures Code) Amdt 2, Oct. 1984	Spec A2.3, B1.3
AS 1288	1994	Glass in buildings - Selection and installation (SAA Glass Installation Code)	B1.3
AS 1530		Methods of fire tests on building materials components and structures	A1.1
Part 1	1994	Combustibility test for materials	
Part 2	1993	Test for flammability of materials building construction Amdt 1, July 1993	
Part 4	1990	Fire-resistance tests on elements of building construction Note: Previous test reports under Part 1-1976, and Part 4-1975 remain valid. New reports of tests carried out after the date of amendment must relate to the amended Standard.	
AS 1538	1988	Cold-formed Steel Structures Code	B1.3
AS 1562	1980	Design and installation of sheet roof and wall	

		cladding Amdt 1, July 1993	
Part 1	1992	Metal	B1.3, F1.5
AS 1603		Automatic fire detection and alarm systems	Spec E1.7
Part 1	1990	Heat detectors	
Part 4	1987	Control and indicating equipment Amdt 1, June1988 Amdt 2, Oct 1989	
Part 6	1987	Fire alarm bells	
AS 1639	1990	The design and installation of corrugated fibre-reinforced cement roofing and wall cladding Amdt 1, May 1991	F1.5
AS 1664	1979	Rules for the use of aluminium in structures (SAA Aluminium Structures Code)	B1.3
AS 1668		The use of mechanical ventilation and air-conditioning in buildings	
Part 1	1991	Fire and smoke control	Spec E1.7
Part 2	1991	Mechanical ventilation for acceptable indoor-air quality	F4.5
AS 1670	1986	Automatic fire detection and alarm systems - system design, installation and commissioning Amdt 1, Jan 1987 Amdt 2, March1988 Amdt 3, June 1988	Spec E1.7
AS 1680		Interior lighting	F4.4
Part 1	1990	General principles and recommendations Amdt 1, June 1993	
Part 2.0	1990	Recommendations for specific tasks and interiors Amdt 1, Dec 1992	
Part 2.1	1993	Circulation space and other general areas	
Part 2.2	1994	Office and screen based tasks	
Part 2.3	1994	Education and training facilities	
AS 1684	1992	National Timber Framing Code Amdt 1, Sept 1993 Amdt 2, June 1994	B1.3
AS 1691	1985	Domestic oil-fired appliances - Installation Amdt 1, Sept 1985	G2.2
AS 1720		Timber structures (SAA Timber Structures Code)	
Part 1	1988	Design methods Amdt 1, March 1993	B1.3
Part 4	1990	Fire resistance of structural timber	Spec A2.3
AS 1860	1991	Installation of particleboard flooring	B1.3
AS 1926		Swimming pool safety	
Part 1	1993	Fencing for swimming pools	G1.1
AS 2049	1992	Roof tiles	B1.3, F1.5
AS 2050	1995	Fixing of roofing tiles	B1.3, F1.5
AS 2159	1978	Rules for the design and installation of piles (SAA Piling Code)	B1.3
AS 2327		Composite construction in structural steel and concrete (SAA Composite Construction Code)	

Part 1	1980	Simply supported beams	Spec A2.3, B1.3
AS 2424	1981	Plastics building sheets- General installation requirements and design of roofing systems	B1.3, F1.5
AS 2818	1986	Guide to swimming pool safety	G1.1
AS 2867	1986	Farm structures - General requirements for structural design	B1.3
AS 2870		Residential slabs and footings	
Part 1	1988	Construction	B1.3, F1.10
AS 2904	1986	Damp-proof courses and flashings	F1.9
AS 2908		Cellulose cement products	B1.3, F1.5
Part 1	1992	Corrugated sheets	
Part 2	1992	Flat sheets	
AS 2918	1990	Domestic solid-fuel burning appliances- Installation	G2.2
AS 3600	1994	Concrete Structures	Spec A2.3, B1.3
AS 3623	1993	Domestic metal framing	B1.3
AS 3660		Protection of buildings from subterranean termites	
Part 1	1995	New buildings	B1.3
AS 3666	1989	Air-handling and water systems in buildings - Microbial control	F4.5
AS 3700	1988	Masonry in Buildings (SAA Masonry Code) Amdt 1, Jan 1989 Amdt 2, March 1991 Amdt 3, April 1992 Amdt 4, July 1994	Spec A2.3, B1.3, F5.5
AS 3740	1994	waterproofing of wet areas in residential buildings	F1.7
AS 3786	1993	Smoke alarms	Spec E1.7
AS 3959	1991	Construction of buildings in bushfire prone areas	G5.2
AS 4055	1992	Wind loads for housing	B1.2
AS 4100	1990	Steel structures Amdt 1, Aug 1992 Amdt 2, June 1993	Spec A2.3, B1.3
AS/NZS 4200		Pliable building membranes and underlays	F1.6
Part 1	1994	Materials Amdt 1, Dec 1994	
Part 2	1994	installation requirements	
AS/NZS 4256		Plastic roof and wall cladding material	B1.3, F1.5
Part 1	1994	General requirements	
Part 2	1994	Unplasticised polyvinyl chloride (uPVC) building sheets	
Part 3	1994	Glass fibre reinforced polyester (GRP)	
AISC		Guidelines for assessment of fire resistance of structural steel members	Spec A2.3
ASTM D3018-90		Class A asphalt shingles surfaced with mineral granules	B1.3
CSIRO-DBC&E		Special Report- Low Rise Domestic and Similar Framed Structures, Part 4- Supplementary	B1.3

		Domestic Buildings for Built-Up Areas	
CSIRO-NBTC		Bulletin 5- Earth-wall Construction 4th edition-1987	B1.3
ISO 140		Acoustics - Measurement of sound insulation in buildings and of building elements	
Part VI	1978(E)	Laboratory measurements of impact sound insulation of floors	Spec F5.5
SSL		register of Accredited Products - Fire Protection Equipment	Spec E1.7

SPECIFICATION A2.3 ý FIRE-RESISTANCE OF BUILDING ELEMENTS

1. ý Scope

This specification sets out the procedures for determining the FRL of building elements.

2. ý Rating

A building element meets the requirements of this Specification if-

(a) * * *

(b) ý it is identical with a prototype that has been submitted to the *Standard Fire Test*, or an equivalent or more severe test, and the FRL achieved by the prototype is confirmed in a report from a *Registered Testing Authority* which-

  (i) ý describes the method and condition of test and the form of construction of the tested prototype in full; and

  (ii) ý certifies that the application of restraint to the prototype complied with the *Standard Fire Test*; or

(c) ý it differs in only a minor degree from a prototype tested under (b) and the FRL attributed to the building element is confirmed in a report from a *Registered Testing Authority* which-

  (i) ý certifies that the building element is capable of achieving the FRL despite the minor departures from the tested prototype; and

  (ii) ý describes the materials, construction and conditions of restraint which are necessary to achieve the FRL; or

(d) ý it is designed to achieve the FRL in accordance with-

  (i) ý AS1250, AS4100, AS2327 and AISC Guidelines for Assessment of Fire Resistance of Structural Steel Members if it is a steel or composite structure; or

  (ii) ý AS3600 if it is a concrete structure; or

  (iii) ý AS 1720.4 if it is a solid or glued-laminated timber structure; or

  (iv) ý AS3700 if it is a masonry structure; or

(e) ý the FRL is determined by calculation based on the performance of a prototype in the *Standard Fire Test* and confirmed in a report in accordance with Clause 3.

3. ý FRLs determined by calculation

If the FRL of a building element is determined by calculation based on a tested prototype-

(a) ý the building element may vary from the prototype in relation to-

- (i) ý length and height if it is a wall; and
- (ii) ý height if it is a column; and
- (iii) ý span if it is a floor, roof or beam; and
- (iv) ý conditions of support; and
- (v) ý to a minor degree, cross-section and components.

(b) ý the report must demonstrate by calculation that the building element would achieve the FRL if it is subjected to the regime of the *Standard Fire Test* in relation to-

- (i) ý *structural adequacy* (including deflection); and
- (ii) ý *integrity*; and
- (iii) ý *insulation*; and

(c) ý the calculations must take into account-

- (i) ý the temperature reached by the components of the prototype and their effects on strength and modulus of elasticity; and
- (ii) ý appropriate features of the building element such as support, restraint, cross-sectional shape, length, height, span, slenderness ratio, reinforcement, ratio of surface area to mass per unit length, and fire protection; and
- (iii) ý features of the prototype that influenced its performance in the *Standard Fire Test* although these features may not have been taken into account in the design for dead and live load; and
- (iv) ý features of the conditions of test, the manner of support and the position of the prototype during the test, that might not be reproduced in the building element if it is exposed to fire; and
- (v) ý the design load of the building element in comparison with the tested prototype.

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SECTION B STRUCTURE

CONTENTS

OBJECTIVES

A building must be so designed and constructed that the following objectives are fulfilled:

Part B1 Structural Provisions

All loads, internal actions, material properties and *foundation* conditions that significantly affect structural sufficiency or serviceability must be taken into account in the construction of a building or other structure.

PART B1 STRUCTURAL PROVISIONS

B1.1 General Requirements

A building or structure and its materials and components must be capable of sustaining at an acceptable level of safety and serviceability-

(a) ý the most adverse combination of loads (including combinations of loads that might result in a potential for progressive collapse); and

(b) other actions, ý

to which they may reasonably be subjected. ý

B1.2 Loads

NT B1.2

The loading requirements of B1.1 are satisfied if the building or structure can resist loads determined in accordance with the following:

(a) ý Dead and live loads and load combinations: AS 1170.1.

(b) ý Wind loads: AS 1170.2.

(c) ý Snow loads: AS 1170.3.

(d) ý Earthquake loads: AS 1170.4.

(e) ý Wind loads for housing: AS 4055.

B1.3 Construction deemed-to-satisfy

The requirements of B1.1 for materials and forms of construction are satisfied if they comply with the following:

(a) ý Masonry (including masonry-veneer, unreinforced masonry and reinforced masonry): AS 3700.

(b) ý Concrete construction (including reinforced and prestressed concrete): AS 3600.

(c) ý Steel construction-

(i) ý Steel structures: AS4100 or AS1250 except that where AS1250 is used the following limitations apply:

(A) ý Steels must have a specified yield stress not greater than 350MPa.

(B) ý Hot rolled steel sections and flat plate must not be more than 40 mm thick.

(C) * * *

(D) ý Beam elements must not be greater than 20 m in length.

(ii) ý Cold formed steel structures: AS 1538.

(d) ý Composite steel and concrete: AS 2327.1

(e) ý Aluminium construction: AS 1664.

QLD B1.3(f)

SA B1.3(f)

VIC B1.3(f)

(f) ý Timber construction-

(i) ý Design of timber structures: AS 1720.1

(ii) ý Timber structures not subject to snow loads: AS1684.

(iii) ý In a Class 10a building with a *floor area* less than 60m^2 located in an area not subjected to seismic activity snow loads, and where the design wind velocity calculated under AS1170.2 does not exceed 33 m/s: CSIRO-DBC&E Special Report- Low Rise Domestic Similar Framed Structures, Part 4-Supplementary Domestic Buildings for Built-up Areas, Sections I to V.

WA B1.3(g)

(g) ý Footings: Footings for Class 1 and 10a buildings: AS 2870.1

(h) ý Piling: AS2159.

VIC B1.3(i)

(i) Glass installations: AS1288. ý

NT B1.3(j)

(j) ý Protection from termites: Where a *structural member* is subject to attack by subterranean termites: AS 3660.1 and:

(i) ý for the purposes of this provision, a *structural member* consisting entirely of, or a combination of, any of the following materials is considered not to be subject to attack:

(A) ý Steel.

(B) ý Concrete.

(C) ý Masonry.

(D) ý Fibre-reinforced cement.

(E) ý Timber - naturally termite resistant in accordance with Appendix A of AS 3660.1.

(F) ý Timber - preservative treated in accordance with Appendix B of AS 3660.1.

(ii) ý a durable notice must be permanently fixed to the building in a prominent location, such as a meter box or the like, indicating-

(A) ý the method of protection; and

(B) ý the date of installation of the system; and

(C) ý where a chemical barrier is used, its life expectancy as listed on the National Registration Authority label; and

(D) ý the installer's or manufacturer's recommendations for the scope and frequency of future inspections for termite activity.

(k) ý Roof construction (except in cyclone areas):

(i) ý Extruded PVC and glass fibre reinforced polyester (GRP) sheeting: AS/NZS 4256, AS 2424.

(ii) ý Roofing tiles: AS2049, AS2050.

(iii) ý Cellulose fibre reinforced corrugated cement sheets: AS2908.1 with safety mesh installed in accordance with AS2424 Clause 2.3.3. for PVC and GRP sheeting.

(iv) ý Metal roofing: AS1562.1

(v) ý Asphalt shingles: ASTM D3018-90, Type A

(l) ý Particleboard structural flooring: AS1860 (except for Clauses 5 and 6 and Table 1).

WA B1.3(m)

(m) ý Earthwall construction: NBTC Bulletin 5, edition 4, Tables 3.1 and 3.7 and associated Table.

(n) ý Structures for primary production purposes in rural areas: AS 2867

(o) ý Domestic metal framing: As 3623

VIC B1.3(p),(q),(r)

WA B1.3(p)

Additional provisions in State/Territory Appendices: ý

NT Specification B1.2	Loads in Cyclonic Areas.
WA Specification B1.3(m)	Earth Wall Construction.
WA Specification B1.3(o)	Seismic Construction - Class 1 Buildings.

********** ý

SECTION C FIRE RESISTANCE

CONTENTS

OBJECTIVES

A building must be so designed and constructed that the following objectives are fulfilled:

Part C1 Fire Resistance and Stability

(a) ý A building must be constructed so that it is protected from fire in any other building.

(b) ý Materials used in the construction must be such that if there is a fire in the building-

(i) ý the spread of fire and the generation of smoke and toxic gases will be minimised;

(ii) ý stability will be maintained for a period at least sufficient for the occupants to escape and to ensure the safety of fire-fighters; and

(iii) ý there will be little risk of collapse onto adjoining property.

PART C1 FIRE RESISTANCE AND STABILITY

NSW C1.9

C1.9 Class 1 and 10 buildings

(a) ý Class 1 buildings must be protected from the spread of fire from-

(i) ý another building other than an appurtenant Class 10 building; and

(ii) ý the allotment boundary.

(b) ý Class 10a buildings must not significantly increase the risk of spread of fire between Class 2 to 9 buildings.

(c) ý For Class 1 buildings and Class 10a buildings appurtenant to Class 1 buildings, construction in accordance with Specification C1.9 satisfies (a).

Specification C1.1 FIRE-RESISTING CONSTRUCTION

2.5 General concessions

(a) * * *

(b) * * *

(c) * * *

(d) * * *

(e) ý **Non-combustible materials** - The following materials, though *combustible* or containing *combustible* fibres, may be used wherever a *non-combustible* material is required:

(i) ý plasterboard;

(ii) ý perforated gypsum lath with a normal paper finish;

(iii) ý fibrous-plaster sheet conforming to AS2185 Specification for Fibrous Plaster Products;

(iv) ý fibre-reinforced cement sheeting;

(v) ý pre-finished metal sheeting having a *combustible* surface finish not exceeding 1 mm thickness and where the *Spread-of-Flame Index* of the product is not greater than 0;

(vi) ý bonded laminated materials where-

(A) ý each laminate is *non-combustible*; and

(B) ý each adhesive layer does not exceed 1 mm in thickness; and

(C) ý the total thickness of adhesive layers does not exceed 2 mm; and

(D) ý the *Spread-of-Flame Index* and the *Smoke-Developed Index* of the laminated material as a whole does not exceed 0 and 3 respectively.

SPECIFICATION C1.8 ý STRUCTURAL TESTS FOR LIGHTWEIGHT CONSTRUCTION

1. ý Scope

This Specification describes tests to be applied to and criteria to be satisfied by a wall system of *lightweight construction*.

2. ý Application

A wall system need not be tested in accordance with this specification for static pressure or impact if it is designed and constructed in accordance with Section B to resist the appropriate pressures and impacts defined in this specification.

3. ý Tests

3.4 Walls generally

An *external* and *internal wall* of *lightweight construction* that is *required* to be *fire-resisting*, must be subjected to the following tests and must fulfil the following criteria:

(a) ý The materials tests of Clause 5(a) and the criteria of Clause 6(a).

(b) ý A static test by the imposition of a uniformly distributed load of 0.25 kPa (or its equivalent) in accordance with Clause 5(b) and the damage and deflection criteria of Clauses 6(b) and (c) respectively.

(c) ý A dynamic test by fall of the impact bag through a height of 100 mm in accordance with Clause 5(c) and the damage and deflection criteria of Clauses 6(b) and (d) respectively.

(d) ý The surface indentation test of Clause 5(d) and the surface indentation criterion of Clause 6(e).

4. ý Test specimens

4.1 General

Testing must be carried out on either-

(a) ý construction in situ; or

(b) ý a laboratory specimen of the construction.

4.2 Testing in situ

If testing is carried out in situ, it must be done on that part of the construction least likely, because of the particular combination of the height of the walls, the support conditions and other aspects of the construction, to resist the loads.

4.3 Testing of specimens

If a laboratory specimen is tested, the specimen must span only in the direction corresponding to the height of the wall and testing must be done in accordance with either (a) or (b) below:

(a) ý (i) the height of the test specimen (or length, if the specimen is tested horizontally) must be identical with the height between supports in the actual construction; and

(ii) ý the specimen must be supported at the top and bottom (or at each end if tested horizontally) by components identical with, and in a manner identical with, the actual construction.

(b) ý If the distance between supports of the actual construction is more than 3 m, then a smaller specimen may be tested but-

(i) ý the distance between supports must be not less than 3 m; and

(ii) ý forces, reactions and support conditions must be modelled so as to reproduce the behaviour of the actual construction if it were tested in-situ.

5. ý Test methods

Tests must be carried out in accordance with the following:

(a) ý **Material tests** - The methods specified for the constituent materials of the construction of the standards adopted by reference in the BCA.

(b) ý **For resistance to static pressure** - The provisions for testing walls under transverse load in ASTM E72-80, except that-

(i) ý support conditions must be as specified in Clause 4.3; and

(ii) ý equivalent load shall mean the quarter-point load that produces the same deflection or central moment as appropriate.

(c) ý **For resistance to impact** - The provisions for testing wall systems in ASTM E695-79 (1985), except that-

(i) ý the point of impact must be set 1.5 m above finished floor level or 1.5 m above the part of the specimen that corresponds to finished floor level; and

(ii) ý the impact bag must be not less than 225 mm in diameter and not more than 260 mm in diameter and have a mass of 27.2 kg (+ 0.1 kg, -0); and

(iii) ý the mass must be achieved by putting loose, dry sand into the bag and must be adjusted before each series of impact tests; and

(iv) ý where the impact bag and suspension cannot be vertical at the instant of impact on a curved surface or an inclined surface, the height of drop is the net height at the point of impact.

(d) ý **For resistance to surface indentation** - For all materials irrespective of composition the test for surface hardness of Clause A2 of Appendix A of AS 2185.

(e) ý **For resistance of lift shaft construction to repetitive load** - As for 5(b) except that-

(i) ý it is sufficient to test one specimen with the pressure applied from the side of the construction on which the lift will operate; and

(ii) ý the load must be applied dynamically at a frequency not less than 1 Hz and not more than 3 Hz; and

(iii) ý equivalent load shall mean the quarter-point load that produces the same central moment as the distributed load.

6. ý Criteria of compliance

The wall system or the specimen of it must fulfil the following criteria:

(a) ý **Material**s - Materials must comply with the applicable standard adopted by reference in the BCA.

(b) ý **Damage** - There must no crack, penetration or permanent surface-deformation to a depth of more than 0.5 mm or any other non-elastic deformation or fastener failure.

(c) ý **Deflection - Static pressure** - Under static pressure the deflection must not be more than-

(i) ý 1/240th of the height between supports; nor

(ii) ý for construction other than a lift *shaft* - 30 mm; or

(iii) ý for a lift *shaft* - 20 mm unless the requirements of Clause 15.2(a) of AS 1735.2 are fulfilled.

(d) ý **Deflection - Impact** - Under impact the instantaneous deflection must not be more than-

(i) ý 1/120th of the height of the wall between supports; nor

(ii) ý for construction other than a lift *shaft* - 30 mm; or

(iii) ý for a lift *shaft* - 20 mm unless the requirements of Clause 15.2(a) of AS 1735.2 are fulfilled.

(e) ý **Surface indentation** - No impression must be more than 5 mm in diameter.

Specification C1.9 ý FIRE-RESISTANCE OF CLASS 1 AND 10 BUILDINGS

1. Scope

This Specification is a set of methods which satisfy the performance requirements of C1.9(a).

2. External walls of Class 1 buildings

An *external wall* of a Class 1 building, and any openings in that wall, must comply with Clause 4 if the wall is less than-

(a) ý 1 m from an allotment boundary other than the boundary adjoining a road alignment or other public space; or

(b) ý 2 m from another building on the same allotment other than an appurtenant Class 10 building or a detached part of the same Class1 building.

3. Measurement of distances

(a) ý The distance from any point on an *external wall* of a building to an allotment boundary or another building is the distance to that point measured along a line at right angles from the allotment boundary or *external wall* of the other building which intersects that point without being obstructed by a wall complying with Clause 4.

(b) ý Where a wall within a specified distance is *required* to be constructed in a certain manner, only that part of the wall (including any openings) within the specified distance need be constructed in that manner.

4. Construction of external walls

(a) ý *External walls* (including gables) referred to in Clause 2 or 5 must extend to the underside of a *non-combustible* roof covering or non-combustible eaves lining and must-

(i) ý have an FRL of not less than 60/60/60 when tested from the outside; or

(iii) ý be of masonry-veneer construction in which the external masonry veneer is not less than 90mm thick; or

(iii) ý be of masonry construction not less than 90 mm thick.

(b) ý Openings in *external walls* referred to in Clause 2 or 5 must be protected by-

(i) ý non-openable fire *windows* or other construction with an FRL of not less than 60/60/- ; or

(ii) ý *self-closing* solid core doors not less than 35 mm thick.

(c) ý Sub-floor vents, roof vents, weepholes and penetrations for pipes, conduits and the like need not comply with (b).

5. Class 10a buildings

(a) ý Where a Class 10a building is located between a Class 1 building and the allotment boundary, other than the boundary adjoining a road alignment or other public space, the Class 1 building must be protected in one of the following ways:

(i) ý The Class 10a building is not less than 900 mm from the allotment boundary, other than the boundary adjoining a road alignment or other public space,.

(ii) ý An *external wall* of the Class 10a building which is less than 900 mm from an allotment boundary, other than the boundary adjoining a road alignment or other public space, complies with Clause 4.

(iii) ý An *external wall* of the Class 10a building which is less than 900 mm from the Class 1 building complies with Clause 4.

(iv) ý The Class 1 building is not less than 900 mm from the Class 10a building.

(v) ý An *external wall* of the Class 1 building which is less than 900 mm from the Class 10a building complies with Clause 4.

(b) ý Where a Class 10a building is located between a Class 1 building to which it is appurtenant and another building on the same allotment, the Class 1 building must be protected in one of the following ways:

(i) ý The Class 10a building is not less than 1.8 m from the other building.

(ii) ý An *external wall* of the Class 10a building which is less than 1.8 m from the other building complies with Clause 4.

(iii) ý An *external wall* of the Class 10a building which is less than 1.8 m from the Class 1 building complies with Clause 4.

(iv) ý The Class 1 building is not less than 1.8 m from the Class 10a building.

(v) ý An *external wall* of the Class 1 building which is less than 1.8m from the Class 10a building complies with Clause 4.

(c) ý Where two or more Class 10a buildings on the same allotment are appurtenant to different Class 1 buildings, the Class 10a buildings must be separated-

(i) ý from each other by a distance of not less than 1.8 m; or

(ii) ý from each other by *external walls* complying with Clause 4; or

(iii) ý from each Class 1 building by a distance of not less than 900 mm; or

(iv) ý from each Class 1 building by *external walls* complying with Clause 4; or

(v) ý by a wall complying with Clause 7.

(d) ý A carport is exempt from (a), (b) and (c) if-

(i) ý it has two or more sides open and at least one third of its perimeter open and, for the purposes of this clause, a side is considered to be open if the roof covering adjacent to that side is at least 500 mm from another building or allotment boundary; and

(ii) ý it has a *non-combustible* roof covering and any ceiling lining and wall cladding, including gables, is also *non-combustible* ; and

(iii) ý it does not provide direct vertical support to any part of the Class 1 building; and

(iv) ý in the case where it has a common roof structure with the Class 1 building and the carport does not have a ceiling, the opening between the top of the wall of the Class 1 building and the underside of the roof covering is infilled with-

(A) ý a *non-combustible* material; or

(B) ý construction clad with *non-combustible* material on the carport side.

6. Allowable encroachments

(a) ý An encroachment in relation to any *external wall* of a Class 10a building *required* to comply with Clause 4 or any *external wall* of a Class 1 building is

any construction between the *external wall* of the building and the allotment boundary, or the *external walls* of two buildings on the same allotment.

(b) ý The encroachments allowed within 900 mm of an allotment boundary or within 1.8m of another building on the same allotment are-

(i) ý fascias, gutters, downpipes and the like; and

(ii) ý eaves with *non-combustible* roof cladding and *non-combustible* lining; and

(iii) ý flues, pipes, domestic fuel tanks, cooling or heating appliances or other services; and

(iv) ý light fittings, electricity or gas meters, aerials or antennas; and

(v) ý pergolas or sun blinds; and

(vi) ý unroofed terraces, landings, steps and ramps, not more than 1 m in height.

(c) ý Encroachments listed in (b)(i), if combustible, b(ii) and b(iii) must not be built within 450 mm of an allotment boundary nor be built within 900 mm of the *external wall* or associated encroachments of another building on the same allotment.

7. Separating walls

(a) ý A wall that separates Class 1 dwellings, or separates a Class 1 building from a Class 10a building which is not appurtenant to that Class 1 building must have an FRL of not less than 60/60/60 and-

(i) ý commence at the footings or ground slab; and

(ii) ý extend-

(A) ý if the building has a *non-combustible* roof covering, to the underside of the roof covering; or

(B) ý if the building has a *combustible* roof covering, to not less than 450 mm above the roof covering.

(b) ý A separating wall of *lightweight construction* must comply with Specification C1.8.

(c) ý A separating wall complying with (a)(ii)(A)-

(i) ý must not be crossed by timber or other *combustible* building elements except for roof battens with dimensions of 75 mm x 50 mm or less; and

(ii) ý must have any gap between the top of the wall and the underside of the roof covering packed with mineral fibre or other suitable *fire-resisting* material.

(d) ý Where a building has a masonry veneer *external wall*, any gap between the separating wall and the external masonry veneer must be-

(i) ý not greater than 50 mm; and

(ii) ý packed with a mineral fibre or other suitable *fire-resisting* material with the packing arranged to maintain any waterproofing requirements of F1.4.

8. Sarking-type materials

WA Spec C1.8 8

Any *sarking-type* material used in the roof of a Class 1 building must have a *Flammability Index* of not more than 5

9. ý Rooflights

Combustible rooflights or the like installed in a roof or part of a roof *required* to have a *non-combustible* covering must-

(a) ý have an aggregate area not more than 20 % of the roof or part of the roof; and

(b) ý be not less than-

(i) ý 900 mm from-

(A) ý the allotment boundary other than the boundary adjoining a road alignment or other public space; and

(B) ý the vertical projection of a separating wall extending to the underside of the roof covering; and

(ii) ý 1.8 m from any rooflight or the like in another building on the allotment other than an appurtenant building or a detached part of the same building.

Additional provisions in State/Territory Appendices:

Tas Specification C1.9 101 Roofing

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SECTION D ACCESS AND EGRESS

CONTENTS

OBJECTIVES

A building must be so designed and constructed that the following objectives are fulfilled:

Part D2 Construction of Exits

(a) ý Stairways, ramps and passageways must be such as to provide safe passage for the users of the building.

(b) ý Stairways, ramps, floors and balconies, and any roof to which people normally have access, must have bounding walls, balustrades or other barriers where necessary to protect users from the risk of falling.

PART D2 CONSTRUCTION OF EXITS

D2.1 Application of Part

WA D2.1

Except for D2.13 and D2.16, this Part does not apply to-

(a) ý a Class 1 or Class 10 building.

D2.13 Treads and risers

(a) ý A stairway must be suitable to provide safe passage in relation to the nature, volume and frequency of likely usage.

(b) ý A stairway satisfies (a) if it has-

(i) ý not more than 18 or less than 2 risers in each flight; and

(ii) ý going (G), riser (R) and quantity (2R+G) in with Table D2.13; and

(iii) ý goings and risers that are constant throughout in flight; and

(iv) ý risers which do not have any openings that would allow 125 mm sphere to pass through between the treads; and

ACT D2.13(b)(v)

(v) ý treads which have a non-slip finish or a suitable non-skid strip near the edge of the nosings; and

(vi) ý treads of solid construction (not mesh or other perforated material) if the stairway is more than 10 m high or connects more than 3 *storeys*; and

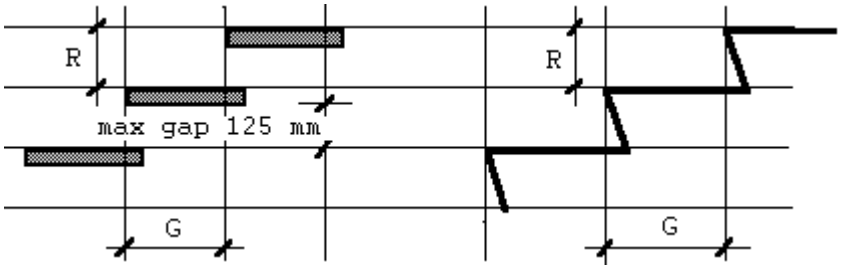
(vii) ý* * *

(viii) ý* * *

(ix) ý in the case of a non-required stairway, not more than 4 winders in a quarter landing.

Table D2.13 RISER AND GOING DIMENSIONS (mm)

	RISER (R)		GOING (G)(b)		QUANTITY (2R+G)	
	Max	Min	Max	Min	Max	Min
Private stairs(a)	190	115	355	240	700	550



Note: (a) Private stairs are-

(i) ý stairs in a Class 1 or 10 building;

(ii) ý * * *

(iii) ý in any building, stairs which are not part of a *required exit* and to which the public do not normally have access.

(b) ý The going in tapered treads (except winders in a quarter landing) in a curved or spiral stair is measured-

(i) ý 270 mm in from the outer side of the unobstructed width of the stairway if the stairway is less than 1 m wide (applicable to a non-*required* stairway only); and

(ii) ý 270 mm from each side of the unobstructed width of the stairway if the stairway is 1 m wide or more.

D2.16 Balustrades

(a) ý A continuous balustrade must be provided along the side of any roof to which public access is provided, any stairway or ramp, any floor, corridor, hallway, balcony, verandah, access bridge or the like and along the side of any path of access to a building, if-

(i) ý it is not bounded by a wall; and

(ii) ý its level is more than 1 m above the floor or ground surface beneath.

(b) ý A *required* balustrade must restrict persons accidentally falling from the floor.

(c) * * *

(d) ý A balustrade in stairways and ramps satisfies (b) if it complies with (g) and (h)(ii).

(e) ý A balustrade along the side of a horizontal or near horizontal surface such as a-

(i) ý roof to which public access is provided and any path of access to a building; and

(ii) ý floor, corridor, hallway, balcony, verandah, access bridge or the like, satisfies (b) if it complies with (g) and (h)(ii).

(f) ý * * *

(g) ý The height of a balustrade satisfies (b) if it is constructed in accordance with the following:

(i) ý The height is not less than 865 mm above the nosings of the stair treads or the floor of a ramp.

(ii) ý The height is not less than-

(A) ý 1 m above the floor of any access path, balcony, landing or the like; or

(B) ý 865 mm above the floor of a landing to a stair or ramp where the balustrade is provided along the inside edge of the landing and does not exceed a length of 500 mm.

(iii) ý A transition zone may be incorporated where the balustrade height changes from 865 mm on the stair flight or ramp to 1 m at the landing.

(h) ý Openings in a balustrade satisfy (b) if the balustrade is constructed in accordance with the following:

(i) * * *

(ii) ý Any opening does not permit a 125 mm sphere to pass through it and for stairs, the space is tested above the nosings.

QLD D2.16(i)

WA D2.16(i)

PART D3 ACCESS FOR PEOPLE WITH DISABILITIES

D3.1 Application of Part

(No BCA provisions relevant to Class 1 or 10 buildings).

Additional provisions in State/Territory Appendices:

SA Part D3 Access for people with disabilities

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SECTION E SERVICES AND EQUIPMENT

CONTENTS

PART E1 FIRE FIGHTING EQUIPMENT

E1.1 Application of Part

ACT E1.1

NSW E1.1

SA E1.1

TAS E1.1

VIC E1.1

This Part does not apply to-

(a) ý a Class 1a or Class 10 building; and

(b) ý except for E1.7, a Class 1b building.

E1.7 Fire and smoke alarms

ACT E1.7

NSW E1.7

SA E1.7

TAS E1.7

VIC E1.7

(a) ý An *automatic* fire detection and alarm system, designed to ensure the occupants are given adequate warning so they can evacuate the building in an emergency, must be installed in-

(i) ý a Class 1b building.

(b) ý An *automatic* fire detection and alarm system satisfies (a) if it complies with Specification E1.7.

PART E5 MAINTENANCE

(No BCA provisions relevant to Class 1 or 10 buildings).

Additional provisions in State/Territory Appendices:

NSW Part E5 Maintenance

SPECIFICATION E1.7 ý FIRE DETECTION AND ALARM SYSTEMS

1. ý Scope

This Specification describes the installation and operation of fire detection and alarm systems, which may also be utilised to operate a smoke control system within a building.

2. ý Type of system

ACT Spec E1.7 2

NSW Spec E1.7 2

SA Spec E1.7 2

TAS Spec E1.7 2

VIC Spec E1.7 2

An *automatic* fire detection and alarm system must comply with-

(b) ý for a Class 1b, 2 or 3 building or Class 4 part of a building, Clause 9 as permitted by Clause 8.

3. ý * * *

4. ý Connection to other warning devices

An *automatic* fire detection and alarm system must be connected to and activate-

(b) ý where an emergency warning and communication system is not *required* by Part E4, a system of loud speakers, smoke alarms or other audible warning devices complying with Clause 2.2.3 of AS 2220.2 and located on each *storey*.

5. ý * * *

6. ý Location of smoke detectors

Smoke detectors must be-

NSW Spec E1.7 6(a)

(a) ý wherever possible, surface mounted and outside air-handling ducts, unless a point sampling system with maximum sensitivity level of 0.5% smoke obscuration per metre is used; and

(b) ý located at natural collection points for hot smoke having regard to the ceiling geometry and its effects on the migratory path; and

(c) ý situated not more than 1.5 m horizontal distance from smoke doors or fire doors; and

(d) ý of the photo-electric type if installed within ducts or atmospheres contaminated with dust particles less than 1 μm in size and other particles likely to operate an ionization type detector.

7. ý Threshold Levels

(a) ý Sampling systems must comply with AS 1670, with response times and alarm thresholds maintained at minimum levels and no alarm delay permitted on the highest alarm threshold utilised.

(b) ý The setting of alarm threshold levels for addressable detectors used within intelligent systems must not exceed the sensitivity levels nominated in-

(i) AS 1668.1; and

(ii) AS 1603 Parts 1, 4 and 6.

8. Class 1b, 2 and 3 buildings and a Class 4 part of a building- alternative system

ACT Spec E1.7 8

NSW Spec E1.7 8

QLD Spec E1.7 8

SA Spec E1.7 8

TAS Spec E1.7 8

VIC Spec E1.7 8

(a) ý In a Class 1b or 2 building or a Class 4 part of a building, an *automatic* smoke detection and alarm system must-

(i) ý consist of a system of self-contained smoke alarms in accordance with Clause 9; or

(ii) ý comply with Clauses 2(a), 3, 4, 6 and 7 of this Specification.

9. ý Self-contained smoke alarms

ACT Spec E1.7 9

NSW Spec E1.7 9

SA Spec E1.7 9

TAS Spec E1.7 9

VIC Spec E1.7 9

A system consisting of self-contained smoke alarms must comply with the following:

(a) ý In a Class 1b building, self-contained smoke alarms must be installed in suitable locations on or near the ceiling-

(i) in every bedroom and associated hallway; and

(ii) on each *storey*.

(e) (i) Self-contained smoke alarms must-

(A) comply with AS 3786; or

(B) be listed in the SSL Register of Accredited Products; and

(ii) be connected to the consumer mains power.

Additional provisions in State/Territory Appendices:

Vic E1.7. Self contained smoke alarms

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SECTION F HEALTH AND AMENITY ý

CONTENTS

F5.3 Sound insulation of walls between units<R> ý

F5.5 Walls between a bathroom, laundry or kitchen and a habitable room in ý adjoining unit

Specifications

Specification F5.2 STC Ratings for Building Elements

Specification F5.5 Impact Sound - Test of Equivalence

OBJECTIVES

A building must be so designed and constructed that the following objectives are fulfilled:

Part F1 Damp and Weatherproofing

Suitable drainage, damp and weatherproofing must be provided where necessary to prevent-

(a) moisture or damp affecting the stability of the building; or

(b) the creation of any unhealthy or dangerous condition; or

(c) undue damage to adjoining property.

Part F2 Sanitary Facilities

Adequate toilet and washing facilities must be provided for the occupants of a building, having regard to its use and size.

Part F3 Room Sizes

The ceiling height of rooms and other spaces within a building must be adequate for their use or purpose.

Part F4 Light and Ventilation

Light and ventilation within a building must be adequate for the occupants, having regard to the use or purpose of the building.

Part F5 Noise Transmission

VIC Part F5

Adequate insulation against noise transmission must be provided to minimise undue disturbance to neighbouring occupants.

Additional Objectives in State/Territory Appendices:

ACT Part F6 Thermal Insulation

SA Part F6 Rodent Protection

Vic Part F6 Thermal Insulation

PART F1 DAMP AND WEATHERPROOFING

F1.1 Drainage

ACT F1.1

The construction of a drainage system and the position and manner of discharge of a stormwater drain must not-

(a) result in the entry of water into a building; or

(b) affect the stability of a building; or

(c) create any unhealthy or dangerous condition on the *site* or within the building.

F1.2 Building on land subject to dampness

One or more of the following measures must be carried out if it is warranted by the dampness of the building *site*:

(a) ý The subsoil must be adequately drained.

(b) ý The ground under the building must be regraded or filled and provided with outlets to prevent accumulation of water.

(c) ý The surface of the ground under the building must be covered with a suitable damp-resisting material.

F1.3 Drainage of land surrounding buildings

A suitable system of drainage must be provided if paving, excavation or any other work on an allotment will cause undue interference with the existing drainage of rainwater falling on the allotment whether the existing drainage is natural or otherwise.

F1.4 Weatherproofing of roofs and walls

Roofs and *external walls* (including openings around *windows* and doors) must be so constructed as to prevent rain or dampness penetrating to the inner parts of a building, unless it is-

(a) ý a Class 10 building and in the particular case there is no necessity for compliance; or

(b) ý a garage, tool shed, *sanitary compartment*, or the like, forming part of a building used for other purposes.

F1.5 Roof coverings deemed-to-satisfy

A roof complies with F1.4 if it is covered with-

(a) ý concrete roofing tiles that comply with AS 2049 and are fixed, except in cyclonic areas, in accordance with AS 2050, as appropriate; or

(b) ý terracotta roofing tiles that comply with AS 2049 and are fixed, except in cyclonic areas, in accordance with AS 2050; or

(c) ý corrugated cellulose fibre reinforced cement sheeting that complies with AS2908.1 and installed in accordance with AS 1639; or

(d) ý metal sheet roofing that complies with AS 1562.1; or

(e) ý plastic sheet roofing designed and installed in accordance with AS/NZS 4256 and AS 2424; or

(f) asphalt shingles that comply with ASTM D3018-90, Type A.

F1.6 Sarking

(a) *Sarking-type materials* used for weatherproofing of roofs and walls, as *required* by F1.4, must be suitable for the purpose.

(b) Compliance with AS/NZS 4200 satisfies (a).

F1.7 Waterproofing of wet areas in buildings ý

SA F1.7

(a) ý The following parts of a building must be impervious to water:

(i) ý In any building - the floor surface or substrate in a shower enclosure, or within 1.5 m measured horizontally from a point vertically below the shower fitting, if there is no enclosure.

(ii) * * *

(iii) * * *

(iv) ý The wall surface or substrate-

(A) ý of a shower enclosure, or if the shower is not enclosed, within 1.5 m and exposed to a shower fitting, to a height of 1.8 m above the floor;

(B) ý immediately adjacent or behind a bath, trough, basin, sink, or similar fixture, to a height of not less than 150 mm above the fixture if it is within 75 mm of the wall.

(v) ý The junction between the floor and wall if the wall and floor are *required* to be impervious to water.

(vi) ý The junction between the wall and fixture if the wall is *required* to be impervious to water.

(b) ý compliance with AS 3740 satisfies (a).

NSW F1.7(c)

F1.8 Damp-proof courses and mortars ý

SA F1.8

Except in a building that is exempt from weatherproofing under F1.4, moisture from the ground must be prevented from reaching-

(a) the lowest floor timbers and the walls above the lowest floor joists; and

(b) the walls above the damp-proof course; and

(c) the underside of a suspended floor constructed of a material other than timber, and the supporting beams or girders.

F1.9 Acceptable damp-proof courses

SA F1.9

A damp-proof course must consist of-

(a) a material that complies with AS2904; or

(b) suitable termite shields; or

(c) other suitable material.

F1.10 Damp-proofing of floors on the ground

If a floor of a room is laid on the ground or on fill-

(a) ý moisture from the ground must be prevented from reaching the upper surface of the floor and adjacent walls by-

SA F1.10(a)(i)

(i) ý the insertion of a vapour barrier in accordance with AS2870.1; or

(ii) ý other suitable means; except

(b) ý damp-proofing need not be provided if-

(i) ý the building is exempt from weatherproofing under F1.4.

Additional provisions in State/Territory Appendices:

Qld F1.101 Flashings to narrow spaces

Vic F1.7.1 Waterproofing deemed to satisfy

Vic Specification F1.7.1 Waterproofing deemed-to-satisfy

PART F2 SANITARY AND OTHER FACILITIES

F2.1 Facilities in residential buildings

Sanitary and other facilities for Class 1 buildings must be provided in accordance with Table F2.1.

NSW Table F2.1

VIC Table F2.1

Table F2.1 PROVISION OF SANITARY AND OTHER FACILITIES IN RESIDENTIAL BUILDINGS

CLASS OF BUILDING	MINIMUM FACILITIES REQUIRED
Class 1	(a) a kitchen sink and facilities for the preparation and cooking of food; (b) a bath or shower; (c) clothes washing facilities, comprising at least one washtub and space in the same room for a washing machine or wash copper; and (d) a closet pan and washbasin If any of these facilities are detached from the main building, they must be set aside for the exclusive use of the occupants of the Class 1 building.

Additional provisions in State/Territory Appendices:

Qld F2.5 Construction of sanitary compartments

WA F2.5 Construction of sanitary compartments

Tas F2.102 Installation of closet fixtures

PART F3 ROOM SIZES ý

F3.1 Height of rooms

(a) ý A room or space within a building must have sufficient height suitable for the intended function of that room or space.

(b) ý The requirement of (a) is satisfied if the ceiling height is not less than-

(i) ý in a Class 1, 2 or 3 building or Class 4 part-

(B) ý a kitchen, laundry, or the like - 2.1 m; and

(C) ý a corridor, passageway or the like - 2.1 m; and

(A) ý *a habitable room* excluding a kitchen - 2.4 m; and

(ii) * * *

(iii) * * *

(iv) ý * * *

(v) ý in any building-

(A) ý a bathroom, shower room, *sanitary compartment*, airlock, tea preparation room, pantry, store room, garage, car parking area, or the like - 2.1 m; and

(B) ý * * *

(C) ý an attic room, room with a sloping ceiling or projection below ceiling line or a non-*habitable* room or similar space - a height that does not unduly interfere with the proper functioning of the room or space.

Additional provisions in State/Territory Appendices:

ACT F3.101 Car parking facilities

PART F4 LIGHT AND VENTILATION

F4.1 Provision of natural light

Natural lighting must be provided in:

(a) ý **Class 1 buildings** - to all *habitable rooms*.

F4.2 Methods and extent of natural lighting

(a) ý *Required* natural lighting must be provided by *windows* that-

(i) ý have an aggregate light transmitting area measured exclusive of framing members, glazing bars or other obstructions of not less than 10% of the *floor area* of the room; and

(ii) ý are open to the sky or face a court or other space open to the sky or an open verandah, *carport* or the like.

(b) ý in a Class 1 building, a *required window* that faces a boundary of an adjoining allotment must not be less than a horizontal distance of 900 mm from that boundary.

F4.3 Natural light borrowed from adjoining room

Natural lighting to a room in a Class 1 building may come through a glazed panel or opening from an adjoining room (including an enclosed verandah) if-

(a) * * *

(b) the glazed panel or opening has an area of not less than 10% of the *floor area* of the room to which it provides light; and

(c) the adjoining room has *windows* with an aggregate light transmitting area of not less than 10% of the combined *floor areas* of both rooms,

and the areas specified in (b) and (c) may be reduced as appropriate if direct natural light is provided from another source.

F4.4 Artificial lighting

(a) ý Artificial lighting must be provided-

(i) * * *

(ii) ý if natural lighting of a standard equivalent to that *required* by F4.2 is not available, and the periods of occupation or use of the room or space will create undue hazard to occupants seeking egress in an emergency, in-

(A) ý Class 1 buildings - to *sanitary compartments*, bathrooms, shower rooms, airlocks and laundries.

(b) ý An artificial lighting system in accordance with AS 1680 satisfies (a).

F4.5 Ventilation of rooms

(a) ý A *habitable room*, home office, workroom, *sanitary compartment*, bathroom, shower room, laundry and any other room occupied by a person for any purpose, must have adequate flow-through or cross-ventilation and air quality, including sufficient air-changes and fresh air quantities.

(b) ý The requirements of (a) are satisfied by provision of-

(i) ý natural ventilation complying with F4.6; or

NSW F4.5(b)(ii)

(ii) ý a mechanical ventilation or air-conditioning system complying with AS1668.2 and AS 3666.

F4.6 Natural ventilation

Required natural ventilation must be provided by permanent openings, *windows*, doors or other devices which can be opened-

(a) ý with an aggregate opening or openable size not less than 5% of the *floor area* of the room *required* to be ventilated; and

(b) ý open to-

(i) ý a suitably sized court, or space open to the sky; or

(ii) ý an open verandah, carport, or the like; or

(iii) ý an adjoining room in accordance with F4.7.

F4.7 Ventilation borrowed from adjoining room

Natural ventilation to a room may come through a *window*, opening, ventilating door or other device from an adjoining room (including an enclosed verandah) if both

rooms are within the same *sole-occupancy unit* or the enclosed verandah is common property, and-

(a) ý in a Class 1 building-

(i) ý the room to be ventilated is not a *sanitary compartment*; and

(ii) ý the window, opening, door or other device has a ventilating area of not less than 5% of the *floor area* of the room to be ventilated; and

(iii) ý the adjoining room has a *window*, opening, door or other device with a ventilating area of not less than 5% of the combined *floor areas* of both rooms; and

(b) * * *

(c) ý the ventilating areas specified in (a) may be reduced as appropriate if direct natural ventilation is provided from another source.

F4.8 Restriction on position of water closets

A room containing a closet pan must not open directly into-

(a) ý a kitchen or pantry.

F4.9 Airlocks

If a room containing a closet pan or urinal is prohibited under F4.8 from opening directly to another room-

(a) ý in a Class 1 building-

(i) ý access must be by an airlock, hallway or other room; or

(ii) ý the room containing the closet pan or urinal must be provided with mechanical exhaust ventilation.

F4.10 Sub-floor ventilation

(a) ý Suitable provision must be made to prevent undue deterioration of the lowest floor of a building because of dampness, other conditions on the allotment or the design of the building.

(b) ý The requirements of (a) are satisfied if-

(i) ý an adequately cross-ventilated space is provided between the underside of the floor, if it is suspended, and the ground surface; or

(ii) ý an impervious cover is provided over the ground surface beneath the building; or

(iii) ý the floor members are suitably treated.

PART F5 NOISE TRANSMISSION AND INSULATION

F5.1 Application of Part

NSW F5.1

VIC F5.1

This Part applies to-

(a) ý Class 1 buildings joined by a separating wall as *required* by Clause 7 of Specification C1.9.

F5.2 ý Sound Transmission Class: Interpretation

A form of construction *required* to have a certain Sound Transmission Class (STC) must-

(a) have the *required* value determined under AS1276; or

(b) comply with Specification F5.2; or

(c) be supported by evidence of its STC under A2.2.

F5.4 ý Sound insulation of walls between units

A wall must have an STC not less than 45 if it separates-

(a) ý *sole-occupancy units*.

F5.5 ý Walls between a bathroom, sanitary compartment, laundry or kitchen and a habitable room in adjoining unit

(a) ý A wall separating a bathroom, *sanitary compartment,* laundry or kitchen in one *sole-occupancy unit* from a *habitable* room (other than a kitchen) in an adjoining unit must-

(i) ý have an STC of not less than 50; and

(ii) ý provide a satisfactory level of insulation against impact sound; and

(iii) ý not incorporate a duct which reduces the STC of the wall to less than 50.

(b) ý A wall satisfies (a)(i) and (a)(ii) if it is-

(i) ý in accordance with Table F5.5; or

(ii) ý for other than masonry, in 2 or more separate leaves without rigid mechanical connection except at their periphery; or

(iii) ý identical with a prototype that is no less resistant to the transmission of impact sound when tested in accordance with Specification F5.5 than a wall listed in Table F5.5.

Table F5.5 CONSTRUCTION OF WALLS TO REDUCE IMPACT SOUND ý

CAVITY BRICKWORK-

Two leaves 90 mm brick masonry with-

(i) ý all joints filled solid with mortar; and

(ii) ý an air space not less than 40 mm between the leaves; and

(iii) ýthe leaves connected only by ties in accordance with AS 3700.

SINGLE LEAF BRICKWORK

110 mm thick brick masonry with-

(i) ý each face rendered 13 mm thick; and

(ii) ý 50 mm x 12 mm thick timber battens at not more than 610 mm centres fixed to each face but not recessed into the render; and

(iii) ýone layer of 12 mm thick softboard nailed to the battens; and

(iv) ý6 mm thick medium density hardboard adhesive-fixed to the softboard.

CONCRETE BLOCKWORK-

190 mm thick concrete block masonry with-

(i) ý each face of the blocks fitted with 50 mm x 50 mm timber battens, spaced at not more than 610 mm centres, screw-fixed into resilient plugs with rubber inserts;

(ii) ý the space between the battens completely filled with mineral or glass wool blanket or batts not less

than 50 mm thick; and

(iii) ýthe outer face of the battens finished with plasterboard not less than 10 mm thick or other material with a mass per unit area not less than 7.3 kg/m^2.

F5.7 Isolation of pumps

A flexible coupling must be used at the point of connection between the service pipes in a building and any circulating or other pump.

SPECIFICATION F5.2 ýSTC RATINGS FOR BUILDING ELEMENTS

1. ý Scope

This Specification lists the Sound Transmission Class ratings for some common forms of construction.

2. ý Construction deemed-to-satisfy

The forms of construction listed in Table 2 are considered to have the STC stated in that Table if installed as follows:

(a) ý **Masonry** - Units must be laid with all joints filled solid, including those between the masonry and any adjoining construction.

(b) ý **Concrete slabs** - Joints between concrete slabs and any adjoining construction must be filled solid.

(c) ý **Plasterboard** -

(i) ý if one layer is *required* under this Specification, it must be screw-fixed to the studs with joints staggered on opposite faces; and

(ii) ý if 2 layers are *required*, the first layer must be fixed according to (i) and the second layer must be fixed to the first layer with nails, screws or adhesive so that the joints do not coincide with those of the first layer; and

(iii) ý joints between sheets or between sheets and any adjoining construction must be taped and filled solid; and

(iv) ý fire-protective grade plasterboard must be the special grade manufactured for use in *fire-resisting construction*.

(d) ý **Steel studs and perimeter members** -

(i) ý the section of steel must be not less than 0.6mm thick;

(ii) ý studs must be not less than 63mm in depth unless another depth is listed in the Table; and

(iii) ý studs must be fixed to steel top and bottom plates of sufficient depth to permit secure fixing of the plasterboard; and

(iv) ý all steel members at the perimeter of the wall must be securely fixed to the adjoining structure and bedded in resilient compound or the joints must be caulked so that there are no voids between the steel members and the wall.

Table 2 STC RATINGS APPLICABLE TO CONSTRUCTION

CONSTRUCTION	STC (not less than)

WALLS		
Clay brickwork-		
(a)	230 mm thick in one or more leaves and with a mass per unit area of not less than 290 kg/m^2	45
(b)	110 mm thick rendered 13 mm thick on both sides with a mass per unit area of the unrendered wall being not less than 190 kg/m^2	45
(c)	110 mm thick, of semi-dry-pressed bricks and rendered 13 mm on one side, the mass per unit area of the unrendered wall being not less than 215 kg/m^2	45
(d)	110 mm thick, of extruded brick and rendered 13 mm on one side, the mass per unit area of the unrendered wall being not less than 180 kg/m^2	45
Concrete brickwork- 110 mm thick with a mass per unit area of not less than 195 kg/m^2		45
Concrete blockwork -		
(a)	190 mm thick with a mass per unit area of not less than 215 kg/m^2	45
(b)	140 mm thick, the wall thickness of the blocks being not less than 44 mm and with -	
	(i) 50 mm x 50 mm timber battens spaced at not more than 610 mm centres screw-fixed on one face of the blocks into resilient plugs with rubber inserts between battens and the wall; and	
	(ii) the face of the battens clad with 13 mm thick standard plasterboard; and	
	(iii) a mass per unit area of the whole system of not less than 220 kg/m^2	45
Concrete-		
(a)	In-situ concrete- 125 mm thick and with a density of not less than 2200 kg/m^3	45
(b)	In-situ concrete- 100 mm thick and with a density of not less than 2500 kg/m^3	45
(c)	Precast concrete- 100 mm thick and without joints	45
Steel stud walling-		
(a)	with 2 layers of 16 mm thick fire-protective grade plasterboard fixed to each face	45
(b)	with-	
	(i) 1 layer of 13 mm thick fire-protective grade plasterboard fixed to one face, and before fixing, 50 mm thick mineral or glass wool blanket or batts stapled to the back of each sheet so that the sheet is completely covered; and	
	(ii) 2 layers of 13 mm thick fire-grade plasterboard fixed to the other face	45
(c)	with-	
	(i) 1 layer of 16 mm fire-protective grade plasterboard fixed to one face; and	
	(ii) 50 mm thick mineral or glass wool blanket or batts wedged firmly between the studs; and	
	(iii) 2 layers of fire-protective grade plasterboard fixed to the other face, the inner layer being 16 mm thick and the outer layer being 13 mm	45
(d)	with 2 layers of 13 mm plasterboard on both sides of 75 mm studs	45

SPECIFICATION F5.5 IMPACT SOUND - TEST OF EQUIVALENCE

1. Scope

This specification describes a method of test to determine the comparative resistance of walls to the transmission of impact sound.

2. ý Construction to be tested ý

(a) ý The test is conducted on a specimen of prototype wall construction and on a specimen of one or other of the constructions specified in Table F5.5.

(b) ý The testing of a construction specified in Table F5.5 need not be repeated for subsequent comparisons provided complete records of the results, the test equipment and the technique of testing are kept so that identical equipment can be employed and an identical technique can be adopted in the testing of specimens of prototype wall construction.

3. ý Method

(a) ý The wall constructions to be compared must be tested in a laboratory complying with AS1191.

(b) ý A horizontal steel platform 510 mm x 460 mm x 10 mm thick must be placed with one long edge in continuous and direct contact with the wall to be tested on the side of the wall on which the impact sound is to be generated.

(c) ý A tapping machine complying with ISO 140/VI-1978 (E) must be mounted centrally on the steel platform.

(d) ý The sound transmission through the wall must be determined in accordance with AS1191, except that the tapping machine as mounted on the steel platform must be used as the source of sound.

(e) ý The impact sound pressure levels measured in the receiving room must be converted into normalized levels using a reference equivalent absorption area of 10 m^2.

Additional provisions in State/Territory Appendices:

ACT Part F6	Thermal Insulation
Qld Part F101	Vermin Control
SA Part F6	Rodent Protection
Vic Part F6	Thermal Insulation

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SECTION G ANCILLARY PROVISIONS

CONTENTS

OBJECTIVES

This Section contains more specific requirements for particular parts of buildings or structures.

Parts of buildings and structures must be so designed and constructed that the following objectives, in addition to those listed for Sections B, C, D, E and F where relevant, are fulfilled:

Part G1 Minor Structures and Components

G1.1 Swimming pools-

(a) Suitable means for the disposal of waste and drainage must be provided to a *swimming pool*.

QLD G1.1(b)

(b) Access by unsupervised young children to *swimming pools* must be restricted.

TAS G1.1(c)

Part G2 Heating Appliances, Fireplaces, Chimneys and Flues

Heating appliances, fireplaces, chimneys and flues must be adequately constructed or separated to prevent-

(a) ignition of nearby parts of the building; or

(b) escape or discharge of smoke to the inside of the building or to adjacent *windows*, ventilation inlets, or the like.

Part G4 Construction in Alpine Areas

Additional safety measures must be provided in *alpine areas* in view of the increased difficulties in fighting fire and maintaining access and means of egress in snow or iced conditions.

Part G5 Construction in Bushfire Prone Areas

Residential buildings constructed in *bushfire prone areas* must provide some resistance to bushfires in order to reduce the danger to life and minimise loss of property.

Additional provisions in State/Territory Appendices:

SA Part G6 Dangerous Substances Storerooms

SA Part G8 Miscellaneous Provisions

Tas Part G101 Projections Over Ways

PART G1 MINOR STRUCTURES AND COMPONENTS

G1.1 Swimming pools

NT G1.1

WA G1.1

(a) **Drainage :** A *swimming pool* must have suitable means of drainage.

NSW G1.1(b)

QLD G1.1(b)

SA G1.1(b)

(b) **Safety fencing :** A *swimming pool* associated with a Class 1 building, with a depth of water more than 300 mm must have suitable barriers to restrict access by young children to the immediate pool surrounds or safety fencing in accordance with AS2818 and AS1926.1.

ACT G1.1(c), (e)

QLD G1.1(c)

SA G1.1(c)

TAS G1.1(e)

Additional provisions in State/Territory Appendices:

ACT G1.104 Garbage facilities

NSW G1.101 Provision for cleaning windows

PART G2 HEATING APPLIANCES, FIREPLACES, CHIMNEYS AND FLUES

G2.1 General requirements

A chimney or flue must be constructed-

(a) to withstand the temperatures likely to be generated by the appliance to which it is connected; and

(b) so that the temperature of the exposed faces will not reach a level that would cause damage to nearby parts of the building; and

(c) so that hot products of combustion will not-

  (i) escape through the walls of the chimney or flue; or

  (ii) discharge in a position that will cause fire to spread nearby combustible materials or allow smoke to penetrate through nearby *windows*, ventilation inlets, or the like; and

(d) in such a manner as to prevent rainwater penetrating to any part of the interior of the building.

G2.2 Installation of appliances

The installation of a stove, heater or similar appliance in a building must comply with:

(a) Domestic oil-fired appliances - Installation: AS1691.

(b) Domestic solid-fuel burning appliances - Installation: AS2918.

ACT G2.2(e)

G2.3 Open fireplaces deemed-to-satisfy

An open fireplace, or solid-fuel burning appliance in which the fuel-burning compartment is not enclosed, satisfies G2.1 if it has-

(a) a hearth constructed of stone, concrete, masonry or similar *non-combustible* material so that-

  (i) it extends not less than 300 mm beyond the front of the fireplace opening and not less than 150 mm beyond each side of that opening; and

  (ii) it extends beyond the limits of the fireplace or not less than 300 mm if the fireplace or appliance is free-standing from any wall of the room; and

  (iii) its upper surface does not slope away from the grate or appliance; and

  (iv) *combustible* material situated below the hearth but not below that part *required* to extend beyond the opening or the limits of the fireplace is not less than 155 mm from the upper surface of the hearth.

(b) walls forming the sides and back of the fireplace up to not less than 300 mm above the underside of the arch or lintel which-

  (i) are constructed in 2 separate leaves of solid masonry not less than 180 mm thick, excluding any cavity; and

  (ii) do not consist of concrete block masonry in the construction of the inner leaf; and

(c) walls of the chimney above the level referred to in (b)-

(i) constructed of masonry units with a net volume, excluding cored and similar holes, not less than 75% of their gross volume, measured on the overall rectangular shape of the units, and with an actual thickness of not less than 100 mm; and

(ii) lined internally to a thickness of not less than 12 mm with rendering consisting of 1 part cement, 3 parts lime, and 10 parts sand by volume, or other suitable material; and

(d) suitable damp-proof courses or flashings to maintain weatherproofing.

ACT G2.3(e)

Additional provisions in State/Territory Appendices:

ACT G2.102 Chimneys and flues

PART G4 CONSTRUCTION IN ALPINE AREAS

G4.1 Application of Part

This Part applies to any building constructed in an *alpine area* and overrules other provisions of the BCA.

G4.3 External doorways

(a) A door fitted to an external doorway which may be subject to the build-up of snow must-

(i) only be capable of opening inwards; and

(ii) be marked "OPEN INWARDS" on the inside face of the door in letters not less than 75mm high and in a colour contrasting with that of the background; and

(iii) if it serves a corridor or stairway, be positioned in an alcove or recess so that it does not hinder egress.

(b) An alcove or recess with-

(i) no horizontal dimension less than twice the width of the door; and

(ii) the door positioned to open against a wall such that the distance from any part of its swing to the nearest point of entry of the stairway or corridor is not less than the width of the door,

is deemed to satisfy Clause (a)(iii).

G4.5 External ramps

An external ramp serving as an exit must have a gradient not steeper than 1 in 12.

G4.6 Discharge of exits

(a) Buildings must be constructed so that snow or ice is not deposited on the allotment, any adjoining allotment, road or public space in a location or manner that will-

(i) significantly obstruct a means of egress from any building to the road or *open space*; or

(ii) otherwise endanger people.

(b) Construction satisfies (a) when-

(i) if any part of an *external wall* is more than 3.6 m above the natural ground level - the distance of that part from a boundary other than a road alignment is not less than 2.5 m plus 100 mm for each 300 mm or part by which that part of the wall exceeds a height of 3.6 m; and

(ii) if an *exit* doorway discharges into a court between wings of a building - the wings are not less than 6m apart; and

(iii) if an *exit* doorway is opposite a barrier which is more than 900 mm above the threshold of the doorway - the threshold is at a distance from that barrier of not less than twice the height of the barrier or 6 m, whichever is the lesser.

G4.7 External trafficable structures

External stairways, ramps, access bridges or other trafficable structures must have-

(a) a floor surface that consists of steel mesh or other suitable material if it is used as a means of egress; and

(b) any *required* balustrade constructed so that its sides are not less than 75% open.

PART G5 CONSTRUCTION IN BUSHFIRE PRONE AREAS

NSW Part G5)

G5.1 Protection required

A Class 1 building that is constructed in a *designated bushfire prone area* must be provided with protection to reduce the risk of ignition by embers in the event of a bushfire.

SA G5.2

G5.2 Protection deemed-to-satisfy

A building complies with G5.1 if it is provided with protection in accordance with AS3959.

Additional provisions in State/Territory Appendices:

SA Part G6 Dangerous Substances Storerooms

SA Part G8 Miscellaneous Provisions

Qld Part G101 Awnings and Balconies

Qld Part G102 Certain Attachments

Tas Part G101 Projections Over Ways

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CONTENTS

This Appendix contains the BCA provisions that have been varied and additional provisions for application to Class 1 or Class 10 buildings in the ACT.

SECTION A GENERAL PROVISIONS

PART A1 INTERPRETATION

ACT Specification A1.3 Standards Adopted by Reference

Insert in Specification A1.3 the following:

ACT Table 1 Schedule of Referenced Documents

No.	Date	Title	Clause(s)
AS 1691	1985	Rules for the installation of domestic oil-fired appliances (SAA Domestic Oil-fired Appliances	ACT G2.3 ACT G2.102

		Installation Code).	
AS 1692	1989	Tanks for flammable and combustible liquids.	ACT G2.2
AS 3500		National Plumbing and Drainage Code	
Part 3	1990	Stormwater drainage	ACT F1.1
AS 3661		Slip resistance of pedestrian surfaces	
Part 1	1993	Requirements	ACT D2.13
Work Safe Australia Asbestos Code of Practice and Guidance Notes			ACT A2.101

PART A2 ý ACCEPTANCE OF DESIGN ANDCONSTRUCTION

Add ACT A2.101 as follows:

ACT A2.101 Hazardous Materials

Asbestos-based materials: When asbestos-based material in any form or in any mixture thereof, or any material containing loose asbestos including asbestos fluff insulation, asbestos sheeting, lagging, fire protection and the like is removed, it must be handled and disposed of in accordance with the Work Safe Australia Asbestos Code of Practice and Guidance Notes.

SECTION D ACCESS AND EGRESS

PART D2 ý CONSTRUCTION OF EXITS

Delete D2.13(b)(v) and insert ACT D2.13(b)(v) as follows:

ACT D2.13 Treads and risers

(b) ý (v) treads which have a non-slip finish or a suitable non-slip strip near the edge of the nosings that meet the requirements of AS 3661.1.

SECTION E SERVICES AND EQUIPMENT

PART E1 ý FIRE-FIGHTING EQUIPMENT

Delete E1.1 and insert ACT E1.1 as follows:

ACT E1.1 Application of Part

This Part does not apply to-

(a) a Class 10 building; and

(b) except for E1.7, a Class 1 building.

Delete E1.7(a)(i) and insert ACT E1.7(a)(I) as follows:

ACT E1.7 Fire and smoke alarms

(a) (i) ý a Class 1 building; and

ACT Specification E1.7 FIRE AND SMOKE ALARMS

Delete Clause 2(b) and insert the following:

2. ý **Type of system**

(b) ý for a Class 1, 2 or 3 building or Class 4 part of a building, Clause 9 as permitted by Clause 8.

Delete the title of Clause 8 and the lead-in phrase of Clause 8(a) and insert the following:

8. ý **Class 1, 2 and 3 buildings and Class 4 part of a building - alternative system**

(a) ý In a Class 1, 2 or 3 building or a Class 4 part of a building, an *automatic* smoke detection and alarm system must-

Delete Clause 9(b) and insert the following:

9. ý **Self-contained smoke alarms**

(b) In a Class 1a, 2 or 3 building, self-contained smoke alarms must be installed in each *sole-occupancy unit* or building in suitable locations on or near the ceiling in any *storey*-

SECTION F HEALTH AND AMENITY

OBJECTIVES

Add objectives for Part F6 as follows:

ACT Part F6 Thermal Insulation

A reasonable level of thermal insulation must be provided to conserve energy used for internal heating and cooling of residential buildings.

PART F1 DAMP AND WATERPROOFING

Delete F1.1 and insert ACT F1.1 as follows:

ACT F1.1 Drainage

(a) ý The construction of a drainage system and the position and manner of discharge of a stormwater drain must not-

(i) ý result in the entry of water into a building; or

(ii) ý affect the stability of a building; or

(iii) ý create any unhealthy or dangerous condition on the site or within a building.

(b) ý Stormwater drainage satisfies (a) if it complies with AS3500.3.

After Part 5 add ACT Part F6 as follows:

ACT Part F6 THERMAL INSULATION

F6.1 Application of Part

This part applies to Class 1 buildings.

F6.2 Provision of thermal insulation

(a) ý **R values** - In this Part "R" or "R value" means the thermal resistance of an element if the building measured in m^2.K/W.

(b) ý **Performance requirements** - Residential buildings must have a reasonable level of thermal insulation to conserve energy used for internal heating and cooling.

(c) ý **Deemed-to-comply provisions** - Compliance with Table F6 satisfies (b).

Table F6 ý MINIMUM OVERALL R VALUE

ELEMENT	MINIMUM R VALUE
Roof or Ceiling	R3.4
External walls	R1.7
Ground floor	R1.0

(d) ý **Exemptions** - The requirements of this Part do not apply to the following types of construction:

(i) ý a ceiling space or underfloor space where unrestricted access for the installation of insulation will be available after the completion of construction;

(ii) ý cavity brick, earthwall construction, ashlar stone or other masonry walls which have a thickness (excluding any cavity) of not less than 180 mm;

(iii) ý *windows*, vents and other similar openings in walls, roofs and ceilings; or

(iv) ý a garage forming part of a Class 1 building which is separated from the habitable rooms of the building by a wall complying with the requirements for an *external wall* in Table F6.

(e) ý **Fire resistance** - When tested in accordance with ASí1530.3 a thermal insulation material must have a *Spread-of-Flame Index* of 0 and a *Smoke-Developed Index* not greater than 4.

SECTION G ANCILLARY PROVISIONS

PART G1 MINOR STRUCTURES AND COMPONENTS

Delete G1.1(b) and insert ACT G1.1(b), (c) and (e) as follows:

ACT G1.1 Swimming Pools

(b) ý (i) A *swimming pool* with a depth of water more than 300 mm must have suitable barriers or safety fencing to restrict access by young children to the immediate pool surrounds.

(ii) ý For a *swimming pool* associated with a Class 1, 2 or 3 building, safety fencing located in accordance with AS 2818 Clauses 9.2.2 or 9.2.3 or 9.2.4 and constructed in accordance with AS 1926 satisfies (i)

(c) ý Indoor or outdoor permanent bathing, wading and *swimming pools* must-

(i) ý where the capacity of the pool exceeds 10 m^3-

(A) ý be of the recirculation type in which the water circulation is maintained through the pool by pumps, the water drawn from the pool being clarified and disinfected before being returned to the pool;

(B) ý have an outlet sump with antivortex cover or grating and have a skimming weir or overflow gutter or channel at high water level; and

(C) ý have means of egress provided in the form of ladders, steps in the floor of the pool or a ramp;

(ii) ý pools must be capable of being completely emptied and any discharge or overflow and pool backwash filter must be connected to the sewer drainage system;

(iii) ý pools must be watertight with smooth surfaces of non-absorbent, non-slip material, light in colour and with rounded corners to facilitate cleaning;

(iv) ý any surrounding concourses must be graded away from the pool.

(e) ý Luminaires and fixed electrical appliances such as filter pumps located in the pool area must be permanently connected except where it is necessary to remove such equipment for servicing, connection may be made with a water resistant plug socket located-

(i) ý at a height of not less than 450 mm above the maximum water level or above the coping of the pool; or

(ii) ý for an above-ground pool, at a height of not less than 450 mm above ground level, at a distance not less than 1 m from the water's edge.

PART G2 ý HEATING APPLIANCES, FIREPLACES, CHIMNEYS AND FLUES

Add ACT G2.2(e) as follows:

ACT G2.2 Installation of appliances

(e) ý storage tanks and other associated fittings: AS 1692, as applicable for tanks in category 1 only.

Add ACT G2.3(e) as follows:

ACT G2.3 Open fireplaces deemed-to-satisfy

(e) ý in the case of a solid-fuel burning appliance in which the fuel burning compartment is not enclosed-

(i) ý a flue constructed of cast iron, cellulose fibre reinforced cement not less than 9.5 mm thick, galvanised steel not less than 1.2 mm thick or such other material of at least equivalent strength and durability, installed in accordance with Section 6 of AS 1691, as though it is a flue connected to an oil heating appliance; and

(ii) ý the heat producing appliance installed to allow ample air circulation and ventilation; and

(iii) ý footings and floor structures strengthened as necessary for the imposed load of the fireplace so as to maintain structural adequacy; and

(iv) ý roof penetrations for flues treated in such a manner so as to not impair the structural adequacy of the roof and to be weatherproof.

Add ACT G2.102 as follows:

ACT G2.102 Chimneys and flues

(a) ý A flue must not be used to convey the hot products of combustion from more than one appliance or fireplace except in the case of-

(ii) ý oil-fired appliances referred to in ACT G2.2, where AS 1691 or AS 1940 permits otherwise; or

(iii) ý open fireplaces and solid-fuel burning appliances referred to in ACT G2.2 where AS 2918 permits otherwise.

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CONTENTS

This Appendix contains the BCA provisions that have been varied and additional provisions for application to Class 1 or Class 10 buildings in NSW.

SECTION A GENERAL PROVISIONS

PART A1 INTERPRETATION

NSW A1.1 Definitions

Delete the following definition:

Designated bushfire prone areas.

Vary definition of *sole-occupancy unit* as follows:

Sole-occupancy unit means-

(a) a dwelling;

PART A3 ý CLASSIFICATION OF BUILDINGS AND STRUCTURES

Vary definition of Class 1 buildings in A3.2 as follows:

NSW A3.2 Classifications

Class 1: One or more buildings which in association constitute-

(a) ý **Class 1a -**

(i) ý a single dwelling; or

(ii) ý two attached dwellings, neither of which is located above the other or above or below another Class of building other than its appurtenant *private garage*; or

(b) ý **Class 1b -** a boarding house, guest house, hostel or the like with a total floor area not exceeding 300 m^2 in which not more than 12 persons would ordinarily be resident, which is not located above or below another Class of building other than a *private garage*.

SECTION C FIRE RESISTANCE

PART C1 ý FIRE RESISTANCE AND STABILITY

Delete C1.9 and insert NSW C1.9 as follows:

NSW C1.9 Class 1 and 10 buildings

(a) ý Class 1 buildings or dwellings must be protected from the spread of fire from-

(i) ý another building or dwelling other than an appurtenant Class 10 building; and

(ii) ý the allotment boundary.

(b) ý Class 10a buildings must not significantly increase the risk of spread of fire between Class 2 to 9 buildings.

(c) ý For Class 1 buildings or dwellings and Class 10a buildings appurtenant to Class 1 buildings or dwellings, construction in accordance with Specification C1.9 satisfies (a).

NSW SPECIFICATION C1.9 ý FIRE-RESISTANCE OF CLASS 1 AND 10 BUILDINGS

Delete Clause 9(b)(ii) and insert new clause as follows:

9. ý Rooflights

(b) ý (ii) 1.8 m from any rooflights or the like in another building or dwelling on the allotment other than an appurtenant building or a detached part of the same building or dwelling.

SECTION E SERVICES AND EQUIPMENT

Delete E1.1 and insert NSW E1.1 as follows:

NSW E1.1 ý Application of Part

This Part does not apply to-

(a) ý a Class 10 building; and

(b) ý except for E1.7, a Class 1 building or dwelling.

Delete E1.7 and insert NSW E1.7 as follows:

NSW E1.7 ý Fire and smoke alarms

(a) ý An *automatic* fire detection and alarm system, designed to ensure the occupants are given adequate warning so they can evacuate the building in an emergency, must be installed in-

(i) ý a Class 1 building or dwelling.

(b) ý An *automatic* fire detection and alarm system satisfies (a) if it complies with Specification E1.7.

NSW SPECIFICATION E1.7 ý FIRE DETECTION AND ALARM SYSTEMS

Delete Clause 2 and insert new clause as follows:

2. ý Type of system

An *automatic* fire detection and alarm system must comply with-

(a) * * ý *

(b) ý for Class 1, 2 and 3 buildings and Class 4 parts, Clause 9 as permitted by Clause 8.

Delete Clause 6(a) and insert new paragraph as follows:

6. ý Location of smoke detectors

(a) ý wherever possible, surface mounted at the return air inlet and spill air or relief air path outside the air handling system ducts, unless a point sampling system with maximum sensitivity level of 0.5% smoke obscuration is used; and

Delete Clause 8 and insert new clause as follows:

8. ý Class 1, 2 and 3 buildings and Class 4 part of a building - alternative system

(a) ý An *automatic* fire detection and alarm system in-

(i) ý a Class 1 building or dwelling and a Class 2 building, where *required* by NSW E1.7; and

(ii) * * * ý

must-

(iii) ý consist of a system of self-contained smoke alarms in accordance with Clause 9; or

(iv) ý comply with Clauses 2(a), 3, 4, 6 and 7 of this Specification utilizing smoke detectors.

Delete Clauses 9(b) and (9)(e)(ii) and insert new clauses as follows:

9. ý **Self-contained smoke alarms**

(b) ý In a Class 1a building or dwelling and within *sole- occupancy units* in a Class 2 building and a Class 4 part of a building and within sole-occupancy units in a Class 3 building referred to in NSW Clause 8(b)(ii) of this Specification, self-contained smoke alarms must be installed in each building, dwelling or *sole-occupancy unit* in suitable locations on or near the ceiling in any *storey*-

(i) containing bedrooms-

(A) between each area containing bedrooms and the remainder of the building, dwelling or *sole-occupancy unit*; or

(B) where bedrooms are served by a hallway, in that hallway; or

(C) in each bedroom and either (A) or (B); and

(ii) not containing bedrooms.

(e) (ii) be connected to the consumer mains power where a building is provided with mains electrical power; and

(iii) have a standby power supply.

SECTION F HEALTH AND AMENITY ý

PART F1 DAMP AND WEATHERPROOFING

Add NSW F1.7(c) as follows:

NSW F1.7 Waterproofing of wet areas in buildings

(c) ý Where a bath is enclosed, the enclosure must be constructed so as to-

(i) ý prevent the creation of an unhealthy condition within the enclosure; and

(ii) ý prevent the entry of rodents; and

(iii) ý prevent the degrading of any supporting members or covering, by moisture within the bath enclosure; and

(iv) ý be structurally adequate.

PART F2 SANITARY AND OTHER FACILITIES

Insert the following lead-in to requirements for Class 1 buildings in Table F2.1:

NSW Table F2.1 ý PROVISION OF SANITARY AND OTHER FACILITIES IN RESIDENTIAL BUILDINGS

CLASS OF BUILDING	MINIMUM FACILITIES REQUIRED
Class 1 ý	Each dwelling in a Class 1 building must be provided with the following:

PART F4 LIGHT AND VENTILATION

Delete F4.5(b)(ii) and insert NSW F4.5(b)(ii) as follows:

NSW F4.5 Ventilation of rooms

(b) ý (ii) a mechanical ventilation or air-conditioning system complying with AS 1668.2.

PART F5 NOISE TRANSMISSION AND INSULATION

Delete clause F5.1 and insert NSW F5.1 as follows:

NSW F5.1 Application of Part

This Part applies to-

(a) ý Dwellings in a Class 1 building separated by a wall.

SECTION G ANCILLARY PROVISIONS

PART G1 MINOR STRUCTURES AND COMPONENTS

Delete G1.1(b):

NSW G1.1 Swimming pools

(b) ý (deleted).

Note: Restriction of access to swimming pools is regulated under the Swimming Pools Act 1992.

Add NSW G1.101 as follows:

NSW G1.101 Provision for cleaning of windows

(a) ý A building must provide for a safe manner of cleaning any *windows* located 3 or more *storeys* above ground level.

(b) ý A building satisfies (a) where-

(i) ý the *windows* can be cleaned wholly from within the building; or

(ii) ý provision is made for the cleaning of the *windows* by a method complying with the Construction Safety Act 1912 and regulations made under that Act.

NSW PART G5 ý CONSTRUCTION IN BUSHFIRE PRONE AREAS

Delete all of Part G5.

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CONTENTS

This Appendix contains the BCA provisions that have been varied and additional provisions for application to Class 1 or Class 10 buildings in the Northern Territory-

A - GENERAL PROVISIONS

B - STRUCTURE

G - ANCILLARY PROVISIONS

SECTION A GENERAL PROVISIONS

PART A1 INTERPRETATION

NT Specification A1.3 Standards Adopted by Reference.

Insert in Table 1 of Specification A1.3 the following:

NT Table 1 SCHEDULE OF REFERENCED DOCUMENTS ý

No	Date	Title ý	Clause
AS 1170 ý		Minimum design loads on structures	
Part 2	1989	Wind forces ý	NT Spec B1.2
AS 1694	1974 ý	Code of practice for physical barriers used in the protection of buildings against subterranean termites	NT B1.3
AS 2057	1986 ý	Protection of buildings from subterranean termites - Chemical treatment of soil for buildings under construction	NT B1.3

SECTION B STRUCTURE

PART B1 STRUCTURAL PROVISIONS

Delete B1.2(b), (c) and (e) and insert NT B1.2(b) as follows:

NT B1.2 Loads

(b) Wind loads: NT Specification B1.2.

(c) ý (deleted).

(e) ý (deleted)

Delete B1.3(j) and B1.3(n) and insert NT B1.3(j) as follows:

NT B1.3 Construction deemed-to-satisfy

(j) ý Protection from termites: Where a *structural member* is subject to attack by subterranean termites-

(i) ý (A) in areas south of the Tropic of Capricorn: AS 2057, AS 1694 or AS 3660.1; or

(B) ý in areas north of the Tropic of Capricorn: AS 2057 or AS 1694; and

(ii) ý for the purposes of this provision, a *structural member* consisting entirely of, or a combination of, any of the following materials is considered not to be subject to attack:

(A) ý Steel.

(B) ý Concrete.

(C) ý Masonry.

(D) ý Fibre-reinforced cement.

(E) ý Timber - naturally termite resistant in accordance with Appendix A of AS 3660.1.

(F) ý Timber - preservative treated in accordance with Appendix B of AS 3660.1.

(iii) ý a durable notice must be permanently fixed to the building in a prominent location, such as a meter box or the like, indicating-

(A) ý the method of protection; and

(B) ý the date of installation of the system; and

(C) ý where a chemical barrier is used, its life expectancy as listed on the National Registration Authority label; and

(D) ý the installer's or manufacturer's recommendations for the scope and frequency of future inspections for termite activity.

(n) ý (deleted)

NT Specification B1.2 LOADS IN CYCLONIC AREAS

1. Scope

This specification contains requirements for the design of buildings in cyclonic areas.

2. Design

The design of a building must, where *required*, comply with the provision of AS 1170.2 so that:

(a) ý As a minimum requirement for residential building design in Region C, terrain category 2½ with velocity multipliers equal to the average of those given in Table 3.2.5.2 of AS 1170.2 for categories 2 and 3 are used where a terrain roughness normally in category 3 may be subject to deterioration in extreme winds.

(b) ý For the purpose of determining internal pressures in accordance with AS 1170.2, all *window* openings whether glazed or not, are regarded as

potential dominant openings unless suitable protection against debris penetration is provided.

(c) ý External doors are regarded as potential dominant openings unless the doors and their fixings are shown to be adequate to resist wind loading.

(d) ý Protection of an opening is adequate for the purposes of this requirement where it can be shown capable of resisting a 4 kg mass having 100 mm x 50 mm impacting cross-section striking at any angle at a velocity of 15 m/s without affecting internal design pressures.

3. Roof Construction

(a) ý Roof cladding- For the purpose of this specification, roof cladding shall not be considered to be bracing for a roof unless it is fixed in such a manner as to act as a braced diaphragm under the combined effects of uplift, repeated loadings and diaphragm action.

(b) ý Test for strength- Metal roofing and its fitments should be capable of withstanding without failure, the test application of 10 000 cycles of working load from zero to that maximum at a rate of 3 Hz, followed by a static load test of 1.8 times the working load.

4. Masonry Veneer Construction

Masonry veneer construction must be designed so that the structural framing, to which a masonry veneer wall is tied, will ensure the stability of the masonry veneer.

SECTION G ANCILLARY PROVISIONS

PART G1 MINOR STRUCTURES AND COMPONENTS

NT G1.1 Swimming pools

Delete G1.1.

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CONTENTS

This Appendix contains the BCA provisions that have been varied and additional provisions for application to Class 1 or Class 10 buildings in Queensland.

SECTION A GENERAL PROVISIONS

PART A1 INTERPRETATION

In A1.1 vary definitions as follows:

Qld A1.1 Definitions

Substitute *Swimming pool*: ý

Swimming pool has the same meaning as in the Queensland Building Act. ý

Insert in Table 1 of Specification A1.3 additional standards as follows: ý

Qld Specification A1.3 STANDARDS ADOPTED BY REFERENCE

Qld Table 1 SCHEDULE OF REFERENCED DOCUMENTS ý

No	Date	Title	Clause

Queensland Forest Service of the Department of Primary Industries Technical Pamphlet No .1 Building Timbers, Properties and Recommendations for their use in Queensland.	Qld B1.3
Queensland Department of Health Vermin Control Regulations.	Qld F101.1

SECTION B STRUCTURE

PART B1 STRUCTURAL PROVISIONS

After B1.3(f)(iii) insert Qld B1.3(f)(iv) as follows:

Qld B1.3 Construction deemed-to-satisfy

(f) ý **Timber Construction:**

(iv) ý Timber used for structural purposes: a species scheduled for the appropriate use in Schedules A, B or C in Queensland Forest Service of the Department of Primary Industries Technical Pamphlet No. 1 - Building Timbers, Properties and Recommendations for their Use in Queensland.

SECTION D ACCESS AND EGRESS

PART D2 CONSTRUCTION OF EXITS

After D2.16(h) insert Qld D2.16(i) as follows:

(i) ý Notwithstanding D2.16(g), a balustrade along the side of a horizontal or near horizontal surface such as a floor, access path, balcony, landing, verandah or the like in a Class 1a building, where the surface is not more than 3 m above the floor or ground surface beneath, satisfies (b) if it complies with (h)(ii) and-

(i) ý the height of the balustrade is not less than 865 mm above the surface of the floor, access path, balcony, landing, verandah or the like; and

(ii) ý all members located more than 150 mm and up to and including 760 mm above the surface must be vertical or otherwise designed to eliminate any toehold.

SECTION F HEALTH AND AMENITY

PART F1 DAMP AND WEATHERPROOFING

Add Qld F1.101 as follows:

Qld F1.101 Flashings to narrow spaces

Spaces between buildings on adjoining *sites* which are narrower than 600 mm must be sealed off and flashed over to prevent the entrance of weather and vermin.

PART F2 SANITARY AND OTHER FACILITIES

Add Qld F2.5(c) and (d) as follows:

Qld F2.5 Construction of sanitary compartments

(c) ý **Entrances** - *Sanitary compartments* must -

(i) * * *

(ii) ý in the case of external facilities, the entrance must be screened.

(d) ý **Doors** - Every door to a *sanitary compartment* must -

(i) ý be capable of being fastened from the inside;

(ii) ý swing clear of the closet pan; and

(iii) ý in the case of a fully enclosed *sanitary compartment*-

(A) ý open outwards;

(B) ý slide; or

(C) ý be readily removable from the outside,

unless there is a clear space of at least 1.2 m between the closet pan within the *sanitary compartment* and the nearest part of the doorway.

Add Part F101 as follows:

Qld Part F101 VERMIN CONTROL

Qld F101.1 Control of vermin

Buildings must be constructed to prevent the entry of vermin in accordance with the *Vermin Control Regulations*.

SECTION G ANCILLARY PROVISIONS

OBJECTIVES

Part G1 Minor Structures and Components

G1.1 Swimming pools

Delete Objective G1.1(b).

PART G1 MINOR STRUCTURES AND COMPONENTS

Delete G1.1(b) and add Qld G1.1(c) as follows:

Qld G1.1 Swimming pools

(c) ý **Electrical conductor:** Where an in-ground swimming or spa pool is constructed with metallic reinforcing, the means for attaching an electrical conductor to the reinforcing must-

(i) ý be incorporated at the time of construction; and

(ii) ý be positioned for use without causing damage to the pool; and

(iii) be in accordance with the requirements of the relevant statutory electricity supply authority; and

(iv) where the connecting facility is below ground level, have its location clearly marked on the structure or shown on approved plans. ý

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CONTENTS

This Appendix contains the BCA provisions that have been varied and additional provisions for application to Class 1 or Class 10 buildings in South Australia.

A - GENERAL PROVISIONS

B - STRUCTURE

D - ACCESS AND EGRESS

E - SERVICES AND EQUIPMENT

F - HEALTH AND AMENITY

G - ANCILLARY PROVISIONS

SECTION A GENERAL PROVISIONS

PART A1 INTERPRETATION

SA A1.1 Definitions

After the definition of "Mezzanine" insert the following:

Minister's Specification means a Specification as from time to time issued by the Minister responsible for the Building Code in this State.

Delete the definition of "Swimming pool" and substitute:

Swimming pool includes an excavation or structure capable of being filled with water to a depth of more than 300 mm, and intended primarily for swimming or other aquatic activity.

Insert in Table 1 of Specification A1.3 additional standards as follows:

SA Specification A1.3 Standards adopted by reference

Table 1 SCHEDULE OF REFERENCED DOCUMENTS ý

No.	Date	Title ý	Clause(s)
AS 1157 ý		Methods of testing materials for resistance to fungal growth	
Part 11	1978 ý	Resistance of rubbers and plastics to surface fungal growth.	SA F1.10
ASTM D 1922-67(1978) Test method for propogation tear resistance of plastic film and thin sheeting by pendulum method.			SA F1.10
ASTM D 3345-74(1980) Method of laboratory evaluation of wood and other cellulosic materials for resistance to termites.			SA F1.10
ASTM E 154-68(1979) Methods of testing materials for use as vapour barriers under concrete slabs and as ground cover in crawl spaces.			SA F1.10
CSIRO-DBC&E Method for the determination of the penetration resistance to falling aggregate.			SA F1.10

SECTION B STRUCTURES

PART B1 STRUCTURAL PROVISIONS

SA B1.3 ý Construction deemed-to-satisfy

Delete paragraph (f) and substitute:

(f) ý Timber Construction-

(i) ý Design of timber structures: AS 1720 or AS 1684;

(ii) ý in a Class 10a building where the design wind velocity calculated under AS 1170.2 does not exceed 33 m/s, with a *floor area* less than 60 m^2:

CSIRO-DBC&E Special Report - Low Rise Domestic and Similar Framed Structures, Part 4 - Supplementary Domestic Buildings for Built-up Areas, Sections I to V.

SECTION D ACCESS AND EGRESS

PART D3 ACCESS FOR PEOPLE WITH DISABILITIES

Delete D3.1 and substitute:

SA D3.1 Application of Part

This Part applies to certain Class 1 buildings where expressly referred to.

Delete Table D3.2 and insert SA Table D3.2 as follows:

SA TableD3.2 REQUIREMENTS FOR ACCESS FOR PEOPLE WITH DISABILITIES

CLASS OF BUILDING ý	ACCESS REQUIREMENTS
Class 1 Whenever 20 or more *sole-occupancy units* of Class 1 are constructed on a *site*-	To and within one *sole-occupancy unit* or 5% of the *sole-occupancy units*, whichever is the greater number.

Note: ý For the purposes of this Table, the term "to and within" a building includes those parts, elements, equipment and facilities such as ramps, handrails, grabrails, doorways, circulation spaces, glazing, door controls, lifts, sanitary facilities, controls and floor surfaces as embraced by AS 1428.1, excluding any references within that Standard to AS 1735.12.

SECTION E SERVICES AND EQUIPMENT ý

PART E1 FIRE FIGHTING EQUIPMENT

Delete E1.1 and insert SA E1.1 as follows:

SA E1.1 Application of Part

This Part does not apply to-

(a) a Class 10 building; and

(b) except for E1.7, a Class 1 building.

Delete E1.7(a)(i) and insert SA E1.7(a)(i) as follows:

SA E1.7 Fire and smoke alarms

(a) (i) a Class 1 building; and

SA SPECIFICATION E1.7 ýFIRE DETECTION AND ALARM SYSTEMS

Substitute Clause 2(b) of Specification E1.7 as follows:

2. ý **Type of system**

(b) ý for a Class 1 building, Clause 9 as permitted by Clause 8.

Substitute the title of Clause 8 and lead-in phrase of Clause 8(a) of Specification E1.7 as follows:

8. ý **Class 1 buildings - alternative system**

(a) ý In a Class 1 building, an *automatic* smoke detection and alarm system must-

Substitute the lead-in phrase of Clause 9(b) of Specification E1.7 as follows:

9. ý **Self-contained smoke alarms**

(b) ý In a Class 1a building, self-contained smoke alarms must be installed in each dwelling or *sole-occupancy unit* in suitable locations on or near the ceiling in any *storey*-

SECTION F HEALTH AND AMENITY

Add objectives for SA Part F6 as follows:

SA Part F6 Rodent Protection

The formation of narrow spaces between buildings, or a building and the boundary, must be avoided to limit the possibility of litter buildup and subsequent rodent infestation.

PART F1 DAMP AND WEATHERPROOFING

Delete F1.7 and insert SA F1.7 as follows:

SA F1.7 Waterproofing of wet areas in buildings

(a) ý A laundry, bathroom, shower facility, water closet or room containing a shower facility or a sanitary fixture such as a handbasin, vanity bowl, urinal, bidet, cleaner's sink, slop sink, pan sink, sterilizer, potato peeler or any other similar fixture must have-

(i) ý a floor surface that is impervious and drained to prevent the accumulation of water on it; and

(ii) ý a wall surface that is impervious; and

(iii) ý impervious joints between the floor and wall surfaces; and

(iv) ý in the case of a shower facility, impervious joints between adjacent walls.

(c) ý The enclosure under every built-in bath must be ventilated and have an impervious floor graded to an outlet discharging over an adjacent floor, except where the bath is

(i) ý situated on the ground floor of a building and is suspended in accordance with E&WS Sanitary Plumbing and Drainage Directions; and

(ii) ý that floor of the building is provided with underfloor ventilation in ý accordance with clause F4.10. ý

(d) ý Every in-situ bath must have impervious surfaces and construction.

(e) ý Where a bench top containing an inset sanitary fixture or any sanitary fixture abuts a wall surface -

(i) ý the wall surface must be impervious; and

(ii) ý the joint between the sanitary fixture or bench top and the wall surface must be impervious.

(f) ý Compliance with Minister's Specification SA F1.7 is compliance with this clause.

Delete F1.8 and F1.9 and insert SA F1.8 and SA F1.9, as follows:

SA F1.8 Damp-proof courses

Except in a building that is exempt from weatherproofing under F1.4, moisture from the ground must be prevented from reaching -

(a) ý the lowest floor timbers and the walls above the lowest floor joists; and

(b) ý any part of a masonry wall; and,

(c) ý the underside of a suspended floor constructed of a material other than timber, and the supporting beams or girders.

SA F1.9 Acceptable damp-proof courses

(a) ý Every damp-proof course *required* must-

(i) ý be impervious to the passage of water; and

(ii) ý exhibit long term resistance to degradation by dissolved salts in ý groundwater. ý

(b) ý The following damp-proof courses are deemed-to-satisfy the requirements of (a):

(i) ý embossed black polyethylene film of high impact resistance and low slip, with a nominal thickness of 0.5 mm prior to embossing, and meeting the requirements of clause 7.6 of AS 2904; or

(ii) ý polyethylene coated metal, that has an aluminium core of not less than 0.1 mm thick, is coated both sides with bitumen adhesive enclosed in polyethylene film of not less than 0.1 m thick on each face, and has a nominal total thickness of not less than 0.5 mm prior to embossing; or

(iii) ý bitumen impregnated materials of not less than 2.5 mm thickness, that meet the requirements of clause 7.5 of AS 2904, when used in walls not higher than 7.8 m above the level of the damp-proof course; or

(iv) ý other suitable material.

Delete F1.10(a)(i) and insert SA F1.10(a)(i) as follows:

SA F1.10 Damp-proofing of floors on the ground

(a) ý (i) the insertion of a vapour barrier in accordance with AS 2870.1 that has the following qualities-

(A) ý Permeability not greater than 0.02µg/N.s; and

(B) ý Durability:

(B1) Resistance to biological decay in accordance with AS 1157; and

(B2) Resistance to termite attack in accordance with ASTM D3345-74; and

(C) ý Resistance to Damage:

(C1) Puncture resistance test to ASTM E154. Resistance should be no less than 200 N and 'stretch' no less than 43 mm; and

(C2) Tear strength to ASTM D1922 with a minimum strength of 8 N in any direction; and

(C3) Falling aggregate impact test to the CSIRO method with maximum permeance of 0.02 μg/N.s after testing; or

After Part F5 add SA Part F6 as follows:

SA PART F6 RODENT PROTECTION

SA F6.101 Minimum separation between buildings

Every part of an *external wall* of a building must be no less than 600 mm from-

(a) ý the *external wall* of any other building on the same *site*; or

(b) any boundary of the *site*, unless that wall is on or abutting that boundary,

unless the space between external columns is not infilled.

SECTION G ANCILLARY PROVISIONS

PART G1 MINOR STRUCTURES AND COMPONENTS

Delete G1.1(b) and insert SA G1.1(b) and (c) as follows:

SA G1.1 Swimming pools

(b) ý **Safety Fencing:**

(i) ý A *swimming pool* must have suitable barriers or safety fencing to restrict access by young children to the immediate pool surrounds.

(ii) ý For a *swimming pool* associated with a Class 1 building safety fencing located in accordance with AS 2818 clauses 9.2.2 or 9.2.3 or 9.2.4 and constructed in accordance with AS 1926.1 satisfies (b)(i).

(c) ý **Pump Intakes:**

(i) ý A swimming pool must have at least two pump intakes not less than 800mm apart and all intakes must have such dimensions or be otherwise protected so as to prevent any part of a child being trapped by suction.

(ii) ý A skimmer box satisfies (c)(i) if it is located at least 100 mm from the edge of the pool and it has a basket access hole of 280 mm diameter or less and-

(A) ý it has a depth to the top of the leaf basket housing of not less than 200 mm; or

(B) ý a secondary intake to the system connects below the basket; or

(C) it has a cover resistant to opening by young children; or

(D) the basket access hole is no more than 150 mm in diameter.

PART G5 CONSTRUCTION IN BUSHFIRE PRONE AREAS

Delete G5.2 and insert SA G5.2 as follows:

SA G5.2 Protection deemed to satisfy

A building complies with G5.1 if it is provided with protection in accordance with Ministers Specification SA G5.101.

Insert SA Part G8 after SA Part G7 as follows:

SA Part G8 MISCELLANEOUS PROVISIONS

SA G8.106 Detached incinerators

A detached incinerator must be situated so that no part of that incinerator is less than 2 m from any boundary of the site, and every other building or structure on the site, or such greater distance as may be required in any area under the *Country Fires Act 1989*.

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CONTENTS

This Appendix contains the BCA provisions that have been varied and additional provisions for application to Class 1 or Class 10 buildings in Tasmania.

SECTION A GENERAL PROVISIONS

PART A1 INTERPRETATION

A1.1 Definitions

BCA definition of "mezzanine" is reprinted as follows:

Mezzanine means an intermediate floor within a room.

BCA definition of "Rise in storeys" is reprinted as follows:

Rise in storeys means the greatest number of *storeys* calculated in accordance with C1.2.

BCA definition of "storey" is reprinted as follows:

Storey means a space within a building which is situated between one floor level and the floor level next above, or if there is no floor above, the ceiling or roof above, but not-

(a) ý a space that contains only-

(i) ý a lift shaft, stairway or meter room; or

(ii) ý a bathroom, shower room, water closet, or other *sanitary compartment*; or

(iii) ý accommodation intended for not more than 3 vehicles; or

(iv) ý a combination of the above; or

(b) ý a *mezzanine*.

SECTION C FIRE RESISTANCE

PART C1 FIRE RESISTANCE AND STABILITY

BCA Clause C1.2 is reprinted as follows:

C1.2 Calculation of rise in storeys

(a) ý The *rise in storeys* is the greatest number of *storeys* at any part of the *external walls* of the building-

(i) ý above the finished ground next to that part; or

(ii) ý if part of the *external wall* is on the boundary of the allotment, above the natural ground level at the relevant part of the boundary.

(b) ý A *storey* is not counted if-

(i) ý it is situated at the top of the building and contains only service units or equipment; or

(ii) ý it is situated partly below the finished ground and the underside of the ceiling is not more than 1m above the average finished level of the ground at the *external wall*, or if the *external wall* is more than 12 m long, the average for the 12 m part where the ground is lowest.

TAS SPECIFICATION C1.9 ý FIRE-RESISTANCE OF CLASS 1 AND 10 BUILDINGS

After clause 8 insert clause Tas 101 as follows:

Tas 101 Roofing

(a) ý Except as set out in (b) and (c), the roofs of all Class 1 and 10 buildings must be *non-combustible*.

(b) ý Subject to B1.1, and Specification C1.1 Clauses 2.4 and 3.6 excluding paragraph (a) and (c), PVC, Acrylic, Polycarbonate and GRP sheeting may be used as a roof covering or canopy over a balcony, verandah, carport, covered way, *swimming pool*, barbeque area, or similar open structure which is attached to a Class 2, 3, 4, 5, 6, 7, 8, or 9 building.

(c) ý On any land zoned Rural (except Rural Residential) in the Municipality's or City's sealed Planning Scheme or Effective Interim Order, if a Class 1 or 10 building or a farm building is situated at a distance not less than shown in Tas Table 101, the roof of that building may be covered with a *combustible* material.

Tas TABLE 101 LOCATIONS OF BUILDINGS THAT MAY HAVE COMBUSTIBLE ROOFS

Building	Minimum Distance (m) from-		
	Wooden Building	Other Building	Allotment Boundary
Class 1 or 10	30	15	30 ý
Farm Building	15	8	15 ý

(d) ý Where in accordance with (c) a roof is covered with wood shingles or shakes over a combustible roof or ceiling, the shingles or shakes must be underlaid with a material having a *Flammability Index* not greater than 2.

(e) ý A roof covered with any of the following materials satisfies (a)-

(i) ý metal sheeting or tiles;

(ii) ý slates;

(iii) ý terracotta or cement roofing tiles;

(iv) ý cement fibre sheeting or shingles;

(v) ý asphalt shingles except on buildings with *rise in storeys* exceeding 2;

(vi) ý built-up roofing covered with *non-combustible* material; or

(vii) ýconcrete, granolithic, terrazzo, cement mortar, or other similar *non-combustible* materials.

SECTION E SERVICES AND EQUIPMENT

PART E1 FIRE FIGHTING EQUIPMENT

Delete E1.1 and insert Tas E1.1 as follows:

Tas E1.1 Application of Part

This Part does not apply to-

(a) ý a Class 10 building; and

(b) ý except for E1.7, a Class 1 building.

Delete E1.7(a) and insert Tas E1.7(a) as follows:

Tas E1.7 Fire and smoke alarms

(a) ý An *automatic* fire detection and alarm system, designed to ensure the occupants are given adequate warning so they can evacuate the building in an emergency, must be installed in-

(i) ý a Class 1 building.

TAS SPECIFICATION E1.7 ý FIRE DETECTION AND ALARM SYSTEMS

Delete Clause 2(b) of Specification E1.7 and insert the following:

2. ý Type of system

(b) ý for a Class 1 building, Clause 9 as permitted by Clause 8.

Delete the title of Clause 8 and the lead-in phrase of Clause 8(a) and insert the following:

8. ý Class 1 building - Alternative system

(a) ý In a Class 1 building, an *automatic* smoke detection and alarm system must-

Delete the lead-in phrase of Clause 9(b) of Specification E1.7 and insert the following:

9. ý Self-contained smoke alarms

(b) ý In a Class 1a building, self-contained smoke alarms must be installed in each dwelling or *sole-occupancy unit* in suitable locations on or near the ceiling in any *storey*-

SECTION F HEALTH AND AMENITY

PART F2 SANITARY FACILITIES

After F2.1 insert Tas F2.102 as follows:

Tas F2.102 Installation of closet fixtures

(a) ý If a sufficient sewerage system is not available, an authorised alternative means of disposal of night soil, may be installed.

(b) ý If sanitary facilities are not water-flushed, the following provisions apply.

(i) ý A pit latrine, an incinerating toilet, a chemical toilet, a removable pan or a non-flushing urinal must not be within 2 m of a building containing *habitable rooms*.

(ii) ý The floor on which a removable pan is placed must be impervious.

(iii) ý A toilet room containing a composting toilet must be separated from habitable rooms by way of a permanently ventilated air lock (which may be a circulation space).

(iv) ý The minimum ventilation *required* under (iii) shall be the greater of

(A) ý 8000 mm^2; or

(B) ý $1/500^{th}$ of the *floor area* of the circulation space.

(v) ý Access for maintenance or removal of waste from a composting toilet must be by way of an access door which opens directly to the outside of the building.

SECTION G ANCILLARY PROVISIONS

OBJECTIVES

Part G1 Minor Structures and Components

G1.1 Swimming pools

Insert Tas Objective (c) as follows:

(c) ý *Swimming pools* must be designed and constructed to provide for the health and safety of swimmers and others.

Add Objectives for Tas Part G101 as follows:

Tas Part G101 Projections over Ways

(a) ý Projections over *ways* must not pose a danger to persons using the *way* nor to adjoining buildings.

(b) ý Roofs of buildings and attachments to buildings must not allow stormwater to reach the way except by *way* of a drain.

(c) ý Excavations must be protected to prevent any part of a *way* from subsiding into them.

(d) ý Footings of a building must not project on to a *way* except if they are at sufficient depth.

PART G1 MINOR STRUCTURES AND COMPONENTS

Add Tas G1.1(e) as follows:

Tas G1.1 Swimming pools

(e) ý If the volume of a *swimming pool* exceeds 15 m^3-

(i) ý an adequate water recirculation, disinfection and filtration system must be installed;

(ii) ý the inlet and outlet openings in a *swimming pool* for the purpose of water recirculation must be so located that water movement is continuous from inlet to outlet;

(iii) ý inlet and outlet openings, and skimmer boxes where provided, must comply with AS 1926.3;

(iv) ý recirculation of water in a *swimming pool* must be so designed that the pool contents are recirculated not less than once in the period shown in Tas Table G1.1(e); and

(v) ý water filtration rates must not exceed 12 250 L/m^2 of sand filter bed per hour, or an equivalent rate in other filter media.

Tas TABLE G1.1(e) RECIRCULATION OF WATER IN SWIMMING POOLS

Pool Type	Period
Outdoor Swimming Pool	6 hours
Indoor Swimming Pool	4 hours
Wading Pool	2 hours

After Part G5 insert Tas Part G101 as follows:

Tas Part G101 PROJECTIONS OVER WAYS

Tas G101.1 Construction and location of projections over ways

(a) ý In this Part the following meanings apply:

Awning means a cover projecting from a building to provide shelter or shade for people outside the building.

Balcony means a permanent projection from a building, designed to be walked, stood or sat on, and which is not roofed.

Kerb-line means the line of the carriageway edge of the kerb or, where there is no kerb, the line of the carriageway edge of the kerb if there was one.

Verandah means a permanent, roofed projection from a building, designed to be walked, stood or sat on.

Way includes a public road, street, alley or footpath.

(b) ý Every bridge connecting buildings over a way must be of *non-combustible* material.

(c) ý Every *awning* and balcony which projects over a *way* must be supported entirely from the building to which it is attached.

(d) ý A *verandah* must not project over a *way*.

(e) ý Every part of a building which projects over a *way* must comply with Tas Table G101.1.

(f) ý Any *combustible awning* which projects over away must not extend to within 1.5 m of an adjoining building.

Tas TABLE G101.1 PROJECTIONS OVER WAYS ý

Heights above ground or footpath level:		
Awnings		2.7 m
Shades or sunblinds (when not in use), signs, lamps or the like		2.4 m
Other projections		3.0 m
Maximum Distance of projection over a way:		
Awnings-		
(i) ý *non-combustible*		not beyond a line 450 mm from the plumb of the kerb-line
(ii) *combustible*		1.0 m
Balconies		1.0 m
Other projections-		
(i) ý in streets more than 15 m wide		900 mm
(ii) ý in streets not more than 15 m wide		600 mm

Note :

(i) ý A door, gate, *window*, sash, or shutter is not deemed to open outwards unless, when open to its utmost extent, some part of it projects beyond the boundary line of the *way*.

(ii) ý The total width of all the oriel *windows* and turrets projecting on to a way in any wall of any *storey* of a building, taken together, must not exceed 3/5of the length of that wall on the level of that *storey*.

Tas G101.2 Protection of ways

(a) ý Every roof of a building, and every *verandah*, *balcony*, or other similar projection or projecting *window* must be so designed and built as to prevent stormwater from it from dropping on, running over, or seeping under any way.

(b) ý The roof of any *awning* that extends more than 1.0 m over a way must be drained to a down pipe.

(c) ý Down-pipes from *awnings*-

(i) ý must not project beyond the boundary of a *way*; and

(ii) ý must be of steel or provided with a protective cover to a height of 2 m from the path.

(d) ý Any excavation must be protected, by shoring or otherwise, as necessary to prevent subsidence into the excavation of any part of a *way* adjoining it.

(e) ý Footings must not extend beyond the boundary of a *way* other than as shown in Tas Table G101.2.

Tas TABLE G101.2 PROJECTION OF FOOTINGS ý

Depth of top of footing below ground level	Maximum permissible projection
Less than 1.3 m ý	Nil
1.3 m to 3.0 m	450 mm
Exceeding 3.0 m	750 mm

********** ý

CONTENTS

This Appendix contains the BCA provisions that have been varied and additional provisions for application to Class 1 or Class 10 buildings in Victoria.

SECTION A GENERAL PROVISIONS

PART A1 INTERPRETATION

Vic A1.1 Definitions

Substitute Clause (b) in the definition of "storey" with:

Storey

(b) ý a *mezzanine* or *mezzanines* in a room provided they comply in aggregate with the lesser of the following requirements-

(i) ý do not exceed 1/3 of the *floor area* of the room; or

(ii) ý have a *floor area* not exceeding 200 m^2.

BCA definition of "mezzanine" is reprinted as follows:

Mezzanine means an intermediate floor within a room.

BCA definition of "storey" is reprinted as follows:

Storey means a space within a building which is situated between one floor level and the floor level next above, or if there is no floor above, the ceiling or roof above, but not-

(a) ý a space that contains only-

(i) ý a lift shaft, stairway or meter room; or

(ii) ý a bathroom, shower room, laundry, water closet, or other *sanitary compartment*; or

(iii) ý accommodation intended for not more than 3 vehicles; or

(iv) ý a combination of the above; or

(b) ý a *mezzanine*.

Vary Specification A1.3 as follows:

Vic Specification A1.3 STANDARDS ADOPTED BY REFERENCE

Vary Table 1 as follows:

Table 1 SCHEDULE OF REFERENCED DOCUMENTS ý

No	Date	Title ý	Clause(s)
Substitute the following Standards in Table A1.3			
AS 1926	1986	Fences and gates for private swimming pools Amdt 1, March 1987	G1.1, Vic G1.101
Add in Table A1.3 additional standards as follows:			
AS 2701		Methods of sampling and testing mortar for masonry construction ý	Vic B1.3(q)
Part 2	1984	Methods of testing ý	
Part 10	1984	Methods for analysis of mortars ý	
AS/NZS 4200		Pliable building membranes and underlays	
Part 1	1994	Materials ý	F1.6
Part 2	1994	Installation requirements ý	F1.6, Vic F6.4
Fire protection equipment - Register of accredited products			
		Scientific Services Laboratory 1991	Vic E1.7
House energy rating			
		Energy Victoria June 1994 ý	Vic F6
Timber Framing Manual			
		Timber Promotion Council 1993 ý	Vic B1.3
Supplementary Tables			
		Timber Promotion Council 1992 ý	Vic B1.3

SECTION B STRUCTURE

PART B1 STRUCTURAL PROVISIONS

Add B1.3(f)(iv) and (i) as follows:

Vic B1.3 Construction deemed to satisfy

(f) ý **Timber construction-**

(iv) ý Timber structures not located in an area subject to snow loads: Timber Framing Manual and Supplementary Tables.

Add B1.3 (p), (q) and (r) as follows:

Vic B1.3 Construction deemed to satisfy

(p) ý **Concrete stumps deemed-to-satisfy** - Notwithstanding (b) concrete stumps shall be deemed-to-satisfy if they comply with Vic Table B1.3(p) and notes.

TABLE B1.3(p) CONCRETE STUMPS - SIZES AND REINFORCEMENT ý

LENGTH OF STUMPS mm	MINIMUM SIZE mm	REINFORCEMENT diameter
1 - 1400 ý	100 x 100 or 110 diameter	5 mm hard drawn wire
1401 - 1800 ý	100 x 100 or 110 diameter	two 5 mm hard drawn wires
1801 - 3000 ý	125 x 125 or 140 diameter	two 5 mm hard drawn wires

Notes:

1. ý Concrete used must be minimum Grade 20 as defined in AS 3600.
2. ý Stumps which project above the ground more than 12 times the width of their smaller face or diameter must be securely braced

(q) ý **Concession for mortar mix**

(i) ý **Proportions by volume** - notwithstanding (a), mortar for any building containing not more than 2 *storeys* may be used providing the mix is not weaker than the ratio of 1 part portland cement to 1 part hydrated lime or lime putty to 10 parts fine aggregate volume batched.

(ii) ý **Testing** - mortar is deemed-to-satisfy (i) if the total percentage by mass of calcium oxide plus soluble silica dioxide is not less than 8.5 when-

(A) ý sampled in accordance with AS 2701.2; and

(B) ý tested in accordance with AS 2701.10.

(r) ý **Class 10a external walls**

A Class 10a building containing not more than one *storey* may be enclosed with masonry *external walls* not less than 110 mm in thickness, provided that-

(i) ý the width of the building measured in the direction of the span of the roof does not exceed 9 m and the height of the *external wall* does not exceed 3 m;

(ii) ý piers are formed which are not less than 230 mm wide, project not less than 120 mm and are spaced at not more than 3 m centres;

(iii) ý the roof is so constructed that the *external walls* are not subject to any thrust therefrom;

(iv) ý such *external walls* must not be *required* to support any load other than the distributed load of the roof;

(v) ý cross walls or equivalent buttresses are constructed at not more than 9 m centres; and

(vi) ý notwithstanding (o) the mortar mix used is no weaker than the ratio of 1 part cement to 1 part lime to 6 parts fine aggregate volume batched.

SECTION E SERVICES AND EQUIPMENT

PART E1 ý FIRE FIGHTING EQUIPMENT

Substitute E1.1 as follows:

Vic E1.1 ý Application

This Part does not apply to-

(a) ý a Class 10 building; or

(b) ý except for E1.7, a Class 1 building.

Delete E1.7(a)(i), (ii), (iii) and (iv) and add Vic E1.7(a)(i), (ii) and (iii) as follows:

Vic E1.7 ý Fire and smoke alarms

(a) ý (i) a Class 1, 2 or 3 building or a Class 4 part of a building; and

(ii) ý a Class 9a building; and

(iii) ý an existing Class 1, 2 or 3 building or a Class 4 part of a building on which building work is carried out.

VIC SPECIFICATION E1.7 ý FIRE DETECTION AND ALARM SYSTEMS

Substitute Clause 2(b) of Specification E1.7 as follows:

2. ý Type of system

(b) ý for a Class 1, 2 or 3 building or Class 4 part of a building, Clause 9 as permitted by Clause 8.

Substitute the title of Clause 8 and the lead-in phrase of Clause 8(a) of Specification E1.7 as follows:

8. ý Class 1, 2 and 3 buildings and Class 4 parts of buildings

(a) ý In a Class 1 or 2 building or a Class 4 part of a building, an *automatic* smoke detection and alarm system must-

Substitute the lead-in phrase of Clause 9(b) and (e)(ii) of Specification E1.7 as follows:

9. ý Self-contained smoke alarms

(b) ý In a Class 1a, 2 or 3 building, or a Class 4 part of a building, self-contained smoke alarms must be installed in each dwelling or *sole-occupancy unit* in suitable locations on or near the ceiling in any *storey*-

(e) ý (ii) be connected to the consumer power mains unless the alarms are installed in an existing part of a Class 1, 2 or 3 building or a Class 4 part of a building.

SECTION F ý HEALTH AND AMENITY

OBJECTIVES

Add objectives for Part F6 as follows:

Vic F6 Thermal Insulation

A reasonable level of thermal insulation must be provided to conserve energy used for internal heating and cooling of residential buildings.

PART F2 SANITARY AND OTHER FACILITIES

Substitute paragraph (c) of requirements for Class 1 buildings in Table F2.1 with:

Vic Table F2.1 ý PROVISION OF SANITARY AND OTHER FACILITIES IN RESIDENTIAL BUILDINGS

CLASS OF BUILDING	MINIMUM FACILITIES REQUIRED
Class 1	(c) Except in a movable unit constructed under section 18 of the *Housing Act 1983*, on the same allotment as another building, clothes washing facilities, comprising at least one wash-tub and space in the same room for a washing machine or wash copper; and

PART F5 NOISE TRANSMISSION AND INSULATION

Substitute F5.1 as follows:

Vic F5.1 Application of Part

(a) ý Floors and *internal walls* separating *sole-occupancy units, and service installations* must provide a reasonable level of acoustic privacy in-

(i) ý Class 1 buildings joined by a separating wall as *required* by Clause 7 of Specification C1.9; and

(ii) ý Class 2 and 3 buildings except *residential aged care buildings*.

(b) ý Construction satisfies (a) if it complies with the provisions of this Part.

Add Part F6 as follows:

VIC PART F6 THERMAL INSULATION

Vic F6.1 Application

This Part applies to Class 1 buildings.

Vic F6.2 Provision of thermal insulation

(a) ý **R values** - In this Part "R" or "R value" means the thermal resistance of an element of the building measured in m^2.K/W.

(b) ý **Performance requirement** - Residential buildings must have a reasonable level of thermal insulation to conserve energy used for internal heating and cooling.

(c) ý The requirements of (b) are satisfied-

(i) ý if the building complies with all elements of option A or all elements of option B of Vic Table F6.1; or

(ii) ý if the building achieves a House Energy Rating of at least 4 stars as assessed by-

(A) ý a registered building practitioner in the category of building surveyor accredited in the use of Energy Victoria's House Energy Rating; or

(B) ý Energy Victoria.

Table F6.1 MINIMUM OVERALL R VALUE

ELEMENT	OPTION A	OPTION B
Roof or ceiling	R2.2	R2.2
External walls	R1.3	R1.7
Ground Floor	R1.0	R0.4

(d) **Deemed "R Values"** - An element described in column 1 of Table F6.2 is deemed to have the R value adjacent to it in column 2.

Table F6.2 R VALUES FOR COMMON ELEMENTS

DESCRIPTION OF ELEMENT col 1	R VALUE col 2
Roofs or ceilings	
Tiled or metal pitched roof, R2.5 bulk insulation between ceiling joists, lined ceiling	R2.4
Tiled or metal pitched roof, rfl as sarking and insulation over rafters, R2.0 bulk insulation between ceiling joists, lined ceiling	R2.2
Metal deck roof, rfl as sarking and insulation, 20 mm air gap, R2.0 bulk insulation installed between joists/beams, rfl as a vapour barrier, ceiling lining on underside of joists/beams	R2.2
Metal deck roof, R2.0 bulk insulation installed between rafters, rfl as a vapour barrier, ceiling lining on underside of rafters	R2.2
Metal deck roof, R2.0 bulk insulation installed between roof battens, rfl as a vapour barrier, ceiling lining on top of exposed rafters	R2.2
Tiled roof, rfl as sarking and insulation, R2.0 bulk insulation installed between counter battens, optional rfl as a vapour barrier, ceiling lining on top of exposed rafters	R2.2
External walls	
Brick/masonry veneer with double sided rfl fixed to external face of studs, lined internally	R1.3
Brick/masonry veneer with R1.5 bulk insulation between the studs, lined internally	R1.7
Brick/masonry veneer with R1.0 foam board fixed over the face of the studs, lined internally	R1.7
Weatherboard/fibre-cement, double sided perforated rfl dished between studs lined internally	R1.3

Weatherboard/fibre cement cladding, R1.5 bulk insulation between studs, lined internally	R1.7
Cavity brick with R0.8 foam board in cavity	R1.3
150 mm concrete panel with R1.0 foam board and lined internally	R1.3
Floors	
Concrete/masonry on ground	R1.5
Timber framed floor open around perimeter	R0.4
Timber framed floor, enclosed perimeter perforated rfl dished between joists	R1.0
Timber framed floor, enclosed perimeter, 13 mm foam board fixed to the underside of floor joists	R1.0

(e) ý **Exemptions** - The requirements of this Part do not apply to the following types of construction:

(i) ý concrete panels, cavity brick, earthwall construction, ashlar stone or other masonry walls which have a thickness (excluding any cavity) of not less than 180mm if the floor of the building is concrete or masonry in direct contact with the ground;

(ii) ý windows, vents and other similar openings in walls, roofs and ceilings; or

(f) ý **Separating walls** - For the purposes of (c), a wall which separates a Class 1 building from a Class 10a building is regarded as an *external wall*.

Vic F6.3 Chimneys and flues

Chimneys and flues from open solid fuel-burning appliances must be provided with a damper or flap.

Vic F6.4 Installation of reflective foil laminate

Installation of reflective foil laminate must comply with AS/NZS 4200.2.

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CONTENTS ý

This Appendix contains the BCA provisions that have been varied and additional provisions for application to Class 1 or Class 10 buildings in Western Australia.

B - STRUCTURE

C - FIRE RESISTANCE

D - ACCESS AND EGRESS

F - HEALTH AND AMENITY

G - ANCILLARY PROVISIONS

SECTION B STRUCTURE ý

PART B1 STRUCTURAL PROVISIONS

Delete B1.3(g) and (m), and insert WA B1.3(m) and (p) as follows:

WA B1.3 Construction deemed-to-satisfy

(g) (deleted).

(m) **Earthwall construction:** WA Specification B1.3(m).

(p) **Seismic construction**: Class 1 buildings: WA Specification B1.3(p).

After Part B2, insert WA Specification B1.3(m) as follows:

WA Specification B1.3(m) EARTH WALL CONSTRUCTION

1. Scope

This Specification contains the requirements for *earth-wall construction*.

2. Definitions

For the purpose of this Specification:

Adobe construction means a type of construction using blocks of sun dried mud.

Bulletin 5 means CSIRO-NBTC Bulletin 5 Earth Wall Construction 4th Edition 1987.

Earth-wall construction means *adobe construction*, *mechanically pressed-soil block construction* or *rammed-earth construction*.

Mechanically pressed-soil block construction means a type of construction using blocks produced by pressed block making machines.

Rammed-earth construction means a type of construction in which damp earth is tamped in situ between temporary movable framework.

Terrain Category followed by a designation, refers to the terrain category so designated in AS 1170.2.

3. Not permitted in certain places

A building must not be of *earth-wall construction* if it is situated on a site that is subject to flooding.

4. Construction generally

(a) ý A building of *earth-wall construction* must be constructed in accordance with the recommendations contained in *Bulletin 5* except where varied by this Specification.

(b) ý A building of *earth-wall construction* must not exceed two *storeys* in height and walls must be laterally restrained at intermediate floor level.

5. Sample of test results may be required

Prior to and during construction, Council may require-

(a) ý in the case of-

(i) ý *rammed-earth construction* - a sample panel at least 900 mm long by 900 mm high;

(ii) ý *adobe construction* - a sample comprising of a least 3 blocks, made of the materials and by the methods to be used in the construction, to be provided for inspection on the site; and

(b) ý in the case of *mechanically pressed-soil block construction* - the submission to it of the results of tests, conducted in accordance with Appendix E of *Bulletin 5*, made on blocks of the kind to be used in the construction after they have been moist cured for seven days.

6. Minimum thickness of walls

In a building of *earth-wall construction*, the thickness of a wall must be-

(a) ý In the case of *adobe construction* or *rammed-earth construction*-

(i) ý for an *external wall*, not less than 250 mm; and

(ii) ý for an *internal wall*, not less than 200 mm;

(b) ý In the case of *mechanically pressed-soil block construction*-

(i) ý for an *external wall*, not less than 250 mm; and

(ii) ý for an *internal wall*, not less than 150 mm.

7. Protection

Every building of *earth-wall construction*-

(a) ý must be provided with a suitable means of protection to prevent water from the roof running down the face of every wall; and

(b) ý must, except in the case illustrated in Figure 1.3 of *Bulletin 5*, have the ground adjacent to the walls so graded and paved as to prevent any surface water from reaching those walls.

After WA Specification B1.3(m), insert WA Specification B1.3(p) as follows:

WA Specification B1.3(p) ý SEISMIC CONSTRUCTION - CLASS 1 BUILDINGS

1. ý Scope

This Specification is a set of methods which satisfy the performance requirements of B1.1 in respect of earthquake loads.

2. ý Interpretation

In this Specification -

(a) ý timber framing connector means a manufactured connector system for timber joints formed from 1.2 mm minimum thickness galvanised steel and punched to take nails; and

(b) ý acceleration coefficient means an index number determined under AS 1170.4

3. ý Construction

(a) ý In locations with an acceleration coefficient of 0.12 or greater but less than 0.15, any Class 1 building must comply with WA Table B1.3A.

(b) ý In locations with an acceleration coefficient of 0.15 or greater, any Class 1 building must comply with WA Table B1.3B.

WA TABLE B1.3A ý

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1. ý Application

(a) ý This Table applies to Class 1 buildings having a *rise in storeys* no greater than 1 and located in an area with a coefficient of acceleration of 0.12 or greater but less than 0.15.

(b) ý This Table does not apply to Class 1 buildings having

(i) ý a roof clad with concrete or terracotta tile; or

(ii) ý masonry projections or overhangs, masonry parapets or unbraced masonry chimneys.

2. ý Foundations and Footings

(a) ý Stumps - of steel, timber or reinforced concrete.

(b) ý Bracing to stumps with galvanised M12 bolts or equivalent to comply with AS1684-

(i) ý at intervals not exceeding 10m.

(ii) ý at corner stumps - in two directions.

(iii) ý to every stump projecting more than 650 mm out of the ground.

(c) ý Floor beams - fixed to the top of stumps with two M10 diameter bolts or equivalent fixing.

(d) ý Bottom plates of framed structures where fixed to a concrete raft or strip footing - fixed with M10 bolts or masonry anchors at 1200 mm maximum centres.

(e) ý Concrete strip footings - continuously reinforced with two layers of reinforcement comprising two 12 mm diameter bars (Grade 400Y) per layer and tied with R6 ligatures at centres not exceeding 2.5 times the depth of the footing.

(f) ý Raft slabs - incorporating monolithic edge beams.

3. ý **Framed Wall Construction**

(a) ý Metal framing-

(i) ý complying with AS 1538 or AS 1884, braced and nogged with welded joints or fixed with self-tapping fastenings or bolts to give a joint of equal strength.

(ii) ý with material used in walls, other than bracing, not to be less than 1.2 mm thick.

(iii) ý wall plates - continuous between cross walls or spliced to maintain strength.

(b) ý Timber framing-

(i) ý fixed with timber framing connectors nailed with a least three 2.8mm diameter x 30 mm long nails to each fixing plate or the connector; or

(ii) ý constructed of seasoned timber, fixed with at least two 2.8 mm diameter nails, machine nailed through the top or bottom wall plate into the stud.

(iii) ý wall plates - continuous between cross walls or spliced to maintain strength.

4. ý **Masonry Construction**

(a) ý Internal or *external walls* 4m in length or greater - stiffened by cross walls, columns or bracing, certified by a *professional engineer* as complying with AS 1170.4.

(b) ý Cross walls - tied to the internal leaf of cavity walls by fully bonding or by metal ties at every second course.

(c) ý Mortar - at least as strong as a 1:1:6.

(d) ý Masonry units - to have good mortar adherence properties.

(e) ý Bricks-

(i) ý laid on full bed joint with full perpends.

(ii) ý to be solid when laid in the top two courses of *internal walls* and the internal leaf of *external walls*.

(f) ý Reinforcement-

(i) ý both leaves of *external walls*, reinforced with two R6 bars (Grade 250), or two 3.15 mm diameter bars (Grade 450), in the course immediately under *window* sills and over door and *window* heads.

(ii) ý placed in the external leaf of an *external wall*, galvanised.

(iii) ý to extend a minimum of 300 mm beyond the supporting cross walls or columns.

(iv) in cross walls, turned and lapped 300 mm into the *external walls*.

(v) ý splices, not less than 300 mm

(g) ý Continuous reinforced brick bond beams, comprising two R6 bars (Grade 250), or two 3.15 mm diameter bars (Grade 450), in each of the top three bed joints, constructed-

(i) ý on the internal leaf of all *external walls* and on all cross walls; and

(ii) ý where the roof is pitched on the external leaf of an *external wall*, on that external leaf.

(h) ý Top wall plates - fixed to the second top course of walls by masonry anchors, or equivalent fixing, at 1 800 mm maximum centres.

5. ý **Veneer on Frame Construction**

(a) ý Veneers-

(i) ý to comprise an external leaf of masonry and *internal walls* of timber or metal framing.

(ii) ý to be fixed in accordance with AS 3700.

6. ý **Roof Construction**

(a) ý Roof bracing - to transfer all horizontal loads directly to crosswalls.

(b) ý Roof framing - fixed to the top wall plate using timber framing connectors nailed with at least three 2.8 mm diameter x 30 mm long nails to each fixing plate of the connector.

WA TABLE B1.3B ý

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1. ý **Application**

(a) ý This Table applies to Class 1 buildings having a *rise in storeys* no greater than 1 and located in an area with a coefficient of acceleration of 0.15 or greater.

(b) ý This Table does not apply to Class 1 buildings having-

(i) ý a roof clad with concrete or terracotta tile; or

(ii) ý masonry projections or overhangs, masonry parapets or unbraced masonry chimneys.

2. ý **Foundations and Footings**

(a) ý stumps - of steel, timber or reinforced concrete.

(b) ý Bracing to stumps - fixed with galvanised M 12 bolt or equivalent to comply with AS1684-

(i) ý at intervals not exceeding 8m.

(ii) ý at corner stumps in two directions.

(iii) ý to every stump projecting more than 500 mm out of the ground.

(c) ý Floor beams- fixed to the top of stumps with two M10 bolts or equivalent fixing.

(d) ý Bottom plates of framed structures where fixed to a concrete raft or strip footing - fixed with M10 bolts or masonry anchors at 1 200 mm maximum centres.

(e) ý Concrete strip footings - continuously reinforced with two layers of reinforcement comprising two 12 mm diameter bars (Grade 400Y) per layer and tied with R6 ligatures at centres not exceeding 2.5 times the depth of the footing.

(f) ý Raft slabs- Incorporating monolithic edge beams.

3. ý **Framed Wall Construction**

(a) ý Metal framing-

(i) ý complying with AS 1538 or AS 1684, braced and nogged with welded joints or fixed with self-tapping fastenings or bolts to give a joint of equal strength.

(ii) ý with material used in walls, other than bracing, not be less than 1.2 mm thick.

(iii) ý wall plates - continuous between cross walls or spliced to maintain strength.

(b) ý Timber framing-

(i) ý fixed with timber framing connectors nailed with at least three 2.8mm diameter x 30 mm long nails to each fixing plate or the connector; or

(ii) ý constructed of seasoned timber, fixed with at least two 2.8 mm diameter nails, machine nailed through the top or bottom wall plate into the stud.

(iii) ý wall plates- continuous between cross walls or spliced to maintain strength.

4. ý **Veneer on Frame Construction**

(a) ý Veneers-

(i) ý to comprise an external leaf of masonry and *internal walls* of timber or metal framing.

(ii) ý to be fixed in accordance with AS 3700.

(b) ý timber framing-

(i) ý wall plates-

(A) ý fixed to transfer lateral loads between frames of *external walls* and frames of *internal walls*.

(B) ý F8 grade timber minimum dimensions 100 mm x 50 mm where cross walls are spaced at not greater than 4 800 mm centres.

(ii) ý *external walls* framing in *external walls* - fixed to supporting cross walls at or near top wall plate level by at least two timber framing connectors with at least three 2.8 mm diameter nails to each plate of the connector or by bolting the frames together with M10 minimum diameter bolts.

(c) metal framing-

(i) ý wall plates-

(A) ý fixed to transfer lateral loads between frames of *external walls* and frames of *internal walls*.

(B) ý minimum dimensions 78 mm x 31 mm x 1.2 mm where cross walls are spaced at not greater than 5 500 mm centres, and stiffened by an additional 75 mm x 78 mm x 1.6 mm plate where the span exceeds 3 500 mm.

(ii) ý *external walls* - framing in *external walls*, fixed to supporting cross walls at or near top wall plate level by at least two framing connectors or by bolting the frames together with M 10 minimum diameter bolts.

(d) ý *external walls* - 100 mm x 100 mm galvanised steel mesh fixed to the timber or metal framing of *external walls* clad with masonry veneer.

(e) ý masonry veneer - may not be placed over openings or in gables.

6. ý **Roof Construction**

(a) ý Roof bracing - transfer all horizontal loads directly to crosswalls.

(b) ý Roof framing - fixed to the top wall plate using timber framing connectors nailed with at least three 2.8 mm diameter x 30 mm long nails to each fixing plate of the connector.

SECTION C FIRE RESISTANCE

PART C1 FIRE RESISTANCE AND STABILITY

Delete Specification C1.9 Clause 8 and insert WA Specification C1.9 Clause 8 as follows:

WA Specification C1.9 ý FIRE-RESISTANCE OF CLASS 1 AND 10 BUILDINGS

8. Sarking-type materials

Any *sarking-type material* and such material used for flexible air ducts in a Class 1 building must have a *Flammability Index* of not more than 5.

SECTION D ACCESS AND EGRESS

PART D2 CONSTRUCTION OF EXITS

Delete D2.1 and insert WA D2.1 as follows:

WA D2.1 Application of Part

Except for WA D2.16(i), this Part does not apply to-

(a) ý a Class 1 or Class 10 building.

After D2.16(h) insert WA D2.16(i) as follows:

WA D2.16 Balustrades

(i) ý In a Class 1 or Class 10 building, every accessible balcony, sun-deck, open floor or the like, having a floor more than 1500 mm above the finished level of the ground or floor below, must have at least a single horizontal rail part of which must be at a height in the range of 750 mm to 900 mm above the floor.

SECTION F HEALTH AND AMENITY

PART F2 SANITARY AND OTHER FACILITIES

Delete F2.5(b) and insert WA F2.5(b) as follows:

WA F2.5 Construction of sanitary compartments

(b) ý **Doors** - the door of every fully enclosed closet pan compartment must-

(i) ý open outwards; or

(ii) ý be readily removable from the outside.

SECTION G ANCILLARY PROVISIONS

PART G1 MINOR STRUCTURES AND COMPONENTS

Delete G1.1 and insert WA G1.1 as follows:

WA G1.1 Swimming pools

(a) ý **Drainage:** A *swimming pool* must have suitable means of drainage.

(b) ý **Safety fencing:** A *swimming pool* with a depth of water more than 300 mm must have suitable barriers, or safety fencing in accordance with AS 2818 and AS 1926, to restrict access by young children to-

(i) ý the allotment or the immediate pool surrounds if there is only one Class 1 building on the allotment; or

(ii) ý the immediate pool surrounds, if the swimming pool is associated with a number of Class 1 buildings on the same allotment.

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