



**National  
Construction  
Code**

# **Volume Two** Building Code of Australia

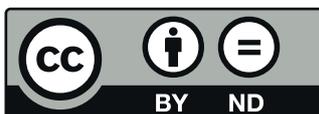


**Australian  
Building  
Codes Board**

# **2022**

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# Introduction to the National Construction Code (NCC)

## About the NCC

The NCC is Australia's primary set of technical design and construction provisions for buildings. As a performance-based code, it sets the minimum required level for the safety, health, amenity, accessibility and sustainability of certain buildings. It primarily applies to the design and construction of new buildings, and plumbing and drainage systems in new and existing buildings. In some cases it may also apply to structures associated with buildings and new building work or new plumbing and drainage work in existing buildings.

The Australian Building Codes Board (ABCB), on behalf of the Australian Government and each State and Territory government, produces and maintains the NCC. When determining the content of the NCC, the ABCB seeks to—

- ensure requirements have a rigorously tested rationale; and
- effectively and proportionally address applicable issues; and
- create benefits to society that outweigh costs; and
- consider non-regulatory alternatives; and
- consider the competitive effects of regulation; and
- not be unnecessarily restrictive.

The primary users of the NCC include architects, builders, plumbers, building surveyors, hydraulic consultants, engineers and other building and plumbing related professions and trades.

## Format of the NCC

The NCC is published in three volumes. The Building Code of Australia (BCA) is Volumes One and Two of the NCC and the Plumbing Code of Australia (PCA) is Volume Three of the NCC.

## Components of the NCC

The NCC provides the technical provisions for the design and construction of buildings and other structures, and plumbing and drainage systems.

NCC Volume One primarily covers the design and construction of multi-residential, commercial, industrial and public assembly buildings and some associated structures.

NCC Volume Two primarily covers the design and construction of smaller scale buildings including houses, small sheds, carports and some associated structures.

NCC Volume Three covers the design, construction and maintenance of plumbing and drainage systems in new and existing buildings.

Each volume contains—

- Governing Requirements; and
- Performance Requirements; and
- compliance options to meet the NCC requirements; and
- State and Territory variations and additions.

The NCC uses building classifications to identify requirements for different intended purposes of buildings or parts of buildings. A building classification relates to the characteristics and the intended use of the building. Information on building classifications is found in [Part A6](#) of the Governing Requirements.

## Legislative arrangements and the NCC

The NCC is given legal effect through State and Territory, or other statutory authority, building and plumbing legislation. These Acts and Regulations set out the legal framework and administration mechanisms for the NCC to support the design and construction of buildings.

The dates of adoption of the NCC are determined by State and Territory building and plumbing administrations.

### How to use the NCC

Each volume of the NCC is split into two main sections:

- Administrative requirements contained within the Governing Requirements.
- Technical requirements contained within the remaining sections of the NCC.

The Governing Requirements provide the rules and instructions for using and complying with the NCC. They are vital in understanding how the technical requirements of the NCC should be applied to any particular situation. The Governing Requirements are also important in understanding how the NCC fits with the building and plumbing regulatory framework within Australia.

### NCC clause numbering system

The NCC uses a uniform clause numbering system across each of its three volumes. This system is called Section-Part-Type-Clause (SPTC). In each clause number—

- The first letter indicates which NCC Section sits within, or if the letter S is used, that the clause is part of a Specification. The letter S is used in place of a Section indicator because the same Specification may be called up in several different Sections of the NCC.
- The first number indicates the number of each Part within a Section, or the number of a Specification. Parts are numbered sequentially within each Section, starting at 1. Specifications are numbered sequentially across all three volumes, also starting at 1.
- The second letter indicates the clause Type. It will be G, O, F, P, V, D or C and these are explained below.
- The second number is the clause number within each Part or Specification.

The clause Types used in the NCC are as follows:

- G = Governing requirement (mandatory)
- O = Objective (guidance)
- F = Functional Statement (guidance)
- P = Performance Requirement (mandatory)
- V = Verification Method (optional)
- D = Deemed-to-Satisfy Provision (optional)
- C = Clause in a Specification (clauses in Specifications may be mandatory or optional, depending on how the Specification is called up by the NCC).

Informative parts of the NCC (e.g. Introduction to the NCC) are not numbered and do not have numbered paragraphs. This helps make it easy to see that their content is information only and does not contain any regulatory requirements.

# Introduction to NCC Volume Two

## About NCC Volume Two

NCC Volume Two contains technical design and construction requirements for certain residential and non-habitable buildings and structures.

Volume Two contains the requirements for—

- Class 1 and 10a buildings (other than access requirements for people with a disability in Class 1b and 10a buildings); and
- certain Class 10b structures (other than access requirements for people with a disability in Class 10b *swimming pools*); and
- Class 10c *private bushfire shelters*.

## Components of NCC Volume Two

NCC Volume Two contains the following Sections:

- Section A – Governing Requirements
- Section H – Housing:
  - Part H1 – Structure
  - Part H2 – Damp and weatherproofing
  - Part H3 – Fire safety
  - Part H4 – Health and amenity
  - Part H5 – Safe movement and access
  - Part H6 – Energy efficiency
  - Part H7 – Ancillary provisions and additional construction requirements
  - Part H8 – Livable housing design
- Schedules—
  - Abbreviations and symbols
  - Definitions
  - Referenced documents
  - State and Territory variations and additions

## List of NCC Specifications

Table 1 sets out the number and title of each NCC Specification, along with the clauses in each NCC Volume that refer to the Specification.

**Table 1: List of NCC Specifications**

Spec no.	Title	References	
		Vols. One, Two and Housing Provisions	Vol. Three
1	Fire resistance of building elements	A5G5; A5G6; C4D15; S2C1; S9C2	A5G5; A5G6
2	Description of materials referred to in Specification 1	A5G5; A5G6; C4D15; S1C2; S9C2	A5G5; A5G6
3	Fire hazard properties (determination)	A5G6	A5G6
4	Design of buildings in cyclonic areas	B1D3	-
5	Fire-resisting construction	C2D2; C2D10; C3D6; C3D8; C3D9; C3D10; C3D11; C3D13; C4D6; C4D8; C4D13; C4D15; D2D13; E1D5; G3D6; S17C11; S18C4; S31C3	-
6	Structural tests for lightweight construction	B1D4; C2D9; S5C23; S14C2; S32C2; S32C3; Housing Provisions 9.3.1	-
7	Fire hazard properties (requirements)	C2D11; C2D14; S3C2; S14C2; S19C7; S32C6	-
8	Performance of external walls in fire	C2D12	-
9	Cavity barriers for fire-protected timber	C2D13; C4D16; S5C11; S5C20	-
10	Fire protected timber	S1C2	-
11	Smoke-proof walls in health-care and residential care buildings	C3D6; C3D15; C4D12; E2D11	-
12	Fire doors, smoke doors, fire windows and shutters	C4D5; G3D4; S11C2; S11C3	-
13	Penetration of walls, floors and ceilings by services	C4D15	-
14	Non-required stairways, ramps and escalators	C2D11; D2D17	-
15	Braille and tactile signs	D4D7; S27C10	-
16	Accessible water entry/exit for swimming pools	D4D11	-
17	Fire sprinkler systems	C1V3; C2D6; C2D13; C3D2; C3D4; C3D7; C3D8; C4D6; C4D7; C4D8; C4D9; C4D12; D2D4; D2D17; E1D4; E2D8; E2D9; E2D10; E2D11; E2D13; E2D14; E2D15; E2D16; E2D17; E2D19; E2D20; G3D1; G3D6; G6D6; I1D2; S5C10; S5C11; S5C14; S5C18; S5C19; S5C20; S5C21; S5C22; S5C24; S7C3; S7C4; S19C11; S20C3; S20C4; S20C5; S31C2	-

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Spec no.	Title	References	
		Vols. One, Two and Housing Provisions	Vol. Three
18	Class 2 and 3 buildings not more than 25 m in effective height	E1D4; S17C2; S23C1; S23C3	-
19	Fire control centres	E1D14	-
20	Smoke detection and alarm systems	E2D3; E2D5; E2D7; E2D8; E2D9; E2D11; E2D13; E2D14; E2D15; E2D16; E2D17; E2D18; E2D19; E2D20; S5C19; S5C22; S17C8; S18C3; S21C7; S21C8; S22C3	-
21	Smoke exhaust systems	C3D13; E2D10; E2D14; E2D15; E2D16; E2D17; E2D18; E2D19; E2D20; S20C6; S20C8	-
22	Smoke-and-heat vents	E2D10; E2D14; E2D15; E2D16; E2D17; E2D18; E2D19; E2D20; S20C8	-
23	Residential fire safety systems	S18C3; S18C4	-
24	Lift installations	E3D2	-
25	Photoluminescent exit signs	E4D8	-
26	Waterproofing and water resistance requirements for building elements in wet areas	F1D6	-
27	Accessible adult change facilities	F4D12; S15C1	-
28	Sound insulation for building elements	F5D3; F5D4	-
29	Impact sound — Test of equivalence	F5D4; S28C2	-
30	Installation of boilers and pressure vessels	G2D2	-
31	Fire and smoke control in buildings containing atriums	G3D4; G3D8; S14C2	-
32	Construction of proscenium walls	C2D11; I1D3	-
33	Additional requirements	J1V1; J1V2; J1V3; J1V5	-
34	Modelling parameters	J1V3; S35C1	-
35	Modelling profiles	S34C3	-
36	Material properties	J4D3	-
37	Calculation of U-Value and solar admittance	J3D9; J3D13; J4D3; J4D6	-
38	Spandrel panel thermal performance	S37C3; S37C4	-
39	Sub-floor thermal performance	J4D3	-
40	Lighting and power control devices	J7D3; J7D4; J7D5; J7D6; J7D7	-
41	Cross-connection hazards	-	B5D2; B5D3; B5D4
42	House energy rating software	H6D2	-
43	Bushfire protection for certain Class 9 buildings	G5D4	-
44	Calculation of heating load limit, cooling load limit and thermal energy load limit	J1P2; H6P1	-
45	Modelling profiles for J1V5	J1V5	-

## History of Adoption - NCC Volume Two

### Adoption of NCC Volume Two

The adoption of each edition of NCC Volume Two (also referred to as BCA Volume Two) is set out in Table 1.

**Table 1: History of adoption of NCC Volume Two**

Edition	Commonwealth	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
BCA 96	1 Jul 1997	1 Jul 1997	1 Jul 1997	7 Jan 1998	1 Jul 1997	1 Jan 1998	1 Jul 1997	1 Aug 1997	1 Jul 1997
BCA 96 Amdt 1	1 Jul 1997	1 Jul 1997	1 Jul 1997	7 Jan 1998	1 Jul 1997	1 Jan 1998	1 Jul 1997	1 Aug 1997	1 Jul 1997
BCA 96 Amdt 2	1 Jan 1998	1 Jan 1998	27 Feb 1998	7 Jan 1998	1 Jan 1998	1 Jan 1998	1 Jan 1998	1 Jan 1998	1 Jan 1998
BCA 96 Amdt 3	1 Jul 1998	1 Jul 1998	1 Jul 1998	1 Jul 1998	1 Jul 1998	13 Jul 1998	1 Jul 1998	1 Jul 1998	1 Jul 1998
BCA 96 Amdt 4	1 Jan 1999	17 May 1999	1 Feb 1999	1 Jan 1999	1 Jan 1999	1 Jan 1999	1 Jan 1999	1 Jan 1999	1 Jan 1999
BCA 96 Amdt 5	1 Jul 1999	3 Nov 1999	1 Aug 1999	1 Jul 1999	1 Jul 1999	1 Jul 1999	1 Jul 1999	1 Jul 1999	1 Jul 1999
BCA 96 Amdt 6	1 Jan 2000	10 Feb 2000	1 Jan 2000	1 Jan 2000	1 Jan 2000	17 Jan 2000	1 Jan 2000	1 Jan 2000	1 Jan 2000
BCA 96 Amdt 7	1 Jul 2000	10 Jul 2000	1 Jul 2000	1 Jul 2000	1 Jul 2000	1 Jul 2000	1 Jul 2000	1 Jul 2000	1 Jul 2000
BCA 96 Amdt 8	1 Jan 2001	11 Jan 2001	1 Jan 2001	1 Jan 2001	1 Jan 2001	1 Jan 2001	1 Jan 2001	1 Jan 2001	1 Jan 2001
BCA 96 Amdt 9	1 Jul 2001	12 Jul 2001	1 Jul 2001	1 Jul 2001	1 Jul 2001	2 Jul 2001	1 Jul 2001	1 Jul 2001	1 Jul 2001
BCA 96 Amdt 10	1 Jan 2002	1 Jan 2002	1 Jan 2002	1 Jan 2002	1 Jan 2002	1 Jan 2002 <sup>1</sup>	1 Jan 2002	1 Jan 2002	1 Jan 2002
BCA 96 Amdt 11	1 Jul 2002	1 Jul 2002 <sup>2</sup>	1 Jul 2002	1 Jul 2002	1 Jul 2002	1 Jul 2002	1 Jul 2002	1 Jul 2002	1 Jul 2002
BCA 96 Amdt 12	1 Jan 2003	1 Jan 2003	1 Jan 2003	1 Jan 2003	1 Jan 2003	1 Jan 2003	1 Jan 2003	1 Jan 2003	1 Jan 2003
BCA 96 Amdt 13	1 Jul 2003	1 Jul 2003	1 Jul 2003	1 Jul 2003	1 Jul 2003 <sup>3</sup>	1 Jul 2003	1 Jul 2003	1 Jul 2003	1 Jul 2003
BCA 2004	1 May 2004	1 May 2004	1 May 2004	1 May 2004	1 May 2004	1 May 2004	1 May 2004	1 May 2004	1 May 2004
BCA 2005	1 May 2005	1 May 2005	1 May 2005	1 May 2005	1 May 2005	1 May 2005	1 May 2005	1 May 2005	1 May 2005
BCA 2006	1 May 2006	1 May 2006	1 May 2006	1 May 2006	1 May 2006	1 May 2006 <sup>4</sup>	1 May 2006	1 May 2006	1 May 2006
BCA 2007	1 May 2007	1 May 2007	1 May 2007	1 May 2007	1 May 2007	1 May 2007 <sup>5</sup>	1 May 2007	1 May 2007	1 May 2007
BCA 2008	1 May 2008	1 May 2008	1 May 2008	1 May 2008	1 May 2008	1 May 2008	1 May 2008	1 May 2008	1 May 2008
BCA 2009	1 May 2009	1 May 2009	1 May 2009	1 May 2009	1 May 2009	1 May 2009	1 May 2009	1 May 2009	1 May 2009

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Edition	Commonwealth	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
BCA 2010	1 May 2010	1 May 2010	1 May 2010	1 May 2010	1 May 2010	1 May 2010 <sup>6</sup>	1 May 2010	1 May 2010	1 May 2010
NCC 2011	1 May 2011	1 May 2011	1 May 2011	1 May 2011	1 May 2011	1 May 2011	1 May 2011	1 May 2011	1 May 2011
NCC 2012	1 May 2012	1 May 2012	1 May 2012	1 May 2012	1 May 2012	1 May 2012	1 May 2012	1 May 2012	1 May 2012
NCC 2013	1 May 2013	1 May 2013	1 May 2013	1 May 2013	1 May 2013	1 May 2013	1 May 2013	1 May 2013	1 May 2013
NCC 2014	1 May 2014	1 May 2014	1 May 2014	1 May 2014	1 May 2014	1 May 2014	1 May 2014	1 May 2014	1 May 2014
NCC 2015	1 May 2015	1 May 2015	1 May 2015	1 May 2015	1 May 2015	1 May 2015	1 May 2015	1 May 2015	1 May 2015
NCC 2016	1 May 2016	1 May 2016	1 May 2016	1 May 2016	1 May 2016	1 May 2016	1 May 2016	1 May 2016	1 May 2016
NCC 2019	1 May 2019	1 June 2019	1 May 2019	1 May 2019	1 May 2019	1 May 2019	1 May 2019	1 May 2019	1 May 2019
NCC 2019 Amdt 1	1 Jul 2020	1 Jul 2020	1 Jul 2020	1 Jul 2020	1 Jul 2020	1 Jul 2020	1 Jul 2020	1 Jul 2020	1 Jul 2020
NCC 2022	1 May 2023	1 May 2023	1 May 2023	1 May 2023	1 May 2023	1 May 2023	1 May 2023	1 May 2023	1 May 2023

### Table Notes

- (1) 1 January 2002 (except SA2 - date to be advised).
- (2) 1 July 2002 (except Australian Capital Territory additions - which was adopted on 21 June 2002).
- (3) 1 July 2003 (except for Parts 2.6 and 3.12 which are adopted on 1 September 2003).
- (4) 1 May 2006, except for South Australian variations P2.6.2, V2.6.2.3 and 3.12.5.4 and South Australian addition SA2 which were adopted on 1 July 2006. The adoption of South Australian variation clause 3.7.4.2 is yet to be advised.
- (5) 1 May 2007, excluding South Australian variation clause 3.7.4.2, (for the purposes of sub-clauses (1) and (2) of Schedule 18 of the Development Regulations 1993): and sub-clause c) of variation clause 3.7.4.2 (for the purpose of sub-clauses (3) and (4) of Schedule 18 of the Development Regulations 1993).
- (6) 1 May 2010 except for Parts 2.6 and 3.12, which were adopted on 1 September 2010, and the restriction on child resistant door sets in 3.9.3.0 and the additional bushfire requirements for 'excluded areas' prescribed in SA 3.7.4.2(d) and (e), which were adopted on 2 December 2010.

## Adoption of BCA 96 Volume Two

The 1996 edition of the BCA Volume Two was adopted as set out in Table 1.

### BCA 96 Amendment No. 1

Amendment No. 1 of the 1996 edition of the BCA Volume Two was adopted as set out in Table 1.

The purpose of Amendment No. 1 is to—

- include typographical changes including spelling, punctuation, cross references and layout; and
- include reference to a Certificate of Conformity issued by the ABCB in A2.2; and
- change the reference to the Standards Mark Certificate to refer to JAS-ANZ in A2.2; and
- update references to Standards.

Note: The revisions contained in Amendment No. 1 to the Housing Provisions have not been marked in the text.

### **BCA 96 Amendment No. 2**

Amendment No. 2 of the 1996 edition of the BCA Volume Two was adopted as set out in Table 1.

The purpose of Amendment No. 2 is to—

- include typographical changes including spelling, punctuation, cross references and layout; and
- update references to Standards; and
- include minor technical changes.

### **BCA 96 Amendment No. 3**

Amendment No. 3 of the 1996 edition of the BCA Volume Two was adopted as set out in Table 1.

The purpose of Amendment No. 3 is to—

- incorporate the outcomes of the 1997 ABCB Variations Conference; and
- update references to Standards; and
- include minor technical changes.

### **BCA 96 Amendment No. 4**

Amendment No. 4 of the 1996 edition of the BCA Volume Two was adopted as set out in Table 1.

The purpose of Amendment No. 4 is to—

- update references to Standards; and
- include minor technical changes.

### **BCA 96 Amendment No. 5**

Amendment No. 5 of the 1996 edition of the BCA Volume Two was adopted as set out in Table 1.

The purpose of Amendment No. 5 is to—

- update references to Standards; and
- expand on the requirements for subfloor ventilation based on climatic conditions; and
- revise the Acceptable Construction Practice for Steel framing; and
- include additional details in the Acceptable Construction Practice for fencing of swimming pools; and
- include minor technical changes.

### **BCA 96 Amendment No. 6**

Amendment No. 6 of the 1996 edition of the BCA Volume Two was adopted as set out in Table 1.

The purpose of Amendment No. 6 is to—

- update references to Standards; and
- revise the Acceptable Construction Practice for Footing and Slab Construction; and
- replace Sound Transmission Class (STC) with weighted sound reduction index ( $R_w$ ) within Part 3.8.6; and
- include minor technical changes.

### **BCA 96 Amendment No. 7**

Amendment No. 7 of the 1996 edition of the BCA Volume Two was adopted as set out in Table 1.

The purpose of Amendment No. 7 is to—

- update references to Standards; and
- include requirements for separation of eaves and verandah spaces that are open to the roof space and common to 2 or more Class 1 buildings; and

- reinstate the Acceptable Construction Practice for buildings in bushfire-prone areas, following alignment with the 1999 version of AS 3959; and
- change the limitations on winders used in lieu of quarter and half landings within stairways; and
- include minor technical changes.

### **BCA 96 Amendment No. 8**

Amendment No. 8 of the 1996 edition of the BCA Volume Two was adopted as set out in Table 1.

The purpose of Amendment No. 8 is to—

- update references to Standards; and
- include minor technical changes; and
- achieve greater consistency between both Volumes of the BCA for stair construction.

### **BCA 96 Amendment No. 9**

Amendment No. 9 of the 1996 edition of the BCA Volume Two was adopted as set out in Table 1.

The purpose of Amendment No. 9 is to—

- update references to Standards; and
- include minor technical changes; and
- clarify which glazing assemblies must comply with AS 2047 and which must comply with AS 1288.

### **BCA 96 Amendment No. 10**

Amendment No. 10 of the 1996 edition of the BCA Volume Two was adopted as set out in Table 1.

The purpose of Amendment No. 10 is to—

- update references to Standards; and
- update the requirements for protective coatings for steelwork in locations near saltwater; and
- align Figure 3.6.1 dealing with glazing with AS 1288; and
- extend the concession for fire separation of windows in non-habitable rooms to windows in bathrooms, laundries and toilets and also include buildings on the same allotment; and
- replace testing to AS/NZS 1530.3 for timber in bushfire areas with reference to AS/NZS 3837; and
- include minor technical changes.

### **BCA 96 Amendment No. 11**

Amendment No. 11 of the 1996 edition of the BCA Volume Two was adopted as set out in Table 1.

The purpose of Amendment No. 11 is to—

- update references to Standards; and
- transfer public policy matters, with respect to structural adequacy, from the AS 1170 series to the BCA; and
- introduce new definitions and more detailed provisions on the installation of flashings and damp-proof courses; and
- include minor technical changes.

### **BCA 96 Amendment No. 12**

Amendment No. 12 of the 1996 edition of the BCA Volume Two was adopted as set out in Table 1.

The purpose of Amendment No. 12 is to—

- update references to Standards; and
- allow the use of either the 1989 editions or the 2002 editions of the 1170 series of standards; and

- include Energy Efficiency measures into the Housing Provisions; and
- include minor technical changes.

Note: Only substantive typographical corrections are noted in the margin.

### **BCA 96 Amendment No. 13**

Amendment No. 13 of the 1996 edition of the BCA Volume Two was adopted as set out in Table 1.

The purpose of Amendment No. 13 is to—

- update references to Standards; and
- refine the Energy Efficiency provisions and advise of their adoption in Western Australia and Queensland; and
- include minor technical changes.

Note: Only substantive typographical corrections are noted in the margin.

### **Adoption of BCA 2004 Volume Two**

The 2004 edition of the BCA was adopted as set out in Table 1.

The purpose of BCA 2004 Volume Two is to—

- remove references to BCA 96; and
- clarify the method of determining the Performance Requirements that are relevant to Alternative Solutions; and
- update references to other documents; and
- revise the acceptable construction practice for footing and slab construction; and
- prohibit the use of lead on roofs used to collect potable water; and
- reform the provisions for sound insulation; and
- update the Energy Efficiency provisions; and
- include minor technical changes.

### **Adoption of BCA 2005 Volume Two**

The 2005 edition of the BCA Volume Two was adopted as set out in Table 1.

The purpose of BCA 2005 Volume Two is to—

- update references to other documents; and
- update the provisions for waterproofing of wet areas; and
- update balustrading provisions to include wire balustrades; and
- include minor technical changes.

### **Adoption of BCA 2006 Volume Two**

The 2006 edition of the BCA Volume Two was adopted as set out in Table 1.

The purpose of BCA 2006 Volume Two is to—

- update references to other documents; and
- convert the W wind speed categories to the N and C wind speed categories; and
- include a national testing regime for cladding in cyclonic areas; and
- include enhanced energy efficiency provisions; and
- include minor technical changes.

### **Adoption of BCA 2007 Volume Two**

The 2007 edition of the BCA Volume Two was adopted as set out in Table 1.

The purpose of BCA 2007 Volume Two is to—

- update references to other documents; and
- clarify that compliance with either the appropriate acceptable construction manuals or the appropriate acceptable construction practice set out in Section 3 is deemed to comply with the Performance Requirements; and
- clarify when it is appropriate to use the acceptable construction practice for the installation of glazing and when it is necessary for windows to comply with AS 2047; and
- update acceptable construction practice for the installation of glazing to align with recent changes to AS 1288; and
- update Energy Efficiency provisions including providing clarification and additional information; and
- include minor technical changes.

### Adoption of BCA 2008 Volume Two

The 2008 edition of the BCA Volume Two was adopted as set out in Table 1.

The purpose of BCA 2008 Volume Two is to—

- update references to other documents; and
- include lists of other legislation affecting buildings in the various States and Territories; and
- include provisions for swimming pool water recirculation systems; and
- include minor technical changes.

### Adoption of BCA 2009 Volume Two

The 2009 edition of the BCA Volume Two was adopted as set out in Table 1.

The purpose of BCA 2009 Volume Two is to—

- update references to other documents; and
- after expiry of the agreed transition period, except for the 1993 edition of AS 1170.4, delete all references to the older loading standards contained in the AS 1170 series and consequently, all provisions referring to them; and
- simplify the wire balustrade provisions including the addition of a Verification Method; and
- clarify the height of rooms in an attic and with a sloping ceiling; and
- clarify the provisions for the construction of sanitary compartments to enable an unconscious occupant to be removed; and
- further update the energy efficiency provisions; and
- include minor technical changes.

### Adoption of BCA 2010 Volume Two

The 2010 edition of the BCA Volume Two was adopted as set out in Table 1.

The purpose of BCA 2010 Volume Two is to—

- update references to other documents; and
- delete reference to the 1993 edition of AS 1170.4 and consequently all provisions referring to it; and
- increase the stringency of the energy efficiency provisions and, as part of reducing greenhouse gas emissions, introduce provisions for lighting and the greenhouse gas intensity of the energy source for services such as water and space heaters; and
- update Part 3.7.4, as a consequence of referencing the 2009 edition of AS 3959 Construction of buildings in bushfire-prone areas, including—
  - applying the provisions to a Class 10a building or deck associated with a Class 1 building; and
  - the deletion of the acceptable construction practice; and
- include minor technical changes.

### Adoption of NCC 2011 Volume Two

The 2011 edition of the NCC Volume Two was adopted as set out in Table 1.

The purpose of NCC 2011 Volume Two is to—

- update references to other documents; and
- include provisions for private bushfire shelters for Class 1 dwellings; and
- revise the definition of Class 1b buildings; and
- include minor technical changes.

### Adoption of NCC 2012 Volume Two

The 2012 edition of the NCC Volume Two was adopted as set out in Table 1.

The purpose of NCC 2012 Volume Two is to—

- update references to other documents; and
- include revised provisions aimed at reducing slips, trips and falls in buildings; and
- remove the acceptable construction practice for masonry following the referencing of AS 4773 Masonry for small buildings, and completion of a 12 month transition period; and
- restructure the acceptable construction practice for wet areas; and
- include minor technical changes.

### Adoption of NCC 2013 Volume Two

The 2013 edition of the NCC Volume Two was adopted as set out in Table 1.

The purpose of NCC 2013 Volume Two is to—

- update references to other documents; and
- include new provisions for openable windows to reduce falls in buildings; and
- include a Performance Requirement and reference a Standard for construction in flood hazard areas; and
- include minor technical changes.

### Adoption of NCC 2014 Volume Two

The 2014 edition of the NCC Volume Two was adopted as set out in Table 1.

The purpose of NCC 2014 Volume Two is to—

- update references to other documents; and
- quantify slip resistance on stair treads in Class 1 buildings; and
- relocate the energy efficiency provisions for heated water systems to NCC Volume Three; and
- expand the energy efficiency heating options for swimming pools and associated spa pools; and
- include a new acceptable construction practice for hardboard cladding; and
- include minor technical changes.

### Adoption of NCC 2015 Volume Two

The 2015 edition of the NCC Volume Two was adopted as set out in Table 1.

The purpose of NCC 2015 Volume Two is to—

- update references to other documents; and
- include a Verification Method for structural reliability; and
- include a Verification Method for weatherproofing of external walls; and
- include revised Acceptable Construction Practice for termite management systems.

### Adoption of NCC 2016 Volume Two

The 2016 edition of NCC Volume Two was adopted as set out in Table 1.

The purpose of NCC 2016 Volume Two is to—

- update references to other documents; and
- amend the “Introduction” and “General Requirements” as part of the initiative to increase the use of Performance Solutions; and
- include new Verification Methods for structural robustness and indoor air quality; and
- include changes as a result of the Acceptable Construction Practice Review project, including the provisions for termite risk management, subfloor ventilation, facilities, light and ventilation and stair construction; and
- include requirements for overflow of eaves gutters; and
- include minor technical changes.

### Adoption of NCC 2019 Volume Two

The 2019 edition of NCC Volume Two was adopted as set out in Table 1.

The purpose of NCC 2019 Volume Two is to—

- include the Governing Requirements, that result from revision of Part 1 to improve readability and are common to all volumes; and
- introduce the use of schedules that are common to all volumes; and
- include new Verification Methods; and
- include changes resulting from review of acceptable construction practice, including amendments for earthworks, masonry, roof and wall cladding, fire safety and alpine areas; and
- update references to other documents; and
- include minor technical changes.

### NCC 2019 Amendment No. 1

Amendment No. 1 to the 2019 edition of NCC Volume Two was adopted as set out in Table 1.

The purpose of NCC Volume Two Amendment 1 is to—

- require that a process be followed to improve the quality of and documentation for Performance Solutions; and
- require labelling of Aluminium Composite Panels; and
- clarify that anti-ponding board requirements only apply to roofs where sarking is installed.

### NCC 2022

The 2022 edition of NCC Volume Two was adopted as set out in Table 1.

The purpose of NCC Volume Two 2022 is to—

- include quantified Performance Requirements; and
- include changes resulting from review of housing provisions, including amendments for footings and slabs, masonry, steel framing, waterproofing and glazing; and
- include amendments relating to allowable encroachments; and
- incorporate amended energy efficiency and condensation management provisions; and
- update references to other documents; and
- include other minor technical changes.

## List of amendments - NCC 2022 Volume Two

This list has been prepared by the Australian Building Codes Board to assist National Construction Code (NCC) users in identifying changes incorporated in the 2022 edition of the Volume Two of the NCC.

The notes provide a description of major changes made from the previous edition of Volume Two.

While the Australian Building Codes Board has attempted to include all major changes made from the previous edition of the Volume Two, the Board does not give any warranty nor accept any liability in relation to the contents of this list of amendments.

**Table 1: List of amendments - NCC 2022 Volume Two**

Reference	Changes and Commentary
<b>General</b>	
Throughout	An “Introduction to this Part” has been added to introduce the intent and purpose of every Part of the NCC.
Throughout	A number of provisions have been amended, restructured, deleted and relocated as part of the initiative to provide a consistent NCC structure and improve NCC usability.
<b>Section A—Governing requirements</b>	
A1G2	A new clause added to specify scope of NCC Volume One.
A1G2	A new clause added to specify scope of NCC Volume Three.
A1G3	A new clause added to specify scope of NCC Volume Three.
A2G2(4)(b)	Amended to remove unnecessary duplication.
A5G3	A Note has been included to outline transitional arrangements regarding new numbering system and documentary evidence.
A5G4	A new clause added to limit lead content in copper alloy plumbing products in contact with drinking water.
A5G9	A new clause added to require a NatHERS certificate be issued for the house energy rating software output where house energy rating software is required.
A6G1	The limitation statement has been amended to include a Class 9b early childhood centre.
Specification 1	Schedule 5 in NCC 2019 Amendment 1 has been relocated into new Specification 1 and 2.
Specification 2	Schedule 5 in NCC 2019 Amendment 1 has been relocated into new Specification 1 and 2.
Specification 3	Schedule 6 in NCC 2019 Amendment 1 has been relocated into new Specification 3.
<b>Part H1—Structure</b>	
H1D4	Amended to reflect current practice, improve readability and structure including the maximum size and geometry of footings and slabs.
H1D5	Amended to reflect current practice, improve readability and structure including requirements for maximum wind speeds, masonry veneer walls, site soil classifications and design details.

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Reference	Changes and Commentary
H1D6	Amended to reflect current practice, improve readability and structure.
H1D8	Amended to reflect current practice, improve readability and structure.
H1D11	Amended to improve the title and application requirements for Part 12.3 of the ABCB Housing Provisions.
<b>Part H2—Damp and weatherproofing</b>	
H2O1	Amended to improve clarity and includes safeguarding occupants and protect the building from damage from rising damp.
H2P1	Amended as a consequence of replacing 'average recurrence interval' with 'annual exceed probability'.
H2D2	Amended as a consequence of replacing 'average recurrence interval' with 'annual exceed probability'.
H2D4	Amended and includes a new Deemed-to-Satisfy pathway for satisfying weatherproofing of masonry.
H2D6	Sub-clause (2) has been amended to replace 'average recurrence interval' with 'annual exceedance probability' and Sub-clause (3) has been amended to exclude box gutters from Part 7.4 of the ABCB Housing Provisions.
H2D8	A new clause which incorporates 3.8.1.3 of Volume Two 2019 Amendment 1 to specify the requirements and application of external waterproofing for roofing systems.
<b>Part H3—Fire safety</b>	
H3P1	Amended and now contains quantified level of performance for protection of Class 1 buildings from the spread of fire.
H3P2	Amended and now contains quantified level of performance for automatic warning on detection of smoke in Class 1 buildings.
<b>Part H4—Health and amenity</b>	
H4D2	Amended as a consequence of moving external waterproofing of H2D8
H4D3	A new clause has been included for installation and materials of wet are components and systems.
H4V5	Amended to include new references to sections of the standard AIRAH DA07 for input assumptions, and new failure criteria included based on a mould index of 3.
<b>Part H6—Energy efficiency</b>	
H6O1	Amended to expand the energy efficiency Objectives of Part H6.
H6F1	Amended to expand the energy efficiency Functional Statement of Part H6.
H6P1	Amended to include quantified requirements for the thermal performance of a building.
H6P2	Amended to include quantified requirements for the energy used by a building's domestic services.
H6V2	Amended to align with changes in Section 13 of the ABCB Housing Provisions and added detailed schedules for calculating heating and cooling loads.

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Reference	Changes and Commentary
H6V3	Amended to include new ventilation requirements when an air change rate of less than 5m <sup>2</sup> /m <sup>3</sup> /hr at 50 Pa reference pressure is achieved.
Specification 42	Amended to consolidate the requirements when using house energy rating software and added the new requirement for net equivalent energy usage.
Specification 44	A new specification has been inserted and contains the methods of calculating heating load limits, cooling load limits and thermal load limits for Performance Requirements H6P1 of Volume Two and J1P2 of Volume One.
<b>Part H7—Ancillary provisions and additional construction requirements</b>	
H7P5	Amended and now contains quantified level of performance for design and construction of buildings in bushfire prone areas.
H7P6	Amended and now contains quantified level of performance for design and construction of private bushfire shelters.
<b>Part H8—Livable housing design</b>	
H8	A new Part has been inserted containing the Livable housing design requirements. This includes new Objectives, Functional Statements, Performance Requirement and Deemed-to-Satisfy Provisions.
<b>Schedule 1—Definitions</b>	
Schedule 1	Schedule 1 has been amended as part of the initiative to improve readability of the NCC. Schedule 1 – Definitions includes Abbreviations, Symbols and Glossary. States & Territory Appendices (formerly located in Schedule 1) have been incorporated into Schedule 3 to Schedule 11.
Abbreviations	Acrylic conformal coating (ACC) has been added.
Abbreviations	Acrylic latex (ACL) has been added.
Abbreviations	Australian Institute of Refrigeration, Air conditioning and Heating (AIRAH) has been added.
Abbreviations	American National Standards Institute (ANSI) has been added.
Abbreviations	American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE) has been added.
Abbreviations	National Standard of Canada (CAN) has been added.
Abbreviations	Chartered Institution of Building Services Engineer (CIBSE) has been added.
Abbreviations	Flame zone (FZ) has been added.
Abbreviations	Greenhouse and Energy Minimum Standards (GEMS) has been added.
Abbreviations	Hot dip galvanising (HDG) has been added.
Abbreviations	Inorganic zinc silicate (IZS) has been added.
Abbreviations	NATA has been amended to include reference to Australia.
Abbreviations	National Sanitation Foundation (NSF) has been added.
Abbreviations	Polyurethane (PUR) has been added.
Symbols	µg/N.s has been added.

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Reference	Changes and Commentary
Symbols	f'c has been added.
Symbols	f'y has been added.
Symbols	G has been added.
Symbols	N/m has been added.
Symbols	Q has been added.
Symbols	ULS has been added.
Glossary	A defined term, 'Above ground rainwater tank', has been added.
Glossary	A defined term, 'Annual exceedance probability', has been added as a consequence of amendments to Part 7.4 Gutters and downpipes of the ABCB Housing Provisions.
Glossary	A defined term, 'Assumed cooling thermostat set point' has been added as a consequence of quantification in J1P2 and H6P1.
Glossary	A defined term, 'Average recurrence interval', has been deleted as a consequence of amendments to Part 7.4 Gutters and downpipes of the ABCB Housing Provisions.
Glossary	A defined term, 'Bond breaker', has been added as a consequence of amendments to Part 10.2 of the ABCB Housing Provisions.
Glossary	A defined term, 'Building complexity criteria', has been added.
Glossary	A defined term, 'Buried rainwater tank', has been added as a consequence of amendments to Specification 41 of Volume Three.
Glossary	A defined term, 'Cooling degree hours' has been added as a consequence of quantification in J1P2 and H6P1.
Glossary	A defined term, 'Daily outdoor temperature range' has been added as a consequence of quantification in J1P2 and H6P1.
Glossary	A defined term, 'Dehumidification gram hours', has been added as a consequence of quantification in J1P2 and H6P1.
Glossary	A defined term, 'Design bushfire', has been added as a consequence of amendments to Part G5.
Glossary	The defined term, 'Domestic services', has been amended to include on-site renewable energy equipment as a result of quantification in J1P3 and H6P2.
Glossary	A defined term, 'Drainage flange', has been added as a consequence of amendments to Part 10.2 of the ABCB Housing Provisions.
Glossary	A defined term, 'Drainage riser', has been added as a consequence of amendments to Part 10.2 of the ABCB Housing Provisions.
Glossary	A defined term, 'Efficacy', has been added as a consequence of including quantified Performance Requirement H3P2 for automatic warning for occupants.
Glossary	A defined term, 'Energy value', has been added as a consequence of quantification in J1P3 and H6P2.

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Reference	Changes and Commentary
Glossary	A defined term, 'Engaged pier', has been added as a consequence of amendments to Section 5 of the ABCB Housing Provisions.
Glossary	A defined term, 'Fire actions', has been added as a consequence of amendments to Part G5.
Glossary	The defined term, 'Flashing', has been amended to clarify perimeter and vertical flashings as a consequence of amendments to Part 10.2 of the ABCB Housing Provisions.
Glossary	The defined term, 'Floor area', for Volume One, has been amended on account of new defined term 'Volume'.
Glossary	A defined term, 'Floor waste', has been added as a consequence of amendments to Part 10.2 of the ABCB Housing Provisions.
Glossary	The defined term, 'Glazing', has been amended as a consequence of the updates to the energy efficiency Deemed-to-Satisfy provisions for Class 2 buildings.
Glossary	A defined term, 'Heating degree hours', has been added as a consequence of quantification in J1P2 and H6P1.
Glossary	A defined term, 'Hob', has been added as a consequence of amendments to Part 10.2 of the ABCB Housing Provisions.
Glossary	A defined term 'Irrigation system', has been added as a consequence of amendments to S41C2 in Volume Three.
Glossary	A defined term, 'Lateral support', has been added as a consequence of amendments to Part 5.3 of the ABCB Housing Provisions.
Glossary	A defined term, 'Main water heater' has been added as a consequence of including new whole-of-home energy efficiency requirements.
Glossary	A defined term, 'Main space conditioning' has been added as a consequence of including new whole-of-home energy efficiency requirements.
Glossary	A defined term, 'Maximum retained water level', has been added as a consequence of amendments to Part 10.2 of the ABCB Housing Provisions.
Glossary	A defined term, 'Membrane', has been added as a consequence of amendments to Part 10.2 of the ABCB Housing Provisions.
Glossary	The defined term, 'NABERS Energy for Offices' has been amended to be 'NABERS Energy' to reflect its use for multiple building classifications.
Glossary	The defined term, 'Performance-based design brief' has been amended for clarity.
Glossary	The defined term, 'Point of connection', has been amended for clarity.
Glossary	A defined term, 'Preformed shower base', has been added as a consequence of amendments to Part 10.2 of the ABCB Housing Provisions.
Glossary	A defined term, 'Primary insulation layer', has been added as a consequence of amendments to condensation management provisions.

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Reference	Changes and Commentary
Glossary	The defined term, 'Rainwater harvesting system', has been amended to 'Rainwater service' and 'Rainwater storage' as a consequence of amendments to Part B6 of Volume Three.
Glossary	The defined term 'Reference building' has been amended to remove reference to Thermal comfort levels and as a consequence of the introduction of J1V5.
Glossary	A defined term, 'Reliability', has been added as a consequence of including quantified Performance Requirements for automatic warning for occupants.
Glossary	A defined term, 'Screed', has been added as a consequence of amendments to Part 10.2 of the ABCB Housing Provisions.
Glossary	The defined term, 'Shower area', has been amended to clarify enclosed and unenclosed shower areas as a consequence of amendments to Part 10.2 of the ABCB Housing Provisions.
Glossary	A defined term, 'Shower screen', has been added as a consequence of amendments to Part 10.2 of the ABCB Housing Provisions.
Glossary	A defined term, 'Thermal energy load', has been added as a consequence of quantification in J1P2 and H6P1.
Glossary	The defined term 'Total R-Value' in the ABCB Housing Provisions has been amended to align with Volume One.
Glossary	The defined term 'Total System U-Value' in the ABCB Housing Provisions has been amended to align with Volume One.
Glossary	A defined term 'Unprotected water service', has been added as a consequence of introducing new provision for unprotected water service – B5D5 of Volume Three.
Glossary	A defined term, 'Vapour permeance', has been added as a consequence of amendments to the condensation management provisions.
Glossary	A defined term, 'Volume', has been added to clarify the volume space with respect to a building, fire compartment and atrium.
Glossary	A defined term, 'Waterproofing system', has been added as a consequence of amendments to Part 10.2 of the ABCB Housing Provisions.
Glossary	A defined term, 'Water stop', has been added as a consequence of amendments to Part 10.2 of the ABCB Housing Provisions.
Glossary	A defined term, 'Weighted average', has been added as a consequence of amendments to A5G4.
Glossary	A defined term, 'Wetted surface area', has been added to provide clarification to the defined term 'Weighted average'.
<b>Schedule 2—Referenced documents</b>	
AS/NZS 1170.2	The 2021 edition of AS/NZS 1170 Part 2 'Structural design actions — Wind actions' has been referenced.
AS 1288	The 2021 edition of AS 1288 'Glass in buildings — Selection and installation' has been referenced.

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Reference	Changes and Commentary
AS 1397	The 2021 edition of AS 1397 'Continuous hot-dip metallic coated steel sheet and strip — Coatings of zinc and zinc alloyed with aluminium and magnesium' has been referenced. A note has been included to outline transitional arrangements.
AS 1530 Parts 1 to 4	The notes to AS 1530 Parts 1 to 4 have been deleted.
AS 1530.8.1	The 2018 edition of AS 1530 Part 8.1 'Methods for fire tests on building materials, components and structures — Tests on elements of construction for buildings exposed to simulated bushfire attack — Radiant heat and small flaming sources' has been referenced.
AS/NZS 1546.1	The 2008 edition of AS/NZS 1546 Part 1 'On-site domestic wastewater treatment units — Septic tanks' has been referenced.
AS/NZS 1546.2	The 2008 edition of AS/NZS 1546 Part 2 'On-site domestic wastewater treatment units — Waterless composting toilets' has been referenced.
AS 1546.3	Amdt 1 of the 2017 edition of AS 1546 Part 3 'On-site domestic wastewater treatment units — Secondary treatment systems (incorporating amendment 1)' has been referenced.
AS 1546.4	The 2016 edition of AS 1546 Part 4 'On-site domestic wastewater treatment units — Domestic greywater treatment systems' has been referenced.
AS/NZS 1547	The 2012 edition of AS/NZS 1547 'On-site domestic wastewater management' has been referenced.
AS/NZS 1562.2	The 1999 edition of AS/NZS 1562 Part 2 'Design and installation of sheet roof and wall cladding — Corrugated fibre-reinforced cement' has been deleted.
AS 1562.3	The 2006 edition of AS 1562 Part 3 'Design and installation of sheet roof and wall cladding — Plastic' has been referenced.
AS 1670.1	Amdt 1 of the 2018 edition AS 1670 Part 1 'Fire detection, warning, control and intercom systems — System design, installation and commissioning — Fire (incorporating amendment 1)' has been referenced. Notes to AS 1670 have been amended to outline transitional arrangements.
AS 1670.3	Amdt 1 of the 2018 edition AS 1670 Part 3 'Fire detection, warning, control and intercom systems — System design, installation and commissioning — Fire alarm monitoring (incorporating amendment 1)' has been referenced. Notes to AS 1670 have been amended to outline transitional arrangements.
AS 1670.4	Amdt 1 of the 2018 edition AS 1670 Part 4 'Fire detection, warning, control and intercom systems — System design, installation and commissioning — Emergency warning and intercom systems (incorporating amendment 1)' has been referenced. Notes to AS 1670 have been amended to outline transitional arrangements.
AS 1684.2	The 2021 edition of AS 1684 Part 2 'Residential timber-framed construction — Non-cyclonic areas' has been referenced.

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Reference	Changes and Commentary
AS 1684.3	The 2021 edition of AS 1684 Part 3 'Residential timber-framed construction —Cyclonic areas' has been referenced.
AS/NZS 1720.4	The 2019 edition of AS/NZS 1720 Part 4 'Timber structures — Fire resistance of timber elements' has been referenced.
AS 1720.5	Amdt 1 of the 2015 edition of AS 1720 Part 5 'Timber structures —Nailplated timber roof trusses (incorporating amendment 1)' has been referenced.
AS/NZS 1859.4	The note to AS/NZS 1859 Part 4 has been deleted.
AS 2118.1	Amdt 2 of the 2017 edition of AS 2118 Part 1 'Automatic fire sprinkler systems — General systems (incorporating amendments 1 and 2)' has been referenced.
AS 2118.4	The 2012 edition of AS 2118 Part 4 'Automatic fire sprinkler systems — Sprinkler protection for accommodation buildings not exceeding four storeys in height'.
AS 2118.5	The 2008 edition of AS 2118 Part 5 'Automatic fire sprinkler systems — Home fire sprinkler systems' has been referenced.
AS 2118.6	The 2012 edition of AS 2118 Part 6 'Automatic fire sprinkler systems — Combined sprinkler and hydrant systems in multistorey buildings.'
AS/NZS 2293.1	Amdt 1 of the 2018 edition of AS/NZS 2293 Part 1 'Emergency lighting and exit signs for buildings — System design, installation and operation (incorporating amendment 1)' has been referenced.
AS 2312.1	The 2014 edition of AS 2312 Part 1 'Guide to the protection of structural steel against atmospheric corrosion by the use of protective coatings — Paint coatings' has been referenced.
AS/NZS 2312.2	The 2014 edition of AS/NZS 2312 Part 2 'Guide to the protection of structural steel against atmospheric corrosion by the use of protective coatings — Hot dip galvanizing' has been referenced.
AS/NZS 2327	Amdt 1 of the 2017 edition of AS/NZS 2327 'Composite structures — composite steel-concrete construction in buildings (incorporating amendment 1)' has been referenced.
AS 2419.1	The 2021 edition of AS 2419 Part 1 'Fire hydrant installations — System design, installation and commissioning' has been referenced.
AS 2441	The 2005 edition of AS 2441 'Installation of fire hose reels (incorporating amendment 1) has been referenced.
AS 2699.1	The 2020 edition of AS 2699 Part 1 'Built-in components for masonry construction — Wall ties' has been referenced. A note has been included to outline transitional arrangements.
AS 2699.3	The 2020 edition of AS 2699 Part 3 'Built-in components for masonry construction — Lintels and shelf angles (durability requirements)' has been referenced. A note has been included to outline transitional arrangements.
AS/NZS 3500.0	The 2021 edition of AS 3500 Part 0 'Plumbing and drainage — Glossary of terms' has been referenced.

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Reference	Changes and Commentary
AS/NZS 3500.1	The 2021 edition of AS 3500 Part 1 'Plumbing and drainage — Water services' has been referenced.
AS/NZS 3500.2	Amdt 1 of the 2021 edition of AS 3500 Part 2 'Plumbing and drainage — Sanitary plumbing and drainage (incorporating amendment 1)' has been referenced.
AS/NZS 3500.3	The 2021 edition of AS 3500 Part 3 'Plumbing and drainage — Stormwater drainage' has been referenced. A note has been included to outline transitional arrangements.
AS/NZS 3500.4	The 2021 edition of AS 3500 Part 4 'Plumbing and drainage — Heated water services' has been referenced.
AS 3600	Amdt 2 of the 2018 edition of AS 3600 'Concrete structures (incorporating amendments 1 and 2)' has been referenced.
AS 3740	The 2021 edition of AS 3740 'Waterproofing of domestic wet areas' has been referenced.
AS 3959	Amdts 1 and 2 of the 2018 edition of AS 3959 'Construction of buildings in bushfire-prone areas (incorporating amendments 1 and 2)' has been referenced.
AS 4055	The 2021 edition of AS 4055 'Wind loads for housing' has been referenced.
AS 4072.1	The note to AS 4072 Part 1 has been deleted.
AS 4100	The 2020 edition of AS 4100 'Steel structures' has been referenced.
AS 4200.1	Amdt 1 of the 2017 edition of AS 4200 Part 1 'Pliable building membranes and underlays — Materials (incorporating amendment 1)' has been referenced.
AS 4200.2	Amdts 1 and 2 of the 2017 edition of AS 4200 Part 2 'Pliable building membranes and underlays — Installation (incorporating amendments 1 and 2)' has been referenced.
AS/NZS 4234	The 2021 edition of AS/NZS 4234 'Heated water systems — Calculation of energy consumption' has been referenced.
AS 4254.1	The 2021 edition of AS 4254 Part 1 'Ductwork for air-handling systems in buildings — Flexible duct' has been referenced.
AS/NZS 4256.1	The 1994 edition of AS/NZS 4256 Part 1 'Plastic roof and wall cladding materials — General requirements' has been deleted.
AS/NZS 4256.2	The 1994 edition of AS/NZS 4256 Part 2 'Plastic roof and wall cladding materials — Unplasticized polyvinyl chloride (uPVC) building sheets' has been deleted.
AS/NZS 4256.3	The 1994 edition of AS/NZS 4256 Part 3 'Plastic roof and wall cladding materials — Glass fibre reinforced polyester (GRP)' has been deleted.
AS/NZS 4256.5	The 1996 edition of AS/NZS 4256 Part 5 'Plastic roof and wall cladding materials — Polycarbonate' has been deleted.
AS 4773.2	Amdt 1 of the 2015 edition of AS 4773 Part 2 'Masonry in small buildings — Construction' has been referenced.

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Reference	Changes and Commentary
AS/NZS 4858	The 2004 edition of AS/NZS 4858 'Wet area membranes' has been referenced.
AS 5146.3	The 2018 edition of AS 5146 Part 3 'Reinforced Autoclaved Aerated Concrete — Construction' has been referenced.
AS 5216	The 2021 edition of AS 5216 'Design of post-installed and cast-in fastenings in concrete' has been referenced.
AS/NZS 5601.1	The 2013 edition of AS/NZS 5601 Part 1 'Gas installations — General installations' has been referenced.
AIRAH-DA07	The 2021 edition of AIRAH-DA07 'Criteria for moisture control design analysis in buildings' has been referenced.
ASTM E903	The 2012 edition of ASTM E903 'Standard Test Method for Solar Absorptance, Reflectance, and Transmittance of Materials Using Integrating Spheres' has been deleted.
ASTM E96	The 2016 edition of ASTM E96 'Standard Test Methods for Water Vapor Transmission of Materials' has been referenced.
ABCB	The 2022 version of the ABCB 'Fire Safety Verification Method' Standard has been referenced. As a consequence, the FSVM is deleted as a standalone schedule.
ABCB	The 2022 version of the ABCB 'Housing Provisions' Standard has been referenced.
ABCB	The 2022 version of the ABCB 'Livable Housing Design' Standard has been referenced.
ABCB	The 2022 version of the ABCB 'Standard for NatHERS Heating and Cooling Load Limits' has been referenced.
ABCB	The 2022 version of the ABCB 'Standard for Whole-of-home Efficiency Factors' has been referenced.
FPAA101D	The 2021 edition of FPAA101D 'Automatic Fire Sprinkler System Design and Installation — Drinking Water Supply' has been referenced.
FPAA101H	Amdt 1 of the 2018 edition of FPAA101H 'Automatic Fire Sprinkler System Design and Installation — Hydrant Water Supply (incorporating amendment 1)' has been referenced.
NASH Standard	The 2021 edition of NASH Standard 'Steel Framed Construction in Bushfire Areas' has been referenced.
NSF/ANSI/CAN 372	The 2020 edition of NSF/ANSI/CAN 372 'Drinking Water System Components — Lead Content' has been referenced.

**Section A      Governing requirements**

**Part A1      Interpreting the NCC**

**Governing Requirements**

- A1G1                      Scope of NCC Volume One
- A1G2                      Scope of NCC Volume Two
- A1G3                      Scope of NCC Volume Three
- A1G4                      Interpretation

**Part A2      Compliance with the NCC**

**Governing Requirements**

- A2G1                      Compliance
- A2G2                      Performance Solution
- A2G3                      Deemed-to-Satisfy Solution
- A2G4                      A combination of solutions

**Part A3      Application of the NCC in States and Territories**

**Governing Requirements**

- A3G1                      State and Territory compliance

**Part A4      Referenced documents**

**Governing Requirements**

- A4G1                      Referenced documents
- A4G2                      Differences between referenced documents and the NCC
- A4G3                      Adoption of referenced documents

**Part A5      Documentation of design and construction**

**Governing Requirements**

- A5G1                      Suitability
- A5G2                      Evidence of suitability – Volumes One, Two and Three
- A5G3                      Evidence of suitability – Volumes One and Two (BCA)
- A5G4                      Evidence of suitability – Volume Three (PCA)
- A5G5                      Fire-resistance of building elements
- A5G6                      Fire hazard properties
- A5G7                      Resistance to the incipient spread of fire
- A5G8                      Labelling of Aluminium Composite Panels
- A5G9                      NatHERS

**Part A6      Building classification**

**Governing Requirements**

- A6G1                      Determining a building classification
- A6G2                      Class 1 buildings
- A6G3                      Class 2 buildings
- A6G4                      Class 3 buildings
- A6G5                      Class 4 buildings
- A6G6                      Class 5 buildings
- A6G7                      Class 6 buildings
- A6G8                      Class 7 buildings

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A6G9	Class 8 buildings
A6G10	Class 9 buildings
A6G11	Class 10 buildings and structures
A6G12	Multiple classifications

### Part A7

#### United buildings

##### Governing Requirements

A7G1	United buildings
A7G2	Alterations in a united building

### Specification 1

#### Fire-resistance of building elements

S1C1	Scope
S1C2	Rating
S1C3	FRLs determined by calculation
S1C4	Interchangeable materials
S1C5	Columns covered with lightweight construction
S1C6	Non-loadbearing elements

### Specification 2

#### Descriptions of elements referred to in Specification 1

S2C1	Scope
S2C2	Mortar for masonry
S2C3	Gypsum blocks
S2C4	Gypsum-sand mortar and plaster
S2C5	Gypsum-perlite and gypsum-vermiculite plaster
S2C6	Plaster of cement and sand or cement, lime and sand
S2C7	Plaster reinforcement
S2C8	Ashlar stone masonry
S2C9	Dimensions of masonry
S2C10	Solid units
S2C11	Hollow units
S2C12	Equivalent thickness
S2C13	Height-to-thickness ratio of certain walls
S2C14	Increase in thickness by plastering — walls
S2C15	Increase in thickness by plastering — columns
S2C16	Gypsum-perlite or gypsum-vermiculite plaster or metal lath — walls
S2C17	Gypsum-perlite or gypsum-vermiculite plaster or metal lath — columns
S2C18	Gypsum-perlite or gypsum-vermiculite plaster or metal lath — beams
S2C19	Exposure of columns
S2C20	Exposure of beams
S2C21	Filling of column spaces
S2C22	Hollow terracotta blocks
S2C23	Reinforcing for column and beam protection — masonry
S2C24	Reinforcing for column and beam protection — gypsum blocks and hollow terracotta blocks
S2C25	Reinforcing for column and beam protection — structural con

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	crete and poured gypsum
S2C26	Reinforcing for column and beam protection — gypsum-perlite or gypsum-vermiculite plaster sprayed to contour
S2C27	Measurement of thickness of column and beam protection

### **Specification 3 Fire hazard properties**

S3C1	Scope
S3C2	General requirement
S3C3	Form of test
S3C4	Test specimens
S3C5	Concession
S3C6	Smaller specimen permitted

### Part A1 Interpreting the NCC

#### Introduction to this Part

This Part explains important concepts on how the NCC must be interpreted and applied. There are certain conventions and approaches that need to be taken into account when using the NCC. This includes interpreting specific language and terms. This is critical to understanding the intended technical and legal meaning of the NCC. This Part also explains the difference between the mandatory Parts of the NCC and the Parts that are only explanatory or guidance in nature.

#### Governing Requirements

##### A1G1 Scope of NCC Volume One

[New for 2022]

NCC Volume One contains the requirements for—

- (a) all Class 2 to 9 buildings; and
- (b) access requirements for people with a disability in Class 1b and 10a buildings; and
- (c) certain Class 10b structures including access requirements for people with a disability in Class 10b *swimming pools*.

##### A1G2 Scope of NCC Volume Two

[New for 2022]

NCC Volume Two contains the requirements for—

- (a) Class 1 and 10a buildings (other than access requirements for people with a disability in Class 1b and 10a buildings); and
- (b) certain Class 10b structures (other than access requirements for people with a disability in Class 10b *swimming pools*); and
- (c) Class 10c *private bushfire shelters*.

##### A1G3 Scope of NCC Volume Three

[New for 2022]

- (1) NCC Volume Three contains technical requirements for the design, construction, installation, replacement, repair, alteration and maintenance for *plumbing* and *drainage* systems in new and existing buildings.
- (2) NCC Volume Three applies to these systems in all classes of buildings whenever *plumbing* and *drainage* work is carried out.
- (3) NCC Volume Three additionally applies to *sites* where services are designed, constructed, installed, replaced, repaired, altered and maintained independently of buildings.
- (4) NCC Volume Three applies from the *point of connection* to the point of discharge.

##### A1G4 Interpretation

[2019: A1.0]

- (1) The following components of the NCC are non-mandatory and informative:
  - (a) Content identified as “explanatory information”.
  - (b) The “Introduction” information, located at the beginning of each Volume, Section or Part.

## Governing requirements

- (2) Words in italics must be interpreted in accordance with—
- (a) definitions provided in Schedule 1, unless the contrary intention appears; and
  - (b) additional definitions in State or Territory appendices, as appropriate.
- (3) The NCC must be interpreted and applied in accordance with the following:
- (a) A reference to a building is a reference to an entire building or part of a building (as the case requires).
  - (b) A reference to *plumbing or drainage solution*, or *product* in Volume Three is a reference to an entire installation, system or *product*, or part of an installation, system or *product* (as the case requires).
  - (c) A reference in a *Performance Requirement* to “the degree necessary” means—
    - (i) that consideration of all the criteria referred to in the *Performance Requirement* will determine the outcome appropriate to the circumstances; and
    - (ii) that in certain cases it may not be necessary to incorporate any specific measures to meet the relevant *Performance Requirement*.
  - (d) An “Application” statement is mandatory and is provided to specify where and when a requirement or provision applies.
  - (e) A “Limitation” statement is mandatory and is provided to specify where and when the application of a requirement or provision is limited to a certain circumstance.
  - (f) An “Exemption” statement is mandatory and is provided to specify where or when a requirement or provision does not need to be complied with.
  - (g) A “Note” is part of a provision or requirement and provides additional mandatory instructions.
  - (h) Figures in the NCC—
    - (i) are used to illustrate specific issues referenced in the associated text; and
    - (ii) are not to be construed as containing all design information that is *required* for that particular building element or situation.
  - (i) The definitions, symbols and abbreviations listed in Schedule 1.
- (4) A reference to a building class is a reference to all the sub-classifications of that class.
- (5) The following sub-classifications apply:
- (a) Classes 1a and 1b are sub-classifications of Class 1.
  - (b) Classes 7a and 7b are sub-classifications of Class 7.
  - (c) Classes 9a, 9b and 9c are sub-classifications of Class 9.
  - (d) Classes 10a, 10b and 10c are sub-classifications of Class 10.
- (6) A reference to a sub-classification is solely to that sub-classification.

TAS A1G4(7)

### Notes

For Volume Three, if a word is not defined in Schedule 1, the meaning (if any) attributed to it under AS/NZS 3500.0 should be used unless the contrary intention appears.

### Explanatory Information

Explanatory information and Introduction information contained in the NCC is non-mandatory and is provided for guidance purposes only. This informative material should be read in conjunction with the technical provisions of the NCC. Any statements made in the informative and guidance components of the NCC should not be taken to override the NCC. Unlike the NCC, which is adopted by legislation, the informative and guidance components are not called up into legislation and they do not cover State and Territory variations and additions. Because informative and guidance components of the NCC do not have regulatory force, the ABCB accepts no responsibility for its contents when applied to specific buildings or any liability which may result from its use.

Defined words provide the precise meaning and expressions of key words used for understanding and complying with the NCC. Where a word is not defined in the NCC, the relevant common meaning of the word should be used.

Generally, a reference to a building is a reference to the whole building, regardless of classification. However, when a

## Governing requirements

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provision is applicable to a specific class or classes of building, that reference to a building may be a reference to the whole building or part of the building depending on how the building is classified.

Classes 1a and 1b, 7a and 7b, 9a, 9b and 9c, and 10a, 10b and 10c are separate classifications. In the NCC, when the designation 'a', 'b' or 'c' is not applied, the reference is to all buildings of the general class. For example, 'Class 9b' refers only to Class 9b buildings, but 'Class 9' refers to Classes 9a, 9b and 9c.

Whether a provision applies or not depends on the circumstances of the case and the circumstances in which the reference is made. For example, where a building has a single classification, a reference to a building in the NCC is understandably a reference to a whole building. However, where a building has parts of different classification, unless the contrary intention appears (i.e. there is a specific reference to the whole building), a reference to a building in the NCC is a reference to the relevant part of the building. This means that each part of the building must comply with the relevant provisions for its classification.

A number of the *Performance Requirements* of the NCC use the expression "to the degree necessary" or "appropriate to". These expressions provide flexibility by allowing appropriate authorities to determine the degree of compliance necessary in a particular case. Therefore, any part of the NCC that uses these expressions should be referenced against the requirements of the *appropriate authority*. For example, an *appropriate authority* might judge that an item need not be installed, or a particular level of performance be achieved.

Application, Limitation, and Exemption statements are used to identify provisions that may or may not apply in certain situations, to varying degrees.

Figures are used to explain the requirements of a particular clause. To ensure the context of the requirement is clearly understood, adjacent construction elements of the building that would normally be required in that particular situation are not always shown. Accordingly, aspects of figures that are not shown should not be interpreted as meaning these construction details are not *required*. Therefore a figure must not be used as an indication of the full construction requirements in a given situation, as the only available option, or a substitute for referencing appropriate construction requirements (in other sources) for a given clause.

## Part A2 Compliance with the NCC

### Introduction to this Part

This Part explains the possible methods of demonstrating compliance with the NCC. It explains the various compliance pathways within the NCC and the appropriate steps that must be taken for each of these pathways.

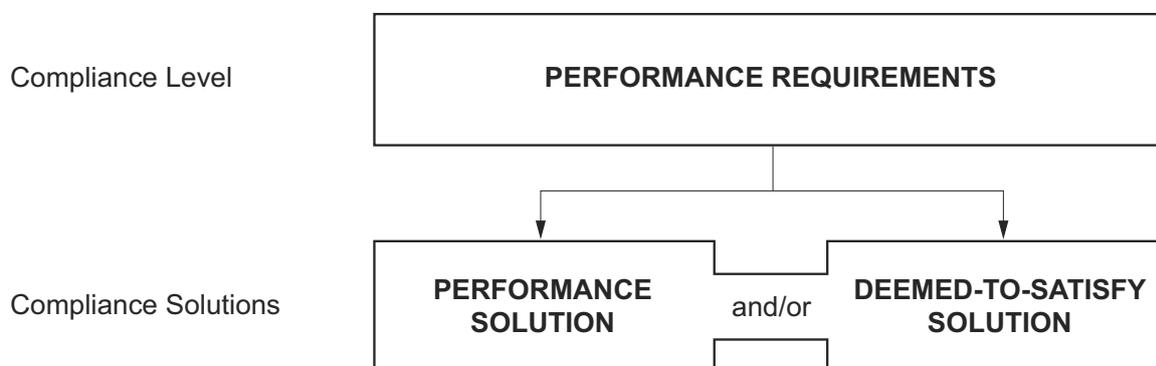
#### Governing Requirements

#### A2G1 Compliance

[2019: A2.0, A2.1]

- (1) Compliance with the NCC is achieved by complying with—
  - (a) the Governing Requirements of the NCC; and
  - (b) the *Performance Requirements*.
- (2) *Performance Requirements* are satisfied by one of the following, as shown in Figure A2G1:
  - (a) *Performance Solution*.
  - (b) *Deemed-to-Satisfy Solution*.
  - (c) A combination of (a) and (b).

Figure A2G1: NCC compliance structure



#### A2G2 Performance Solution

[2019: A2.2]

- (1) A *Performance Solution* is achieved by demonstrating—
  - (a) compliance with all relevant *Performance Requirements*; or
  - (b) the solution is at least *equivalent* to the *Deemed-to-Satisfy Provisions*.
- (2) A *Performance Solution* must be shown to comply with the relevant *Performance Requirements* through one or a combination of the following *Assessment Methods*:
  - (a) Evidence of suitability in accordance with Part A5 that shows the use of a material, product, *plumbing and drainage product*, form of construction or design meets the relevant *Performance Requirements*.
  - (b) A *Verification Method* including the following:
    - (i) The *Verification Methods* provided in the NCC.
    - (ii) Other *Verification Methods*, accepted by the *appropriate authority* that show compliance with the relevant *Performance Requirements*.

## Governing requirements

- (c) *Expert Judgement*.
  - (d) Comparison with the *Deemed-to-Satisfy Provisions*.
- (3) Where a *Performance Requirement* is satisfied entirely by a *Performance Solution*, in order to comply with (1) the following method must be used to determine the *Performance Requirement* or *Performance Requirements* relevant to the *Performance Solution*:
- (a) Identify the relevant *Performance Requirements* from the Section or Part to which the *Performance Solution* applies.
  - (b) Identify *Performance Requirements* from other Sections or Parts that are relevant to any aspects of the *Performance Solution* proposed or that are affected by the application of the *Performance Solution*.
- (4) Where a *Performance Requirement* is proposed to be satisfied by a *Performance Solution*, the following steps must be undertaken:
- (a) Prepare a *performance-based design brief* in consultation with relevant stakeholders.
  - (b) Carry out analysis, as proposed by the *performance-based design brief*.
  - (c) Evaluate results from (4)(b) against the acceptance criteria in the *performance-based design brief*.
  - (d) Prepare a final report that includes—
    - (i) all *Performance Requirements* and/or *Deemed-to-Satisfy Provisions* identified through A2G2(3) or A2G4(3) as applicable; and
    - (ii) identification of all *Assessment Methods* used; and
    - (iii) details of steps (4)(a) to (4)(c); and
    - (iv) confirmation that the *Performance Requirement* has been met; and
    - (v) details of conditions or limitations, if any exist, regarding the *Performance Solution*.

VIC A2G2(5)

### A2G3 Deemed-to-Satisfy Solution

[2019: A2.3]

- (1) A solution that complies with the *Deemed-to-Satisfy Provisions* is deemed to have met the *Performance Requirements*.
- (2) A *Deemed-to-Satisfy Solution* can show compliance with the *Deemed-to-Satisfy Provisions* through one or more of the following *Assessment Methods*:
  - (a) Evidence of suitability in accordance with Part A5 that shows the use of a material, product, *plumbing and drainage product*, form of construction or design meets a *Deemed-to-Satisfy Provision*.
  - (b) *Expert Judgement*.

### A2G4 A combination of solutions

[2019: A2.4]

- (1) *Performance Requirements* may be satisfied by using a combination of *Performance Solutions* and *Deemed-to-Satisfy Solutions*.
- (2) When using a combination of solutions, compliance can be shown through the following, as appropriate:
  - (a) A2G2 for assessment against the relevant *Performance Requirements*.
  - (b) A2G3 for assessment against the relevant *Deemed-to-Satisfy Provisions*.
- (3) Where a *Performance Requirement* is satisfied by a *Performance Solution* in combination with a *Deemed-to-Satisfy Solution*, in order to comply with (1), the following method must be used to determine the *Performance Requirement* or *Performance Requirements* relevant to the *Performance Solution*:
  - (a) Identify the relevant *Deemed-to-Satisfy Provisions* of each Section or Part that are to be the subject of the *Performance Solution*.
  - (b) Identify the *Performance Requirements* from the same Sections or Parts that are relevant to the identified

## Governing requirements

### *Deemed-to-Satisfy Provisions.*

- (c) Identify *Performance Requirements* from other Sections or Parts that are relevant to any aspects of any *Performance Solution* proposed or that are affected by the application of the *Deemed-to-Satisfy Provisions* that are the subject of the *Performance Solution*.

### Explanatory Information

To comply with the NCC, a solution must achieve compliance with the Governing Requirements and the *Performance Requirements*. The Governing Requirements contain requirements about how the *Performance Requirements* must be met.

*Performance Requirements* outline the minimum necessary standards different buildings or building elements must attain. The *Performance Requirements* are the only NCC technical provisions that must be satisfied.

In some instances, State and Territory variations and additions may also be applicable to certain *Performance Requirements*.

A solution may be partly a *Performance Solution* and partly a *Deemed-to-Satisfy Solution*. However, no matter what method is chosen, building proponents need to always meet the *Performance Requirements* of the NCC.

A2G2(2)(b)(ii) provides for the use of *Verification Methods* that are not listed in the NCC. A *Verification Method* may include—

- a calculation, using analytical methods or mathematical models; or
- a test, using a technical procedure, either on-site or in a laboratory, to directly measure the extent to which the *Performance Requirements* have been met; or
- an inspection (and inspection report); or
- any other acceptable form of certification.

Any *Verification Method* used must be acceptable to the *appropriate authority*.

A *Performance Solution* must comply with all applicable *Performance Requirements* of the NCC. A *Performance Solution* provides a tailored solution to meet the intended objective of the *Performance Requirements*. A *Performance Solution* must comply with all relevant *Performance Requirements* and must be verified using one or a combination of the following *Assessment Methods*:

- Evidence of suitability.
- *Verification Method*.
- *Expert Judgement*.
- Comparison with the *Deemed-to-Satisfy Provisions*.

For example, building proponents who wish to know what has to be done to satisfy the fire safety *Performance Requirements* for a particular building can either follow the *Deemed-to-Satisfy Provisions* or develop a *Performance Solution*. Guidance on how to develop *Performance Solutions* can be found on the ABCB website at: [www.abcb.gov.au](http://www.abcb.gov.au). The ABCB Resource Library contains information on the development of *Performance Solutions* for both building and plumbing.

A *Deemed-to-Satisfy Solution* is achieved by following all appropriate *Deemed-to-Satisfy Provisions* in the NCC. The *Deemed-to-Satisfy Provisions* are prescriptive (i.e. like a recipe book, they tell you how, what and in which location things must be done). They include materials, components, design factors, and construction methods that, if used, are deemed to meet the *Performance Requirements*, hence the term “Deemed-to-Satisfy”.

A *Deemed-to-Satisfy Solution* may be verified using one or a combination of the following *Assessment Methods*:

- Evidence of suitability.
- *Expert Judgement*.

Some *Performance Requirements* are without *Deemed-to-Satisfy Solutions*. Compliance with these *Performance Requirements* must be achieved by using a *Performance Solution*.

When designing a building or *plumbing* or *drainage* system, both *Performance Solutions* and *Deemed-to-Satisfy Solutions* can be used to achieve compliance with *Performance Requirements*. A combination of solutions may be used to satisfy a single *Performance Requirement*. This may include occasions where a specific *Performance Requirement* covers a number of elements of a building or *plumbing* or *drainage* system.

No NCC provision can be considered in isolation. Any departure from the *Deemed-to-Satisfy Provisions* for a

## Governing requirements

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*Performance Solution* needs to be assessed against the relevant *Performance Requirements* within the relevant NCC Section or Part. Additionally, the proposed *Performance Solution* may also impact on other *Performance Requirements* in other Sections or Parts. Thus, these additional *Performance Requirements* need to be considered in relation to the subject *Performance Solution*. A2G2(3) and A2G4(3) set out the methods for determining which *Performance Requirements* are relevant.

It is important that a holistic approach is used when determining the appropriate *Performance Requirements*.

A2G4(2)(a) references A2G2. Therefore, when using a combination of *Performance Solutions* and *Deemed-to-Satisfy Solutions* it is necessary to comply with A2G2(4) where a *Performance Requirement* is proposed to be satisfied by a *Performance Solution*.

More information on NCC compliance methods is located at [www.abcb.gov.au](http://www.abcb.gov.au).

### Part A3 Application of the NCC in States and Territories

#### Introduction to this Part

This Part explains applying the NCC in accordance with State or Territory legislation. The NCC has legal effect through references in relevant State or Territory building and plumbing legislation.

Although the NCC is a nationally consistent code, there are some situations where a State or Territory enforces a variation, addition or deletion to it. This Part also explains how these variations, additions and deletions apply.

#### Governing Requirements

#### A3G1 State and Territory compliance

[2019: A3.0]

- (1) For application within a particular State or Territory, the volumes of the NCC comprise inclusively of—
  - (a) Sections A to G, I and J and associated schedules of Volume One; and
  - (b) Sections A and H and associated schedules of Volume Two; and
  - (c) Sections A to E and associated schedules of Volume Three.
- (2) State and Territory variations, additions and deletions must be complied with in conjunction with the NCC.
- (3) The NCC is subject to, and may be overridden by, State or Territory legislation.
- (4) State and Territory variations, additions and deletions are contained in the following Schedules:
  - (a) Schedule 3: Commonwealth of Australia.
  - (b) Schedule 4: Australian Capital Territory.
  - (c) Schedule 5: New South Wales.
  - (d) Schedule 6: Northern Territory.
  - (e) Schedule 7: Queensland.
  - (f) Schedule 8: South Australia.
  - (g) Schedule 9: Tasmania.
  - (h) Schedule 10: Victoria.
  - (i) Schedule 11: Western Australia.
- (5) State and Territory variations and deletions are identified throughout the NCC.

#### Explanatory Information

The NCC is given legal effect by building regulatory legislation in each State and Territory. This legislation consists of an Act of Parliament and subordinate legislation which empowers the regulation of certain aspects of building and plumbing, and contains the administrative provisions necessary to give effect to the legislation.

Although the NCC is a national code, in some instances it is necessary for a State or Territory to vary or apply additional requirements specific to their jurisdiction. A3G1(2) highlights that these variations, additions or deletions must be applied in conjunction with the NCC provisions. Typically, these variations, additions or deletions override the requirements contained within the NCC.

Any provision of the NCC may be overridden by, or subject to, State or Territory legislation. The NCC must therefore be read in conjunction with that legislation. Any queries on such matters should be referred to the State or Territory authority responsible for building and plumbing regulatory matters.

Where a requirement or provision of the NCC is subject to a State or Territory variation, addition, or deletion, a reference to the appropriate provision in the applicable State or Territory schedule is included with that requirement or provision.

### Part A4 Referenced documents

#### Introduction to this Part

This Part explains how documents referenced in the NCC are adopted and applied. The NCC itself does not contain details of every design and construction requirement for a building or *plumbing* or *drainage* system. As such, the NCC calls upon or “references” other documents with this information. These are called NCC referenced documents. Examples of such documents are Australian Standards, ABCB protocols, ABCB standards and other publications.

There are multiple types of referenced documents. A primary referenced document is one referenced in Schedule 2 of the NCC. A secondary referenced document is one referenced in a primary referenced document. Other referenced documents are referenced by secondary and subsequently referenced documents.

#### Governing Requirements

#### A4G1 Referenced documents

[2019: A4.0]

- (1) A reference in the NCC to a document refers to the edition or issues and any amendment listed in Schedule 2.
- (2) A document referenced in the NCC is only applicable in the context in which the document is quoted.

##### TAS A4G1(3)

- (3) Where a new edition, issue or amendment of a primary referenced document is not listed in Schedule 2, the new edition, issue or amendment is not referenced for the purpose of the NCC.
- (4) Any document referenced in a primary referenced document is known as a secondary referenced document.
- (5) A reference in a primary referenced document to a secondary or other referenced document is a reference to the document as it existed at the time of publication of the primary referenced document.

#### Applications

A4G1 applies to documents referenced in the ABCB Housing Provisions in the same way as for documents referenced within any other part of the NCC.

#### Exemptions

If the secondary or other referenced document is also a primary referenced document, A4G1(5) does not apply.

#### A4G2 Differences between referenced documents and the NCC

[2019: A4.1]

The NCC overrules any difference between the NCC (including the ABCB Housing Provisions) and a primary referenced document, including any secondary referenced document.

#### Applications

A4G2 applies to documents referenced in the ABCB Housing Provisions in the same way as for other documents referenced by Volumes One, Two or Three of the NCC.

**A4G3 Adoption of referenced documents**

[2019: A4.2]

The NCC does not require compliance with requirements in relation to the following matters where they are prescribed in a referenced document:

- (a) The rights, responsibilities or obligations between the manufacturer, supplier or purchaser.
- (b) The responsibilities of any tradesperson or other building operative, architect, engineer, authority, or other person or body.
- (c) The submission for approval of any material, building component, form or method of construction, to any person, authority or body other than those empowered under State or Territory legislation to give that approval.
- (d) The submission of a material, product, form of construction or design to any person, authority or body for opinion.
- (e) Any departure from the NCC, rule, specification or provision at the sole discretion of the manufacturer or purchaser, or by arrangement or agreement between the manufacturer and purchaser.

**Applications**

A4G3 applies to documents referenced in the ABCB Housing Provisions in the same way as for documents referenced within Volumes One, Two or Three of the NCC.

**Explanatory Information**

Schedule 2 is only mandatory to *Deemed-to-Satisfy Provisions*, Specifications and *Verification Methods*. However, referenced documents are only applicable to the NCC provision that references the document.

A proponent undertaking a *Performance Solution* can use any element or edition of any document, if they help satisfy the *Performance Requirements*. They do not need to use the documents listed in Schedule 2.

Schedule 2 lists the specific edition of the Standard or other document adopted, including any amendments considered appropriate for Schedule 2, the *Deemed-to-Satisfy Provisions*, Specifications or *Verification Methods*. Other editions of (or amendments to) the referenced document are not adopted and have no standing under the NCC.

A primary referenced document may refer to a secondary referenced document. **A4G1(5)** stipulates that the secondary referenced document is the edition of the document that existed at the time of publication of the primary referenced document. When another edition of (or amendment to) a secondary referenced document is released, subject to the exemption to **A4G1**, that edition (or amendment) is not adopted for the purposes of the primary referenced document.

**A4G3** means that contractual matters or clauses defining responsibilities of various parties, and matters not appropriate for adoption in the NCC are not included when a document is called up in the NCC.

### Part A5 Documentation of design and construction

#### Introduction to this Part

This Part explains the evidence needed to show that the NCC requirements are met and the solution is “fit for purpose”. It covers the use of materials, products, forms of construction and designs. It details separate requirements for the BCA and PCA.

Examples of evidence to be prepared and retained include certificates, reports, calculations and any other documents or information showing compliance with the NCC requirements.

#### Governing Requirements

##### A5G1 Suitability

[2019: A5.0]

- (1) A building and *plumbing* or *drainage* installation must be constructed using materials, products, *plumbing products*, forms of construction and designs fit for their intended purpose to achieve the relevant requirements of the NCC.
- (2) For the purposes of (1), a material, product, *plumbing product*, form of construction or design is fit for purpose if it is—
  - (a) supported by evidence of suitability in accordance with—
    - (i) A5G2; and
    - (ii) A5G3 or A5G4 as appropriate; and
  - (b) constructed or installed in an appropriate manner.

#### Explanatory Information

A5G1 relates to the quality of work and materials needed to construct a building to meet NCC requirements.

This means that—

- all people involved with construction must work skillfully in accordance with good trade practice; and
- all materials must be of a quality to fulfil their function/s within the building.

A5G1 only applies to matters normally covered by the NCC.

While A5G1 outlines quality of work and material demands, sometimes additional conditions may be required by—

- other Commonwealth, State or Territory legislation; and
- contracts that include either specific quality requirements, or requirements for specific materials and the like.

#### Explanatory Information: Example

Permit authorities would ordinarily not apply A5G1 to such matters as—

- plastering — other than for fire rating, waterproofing of *wet areas*, and sound insulation; or
- painting — other than that required for weatherproofing an *external wall*.

When determining which form of evidence will be used, it is important to consider the appropriateness of the evidence, as some forms of evidence may be more suitable to materials and products and others to designs and forms of construction. The requirement to consider appropriateness of the evidence is specified in A5G2(1).

## Governing requirements

### A5G2 Evidence of suitability – Volumes One, Two and Three

[2019: A5.1]

- (1) The form of evidence used must be appropriate to the use of the material, product, *plumbing product*, form of construction or design to which it relates.
- (2) Any copy of documentary evidence submitted must be a complete copy of the original certificate, report or document.

#### Explanatory Information

For further guidance, refer to the ABCB Handbook for Evidence of Suitability.

All copies of documents provided as evidence must be unabridged copies of the originals. No part can be left incomplete.

### A5G3 Evidence of suitability – Volumes One and Two (BCA)

[2019: A5.2]

- (1) Subject to A5G5, A5G6, A5G7 and A5G9, evidence to support that the use of a material, product, form of construction or design meets a *Performance Requirement* or a *Deemed-to-Satisfy Provision* may be in the form of any one, or any combination of the following:
  - (a) A current CodeMark Australia or CodeMark *Certificate of Conformity*.
  - (b) A current *Certificate of Accreditation*.
  - (c) A current certificate, other than a certificate described in (a) and (b), issued by a *certification body* stating that the properties and performance of a material, product, form of construction or design fulfil specific requirements of the BCA.
  - (d) A report issued by an *Accredited Testing Laboratory* that—
    - (i) demonstrates that a material, product or form of construction fulfils specific requirements of the BCA; and
    - (ii) sets out the tests the material, product or form of construction has been subjected to and the results of those tests and any other relevant information that has been relied upon to demonstrate it fulfils specific requirements of the BCA.
  - (e) A certificate or report from a *professional engineer* or other *appropriately qualified person* that—
    - (i) certifies that a material, product, form of construction or design fulfils specific requirements of the BCA; and
    - (ii) sets out the basis on which it is given and the extent to which relevant standards, specifications, rules, codes of practice or other publications have been relied upon to demonstrate it fulfils specific requirements of the BCA.
  - (f) Another form of documentary evidence, such as but not limited to a *Product Technical Statement*, that—
    - (i) demonstrates that a material, product, form of construction or design fulfils specific requirements of the BCA; and
    - (ii) sets out the basis on which it is given and the extent to which relevant standards, specifications, rules, codes of practice or other publications have been relied upon to demonstrate it fulfils specific requirements of the BCA.
- (2) Evidence to support that a calculation method complies with an ABCB protocol may be in the form of any one, or any combination of the following:
  - (a) A certificate from a *professional engineer* or other *appropriately qualified person* that—
    - (i) certifies that the calculation method complies with a relevant ABCB protocol; and
    - (ii) sets out the basis on which it is given and the extent to which relevant standards, specifications, rules, codes of practice and other publications have been relied upon.
  - (b) Another form of documentary evidence that correctly describes how the calculation method complies with a relevant ABCB protocol.

#### Applications

A5G3 is only applicable to NCC Volumes One and Two (BCA).

## Governing requirements

### Notes

Current documentary evidence, such as a certificate or report, containing references to NCC 2019 provisions remains valid despite amended provision references in NCC 2022, subject to technical requirements remaining the same between editions.

### Explanatory Information

A5G3 represents the minimum level of documentary evidence needed to show that a material, product, form of construction or design meets the relevant NCC requirements. The evidence can be required by:

- an *appropriate authority*;
- a party to a construction contract; or
- a person certifying compliance with the NCC.

If a building proponent does not produce exactly what is required, the evidence may be rejected.

It should be noted that 'design' may refer to engineering design, architectural design as well as product and material design.

A5G3(1)(f) allows for the use of alternative forms of documentary evidence to those included in A5G3(1)(a) to (e), as long as they comply with certain specified conditions.

An example of this arises when an authority carries out an inspection of a building site. The inspection alone would not be acceptable as evidence. However, if the authority compiled a written report detailing findings and conclusions from the inspection, then it may comply with the requirements of A5G3(1)(f).

A *Product Technical Statement* detailing the characteristics and merits of a particular product or system is also an example of another form of documentary evidence.

There is significant reliance by industry on the use of calculation methods, including software programs, for demonstrating compliance with the NCC. While there is no formal recognition of specific methods, A5G3(2) allows suitable evidence to be submitted to demonstrate that a calculation method (including a software program) complies with a relevant ABCB protocol that establishes the characteristics of a suitable calculation method.

If under a *Deemed-to-Satisfy Provision* a building element is *required* to have an FRL, then A5G3 may be used to provide evidence to show that the FRL has been determined in accordance with *Specification 1* and *2*.

In the case of a test report from an *Accredited Testing Laboratory*, the report may be either—

- the test report referred to in clause 2.16.2 of AS 1530.4 (also referred to as a full test report); or
- the regulatory information report referred to in clause 2.16.3 of AS 1530.4 (also referred to as a short-form report).

In both cases the report must be an unabridged copy of the original report. A test certificate referred to in clause 2.16.4 of AS 1530.4 on its own is not suitable for showing compliance with the NCC.

If a proposal uses a *Deemed-to-Satisfy Provision* that requires a building element to have *fire hazard properties*, then A5G3 may be used to provide evidence to support the proposal and show that the *fire hazard properties* have been determined in accordance with A5G6.

Refer to the guidance provided in the Guide to Volume One for further information on *fire hazard properties* which includes—

- *Flammability Index*; and
- *Spread-of-Flame Index*; and
- *Smoke-Developed Index*; and
- a material's *group number*; and
- *smoke growth rate index*.

The *Deemed-to-Satisfy Provisions* of the BCA contain a number of provisions requiring a ceiling to have a *resistance to the incipient spread of fire* to the space above itself. A5G7 sets out the method of determining the incipient spread of fire. The method is based on the method of determining the FRL of a building element and use of the *Standard Fire Test*.

## Governing requirements

### A5G4 Evidence of suitability – Volume Three (PCA)

[2019: A5.3]

- (1) Any *product* that is intended for use in contact with *drinking water* must comply with the relevant requirements of AS/NZS 4020, verified in the form of either—
  - (a) a test report provided by an *Accredited Testing Laboratory*, in accordance with AS/NZS 4020; or
  - (b) a *WaterMark Licence* issued in accordance with (3), if it includes compliance with AS/NZS 4020.
- (2) Any *product* that contains copper alloy and is intended for use in contact with *drinking water* must have a *weighted average* lead content of not more than 0.25% verified in the form of either—
  - (a) a test report provided by an *Accredited Testing Laboratory*, in accordance with NSF/ANSI/CAN 372; or
  - (b) a *WaterMark Licence* issued in accordance with (3), if it includes compliance with NSF/ANSI/CAN 372.
- (3) A *product* of a type listed on the *WaterMark Schedule of Products* is deemed to be fit for its intended purpose if it has a *WaterMark Licence* issued in accordance with the WaterMark Scheme Rules.
- (4) A *product* of a type listed on the *Watermark Schedule of Excluded Products* requires evidence of suitability in the form of—
  - (a) a current certificate issued by a *certification body* stating that the properties and performance of a *product* can meet the requirements of the PCA; or
  - (b) a report issued by an *Accredited Testing Laboratory* that—
    - (i) demonstrates that the *product* complies with the relevant requirements of the PCA; and
    - (ii) sets out the tests the *product* has been submitted to and the results of those tests and any other relevant information that has been relied upon to demonstrate suitability for use in a *plumbing* or *drainage* installation.
- (5) Any *product* that is not covered by (3) or (4) must be subjected to a risk assessment in accordance with the WaterMark Scheme Rules.
- (6) Evidence to support that a design or system meets the relevant PCA *Performance Requirements* must be in the form of any one or any combination of the following:
  - (a) The design or system complies with a *Deemed-to-Satisfy Provision*.
  - (b) The design or system is a *Performance Solution* from a *professional engineer* or a *recognised expert* that—
    - (i) certifies that the design or system complies with the relevant requirements of the PCA; and
    - (ii) sets out the basis on which it is given and the extent to which relevant standards, specifications, rules, codes of practice or other publications have been relied upon.
  - (c) Any other form of documentary evidence that—
    - (i) demonstrates that a design or system complies with the relevant requirements of the PCA; and
    - (ii) sets out the basis on which it is given and the extent to which relevant standards, specifications, rules, codes of practice or other publications have been relied upon.

TAS A5G4(10)

TAS A5G4(7)

TAS A5G4(8)

TAS A5G4(9)

#### Notes

*On-site wastewater management systems* larger than covered by the standards are exempt and a *Performance Solution* is required.

#### Notes

- (1) A5G4(2) does not take effect until the completion of the transition period specified by WaterMark Notice of Direction 2021/4.
- (2) Note 1 does not prevent the use of *products* certified in accordance with A5G4(2) prior to the completion of the transition period specified by the WaterMark Notice of Direction 2021/4.

## Governing requirements

### Applications

*Products* subject to the requirements of A5G4(2) are specifically nominated in the *WaterMark Schedule of Products* and the *WaterMark Schedule of Excluded Products*.

### Exemptions

(1) *Products* that are used exclusively for non-drinking uses such as manufacturing, industrial processing, irrigation or any other uses where water is not anticipated to be used for human consumption are excluded from the requirements of A5G4(2).

### Explanatory Information

Some examples of products subject to A5G4(2) include the following:

- Copper alloy fittings.
- Stainless-steel braided hoses.
- Valves (such as valves for isolation, backflow prevention, alteration of pressure and temperature).
- Taps and mixers.
- Water meters.
- Pumps (for use with cold and heated water services).
- Water heaters.
- Residential water filtration equipment.
- Water dispensers (such as boiling and cooling units, drinking fountains and bottle fillers).
- Fire sprinkler systems connected to the cold water service that are not isolated from fixtures and fittings intended to supply water for human consumption.

Some examples of products excluded from the requirements of A5G4(2) include the following:

- Shower heads for bathing.
- Emergency showers, eye wash and/or face wash equipment.
- Pumps used for irrigation, fire-fighting or other non-drinking water purposes.
- Fire-fighting water services and equipment including residential fire sprinklers.
- Appliances, including washing machines and dishwashers.
- Commercial boilers associated with heating, ventilation and air-conditioning systems.
- Sanitary fixtures (such as toilets, cistern inlet valves, bidets and urinals).
- Non-drinking water systems (such as recycled water systems).

Product certification transition arrangements are outlined in Notices of Direction issued through the *WaterMark Certification Scheme*.

Lead is currently permitted in small proportions in the raw materials used to manufacture some *plumbing products*. Whilst the allowable lead levels permitted in *products* manufactured prior to 1 September 2025 ensures compliance with the Australian Drinking Water Guidelines, the use of products compliant with the lead levels in A5G4(2) is encouraged, to avoid the potential for adverse effects on human health.

A5G4(1) requires any *product* intended for use in contact with *drinking water* to comply with AS/NZS 4020. Compliance is achieved by passing the relevant tests set out in the Standard.

Evidence of compliance must then be provided in accordance with A5G4(1), under which there are two options. The first, at A5G4(1)(a), recognises test reports and certificates that cover compliance with AS/NZS 4020 only. The second, at A5G4(1)(b), recognises *WaterMark Licences* where compliance with AS/NZS 4020 is a requirement of the relevant *product* Standard or WaterMark Technical Specification.

For *products* that are of a type listed on the *WaterMark Schedule of Products*, A5G4(2) requires that these *products* have a *WaterMark Licence*. A *WaterMark Licence* reflects that the *product* has been certified and authorised in accordance with the WaterMark Scheme Rules.

For *products* that are not subject to WaterMark certification (i.e. excluded *products*), evidence that can be used to

## Governing requirements

support that the *product* is fit for its intended purpose is provided in A5G4(3). This may include demonstrating compliance with a *product* specification referenced in the *WaterMark Schedule of Excluded Products*, where one is available.

A5G4(4) provides that any *product* that is not listed on the *WaterMark Schedule of Products* or the *WaterMark Schedule of Excluded Products* must be subjected to a risk assessment in accordance with the WaterMark Scheme Rules. The risk assessment will determine whether the *product* in question requires certification and authorisation, or if it should be listed as an “excluded product”. This in turn will determine the form of evidence of suitability applicable to the *product*.

### Explanatory Information: What is WaterMark?

The *WaterMark Certification Scheme* is a mandatory certification scheme for *plumbing* and *drainage products* to ensure that these *products* are fit for purpose and appropriately authorised for use in a *plumbing* or *drainage* system.

The PCA, through Part A5, requires certain *plumbing* and *drainage products* to be certified and authorised for use in a *plumbing* or *drainage* system. These products are certified through the *WaterMark Certification Scheme* and listed on the WaterMark Product Database.

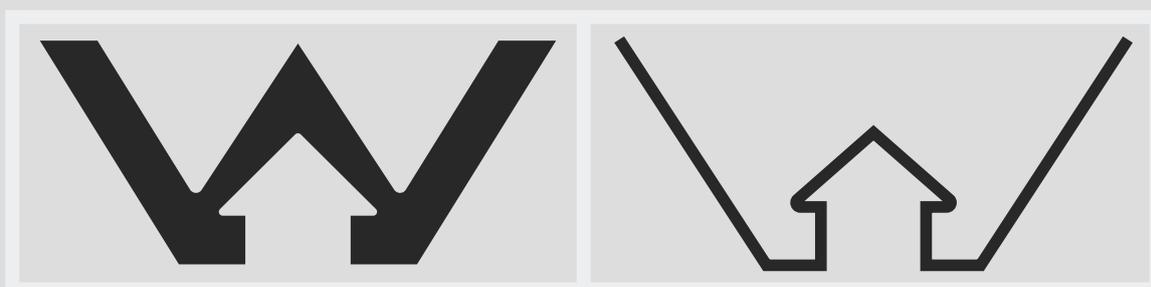
The *WaterMark Certification Scheme* is governed by the WaterMark Scheme Rules, which are available for download from the ABCB website at: [www.abcb.gov.au](http://www.abcb.gov.au). These rules set out the requirements for risk assessments, evaluation, certification, and the drafting of WaterMark Technical Specifications.

When a *product* is listed on the *WaterMark Schedule of Products* then, for it to be certified and authorised, the *product* must—

- be tested by an *Accredited Testing Laboratory*; and
- comply with an approved *product* specification (either a relevant existing *product* Standard or a WaterMark Technical Specification); and
- be manufactured in accordance with an approved Quality Assurance Program; and
- carry a scope of use.

*Products* that comply fully with the applicable requirements of the *WaterMark Certification Scheme* are then eligible to be certified by a *WaterMark Conformity Assessment Body* and listed on the WaterMark Product Database. Certified *products* are identifiable by the WaterMark certification trade mark, shown in Figure A5G4 below, that must be displayed on the *product* upon granting of a *WaterMark Licence*.

Figure A5G4 (explanatory): WaterMark Certification Scheme Trademarks



### A5G5 Fire-resistance of building elements

[2019: A5.4]

Where a *Deemed-to-Satisfy Provision* requires a building element to have an FRL, it must be determined in accordance with Specifications 1 and 2.

### A5G6 Fire hazard properties

[2019: A5.5]

Where a *Deemed-to-Satisfy Provision* requires a building component or assembly to have a *fire hazard property* it must be determined as follows:

- (a) For *average specific extinction area*, *critical radiant flux* and *Flammability Index*, as defined in Specification 1.
- (b) For *Smoke-Developed Index* and *Spread-of-Flame Index*, in accordance with Specification 3.

## Governing requirements

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- (c) For a material's *group number* or *smoke growth rate index* (SMOGR<sub>A<sub>RC</sub></sub>), in accordance with S7C4(2).

### A5G7 Resistance to the incipient spread of fire

[2019: A5.6]

A ceiling is deemed to have a *resistance to the incipient spread of fire* to the space above itself if—

- (a) it is identical with a prototype that has been submitted to the *Standard Fire Test* and the *resistance to the incipient spread of fire* achieved by the prototype is confirmed in a report from an *Accredited Testing Laboratory* that—
  - (i) describes the method and conditions of the test and form of construction of the tested prototype in full; and
  - (ii) certifies that the application of restraint to the prototype complies with the *Standard Fire Test*; or
- (b) it differs in only a minor degree from a prototype tested under (a) and the *resistance to the incipient spread of fire* attributed to the ceiling is confirmed in a report from an *Accredited Testing Laboratory* that—
  - (i) certifies that the ceiling is capable of achieving the *resistance to the incipient spread of fire* despite the minor departures from the tested prototype; and
  - (ii) describes the materials, construction and conditions of restraint that are necessary to achieve the *resistance to the incipient spread of fire*.

### A5G8 Labelling of Aluminium Composite Panels

[2019: A5.7]

An *Aluminium Composite Panel* must be labelled in accordance with SA TS 5344.

### A5G9 NatHERS

[New for 2022]

Where *house energy rating software* is *required* to be used, evidence of the *house energy rating software* output must be in the form of a NatHERS certificate issued in accordance with the NatHERS scheme.

### Part A6 Building classification

#### Introduction to this Part

The NCC groups buildings and structures by the purpose for which they are designed, constructed or adapted to be used, assigning each type of building or structure with a classification. This Part explains how each building classification is defined and used in the NCC.

The building classifications are labelled “Class 1” through to “Class 10”. Some classifications also have sub-classifications, referred to by a letter after the number (e.g. Class 1a).

The technical building requirements for Class 2 to 9 buildings are mostly covered by Volume One of the NCC and those for Class 1 and 10 are mostly covered by Volume Two of the NCC. Volume Three of the NCC covers *plumbing* and *drainage* requirements for all building classifications.

A building may have parts that have been designed, constructed or adapted for different purposes. In most cases, each of these parts is a separate classification. A building (or part of a building) may also have more than one such purpose and may be assigned more than one classification.

#### Governing Requirements

#### A6G1 Determining a building classification

[2019: A6.0]

- (1) 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.
- (2) Each part of a building must be classified according to its purpose and comply with all the appropriate requirements for its classification.
- (3) A room that contains a mechanical, thermal or electrical facility or the like that serves the building must have the same classification as the major part or principal use of the building or *fire compartment* in which it is situated.
- (4) Unless another classification is more suitable, an *occupiable outdoor area* must have the same classification as the part of the building to which it is associated.

#### Exemptions

- (1) For A6G1(1) where a part of a building has been designed, constructed or adapted for a different purpose and is less than 10% of the *floor area* of the *storey* it is situated on, the classification of the other part of the *storey* may apply to the whole *storey*.
- (2) A6G1(3) does not apply to an *electricity network substation*.

#### Limitations

Exemption (1) does not apply where the minor use of a building is a laboratory, a Class 9b *early childhood centre*, or a Class 2, 3 or 4 part of a building.

#### Explanatory Information

Classification is a process for understanding risks in a building or part, according to its use. It must be correctly undertaken to achieve NCC aims as appropriate to each building in each circumstance.

It is possible for a single building to have parts with different classifications. Part of a building can also have more than one classification. Where there is any conflict between what requirements the part should comply with, the more stringent requirement applies.

Where it is unclear which classification should apply, *appropriate authorities* have the discretion to decide. They base their decision on an assessment of the building proposal.

## Governing requirements

They will look at what classification the building most closely resembles. They will also take into account the likely *fire load*, plus, the likely consequences of any risks to the safety, health and amenity of people using the building.

*Appropriate authorities* will also look at any relevant court decisions or determinations of the State or Territory body responsible for considering appeals on building classification matters.

It should be noted that appeals body determinations and, in some States and Territories, certain court decisions are usually not precedent creating. Such decisions are determined on a case-by-case basis.

It should also be noted that State and Territory authorities responsible for building regulatory matters may have issued advice, interpretations or guidelines to assist practitioners in applying the correct classification to a building or part. Advice on such matters should be sought from the relevant authority.

Under Exemption (1) to A6G1, if 10% or less of the *floor area* of a *storey* is used for a purpose which could be classified differently to the remainder of that *storey*, that part may be classified as being the same as the remainder. Laboratories, *sole-occupancy units* in Class 2, 3 or 4 parts, and Class 9b *early childhood centres* are excluded from this concession (see Limitation to A6G1). The reason is that laboratories are considered to have a high *fire hazard* potential and classifying them with the remainder of the building could, in a majority of cases, endanger occupants of the other parts of the building which have a lower *fire hazard* potential. In relation to Class 9b *early childhood centres*, the intent is to ensure that these facilities cannot be regarded as another class and that the specific fire safety requirements applicable to Class 9b *early childhood centres* are implemented. Also, the intent is not to allow *sole-occupancy units* in Class 2, 3 or 4 parts to be regarded as another Class such as Class 6 and then not have any fire or sound insulation between the units and any other classification which may have a high *fire load* and could endanger the occupants of the Class 2, 3 or 4 part.

If Exemption (1) to A6G1 is used, it should be remembered that it will still be necessary to use the occupant numbers in Volume One Table D2D18 for the particular use of the area. Likewise, the lighting and equipment levels, people occupancy and load profiles for the area of minor use for the purposes of Volume One Section J must be in accordance with the use of the area.

If the *storey* has a very large *floor area*, the 10% or less concession area may also be large, even though the rest of the building is classifiable as a building which ordinarily has a lower risk potential. An example of the application of this area concession could be as follows:

- If a single *storey* factory has an office that takes up 8% of the whole *storey's floor area*, the entire building (including the office) can be classified as being Class 8.
- However, if that office area takes up 12% of the *storey's floor area*, that area must be classified as Class 5, and the remainder of the building as Class 8.

Under A6G1(3) a plant room, machinery room, lift motor room or *boiler* room, have the same classification as the part of the building they are in. These kinds of rooms do not need to be ancillary or subordinate to the part of the building they are in, that is, the 10% criterion is not applicable.

There are specific provisions for these kinds of rooms. For example, Volume One Section C requires some of them to be fire separated from the remainder of the building (e.g. see C3D14 with regard to elements of the electricity supply system).

## A6G2            Class 1 buildings

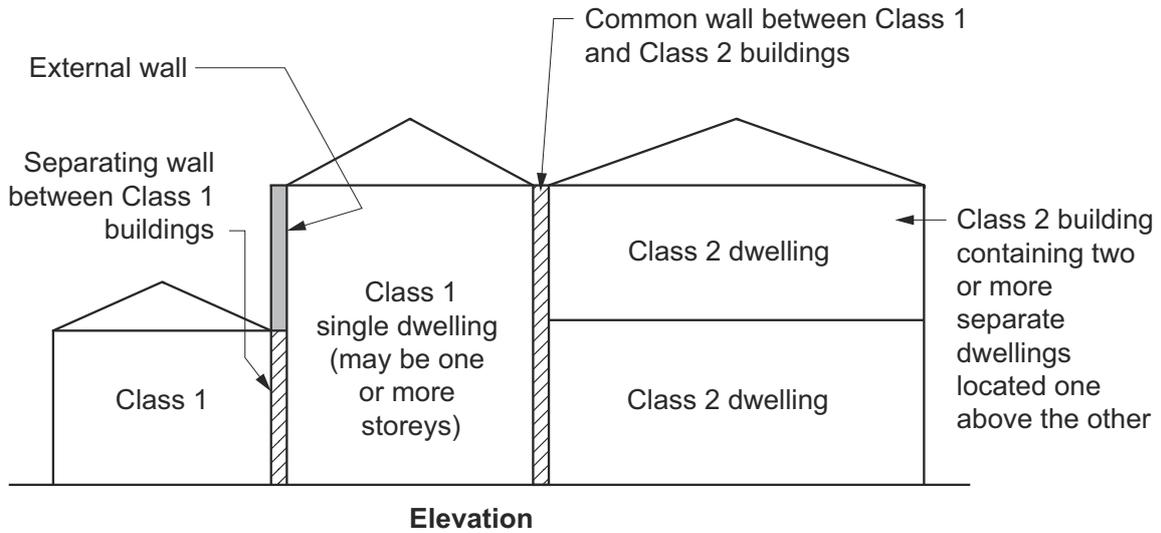
[2019: A6.1]

- (1) A Class 1 building is a dwelling.
- (2) Class 1 includes the following sub-classifications:
  - (a) Class 1a is one or more buildings, which together form a single dwelling including the following:
    - (i) A detached house.
    - (ii) One of a group of two or more attached dwellings, each being a building, separated by a *fire-resisting wall*, including a row house, terrace house, town house or villa unit.
  - (b) Class 1b is one or more buildings which together constitute—
    - (i) a boarding house, guest house, hostel or the like that—
      - (A) would ordinarily accommodate not more than 12 people; and
      - (B) have a total area of all floors not more than 300 m<sup>2</sup> (measured over the enclosing walls of the building or buildings); or

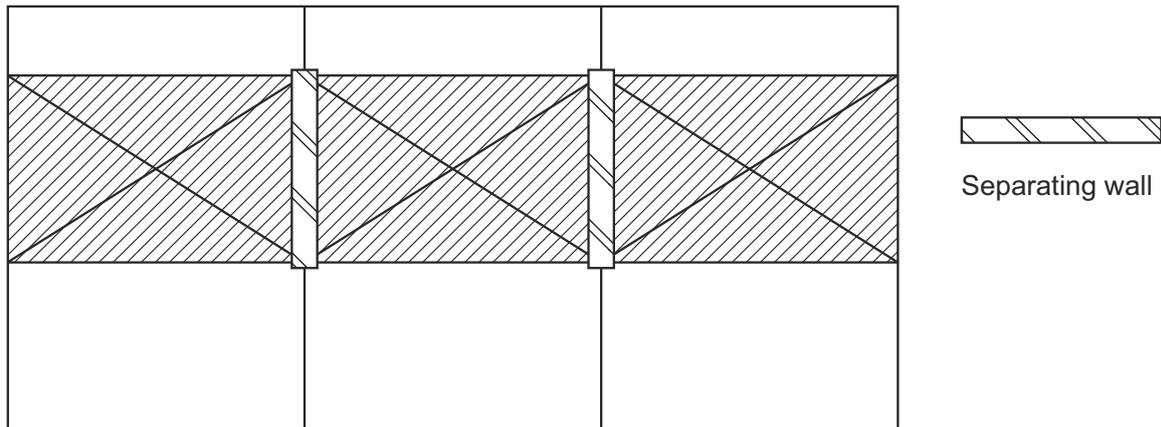
**Governing requirements**

(ii) four or more single dwellings located on one allotment and used for short-term holiday accommodation.

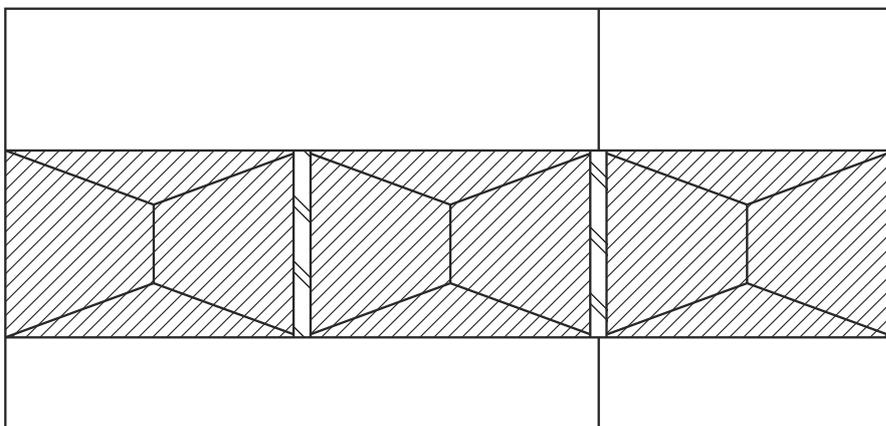
**Figure A6G2a: Identification of Class 1 buildings**



**Figure A6G2b: Typical Class 1 building configurations**



(a) 3 Class 1 buildings on 3 separate allotments

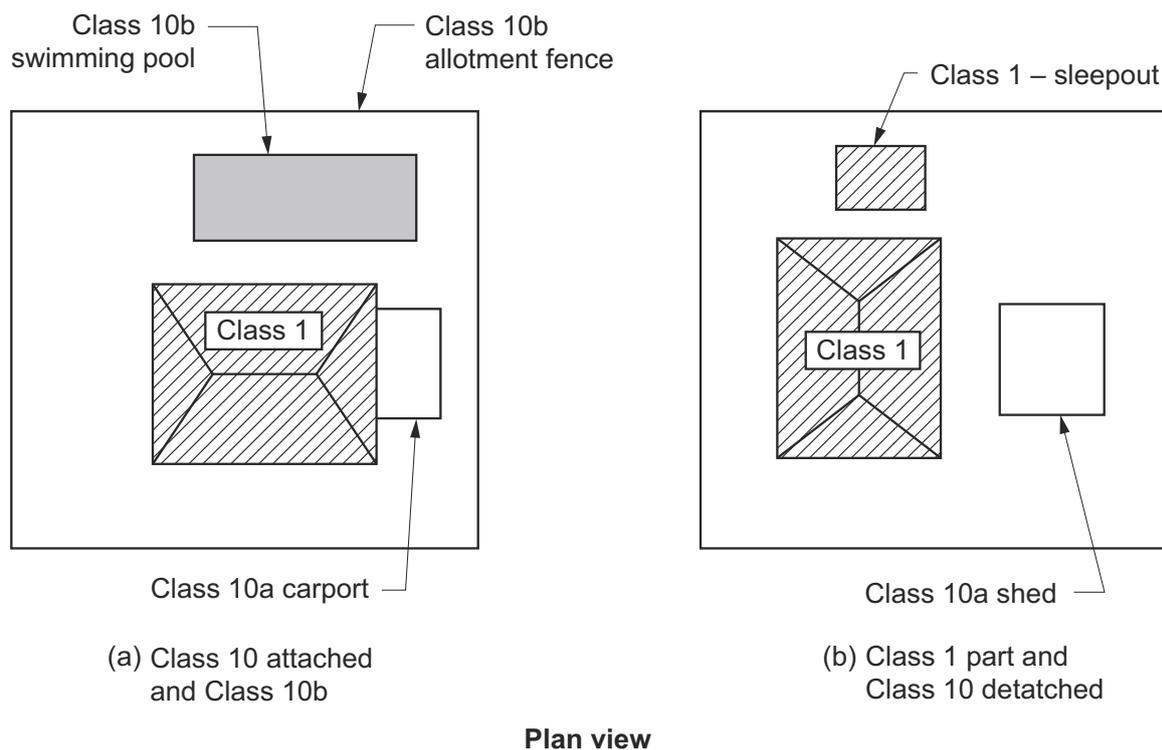


(b) 3 Class 1 buildings on 2 separate allotments

**Plan view**

## Governing requirements

**Figure A6G2c: Domestic allotment — classification of buildings and structures**



### Notes

Figures A6G2a, A6G2b and A6G2c illustrates requirements of this provision.

### Limitations

For A6G2, a Class 1 building cannot be located above or below another dwelling or another class of building, other than a *private garage*.

### Explanatory Information

Class 1 buildings are primarily covered in Volumes Two and Three of the NCC. Class 1 buildings are not located above or below another dwelling, or another class of building other than a *private garage*.

A *sole-occupancy unit* used for residential purposes located over another *sole-occupancy unit* used for residential purposes will always be a Class 2 or Class 3 building (depending on the circumstances). It cannot be a Class 1 building.

A single Class 1 dwelling can be made up of more than one building. For example, it may include what is ordinarily called a house, plus one or more habitable 'outbuildings' such as sleepouts. Note that a habitable building such as a sleepout cannot be classified as a Class 10 building.

The height or number of storeys of a Class 1 building makes no difference to its classification.

Class 1b buildings used for short-term holiday accommodation include cabins in caravan parks, tourist parks, farm stay, holiday resorts and similar tourist accommodation. This accommodation itself is typically rented out on a commercial basis for short periods and generally does not require the signing of a lease agreement. Short-term accommodation can also be provided in a boarding house, guest house, hostel, bed and breakfast accommodation or the like.

Unlike a Class 1b building described in A6G2(2)(a), a Class 1b building described in A6G2(2)(b) does not have any *floor area* limitation. Therefore, if 4 or more single dwellings are located on the one allotment and used for short-term holiday accommodation, each single dwelling would be classified as a Class 1b building regardless of the *floor area* of each dwelling or the combined *floor area* of all of the dwellings.

See also Volume One D4D2(3) which contains an explanation of what is considered to be "one allotment".

The Class 1b classification can attract concessions applicable to Class 3 buildings. These concessions allow people to rent out rooms in a house, or run a bed and breakfast, without having to comply with the more stringent Class 3 requirements. The reasoning is that the smaller size of the building and its lower number of occupants represents reduced fire risks.

## Governing requirements

Apart from their use, the primary difference between Class 1a and Class 1b buildings is that the latter is required to have a greater number of smoke alarms and in some circumstances, access and features for people with a disability.

### A6G3 Class 2 buildings

[2019: A6.2]

- (1) A Class 2 building is a building containing two or more *sole-occupancy units*.
- (2) Each *sole-occupancy unit* in a Class 2 building must be a separate dwelling.

#### Explanatory Information

A Class 2 building is one that includes more than one dwelling, each of which is generally solely occupied by one or more people to the exclusion of others.

Such buildings must not be otherwise classified as a Class 1 or Class 3 building or Class 4 part. See [Explanatory Figure A6G3a](#) for a typical configuration of Class 1 and Class 2 buildings.

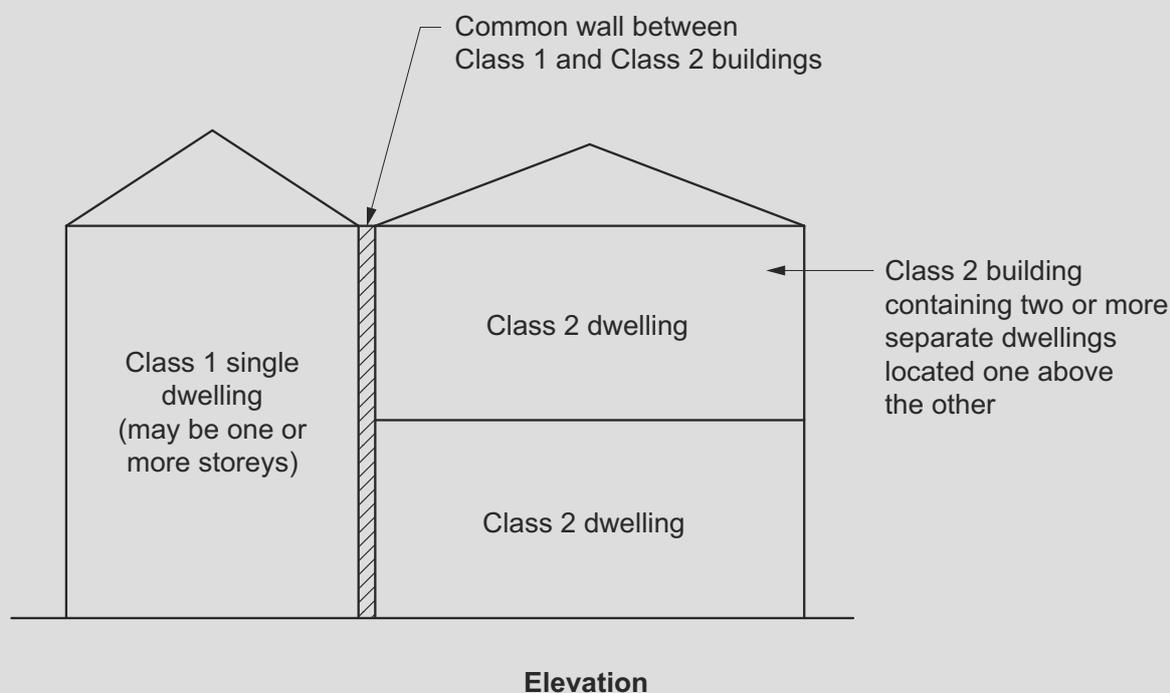
Where a sole-occupancy residential unit is located above another sole-occupancy residential unit, the building containing the units can be either a Class 2 or a Class 3 building, depending on the other circumstances of the building proposal.

Class 2 buildings can be single *storey* attached dwellings. Where there is any common space below such dwellings, they are Class 2 (and cannot be Class 1) irrespective of whether the space below is a *storey* or not (see [Explanatory Figure A6G3b](#)).

Class 2 buildings can be attached to buildings of another class. The attached Class 2 buildings need not be attached to one another, and need not be more than a single *storey*.

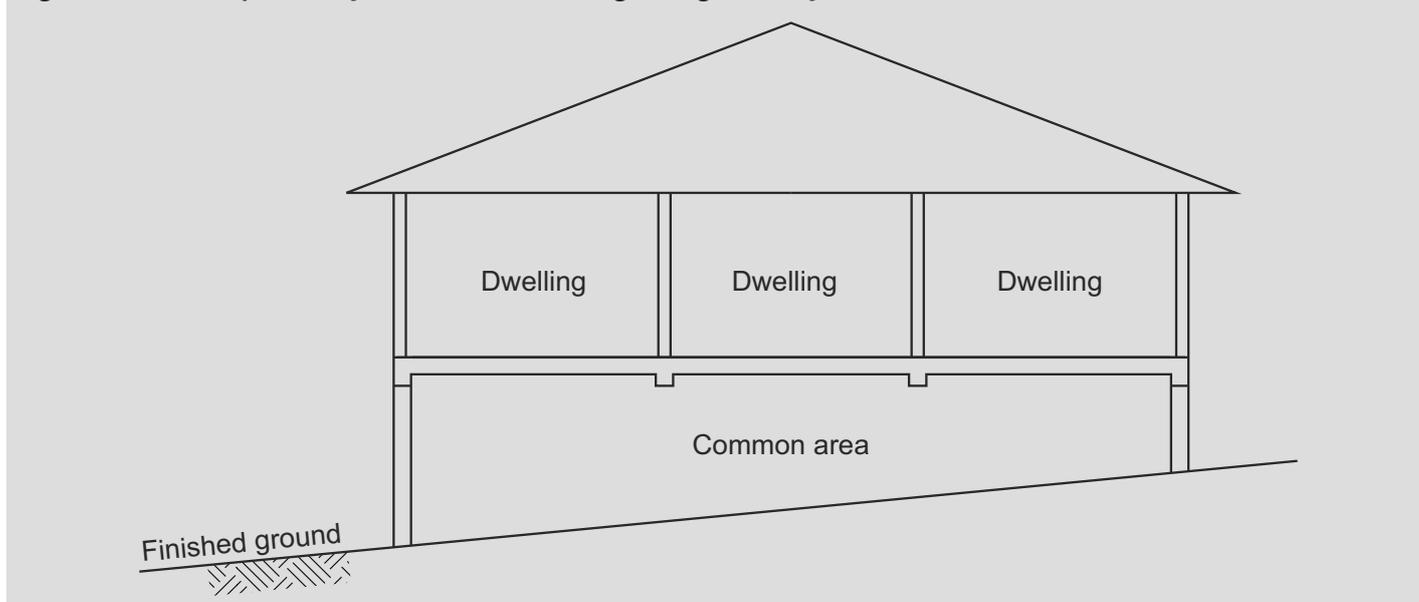
When two or more dwellings are attached to another class, they cannot be Class 4 parts, as any building can only contain one Class 4 dwelling.

**Figure A6G3a (explanatory): Section showing a typical configuration of Class 1 and Class 2 buildings (with non-combustible roof coverings)**



## Governing requirements

Figure A6G3b (explanatory): Elevation showing a single storey of Class 2 with a common area below



### A6G4 Class 3 buildings

[2019: A6.3]

- (1) A Class 3 building is a residential building providing long-term or transient accommodation for a number of unrelated persons.
- (2) Class 3 buildings include the following:
  - (a) A boarding house, guest house, hostel, lodging house or backpacker accommodation.
  - (b) A residential part of a hotel or motel.
  - (c) A residential part of a *school*.
  - (d) Accommodation for the aged, children, or people with disability.
  - (e) A residential part of a *health-care building* which accommodates members of staff.
  - (f) A residential part of a *detention centre*.
  - (g) A *residential care building*.

#### Limitations

For A6G4, a Class 3 building is not a Class 1 or 2 building but may be a mixture of Class 3 and another class.

#### Explanatory Information

Class 3 buildings provide accommodation for unrelated people. The length of stay is unimportant.

Some exceptions to this classification include: certain bed and breakfast accommodation, boarding houses, guest houses, hostels, or lodging houses and the like which fall within the concession provided for Class 1b buildings.

Also, any sized building can be classified as Class 1 or Class 2 if it is used to house any number of unrelated people who jointly own or rent it, or share it on a non-rental basis with an owner or tenant.

It is not unusual for a manager's, owner's or caretaker's dwelling attached to a Class 3 building to be thought of as a Class 4 part of the Class 3 building. However, a Class 4 part of a building can only be part of a Class 5-9 building.

Accordingly, such dwellings are either classified as Class 1, Class 2 or Class 3, depending on the circumstances of the building proposal. However, a building could be a mixture of Class 3 and another class.

Class 3 buildings include—

- the residential parts of hotels and motels; and
- hotel or motel caretakers', managers' or owners' flats, noting that under certain circumstances such dwellings could

## Governing requirements

be Class 1, Class 2 or Class 3 buildings; and

- dormitory accommodation, in schools or elsewhere, noting that a dormitory is generally (but not always) considered to be a *sole-occupancy unit*; and
- bed and breakfast accommodation, a boarding house, guest house, hostel, or lodging house; and
- backpackers' accommodation; and
- a building which houses elderly people or other people who require special care (in some States or Territories it is not acceptable for a Class 1b building to be used to house elderly people or other people who require special care - it is recommended the local building regulatory body be consulted); and
- workers' quarters, including shearers' or fruit pickers' accommodation, or hotel workers' accommodation.

### A6G5            Class 4 buildings

[2019: A6.4]

Class 4 is a dwelling in a Class 5, 6, 7, 8 or 9 building if it is the only dwelling in the building.

#### Explanatory Information

Class 4 classification applies to some types of accommodation located within a Class 5-9 building. The most common include a caretaker's flat within a building; and accommodation over or otherwise connected to a shop.

A Class 4 part cannot be located within a Class 1, Class 2 or Class 3 building. There can only be one Class 4 dwelling in a building. If there are two or more dwellings, they are Class 1, Class 2, or possibly Class 3. These Class 1, Class 2 or Class 3 parts need not be attached to one another, nor be more than a single *storey*.

Where a Class 4 part of a building is rented out for accommodation purposes, it retains its Class 4 classification. However, if any other part of the principal building is used for accommodation, for example, the attached shop is converted into an additional flat, both flats become classifiable as Class 2 or, depending on their use, possibly Class 3.

### A6G6            Class 5 buildings

[2019: A6.5]

A Class 5 building is an office building used for professional or commercial purposes.

#### Explanatory Information

Class 5 buildings include professional chambers or suites, lawyers' offices, government offices, advertising agencies and accountants' offices.

NSW A6G7

SA A6G7

### A6G7            Class 6 buildings

[2019: A6.6]

- (1) A Class 6 building is a shop or other building used for the sale of goods by retail or the supply of services direct to the public.
- (2) Class 6 buildings include the following:
  - (a) An eating room, cafe, restaurant, milk or soft-drink bar.
  - (b) A dining room, bar area that is not an *assembly building*, shop or kiosk part of a hotel or motel.
  - (c) A hairdresser's or barber's shop, public laundry, or undertaker's establishment.
  - (d) A supermarket or sale room, showroom, or *service station*.

## Governing requirements

### Explanatory Information

A Class 6 building is a building where goods or services are directly sold or supplied to the public. Examples of a Class 6 building may include—

- a place where food or drink may be purchased such as a café or restaurant; or
- a dining room, bar area that is not an *assembly building*, shop or kiosk part of a hotel or motel; or
- a hairdresser's or barber's shop, public laundry, veterinarian; or
- supermarket or sale room, florist, showroom, or *service station*.

*Service stations* are Class 6 buildings. These are outlets used for the servicing of cars and the selling of fuel or other goods. The expression '*service station*' is not intended to cover buildings where panel beating, auto electrical, muffler replacement, tyre replacement and the like are solely carried out. Such buildings should be classified as Class 6, Class 7 or Class 8 buildings as the *appropriate authority* sees fit.

## A6G8 Class 7 buildings

[2019: A6.7]

- (1) A Class 7 building is a storage-type building.
- (2) Class 7 includes the following sub-classifications:
  - (a) Class 7a — a *carpark*.
  - (b) Class 7b — a building that is used for storage, or display of goods or produce for sale by wholesale.

### Explanatory Information

There are three basic types of Class 7 building. The first is a *carpark* as defined in the NCC. The second is a building used for storage, often referred to as a 'warehouse'. The third is a building used for the display of goods or produce for sale by wholesale. 'Wholesale' means sale to people in the trades or in the business of 'on-selling' goods and services to another party (including the public).

## A6G9 Class 8 buildings

[2019: A6.8]

- (1) A Class 8 building is a process-type building.
- (2) Class 8 buildings include the following:
  - (a) A laboratory.
  - (b) A building in which the production, assembling, altering, repairing, packing, finishing, or cleaning of goods or produce for sale takes place.

### Explanatory Information

The most common way to describe a Class 8 building is as a 'factory'. However, this can give a simplistic impression of the types of building which can fall within this classification.

For example—

- some laboratories, despite their often small size, have been included as Class 8 buildings principally because of their high *fire hazard*; and
- buildings used for altering or repairing (except *service stations*, which are specifically included in A6G7 as Class 6 buildings); and
- potteries; and
- food manufacturers (but not restaurants, which are specifically included in A6G7 as Class 6 buildings); and
- buildings used for the packing or processing of produce, such as a farm or horticultural building.

## A6G10 Class 9 buildings

[2019: A6.9]

- (1) A Class 9 building is a building of a public nature.
- (2) Class 9 includes the following sub-classifications:
  - (a) Class 9a — a *health-care building* including any parts of the building set aside as laboratories, and includes a *health-care building* used as a *residential care building*.
  - (b) Class 9b — an *assembly building* including a trade workshop or laboratory in a primary or secondary *school*.
  - (c) Class 9c — a *residential care building*.

### Exemptions

A6G10(2)(b) excludes any parts of the building that are of another Class.

### Explanatory Information

Class 9a buildings are *health-care buildings*, including day-care surgeries or procedure units and the like. See definition of *health-care building*. Laboratories that are part of a Class 9a building are Class 9a, despite the general classification of laboratories as Class 8 buildings.

Class 9b buildings are *assembly buildings*.

These buildings can include—

- theatres, cinemas and halls, churches, schools, early childhood centres, kindergartens, preschools and child-minding centres; and
- indoor cricket, tennis, basketball centres and sport stadiums; and
- nightclubs, discotheques, bar areas providing live entertainment and/or containing a dance floor, public halls, dance halls and other places of entertainment; and
- snooker halls; and
- bus and railway stations.

Regarding the Exemption to A6G10(2)(b), a building could be a mixture of Class 9b and another class, or a Class 9b building could contain parts that are of another class, but be taken as a Class 9b building because of Exemption (1) to A6G1.

Class 9c buildings are *residential care buildings* that may contain residents who have various care level needs.

The Class 9c classification recognises that many residents progress through a continuum of care needs from low to high. Many older people enter residential care with low care needs (typically Class 3 facilities) but, as they age, require higher levels of care. In the past, such progression often necessitated the transfer of a hostel resident (Class 3) to a nursing home (Class 9a). This frequently had negative consequences for the health and well-being of the resident, for whom the hostel accommodation was home. It also led, at times, to the separation of couples with differing care needs.

Building designers should note that Class 3 buildings include hostels for the accommodation of the aged, and Class 9a buildings include nursing homes. It is important to be aware, however, that construction of Class 3 or 9a buildings may restrict the options available to the operators of a facility in relation to the profile of the residents they wish to accommodate. Where the potential exists for residents of varying care needs to be accommodated, consideration of the Class 9c provisions may be appropriate. The Class 9c classification allows for any mix of low and high care residents and is intended to allow the mix to change as the residents' care needs change over time, without the need to obtain any further consent or approval from the *appropriate authority*.

Multi-care level facilities are for residents who may require the full range of care services outlined by the Aged Care Act. Hence, it is not intended to restrict the resident type and provides maximum flexibility for service providers, residents and the community.

The NCC provisions for Class 9c buildings are based on minimal on duty on-site staff being available at any time. However, it is recognised that the staff numbers vary throughout the course of any one day, due to the care needs of the residents and the functioning of the facility. It is also recognised that the specific care needs of the residents may result in a greater minimum number of staff.

## A6G11 Class 10 buildings and structures

[2019: A6.10]

- (1) A Class 10 building is a non-habitable building or structure.
- (2) Class 10 includes the following sub-classifications:
  - (a) Class 10a is a non-habitable building including a *private garage*, carport, shed or the like.
  - (b) Class 10b is a structure that is a fence, mast, antenna, retaining wall or free-standing wall or *swimming pool* or the like.
  - (c) Class 10c is a *private bushfire shelter*.

### Explanatory Information

Class 10a buildings are non-habitable buildings. See [Explanatory Figure A6G11](#) for an indication of some Class 10 building configurations.

Class 10b structures are non-habitable structures. There is no requirement for Class 10 buildings to be appurtenant to a building of any other Class, for example, a small shed standing on its own on an allotment and a toilet block in a park.

A habitable 'outbuilding' which is appurtenant to another building is generally part of that building. Again, habitable 'outbuildings' cannot be classified as Class 10 buildings.

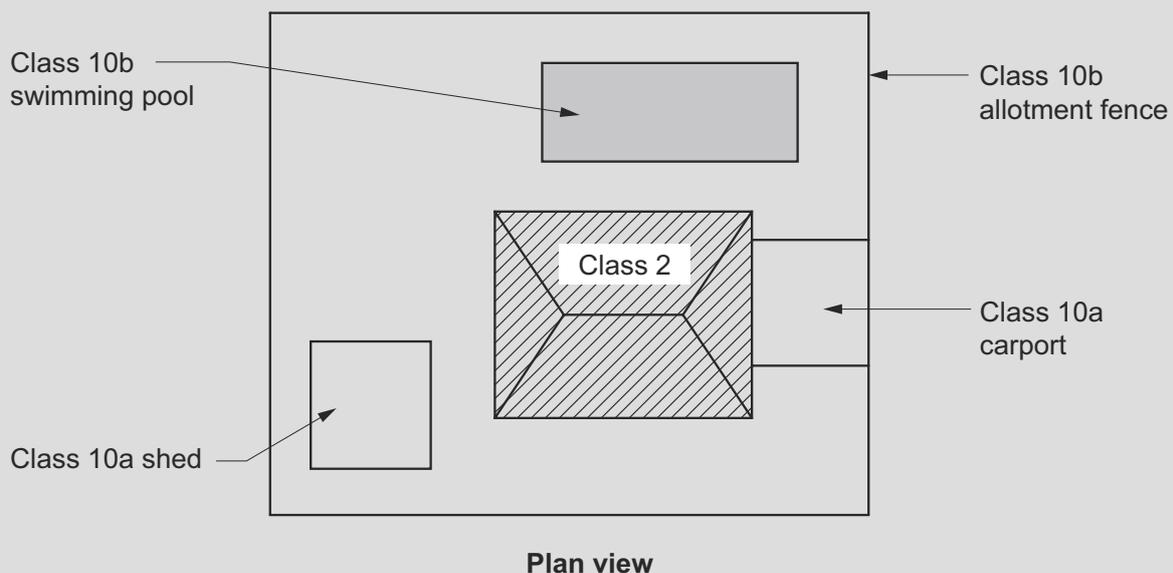
Typical outbuilding classifications include the following:

- A sleepout on the same allotment as a Class 1 building is part of the Class 1 building.
- A detached entertainment room on the same allotment as a Class 1 building, perhaps associated with a *swimming pool*, is part of the Class 1 building.
- A small toolshed, used for trade-related hobbies for non-commercial purposes or home repairs, on the same allotment as a Class 1 building, would be classified as a Class 10 building.

Provisions relating to Class 10c structures are only intended to address *private bushfire shelters* associated with a single Class 1a dwelling. These provisions are contained in Volume Two of the NCC.

Some States or Territories may exempt some Class 10 buildings or structures (often on the basis of height or size) from the need to have a building permit. Queries on this matter should be referred to the State or Territory body responsible for regulatory matters.

**Figure A6G11 (explanatory): Examples of Class 10 buildings and structures**



## A6G12 Multiple classifications

[2019: A6.11]

A building (or part of a building) may be designed, constructed or adapted for multiple purposes and have more than one classification.

### Applications

For A6G12, a building (or part of a building) must comply with all the relevant requirements that apply to each of the classifications for that building (or part of a building).

### Explanatory Information: Difficult classifications — Class 2 or Class 3?

There is a fine line between a Class 2 building containing apartments or flats and a Class 3 motel building with units containing bathroom, laundry and cooking facilities, which may both be made available for short term holiday rental. When does a Class 3 motel unit become a Class 2 holiday flat and vice versa?

In general, an assessment will be based on the most likely use of the building by *appropriate authorities*.

Class 3 buildings, where the occupants are generally unfamiliar with the building and have minimum control over the safety of the building, represent a higher risk level and therefore require higher safety levels. In a case where the classification is unclear, a decision should be made according to the perceived risks inherent in the use of the building.

### Explanatory Information: Difficult classifications — Class 6 or Class 7?

Class 7 buildings include those used to sell goods on the wholesale market, whereas Class 6 buildings are used to sell goods to the public.

Some establishments claim to sell goods to both the wholesale and retail markets. As a rule, however, if the general public has access to the building, it is considered a 'shop', and therefore a Class 6 building.

### Explanatory Information: Difficult classifications — Hotel bars: Class 6 or 9b?

As can be seen from the definition of a Class 6 building, it includes a hotel bar which is not an *assembly building*. The bar includes the bar area and associated standing and seating areas. This clarifies that the bar extends beyond the serving area to include standing and sitting areas where patrons may drink alcohol or other beverages and consume food. The exclusion of an *assembly building* means that a bar providing live entertainment or containing a dance floor is not considered to be Class 6; it must be considered as Class 9b. However, when that use is minor compared with the remainder of the bar, such as a piano bar or the like where patrons only listen to music and there is no dance floor, the *appropriate authority* should exercise judgement on the predominant use and therefore the appropriate classification of the bar.

A Class 9b building is an *assembly building* which is defined to include a building where people may assemble for entertainment, recreational or sporting purposes.

A building may have more than one classification (see A6G12).

### Explanatory Information: Buildings used for farming purposes

Buildings used for farming-type purposes are often very diverse in nature, occupancy, use and size. In some States or Territories, *appropriate authorities* may classify farm buildings as Class 10a, which covers non-habitable buildings. They would only make this decision if a classification of Class 7 or Class 8 would not be more appropriate.

When making their decision they consider the building's size, purpose, operations and the extent to which people are employed in the building. For example, it may be appropriate to classify a shed which is used to store a tractor as a Class 10a building.

The NCC has definitions of *farm building* and *farm shed* which are certain Class 7 and 8 buildings used for farming purposes. Concessions to specific *Deemed-to-Satisfy Provisions* apply to *farm buildings* and *farm sheds* in recognition of their often low risk features, and it is recommended that reference is made to the definitions of *farm building* and *farm shed* for further guidance which may assist determination of an appropriate NCC classification.

For example, if people are likely to be employed to stack materials/produce in a storage building or remove materials/produce from a storage building then a classification of Class 7b may be appropriate. Depending upon whether

## Governing requirements

the criteria in the definition of *farm shed* or *farm building* have been met, the associated *Deemed-to-Satisfy Provisions* in NCC Volume One Part I3 may apply.

Similarly if people are likely to be employed to pack or process materials/produce within a building, or employed to feed, clean or collect produce from animals or plants within a building then a classification of Class 8 may be appropriate. Depending upon whether the criteria in the definition of *farm shed* or *farm building* have been met, the associated *Deemed-to-Satisfy Provisions* in NCC Volume One Part I3 may apply.

However identification of low *fire load*, low occupant risk and low risk of fire spread should not be used as justification for choosing a less stringent building classification for a building under the *Deemed-to-Satisfy Provisions*. For example, if the intended use of a building is to grow or store a large amount of tomatoes, such as a large greenhouse, and there is likely to be only one to two persons in the building at any time, it is considered inappropriate to classify the building as a Class 10a under the *Deemed-to-Satisfy Provisions* and a classification of Class 7 or Class 8 would be more appropriate.

The *Deemed-to-Satisfy Provisions* for a Class 7 or Class 8 *farm building* or *farm shed* do not prevent the ability to consider or develop a *Performance Solution* for a particular building where the requirements may not be considered appropriate or are viewed as too stringent. Similarly if a Class 7 or 8 building used for farming purposes does not meet all the criteria to be considered a *farm building* or *farm shed* under the *Deemed-to-Satisfy Provisions*, this would not limit the ability to develop a *Performance Solution* which could contain features similar to those allowed under the *Deemed-to-Satisfy Provisions* for *farm buildings* or *farm sheds*.

For example, if a Class 8 commercial poultry building meets all the criteria to be considered a farm building under the *Deemed-to-Satisfy Provisions* other than the maximum *floor area* criteria, a *Performance Solution* could be developed to demonstrate that the concessions for a farm building under the *Deemed-to-Satisfy Provisions* are appropriate.

In regards to a *farm building* or *farm shed* where the purpose of the building is to park farm vehicles when not in use, as well as perhaps clean or polish the vehicle(s), it may be appropriate that this type of building is classified as a Class 7a.

However, a number of *farm buildings* and *farm sheds* are often not only used for the storage of farm vehicles, but to store supplies such as fuel, grain or hay. A Class 7a classification may still be appropriate where the majority of the shed's space is intended to be designated for the parking of vehicles. However, it may be more appropriate to classify some types of buildings as Class 7b, rather than Class 7a where a mixed use shed is intended.

Under A6G12 each part of a building (including the entire building) may have more than one classification. This means, for example, that it is permissible to classify part of a building as a Class 6/7 building, or a Class 5/6 building, or whatever is appropriate.

It is expected that this approach may be taken by a builder who is uncertain of what the precise use of a building will be after its sale, or to maximise the flexibility of the building's use.

Under the Application to A6G12, where a building has more than one classification the more stringent Class requirements will apply.

### Part A7 United buildings

#### Introduction to this Part

This Part explains how multiple buildings can be considered as a united building. Where adjacent buildings are joined through openings in walls, they need not meet additional requirements if they jointly comply with the NCC as a single building.

#### Governing Requirements

#### A7G1 United buildings

[2019: A7.0]

Buildings are deemed united when two or more buildings adjoining each other are connected and used as one building.

#### Applications

- (1) For A7G1, two or more buildings are a united building if they are connected through openings in the walls dividing them and together comply with all the requirements of the NCC as though they are a single building.
- (2) A7G1 only applies to Class 2 to 9 buildings.

#### A7G2 Alterations in a united building

[2019: A7.1]

If, after *alterations* or any other building work, two or more of the buildings in A7G1 cease to be connected through openings in the dividing walls, each of those buildings not now connected must comply with all the requirements for a single building.

#### Explanatory Information

It is not unusual for authorities to receive plans proposing the connecting of two or more buildings. Connecting buildings could be achieved by breaking openings through walls, or by joining the buildings by a tunnel, bridge or covered walkway.

When connected, if the buildings jointly comply with all the requirements of the NCC applying as if they were a single building, they become a united building.

United buildings are not *required* to comply with additional NCC provisions. For example, any new openings do not require any form of fire protection not *required* of a single building.

Note, however, an *external wall*, which as a result of an interconnection becomes an *internal wall*, must comply with the requirements for an *internal wall*.

Interconnected buildings that do not jointly comply with all the requirements applicable to a single building, remain as separate buildings.

This raises the possible need for fire doors, or other forms of protection to be fitted to connecting openings.

#### Explanatory Information: Multiple allotments or ownership

The NCC does not concern itself with actually prohibiting or permitting the uniting of buildings in separate ownership or on separate allotments. Such matters are dealt with by the relevant local bodies.

#### Explanatory Information: Example of connection by bridge

In this example, Building A is connected to Building B by bridge C. There are four different options for designing such a proposal.

The first is a united building:

## Governing requirements

A, B and C are considered as a single structure and comply with the NCC.

The second is three separate buildings:

A, B and C are a fire-source feature to each of the others, and are separated by fire walls with the openings protected at the points of connection. In this case, C may require independent support and separate egress to a road or open space, that is not through Buildings A or B. In this case, attention should also be paid to the length of the bridge, as regards distance of travel to an *exit*.

The third option is the bridge as a portion of Building A:

In this option, A and C are one building, meeting all requirements of the NCC as a single or united building. B is a separate building, with suitable fire separation, including fire-doors at the point of interconnection. Bridge C could be supported off Building A, but not off Building B.

The fourth option is having the bridge as a portion of Building B:

In this option, B and C are one building, meeting all requirements of the NCC as a single or united building. A is a separate building, with suitable fire separation, including fire doors at the point of interconnection. Bridge C could be supported off Building B, but not off Building A.

In some cases, C will link A and B across a public road, including laneways and the like. Special approvals may be required from various *appropriate authorities*. However, in such cases—

- if C is supported by means other than off A and B, such support will generally only be permitted if there is no obstruction of the public road; and
- care will need to be taken in calculating the distance of travel to an *exit* if travel is required to be over C and the road is wide; and
- fire-separation may be necessary at each end of the bridge.

If the last stipulation is the case, the following matters need consideration:

- The bridge would probably need to be of fire-rated construction because *combustible* construction could provide a ready path for the transfer of fire, and *non-combustible* construction could, in a major fire, distort and collapse onto the road.
- The designer needs to take care that the bridge does not negate the fire separation between the *storeys* of the building.

## Specification 1      Fire-resistance of building elements

### S1C1      Scope

[2019: Sch. 5: 1]

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

### S1C2      Rating

[2019: Sch. 5: 2]

A building element meets the requirements of this Specification if—

- (a) it is listed in, and complies with Tables S1C2a, S1C2b, S1C2c, S1C2d, S1C2e, S1C2f, S1C2g, S1C2h, S1C2i, S1C2j, S1C2k, S1C2l, S1C2m or S1C2n of this Specification as applicable; or
- (b) 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 without the assistance of an active fire suppression system is confirmed in a report from an *Accredited Testing Laboratory* which—
  - (i) describes the method and conditions of the test and the form of construction of the tested prototype in full; and
  - (ii) certifies that the application of restraint to the prototype complied with the *Standard Fire Test*; or
- (c) 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 an *Accredited Testing Laboratory* which—
  - (i) certifies that the building element is capable of achieving the FRL despite the minor departures from the tested prototype; and
  - (ii) describes the materials, construction and conditions of restraint which are necessary to achieve the FRL; or
- (d) it is designed to achieve the FRL in accordance with—
  - (i) AS/NZS 2327, AS 4100 and AS/NZS 4600 if it is a steel or composite structure; or
  - (ii) AS 3600 if it is a concrete structure; or
  - (iii) AS 1720.4 if it is a timber element other than *fire-protected timber*; or
  - (iv) AS 3700 if it is a masonry structure; or
- (e) 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 S1C3; or
- (f) for *fire-protected timber*, it complies with Specification 10 where applicable.

**Table S1C2a:      FRLs deemed to be achieved by walls — masonry**

Masonry type	Minimum thickness (mm) of principal material for FRLs				
	60/60/60	90/90/90	120/120/120	180/180/180	240/240/240
Ashlar	-	-	-	-	300
Calcium silicate	See clause S1C2(d)(iv)				
Concrete					
Fired clay					

**Table Notes**

For the purposes of this table, each element must meet the requirements of [Specification 2](#).

## Governing requirements

**Table S1C2b: FRLs deemed to be achieved by walls — concrete**

Concrete type	Minimum thickness (mm) of principal material for FRLs				
	60/60/60	90/90/90	120/120/120	180/180/180	240/240/240
No fines	-	-	-	150	300
Prestressed	See clause S1C2(d)(iv)				
Reinforced					
Plain	-	-	-	150	170

**Table Notes**

For the purposes of this table, each element must meet the requirements of [Specification 2](#).

**Table S1C2c: FRLs deemed to be achieved by walls — gypsum**

Gypsum type	Minimum thickness (mm) of principal material for FRLs				
	60/60/60	90/90/90	120/120/120	180/180/180	240/240/240
Solid gypsum blocks	75	90	100	110	125
Gypsum — perlite or gypsum vermiculite-plaster on metal lath and channel (non-loadbearing walls only)	50	50	65	-	-

**Table Notes**

For the purposes of this table, each element must meet the requirements of [Specification 2](#).

**Table S1C2d: FRLs deemed to be achieved by concrete columns**

Column type	Minimum thickness (mm) of principal material for FRLs				
	60/60/60	90/90/90	120/120/120	180/180/180	240/240/240
Prestressed	See clause S1C2(d)(ii)				
Reinforced					

**Table S1C2e: FRLs deemed to be achieved by hot-rolled steel columns (including a fabricated column) exposed on not more than 3 sides**

Fire protection	Minimum thickness (mm) of principal material for FRLs				
	60/60/60	90/90/90	120/120/120	180/180/180	240/240/240
Concrete cast in-situ — <i>loadbearing</i>	25	30	40	55	75
Concrete cast in-situ — <i>non-loadbearing</i> unplastered	25	30	40	50	75
Concrete cast in-situ — <i>non-loadbearing</i> plastered 13 mm	25	25	30	40	50
Gypsum cast in-situ	-	-	-	-	50
Gypsum — perlite or gypsum-vermiculite plaster—sprayed to contour	20	25	35	50	55

## Governing requirements

Fire protection	Minimum thickness (mm) of principal material for FRLs				
	60/60/60	90/90/90	120/120/120	180/180/180	240/240/240
Gypsum — perlite or gypsum-vermiculite plaster—sprayed on metal lath	20	20	25	35	45

### Table Notes

For the purposes of this table, each element must meet the requirements of [Specification 2](#).

**Table S1C2f: FRLs deemed to be achieved by hot-rolled steel columns (including a fabricated column) exposed on no more than 3 sides and with column spaces filled**

Fire protection	Minimum thickness (mm) of principal material for FRLs				
	60/60/60	90/90/90	120/120/120	180/180/180	240/240/240
Solid calcium-silicate masonry	50	50	50	50	65
Solid clay masonry	50	50	50	65	90
Solid concrete masonry	50	50	50	65	90
Solid gypsum blocks	50	50	50	50	65
Hollow terracotta blocks — plastered 13 mm	50	50	50	65	90

### Table Notes

For the purposes of this table, each element must meet the requirements of [Specification 2](#).

**Table S1C2g: FRLs deemed to be achieved by hot-rolled steel columns (including a fabricated column) exposed on no more than 3 sides and with column spaces unfilled**

Fire protection	Minimum thickness (mm) of principal material for FRLs				
	60/60/60	90/90/90	120/120/120	180/180/180	240/240/240
Solid calcium-silicate masonry	50	50	50	-	-
Solid clay masonry	50	50	65	-	-
Solid concrete masonry	50	50	65	-	-
Solid gypsum blocks	50	50	50	-	-
Hollow terracotta blocks — plastered 13 mm	50	50	65	-	-

### Table Notes

For the purposes of this table, each element must meet the requirements of [Specification 2](#).

**Table S1C2h: FRLs deemed to be achieved by hot-rolled steel columns (including a fabricated column) exposed on no more than 4 sides**

Fire protection	Minimum thickness (mm) of principal material for FRLs				
	60/—/—	90/—/—	120/—/—	180/—/—	240/—/—
Concrete cast in-situ — <i>loadbearing</i>	25	40	45	65	90
Concrete cast in-situ — non- <i>loadbearing</i> unplastered	35	30	40	50	65
Concrete cast in-situ — non- <i>loadbearing</i> plastered 13 mm	25	25	30	40	50
Gypsum cast in-situ	-	-	-	-	50

## Governing requirements

Fire protection	Minimum thickness (mm) of principal material for FRLs				
	60/–/–	90/–/–	120/–/–	180/–/–	240/–/–
Gypsum — perlite or gypsum-vermiculite plaster — sprayed to contour	25	30	40	55	65
Gypsum — perlite or gypsum-vermiculite plaster — sprayed on metal lath	20	20	30	40	50

### Table Notes

For the purposes of this table, each element must meet the requirements of [Specification 2](#).

**Table S1C2i: FRLs deemed to be achieved by hot-rolled steel columns (including a fabricated column) exposed on no more than 4 sides and with column spaces filled**

Fire protection	Minimum thickness (mm) of principal material for FRLs				
	60/–/–	90/–/–	120/–/–	180/–/–	240/–/–
Solid calcium-silicate masonry	50	50	50	65	75
Solid clay masonry	50	50	50	75	100
Solid concrete masonry	50	50	50	75	100
Solid gypsum blocks	50	50	50	65	75
Hollow terracotta blocks — plastered 13 mm	50	50	50	75	100

### Table Notes

For the purposes of this table, each element must meet the requirements of [Specification 2](#).

**Table S1C2j: FRLs deemed to be achieved by hot-rolled steel columns (including a fabricated column) exposed on no more than 4 sides and with column spaces unfilled**

Fire protection	Minimum thickness (mm) of principal material for FRLs				
	60/–/–	90/–/–	120/–/–	180/–/–	240/–/–
Solid calcium-silicate masonry	50	50	50	-	-
Solid clay masonry	50	50	65	-	-
Solid concrete masonry	50	50	65	-	-
Solid gypsum blocks	50	50	50	-	-
Hollow terracotta blocks — plastered 13 mm	50	50	65	-	-

### Table Notes

For the purposes of this table, each element must meet the requirements of [Specification 2](#).

**Table S1C2k: FRLs deemed to be achieved by concrete beams**

Concrete type	Minimum thickness (mm) of principal material for FRLs				
	60/–/–	90/–/–	120/–/–	180/–/–	240/–/–
Prestressed	See clause <a href="#">S1C2(d)(ii)</a>				
Reinforced					

**Table S1C2l: FRLs deemed to be achieved by hot-rolled steel beams (including an open-web joist, girder, truss, etc.) exposed on no more than 3 sides**

Fire protection	Minimum thickness (mm) of principal material for FRLs				
	60/–/–	90/–/–	120/–/–	180/–/–	240/–/–
Concrete — cast in-situ	25	30	40	50	65

## Governing requirements

Fire protection	Minimum thickness (mm) of principal material for FRLs				
	60/-/-	90/-/-	120/-/-	180/-/-	240/-/-
Gypsum — perlite or gypsum-vermiculite plaster — sprayed to contour	20	25	35	50	55
Gypsum — perlite or gypsum-vermiculite plaster — sprayed on metal lath	20	20	25	35	45

### Table Notes

For the purposes of this table, each element must meet the requirements of [Specification 2](#).

**Table S1C2m: FRLs deemed to be achieved by hot-rolled steel beams (including an open-web joist, girder, truss, etc.) exposed on 4 sides**

Fire protection	Minimum thickness (mm) of principal material for FRLs				
	60/-/-	90/-/-	120/-/-	180/-/-	240/-/-
Concrete — cast in-situ	25	40	45	60	90
Gypsum — perlite or gypsum-vermiculite plaster — sprayed to contour	20	30	40	55	65
Gypsum — perlite or gypsum-vermiculite plaster — sprayed on metal lath	20	20	35	40	50

### Table Notes

For the purposes of this table, each element must meet the requirements of [Specification 2](#).

**Table S1C2n: FRLs deemed to be achieved by floor, roof or ceiling**

Floor, roof or ceiling type	Minimum thickness (mm) of principal material for FRLs				
	60/60/60	90/90/90	120/120/120	180/180/180	240/240/240
Prestressed	See clause <a href="#">S1C2(d)(ii)</a>				
Reinforced					

## S1C3 FRLs determined by calculation

[2019: Sch. 5: 3]

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

- (a) the building element may vary from the prototype in relation to—
  - (i) length and height if it is a wall; and
  - (ii) height if it is a column; and
  - (iii) span if it is a floor, roof or beam; and
  - (iv) conditions of support; and
  - (v) to a minor degree, cross-section and components; and
- (b) 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) *structural adequacy* (including deflection); and
  - (ii) *integrity*; and
  - (iii) *insulation*; and
- (c) the calculations must take into account—
  - (i) the temperature reached by the components of the prototype and their effects on strength and modulus of elasticity; and

## Governing requirements

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- (ii) 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) 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) 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) the design load of the building element in comparison with the tested prototype.

### S1C4 Interchangeable materials

[2019: Sch. 5: 4]

- (1) Concrete and plaster — An FRL achieved with any material of Group A, B, C, D or E as an ingredient in concrete or plaster, applies equally when any other material of the same group is used in the same proportions:
  - (a) Group A: any portland cement.
  - (b) Group B: any lime.
  - (c) Group C: any dense sand.
  - (d) Group D: any dense calcareous aggregate, including any limestone or any calcareous gravel.
  - (e) Group E: any dense siliceous aggregate, including any basalt, diorite, dolerite, granite, granodiorite or trachyte.
- (2) Perlite and vermiculite — An FRL achieved with either gypsum-perlite plaster or gypsum-vermiculite plaster applies equally for each plaster.

### S1C5 Columns covered with lightweight construction

[2019: Sch. 5: 5]

If the *fire-resisting* covering of a steel column is *lightweight construction*, the construction must comply with Volume One C2D9 and C4D17.

### S1C6 Non-loadbearing elements

[2019: Sch. 5: 6]

If a non-*loadbearing* element is able to be used for a purpose where the *Deemed-to-Satisfy Provisions* prescribe an FRL for *structural adequacy*, *integrity* and *insulation*, that non-*loadbearing* element need not comply with the *structural adequacy* criteria.

**Specification 2**      **Descriptions of elements referred to in Specification 1**

**S2C1**      **Scope**

[New for 2022]

This Specification sets out the descriptions of elements referred to in Tables S1C2a, S1C2b, S1C2c, S1C2e, S1C2f, S1C2g, S1C2h, S1C2i, S1C2j, S1C2l and S1C2m of Specification 1.

**S2C2**      **Mortar for masonry**

[2019: Sch. 5 (Annex): 1.1]

Masonry units of ashlar, calcium silicate, concrete or fired clay (including terracotta blocks) must be laid in cement mortar or composition mortar complying with the relevant provisions of AS 3700.

**S2C3**      **Gypsum blocks**

[2019: Sch. 5 (Annex): 1.2]

Gypsum blocks must be laid in gypsum-sand mortar or lime mortar.

**S2C4**      **Gypsum-sand mortar and plaster**

[2019: Sch. 5 (Annex): 1.3]

Gypsum-sand mortar and gypsum-sand plaster must consist of either—

- (a) not more than 3 parts by volume of sand to 1 part by volume of gypsum; or
- (b) if lime putty is added, not more than 2.5 parts by volume of sand to 1 part by volume of gypsum and not more than 5% of lime putty by volume of the mixed ingredients.

**S2C5**      **Gypsum-perlite and gypsum-vermiculite plaster**

[2019: Sch. 5 (Annex): 1.4]

Gypsum-perlite or gypsum-vermiculite plaster must be applied—

- (a) in either one or 2 coats each in the proportions of 1 m<sup>3</sup> of perlite or vermiculite to 640 kg of gypsum if the *required* thickness of the plaster is not more than 25 mm; and
- (b) in 2 coats if the *required* thickness is more than 25 mm, the first in the proportions of 1 m<sup>3</sup> of perlite or vermiculite to 800 kg of gypsum and the second in the proportions of 1 m<sup>3</sup> of perlite or vermiculite to 530 kg of gypsum.

**S2C6**      **Plaster of cement and sand or cement, lime and sand**

[2019: Sch. 5 (Annex): 1.5]

Plaster prescribed in Tables S1C2c, S1C2e, S1C2f, S1C2g, S1C2h, S1C2i, S1C2j, S1C2l and S1C2m—

- (a) must consist of cement and sand or cement, lime and sand; and
- (b) may be finished with gypsum, gypsum-sand, gypsum-perlite or gypsum-vermiculite plaster or with lime putty.

**S2C7**      **Plaster reinforcement**

[2019: Sch. 5 (Annex): 1.6]

If plaster used as fire protection on walls is more than 19 mm thick—

## Governing requirements

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- (a) it must be reinforced with expanded metal lath that—
  - (i) has a mass per unit area of not less than 1.84 kg/m<sup>2</sup>; and
  - (ii) has not fewer than 98 meshes per metre; and
  - (iii) is protected against corrosion by galvanising or other suitable method; or
- (b) it must be reinforced with 13 mm x 13 mm x 0.7 mm galvanised steel wire mesh securely fixed at a distance from the face of the wall of not less than  $\frac{1}{3}$  of the total thickness of the plaster.

### S2C8 Ashlar stone masonry

[2019: Sch. 5 (Annex): 2]

Ashlar masonry must not be used in a part of the building containing more than 2 *storeys*, and must not be of—

- (a) aplite, granite, granodiorite, quartz dacite, quartz diorite, quartz porphyrite or quartz porphyry; or
- (b) conglomerate, quartzite or sandstone; or
- (c) chert or flint; or
- (d) limestone or marble.

### S2C9 Dimensions of masonry

[2019: Sch. 5 (Annex): 3]

The thicknesses of masonry of calcium-silicate, concrete and fired clay are calculated as set out in S2C10 to S2C12.

### S2C10 Solid units

[2019: Sch. 5 (Annex): 3.1]

For masonry in which the amount of perforation or coring of the units does not exceed 25% by volume (based on the overall rectangular shape of the unit) the thickness of the wall must be calculated from the manufacturing dimensions of the units and the specified thickness of the joints between them as appropriate.

### S2C11 Hollow units

[2019: Sch. 5 (Annex): 3.2]

For masonry in which the amount of perforation or coring of the units exceeds 25% by volume (based on the overall rectangular shape of the unit) the thickness of the wall must be calculated from the equivalent thicknesses of the units and the specified thickness of the joints between them as appropriate.

### S2C12 Equivalent thickness

[2019: Sch. 5 (Annex): 3.3]

The equivalent thickness of a masonry unit is calculated by dividing the net volume by the area of one vertical face.

### S2C13 Height-to-thickness ratio of certain walls

[2019: Sch. 5 (Annex): 5]

The ratio of height between lateral supports to overall thickness of a wall of ashlar, no-fines concrete, unreinforced concrete, solid gypsum blocks, gypsum-perlite or gypsum-vermiculite plaster on metal lath and channel, must not exceed—

- (a) 20 for a *loadbearing* wall; or
- (b) 27 for a non-*loadbearing* wall.

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### S2C14 Increase in thickness by plastering — walls

[2019: Sch. 5 (Annex): 6.1]

If a wall of ashlar, solid gypsum blocks or concrete is plastered on both sides to an equal thickness, the thickness of the wall for the purposes of Tables S1C2b and S1C2c (but not for the purposes of S2C5) may be increased by the thickness of the plaster on one side.

### S2C15 Increase in thickness by plastering — columns

[2019: Sch. 5 (Annex): 6.2]

- (1) Where Tables S1C2e, S1C2f, S1C2g, S1C2h, S1C2i and S1C2j indicate that column-protection is to be plastered, the tabulated thicknesses are those of the principal material.
- (2) The thicknesses referred to in (1) do not include the thickness of plaster, which must be additional to the listed thickness of the material to which it is applied.

### S2C16 Gypsum-perlite or gypsum-vermiculite plaster or metal lath — walls

[2019: Sch. 5 (Annex): 7.1]

In walls fabricated of gypsum-perlite or gypsum-vermiculite plaster on metal lath and channel—

- (a) the lath must be securely wired to each side of 19 mm x 0.44 kg/m steel channels (used as studs) spaced at not more than 400 mm centres; and
- (b) the gypsum-perlite or gypsum-vermiculite plaster must be applied symmetrically to each exposed side of the lath.

### S2C17 Gypsum-perlite or gypsum-vermiculite plaster or metal lath — columns

[2019: Sch. 5 (Annex): 7.2]

- (1) For the fire protection of steel columns with gypsum-perlite or gypsum-vermiculite on metal lath—
  - (a) the lath must be fixed at not more than 600 mm centres vertically to steel furring channels, and—
    - (i) if the plaster is to be 35 mm thick or more — at least 12 mm clear of the column; or
    - (ii) if the plaster is to be less than 35 mm thick — at least 6 mm clear of the column;
  - (b) the plaster may be applied to self-furring lath with furring dimples to hold it not less than 10 mm clear of the column.
- (2) For the purposes of (1), the thickness of the plaster must be measured from the back of the lath.

### S2C18 Gypsum-perlite or gypsum-vermiculite plaster or metal lath — beams

[2019: Sch. 5 (Annex): 7.3]

For the fire protection of steel beams with gypsum-perlite or gypsum-vermiculite on metal lath—

- (a) the lath must be fixed at not more than 600 mm centres to steel furring channels and at least 20 mm clear of the steel; and
- (b) the thickness of the plaster must be measured from the back of the lath.

### S2C19 Exposure of columns

[2019: Sch. 5 (Annex): 8.1]

A column incorporated in or in contact on one or more sides with a wall of solid masonry or concrete at least 100 mm thick may be considered to be exposed to fire on no more than 3 sides.

**S2C20 Exposure of beams**

[2019: Sch. 5 (Annex): 8.2]

A beam, open-web joist, girder or truss in direct and continuous contact with a concrete slab or a hollow block floor or roof may be considered to be exposed to fire on no more than 3 sides.

**S2C21 Filling of column spaces**

[2019: Sch. 5 (Annex): 9]

- (1) The spaces between the fire-protective material and the steel (and any re-entrant parts of the column itself) must be filled solid with a fire-protective material like concrete, gypsum or grout.
- (2) The insides of hollow sections, including pipes, need not be filled.

**S2C22 Hollow terracotta blocks**

[2019: Sch. 5 (Annex): 10]

The proportion of cored holes or perforations in a hollow terracotta block (based on the overall rectangular volume of the unit) must not exceed the following:

- (a) For blocks up to 75 mm thick — 35%.
- (b) For blocks more than 75 mm but not more than 100 mm thick — 40%.
- (c) For blocks more than 100 mm — 50%.

**S2C23 Reinforcing for column and beam protection — masonry**

[2019: Sch. 5 (Annex): 11.1]

Masonry of calcium-silicate, fired clay and concrete for the protection of steel columns must have steel-wire or mesh reinforcement in every second course and lapped at the corners.

**S2C24 Reinforcing for column and beam protection — gypsum blocks and hollow terracotta blocks**

[2019: Sch. 5 (Annex): 11.2]

Gypsum blocks and hollow terracotta blocks for the protection of steel columns must have steel-wire or mesh reinforcement in every course and lapped at corners.

**S2C25 Reinforcing for column and beam protection — structural concrete and poured gypsum**

[2019: Sch. 5 (Annex): 11.3]

If a steel column or a steel beam is to be protected with structural concrete or poured gypsum, the concrete or gypsum must be reinforced with steel-wire mesh or steel-wire binding placed about 20 mm from its outer surface, and—

- (a) for concrete or gypsum less than 50 mm thick, the steel wire must be—
  - (i) at least 3.15 mm in diameter; and
  - (ii) spaced at not more than 100 mm vertically; or
- (b) for concrete or gypsum not less than 50 mm thick, the steel wire must be either—
  - (i) of a diameter and spacing in accordance with (a); or
  - (ii) at least 5 mm in diameter and spaced at not more than 150 mm vertically.

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### S2C26 Reinforcing for column and beam protection — gypsum-perlite or gypsum-vermiculite plaster sprayed to contour

[2019: Sch. 5 (Annex): 11.4]

- (1) If a steel column or steel beam is protected with either gypsum-perlite or gypsum-vermiculite plaster sprayed to contour and the construction falls within the limits of Table S2C26a or S2C26b, the plaster must be reinforced with—
  - (a) expanded metal lath complying with S2C7; or
  - (b) galvanised steel wire mesh complying with S2C7.
- (2) The reinforcement must be placed at a distance from the face of the plaster of at least 1/3 of the thickness of the plaster and must be securely fixed to the column or beam at intervals of not more than the relevant listing in Tables S2C26a and S2C26b.
- (3) For the purposes of Tables S2C26a and S2C26b—
  - (a) “vertical” includes a surface at not more than 10° to the vertical; and
  - (b) “horizontal” includes a surface at not more than 10° to the horizontal; and
  - (c) “underside” means the underside of any horizontal or non-vertical surface.

**Table S2C26a: Reinforcement of gypsum-perlite or gypsum-vermiculite plaster sprayed to contour — vertical members with H or I cross-section**

Surface to be protected	Reinforcement required if smaller dimension of surface exceeds (mm)	Max spacing of fixings of the mesh to surface (mm)
Vertical	450	450
Non-vertical	300	300
Underside	300	300
Upper side of a horizontal surface	Not required	N/A

**Table S2C26b: Reinforcement of gypsum-perlite or gypsum-vermiculite plaster sprayed to contour — vertical members with other shapes**

Surface to be protected	Reinforcement required if smaller dimensions of surface exceeds (mm)	Max spacing of fixings of the mesh to surface (mm)
Vertical	Any size	450
Non-vertical	Any size	300
Underside	Any size	300
Upper side of a horizontal surface	Not required	N/A

### S2C27 Measurement of thickness of column and beam protection

[2019: Sch. 5 (Annex): 12.1]

The thickness of the fire protection to steel columns and steel beams (other than fire protection of gypsum-perlite or gypsum-vermiculite plaster sprayed on metal lath or sprayed to contour) is to be measured from the face or edge of the steel, from the face of a splice plate or from the outer part of a rivet or bolt, whichever is the closest to the outside of the fire-protective construction, except that—

- (a) if the thickness of the fire protection is 40 mm or more, rivet heads may be disregarded; and
- (b) if the thickness of the fire protection is 50 mm or more—
  - (i) any part of a bolt (other than a high-tensile bolt) may be disregarded; and
  - (ii) a column splice plate within 900 mm of the floor may encroach upon the fire protection by up to a ¼ of the thickness of the fire protection; and
- (c) the flange of a column or beam may encroach by up to 12 mm upon the thickness of the fire protection at right

## Governing requirements

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angles to the web if—

- (i) the column or beam is intended to have an FRL of 240/240/240 or 240/-/-; and
- (ii) the flange projects 65 mm or more from the web; and
- (iii) the thickness of the edge of the flange (inclusive of any splice plate) is not more than 40 mm.

## Specification 3 Fire hazard properties

### S3C1 Scope

[2019: Sch. 6: 1]

This Specification sets out the procedures for determining the *fire hazard properties* of assemblies tested to AS/NZS 1530.3.

#### Assemblies

### S3C2 General requirement

[2019: Sch. 6: 2.1]

The *fire hazard properties* of assemblies and their ability to screen their core materials as *required* under Specification 7 must be determined by testing in accordance with S3C3 to S3C6.

### S3C3 Form of test

[2019: Sch. 6: 2.2]

Tests must be carried out in accordance with—

- (a) for the determination of the *Spread-of-Flame Index* and *Smoke-Developed Index* — AS/NZS 1530.3; and
- (b) for the determination of the ability to prevent ignition and to screen its core material from free air — AS 1530.4.

### S3C4 Test specimens

[2019: Sch. 6: 2.3]

Test specimens must incorporate—

- (a) all types of joints; and
- (b) all types of perforations, recesses or the like for pipes, light switches or other fittings, which are proposed to be used for the member or assembly of members in the building.

### S3C5 Concession

[2019: Sch. 6: 2.4]

S3C4 does not apply to joints, perforations, recesses or the like that are larger than those in the proposed application and have already been tested in the particular form of construction concerned and found to comply with the conditions of the test.

### S3C6 Smaller specimen permitted

[2019: Sch. 6: 2.5]

A testing laboratory may carry out the test specified in S3C3(b) at pilot scale if a specimen (which must be not less than 900 mm x 900 mm) will adequately represent the proposed construction in the building, but the results of that test do not apply to construction larger than limits defined by the laboratory conducting the pilot examination.

**Section H Class 1 and 10 buildings**

**Part H1**

**Structure**

**Objectives**

H1O1 Objective

**Functional Statements**

H1F1 Functional Statements

**Performance Requirements**

H1P1 Structural reliability and resistance

H1P2 Buildings in flood areas

**Verification Methods**

H1V1 Structural reliability

H1V2 Structural robustness

**Deemed-to-Satisfy Provisions**

H1D1 Deemed-to-Satisfy Provisions

H1D2 Structural provisions

H1D3 Site preparation

H1D4 Footings and slabs

H1D5 Masonry

H1D6 Framing

H1D7 Roof and wall cladding

H1D8 Glazing

H1D9 Earthquake areas

H1D10 Flood hazard areas

H1D11 Attachment of framed decks and balconies to external walls of buildings using a waling plate

H1D12 Piled footings

**Part H2**

**Damp and weatherproofing**

**Objectives**

H2O1 Objective

**Functional Statements**

H2F1 Surface water

H2F2 Weatherproofing and dampness

H2F3 Drainage from swimming pools

**Performance Requirements**

H2P1 Rainwater management

H2P2 Weatherproofing

H2P3 Rising damp

H2P4 Drainage from swimming pools

**Verification Methods**

H2V1 Weatherproofing

**Deemed-to-Satisfy Provisions**

H2D1 Deemed-to-Satisfy Provisions

H2D2 Drainage

H2D3	Footings and slabs
H2D4	Masonry
H2D5	Subfloor ventilation
H2D6	Roof and wall cladding
H2D7	Glazing
H2D8	External waterproofing

### Part H3

#### Fire safety

##### Objectives

H3O1	Objective
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##### Functional Statements

H3F1	Protection from the spread of fire
H3F2	Fire detection and early warning

##### Performance Requirements

H3P1	Spread of fire
H3P2	Automatic warning for occupants

##### Verification Methods

H3V1	Avoidance of spread of fire between buildings on one allotment
H3V2	Avoidance of spread of fire from allotment boundary
H3V3	Avoidance of spread of fire between buildings on adjoining allotments
H3V4	Avoidance of spread of fire between Class 2-9 buildings

##### Deemed-to-Satisfy Provisions

H3D1	Deemed-to-Satisfy Provisions
H3D2	Fire hazard properties and non-combustible building elements
H3D3	Fire separation of external walls
H3D4	Fire protection of separating walls and floors
H3D5	Fire separation of garage-top-dwellings
H3D6	Smoke alarms and evacuation lighting

### Part H4

#### Health and amenity

##### Objectives

H4O1	Wet areas
H4O2	Room heights
H4O3	Facilities
H4O4	Light
H4O5	Ventilation
H4O6	Sound insulation
H4O7	Condensation and water vapour management

##### Functional Statements

H4F1	Wet areas
H4F2	Room heights
H4F3	Facilities
H4F4	Light
H4F5	Ventilation
H4F6	Sound insulation
H4F7	Condensation and water vapour management

### Performance Requirements

H4P1	Wet areas
H4P2	Room heights
H4P3	Personal hygiene and other facilities
H4P4	Lighting
H4P5	Ventilation
H4P6	Sound insulation
H4P7	Condensation and water vapour management

### Verification Methods

H4V1	Room or space height
H4V2	Verification of suitable natural light
H4V3	Verification of indoor air quality
H4V4	Sound insulation
H4V5	Verification of condensation management

### Deemed-to-Satisfy Provisions

H4D1	Deemed-to-Satisfy Provisions
H4D2	Wet areas
H4D3	Materials and installation of wet area components and systems
H4D4	Room heights
H4D5	Facilities
H4D6	Light
H4D7	Ventilation
H4D8	Sound insulation
H4D9	Condensation management

## Part H5

### Safe movement and access

#### Objectives

H5O1	Objective
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#### Functional Statements

H5F1	Safety from falling
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#### Performance Requirements

H5P1	Movement to and within a building
H5P2	Fall prevention barriers

#### Verification Methods

H5V1	Wire barriers
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#### Deemed-to-Satisfy Provisions

H5D1	Deemed-to-Satisfy Provisions
H5D2	Stairway and ramp construction
H5D3	Barriers and handrails

## Part H6

### Energy efficiency

#### Objectives

H6O1	Objective
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#### Functional Statements

H6F1	Energy efficiency
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#### Performance Requirements

H6P1	Thermal performance
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H6P2 Energy usage

### Verification Methods

H6V1 Application of H6V2 and H6V3

H6V2 Verification using a reference building

H6V3 Verification of building envelope sealing

### Deemed-to-Satisfy Provisions

H6D1 Deemed-to-Satisfy Provisions

H6D2 Application of Part H6

## Part H7

### Ancillary provisions and additional construction requirements

#### Objectives

H7O1 Objective

#### Functional Statements

H7F1 Swimming pool access

H7F2 Heating appliances

H7F3 Alpine areas

H7F4 Bushfire areas

H7F5 Private bushfire shelters

#### Performance Requirements

H7P1 Swimming pool access

H7P2 Swimming pool reticulation systems

H7P3 Heating appliances

H7P4 Buildings in alpine areas

H7P5 Buildings in bushfire prone areas

H7P6 Private bushfire shelters

#### Verification Methods

H7V1 Combustion appliances

H7V2 Buildings in bushfire prone areas

#### Deemed-to-Satisfy Provisions

H7D1 Deemed-to-Satisfy provisions

H7D2 Swimming pools

H7D3 Construction in alpine areas

H7D4 Construction in bushfire prone areas

H7D5 Heating appliances, fireplaces, chimneys and flues

## Part H8

### Livable housing design

#### Objectives

H8O1 Objective

#### Functional Statements

H8F1 Livable housing design

#### Performance Requirements

H8P1 Livable housing design

#### Deemed-to-Satisfy Provisions

H8D1 Deemed-to-Satisfy Provisions

H8D2 Livable housing design

## Specification 42 House energy rating software

S42C1 Scope

S42C2	Heating and cooling loads
S42C3	Net equivalent energy usage
S42C4	Additional Deemed-to-Satisfy Provisions when using house energy rating software

### **Specification 44 Calculation of heating load limit, cooling load limit and thermal energy load limit**

S44C1	Scope
S44C2	Heating load limit
S44C3	Cooling load limit
S44C4	Thermal energy load limit

## Part H1 Structure

### Introduction to this Part

This Part focuses on safeguarding people from injury caused by structural failure, loss of *amenity* caused by structural behaviour (deflections, creep, vibration, settlement and the like), protection of other property from physical damage caused by structural failure and safeguarding people from injury that may be caused by failure of, or impact with, glazing.

### Objectives

H1O1	Objective	[2019: O2.1]
	The Objective is to— <ul style="list-style-type: none"><li>(a) safeguard people from injury caused by structural failure; and</li><li>(b) safeguard people from loss of <i>amenity</i> caused by structural behaviour; and</li><li>(c) protect <i>other property</i> from physical damage caused by structural failure; and</li><li>(d) safeguard people from injury that may be caused by failure of, or impact with, glazing.</li></ul>	

### Functional Statements

H1F1	Functional Statements	[2019: F2.1]
	(1) A building or structure is to withstand the combination of loads and other actions to which it may be reasonably subjected. (2) Glazing is to be installed in a building to avoid undue risk of injury to people.	

### Performance Requirements

H1P1	Structural reliability and resistance	[2019: P2.1.1]
	(1) By resisting the actions to which it may reasonably be expected to be subjected, a building or structure, during construction and use, with appropriate degrees of reliability, must— <ul style="list-style-type: none"><li>(a) perform adequately under all reasonably expected design actions; and</li><li>(b) withstand extreme or frequently repeated design actions; and</li><li>(c) be designed to sustain local damage, with the structural system as a remaining stable and not being damaged to an extent disproportionate to the original local damage; and</li><li>(d) avoid causing damage to <i>other properties</i>.</li></ul> (2) The actions to be considered to satisfy (1) include but are not limited to— <ul style="list-style-type: none"><li>(a) permanent actions (dead loads); and</li><li>(b) imposed actions (live loads arising from occupancy and use); and</li><li>(c) wind action; and</li></ul>	

## Class 1 and 10 buildings

- (d) earthquake action; and
  - (e) snow action; and
  - (f) liquid pressure action; and
  - (g) ground water action; and
  - (h) rainwater action (including ponding action); and
  - (i) earth pressure action; and
  - (j) differential movement; and
  - (k) time dependent effects (including creep and shrinkage); and
  - (l) thermal effects; and
  - (m) ground movement caused by—
    - (i) swelling, shrinkage or freezing of the subsoil; and
    - (ii) landslip or subsidence; and
    - (iii) siteworks associated with the building or structure; and
  - (n) *construction activity actions*; and
  - (o) termite actions.
- (3) The structural resistance of materials and forms of construction must be determined using five percentile characteristic material properties with appropriate allowance for—
- (a) known construction activities; and
  - (b) type of material; and
  - (c) characteristics of the site; and
  - (d) the degree of accuracy inherent in the methods used to assess the structural behaviour; and
  - (e) action effects arising from the differential settlement of foundations, and from restrained dimensional changes due to temperature, moisture, shrinkage, creep and similar effects.
- (4) Glass installations that are at risk of being subjected to human impact must have glazing that—
- (a) if broken on impact, will break in a way that is not likely to cause injury to people; and
  - (b) resists a reasonably foreseeable human impact without breaking; and
  - (c) is protected or marked in a way that will reduce the likelihood of human impact.

QLD H1P2

SA H1P2

### H1P2 Buildings in flood areas

[2019: P2.1.2]

- (1) A building in a *flood hazard area* must be designed and constructed, to the degree necessary, to resist flotation, collapse or significant permanent movement resulting from the action of hydrostatic, hydrodynamic, erosion and scour, wind and other actions during the *defined flood event*.
- (2) The actions and requirements to be considered to satisfy (1) include but are not limited to—
- (a) flood actions; and
  - (b) elevation requirements; and
  - (c) foundation and footing requirements; and
  - (d) requirements for enclosures below the *flood hazard level*; and
  - (e) requirements for structural connections; and
  - (f) material requirements; and
  - (g) requirements for utilities; and
  - (h) requirements for occupant egress.

**Limitations**

H1P2 only applies to a Class 1 building.

QLD H1P3

**Verification Methods****H1V1 Structural reliability**

[2019: V2.1.1]

- (1) This *Verification Method* is only applicable to components with a resistance coefficient of variation of at least 10% and not more than 40%.
- (2) For components with a calculated resistance coefficient of variation value less than 10%, then a minimum value of 10% should be used.
- (3) Compliance with H1P1(1), (2) and (3) is verified for the design of a structural component for strength when—
  - (a) the capacity reduction factor  $\phi$  satisfies  $\phi \leq \text{Average}(\phi_G, \phi_Q, \phi_W, \dots)$ , where  $\phi_G, \phi_Q, \phi_W, \dots$  are capacity reduction factors for all relevant actions and must contain at least permanent (G), imposed (Q) and wind (W) actions; and
  - (b) the capacity reduction factors  $\phi_G, \phi_Q, \phi_W, \dots$  are calculated for target reliability indices for permanent action  $\beta_{TG}$ ,

for imposed action  $\beta_{TQ}$ , for wind action  $\beta_{TW, \dots}$  in accordance with the equation: 
$$\beta = \ln \left[ \left( \frac{\bar{R}}{\bar{S}} \right) \sqrt{\frac{C_S}{C_R}} \right] / \sqrt{\ln(C_R \cdot C_S)}$$
, where—

$$(i) \quad \left( \frac{\bar{R}}{\bar{S}} \right) = \frac{\left( \frac{\gamma}{\phi} \right) \left( \frac{\bar{R}}{R_N} \right)}{\left( \frac{\bar{S}}{S_N} \right)}; \text{ and}$$

$$(ii) \quad C_R = 1 + V_R^2$$

$$C_S = 1 + V_S^2, \text{ where—}$$

(A)  $\frac{\bar{R}}{R_N}$  = ratio of mean resistance to nominal; and

(B)  $\frac{\bar{S}}{S_N}$  = ratio of mean action to nominal; and

(C)  $C_S$  = correction factor for action; and

(D)  $C_R$  = correction factor for resistance; and

(E)  $V_S$  = coefficient of variation of the appropriate action as given in Table H1V1a; and

(F)  $V_R$  = coefficient of variation of the resistance; and

(G)  $\gamma$  = appropriate load factor as given in AS/NZS 1170.0; and

(H)  $\phi$  = capacity factor for the appropriate action; and

- (c) the annual target reliability indices  $\beta_{TG}, \beta_{TQ}, \beta_{TW, \dots}$  are established as follows:

- (i) For situations where it is appropriate to compare with an equivalent Deemed-to-Satisfy product, a resistance model must be established for the equivalent Deemed-to-Satisfy product and  $\beta_{TG}, \beta_{TQ}, \beta_{TW}$  must be calculated for the equivalent Deemed-to-Satisfy product in accordance with the equation given at (b).

## Class 1 and 10 buildings

- (ii) The target reliability indices  $\beta_{TG}, \beta_{TQ}, \beta_{TW}, \dots$  thus established, must be not less than those given in Table H1V1b minus 0.5.
- (iii) For situations where it is not appropriate to compare with an equivalent Deemed-to-Satisfy product, the target reliability index  $\beta$  must be as given in Table H1V1b.
- (4) The resistance model for the component must be established by taking into account variability due to material properties, fabrication and construction processes and structural modelling.

**Table H1V1a: Annual action models**

Design action	Ratio of mean action to nominal	Coefficient of variation of the action
Permanent action ( $\gamma_G = 1.35$ )	$(\bar{G}/G_N) = 1.00$	$V_G = 0.10$
Imposed action ( $\gamma_Q = 1.50$ )	$(\bar{Q}/Q_N) = 0.50$	$V_Q = 0.43$
Wind action ( $\gamma_W = 1.00$ ) (Non-cyclonic)	$(\bar{W}/W_N) = 0.16$	$V_W = 0.49$
Wind action ( $\gamma_W = 1.00$ ) (Cyclonic)	$(\bar{W}/W_N) = 0.16$	$V_W = 0.71$
Snow action ( $\gamma_S = 1.00$ )	$(\bar{S}/S_N) = 0.29$	$V_S = 0.57$
Earthquake action ( $\gamma_E = 1.00$ )	$(\bar{E}/E_N) = 0.05$	$V_E = 1.98$

**Table H1V1b: Annual target reliability indices ( $\beta$ )**

Type of action	Target reliability index $\beta$
Permanent action	4.3
Imposed action	4.0
Wind, snow and earthquake action	3.7

### Table Notes

- (1) Table H1V1b is applicable for components that exhibit brittle failure similar to concrete as specified in AS 3600.
- (2) For components with creep characteristics similar to timber as specified in AS 1720.1, the target reliability index for permanent action shall be increased to 5.0.
- (3) The above target reliability indices are based on materials or systems that exhibit creep or brittle failure characteristics similar to timber and concrete.
- (4) Table H1V1b may also be applicable to materials or systems that exhibit creep or brittle failure differently to steel, timber or concrete provided that the creep and/or brittle nature of the material or system are properly accounted for in the design model.
- (5) The above target reliability indices are also applicable for materials or systems that exhibit ductile failure characteristics.

## H1V2 Structural robustness

[2019: V2.1.2]

- (1) Compliance with H1P1(1)(c) is verified for structural robustness if (2) and (3) are complied with.
- (2) The structure is assessed such that the building remains stable and the resulting collapse does not extend further than the immediately adjacent storeys upon the notional removal in isolation of—
  - (a) any supporting column; or
  - (b) any beam supporting one or more columns; or
  - (c) any segment of a load bearing wall of length equal to the height of the wall.

## Class 1 and 10 buildings

- (3) It is demonstrated that if a supporting structural component is relied upon to carry more than 25% of the total structure, a systematic risk assessment of the building is undertaken and critical high risk components are identified and designed to cope with the identified hazard or protective measures chosen to minimise the risk.

### Explanatory Information

H1V2 is a means to verify structural robustness of a building or structure in order to meet the requirements of H1P1(1)(c). For further guidance, refer to the ABCB Handbook for Structural Robustness.

## Deemed-to-Satisfy Provisions

### H1D1 Deemed-to-Satisfy Provisions

[New for 2022]

- (1) Where a *Deemed-to-Satisfy Solution* is proposed, *Performance Requirements H1P1* and *H1P2* are satisfied by complying with H1D2 to H1D11.
- (2) Where a *Performance Solution* is proposed, the relevant *Performance Requirements* must be determined in accordance with A2G2(3) and A2G4(3) as applicable.

### H1D2 Structural provisions

[2019: 3.0.1]

A Class 1 or Class 10 building must be constructed in accordance with—

- (a) Section 2 of the ABCB Housing Provisions; or
- (b) the relevant provisions of H1D3 to H1D12; or
- (c) any combination thereof.

### H1D3 Site preparation

[2019: 3.1.1, 3.1.2, 3.1.4]

- (1) *Performance Requirement H1P1* is satisfied for earthworks associated with the construction of a building or structure if they are in accordance with Part 3.2 of the ABCB Housing Provisions, provided that the *site* is classified as A, S, M, H or E in accordance with 4.2.2 of the ABCB Housing Provisions and the work is undertaken in normal site conditions.
- (2) *Performance Requirement H1P1* is satisfied for an earth retaining structure associated with the construction of a building or structure if it is designed and constructed in accordance with AS 4678.

#### QLD H1D3(3)

- (3) Compliance with Part 3.4 of the ABCB Housing Provisions satisfies *Performance Requirement H1P1* for termite risk management.

### Explanatory Information: “Normal” site conditions

“Normal” *site* conditions relates to parameters such as—

- the *site* conditions not being significantly modified by the removal of previous buildings or other structures; and
- the moisture conditions on *site* being as a result of seasonal and climatic changes; and
- the *site* conditions not being subject to unusual moisture conditions caused by drains, dams, channels, ponds or tanks which are to be maintained or removed; and
- large trees have not been recently removed from the *site* in the area where the building is to be constructed; and
- other similar matters.

Further information regarding normal and abnormal *site* conditions can be found in AS 2870.

**Explanatory Information: Earth retaining structures**

AS 4678 contains requirements for earth retaining structures between 800 mm and 15 m in height, and does not apply to structures which are founded in exceptional *site* conditions (e.g. landslips), are subjected to sustained cyclic loading or are used for the purposes of water-retaining (e.g. dams and reservoirs).

It should be noted that H1D3(2) is only one way of achieving compliance with H1P1. Other ways of complying include the following:

- The relevant structural design provisions referenced in H1D2.
- The relevant provisions of other Parts of the ABCB Housing Provisions relating to earth retaining structures.
- A *Performance Solution* that uses one of the other NCC *Assessment Methods* which verifies that compliance with H1P1 will be achieved.

**Explanatory Information: Termite risk management**

The intent of these requirements is to provide for a termite management system that deters termites from gaining entry to a building via a concealed route. The installation of a termite management system will not stop termite activity from occurring on the *site*.

**H1D4 Footings and slabs**

[2019: 3.2.0, 3.2.1]

*NSW H1D4(1)*

- (1) *Performance Requirement H1P1* is satisfied for the design and construction of footings and slabs if they comply with either (a) or (b):
- (a) One of the following:
    - (i) AS 2870.
    - (ii) AS 3600.
  - (b) Subject to (2), Section 4 of the ABCB Housing Provisions.
- (2) Section 4 of the ABCB Housing Provisions may only be used where—
- (a) the footing is on a Class A, S or M *site* (classified in accordance with AS 2870) with a uniform bearing capacity; and
  - (b) any slab—
    - (i) is not more than 18 m long or wide; and
    - (ii) does not contain permanent joints excluding construction joints; and
    - (iii) is of a geometric shape containing only external right angles, other than a slab in (c); and
  - (c) any footing and slab in (b) has not more than one re-entrant corner; and
  - (d) the footing and slab are not constructed on soil classified as an aggressive soil type; and
  - (e) the structure supported by the footing does not contain—
    - (i) more than two trafficable floors; or
    - (ii) a wall height exceeding 8 m, excluding any gable; and
  - (f) the footing does not support more than one concrete slab; and
  - (g) the building does not include wing walls or masonry arches unless they are detailed for movement in accordance with Cement Concrete and Aggregates Australia TN 61; and
  - (h) single leaf earth or stone masonry walls do not exceed 3 m in height; and
  - (i) the *site* is considered to be normal as defined in Part 3.2 of the ABCB Housing Provisions; and
  - (j) the *site* is not located in an *alpine area*; and
  - (k) the building is one for which Appendix A of AS 1170.4 contains no specific earthquake design requirements.

## Class 1 and 10 buildings

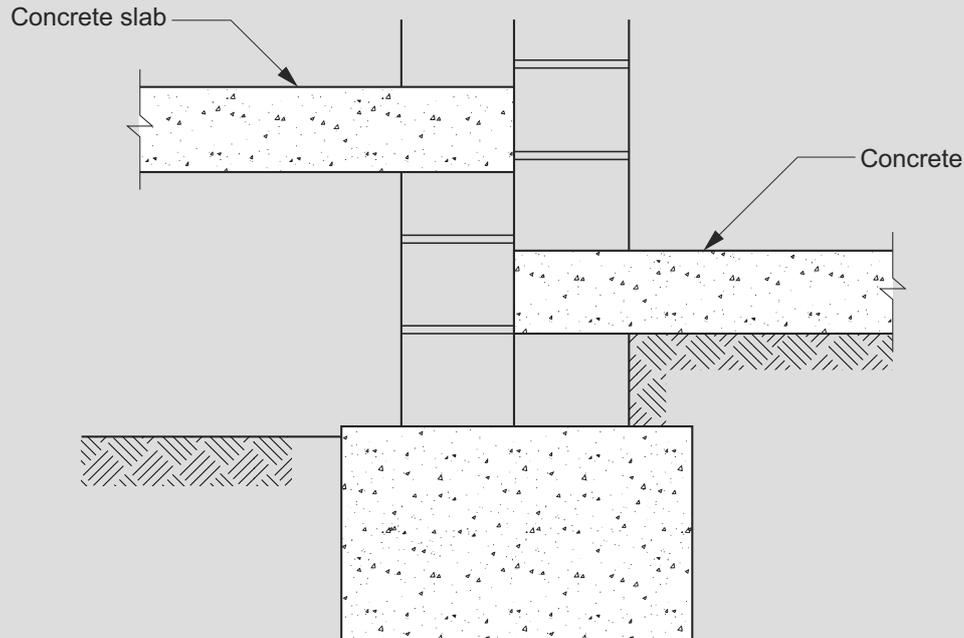
### Explanatory Information: Composite construction

Design requirements for other materials that may be used in combination with the above footing systems, including the use of heavy steel support beams and piled footings, etc. are described in [H1D2](#) and in Section 2 of the ABCB Housing Provisions.

### Explanatory Information: Split level slab

For the purposes of H1D4(2)(e), split level slabs are considered as one slab. See [Figure H1D4a](#).

**Figure H1D4a (explanatory): Split level concrete slab**



### Explanatory Information: Geometric slab

For the purposes of H1D4(2)(b)(iii) and (c), a slab is considered geometric if it is square or rectangular and contains 4 external right angles as described in [explanatory Figures H1D4b](#) or [H1D4c](#).

## Class 1 and 10 buildings

Figure H1D4b (explanatory): Geometric slab without re-entrant corner

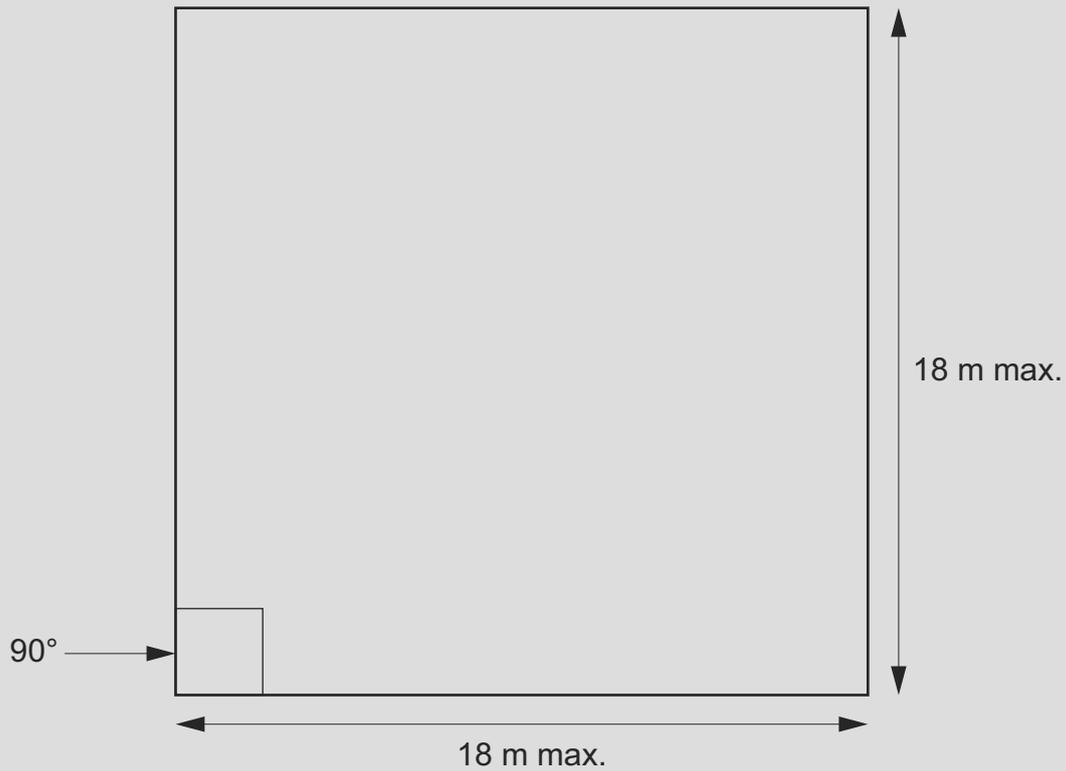
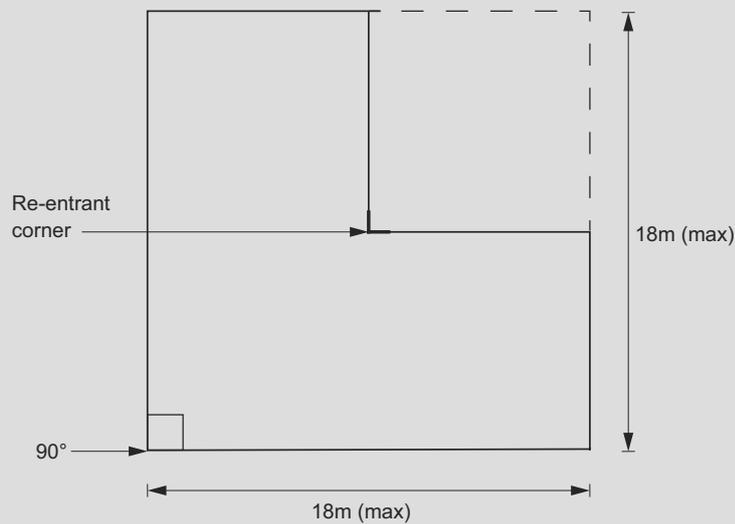


Figure H1D4c (explanatory): Geometric slab with re-entrant corner



## H1D5 Masonry

[2019: 3.3.1-3.3.3, 3.3.5-3.3.6]

- (1) *Performance Requirement H1P1* is satisfied for masonry veneer if it is designed and constructed in accordance with—
- (a) AS 3700; or
  - (b) AS 4773.1 and AS 4773.2; or

## Class 1 and 10 buildings

- (c) Part 5.2 of the ABCB Housing Provisions provided—
- (i) the building is located in an area with a wind class of not more than N3; and
  - (ii) masonry veneer walls—
    - (A) are constructed on footings and/or slabs that comply with H1D4; and
    - (B) comply with Part 5.6 using components that comply with Part 5.7 of the ABCB Housing Provisions; and
  - (iii) the building *site* soil classification is A, S or M in accordance with AS 2870; and
  - (iv) the framing that the masonry wall is tied to complies with H1D6; and
  - (v) the building is not constructed in an *alpine area*; and
  - (vi) the building is one for which Appendix A of AS 1170.4 contains no specific earthquake design requirements.
- (2) **Performance Requirement H1P1** is satisfied for *cavity brick unreinforced masonry* if it is designed and constructed in accordance with:
- (a) AS 3700; or
  - (b) AS 4773.1 and AS 4773.2; or
  - (c) Part 5.3 of the ABCB Housing Provisions provided—
    - (i) the building is located in an area with a *design wind speed* of not more than N3; and
    - (ii) *cavity* masonry walls—
      - (A) are constructed on footings and/or slabs that comply with H1D4; and
      - (B) comply with Part 5.6 using components that comply with Part 5.7 of the ABCB Housing Provisions; and
    - (iii) the building *site* soil classification is A, S or M in accordance with AS 2870; and
    - (iv) the building is not constructed in an *alpine area*; and
    - (v) the building is one for which Appendix A of AS 1170.4 contains no specific earthquake design requirements.
- (3) **Performance Requirement H1P1** is satisfied for single leaf *unreinforced masonry* if it is designed and constructed in accordance with:
- (a) AS 3700; or
  - (b) AS 4773.1 and AS 4773.2; or
  - (c) Part 5.4 of the ABCB Housing Provisions provided—
    - (i) the building is located in an area with a *design wind speed* of not more than N3; and
    - (ii) single leaf *unreinforced masonry* walls—
      - (A) are constructed on footings and/or slabs that comply with H1D4; and
      - (B) comply with Part 5.6 using components that comply with Part 5.7 of the ABCB Housing Provisions; and
    - (iii) the building *site* soil classification is A, S or M in accordance with AS 2870; and
    - (iv) the building is not constructed in an *alpine area*; and
    - (v) the building is one for which Appendix A of AS 1170.4 contains no specific earthquake design requirements.
- (4) **Performance Requirement H1P1** is satisfied for *reinforced masonry* if it is designed and constructed in accordance with:
- (a) AS 3700, except—
    - (i) '(for piers—isolated or engaged)' is removed from clause 8.5.1(d); and
    - (ii) where clause 8.5.1 requires design as for *unreinforced masonry* in accordance with Section 7, the member must also be designed as *unreinforced masonry* in accordance with Table 10.3 and 4.1(a)(i)(C) of AS 3700; or
  - (b) AS 4773.1 and AS 4773.2.
- (5) **Performance Requirement H1P1** is satisfied for an isolated masonry pier system if it is designed and constructed in accordance with one of the following, as appropriate:

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- (a) AS 3700, except—
  - (i) '(for piers—isolated or engaged)' is removed from clause 8.5.1(d); and
  - (ii) where clause 8.5.1 requires design as for *unreinforced masonry* in accordance with Section 7, the member must also be designed as *unreinforced masonry* in accordance with Table 10.3 and 4.1(a)(i)(C) of AS 3700.
- (b) AS 4773.1 and AS 4773.2.
- (c) Part 5.5 of the ABCB Housing Provisions provided—
  - (i) the building is located in an area with a wind class of not more than N3; and
  - (ii) isolated piers are constructed on footings and/or slabs that comply with H1D4; and
  - (iii) masonry units comply with 5.6.2(4) of the ABCB Housing Provisions and have a minimum compressive strength of—
    - (A) 6.2 MPa for solid or cored units; or
    - (B) 15 MPa for hollow units; and
  - (iv) the roof structure and any walls provide the *required* lateral bracing for the top of the isolated pier when determined in accordance with AS 3700, except—
    - (A) '(for piers—isolated or engaged)' is removed from clause 8.5.1(d); and
    - (B) where clause 8.5.1 requires design as for *unreinforced masonry* in accordance with Section 7, the member must also be designed as *unreinforced masonry* in accordance with Table 10.3 and 4.1(a)(i)(C) of AS 3700; and
  - (v) the building *site* soil classification is A, S or M in accordance with AS 2870; and
  - (vi) the building is not constructed in an *alpine area*; and
  - (vii) the building is one for which Appendix A of AS 1170.4 contains no specific earthquake design requirements.
- (6) *Performance Requirement H1P1* is satisfied for masonry accessories if they are constructed and installed in accordance with:
  - (a) AS 3700; or
  - (b) AS 4773.1 and AS 4773.2.
  - (c) Part 5.6 of the ABCB Housing Provisions provided—
    - (i) the building is located in an area with a wind class of not more than N3; and
    - (ii) the building is not constructed in an *alpine area*; and
    - (iii) the building is one for which Appendix A of AS 1170.4 contains no specific earthquake design requirements.

### Explanatory Information: Composite construction

Design requirements for other materials that may be used in combination with masonry i.e. heavy steel support beams etc. are described in H1D2 and Section 2 of the ABCB Housing Provisions.

### Explanatory Information: AS 1170.4

There are certain limitations on the application to domestic building structures such as Class 1a and Class 1b buildings in Appendix A of AS 1170.4. These limitations include height, roof slope, etc. For additional information refer to Appendix A of AS 1170.4.

## H1D6 Framing

[2019: 3.4.0, 3.4.2-3.4.4]

- (1) Diagrams depicting framing members and associated terminology used to describe them are set out in [Figures H1D6c](#), [H1D6d](#) and [H1D6e](#), and in most cases are applicable for both steel and timber frame members.
- (2) Terminology and spacing for structural steel members are set out in [Tables H1D6a](#) and [H1D6b](#), and [Figures H1D6a](#), [H1D6b](#) and [H1D6f](#).
- (3) *Performance Requirement H1P1* is satisfied for steel framing if it is designed and constructed in accordance with

## Class 1 and 10 buildings

one of the following:

- (a) Residential and low-rise steel framing:
  - (i) Design: NASH Standard 'Residential and Low-Rise Steel Framing' Part 1.
  - (ii) Design solutions: NASH Standard 'Residential and Low-Rise Steel Framing' Part 2.
- (b) Steel structures: AS 4100.
- (c) Cold-formed steel structures: AS/NZS 4600.

### QLD H1D6(4)

- (4) *Performance Requirement H1P1* is satisfied for timber framing if it is designed and constructed in accordance with the following, as appropriate:
  - (a) Design of timber structures: AS 1720.1.
  - (b) Design of nailplated timber roof trusses: AS 1720.5.
  - (c) Residential timber-framed construction – non-cyclonic areas: AS 1684.2 or AS 1684.4.
  - (d) Residential timber-framed construction – cyclonic areas: AS 1684.3.
  - (e) Installation of particleboard flooring: AS 1860.2.
- (5) *Performance Requirement H1P1* is satisfied for structural steel sections if they are designed and constructed in accordance with one of the following:
  - (a) Steel structures: AS 4100.
  - (b) Cold-formed steel structures: AS/NZS 4600.
  - (c) For structural stability, strength and deflection, and subject to (6), Part 6.3 of the ABCB Housing Provisions.
  - (d) For corrosion protection, clause 6.3.9 of Part 6.3 of the ABCB Housing Provisions.
- (6) For the purposes of (5)(c), Part 6.3 of the ABCB Housing Provisions may only be used where—
  - (a) the building is located in an area with a wind class of not more than N3; and
  - (b) the first dimension of steel sections is installed vertically; and
  - (c) all loads are evenly distributed (unless otherwise noted or allowed for); and
  - (d) the building is one for which Appendix A of AS 1170.4 contains no specific earthquake design requirements; and
  - (e) the structural steel members are not subject to snow loads; and
  - (f) the structural steel members are in buildings within geometric limits set out in clause 1.2 of AS 4055.
- (7) The use of structural software is subject to the following:
  - (a) Structural software used in computer aided design of a building or structure, that uses design criteria based on the *Deemed-to-Satisfy Provisions* of Section H, including its referenced documents, for the design of steel or timber trussed roof and floor systems and framed building systems, must comply with the ABCB Protocol for Structural Software.
  - (b) Structural software referred to in (a) can only be used for buildings within the following geometric limits:
    - (i) The distance from ground level to the underside of eaves must not exceed 6 m.
    - (ii) The distance from ground level to the highest point of the roof, neglecting chimneys, must not exceed 8.5 m.
    - (iii) The building width including roofed verandahs, excluding eaves, must not exceed 16 m.
    - (iv) The building length must not exceed five times the building width.
    - (v) The roof pitch must not exceed 35 degrees.
  - (c) The requirements of (a) do not apply to design software for individual frame members such as electronic tables similar to those provided in—
    - (i) AS 1684; or
    - (ii) NASH Standard – Residential and Low-Rise Steel Framing, Part 2.

**Class 1 and 10 buildings**

**Table H1D6a:** Effective load width for structural steel bearers and strutting beams—Single spanning rafter or joist

Design member	Member 1	Member 2
Effective load width	$0.5 \times \text{Span 1}$	$0.5 \times (\text{Span 1} + \text{Span 2})$

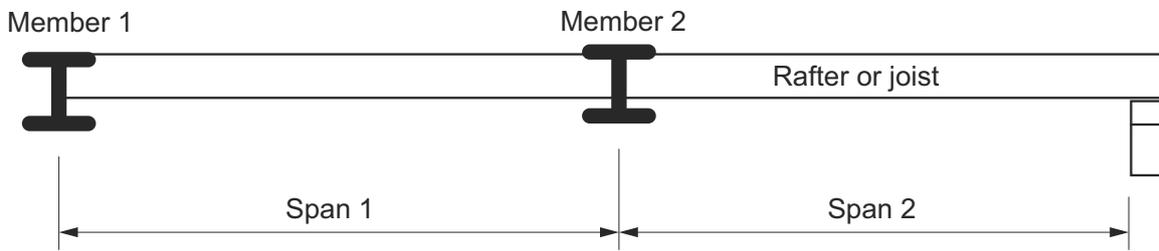
**Table H1D6b:** Effective load width for structural steel bearers and strutting beams—Continuous spanning rafter or joist

Design Member	Member 1	Member 2	Member 3
Effective load width	$0.4 \times \text{Span 1}$	$0.6 \times (\text{Span 1} + \text{Span 2})$	$0.5 \times (\text{Span 2}) + \text{Span 3}$

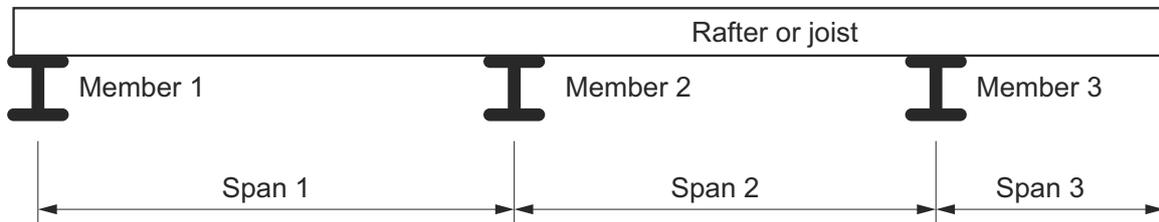
**Table Notes**

The length of Span 3 must not be more than  $0.5 \times \text{Span 2}$ .

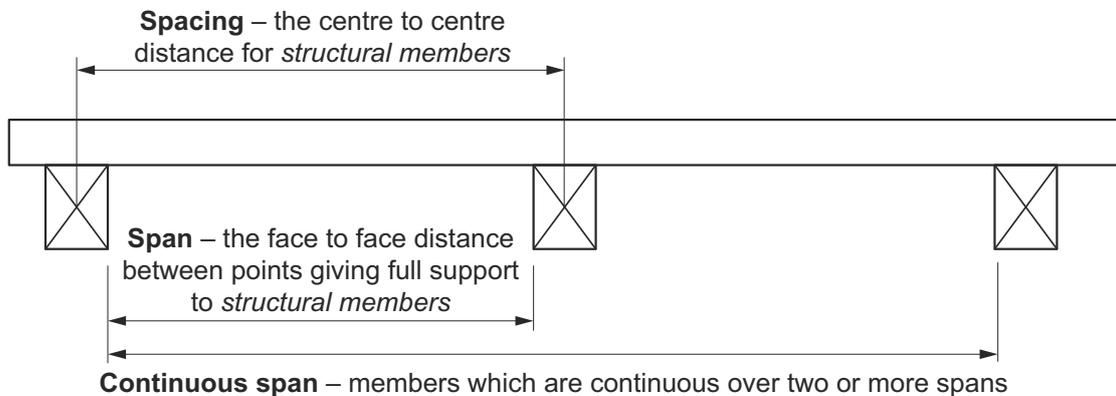
**Figure H1D6a:** Effective load width for structural steel bearers and strutting beams—Single spanning rafter or joist



**Figure H1D6b:** Effective load width for structural steel bearers and strutting beams—Continuous spanning rafter or joist

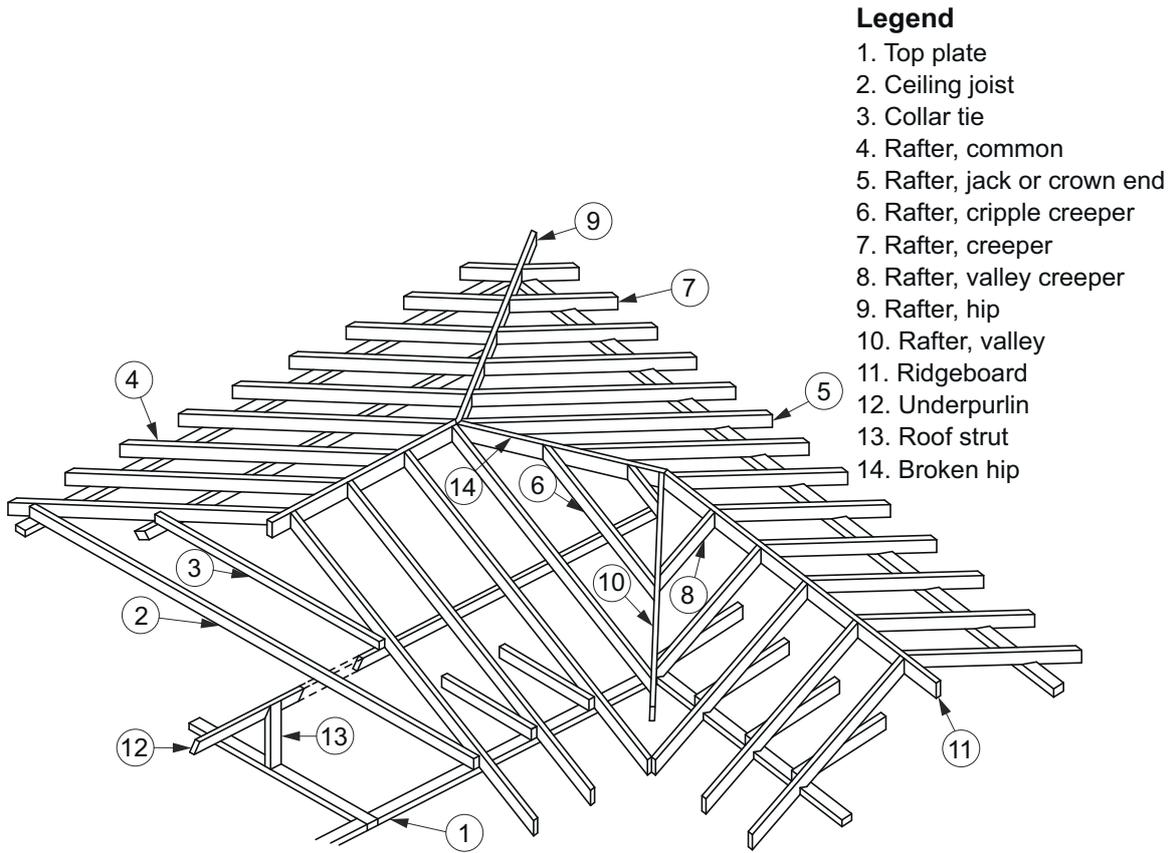


**Figure H1D6c:** Span and spacing terms



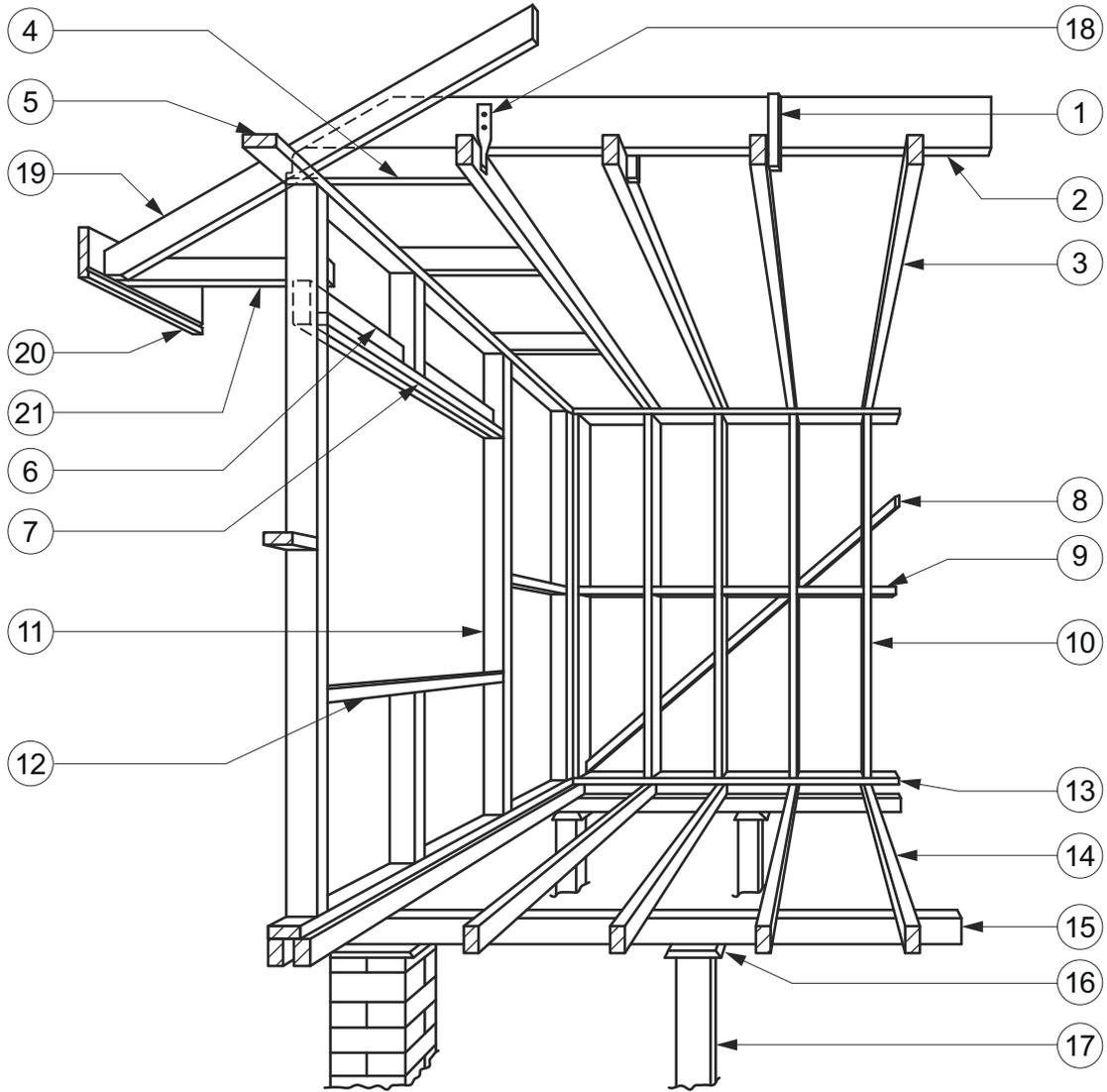
Class 1 and 10 buildings

Figure H1D6d: Typical roof framing members



Class 1 and 10 buildings

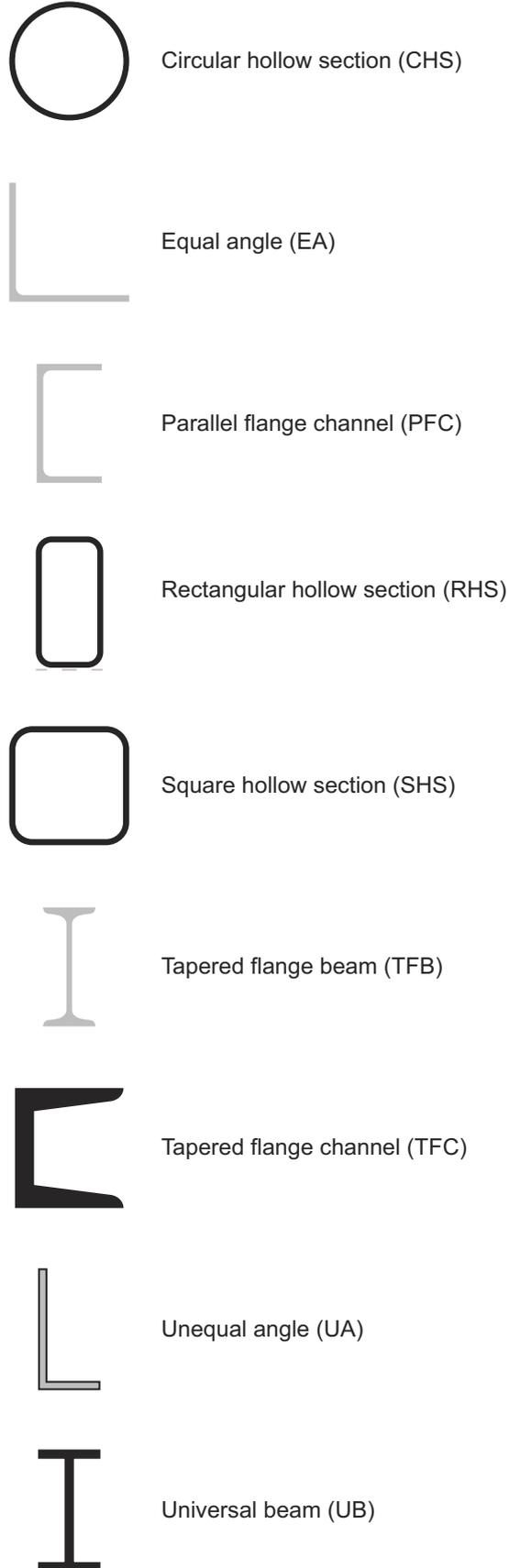
Figure H1D6e: Floor, wall, ceiling and other framing members



- Legend:**
- |                   |                       |                     |
|-------------------|-----------------------|---------------------|
| 1. Cleat          | 8. Brace              | 15. Bearer          |
| 2. Hanging beam   | 9. Nogging            | 16. Termite shield  |
| 3. Ceiling joist  | 10. Stud              | 17. Stump           |
| 4. Jack joist     | 11. Jamb stud         | 18. Hoop iron strap |
| 5. Top wall plate | 12. Sill trimmer      | 19. Rafter          |
| 6. Lintel         | 13. Bottom wall plate | 20. Fascia          |
| 7. Ledger         | 14. Floor joist       | 21. Soffit bearer   |

## Class 1 and 10 buildings

Figure H1D6f: Steel member descriptions—abbreviations and profiles



### Explanatory Information

For the purposes of H1D6(2), design requirements for other materials used in combination with steel or timber framing, including the use of concrete floors, structural steel support beams, etc. are described in the following locations within the ABCB Housing Provisions:

## Class 1 and 10 buildings

- Section 2 for structural provisions.
- Part 6.3 for structural steel members.

The weight of roof or ceiling insulation, particularly if additional ceiling insulation is used for compliance with the energy efficiency provisions, needs to be considered in the selection of plasterboard, plasterboard fixings and building framing.

For the purposes of H1D6(3) and (4):

- Information on *design wind speeds* for particular areas may be available from the *appropriate authority*.
- A map indicating cyclonic regions of Australia is contained in Part 2.2.
- There are certain limitations on the application to domestic structures such as Class 1a and 1b buildings in Appendix A of AS 1170.4. These limitations include building height, roof slope, etc. For additional information refer to Appendix A of AS 1170.4.

H1D6(7) does not apply where a software package simply eliminates manual calculations and the process of the package requires identical methodology as that undertaken manually, e.g. AS 1684 span tables and bracing calculations.

The application of Part 6.3 of the ABCB Housing Provisions requires all loads to be distributed evenly unless they are noted otherwise or allowed for within the construction and placement of relevant building elements. Part 6.3 of the ABCB Housing Provisions allows for point loads to be applied to strutting beams only if the loads are located within the middle third of the beam's span. In any other case, designs should be carried out in accordance with either H1D6(5)(a) or (b), or by a suitably qualified practitioner.

### Explanatory Information: Explanation of first dimension of steel section installed vertically

H1D6(6) provides that Part 6.3 of the ABCB Housing Provisions satisfies *Performance Requirement H1P1* with respect to structural stability, strength and deflection if the 'first dimension' of a steel section is installed vertically.

For example, a 150 x 90 x 8 UA is used as a structural steel member (lintel) to support masonry over an opening.

The "first dimension" designated is 150 mm ( $b_1$ ) and is the vertical leg that resists bending loads over the width of the opening. This leg must be installed in the vertical plane.

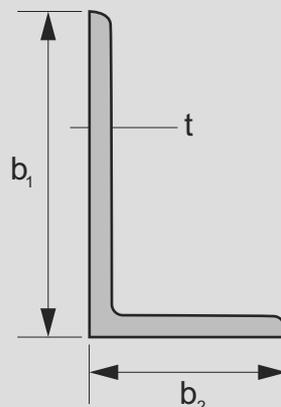
The 90 mm ( $b_2$ ) designation refers to the horizontal leg that rests under the masonry elements and transfers direct loads to the extremities of the opening while the 8 mm ( $t$ ) designation refers to the thickness of the steel section.

A 150 x 90 x 8 UA is designated as follows:

- 150 = leg length ( $b_1$ )
- 90 = leg length ( $b_2$ )
- 8 = thickness ( $t$ )

These designations are depicted in [Explanatory Figure H1D6](#).

**Figure H1D6 (explanatory):** Designation of first dimension of steel section installed vertically



## Class 1 and 10 buildings

WA H1D7

### H1D7 Roof and wall cladding

[2019: 3.5, 3.5.1-3.5.5]

- (1) Diagrams depicting relevant roofing and supporting members and associated terminology used to describe them are set out in [Figure H1D7a](#) and [Figure H1D7b](#).
- (2) *Performance Requirement H1P1* is satisfied for sheet roofing if it complies with one or a combination of the following:
  - (a) Metal roofing:
    - (i) AS 1562.1; and
    - (ii) in wind regions C and D in accordance with Figure 2.2.3 in Section 2 of the ABCB Housing Provisions (cyclonic areas), metal roof assemblies, their connections and immediate supporting members must be capable of remaining in position notwithstanding any permanent distortion, fracture or damage that might occur in the sheet or fastenings under the pressure sequences A to G defined in [Table H1D7](#).
  - (b) Plastic sheet roofing: AS 1562.3.
  - (c) Metal sheet roofing: Part 7.2 of the ABCB Housing Provisions, provided the building is located in an area with a wind class of not more than N3.
- (3) *Performance Requirement H1P1* is satisfied for roof cladding if it complies with one or a combination of the following:
  - (a) Terracotta, fibre-cement and timber slates and shingles: AS 4597.
  - (b) For roof tiles—
    - (i) AS 2050; or
    - (ii) Part 7.3 of the ABCB Housing Provisions, provided—
      - (A) the building is located in an area with a wind class of not more than N3; and
      - (B) the roof tiles comply with AS 2049; and
      - (C) the roof has a pitch of not less than 15 degrees and not more than 35 degrees.
- (4) *Performance Requirement H1P1* is satisfied for timber and composite wall cladding if it is designed and constructed in accordance with—
  - (a) for autoclaved aerated concrete wall cladding, AS 5146.1; or
  - (b) for wall cladding, Part 7.5 of the ABCB Housing Provisions.
- (5) *Performance Requirement H1P1* is satisfied for a metal wall cladding if it is designed and constructed in accordance with AS 1562.1.

**Table H1D7: Low-High-Low pressure sequence**

Sequence	Number of cycles	Load
A	4500	0 to 0.45 Pt
B	600	0 to 0.6 Pt
C	80	0 to 0.8 Pt
D	1	0 to 1.0 Pt
E	80	0 to 0.8 Pt
F	600	0 to 0.6 Pt
G	4500	0 to 0.45 Pt

#### Table Notes

- (1) Pt is the ultimate limit state wind pressure on internal and external surfaces as determined in accordance with AS/NZS 1170.2, modified by an appropriate factor for variability, as determined in accordance with Table B1 of AS/NZS 1170.0.
- (2) The rate of load cycling must be less than 3 Hz.
- (3) The single load cycle (sequence D) must be held for a maximum of 10 seconds.

## Class 1 and 10 buildings

Figure H1D7a: Section of a typical sheet roof

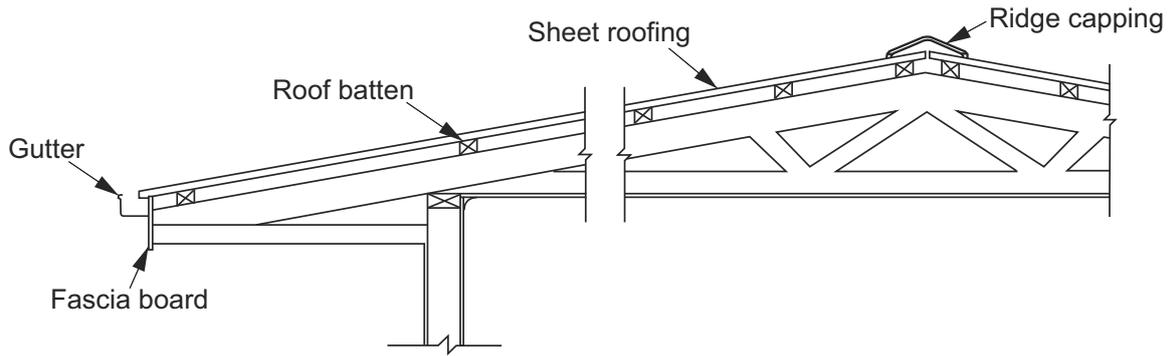
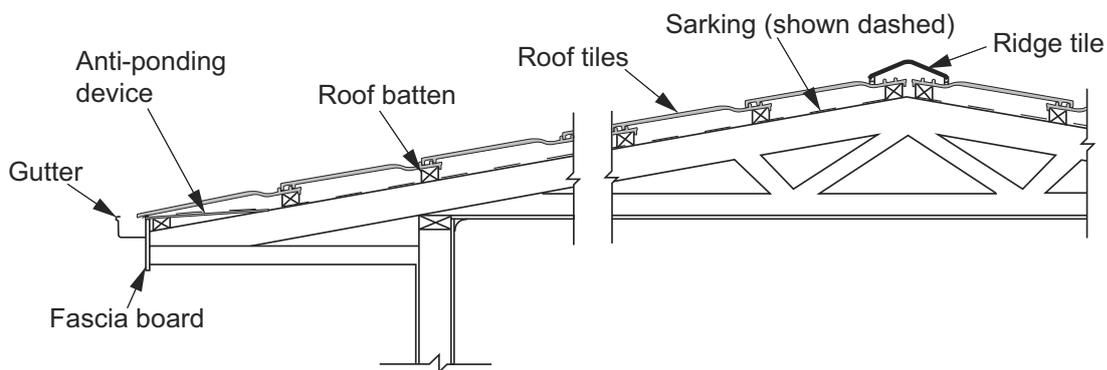


Figure H1D7b: Section of a typical tile roof



### Explanatory Information

The requirements of H1D7(2)(a)(ii) must be read in conjunction with the provisions of AS/NZS 1170.2. The ABCB commissioned research to establish a nationally consistent testing regime for metal roof cladding assemblies in cyclonic areas. The results of this research are contained in H1D7(2)(a)(ii).

Low cycle fatigue cracking of metal roof cladding elements during tropical cyclones is a complex process where small changes in load, geometry or material properties can significantly affect the fatigue performance of the cladding system (includes immediate supports, fixings and cladding). The consequences of failure of an element can quickly lead to more elements progressively failing. These failed elements become wind driven debris and so pose a threat to people and other structures as potential missiles.

If a system does not successfully resist the fatigue loading sequence in [Table H1D7](#), it does not comply. The test section consists of cladding elements, fastenings and immediate supporting members assembled together in a manner identical to those parts of the particular roof which the test section is intended to replicate.

## H1D8 Glazing

[2019: 3.6]

- (1) *Performance Requirement H1P1* is satisfied for glazing and *windows* if they are—
- (a) designed and constructed in accordance with AS 2047 for glazed assemblies in an *external wall* including—
    - (i) *windows*, other than those listed in (2); and
    - (ii) sliding and swinging glazed doors with a frame, including French and bi-fold doors with a frame; and
    - (iii) adjustable louvres; and
    - (iv) *window* walls with one-piece framing; and
  - (b) installed such that they comply with—
    - (i) AS 2047; and
    - (ii) Part 8.2 of the ABCB Housing Provisions, provided that they are—

## Class 1 and 10 buildings

- (A) in buildings that are within the geometric limits set out in clause 1.2 of AS 4055; and
- (B) located in an area with a wind class of not more than N3.
- (2) *Performance Requirement H1P1* is satisfied for glazing in glazed assemblies if it—
- (a) complies with Part 8.3 of the ABCB Housing Provisions; or
  - (b) is designed and constructed in accordance with AS 1288 for all glazed assemblies not covered by (1) and the following glazed assemblies:
    - (i) All glazed assemblies not in an *external wall*.
    - (ii) Revolving doors.
    - (iii) Fixed louvres.
    - (iv) Skylights, roof lights and *windows* other than in the vertical plane.
    - (v) Sliding and swinging doors without a frame.
    - (vi) *Windows* constructed on-site and architectural one-off *windows*, which are not design tested in accordance with AS 2047.
    - (vii) Second-hand *windows*, re-used *windows* and recycled *windows*.
    - (viii) Heritage *windows*.
    - (ix) Glazing used in balustrades and overhead glazing.
- (3) *Performance Requirement H1P1(4)* is satisfied for glazed assemblies at risk of human impact if they—
- (a) are designed, constructed and installed in accordance with—
    - (i) for glass, AS 1288; and
    - (ii) for *windows*, AS 2047; or
  - (b) comply with Part 8.4 of the ABCB Housing Provisions.

### Explanatory Information: AS 2047

- AS 2047 specifies requirements for the design, testing and manufacture of *windows*. The reference to *windows* in AS 2047 includes certain types of louvres and glazed doors that may be sliding, swinging, French or bi-fold doors.
- AS 2047 does not cover assemblies that are internal or revolving doors, fixed louvres, skylights, rooflights and *windows* not installed in the vertical plane, *windows* in greenhouses or horticultural buildings, frameless sliding or swinging doors, *windows* constructed on site, one-off untested architectural designed *windows*, second-hand, recycled or reused *windows* and heritage *windows* defined by relevant State and Territory authorities.

### Explanatory Information: AS 1288

In relation to building work covered by NCC Volume Two and the ABCB Housing Provisions, AS 1288 does not cover the selection and installation of glass for *windows* and doors in heritage buildings, restoration or repairs to leadlights, glass blocks, bricks or pavers.

### Explanatory Information: AS 4055

Clause 1.2 of AS 4055 sets out geometric limitations that include the following:

- The distance from the ground level adjacent to the building to the underside of eaves is not to exceed 6.0 m.
- The distance from the ground level of the building to the highest point of the roof, excluding chimneys is not to exceed 8.5 m.
- The width of the building, including verandas, but excluding eaves, is not to exceed 16.0 m.
- The length of the building is not to exceed five times its width.
- The roof pitch is not to exceed 35°.

## H1D9 Earthquake areas

[2019: 3.10.2]

*Performance Requirement H1P1* for Class 1 and 10 buildings constructed in areas subject to seismic activity is satisfied if the building is constructed in accordance with Section 2 of the ABCB Housing Provisions.

### Explanatory Information

- Most domestic structures are not required to be specifically designed for earthquakes.
- There are certain limitations on the application to domestic structures such as Class 1a and 1b buildings in Appendix A of AS 1170.4. These limitations include building height, roof slope, etc. For additional information refer to Appendix A of AS 1170.4.

QLD H1D10

VIC H1D10

## H1D10 Flood hazard areas

[2019: 3.10.3]

*Performance Requirement H1P2* for a Class 1 building constructed in a *flood hazard area* is satisfied if the building is constructed in accordance with the ABCB Standard for Construction of Buildings in Flood Hazard Areas.

## H1D11 Attachment of framed decks and balconies to external walls of buildings using a waling plate

[2019: 3.10.6.1]

*Performance Requirement H1P1* is satisfied for the attachment of a deck or balcony to an *external wall* if it complies with Part 12.3 of the ABCB Housing Provisions, provided—

- the deck or balcony is not located in an *alpine area*; and
- the height of the deck or balcony is not more than 3 m measured from the uppermost finished floor surface of the deck or balcony at any point to the top of any supporting footing; and
- the waling plate does not support—
  - more than one floor; or
  - loadbearing* or non-*loadbearing* walls; or
  - roof loads; and
- the deck or balcony does not cantilever off the *external wall*; and
- the total imposed load on the deck or balcony does not exceed 2 kPa; and
- the deck or balcony framing including member sizes, spans and spacing, bracing for racking and shear forces, fixings and structural supports complies with H1D2; and
- steel framing constructed in accordance with H1D6(3); and
- timber framing is constructed in accordance with H1D6(4); and
- the *external wall* supporting the deck or balcony is constructed of—
  - 190 mm thick fully core-filled concrete masonry, reinforced with vertical N12 bars at not more than 600 mm centres; or
  - steel framing complying with H1D6(3); or
  - timber framing complying with H1D6(4); and
- the *external wall* referred to in (i) must be continuous from the upper most surface of the deck or balcony to the supporting footing and contain no openings or lintels below the deck or balcony; and
- the waling plate is fixed to the *external wall* in accordance with clause 12.3.2 of the ABCB Housing Provisions

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and attached by—

- (i) fixing the waling plate through wall cladding complying with H1D7(4) or H1D7(5), provided the cladding is directly fixed to the *external wall*; or
- (ii) removing parts of the wall cladding so that the waling plate is directly fixed to the *external wall*, with—
  - (A) the junction of the waling plate and the *external wall* flashed in accordance with clause 12.3.3 of the ABCB Housing Provisions; and
  - (B) the cladding restored to its original strength by installing blocking supports as necessary on completion of installation; and
- (l) the deck or balcony is braced to prevent lateral movement in accordance with clause 12.3.4 of the ABCB Housing Provisions.

### Explanatory Information

A 2 kPa imposed load is commensurate with domestic and residential activities associated with Class 1 buildings (e.g. dwellings with limited occupancy and restricted public access) and is not appropriate for applications where the deck or balcony supports heavy equipment, spa/bathing pools or circumstances where the deck or balcony is intended for community access (e.g. applications with a mid-high occupancy and possibility of public access).

If the design live load of the deck or balcony is more than 2 kPa, the framing members of the deck or balcony must be designed by a *professional engineer* or other *appropriately qualified person* in accordance with the relevant structural design manuals in Part 2.2 of the ABCB Housing Provisions.

H1D11(k)(ii) requires consideration to be given to restoring cladding, weatherproofing and structural properties. Other considerations include restoring the appropriate sound and thermal insulation, and the capacity to maintain an FRL where *required*.

H1D11 describes the circumstances under which the methods of attachment described in this Part are deemed appropriate.

Where a deck or balcony is constructed outside the conditions listed in H1D11, e.g. attachment to a masonry veneer wall, the method of attachment to the building or structure must be designed by a *professional engineer* or other *appropriately qualified person* in accordance with the relevant structural design manuals in Part 2.2 of the ABCB Housing Provisions. Such a design will need to consider the suitability of the wall to withstand the loads imposed by the deck or balcony, and the capacity of the connections.

Examples of *external wall* construction that are outside the application of H1D11 include a masonry *external wall* that is not fully core-filled, cavity masonry and masonry veneer construction where fasteners may be subject to withdrawal.

An alternative to attaching a deck or balcony directly to an *external wall* includes providing supporting piers, posts or columns or the like parallel to the wall line or at right angles to the wall.

## H1D12 Piled footings

[3.2.0]

*Performance Requirement H1P1* is satisfied for piled footings if they are designed and installed in accordance with AS 2159.

### Explanatory Information

Slab construction—design requirements for other elements of construction that may be used in combination with the above piled footing systems, including concrete slabs, etc. are described in H1D2 for Structural provisions and H1D4 for Footings and slabs.

## Part H2 Damp and weatherproofing

### Introduction to this Part

This Part focuses on reducing the risk of illness or injury as a result of the effects of moisture on a building, including *surface water*, weather and waste water discharge. It also includes requirements to prevent waste water discharge from damaging *other property* adjoining the *site*.

### Objectives

H2O1	Objective	[2019: O2.2]
	The Objective is to—	
	(a) safeguard occupants from illness or injury and protect the building from damage caused by—	
	(i) <i>surface water</i> ; and	
	(ii) external water entering a building; and	
	(iii) the accumulation of internal moisture in a building; and	
	(iv) discharge of <i>swimming pool</i> waste water; and	
	(v) rising damp; and	
	(b) protect other property from damage caused by—	
	(i) redirected <i>surface water</i> ; and	
	(ii) the discharge of <i>swimming pool</i> waste water.	

### Functional Statements

H2F1	Surface water	[2019: F2.2.1]
	A building including any associated <i>sitework</i> is to be constructed in a way that protects people and <i>other property</i> from the adverse effects of redirected <i>surface water</i> .	
H2F2	Weatherproofing and dampness	[2019: F2.2.2]
	A building is to be constructed to provide resistance to moisture from the outside and moisture rising from the ground.	

### Limitations

H2F2 does not apply to a Class 10 building except where its construction contributes to the weatherproofing of the Class 1 building.

H2F3	Drainage from swimming pools	[2019: F2.2.3]
	Adequate means for the disposal of <i>swimming pool</i> water and drainage is to be provided to a <i>swimming pool</i> .	

## Class 1 and 10 buildings

### Performance Requirements

#### H2P1 Rainwater management

[2019: P2.2.1]

- (1) *Surface water*, resulting from a storm having an *annual exceedance probability* of 5% and which is collected or concentrated by a building or *sitework*, must be disposed of in a way that avoids the likelihood of damage or nuisance to any *other property*.
- (2) *Surface water*, resulting from a storm having an *annual exceedance probability* of 1% must not enter the building.
- (3) A drainage system for the disposal of *surface water* resulting from a storm having an *annual exceedance probability* of—
  - (a) 5% must—
    - (i) convey *surface water* to an appropriate *outfall*; and
    - (ii) avoid *surface water* damaging the building; and
  - (b) 1% must avoid the entry of *surface water* into a building.

#### Limitations

H2P1(2) does not apply to a Class 10 building except where its construction contributes to the weatherproofing of the Class 1 building.

#### H2P2 Weatherproofing

[2019: P2.2.2]

A roof and *external wall* (including openings around *windows* and doors) must prevent the penetration of water that could cause—

- (a) unhealthy or dangerous conditions, or loss of *amenity* for occupants; and
- (b) undue dampness or deterioration of building elements.

#### Limitations

H2P2(a) does not apply to a Class 10 building except where its construction contributes to the weatherproofing of the Class 1 building.

*NSW H2P3*

*SA H2P3*

#### H2P3 Rising damp

[2019: P2.2.3]

Moisture from the ground must be prevented from causing—

- (a) unhealthy or dangerous conditions, or loss of *amenity* for occupants; and
- (b) undue dampness or deterioration of building elements.

#### Limitations

H2P3 does not apply to a Class 10 building where in the particular case there is no necessity for compliance.

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NT H2P4

### H2P4 Drainage from swimming pools

[2019: P2.2.4]

A *swimming pool* must have adequate means of draining the pool in a manner which will not—

- (a) cause illness to people; or
- (b) affect *other property*.

#### Notes

The NCC Volume Two and the ABCB Housing Provisions do not contain any *Deemed-to-Satisfy Provisions* for this *Performance Requirement*.

### Verification Methods

### H2V1 Weatherproofing

[2019: V2.2.1]

- (1) Compliance with H2P2 for weatherproofing of an *external wall* is verified when—
  - (a) a prototype passes the procedure described in (2); and
  - (b) the *external wall*—
    - (i) has a risk score of 20 or less, when the sum of all risk factor scores are determined in accordance with Table H2V1a; and
    - (ii) is not subjected to an ultimate limit state wind pressure of more than 2.5 kPa; and
    - (iii) includes only *windows* that comply with AS 2047.
- (2) The test procedure referred to in (1)(a) must be as follows:
  - (a) The test specimen is in accordance with the requirements of (3).
  - (b) The test procedure is in accordance with the requirements of (4) and (5) as appropriate.
  - (c) The test specimen does not fail the criteria in (6).
  - (d) The test is recorded in accordance with the requirements of (7).
- (3) Test specimen: The test specimen must incorporate—
  - (a) representative samples of openings and joints, including—
    - (i) vertical and horizontal control joints; and
    - (ii) wall junctions; and
    - (iii) *windows* or doors; and
    - (iv) electrical boxes; and
    - (v) balcony drainage and parapet flashings; and
    - (vi) footer and header termination systems; and
  - (b) for a *cavity wall*—
    - (i) a transparent material for a proportion of the internal wall lining (to provide an unobstructed view of the *external wall* cladding) with sufficient structural capability and similar air tightness to resist the applied wind pressures; and
    - (ii) a 15 mm diameter hole in the internal wall lining below a *window*.
- (4) The test procedure for a *direct fix cladding wall* or *unique wall* must be as follows:
  - (a) Apply 100% positive and negative serviceability wind pressures to the external face of the test specimen for a period of not less than 1 minute each.

**Class 1 and 10 buildings**

- (b) Apply static pressure of either 300 Pa or 30% serviceability wind pressure, whichever is higher, in accordance with the water penetration test procedure at clause 8.5.2 of AS/NZS 4284.
  - (c) Apply cyclic pressure in accordance with—
    - (i) the three stages of Table H2V1b; and
    - (ii) the water penetration test procedure at clause 8.6.2 of AS/NZS 4284.
- (5) The test procedure for a *cavity wall* must be as follows:
- (a) Apply 100% positive and negative serviceability wind pressures to the external face of the test specimen for a period of not less than 1 minute each.
  - (b) Apply static pressure of either 300 Pa or 30% serviceability wind pressure, whichever is higher, in accordance with the water penetration test procedure at clause 8.5.2 of AS/NZS 4284.
  - (c) Apply cyclic pressure in accordance with—
    - (i) stage 3 of Table H2V1b; and
    - (ii) the water penetration test procedure at clause 8.6.2 of AS/NZS 4284.
  - (d) To simulate the failure of the primary weather-defence or sealing, the following procedure must be applied to the test specimen:
    - (i) Insert 6 mm diameter holes through the external face of the *cavity wall* in all places specified below:
      - (A) Wall/*window* or wall/door junctions at  $\frac{3}{4}$  height.
      - (B) Immediately above the head flashing.
      - (C) Through external sealing of the horizontal and vertical joints.
      - (D) Above any other penetration detail not covered by (A) to (C).
    - (ii) Repeat the static and cyclic pressure tests of (b) and (c).
    - (iii) Within 30 minutes of the completion of (ii), remove the internal lining of the *cavity wall* and check for compliance with (6).
    - (iv) With the internal lining removed, apply a final static pressure test at 50 Pa for a period of 15 minutes.
- (6) Compliance:
- (a) A *direct fix cladding wall* and *unique wall* are verified for compliance with H2P2 if there is no presence of water on the inside surface of the facade.
  - (b) A *cavity wall* is verified for compliance with H2P2 if there is no presence of water on the removed surface of the *cavity*, except that during the simulation of the failure of the primary weather-defence or sealing, water may—
    - (i) transfer to the removed surface of the *cavity* due to the introduced defects (6 mm holes); and
    - (ii) contact, but not pool on, battens and other cavity surfaces.
- (7) Test report — The test report must include the following information:
- (a) Name and address of the person supervising the test.
  - (b) Test report number.
  - (c) Date of the test.
  - (d) Cladding manufacturer's name and address.
  - (e) Construction details of the test specimen, including a description, and drawings and details of the components, showing modifications, if any.
  - (f) Test sequence with the pressures used in all tests.
  - (g) For each of the static and cyclic pressure tests, full details of all leakages, including position, extent and timing.

## Class 1 and 10 buildings

Table H2V1a: Risk factors and scores

Risk factor	Category	Risk severity	Score
Wind region	Region A(0-5) (AS/NZS 1170.2)	Low to medium	0
	Region B1-2 (AS/NZS 1170.2)	Low to medium	0
	Region C (AS/NZS 1170.2)	High	1
	Region D (AS/NZS 1170.2)	Very high	2
Number of storeys	One storey	Low	0
	Two storeys in part	Medium	1
	Two storeys	High	2
	More than two storeys	Very high	4
Roof/wall junctions	Roof-to-wall junctions fully protected	Low	0
	Roof-to-wall junctions partially exposed	Medium	1
	Roof-to-wall junctions fully exposed	High	3
	Roof elements finishing within the boundaries formed by the <i>external walls</i>	Very high	5
Eaves width	Greater than 600 mm for single storey	Low	0
	451-600 mm for single storey	Medium	1
	Greater than 600 mm for two storey	Medium	1
	101-450 mm for single storey	High	2
	451-600 mm for two storey	High	2
	Greater than 600 mm for above two storey	High	2
	0-100 mm for single storey	Very high	5
	0-450 mm for two storey	Very high	5
	Less than 600 mm for above two storey	Very high	5
Envelope complexity	Simple shape with single cladding type	Low	0
	Complex shape with no more than two cladding types	Medium	1
	Complex shape with more than two cladding types	High	3
	As for high risk but with fully exposed roof-to-wall junctions	Very high	6
Decks, porches and balconies	None	Low	0
	Timber slat deck or porch at ground level	Low	0
	Fully covered in plan view	Medium	2

## Class 1 and 10 buildings

Risk factor	Category	Risk severity	Score
	by roof		
	Timber slat deck attached at first or second floor level	Medium	2
	Balcony exposed in plan view at first floor level	High	4
	Balcony cantilevered at first floor level	High	4
	Balcony exposed in plan view at second floor level or above	Very high	6
	Balcony cantilevered at second floor level or above	Very high	6

### Table Notes

- (1) Eaves width is measured horizontally from the external face of any wall cladding to the outer edge of any overhang, including fascia and external gutters.
- (2) Barriers to prevent falling and parapets are considered as 0 mm eaves.

**Table H2V1b: Serviceability wind pressure**

Stage number	Serviceability wind pressure
1	15% to 30%
2	20% to 40%
3	30% to 60%

### Explanatory Information

H2V1 contains the same test procedures, compliance criteria and reporting of test results that are contained in F3V1, in NCC Volume One. Consequently the Guide to NCC Volume One contains detailed and supportive explanatory information that is also relevant to H2V1.

## Deemed-to-Satisfy Provisions

### H2D1 Deemed-to-Satisfy Provisions

[New for 2022]

- (1) Where a *Deemed-to-Satisfy Solution* is proposed, *Performance Requirements H2P1 to H2P3* are satisfied by complying with H2D2 to H2D8.
- (2) *Performance Requirement H2P4* must be complied with.
- (3) Where a *Performance Solution* is proposed, the relevant *Performance Requirements* must be determined in accordance with A2G2(3) and A2G4(3) as applicable.

### Notes

There are no *Deemed-to-Satisfy Provisions* for H2P4.

### H2D2 Drainage

[2019: 3.1.3.0, 3.1.3.1]

*Performance Requirement H2P1* is satisfied for drainage if it is designed and constructed in accordance with —

## Class 1 and 10 buildings

- (a) AS/NZS 3500.3; or
- (b) provided the stormwater drainage system otherwise complies with (a), Part 3.3 of the ABCB Housing Provisions for drainage of—
  - (i) roofs in areas subject to 5 minute duration rainfall intensities of not more than 255 mm per hour over an *annual exceedance probability* of 5% (as per Table 7.4.3d of the ABCB Housing Provisions) where a drainage system is *required*; and
  - (ii) sub-soil areas where excessive soil moisture problems may occur; and
  - (iii) land adjoining and under buildings.

### Explanatory Information

- The NCC does not require the installation of drainage systems. Accordingly these requirements need only be applied when these systems are used.
- Information on the need for drainage systems may be obtained from the *appropriate authority*.
- The legal discharge point from a building *site* is generally determined by local government authorities.

## H2D3 Footings and slabs

[2019: 3.2.0]

*Performance Requirement H2P3* is satisfied for footings and slabs if they are installed in accordance with H1D4(1)(a) or (b).

## H2D4 Masonry

[2019: 3.3.4]

(1) H2D4(2)—

- (a) applies to every *external wall* (including the junction between the wall and any *window* or door) of a Class 1 building; and
- (b) does not apply to any Class 10 building except where its construction contributes to the weatherproofing of the Class 1 building.

*SA H2D4(2)*

(2) *Performance Requirements H2P2* and *H2P3* are satisfied for weatherproofing of masonry if it is carried out in accordance with the appropriate provisions of one of the following:

- (a) AS 3700.
- (b) AS 4773.1 and AS 4773.2.
- (c) Part 5.7 of the ABCB Housing Provisions provided masonry walls are constructed in accordance with H1D5 and the requirements of Part 5.7.

*SA H2D4(3)*

*SA H2D4(4)*

## H2D5 Subfloor ventilation

[2019: 3.4.1]

*Performance Requirement H2P3* is satisfied for subfloor ventilation if it is in accordance with Part 6.2 of the ABCB Housing Provisions.

### Explanatory Information

Part 6.2 applies to the subfloor space of all suspended floors of a building or deck, including but not limited to, timber and steel-framed subfloors and suspended concrete slabs.

## H2D6 Roof and wall cladding

[2019: 3.5.1-3.5.5]

### VIC H2D6(1)

- (1) *Performance Requirement H2P1* is satisfied for gutters and downpipes if they are designed and constructed in accordance with one of the following:
- Subject to (2), AS/NZS 3500.3.
  - Subject to (2) and (3), Part 7.4 of the ABCB Housing Provisions.
- (2) The requirements of (1) do not apply to the removal of *surface water* from a storm having an *annual exceedance probability* of 1% for a Class 10 building where in the particular case there is no necessity for compliance.

### VIC H2D6(3)

- (3) Part 7.4 of the ABCB Housing Provisions—
- may only be used provided the roof drainage system is connected to a stormwater drainage system that complies with H2D2; and
  - excludes box gutters.
- (4) *Performance Requirement H2P2* is satisfied for roof and wall cladding if it is in accordance with H1D7(2), (3), (4) or (5) as appropriate.

## H2D7 Glazing

[2019: 3.6]

*Performance Requirement H2P2* is satisfied for weatherproofing for glazing if it is in accordance with H1D8(1).

### Explanatory Information

When satisfying *Performance Requirement H2P2*, H1D8(1) only references AS 2047 for *windows*. If AS 1288 is used for glazing in an *external wall*, it is still necessary to satisfy H2P2.

## H2D8 External waterproofing

[2019: 3.8.1.3]

- (1) *Performance Requirement H2P2* is satisfied for the design and construction of external waterproofing for roofing systems on flat roofs, roof terraces, balconies and terraces and other similar horizontal surfaces located above internal spaces of a building provided—
- membranes* used in the external *waterproofing system* comply with AS 4654.1; and
  - the design and installation of the external *waterproofing system* is in accordance with AS 4654.2.
- (2) The requirements of (1) apply to—
- roofing systems other than those complying with H1D7(2) and (3); and
  - terraces, balconies and the like other than—
    - a concrete slab that has a minimum step-down of 50 mm below the internal floor level; or
    - a suspended concrete slab—
      - where the subfloor space is not used for habitable or non-habitable purposes; and
      - that has a minimum step-down of 50 mm below the internal floor level; or
    - spaced decking in conjunction with framing members that are suitable for external use.

### Explanatory Information

The design of occupiable roof-top spaces, decks, balconies, particularly where located over internal spaces of a building,

## Class 1 and 10 buildings

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can be susceptible to potential for water ingress into a building and causing damage. Therefore, careful consideration should be given to the design, construction and the materials used to minimise the potential for water ingress to spaces below.

H2D8 prescribes external waterproofing requirements for buildings, and references AS 4654 Parts 1 and 2 that provide solutions for liquid and/or sheet *membrane* roofing systems on flat roofs, roof terraces, balconies and terraces located over *habitable rooms*. The term flat roof is commonly used to describe a near flat roof with enough pitch to provide drainage for rainwater.

AS 4654.1 sets out the requirements for materials forming part of a *waterproofing system* and AS 4654.2 sets out design and construction/installation requirements.

A *Performance Solution* in accordance with *A2G2* would need to be provided for other types of external waterproofing materials and designs.

## Part H3 Fire safety

### Introduction to this Part

This Part is intended to minimise the risk of illness, injury or loss of life occurring due to fire. It includes requirements to avoid the spread of fire between buildings (including garage-top dwellings), smoke alarms and evacuation lighting in Class 1b buildings.

#### Objectives

##### H3O1 Objective

[2019: O2.3]

The Objective is to—

- (a) safeguard the occupants from illness or injury by alerting them of a fire in the building so that they may safely evacuate; and
- (b) avoid the spread of fire.

#### Functional Statements

##### H3F1 Protection from the spread of fire

[2019: F2.3.1]

A Class 1 building is to be protected from the spread of fire.

##### H3F2 Fire detection and early warning

[2019: F2.3.2]

A Class 1 building is to be provided with safeguards so that occupants are warned of a fire in the building so that they may safely evacuate.

#### Performance Requirements

##### H3P1 Spread of fire

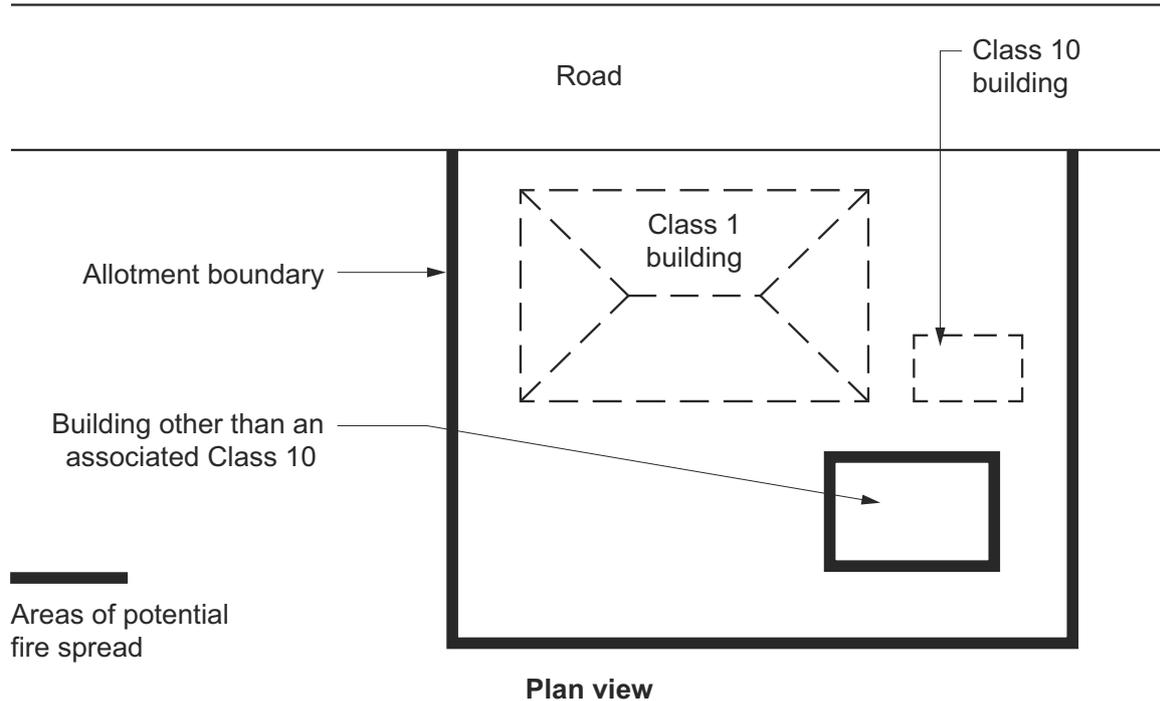
[2019: P2.3.1]

###### SA H3P1(1)

- (1) A Class 1 building must be protected from the spread of fire such that the probability of a building not being able to withstand the design heat flux of 92.6 kW/m<sup>2</sup> for a period of 60 minutes shall not exceed 0.01, when located within 900 mm from the allotment boundary or within 1.8 m from another building on the same allotment from—
  - (a) another building other than an associated Class 10 building; and
  - (b) the allotment boundary, other than a boundary adjoining a road or public space (see [Figure H3P1](#)).
- (2) A Class 10a building must not significantly increase the risk of fire spread between Class 2 to 9 buildings.

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Figure H3P1: Typical areas of potential fire spread



### Figure Notes

This diagram indicates areas of potential fire spread. This situation will differ for corner allotments, etc.

## H3P2 Automatic warning for occupants

[2019: P2.3.2]

In a Class 1 building, occupants must be provided with *automatic* warning on the detection of smoke with an *efficacy* greater than 0.95 and a *reliability* greater than 0.95, so that they may evacuate in the event of a fire to a place of safety appropriate to the—

- (a) function and use of the building; and
- (b) occupant characteristics; and
- (c) *fire load* and combustion characteristics; and
- (d) potential *fire intensity*; and
- (e) *fire hazard*.

### Verification Methods

## H3V1 Avoidance of spread of fire between buildings on one allotment

[2019: V2.3.1.1]

Compliance with H3P1(1)(a) to avoid the spread of fire between buildings on the same allotment is verified when—

- (a) the *external walls* and any openings in the *external walls* of a building, less than 1.8 m from another building, are capable of withstanding 92.6 kW/m<sup>2</sup> of heat flux for 60 minutes; and
- (b) the *external walls* extend to the underside of a *non-combustible* roof covering or *non-combustible* eaves lining in accordance with clause 9.2.3 of the ABCB Housing Provisions.

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### H3V2 Avoidance of spread of fire from allotment boundary

[2019: V2.3.1.2]

Compliance with H3P1(1)(b) to avoid the spread of fire from an allotment boundary is verified when—

- (a) the *external walls* and any openings in the *external walls* of a building, less than 0.9 m from an allotment boundary, are capable of withstanding 92.6 kW/m<sup>2</sup> of heat flux for 60 minutes; and
- (b) the *external walls* extend to the underside of a *non-combustible* roof covering or *non-combustible* eaves lining in accordance with clause 9.2.3 of the ABCB Housing Provisions.

### H3V3 Avoidance of spread of fire between buildings on adjoining allotments

[2019: V2.3.1.3]

Compliance with H3P1(2) to avoid the spread of fire between buildings on adjoining allotments is verified when it is calculated that—

- (a) a building will not cause heat flux in excess of those set out in column 2 of Table H3V3 at locations within the boundaries of an adjoining property set out in column 1 of Table H3V3 where another building may be constructed; and
- (b) when located at the distances from the allotment boundary set out in column 1 of Table H3V3, a building is capable of withstanding the heat flux set out in column 2 of Table H3V3 without ignition.

#### Explanatory Information

H3V3 is equivalent to C1V1 in NCC Volume One. Guidance on the use of C1V1 can be found in the Guide to NCC Volume One, and is applicable to the use of H3V3.

**Table H3V3: Heat flux (adjoining allotment)**

Column 1 (Location)	Column 2 (Heat flux [kW/m <sup>2</sup> ])
On boundary	80
1 m from boundary	40
3 m from boundary	20
6 m from boundary	10

### H3V4 Avoidance of spread of fire between Class 2-9 buildings

[2019: V2.3.1.4]

Compliance with H3P1(2) to avoid a Class 10a building increasing the risk of fire spread between Class 2-9 buildings is verified when it is calculated that a building—

- (a) is capable of withstanding the heat flux set out in column 2 of Table H3V4 without ignition; and
- (b) will not cause heat flux in excess of those set out in column 2 of Table H3V4, when the distance between the buildings is as set out in column 1 of Table H3V4.

#### Explanatory Information

H3V4 is equivalent to C1V2 in NCC Volume One. Guidance on the use of C1V2 can be found in the Guide to NCC Volume One, and is applicable to the use of H3V4.

**Table H3V4: Heat flux (same allotment)**

Column 1 (Location)	Column 2 (Heat flux [kW/m <sup>2</sup> ])
0 m	80
2 m	40

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Column 1 (Location)	Column 2 (Heat flux [kW/m <sup>2</sup> ])
6 m	20
12 m	10

### Deemed-to-Satisfy Provisions

#### H3D1 Deemed-to-Satisfy Provisions

[New for 2022]

- (1) Where a *Deemed-to-Satisfy Solution* is proposed, *Performance Requirements* H3P1 and H3P2 are satisfied by complying with H3D2 to H3D6.
- (2) Where a *Performance Solution* is proposed, the relevant *Performance Requirements* must be determined in accordance with A2G2(3) and A2G4(3) as applicable.

#### H3D2 Fire hazard properties and non-combustible building elements

[2019: 3.7.1]

- (1) The following materials, though *combustible* or containing *combustible* fibres, may be used wherever a *non-combustible* material is *required*:
  - (a) Plasterboard.
  - (b) Perforated gypsum lath with a normal paper finish.
  - (c) Fibrous-plaster sheet.
  - (d) Fibre-reinforced cement sheeting.
  - (e) Pre-finished metal sheeting having a *combustible* surface finish not exceeding 1 mm thick and where the *Spread-of-Flame Index* of the product is not more than 0.
  - (f) *Sarking-type materials* that do not exceed 1 mm in thickness and have a *Flammability Index* not greater than 5.
  - (g) Bonded laminated materials where—
    - (i) each lamina, including any core, is *non-combustible*; and
    - (ii) each adhesive layer does not exceed 1 mm in thickness and the total thickness of the adhesive layers does not exceed 2 mm; and
    - (iii) the *Spread-of-Flame Index* and the *Smoke-Developed Index* of the bonded laminated material as a whole do not exceed 0 and 3 respectively.
- (2) The *fire hazard properties* of materials used in a Class 1 building, including floor or ceiling spaces common with a Class 10 building, must comply with the following:
  - (a) *Sarking-type materials* used in the roof must have a *Flammability Index* not greater than 5.
  - (b) Flexible ductwork used for the transfer of products initiating from a heat source that contains a flame must comply with the *fire hazard properties* set out in AS 4254.1.

#### H3D3 Fire separation of external walls

[2019: 3.7.2]

Compliance with Part 9.2 of the ABCB Housing Provisions satisfies *Performance Requirement* H3P1 for fire separation of *external walls*.

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### H3D4 Fire protection of separating walls and floors

[2019: 3.7.3]

Compliance with Part 9.3 of the ABCB Housing Provisions satisfies *Performance Requirement H3P1* for fire protection of *separating walls* and floors.

#### NSW H3D5

### H3D5 Fire separation of garage-top-dwellings

[2019: 3.7.4]

Compliance with Part 9.4 of the ABCB Housing Provisions satisfies *Performance Requirement H3P1* for fire separation of garage-top dwellings.

### H3D6 Smoke alarms and evacuation lighting

[2019: 3.7.5]

- (1) Compliance with Part 9.5 of the ABCB Housing Provisions satisfies *Performance Requirement H3P2* for smoke alarms and evacuation lighting.
- (2) For the purposes of (1), a Class 1 building includes a Class 10a private garage located above or below the Class 1 building.

#### Explanatory Information: Smoke alarms general requirements

*Performance Requirement H3P2* and the *Deemed-to-Satisfy Provisions* of Part 9.5 of the ABCB Housing Provisions require *automatic* warning on the detection of smoke in buildings, so that occupants may be alerted to a fire in order to evacuate to a place of safety.

#### Explanatory Information: Different smoke alarm requirements for Class 1a and Class 1b buildings

Part 9.5 of the ABCB Housing Provisions specifies different smoke alarm requirements for Class 1a and Class 1b buildings. The main difference is that a Class 1b building is *required* to have a greater number of smoke alarms, i.e. smoke alarms must be installed in all bedrooms, and a system of lighting must be installed to assist evacuation. This is due to Class 1b buildings generally being used for more transient purposes and the occupants being less familiar with the building layout.

#### Explanatory Information: Smoke alarms complying with AS 3786

Clause 9.5.1(b) of the ABCB Housing Provisions requires a smoke alarm(s) to comply with AS 3786. AS 3786 contains the requirements for the design and performance of electrically operated smoke alarms containing both detection and alarm facilities. Types of smoke alarms prescribed in AS 3786 include photoelectric, ionisation or a combination of the two.

#### Explanatory Information: Smoke alarms to be connected to consumer mains source

Clause 9.5.1(c) of the ABCB Housing Provisions requires that a smoke alarm be connected to the consumer mains electricity source where a consumer mains source is supplied to the building. A smoke alarm complying with AS 3786, that is intended for connection to an external power source, is *required* to be provided with a secondary power source i.e. a source of power to supply the smoke alarm in the event that the primary power source is unavailable. Generally, the requirement is met by providing mains powered smoke alarms with a battery back-up.

#### Explanatory Information: Interconnection of smoke alarms

Clause 9.5.1(d) of the ABCB Housing Provisions requires that alarms be interconnected to provide a common alarm so that if one alarm in the dwelling activates, the other alarms automatically activate, which will increase the likelihood of sleeping occupants becoming aware of the detection of smoke. Alarms of a Class 1 building need not be interconnected with alarms in another Class 1 building or a *private garage* which does not belong to the Class 1 building.

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### Explanatory Information: Location of smoke alarms

When deciding on the position of smoke alarms it is important to remember that they are intended to detect smoke before it reaches the sleeping occupants of a building.

The ensuing alarm is designed to wake the occupants and give them time to evacuate the building.

### Explanatory Information: Smoke alarms required on other storeys not containing bedrooms

In addition to a smoke alarm being *required* to be provided on storeys containing bedrooms, a smoke alarm is also *required* on each other storey that is not already provided with a smoke alarm even if those storeys consist of only carparking, bathrooms, laundries and the like. “Storey” in this context differs from the definition contained in the NCC which excludes such spaces from being considered as storeys.

Reference to “storey” only applies within a single dwelling. For example, if a storey contains a *private garage* belonging to the Class 1a dwelling in addition to a *private garage* which does not belong to the Class 1a dwelling, smoke alarms must be installed in both *private garages*.

Where the other storey is a Class 10a *private garage*, clause 9.5.1(b) of the ABCB Housing Provisions permits the use of any other alarm deemed suitable in accordance with AS 1670.1 provided smoke alarms complying with AS 3786 are installed elsewhere in the Class 1 building.

### Explanatory Information: Nuisance alarms

Smoke alarms are extremely sensitive and may detect smoke and moisture created by common household activities such as burnt toast or steam from a bathroom.

Accordingly, to reduce the likelihood of nuisance alarms, it is preferable that smoke alarms are not located near cooking appliances and bathrooms. However, if it is necessary to locate alarms in these positions, the type of alarm installed may need to be considered as some alarm types may be more suitable in certain locations.

### Explanatory Information: Added flexibility when considering smoke alarm location

The options described in the ABCB Housing Provisions are not the only means available for complying with this Part. The performance-based nature of the NCC provides flexibility to develop alternative methods if it is preferred to meet the *Performance Requirement* in some other way. This added flexibility may be utilised when considering the location of smoke alarms.

## Part H4 Health and amenity

### Introduction to this Part

This Part is intended to address several factors which impact on health and *amenity*. These factors include, waterproofing of *wet areas*, room heights, kitchen, laundry and toilet facilities, lighting, ventilation, sound insulation and *condensation*.

#### Objectives

**H401 Wet areas** [2019: O2.4.1]

The Objective is to safeguard the occupants from illness or injury and protect the building from damage caused by the accumulation of internal moisture arising from the use of *wet areas* in a building.

**H402 Room heights** [2019: O2.4.2]

The Objective is to safeguard the occupants from injury or loss of *amenity* caused by inadequate height of a room or space.

**H403 Facilities** [2019: O2.4.3]

The Objective is to—

- (a) safeguard occupants from illness caused by infection; and
- (b) safeguard occupants from loss of *amenity* arising from the absence of adequate personal hygiene facilities; and
- (c) enable occupants to carry out laundering; and
- (d) provide for facilities to enable food preparation; and
- (e) enable unconscious occupants of *sanitary compartments* to be removed from the compartment.

**H404 Light** [2019: O2.4.4]

The Objective is to safeguard occupants from injury, illness or loss of *amenity* due to—

- (a) isolation from natural light; and
- (b) lack of adequate artificial lighting.

**H405 Ventilation** [2019: O2.4.5]

The Objective is to safeguard occupants from illness or loss of *amenity* due to lack of air freshness.

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### H406 Sound insulation

[2019: O2.4.6]

The Objective is to safeguard occupants from illness or loss of *amenity* as a result of undue sound being transmitted between adjoining dwellings.

### H407 Condensation and water vapour management

[New for 2022]

The Objective is to reduce the likelihood of *condensation* or water vapour build-up causing illness, injury or loss of *amenity* for building occupants.

#### Applications

H407 only applies to a Class 1 building.

### Functional Statements

#### H4F1 Wet areas

[2019: F2.4.1]

A building is to be constructed to avoid the likelihood of—

- (a) the creation of any unhealthy or dangerous conditions; or
- (b) damage to building elements,

caused by dampness or water overflow from bathrooms, laundries and the like.

#### H4F2 Room heights

[2019: F2.4.2]

A building is to be constructed to provide height in a room or space suitable for the intended use.

#### H4F3 Facilities

[2019: F2.4.3]

A building is to be provided with suitable—

- (a) space and facilities for personal hygiene; and
- (b) space or facilities for laundering; and
- (c) space and facilities for the preparation and cooking of food; and
- (d) space or other means to permit an unconscious occupant to be removed from a *sanitary compartment*; and
- (e) means for the sanitary disposal of waste water.

#### Applications

H4F3 only applies to a Class 1 building.

## Class 1 and 10 buildings

### H4F4 Light

[2019: F2.4.4]

- (1) A *habitable room* within a building is to be provided with openings to admit adequate natural light consistent with its function or use.
- (2) A space within a building used by occupants is to be provided with artificial lighting consistent with its function or use which, when activated in the absence of suitable natural light, will enable safe movement.

### H4F5 Ventilation

[2019: F2.4.5]

A space used by occupants within a building is to be provided with adequate ventilation consistent with its function or use.

### H4F6 Sound insulation

[2019: F2.4.6]

A building element which separates dwellings is to be constructed to prevent undue sound transmission between those dwellings.

### H4F7 Condensation and water vapour management

[New for 2022]

Building elements in areas subject to water vapour or *condensation* must be constructed to reduce risks to the health of building occupants.

#### Applications

H4F7 only applies to a Class 1 building.

## Performance Requirements

### H4P1 Wet areas

[2019: P2.4.1]

To protect the structure of the building and to maintain the *amenity* of the occupants, water must be prevented from penetrating—

- (a) behind fittings and linings; or
- (b) into concealed spaces,

of sanitary facilities, bathrooms, laundries and the like.

*SA H4P1(2)*

### H4P2 Room heights

[2019: P2.4.2]

A room or space must be of a height that does not unduly interfere with its intended function.

## Class 1 and 10 buildings

### H4P3 Personal hygiene and other facilities

[2019: P2.4.3]

- (1) Suitable sanitary facilities for personal hygiene must be provided in a convenient location within or associated with a building, appropriate to its function or use.
- (2) Laundering facilities or space for laundering facilities and the means for sanitary disposal of waste water must be provided in a convenient location within or associated with a building, appropriate to its function or use.
- (3) A food preparation facility must be provided which includes—
  - (a) a means for food rinsing, utensil washing and the sanitary disposal of associated waste water; and
  - (b) a means for cooking food; and
  - (c) a space for food preparation.
- (4) A *sanitary compartment* must be constructed with sufficient space or other means to enable an unconscious occupant to be removed from the compartment.

#### Applications

H4P3 only applies to a Class 1 building.

#### Explanatory Information

For the purposes of H4P3(2), waste water includes water soiled as a result of clothes washing, mopping floors and other domestic cleaning processes.

### H4P4 Lighting

[2019: P2.4.4]

- (1) A *habitable room* must be provided with *windows*, where appropriate to the function or use of that part of the building, so that natural light, when available, provides an *average daylight factor* of not less than 2%.
- (2) Artificial lighting must be installed to provide an *illuminance* of not less than 20 lux appropriate to the function or use of the building to enable safe movement by occupants.

#### Applications

H4P4(2) only applies—

- (a) to *sanitary compartments*, bathrooms, shower rooms, airlocks, laundries and the like; and
- (b) if natural light of a suitable standard is not available.

#### Explanatory Information

H4P4(1) nominates a minimum *average daylight factor* for rooms provided with natural light. Note that H4V2 provides a method by which *average daylight factor* may be calculated.

To comply with H4P4(2), the level of artificial light must enable safe movement by occupants, appropriate to the use of the building. For example, in a movie room a lower level of lighting may be appropriate while a movie is being screened, however at the beginning and end of the movie when occupants are entering and exiting the movie room the minimum lighting level of 20 lux may be appropriate.

### H4P5 Ventilation

[2019: P2.4.5]

- (1) A space within a building used by occupants must be provided with means of ventilation with *outdoor air* which will maintain adequate air quality.
- (2) A mechanical air-handling system installed in a building must control—

## Class 1 and 10 buildings

- (a) the circulation of objectionable odours; and
  - (b) the accumulation of harmful contamination by micro-organisms, pathogens and toxins.
- (3) Contaminated air must be disposed of in a manner which does not unduly create a nuisance or hazard to people in the building or *other property*.

NT H4P6

### H4P6 Sound insulation

[2019: P2.4.6]

- (1) Walls separating dwellings must, to provide insulation against the transmission of airborne sound, have a weighted standardised level difference with spectrum adaptation term ( $D_{nT,w} + C_{tr}$ ) not less than 45.
- (2) Walls separating a bathroom, *sanitary compartment*, laundry or kitchen in a dwelling from a *habitable room* (other than a kitchen) in an adjoining dwelling, must provide insulation against impact generated sound sufficient to prevent illness or loss of *amenity* to the occupants.
- (3) The *required* sound insulation of walls must not be compromised by the incorporation or penetration of a pipe or other service element.

### H4P7 Condensation and water vapour management

[2019: P2.4.7]

Risks associated with water vapour and *condensation* must be managed to minimise their impact on the health of occupants.

#### Applications

H4P7 only applies to a Class 1 building.

#### Verification Methods

### H4V1 Room or space height

[2019: V2.4.2]

- (1) Compliance with H4P2 is verified where the height of a room or space provides an appropriate *activity support level* that does not unduly interfere with its intended function.
- (2) For a room or space in (1), the *activity support level* must consider the dimensions of—
  - (a) doors, ramps, barriers, stairs and *windows*; and
  - (b) fixed fittings and *domestic services*; and
  - (c) fixed and moveable equipment or furniture; and
  - (d) occupant circulation spaces.

#### Explanatory Information

The intent of H4P2 is the height of a room or space is sufficient for the intended use of the room or space. 'Intended use' recognises that the height required in a room or space is directly related to the room or space's intended function.

H4V1 is a means to verify that the height of a room or space is suitable for the intended use, and therefore meets the requirement of H4P2.

In relation to the intended function of a room or space, the activities that are likely to be undertaken by occupants in the room of space, as well the features of the activities, are relevant considerations when determining a suitable height.

For example, if the intended use of a room is a gymnasium, then gymnastic activities are likely to be undertaken in the room. These activities often involve jumps and flips which require significant space in order to be undertaken safely.

## Class 1 and 10 buildings

In terms of the occupants, their features and needs are also relevant when determining a suitable height. For example, occupant features and needs would differ between rooms or spaces intended as a child's play area, and rooms or spaces intended for adult's indoor cricket.

The method requires consideration of '*activity traits*', '*occupant traits*' and '*activity support level*'. Refer to Schedule 1 for more information on these terms.

When determining the *activity support level*, the method requires consideration of the relevant dimensions of items likely to be located in the room or space, as well as occupant circulation spaces.

Some of these considerations are—

- stairs and ramps, since the height of the room of the space will change relative to the occupant during incline and decline; and
- fixed fittings such as lights that may protrude from the ceiling and wash-basins; and
- domestic services such as air-conditioners, heaters, ceiling fans and *heated water* systems; and
- fixed equipment such manufacturing or processing equipment, permanent signage or displays and lifts; and
- moveable equipment such as whitegoods; and
- fixed furniture such as built-in wardrobes and permanent seating; and
- moveable furniture such as wardrobes, desks and beds; and
- occupant circulation spaces so that occupants can move comfortably and safety around the room or space.

For example, the location and dimensions of a wash-basin is a relevant consideration in determining the *activity support level* of a bathroom. This is because an occupant will typically need to access the wash-basin whilst standing, which will influence the necessary height of the space.

Another example is the consideration of moveable equipment such as a refrigerator in a kitchen. If the intended use of a space is a kitchen, then it would be unrealistic to determine a sufficient height for the room without considering the height of a typical refrigerator that would be located in the room.

### H4V2 Verification of suitable natural light

[2019: V2.4.4]

Compliance with H4P4(1) is verified for the provision of natural light in all *habitable rooms* when the *average daylight factor* for each *window* is determined in accordance with the following formula:

Average Daylight Factor =  $\frac{W}{A} \frac{T\theta}{(1 - R^2)}$ ,

where—

- (a)  $W$  = the net area of the light transmitting area of the *window* (m<sup>2</sup>); and
- (b)  $A$  = the total area of the internal wall, floor and ceiling surfaces (m<sup>2</sup>); and
- (c)  $T$  = the diffuse light transmittance of the *window*; and
- (d)  $\theta$  = visible sky angle in degrees, measured in a plane normal to and from the centre of the *window*; and
- (e)  $R$  = the area-weighted average reflectance of area  $A$ .

#### Explanatory Information

H4V2 is equivalent to F6V3 in NCC Volume One. Guidance on the use of F6V3 can be found in the Guide to NCC Volume One, and is applicable to the use of H4V2.

### H4V3 Verification of indoor air quality

[2019: V2.4.5]

For a Class 1 building, compliance with H4P5(1) and H4P5(2)(a) is verified when it is determined that the building under typical conditions in use is provided with sufficient ventilation with *outdoor air* such that contaminant levels do not exceed the limits specified in Table H4V3.

## Class 1 and 10 buildings

Table H4V3: Maximum contaminant limits for acceptable indoor air quality

Pollutant	Averaging Time	Maximum Air Quality Value
Carbon dioxide, CO <sub>2</sub>	8 hours	850 ppm <sup>Note 1</sup>
Carbon monoxide, CO	15 minutes	90 ppm
Carbon monoxide, CO	30 minutes	50 ppm
Carbon monoxide, CO	1 hour	25 ppm
Carbon monoxide, CO	8 hours	10 ppm
Formaldehyde, CH <sub>2</sub> O	30 minutes	0.1 mg/m <sup>3</sup>
Nitrogen dioxide, NO <sub>2</sub>	1 year	40 µg/m <sup>3</sup> (0.0197 ppm) <sup>Note 2</sup>
Nitrogen dioxide, NO <sub>2</sub>	1 hour	200 µg/m <sup>3</sup> (0.0987 ppm) <sup>Note 2</sup>
Ozone, O <sub>3</sub>	8 hour, daily maximum	100 µg/m <sup>3</sup> (0.0473 ppm)
Particulate matter, PM <sub>2.5</sub>	1 year	10 µg/m <sup>3</sup>
Particulate matter, PM <sub>2.5</sub>	24 hour (99th percentile)	25 µg/m <sup>3</sup>
Particulate matter, PM <sub>10</sub>	1 year	20 µg/m <sup>3</sup>
Particulate matter, PM <sub>10</sub>	24 hour (99th percentile)	50 µg/m <sup>3</sup>
Total volatile organic compounds	1 hour	500 µg/m <sup>3</sup>

## Table Notes

- (1) Based on body odour metric (i.e. 450 ppm above ambient CO<sub>2</sub> level of 400 ppm and demand control ventilation provisions in AS 1668.2).
- (2) Based on pressure of 101.325 kPa and temperature of 25 degrees (i.e. the conversion is mg/m<sup>3</sup> = ppm (molecular weight/24.4)).

## NT H4V4

## H4V4 Sound insulation

[2019: V2.4.6]

Compliance with H4P6(1) and (3) to insulate against transmission of airborne sound through walls separating dwellings is verified when it is measured in-situ that the wall has a weighted standardised level difference with spectrum adaptation term ( $D_{nT,w} + C_{tr}$ ) not less than 45 when determined under AS/NZS ISO 717.1.

## H4V5 Verification of condensation management

[2019: V2.4.7]

- (1) Compliance with *Performance Requirement H4P7* is verified for a roof or *external wall* assembly when it is determined that a mould index of greater than 3, as defined by Section 6 of AIRAH DA07, does not occur on—
- the interior surface of the *water control layer*; or
  - the surfaces of building *fabric* components interior to the *water control layer*.
- (2) The calculation method for (1) must use—
- input assumptions in accordance with AIRAH DA07; and
  - the intermediate method for calculating indoor design humidity in Section 4.3.2 of AIRAH DA07.

## Deemed-to-Satisfy Provisions

## H4D1 Deemed-to-Satisfy Provisions

[New for 2022]

- (1) Where a *Deemed-to-Satisfy Solution* is proposed, *Performance Requirements H4P1 to H4P7* are satisfied by complying with H4D2 to H4D9.
- (2) Where a *Performance Solution* is proposed, the relevant *Performance Requirements* must be determined in accordance with A2G2(3) and A2G4(3) as applicable.

## H4D2 Wet areas

[2019: 3.8.1.1, 3.8.1.2]

Compliance with AS 3740 or Part 10.2 of the ABCB Housing Provisions satisfies *Performance Requirement H4P1* for *wet areas* provided the *wet areas* are protected in accordance with the appropriate requirements of 10.2.1 to 10.2.6 and 10.2.12 of the ABCB Housing Provisions.

## H4D3 Materials and installation of wet area components and systems

[New for 2022]

*Performance Requirement H4P1* is satisfied for materials and the installation of *wet area* components and systems if—

- (a) building elements in *wet areas* are *water resistant* or *waterproof* in accordance with clauses 10.2.1 to 10.2.6 of the ABCB Housing Provisions; and
- (b) they comply with either—
  - (i) AS 3740 and clause 10.2.12 of the ABCB Housing Provisions; or
  - (ii) 10.2.7 to 10.2.32 of the ABCB Housing Provisions.

### Notes: Livable housing design

In a Class 1a dwelling, at least one bathroom and at least one toilet must comply with the ABCB Standard for Livable Housing Design, which may override the requirements of H4D3.

### Explanatory Information

AS 3740 and the ABCB Housing Provisions contain requirements for shower hobs and shower over bath configurations, however these may only be used in a bathroom that is not subject to the ABCB Standard for Livable Housing Design. Generally, the ABCB Standard for Livable Housing Design only applies to one bathroom per dwelling. Therefore, shower hobs and the like may only be used in any additional bathrooms.

## H4D4 Room heights

[2019: 3.8.2]

Compliance with Part 10.3 of the ABCB Housing Provisions satisfies *Performance Requirement H4P2* for room heights.

## H4D5 Facilities

[2019: 3.8.3]

Compliance with Part 10.4 of the ABCB Housing Provisions satisfies *Performance Requirement H4P3* for facilities.

### Explanatory Information: Additional requirements

Additional requirements relating to facilities for people with a disability in Class 1b and Class 10a buildings are contained in NCC Volume One. These requirements are based on the Disability (Access to Premises – Buildings) Standards (Premises Standards) which are available from the Australian Government Attorney-General's Department website at [www.ag.gov.au](http://www.ag.gov.au).

## Class 1 and 10 buildings

### Explanatory Information: Cross-volume considerations

NCC Volume Three contains a number of *plumbing* and *drainage* provisions which are relevant to facilities. These include, but may not be limited to, the following:

- Access for maintenance of *plumbing* and *drainage*: Parts B1, B2, B3, C1 and C2.
- *Heated water* temperature control for facilities used for personal hygiene: Part B2.
- Installation of sanitary *plumbing* and *drainage* systems: Parts C1 and C2.

### H4D6 Light

[2019: 3.8.4]

Compliance with Part 10.5 of the ABCB Housing Provisions satisfies *Performance Requirement H4P4* for lighting.

### H4D7 Ventilation

[2019: 3.8.5]]

- (1) Except for an exhaust fan from a *sanitary compartment*, laundry, kitchen or bathroom, *Performance Requirement H4P5* is satisfied for a mechanical ventilation system if it is installed in accordance with AS 1668.2.
- (2) Compliance with Part 10.6 of the ABCB Housing Provisions satisfies *Performance Requirement H4P5* for ventilation.

### H4D8 Sound insulation

[2019: 3.8.6]

Compliance with Part 10.7 of the ABCB Housing Provisions satisfies *Performance Requirement H4P6* for sound insulation.

#### TAS H4D9

### H4D9 Condensation management

[2019: 3.8.7]

Compliance with Part 10.8 of the ABCB Housing Provisions satisfies *Performance Requirement H4P7* for *condensation* management.

#### Notes

From 1 May 2023 to 30 September 2023 P2.4.7, V2.4.7 and Part 3.8.7 of NCC 2019 Volume Two Amendment 1 may apply instead of H4P7, H4V5 and H4D9 of NCC 2022 Volume Two. From 1 October 2023 H4P7, H4V5 and H4D9 of NCC 2022 Volume Two applies.

#### Explanatory Information

The intent of these requirements is to assist in the mitigation of *condensation* within a building. The implementation of *condensation* management measures may not prevent *condensation* from occurring.

## Part H5 Safe movement and access

### Introduction to this Part

This Part is intended to reduce the likelihood of people being injured when accessing or moving about a building. It does this by setting requirements for the construction of stairways and ramps, slip resistance, and the design and construction of barriers to prevent falls.

#### Objectives

##### H5O1 Objective

[2019: O2.5]

The Objective is to provide people with safe access to and within a building.

*SA H5O2*

#### Functional Statements

##### H5F1 Safety from falling

[2019: F2.5.1]

A building is to provide safe access for people to the services and facilities within.

*SA H5F2*

#### Performance Requirements

##### H5P1 Movement to and within a building

[2019: P2.5.1]

So that people can move safely to and within a building—

- (a) walking surfaces must have safe gradients; and
- (b) any stairway or ramp must—
  - (i) have suitable handrails where necessary to assist and provide stability to people using the stairway or ramp; and
  - (ii) have suitable landings to avoid undue fatigue of users; and
  - (iii) be suitable for safe passage in relation to the nature, volume and frequency of likely usage; and
  - (iv) have slip-resistant walking surfaces on ramps, and on stairway treads or near the edge of the nosing.

##### H5P2 Fall prevention barriers

[2019: P2.5.2]

(1) A barrier must be provided where people could fall—

- (a) 1 m or more—
  - (i) from a floor or roof or through an opening (other than through an openable window) in the *external wall*; or
  - (ii) due to a sudden change of level within or associated with a building; or

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- (b) 2 m or more from a floor through an openable window in a bedroom; or
  - (c) 4 m or more from a floor through an openable window not covered by (b).
- (2) A barrier required by (1) must be—
- (a) continuous and extend for the full extent of the hazard; and
  - (b) of a height to protect people from accidentally falling from the floor or roof or through the opening or openable window; and
  - (c) constructed to prevent people from falling through the barrier; and
  - (d) capable of restricting the passage of children; and
  - (e) of strength and rigidity to withstand—
    - (i) the foreseeable impact of people; and
    - (ii) where appropriate, the static pressure of people pressing against it.

SA H5P3

### Verification Methods

#### H5V1 Wire barriers

[2019: V2.5.1]

Compliance with H5P2(2)(c) and (d) for wire barriers is verified when the wire barrier passes the test described below:

- (a) The test must be carried out on either—
  - (i) a prototype of a wire barrier that is identical to that proposed to be installed on site; or
  - (ii) a wire barrier installed on site.
- (b) The test equipment must consist of the following:
  - (i) A horizontally suspended 125 mm diameter, 405 mm long cylinder of 1 mm thick steel having a highly polished 105 mm long cone at one end with a 20 mm diameter flat leading edge to which an eye bolt is fixed.
  - (ii) A sufficiently flexible horizontal cable with mechanisms capable of applying and measuring a tension of 150 N (or a 15.3 kg weight suspended over a low friction pulley) is to be attached to the eye bolt (see Figure H5V1).
  - (iii) A mechanism capable of measuring the tension force applied to each wire.
- (c) The test procedure must be as follows:
  - (i) Tension the wires, within their safe load, to the same tension in all wires and measure the tensions with a strain indicator.
  - (ii) For—
    - (A) horizontal or near horizontal wires, position the cone against a pair of wires at the mid-span between supports, then apply the 150 N tension force to the cone; and
    - (B) vertical wires, position the cone against a pair of wires at the mid-span between supporting rails, then apply the 150 N tension force to the cone; and
    - (C) near-vertical wires, position the cone against a pair of wires at the widest opening between the wires, then apply the 150 N tension force to the cone.
  - (iii) Attempt to pull the cone through the gap between the wires under the 150 N load, and—
    - (A) increase the tension in the wires and repeat (ii) until such time as the cone will not pull through; or
    - (B) if it does not pull through, reduce the tension in the wires and repeat step (ii).
  - (iv) When the cone is just prevented from pulling through the gap, the wires are at the correct tension in which case the cone is withdrawn and the tension recorded.
  - (v) Reduce the tension in the wires and repeat steps (ii) to (iv) twice more, recording the tension in each case

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after the cone has been removed and then calculate the average of the three tensions as the *required* tension for each wire.

- (vi) For prototype tests of horizontal or near horizontal wires, record the deflection of each wire at the average tension calculated in accordance with (v) when a 2 kg mass is hung at mid-span between supports.
- (d) The test report must include the following information:
- (i) The name and address of the person supervising the test.
  - (ii) The test report number.
  - (iii) The date of the test.
  - (iv) The wire manufacturer's name and address, and specifications of the wires used in the test including the safe load limit of the wires.
  - (v) The construction details of the test specimen, including a description and drawings and details of the components including supports, post or railing spacings and wire spacings.
  - (vi) For a prototype test, the *required* tension calculated in accordance with (c)(v).
  - (vii) For prototype tests of horizontal or near horizontal wires, the deflection measured in accordance with (c)(vi).

### Explanatory Information

H5V1 is a means to verify that a proposed wire barrier satisfies the requirements of H5P2(2)(c) and (d).

The meaning of the phrase "prototype that is identical to that proposed to be installed" is similar to the testing of prototypes for fire resistance. That is the prototype and the installation must be identical with respect to the type of wire, the wire diameter, the number of lays, the wire tension, the post spacing and size, etc.

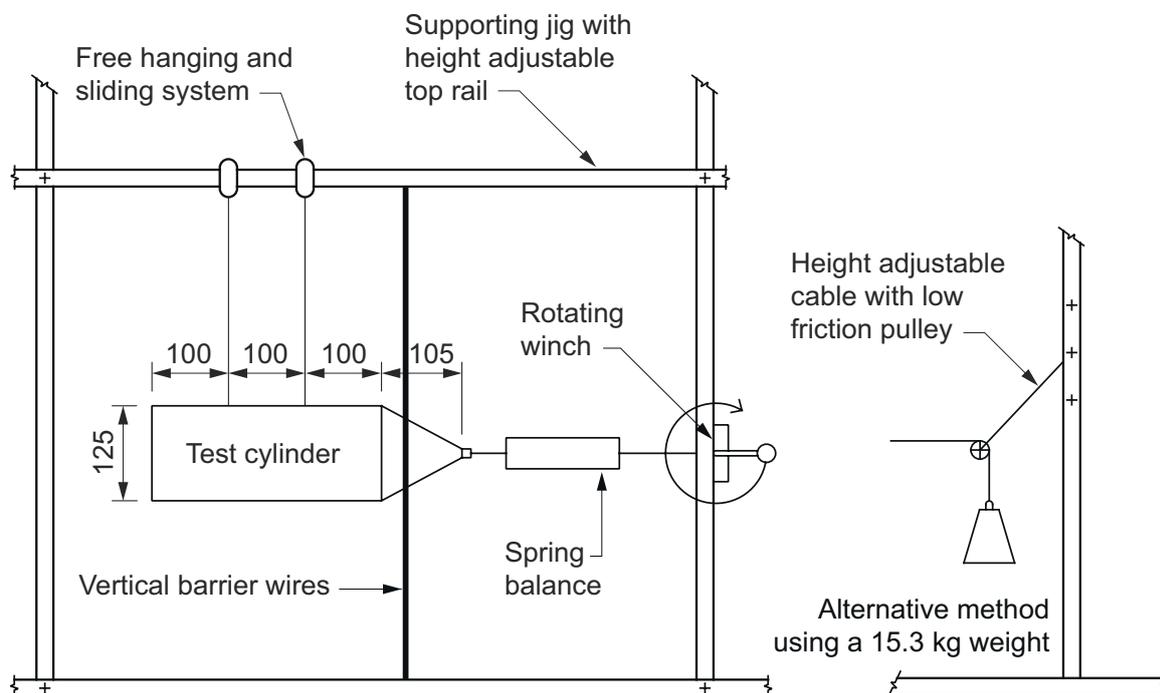
The test procedure is slightly different for barriers with horizontal or near horizontal wires and vertical wires or near vertical wires (see the test procedures set out in H5V1(c)(ii)).

H5V1(c)(vi) allows measuring deflection of wires to verify that the *required* tension has been achieved.

It should be noted that H5V1 is only one form of compliance solution which can be used to demonstrate compliance with H5P2(2)(c) and (d). The following means of verification are available:

- H5V1.
- The *Deemed-to-Satisfy Provisions* in Part 11.3 of the ABCB Housing Provisions.
- A *Performance Solution* that uses one of the other NCC *Assessment Methods* which verifies that H5P2(2)(c) and (d) will be achieved.

**Figure H5V1: Apparatus for testing wire barriers**



**Deemed-to-Satisfy Provisions****H5D1 Deemed-to-Satisfy Provisions**

[New for 2022]

*SA H5D1(1)*

- (1) Where a *Deemed-to-Satisfy Solution* is proposed, *Performance Requirements* H5P1 and H5P2 are satisfied by complying with H5D2 and H5D3.
- (2) Where a *Performance Solution* is proposed, the relevant *Performance Requirements* must be determined in accordance with A2G2(3) and A2G4(3) as applicable.

**H5D2 Stairway and ramp construction**

[2019: 3.9.1]

Compliance with Part 11.2 of the ABCB Housing Provisions satisfies *Performance Requirement* H5P1 for stairway and ramp construction.

**H5D3 Barriers and handrails**

[2019: 3.9.2]

Compliance with Part 11.3 of the ABCB Housing Provisions satisfies *Performance Requirement* H5P2 for barriers and H5P1(b)(i) for handrails.

*SA H5D4*

# Part H6 Energy efficiency

NSW Part H6

NT Part H6

TAS Part H6

## Introduction to this Part

This Part is intended to improve the efficient use of energy in building design and construction, as well as the energy usage by key equipment installed in a building.

### Notes

From 1 May 2023 to 30 September 2023 Part 2.6 and Part 3.12 of NCC 2019 Volume Two Amendment 1 may apply instead of Part H6 of NCC 2022 Volume Two. From 1 October 2023 Part H6 of NCC 2022 Volume Two applies.

## Objectives

### H601 Objective

[2019: O2.6]

The Objective of this Part is to —

- (a) reduce energy consumption and energy peak demand; and
- (b) reduce greenhouse gas emissions; and
- (c) improve occupant health and *amenity*.

## Functional Statements

### H6F1 Energy efficiency

[2019: F2.6]

A building must—

- (a) reduce the energy consumption and energy peak demand of key energy using equipment; and
- (b) reduce greenhouse gas emissions that occur as a result of a building's energy consumption and energy source; and
- (c) improve occupant health and *amenity* by mitigating the impact of extreme hot and cold weather events, and energy blackouts.

## Performance Requirements

### H6P1 Thermal performance

[2019: P2.6.1]

- (1) The total *heating load* of the *habitable rooms* and *conditioned spaces* in a building must not exceed the *heating load* limit in Specification 44.
- (2) The total *cooling load* of the *habitable rooms* and *conditioned spaces* in a building must not exceed the *cooling load* limit in Specification 44.

## Class 1 and 10 buildings

- (3) The total *thermal energy load* of the *habitable rooms* and *conditioned spaces* in a building must not exceed the *thermal energy load* limit in Specification 44.

### H6P2 Energy usage

[2019: P2.6.2]

- (1) The *energy value* of a building's *domestic services* must not exceed 70% of the *energy value* with—
- (a) a 3-star ducted heat pump, rated under the 2019 GEMS determination, heating all spaces that are provided with heating; and
  - (b) a 3-star ducted heat pump, rated under the 2019 GEMS determination, cooling all spaces that are provided with cooling; and
  - (c) a 5-star instantaneous gas water heater, rated under the 2017 GEMS determination, providing all domestic hot water; and
  - (d) a lighting power density of 4 W/m<sup>2</sup> serving all internal spaces that are provided with artificial lighting.
- (2) *Domestic services*, including any associated distribution system and components must, to the degree necessary, have features that facilitate the efficient use of energy appropriate to—
- (a) the *domestic service* and its usage; and
  - (b) the geographic location of the building; and
  - (c) the location of the *domestic service*; and
  - (d) the energy source.

### Verification Methods

#### VIC H6V1

### H6V1 Application of H6V2 and H6V3

[2019: V2.6.1]

The *Verification Methods* in this Part only apply to—

- (a) a Class 1 building; and
- (b) an enclosed Class 10a building attached to a Class 1 building.

#### Explanatory Information

The *Verification Methods* in this Part are intended to apply to whole Class 1 buildings and to whole Class 1 buildings that incorporate attached and enclosed Class 10a parts, such as attached garages. The *Verification Methods* are not intended to apply to detached garages or to open carports.

#### NSW H6V2

### H6V2 Verification using a reference building

[2019: V2.6.2.2]

- (1) Compliance with H6P1 is verified when a proposed building—
- (a) compared to a *reference building*, using a calculation method other than *house energy rating software*, has—
    - (i) in *climate zone* 1, a *cooling load* equal to or less than that of the *reference building*; or
    - (ii) in *climate zone* 8, a *heating load* equal to or less than that of the *reference building*; or
    - (iii) in *climate zones* 2, 3, 4, 5, 6 and 7, a *heating load* and a *cooling load* equal to or less than that of the *reference building*; and

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- (b) complies with—
- (i) for building *fabric* thermal insulation, clause 13.2.2 of the ABCB Housing Provisions; and
  - (ii) for thermal breaks, clauses 13.2.3(7) and 13.2.5(5) of the ABCB Housing Provisions; and
  - (iii) for floor edge insulation, clauses 13.2.6(4), 13.2.6(6) and 13.2.6(7) of the ABCB Housing Provisions; and
  - (iv) for building sealing, Part 13.4 of the ABCB Housing Provisions or H6V3.
- (2) The *reference building* must comply with the *Deemed-to-Satisfy Provisions* in Parts 13.2, 13.3 and 13.5 of the ABCB Housing Provisions.
- (3) The *heating load* and *cooling load* for the proposed building and the *reference building* must be determined using the same—
- (a) calculation method; and
  - (b) location specific data, including that of climate and topography appropriate to the location where the proposed building is to be constructed if the data is available, or the nearest location with similar climatic conditions in the same *climate zone* for which the data is available; and
  - (c) impact of adjoining structures and features; and
  - (d) soil conditions; and
  - (e) orientation; and
  - (f) floor plan, including the location and size of *glazing*; and
  - (g) number of storeys; and
  - (h) roof cladding and *roof lights*; and
  - (i) separating walls; and
  - (j) external non-glazed doors; and
  - (k) intermediate floors; and
  - (l) floor coverings; and
  - (m) ventilation; and
  - (n) function and use of the building and spaces, including zoning and hours of occupation; and
  - (o) operating schedules for heating and cooling in Table H6V2a; and
  - (p) cooling thermostat settings of—
    - (i) for bedrooms, 24°C; and
    - (ii) for *habitable rooms* other than bedrooms—
      - (A) in *climate zones* 1, 2, 3 and 4, 27°C; and
      - (B) In *climate zones* 5, 6, 7 and 8, 26°C; and
  - (q) heating thermostat setting of 20°C for all *habitable rooms*; and
  - (r) occupancy in Table H6V2b, with —
    - (i) heat gains due to occupants of—
      - (A) 75 W per person in bedrooms; and
      - (B) 105 W per person in *habitable rooms* other than bedrooms; and
    - (ii) occupancy schedules in Table H6V2c; and
  - (s) internal heat gains—
    - (i) from appliances, 450 W; and
    - (ii) from lighting, 4 W/m<sup>2</sup>; and
    - (iii) from cooking equipment, in Table H6V2b; and
    - (iv) using the operating schedules for lighting, cooking equipment and appliances, in Table H6V2d; and
  - (t) air infiltration rate—
    - (i) of 0.75 air changes per hour; or
    - (ii) equal to the intended building air change rate at 50 Pa, divided by 20, where—

## Class 1 and 10 buildings

- (A) an intended building air change rate at 50 Pa is specified; and
- (B) additional building sealing provisions to Part 13.4 of the ABCB Housing Provisions are specified; and
- (C) building sealing is verified using H6V3.
- (4) The calculation method used must comply with ANSI/ASHRAE Standard 140 and be capable of assessing the *heating load* and *cooling load* by modelling—
- (a) the building *fabric*; and
  - (b) *glazing* and shading; and
  - (c) air infiltration and ventilation; and
  - (d) the function and use of the building including zoning, hours of occupation, hours of heating and cooling availability and internal heat gains; and
  - (e) relevant built-environment and topographical features; and
  - (f) the sensible heat component of the *cooling load* and *heating load*.
- (5) Climatic data employed in the calculation method must be based on hourly recorded values and be representative of a typical year for the proposed location.

**Table H6V2a: Heating and cooling schedules**

Hour ending at	Habitable rooms other than bedrooms	Bedrooms
1:00	OFF	ON
2:00	OFF	ON
3:00	OFF	ON
4:00	OFF	ON
5:00	OFF	ON
6:00	OFF	ON
7:00	ON	ON
8:00	ON	ON
9:00	ON	ON
10:00	ON	OFF
11:00	ON	OFF
12:00	ON	OFF
13:00	ON	OFF
14:00	ON	OFF
15:00	ON	OFF
16:00	ON	OFF
17:00	ON	OFF
18:00	ON	OFF
19:00	ON	ON
20:00	ON	ON
21:00	ON	ON
22:00	ON	ON
23:00	ON	ON
0:00	OFF	ON

## Class 1 and 10 buildings

Table H6V2b: Occupancy and cooking equipment loads

Floor area of <i>habitable rooms</i> (m <sup>2</sup> )	Occupancy (m <sup>2</sup> /occupant)	Cooking equipment load (W/m <sup>2</sup> of kitchen area)
100	41.2	36.2
125	44.3	34.7
150	47.8	28.9
175	51.7	24.8
200	55.8	25.3
225	60.0	22.5
250	64.4	20.2
275	68.9	18.4
300	73.3	16.9
325	77.5	15.6
350	81.6	14.5
375	85.4	13.5
400	89.0	12.7

Table H6V2c: Occupancy schedules

Hour ending at	Weekday occupancy in <i>habitable rooms</i> other than bedrooms	Weekend occupancy in <i>habitable rooms</i> other than bedrooms	Weekday and weekend bedroom occupancy
1:00	0%	0%	100%
2:00	0%	0%	100%
3:00	0%	0%	100%
4:00	0%	0%	100%
5:00	0%	0%	100%
6:00	0%	0%	100%
7:00	30%	30%	50%
8:00	30%	30%	50%
9:00	100%	30%	50%
10:00	100%	100%	0%
11:00	50%	100%	0%
12:00	50%	100%	0%
13:00	50%	100%	0%
14:00	50%	50%	0%
15:00	50%	50%	0%
16:00	50%	50%	0%
17:00	100%	50%	0%
18:00	100%	50%	0%
19:00	100%	100%	50%
20:00	100%	100%	50%
21:00	100%	100%	50%
22:00	30%	100%	100%
23:00	30%	30%	100%
0:00	0%	0%	100%

## Class 1 and 10 buildings

Table H6V2d: Lighting, cooking and appliance schedules

Hour ending at	Lighting	Cooking	Appliances
1:00	0%	0%	45%
2:00	0%	0%	40%
3:00	0%	0%	40%
4:00	0%	0%	40%
5:00	0%	0%	40%
6:00	0%	0%	40%
7:00	10%	5%	50%
8:00	10%	10%	70%
9:00	5%	10%	55%
10:00	0%	15%	50%
11:00	0%	15%	50%
12:00	0%	15%	50%
13:00	0%	20%	50%
14:00	0%	20%	50%
15:00	0%	20%	50%
16:00	0%	20%	50%
17:00	0%	25%	75%
18:00	20%	40%	95%
19:00	30%	80%	80%
20:00	35%	80%	70%
21:00	30%	40%	70%
22:00	25%	20%	65%
23:00	15%	10%	55%
0:00	0%	5%	55%

## H6V3 Verification of building envelope sealing

[2019: V2.6.2.3]

- (1) Compliance with H6P1 is verified for building *envelope* sealing when a building *envelope* is sealed at an air permeability of not more than 10 m<sup>3</sup>/hr.m<sup>2</sup> at 50 Pa reference pressure when tested in accordance with AS/NZS ISO 9972 Method 1.
- (2) Where an air permeability of not more than 5 m<sup>3</sup>/hr.m<sup>2</sup> at 50 Pa reference pressure is achieved—
  - (a) a mechanical ventilation system must be provided that—
    - (i) can be manually overridden; and
    - (ii) provides outdoor air, either—
      - (A) continuously; or
      - (B) intermittently, where the system has controls that enable operation for not less than 25 percent of each 4 hour segment; and
    - (iii) provides a flow rate not less than that achieved with the following formula:  $Q = (0.05 \times A + 3.5 \times (N + 1)) / p$ , where—
      - (A)  $Q$  = the required air flow rate (L/s); and
      - (B)  $A$  = the total floor area of the building (m<sup>2</sup>); and

## Class 1 and 10 buildings

- (C)  $N$  = the number of bedrooms in the building; and
- (D)  $p$  = the fraction of time within each 4 hour segment that the system is operational; and
- (b) any space with a solid-fuel burning combustion appliance must be ventilated with permanent openings directly to outside with a free area of not less than half of the cross-sectional area of the appliance's flue; and
- (c) any space with a gas-fuelled combustion appliance must be ventilated in accordance with—
- (i) clause 6.4 of AS/NZS 5601.1; and
  - (ii) clause 6.4.5 of AS/NZS 5601.1.
- (3) For the purposes of (2)(c), the volume of the space is considered to be 1 m<sup>3</sup> for determining ventilation requirements.

### Explanatory Information

The intent is that 10 m<sup>3</sup>/hr.m<sup>2</sup> at 50 Pa is broadly equivalent to 10 air changes per hour at 50 Pa when applied to homes.

## Deemed-to-Satisfy Provisions

### H6D1 Deemed-to-Satisfy Provisions

[New for 2022]

- (1) Where a *Deemed-to-Satisfy Solution* is proposed, *Performance Requirements* H6P1 and H6P2 are satisfied by complying with H6D2.
- (2) Where a *Performance Solution* is proposed, the relevant *Performance Requirements* must be determined in accordance with A2G2(3) and A2G4(3) as applicable.

#### VIC H6D2

### H6D2 Application of Part H6

[2019: 3.12.0]

- (1) *Performance Requirement* H6P1 for the thermal performance of the building is satisfied by—
  - (a) complying with S42C2, using *house energy rating software* and S42C4(1); or
  - (b) complying with the following parts of the ABCB Housing Provisions—
    - (i) Part 13.2, for the building *fabric*; and
    - (ii) Part 13.3, for the external *glazing* and shading; and
    - (iii) Part 13.4, for building sealing; and
    - (iv) Part 13.5, for ceiling fans.
- (2) *Performance Requirement* H6P2 for the energy usage of the building is satisfied by—
  - (a) complying with S42C3 using *house energy rating software* and S42C4(2); or
  - (b) complying with Parts 13.6 and 13.7 of the ABCB Housing Provisions for a building with a total floor area not greater than 500 m<sup>2</sup>.

### Explanatory Information

There are two Deemed-to-Satisfy pathways for complying with the energy efficiency *Performance Requirements*:

- Option 1 Energy Rating — applying *Specification 42* to achieve the heating and cooling loads, net equivalent energy usage, and other energy saving features such as thermal breaks, compensation for a loss of ceiling insulation, floor edge insulation and building sealing.
- Option 2 Elemental Provisions — using Section 13 of the ABCB Housing Provisions to satisfy all the detailed provisions including building *fabric*, external *glazing*, building sealing, ceiling fans, whole-of-home energy usage and *services*.

**Class 1 and 10 buildings**

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## Part H7 Ancillary provisions and additional construction requirements

### Introduction to this Part

This Part contains requirements which operate alongside the requirements of other Parts of NCC Volume Two, to address specific types of ancillary structures such as *swimming pools*, heating appliances and fireplaces, and *private bushfire shelters*. This Part also includes additional requirements for construction in *alpine areas* and *designated bushfire prone areas*.

### Objectives

H701

Objective

[2019: O2.7]

The Objective is to—

- (a) safeguard young children from drowning or injury in a *swimming pool*; and
- (b) safeguard people from drowning or injury due to suction by a *swimming pool* water recirculation system; and
- (c) safeguard the occupants from illness or injury caused by fire from heating appliances installed within the building; and
- (d) safeguard the occupants from illness or injury in *alpine areas* from an emergency while evacuating the building; and
- (e) protect a building from the effects of a bushfire; and
- (f) reduce the likelihood of fatalities arising from occupants of a Class 1a dwelling not evacuating a property prior to exposure from a bushfire event.

### Applications

- (1) H701(a) and (b) only apply to a *swimming pool* with a depth of water more than 300 mm.
- (2) H701(f) only applies to a Class 10c building.

### Functional Statements

H7F1

Swimming pool access

[2019: F2.7.1]

A *swimming pool* is to be provided with—

- (a) means to restrict access to it by young children; and
- (b) means to reduce the possibility of a person being entrapped or injured due to suction by a water recirculation system.

### Applications

H7F1 only applies to a *swimming pool* with a depth of water more than 300 mm.

## Class 1 and 10 buildings

### H7F2 Heating appliances

[2019: F2.7.2]

A heating appliance using controlled combustion located in a building is to be installed in a way which reduces the likelihood of—

- (a) fire spreading beyond the appliance; and
- (b) smoke from the appliance entering the building.

### H7F3 Alpine areas

[2019: F2.7.3]

A building in an *alpine area* is to be provided with additional measures in view of the increased difficulties in fighting fire and maintaining access and means of egress in snow conditions.

### H7F4 Bushfire areas

[2019: F2.7.4]

A Class 1 building or a Class 10a building or deck associated with a Class 1 building constructed in a *designated bushfire prone area* is to provide resistance to bushfires in order to reduce the danger to life and reduce the risk of the loss of the building.

### H7F5 Private bushfire shelters

[2019: F2.7.5]

A structure designed for emergency occupation during a bushfire event must provide shelter to occupants from direct and indirect actions of a bushfire.

#### Applications

H7F5 only applies to a Class 10c building.

## Performance Requirements

*NSW H7P1*

*NT H7P1*

*QLD H7P1*

### H7P1 Swimming pool access

[2019: P2.7.1]

A barrier must be provided to a *swimming pool* and must—

- (a) be continuous for the full extent of the hazard; and
- (b) be of a strength and rigidity to withstand the foreseeable impact of people; and
- (c) restrict the access of young children to the pool and the immediate pool surrounds; and
- (d) have any gates and doors fitted with latching devices not readily operated by young children, and constructed to automatically close and latch.

*SA H7P1(2)*

## Class 1 and 10 buildings

### Applications

H7P1 only applies to a *swimming pool* with a depth of water more than 300 mm.

TAS H7P2

### H7P2 Swimming pool reticulation systems

[2019: P2.7.2]

A *swimming pool* water recirculation system must incorporate safety measures to avoid entrapment of, or injury to, a person.

### Applications

H7P2 only applies to a *swimming pool* with a depth of water more than 300 mm.

TAS H7P3

### H7P3 Heating appliances

[2019: P2.7.3]

A heating appliance and its associated components within a building, including an open fire-place, chimney, or the like, must be installed—

- (a) to withstand the temperatures likely to be generated by the appliance; and
- (b) so that it does not raise the temperature of any building element to a level that would adversely affect the element's physical or mechanical properties or function; and
- (c) so that hot products of combustion will not—
  - (i) escape through the walls of the associated components; and
  - (ii) discharge in a position that will cause fire to spread to nearby *combustible* materials or allow smoke to penetrate through nearby *windows*, ventilation inlets, or the like in the building containing the heating appliance.

### Explanatory Information

H7P3 is not intended to apply to inserted fireplaces fuelled by gas. Insert gas fireplaces may be regulated by relevant authorities responsible for gas installations in each State or Territory jurisdiction and may be required to comply with AS/NZS 5601 – Gas installations.

### H7P4 Buildings in alpine areas

[2019: 2.7.4]

- (1) An external doorway from a building in an *alpine area* must be installed so that opening the door is not obstructed by snow or ice.
- (2) A building in an *alpine area* containing external trafficable structures forming part of the means of egress must be constructed so that they remain, as far as practicable, useable under snow conditions.
- (3) A building in an *alpine area* must be constructed so that snow or ice is not shed from the building onto the allotment, any adjoining allotment, road or public space in a location or manner that will—
  - (a) obstruct a means of egress from any building to a road or open space; or
  - (b) otherwise endanger people.

## Class 1 and 10 buildings

TAS H7P5

### H7P5 Buildings in bushfire prone areas

[2019: P2.7.5]

A Class 1 building or a Class 10a building or deck associated with a Class 1 building that is constructed in a *designated bushfire prone area* must be designed and constructed to—

- (a) reduce the risk of ignition from a *design bushfire* with an annual exceedance probability not more than 1:50 years; and
- (b) take account of the assessed duration and intensity of the *fire actions* of the *design bushfire*; and
- (c) be designed to prevent internal ignition of the building and its contents; and
- (d) maintain the structural integrity of the building for the duration of the *design bushfire*.

### H7P6 Private bushfire shelters

[2019: P2.7.6]

A *private bushfire shelter* must be designed and constructed to provide a tenable environment for occupants during a *design bushfire* with an annual probability of exceedance not more than 1:200 years, appropriate to the—

- (a) location of the *private bushfire shelter* relative to *fire hazards* including—
  - (i) predominant vegetation; and
  - (ii) adjacent buildings and structures; and
  - (iii) allotment boundaries; and
  - (iv) other *combustible* materials; and
- (b) occupancy of the *private bushfire shelter*; and
- (c) bushfire intensity having regard for the bushfire attack level; and
- (d) *fire intensity* from adjacent buildings and structures, allotment boundaries and other *combustible* materials; and
- (e) ready access to the *private bushfire shelter* from the associated dwelling and occupant egress after the fire; and
- (f) tenability within the *private bushfire shelter* for the estimated maximum period of occupancy; and
- (g) generation of smoke, heat and toxic gases from materials used to construct the *private bushfire shelter*; and
- (h) structural and *fire loads* and actions to which it may reasonably be subjected, appropriate to—
  - (i) the topography between the *private bushfire shelter* and the predominant vegetation or other *fire hazards*; and
  - (ii) the distance between the *private bushfire shelter* and the predominant vegetation or other *fire hazards*; and
  - (iii) the size of the potential fire source and *fire intensity*; and
  - (iv) wind loading; and
  - (v) potential impact from debris such as falling tree limbs; and
- (i) degree of external signage identifying the location of the *private bushfire shelter*; and
- (j) degree of internal signage identifying the design capacity and maximum period of occupancy; and
- (k) degree of occupant awareness of outside environmental conditions; and
- (l) degree of essential maintenance.

#### Applications

H7P6 only applies to a Class 10c building.

#### Notes

NCC Volume Two and the ABCB Housing Provisions do not contain any *Deemed-to-Satisfy Provisions* for H7P6, however the ABCB Performance Standard for Private Bushfire Shelters contains guidance for H7P6.

## Verification Methods

### H7V1 Combustion appliances

[2019: V2.7.1]

Compliance with H7P3(a) and (b) is verified when—

- (a) components used within an appliance and its installation are constructed from—
  - (i) heat-resistant materials for maximum operating temperatures more than 600°C, where the material complies with (c); or
  - (ii) heat-tolerant materials for maximum operating temperatures more than 150°C and less than 600°C, where the material complies with (c); and
- (b) the building elements surrounding the appliance maintain their designed function and material properties inclusive of a full range of thermal movements when exposed to the heat effects of the appliance; and
- (c) a sample of the material is tested to the maximum operating temperature, specified in (a)(i) or (a)(ii) for a minimum of 96 hours; and
- (d) the tested sample, when allowed to cool, must be free from—
  - (i) visible cracks and fractures; and
  - (ii) visible indication of de-lamination; and
  - (iii) linear distortion in excess of the equivalent of 10 mm per metre, and
  - (iv) deterioration of the appearance of any surface finish, when compared to an unheated sample.

#### Explanatory Information

Under H7V1, it needs to be demonstrated that the proposed appliance will not deteriorate under standard operating conditions. Examples of deterioration may include deformation or failure of components that would render the appliance unsafe to use.

For the purposes of demonstrating compliance with (a), the typical operating temperature of a combustion device can be established by testing.

For the purposes of demonstrating compliance with (b), materials used for building elements (walls, floors and ceiling) in the areas surrounding an appliance can be appropriately selected and/or designed to align with the quantified values as determined by (a). This could either be achieved by using *Expert Judgement* or by adhering to manufacturer's specifications. Certification in accordance with CodeMark Australia would also be a possibility in demonstrating compliance using the *Verification Method*.

Full range of thermal movements relates to both the appliance and materials when exposed to both the heated and ambient conditions.

Benefits to industry derived from the application of this *Verification Method* includes the potential use of non-standard national or internationally manufactured appliances. For example, test reports from appliances complying with various ISO Standards and various British Standards could be used to demonstrate compliance with the *Verification Method*. The *Verification Method* also allows for in situ testing of unique combustion appliances, which would not easily be tested in accordance with the Australian Standard. Such testing would need to be verified by a suitably qualified practitioner and be supported by appropriate documentation.

### H7V2 Buildings in bushfire prone areas

[2019: V2.7.2]

- (1) Compliance with H7P5 is verified if the ignition probability for a building exposed to a *design bushfire* does not exceed 10%.
- (2) Bushfire design actions must be determined in consideration of the annual probability of a *design bushfire* derived from—

## Class 1 and 10 buildings

- (a) assigning the building or structure an Importance Level in accordance with (3); and
  - (b) determining the corresponding annual probability of exceedance in accordance with Table H7V2.
- (3) A building or structure's Importance Level must be identified as one of the following:
- (a) Importance Level 1 — where the building or structure presents a low degree of hazard to life and *other property* in the case of failure.
  - (b) Importance Level 2 — where the building or structure is not of Importance Level 1 or 4 and is a Class 1a or 1b building accommodating 12 people or less.
  - (c) Importance Level 4 — where the building is a Class 10c building and is subject to a necessary 'defend in place' strategy.
- (4) The ignition probability for a building must be assessed by application of the following:
- (a) An event tree analysis of relevant bushfire scenarios.
  - (b) Design bushfire conditions that include combinations of the following actions appropriate to the distance between the building and the bushfire hazard:
    - (i) Direct attack from airborne burning embers.
    - (ii) Burning debris and accumulated embers adjacent to a building element.
    - (iii) Radiant heat from a bushfire front.
    - (iv) Direct flame attack from a bushfire front.
- (5) Applied *fire actions* must allow for reasonable variations in—
- (a) fire weather; and
  - (b) vegetation, including fuel load, burning behaviour of vegetation (including the potential for crown fires); and
  - (c) the distance of the building from vegetation; and
  - (d) topography, including slopes and features that may shield; and
  - (e) ignition of adjacent buildings, building elements, plants, mulch and other materials; and
  - (f) effective size of fire front; and
  - (g) duration of exposure; and
  - (h) flame height; and
  - (i) flame tilt; and
  - (j) flame adhesion to sloping land; and
  - (k) the height of the building and its elements.
- (6) The assessment process must include consideration of—
- (a) the probability of non-complying construction of critical aspects of an approved design; and
  - (b) the probability of critical aspects of an approved design being fully functional during the life of the building; and
  - (c) inclusion of safety factors; and
  - (d) sensitivity analysis of critical aspects of a proposed design.

**Table H7V2: Annual Probability of Exceedance (APE) for design bushfire actions**

Importance Level	Complex analysis APE for bushfire exposure	Simple analysis APE for weather conditions (design bushfire)
1	No requirement	No requirement
2	1:500	1:50
3	N/A for Class 1 and 10 buildings	N/A for Class 1 and 10 buildings
4	1:2000	1:200

### Table Notes

Complex analysis must consider the probability of ignition, fire spread to the urban interface and penetration of the urban interface coincident with fire weather conditions.

## Class 1 and 10 buildings

### Explanatory Information

NCC Volume Two does not apply to buildings that are Importance Level 3, therefore this Importance Level is not included under (3).

### Deemed-to-Satisfy Provisions

#### H7D1 Deemed-to-Satisfy provisions

[New for 2022]

- (1) Where a *Deemed-to-Satisfy Solution* is proposed, *Performance Requirements* H7P1 to H7P5 are satisfied by complying with H7D2 to H7D5.
- (2) Where a *Performance Solution* is proposed, the relevant *Performance Requirements* must be determined in accordance with A2G2(3) and A2G4(3) as applicable.
- (3) If a *private bushfire shelter* is installed, it must comply with *Performance Requirement* H7P6.

### Notes

There are no *Deemed-to-Satisfy Provisions* for H7P6.

#### NSW H7D2

#### H7D2 Swimming pools

[2019: 3.10.1]

#### NT H7D2(1)

#### QLD H7D2(1)

- (1) *Performance Requirement* H7P1 is satisfied for a *swimming pool* with a depth of water more than 300 mm and which is associated with a Class 1 building, if it has safety barriers installed in accordance with AS 1926.1 and AS 1926.2.

#### TAS H7D2(2)

- (2) *Performance Requirement* H7P2 is satisfied for a water recirculation system of a *swimming pool* with a depth of water more than 300 mm, if it complies with AS 1926.3.

#### SA H7D2(3)

#### SA H7D2(4)

#### SA H7D2(5)

### Explanatory Information: Definition of 'swimming pool'

The NCC definition of *swimming pool* is specific in including a bathing or wading pool and a spa. The requirements of AS 1926.3 apply to all types of pools defined as *swimming pools* under the NCC, irrespective of the definition in the Standard.

### Explanatory Information: Water recirculation systems

The *swimming pool* water recirculation system requirements seek to minimise the risk of entrapment or injury of people using the *swimming pool* and provide for the safe operation of skimmer boxes and outlet systems.

### Explanatory Information: Additional requirements

Part 13.7 of the ABCB Housing Provisions contains requirements for *swimming pool* and spa pool heating and pumping. In specific circumstances, Part 13.7 requires a *swimming pool* or spa pool to have a cover to reduce evaporation and subsequent heat loss, and time switches to control the operation of the heater.

## Class 1 and 10 buildings

In addition to the requirements of this Part, a *swimming pool* must comply with the structural requirements of other Parts of NCC Volume Two and the ABCB Housing Provisions. The structural requirements refer to the *swimming pool* being designed and constructed to withstand any combinations of loads and other actions to which it may reasonably be subjected and the structural resistance of the materials and forms of construction used in the *swimming pool*.

### Explanatory Information: Cross-volume considerations

Part C2 of NCC Volume Three sets out the requirements for pumped discharge from *swimming pools*.

## H7D3 Construction in alpine areas

[2019: 3.10.4]

- (1) Compliance with Part 12.2 of the ABCB Housing Provisions satisfies *Performance Requirement H7P4* for buildings that are located in *alpine areas*
- (2) The *Deemed-to-Satisfy Provisions* of this Part apply in addition to other *Deemed-to-Satisfy Provisions* of NCC Volume Two and the ABCB Housing Provisions.
- (3) Where any *Deemed-to-Satisfy Provisions* are in conflict, the provisions of H7D3 take precedence.

NSW H7D4

## H7D4 Construction in bushfire prone areas

[2019: 3.10.5]

- (1) The requirements of (2) only apply in a *designated bushfire prone area*.
- (2) *Performance Requirement H7P5* is satisfied for a Class 1 building, or a Class 10a building or deck associated with a Class 1 building, if it is constructed in accordance with—
  - (a) AS 3959; or
  - (b) NASH Standard – Steel Framed Construction in Bushfire Areas.

QLD H7D4(3)

SA H7D4(3)

## H7D5 Heating appliances, fireplaces, chimneys and flues

[2019: 3.10.7]

*Performance Requirement H7P3* is satisfied for a heating appliance if it is installed in accordance with—

- (a) for a domestic solid fuel burning appliance, AS/NZS 2918; or
- (b) for a heating appliance, Part 12.4 of the ABCB Housing Provisions.

### Explanatory Information

H7D5 applies to three types of heating appliances and includes the following:

- Open fireplaces — where solid fuel such as timber or coals are burnt in an unenclosed compartment. The requirements in Part 12.4 of the ABCB Housing Provisions for open fireplaces relate to masonry or concrete construction for all parts including the hearth, external faces and walls forming the back and sides and chimney.
- Insert fireplaces — manufactured and assembled in factories and inserted into the openings of masonry fireplaces in a building. All insert fireplaces must be tested to AS/NZS 2918 and have closed fire compartments for the burning of solid fuels.
- Free standing heating appliances — manufactured and assembled in factories and installed in the building without being concealed by wall or floor elements. All free standing fireplaces must be tested to AS/NZS 2918 and are *required* to be positioned in a building that meets specific minimum distances from internal building elements.

The requirements of both H7D5(a) and Part 12.4 of the ABCB Housing Provisions are intended to ensure the construction or installation of heating appliances can withstand the temperatures they generate. The requirements also

## Class 1 and 10 buildings

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ensure there is no spread of fire from within the heating appliance to adjacent building elements.

In addition to this, the requirements ensure hot products of combustion and smoke do not affect the occupants within the building. This is achieved by requiring construction and installation of heating appliances to transfer products of combustion and smoke directly to the outside atmosphere.

Insert fireplaces fuelled by gas are not covered by Part 12.4 of the ABCB Housing Provisions. Insert gas fireplaces may be regulated by relevant authorities responsible for gas installations in each State or Territory jurisdiction and may be required to comply with AS/NZS 5601 – Gas installations.

## Part H8 Livable housing design

NSW Part H8

### Introduction to this Part

This Part sets out requirements for dwellings to include features that are designed to improve their accessibility and usability for occupants and visitors, including those with a mobility-related disability.

#### Notes

Part H8 Livable housing design does not take effect until 1 October 2023.

#### Notes: Tasmania Part H8 Livable housing design

For Tasmania, Part H8 does not take effect until 1 October 2024.

### Objectives

#### H801 Objective

[New for 2022]

The Objective of this Part is to ensure that housing is designed to meet the needs of the community, including older people and those with a mobility-related disability.

#### Applications

H801 only applies to a Class 1a building.

### Functional Statements

#### H8F1 Livable housing design

[New for 2022]

A dwelling should be designed such that it is—

- (a) easy to enter; and
- (b) easy to navigate in and around; and
- (c) capable of easy and cost effective adaptation; and
- (d) responsive to the changing needs of occupants.

#### Explanatory Information

H8F1 only applies to a Class 1a building.

### Performance Requirements

## Class 1 and 10 buildings

### H8P1 Livable housing design

[New for 2022]

A Class 1a building must be provided with—

- (a) a continuous and step-free path to a dwelling entrance door from either—
  - (i) the pedestrian entry at the allotment boundary; or
  - (ii) an appurtenant Class 10a garage or carport; or
  - (iii) a car parking space provided for the exclusive use of the occupants of the dwelling; and
- (b) at least one level and step-free entrance door into the dwelling from the access path *required* by (a); and
- (c) internal doors and corridors on the ground or entrance level which facilitate unimpeded movement between spaces; and
- (d) a *sanitary compartment* that—
  - (i) facilitates independent access and use; and
  - (ii) is located on the ground or entry level; and
- (e) a shower that facilitates independent access and use; and
- (f) the walls of the *sanitary compartment* referred to in (d), the shower referred to in (e) and a bath (where installed, other than a freestanding bath) constructed so as to facilitate future installation of grabrails, or the like, in a way that minimises the removal of existing wall linings.

#### Exemptions

H8P1(a) need not be complied with if—

- (a) step-free access cannot be provided from an appurtenant Class 10a garage or carport or a car parking space provided for the exclusive use of the occupants of the dwelling; and
- (b) due to *site* conditions, there is no other suitable location on which to construct the access path.

#### Deemed-to-Satisfy Provisions

### H8D1 Deemed-to-Satisfy Provisions

[New for 2022]

- (1) Where a *Deemed-to-Satisfy Solution* is proposed, *Performance Requirement H8P1* is satisfied by complying with H8D2.
- (2) Where a *Performance Solution* is proposed, the relevant *Performance Requirements* must be determined in accordance with A2G2(3) and A2G4(3).

### H8D2 Livable housing design

[New for 2022]

- (1) A Class 1a dwelling must comply with the ABCB Standard for Livable Housing Design.
- (2) Clause 1.1 of the ABCB Standard for Livable Housing Design need not be complied with if—
  - (a) step-free access via an appurtenant garage, carport or parking space in accordance with Clause 1.1(1)(b) or (c) is not provided; and
  - (b) one or more of the following conditions exist:
    - (i) The average slope of the ground on which the access path would be constructed exceeds a gradient of 1:14.
    - (ii) To provide an external step-free access path would necessitate construction of ramping that exceeds the length and gradient allowed by Clause 1.1(4).

## Class 1 and 10 buildings

- (iii) There is insufficient space available on the *site* on which to construct a step-free access path complying with Clause 1.1.
  - (iv) Subject to (3), the difference in level, measured vertically from the pedestrian entry at the allotment boundary or parking space to the floor level at the entrance door on the nearest floor containing *habitable rooms*, would necessitate construction of ramping that exceeds the length and gradient allowed under Clause 1.1(4).
- (3) For the purposes of (2)(b)(iv), the difference in level must be measured from the floor level at the entrance door, or if there is an attached deck, balcony or the like that provides a step-free connection to the entrance door, from the lowest point of that deck, balcony or the like above the surface beneath,
- (4) Even if Clause 1.1 is not complied with, all other relevant provisions of the ABCB Standard for Livable Housing Design must still be complied with.

### Explanatory Information: Exemptions

The exemptions listed at H8D2(2)(b)(i) and (ii) provide for situations where the ramping necessary to provide a step-free access path would become too lengthy or too steep to be used regularly by a person with limited mobility, and therefore would offer little benefit to dwelling occupants or visitors. Such situations may occur due to a number of factors including (but not limited to) the following:

- The slope of the land upon which the ramp would be constructed. For example, if the required step-free access path cannot be provided in one continuous direction, meaning it would instead need to be cut into the slope, or would run back and forth across the face of the slope, in order to stay within maximum gradient limits.
- The height of the lowest floor containing *habitable rooms* is too high to be reached by a ramp within *required* length and gradient limits. Floor heights can be influenced by factors such as dwelling style, *defined flood level*, location of the dwelling in an *alpine area*, or construction of the dwelling directly above a *private garage* (including garage-top dwellings).

The exemption listed at H8D2(2)(b)(iii) provides for situations where the amount of available space on the *site* is insufficient to accommodate a step-free access path. This may be due to the physical size of the *site*, or regulations outside of the NCC which limit the proportion of a *site* that can be covered by structures and/or impervious ground coverings.

It is important to note that under H8D2(2), an exemption may only be applied if, in a particular case, both (a) and (b) are applicable, not just one or the other.

## Specification 42

## House energy rating software

## S42C1 Scope

[New for 2022]

This Specification sets out requirements for satisfying H6P1 and H6P2 using *house energy rating software*.

## S42C2 Heating and cooling loads

[2019: 3.12.0.1]

- (1) A building must achieve an energy rating, including the separate heating and cooling load limits, using *house energy rating software*, of greater than or equal to—
  - (a) 7 stars; or
  - (b) for a building in *climate zones* 1 or 2, 6.5 stars if the building has an outdoor living area as described in (3) which is fully covered with an impervious roof having a *Total R-Value* greater than or equal to 1.5 (for downward heat flow); or
  - (c) for a building in *climate zones* 1 or 2, 6 stars if the building has an outdoor living area as described in (3) which—
    - (i) is fully covered with an impervious roof having a *Total R-Value* greater than or equal to 1.5 (for downward heat flow); and
    - (ii) has at least one permanently installed ceiling fan.
- (2) The heating and cooling load limits in (1) are specified in the ABCB Standard for NatHERS Heating and Cooling Load Limits.
- (3) An outdoor living area in (1)(b) and (1)(c) is a space that—
  - (a) is directly adjoining, and directly accessible from, a general purpose living area of a Class 1 building such as a lounge, kitchen, dining or family room, which is not a room for sleeping or specialist tasks such as a study or home theatre; and
  - (b) has a *floor area* greater than or equal to 12.0 m<sup>2</sup>; and
  - (c) has length and width dimensions greater than or equal to 2.5 m each; and
  - (d) has an opening height above floor level greater than or equal to 2.1 m; and
  - (e) has one side permanently open with a second side either—
    - (i) permanently open; or
    - (ii) readily openable.
- (4) The sides referred to in (3)(e) must be greater than or equal to 900 mm from an allotment boundary or 900 mm from an obstruction to the breeze path such as a building, fence or other structure.
- (5) Where a ceiling fan is *required* as part of compliance with (1)(c), the fan must—
  - (a) be permanently installed; and
  - (b) have a speed controller; and
  - (c) serve the whole room, with the floor area that a single fan serves not exceeding—
    - (i) 15 m<sup>2</sup> if it has a blade rotation diameter of less than 1200 mm; and
    - (ii) 25 m<sup>2</sup> if it has a blade rotation diameter of greater than or equal to 1200 mm.

**Explanatory Information: Complying with S42C2(1)**

- To comply with (1), the modelled energy loads of a building must not exceed three separate load limits, i.e.—
  - (i) the total load limit corresponding to the applicable star rating; and
  - (ii) the heating load limit; and

## Class 1 and 10 buildings

(iii) the cooling load limit.

- Information about building modelling using *house energy rating software* is available at [www.nathers.gov.au](http://www.nathers.gov.au).
- The ABCB Standard for NatHERS Heating and Cooling Load Limits can be accessed at [www.abcb.gov.au](http://www.abcb.gov.au).

### Explanatory Information: Outdoor living areas

- The opening height in (3)(d) is to provide a breeze path and is likely to be the measurement from the floor to the underside of a perimeter beam. It is not a ceiling height measurement. It is also not a height for mounting a ceiling fan or the height of ceiling fan blades above the floor. These dimensions need to be determined considering the activities in the space, the safety of occupants of the space and any appropriate safety standards.
- There is some survey evidence that suggests the majority of home owners turn off their air-conditioners when using an outdoor living area. Another cost effective option is to install a reed switch or other micro switch on the door leading to the outdoor living area in order to automatically deactivate an air-conditioning unit when the door is left open for a period which allows occupants to enter and leave the air-conditioned space but does not affect the operation of the air-conditioner.
- A side referred to in (3)(e) may contain some obstructions such as columns and barriers. Where an open side is *required* to have a 1 m barrier, consideration as to the type (wire, solid or other) should be made with regard to the overall opening area of the two sides.

## S42C3 Net equivalent energy usage

[New for 2022]

A building must achieve a whole-of-home rating of not less than 60 using *house energy rating software*.

## S42C4 Additional Deemed-to-Satisfy Provisions when using house energy rating software

[3.12.0]

- (1) To comply with H6P1, in addition to S42C2, a building must comply with Section 13 of the ABCB Housing Provisions clauses—
  - (a) 13.2.2, for building *fabric* thermal insulation; and
  - (b) 13.2.3(7) and 13.2.5(5), for thermal breaks; and
  - (c) 13.2.3(5), for compensating for a loss of ceiling insulation, other than where the *house energy rating software* has compensated for a loss of ceiling insulation; and
  - (d) 13.2.6(4), 13.2.6(5) and 13.2.6(6) for floor edge insulation; and
  - (e) Part 13.4, for building sealing.
- (2) To comply with H6P2, in addition to S42C3, a building must comply with Part 13.7 of the ABCB Housing Provisions.

Specification 44

Calculation of heating load limit, cooling load limit and thermal energy load limit

S44C1 Scope

[New for 2022]

This Specification contains the method of calculating the *heating load* limit, *cooling load* limit and *thermal energy load* limit for compliance with J1P2 and H6P1.

S44C2 Heating load limit

[New for 2022]

The *heating load* limit of a space, measured in MJ/m<sup>2</sup>.annum, is equal to the greater of—

- (a) 4; and
- (b)  $((0.0044 \times HDH) - 5.9) \times F_H$ , where—
  - (i) *HDH* = the total annual *heating degree hours* of the building location; and
  - (ii) *F<sub>H</sub>* = the area adjustment factor for the *heating load* limit, determined in accordance with Table S44C2.

Table S44C2: Area adjustment factors for the heating load limit

Total area of <i>habitable rooms</i> ( <i>A<sub>H</sub></i> )	Area adjustment factor ( <i>F<sub>H</sub></i> )
≤ 50 m <sup>2</sup>	1.37
> 50 m <sup>2</sup> to ≤ 350 m <sup>2</sup>	$(5.11 \times 10^{-6})A_H^2 - (3.82 \times 10^{-3})A_H + 1.55$
> 350 m <sup>2</sup>	0.84

S44C3 Cooling load limit

[New for 2022]

(1) The *cooling load* limit of a space, measured in MJ/m<sup>2</sup>.annum, is calculated in accordance with the following formula:

$$CLL = (5.4 + 0.00617 \times (CDH + 1.85DGH)) \times F_C$$

- (2) In the formula at (1)—
  - (a) *CLL* = the *cooling load* limit (MJ/m<sup>2</sup>.annum); and
  - (b) *CDH* = the total annual *cooling degree hours* of the building location; and
  - (c) *DGH* = the total annual *dehumidification gram hours* of the building location; and
  - (d) *F<sub>C</sub>* = the area adjustment factor for the *cooling load* limit, determined in accordance with Table S44C3.

Table S44C3: Area adjustment factors for the cooling load limit

Total area of the <i>habitable rooms</i> ( <i>A<sub>H</sub></i> )	Area adjustment factor ( <i>F<sub>C</sub></i> )
≤ 50 m <sup>2</sup>	1.34
> 50 m <sup>2</sup> and ≤ 200 m <sup>2</sup>	$(1.29 \times 10^{-5})A_H^2 - (5.55 \times 10^{-3})A_H + 1.58$

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Total area of the <i>habitable rooms</i> ( $A_H$ )	Area adjustment factor ( $F_C$ )
> 200 m <sup>2</sup> and ≤ 1000 m <sup>2</sup>	$(3.76 \times 10^{-7})A_H^2 - (7.82 \times 10^{-4})A_H + 1.12$
> 1000 m <sup>2</sup>	0.71

## S44C4 Thermal energy load limit

[New for 2022]

(1) The *thermal energy load* limit of a space, measured in MJ/m<sup>2</sup>.annum, is calculated in accordance with the following

$$\text{formula: } TLL = \frac{19.3HLL + 22.6CLL - 8.4}{T_r + 10.74} - 15$$

(2) In the formula at (1)—

- (a)  $TLL$  = the *thermal energy load* limit; and
- (b)  $HLL$  = the *heating load* limit; and
- (c)  $CLL$  = the *cooling load* limit; and
- (d)  $T_r$  = the annual average *daily outdoor temperature range*.

**Class 1 and 10 buildings**

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**Schedule 1**

**Definitions**

**Abbreviations**

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### Abbreviations

Abbreviation	Definitions
<b>ABCB</b>	Australian Building Codes Board
<b>AC</b>	Alternating Current
<b>ACC</b>	Acrylic conformal coating
<b>ACL</b>	Acrylic latex
<b>ACP</b>	Aluminium Composite Panel
<b>AIRAH</b>	Australian Institute of Refrigeration, Air conditioning and Heating
<b>ANSI</b>	American National Standards Institute
<b>AS</b>	Australian Standard
<b>ASET</b>	Available Safe Egress Time
<b>ASHRAE</b>	American Society of Heating, Refrigerating and Air Conditioning Engineers
<b>ASTM</b>	American Society for Testing and Materials
<b>BAL</b>	Bushfire Attack Level
<b>BCA</b>	Building Code of Australia
<b>BE</b>	Fire blocks evacuation route
<b>CAN</b>	National Standard of Canada
<b>CCT</b>	Correlated Colour Temperature
<b>CF</b>	Challenging fire
<b>CHF</b>	Critical Heat Flux
<b>CIBSE</b>	Chartered Institution of Building Services Engineers
<b>CRF</b>	Critical Radiant Flux
<b>CRI</b>	Colour Rendering Index
<b>CS</b>	Fire starts in a concealed space
<b>C<sub>SHGC</sub></b>	Constant for solar heat gain
<b>CSIRO</b>	Commonwealth Scientific and Industrial Research Organisation
<b>C<sub>U</sub></b>	Constant for conductance
<b>DC</b>	Direct Current
<b>FED</b>	Fractional Effective Dose
<b>FI</b>	Fire brigade intervention
<b>FRL</b>	Fire Resistance Level
<b>FZ</b>	Flame Zone
<b>GEMS</b>	Greenhouse and Energy Minimum Standards
<b>GRP</b>	Glass fibre reinforced polyester
<b>HDG</b>	Hot dip galvanising
<b>HRR</b>	Heat Release Rate
<b>HS</b>	Horizontal fire spread
<b>IS</b>	Rapid fire spread involving internal surface linings
<b>ISO</b>	International Organisation for Standardisation
<b>IZS</b>	Inorganic zinc silicate
<b>LED</b>	Light-Emitting Diode
<b>MEPS</b>	Minimum Energy Performance Standards

## Definitions

Abbreviation	Definitions
<b>NABERS</b>	National Australian Built Environment Rating System
<b>NASH</b>	National Association of Steel-Framed Housing
<b>NATA</b>	National Association of Testing Authorities Australia
<b>NatHERS</b>	Nationwide House Energy Rating Scheme
<b>NCC</b>	National Construction Code
<b>NSF</b>	National Sanitation Foundation
<b>PBDB</b>	Performance-based design brief
<b>PCA</b>	Plumbing Code of Australia
<b>PMV</b>	Predicted Mean Vote
<b>ppm</b>	parts per million
<b>PUR</b>	Polyurethane
<b>PVC</b>	Polyvinyl chloride
<b>RC</b>	Robustness check
<b>RSET</b>	Required Safe Egress Time
<b>R<sub>w</sub></b>	Weighted sound reduction index
<b>SF</b>	Smouldering fire
<b>SHGC</b>	Solar Heat Gain Coefficient
<b>SL</b>	Square mesh
<b>SS</b>	Structural stability and other property
<b>STC</b>	Sound Transmission Class
<b>TM</b>	Trench mesh
<b>UF</b>	Unexpected catastrophic failure
<b>UPVC</b>	Unplasticized polyvinyl chloride
<b>UT</b>	Fire in normally unoccupied room threatening occupants of other rooms
<b>U-Value</b>	Thermal transmittance
<b>VS</b>	Vertical fire spread involving external cladding or external openings
<b>WC</b>	Water closet

## Definitions

### Symbols

Symbols	Definitions
°	degree(s)
°C	degree(s) Celsius
°CDB	degree(s) Celsius Dry Bulb
°CWB	degree(s) Celsius Wet Bulb
-e/MJ	equivalent per Megajoule(s)
µm	micrometre
µg/N.s	Micrograms per newton-second
dB(A)	decibels "A" scale weighting network
f'c	Characteristic compressive strength of concrete at 28 days
f'y	Yield stress used in design
G	Permanent load
J	Joule(s)
J/kg.K	Joules per kilogram degree Kelvin
J/s.m <sup>2</sup>	Joules per second square metre
K	Kelvin(s)
kg	kilogram(s)
kg/m	kilogram(s) per metre
kg/m <sup>2</sup>	kilogram(s) per square metre
kg/m <sup>3</sup>	kilogram(s) per cubic metre
kJ/m <sup>2</sup> .hour	kilojoules per square metre hour
km	kilometre(s)
kPa	kilopascal(s)
kW/m <sup>2</sup>	kilowatt(s) per square metre
kW <sub>heating</sub>	kilowatt(s) of heating
kWr	kilowatt(s) of refrigeration
L	litre(s)
L/min	litre(s) per minute
L/s	litre(s) per second
L/s.m <sup>2</sup>	litre(s) per second square metre
Lumens/W	Lumens per Watt
lx	lux
m	metre(s)
m/s	metre(s) per second
m <sup>2</sup>	square metre(s)
m <sup>2</sup> .K/W	square metre Kelvin(s) per Watt
m <sup>3</sup>	cubic metre(s)
m <sup>3</sup> /hour	cubic metre(s) per hour
m <sup>3</sup> /s	cubic metre(s) per second
mcd/m <sup>2</sup>	millicandelas per square metre
min	minute(s)

## Definitions

Symbols	Definitions
<b>MJ/hour</b>	Megajoules per hour
<b>MJ/m<sup>2</sup>.annum</b>	Megajoules per square metre annum
<b>mm</b>	millimetre(s)
<b>mm<sup>2</sup></b>	square millimetre(s)
<b>MW</b>	megawatt(s)
<b>N</b>	newton(s)
<b>N/m</b>	Newton(s) per metre
<b>Pa</b>	pascal(s)
<b>Pa/m</b>	pascal(s) per metre
<b>Q</b>	Imposed load
<b>s</b>	second(s)
<b>ULS</b>	Ultimate limit state
<b>V</b>	Volt(s)
<b>W</b>	Watt(s)
<b>W<sub>input power</sub></b>	Watts of input power
<b>Wr/W<sub>input power</sub></b>	Watts of thermal refrigeration per watt of input power
<b>W/kW<sub>rej</sub></b>	Watts per kilowatt of heat rejected
<b>Wm<sup>-1</sup>K<sup>-1</sup></b>	Watts per metre degree Kelvin
<b>W/m<sup>2</sup></b>	Watts per square metre
<b>°south</b>	degree south
<b>%</b>	percent
<b>&gt;</b>	greater than
<b>&lt;</b>	less than
<b>≤</b>	less than or equal to
<b>≥</b>	equal to or more than

### Glossary

**Above ground rainwater tank:** A rainwater tank that is not in any way set into the ground.

**Accessible:** Having features to enable use by people with a disability.

**Accessway:** A continuous *accessible* path of travel (as defined in AS 1428.1) to, into or within a building.

**Accredited Testing Laboratory:** One of the following:

- (a) An organisation accredited by the National Association of Testing Authorities Australia (NATA) to undertake the relevant tests.
- (b) An organisation outside Australia accredited to undertake the relevant tests by an authority recognised by NATA through a mutual recognition agreement.
- (c) An organisation recognised as being an Accredited Testing Laboratory under legislation at the time the test was undertaken.

**Activity support level:** The degree to which occupants can undertake activities with respect to the likely *activity traits* and *occupant traits*.

#### Explanatory Information

This term is used to articulate whether the height of a room or space is sufficient and by what degree. This is achieved by having regard to the room or space's intended use by occupants, through consideration of the defined terms '*activity traits*' and '*occupant traits*'.

**Activity traits:** For the purposes of—

- (a) Volume One, the features of the activities that will be undertaken in a *habitable room* or space; or
- (b) Volume Two, the features of the activities that will be undertaken in a room or space.

#### Explanatory Information

This term is used to describe the characteristics of the activities that will be undertaken in a room or space.

For example, the activities likely to be undertaken in a bedroom, and the associated features are—

- sleeping — a person laying horizontally; and
- resting — a person laying horizontally or sitting upright on the bed; and
- leisure activities, such as reading a book — a person sitting upright on the bed, with enough space to stretch their arms vertically; and
- dressing/changing clothes — a person standing with enough space to stretch their arms vertically.

**Administering body:** The body responsible for administering the *WaterMark Certification Scheme*.

**Aged care building:** A Class 9c building for residential accommodation of aged persons who, due to varying degrees of incapacity associated with the ageing process, are provided with *personal care services* and 24 hour staff assistance to evacuate the building during an emergency.

*NSW Aisle*

*SA Agriculture*

**Air-conditioning:** For the purposes of Section J of Volume One, a *service* that actively cools or heats the air within a space, but does not include a *service* that directly—

- (a) cools or heats cold or hot rooms; or
- (b) maintains specialised conditions for equipment or processes, where this is the main purpose of the *service*.

**Alarm zone:** For the purposes of Specification 23, an area of a building protected by one or more smoke alarms connected to one alarm circuit.

**Alpine area:** An area given in [Figure 1](#) and in [Table 1](#) for specific locations, and is—

- (a) likely to be subject to significant snowfalls; and

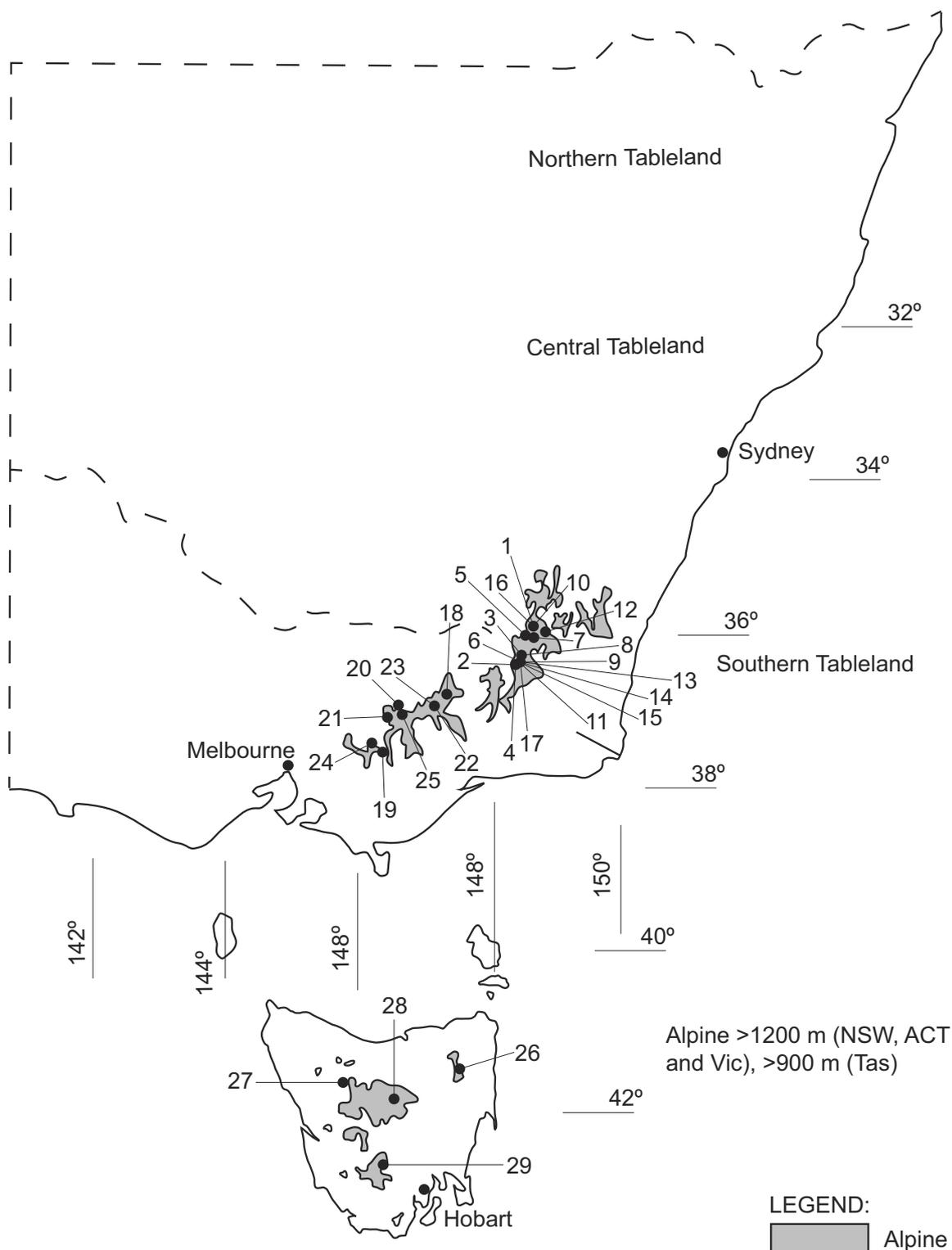
## Definitions

- (b) in New South Wales, the ACT or Victoria more than 1200 m above the Australian Height Datum; and
- (c) in Tasmania more than 900 m above the Australian Height Datum.

**Table 1: Alpine areas where snow loads are significant**

Location	Map identifier
Kiandra (NSW)	1
Mount Kosciuszko (NSW)	2
Perisher Valley (NSW)	3
Thredbo (NSW)	4
Cabramurra (NSW)	5
Charlotte Pass Village (NSW)	6
Diggers Creek (NSW)	7
Guthega Village (NSW)	8
Mount Blue Cow (NSW)	9
Mount Selwyn (NSW)	10
Perisher Range (NSW)	11
Rules Point (NSW)	12
Sawpit Creek (NSW)	13
Smiggin Holes (NSW)	14
Smiggin Range (NSW)	15
Three Mile Dam (NSW)	16
Wilsons Valley (NSW)	17
Falls Creek (Vic.), including Summit Area, Sun Valley and Village Bowl	18
Mount Baw Baw (Vic.)	19
Mount Buffalo (Vic.), including Chalet, Dingo Dell and Tatra	20
Mount Buller (Vic.), including Baldy and Village	21
Mount Hotham (Vic.), including Davenport and Village Centre	22
Dinner Plain (Vic.)	23
Lake Mountain (Vic.)	24
Mount Stirling (Vic.)	25
Ben Lomond Ski Field (Tas.)	26
Cradle Valley (Tas.)	27
Great Lake Area (Tas.)	28
Mount Field Ski Field (Tas.)	29

Figure 1: Alpine areas



**Figure Notes**

This map is approximate only and altitude above Australian Height Datum must be used to determine whether the building falls into an *alpine area* region.

**Explanatory Information**

Alpine areas are located in New South Wales, Victoria and Tasmania.

Alpine areas are areas 1200 m or more above Australian Height Datum (AHD) for New South Wales, Australian Capital Territory and Victoria, and 900 m or more above AHD for Tasmania, as shown in Figure 1.

Alpine areas are considered to receive significant snowfalls (snowfalls that result in an average snow accumulation on

## Definitions

the ground of 175 mm or greater). Regions in New South Wales, the Australian Capital Territory and Victoria between 600 – 1200 m AHD are considered to be sub-alpine areas and may receive significant snowfalls, however unlike alpine areas the snow is unlikely to accumulate.

It is recommended that the *appropriate authority* be consulted to determine whether the building is located in an alpine area. AS/NZS 1170.3 also contains further detail in the identification of alpine areas and the altitude of the alpine regions of Australia.

In the Australian Capital Territory, Canberra is not designated as an alpine area as snow loads are not considered significant.

**Alteration:** In relation to a building, includes an addition or extension to a building.

**Aluminium Composite Panel (ACP):** Flat or profiled aluminium sheet material in composite with any type of materials.

**Amenity:** An attribute which contributes to the health, physical independence, comfort and well-being of people.

**Ancillary element:** An element that is secondary to and not an integral part of another element to which it is attached.

**Annual exceedance probability:** The probability that a given rainfall total accumulated over a given duration will be exceeded in any one year.

**Annual greenhouse gas emissions:** The theoretical amount of greenhouse gas emissions attributable to the energy used annually by a building's *services*, excluding kitchen exhaust and the like.

**Appropriate authority:** For the purposes of the Fire Safety Verification Method, means the relevant authority with the statutory responsibility to determine the particular matter satisfies the relevant *Performance Requirement*.

### Explanatory Information

The *Appropriate Authority* is typically the building surveyor or building certifier charged with the statutory responsibility to determine building compliance and issue the building permit / approval and occupancy certificate / approval.

#### *NSW Appropriate authority*

**Appropriate authority:** The relevant authority with the statutory responsibility to determine the particular matter.

**Appropriately qualified person:** A person recognised by the *appropriate authority* as having qualifications and/or experience in the relevant discipline in question.

**Approved disposal system:** A system for the disposal of sewage, sullage or stormwater approved by an authority having jurisdiction.

**Articulated masonry:** Masonry construction in which special provisions have been made for movement by articulation.

#### *NSW Assembly building*

#### *SA Assembly building*

**Assembly building:** A building where people may assemble for—

- (a) civic, theatrical, social, political or religious purposes including a library, theatre, public hall or place of worship; or
- (b) educational purposes in a *school*, *early childhood centre*, preschool, or the like; or
- (c) entertainment, recreational or sporting purposes including—
  - (i) a discotheque, nightclub or a bar area of a hotel or motel providing live entertainment or containing a dance floor; or
  - (ii) a cinema; or
  - (iii) a sports stadium, sporting or other club; or
- (d) transit purposes including a bus station, railway station, airport or ferry terminal.

**Assessment Method:** A method that can be used for determining that a *Performance Solution* or *Deemed-to-Satisfy Solution* complies with the *Performance Requirements*.

**Assumed cooling thermostat set point:** The cooling thermostat set point used to calculate *cooling degree hours*, and equal to  $17.8 + 0.31T_m$ , where  $T_m$  is the mean January outdoor air temperature measured in degrees Celsius.

**Atrium:** A space within a building that connects 2 or more *storeys* and—

## Definitions

- (a) is enclosed at the top by a floor or roof (including a glazed roof structure); and
- (b) includes any adjacent part of the building not separated by an appropriate barrier to fire; but
- (c) does not include a stairwell, rampwell or the space within a *shaft*; and
- (d) for the purposes of (a) a space is considered enclosed if the area of the enclosing floor or roof is greater than 50% of the area of the space, measured in plan, of any of the *storeys* connected by the space.

**Atrium well:** A space in an *atrium* bounded by the perimeter of the openings in the floors or by the perimeter of the floors and the *external walls*.

*NSW Auditorium*

**Automatic:** Designed to operate when activated by a heat, smoke or fire sensing device.

**Available safe egress time (ASET)**

- (1) The time between ignition of a fire and the onset of untenable conditions in a specific part of a building.
- (2) The time referred to in (1) is the calculated interval between the time of ignition of a fire and the time at which conditions become such that the occupant is unable to take effective action to escape to a place of safety.

**Average daylight factor:** The ratio of the illumination level within a room provided by daylight to the level of daylight outside the building during overcast conditions.

**Average specific extinction area:** The average specific extinction area for smoke as determined by AS 5637.1.

**Backflow prevention device:** An air gap, break tank or mechanical device that is designed to prevent the unplanned reversal of flow of water or *contaminants* into the water service or a *Network Utility Operator's* water supply.

**Backpressure:** A reversal of water flow caused by the downstream pressure becoming greater than the supply pressure.

**Backsiphonage:** A reversal of flow of water caused by negative pressure in the distributing pipes of a water service or supply.

**Backstage:** A space associated with, and adjacent to, a *stage* in a Class 9b building for scenery, props, equipment, dressing rooms, or the like.

**Battery system:** One or more chemical cells connected in series, parallel or a combination of the two for the purpose of electrical energy storage.

**Blockage:** An obstruction within a water service or sanitary *plumbing* or *drainage* system.

**Boiler:** A vessel or an arrangement of vessels and interconnecting parts, wherein steam or other vapour is generated, or water or other liquid is heated at a pressure above that of the atmosphere, by the application of fire, the products of combustion, electrical power, or similar high temperature means, and—

- (a) includes superheaters, reheaters, economisers, boiler piping, supports, mountings, valves, gauges, fittings, controls, the boiler settings and directly associated equipment; but
- (b) excludes a fully flooded or pressurised system where water or other liquid is heated to a temperature lower than the normal atmospheric boiling temperature of the liquid.

**Bond breaker:** A material used as part of a *waterproofing system* that prevents the *membrane* bonding to the substrate, bedding or lining.

**Breaking surf:** Any area of salt water in which waves break on an average of at least 4 days per week but does not include white caps or choppy water.

### Explanatory Information

Breaking surf normally occurs in areas exposed to the open sea. Breaking surf does not normally occur in sheltered areas, such as that which occurs around Port Phillip Bay, Sydney Harbour, Swan River, Derwent River and similar locations.

**Building complexity criteria:** Are used to determine the building complexity level of all or part of a building in accordance with Table 2, where building complexity criteria are as follows:

- (a) Attributes — the building is designed or constructed with any of the following sub-criteria:
  - (i) An *effective height* of more than 25 m.
  - (ii) One or more *Performance Solutions* are used to demonstrate compliance with the *Performance Requirements* relating to material and systems for structural safety.

## Definitions

- (iii) One or more *Performance Solutions* are used to demonstrate compliance with the *Performance Requirements* relating to material and systems for fire safety.
- (iv) Is located in an area prone to natural disaster or adverse environmental conditions.
- (b) Class 2 — all or part of the building is Class 2 of three or more *storeys*.
- (c) Occupant numbers — the building is to be occupied by more than 100 people determined in accordance with D2D18.
- (d) Occupant characteristics — the building is to be occupied by more than 10 people who will require assistance to evacuate the building in an emergency.
- (e) Importance Level — the building is determined to be Importance Level 4 or 5.

### Notes

The NCC currently does not include corresponding technical requirements relating to the defined term 'building complexity criteria' and the various building complexity levels. It is intended that these terms will be integrated into future editions of the NCC.

**Table 2: Building complexity level**

Building complexity level	Criteria
Low	The building meets only one of the following <i>building complexity criteria</i> : (a) (Attributes), (b) (Class 2), (c) (Occupant numbers) or (d) (Occupant characteristics)
Medium	The building meets two of the following <i>building complexity criteria</i> : (a) (Attributes), (b) (Class 2), (c) (Occupant numbers) or (d) (Occupant characteristics)
High	The building meets three of the following <i>building complexity criteria</i> : (a) (Attributes), (b) (Class 2), (c) (Occupant numbers) or (d) (Occupant characteristics)
Very high	The building meets all of the following <i>building complexity criteria</i> : (a) (Attributes), (b) (Class 2), (c) (Occupant numbers) and (d) (Occupant characteristics); or (e) (Building Importance Level 4 or 5)

**Buried rainwater tank:** A rainwater tank that is set into and completely covered by earth.

**Burnout:** Exposure to fire for a time that includes *fire growth*, full development, and decay in the absence of intervention or automatic suppression, beyond which the fire is no longer a threat to building elements intended to perform *loadbearing* or fire separation functions, or both.

*SA Brush fence*

*SA Bulk grain storage facility*

**Carpark:** A building that is used for the parking of motor vehicles but is neither a *private garage* nor used for the servicing of vehicles, other than washing, cleaning or polishing.

**Cavity:** A void between 2 leaves of masonry, or in masonry veneer construction, a void between a leaf of masonry and the supporting frame.

**Cavity wall:** For the purposes of F3V1 and H2V1, a wall that incorporates a drained cavity.

*SA Cell type silo*

*TAS Centre-based care class 4 facility*

*TAS Centre-based care class 5 facility*

**Certificate of Accreditation:** A certificate issued by 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 NCC.

**Certificate of Conformity:** A certificate issued under the ABCB scheme for products and systems certification stating that the properties and performance of a building material or method of construction or design fulfil specific requirements of the NCC.

**Certification body:** A person or organisation operating in the field of material, product, form of construction or design

## Definitions

certification that has been accredited by the Joint Accreditation System of Australia and New Zealand (JAS-ANZ), and is accredited for a purpose other than as part of the CodeMark Australia Certification Scheme or *WaterMark Certification Scheme*.

**Characteristic:** The occupant data to be used in the modelling of access solutions which define how an occupant interacts with a building, i.e. occupant movement speeds, turning ability, reach capability, perception of luminance contrast and hearing threshold.

*VIC Children's service*

**Clad frame:** Timber or metal frame construction with exterior timber or sheet wall cladding that is not sensitive to minor movement and includes substructure masonry walls up to 1.5 m high.

**Climate zone:** An area defined in [Figure 2](#) and in [Table 3](#) for specific locations, having energy efficiency provisions based on a range of similar climatic characteristics.

**Table 3: Climate zones for thermal design**

State	Location	Climate zone
ACT	Canberra	7
NSW	Albury	4
NSW	Armidale	7
NSW	Batemans Bay	6
NSW	Bathurst	7
NSW	Bega	6
NSW	Bellingen Shire - Dorrigo Plateau	7
NSW	Bellingen Shire - Valley & seaboard	2
NSW	Bourke	4
NSW	Broken Hill	4
NSW	Byron Bay	2
NSW	Cobar	4
NSW	Coffs Harbour	2
NSW	Dubbo	4
NSW	Goulburn	7
NSW	Grafton	2
NSW	Griffith	4
NSW	Ivanhoe	4
NSW	Lismore	2
NSW	Lord Howe Island	2
NSW	Moree	4
NSW	Newcastle	5
NSW	Nowra	6
NSW	Orange	7
NSW	Perisher - Smiggins	8
NSW	Port Macquarie	5
NSW	Sydney East	5
NSW	Sydney West	6
NSW	Tamworth	4
NSW	Thredbo	8
NSW	Wagga Wagga	4
NSW	Williamstown	5

## Definitions

State	Location	Climate zone
NSW	Wollongong	5
NSW	Yass	6
NT	Alice Springs	3
NT	Darwin	1
NT	Elliot	3
NT	Katherine	1
NT	Renner Springs	3
NT	Tennant Creek	3
QLD	Birdsville	3
QLD	Brisbane	2
QLD	Bundaberg	2
QLD	Cairns	1
QLD	Cooktown	1
QLD	Cunnamulla	3
QLD	Gladstone	2
QLD	Hervey Bay	2
QLD	Hughenden	3
QLD	Longreach	3
QLD	Mackay	2
QLD	Mount Isa	3
QLD	Normanton	1
QLD	Rockhampton	2
QLD	Roma	3
QLD	Southport	2
QLD	Toowoomba	5
QLD	Townsville	1
QLD	Warwick	5
QLD	Weipa	1
SA	Adelaide	5
SA	Bordertown	6
SA	Ceduna	5
SA	Cook	4
SA	Elliston	5
SA	Kingscote	6
SA	Leigh Creek	5
SA	Lobethal	6
SA	Loxton	5
SA	Naracoorte	6
SA	Marree	4
SA	Mount Gambier	6
SA	Murray Bridge	6
SA	Oodnadatta	4
SA	Port Augusta	4
SA	Port Lincoln	5

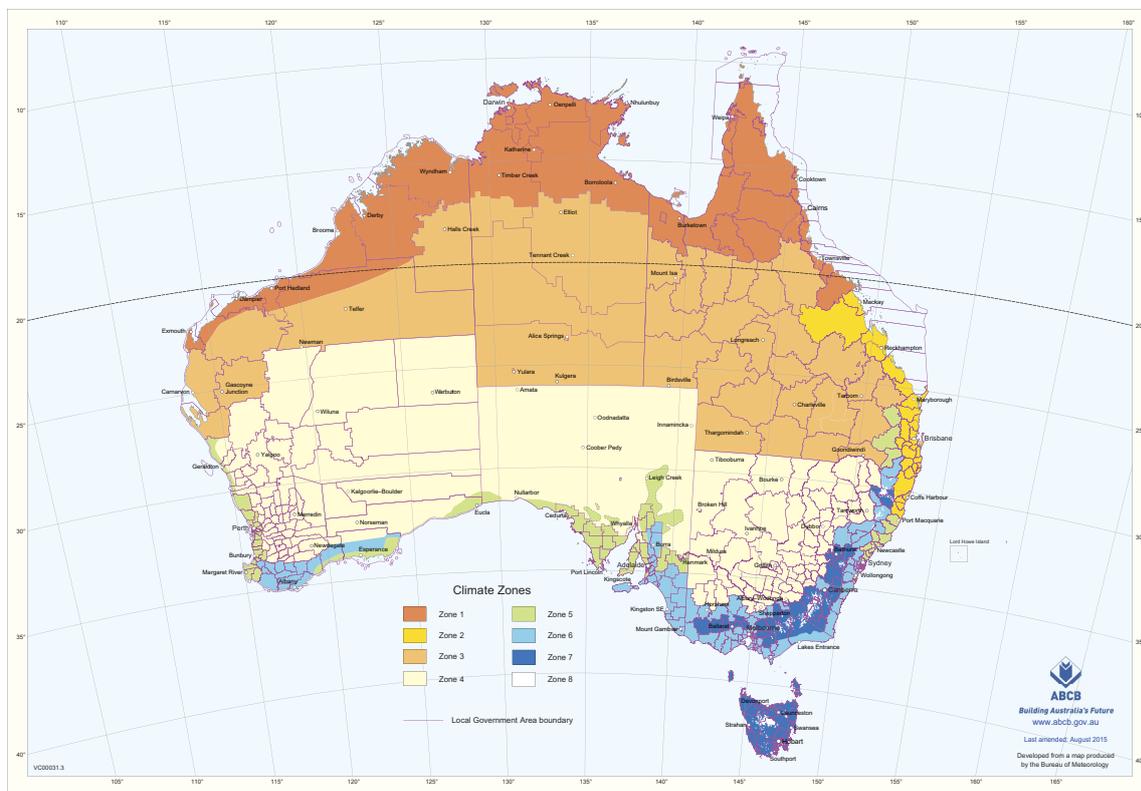
## Definitions

State	Location	Climate zone
SA	Renmark	5
SA	Tarcoola	4
SA	Victor Harbour	6
SA	Whyalla	4
TAS	Burnie	7
TAS	Bicheno	7
TAS	Deloraine	7
TAS	Devonport	7
TAS	Flinders Island	7
TAS	Hobart	7
TAS	Huonville	7
TAS	King Island	7
TAS	Launceston	7
TAS	New Norfolk	7
TAS	Oatlands	7
TAS	Orford	7
TAS	Rossarden	7
TAS	Smithton	7
TAS	St Marys	7
TAS	Zeehan	7
VIC	Anglesea	6
VIC	Ararat	7
VIC	Bairnsdale	6
VIC	Ballarat	7
VIC	Benalla	6
VIC	Bendigo	6
VIC	Bright	7
VIC	Colac	6
VIC	Dandenong	6
VIC	Echuca	4
VIC	Geelong	6
VIC	Hamilton	7
VIC	Horsham	6
VIC	Melbourne	6
VIC	Mildura	4
VIC	Portland	6
VIC	Sale	6
VIC	Shepparton	4
VIC	Swan Hill	4
VIC	Traralgon	6
VIC	Wangaratta	7
VIC	Warrnambool	6
VIC	Wodonga	6
WA	Albany	6

## Definitions

State	Location	Climate zone
WA	Balladonia	4
WA	Broome	1
WA	Bunbury	5
WA	Carnarvon	3
WA	Christmas Island	1
WA	Cocos Island	1
WA	Derby	1
WA	Esperance	5
WA	Exmouth	1
WA	Geraldton	5
WA	Halls Creek	3
WA	Kalgoorlie-Boulder	4
WA	Karratha	1
WA	Meekatharra	4
WA	Northam	4
WA	Pemberton	6
WA	Perth	5
WA	Port Hedland	1
WA	Wagin	4
WA	Wyndham	1

**Figure 2: Climate zones for thermal design**



### Figure Notes

- (1) This map can be viewed in enlargeable form on the ABCB website at [abcb.gov.au](http://abcb.gov.au).
- (2) A Zone 4 area in South Australia, other than a council area, at an altitude greater than 300 m above the

## Definitions

Australian Height Datum is to be considered as Zone 5.

- (3) The areas referred to in (2) have been defined in an enlarged format on the following maps produced by the Department of Planning, Transport and Infrastructure (these maps can be viewed on the Government of South Australia website at [www.sa.gov.au](http://www.sa.gov.au)):
  - (a) Adelaide Hills Climate Zone Map.
  - (b) Barossa Council Climate Zone Map.
  - (c) Regional Council of Goyder Climate Zone Map.
- (4) Locations in *climate zone 8* are in *alpine areas*.

**Combustible:** Applied to—

- (a) a material — means combustible as determined by AS 1530.1; and
- (b) construction or part of a building — means constructed wholly or in part of combustible materials.

*VIC Combustible cladding product*

**Common wall:** For the purposes of—

- (a) Volume One, a wall that is common to adjoining buildings.
- (b) Volume Two and the ABCB Housing Provisions, a wall that is common to adjoining buildings other than Class 1 buildings.

**Condensation:** The formation of moisture on the surface of a building element or material as a result of moist air coming into contact with a surface which is at a lower temperature.

**Conditioned space:** For the purposes of—

- (a) Volume One, a space within a building, including a ceiling or under-floor supply air plenum or return air plenum, where the environment is likely, by the intended use of the space, to have its temperature controlled by *air-conditioning*; or
- (b) Volume Two, a space within a building that is heated or cooled by the building's *domestic services*, excluding a non-*habitable room* in which a heater with a capacity of not more than 1.2 kW or 4.3 MJ/hour is installed.

**Construction activity actions:** Actions due to stacking of building materials or the use of equipment, including cranes and trucks, during construction or actions which may be induced by floor to floor propping.

**Containment protection:** The installation of a *backflow prevention device* at the *point of connection* of a *Network Utility Operator's* water supply to a site.

**Contaminant:** Any substance (including gases, liquids, solids or micro-organisms), energy (excluding noise) or heat, that either by itself or in combination with the same, similar or other substances, energy or heat, changes or is likely to change the physical, chemical or biological condition of water.

*NSW Continental seating*

**Controlled fill:** Material that has been placed and compacted in layers with compaction equipment (such as a vibrating plate) within a defined moisture range to a defined density requirement.

**Cooling degree hours:** For any one hour when the mean outdoor air temperature is above the *assumed cooling thermostat set point*, the degree Celsius air temperature difference between the mean outdoor air temperature and the *assumed cooling thermostat set point*.

**Cooling load:** The calculated amount of energy removed from the cooled spaces of the building annually by artificial means to maintain the desired temperatures in those spaces.

**Critical radiant flux (CRF):** The critical heat flux at extinguishment (CHF in kW/m<sup>2</sup>) as determined by AS ISO 9239.1.

**Cross-connection:** Any actual or potential connection between a water supply and any *contaminant*.

*NSW Cross-over*

**Curtain wall:** A non-*loadbearing external wall* that is not a *panel wall*.

**Daily outdoor temperature range:** The difference between the maximum and minimum temperatures that occur in a day.

**Damp-proof course (DPC):** A continuous layer of impervious material placed in a masonry wall or pier, or between a wall or pier and a floor, to prevent the upward or downward migration of water.

**Deemed-to-Satisfy Provisions:** Provisions which are deemed to satisfy the *Performance Requirements*.

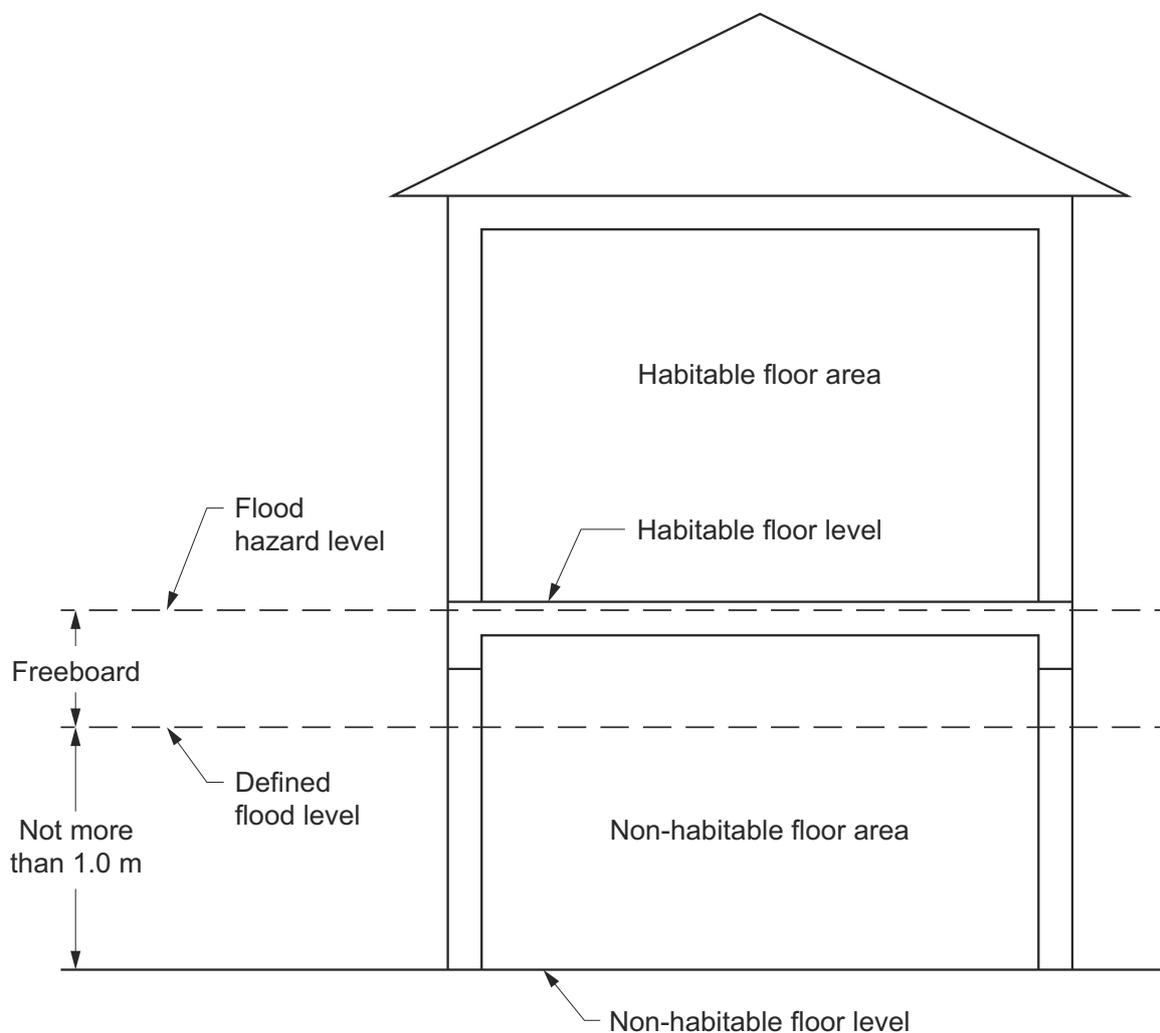
## Definitions

**Deemed-to-Satisfy Solution:** A method of satisfying the *Deemed-to-Satisfy Provisions*.

**Defined flood event (DFE):** The flood event selected for the management of flood hazard for the location of specific development as determined by the *appropriate authority*.

**Defined flood level (DFL):** The flood level associated with a *defined flood event* relative to a specified datum (see Figure 3).

Figure 3: Identification of defined flood level, flood hazard level and freeboard



**Dehumidification gram hours:** For any one hour when the mean humidity is more than 15.7g/kg, the grams per kilogram of absolute humidity difference between the mean outdoor absolute humidity and 15.7g/kg.

*NSW Designated bushfire prone area*

**Designated bushfire prone area:** Land which has been designated under a power of legislation as being subject, or likely to be subject, to bushfires.

**Design bushfire:** The characteristics of a bushfire, its initiation, spread and development, which arises from weather conditions, topography and fuel (vegetation) in a given setting, used to determine *fire actions*.

**Design fire:** The quantitative description of a representation of a fire within the *design scenario*.

**Design scenario:** The specific scenario of which the sequence of events is quantified and a *fire safety engineering* analysis is conducted against.

*WA Design wind speed*

**Design wind speed:** The design gust wind speed for the area where the building is located, calculated in accordance with AS/NZS 1170.2 or AS 4055 (see Table 4 for wind classes).

## Definitions

**Table 4: Wind classes**

Non-cyclonic Region A and B	Cyclonic Region C and D
N1, N2, N3	C1
N4, N5, N6 (these wind classes are covered in the ABCB Housing Provisions Part 2.2).	C2, C3, C4 (these wind classes are covered in the ABCB Housing Provisions Part 2.2).

### Table Notes

- (1) Wind classification map identifying wind regions is contained in ABCB Housing Provisions Part 2.2 (see Figure 2.2.3).
- (2) Information on wind classes for particular areas may be available from the *appropriate authority*.
- (3) “N” = non-cyclonic winds and “C” = cyclonic winds.

**Detention centre:** A building in which persons are securely detained by means of the built structure including a prison, remand centre, juvenile detention centre, holding cells or psychiatric detention centre.

*NSW Development consent*

**Direct fix cladding wall:** For the purposes of F3V1 and H2V1, means a wall with cladding attached directly to the wall framing without the use of a drained cavity.

**Discontinuous construction:** Means—

- (a) a wall having a minimum 20 mm cavity between 2 separate leaves, and—
  - (i) for masonry, where wall ties are used to connect leaves, the ties are of the resilient type; and
  - (ii) for other than masonry, there is no mechanical linkage between the leaves, except at the periphery; and
- (b) a staggered stud wall is not deemed to be discontinuous construction.

**Display glazing:** *Glazing* used to display retail goods in a shop or showroom directly adjacent to a walkway or footpath, but not including that used in a café or restaurant.

**Domestic services:** The basic engineering systems that use energy or control the use of energy; and—

- (a) includes—
  - (i) heating, *air-conditioning*, mechanical ventilation and artificial lighting; and
  - (ii) pumps and heaters for *swimming pools* and spa pools; and
  - (iii) heated water systems; and
  - (iv) on-site *renewable energy* equipment; but
- (b) excludes cooking facilities and portable appliances.

**Drainage:** Any part of—

- (a) a sanitary drainage system, including any liquid trade waste drainage; or
- (b) a stormwater drainage system.

**Drainage flange:** A flange connected to a waste pipe, at the point at which it passes through the floor substrate, to prevent leakage and which enables tile bed drainage into the waste pipe.

**Drainage riser:** A waste pipe between the floor waste and the drainage system.

**Drinking water:** Water intended primarily for human consumption but which has other domestic uses.

### Explanatory Information

See also the Australian Drinking Water Guidelines produced by the National Health and Medical Research Council.

*TAS Early childhood centre*

*VIC Early childhood centre*

**Early childhood centre:** Any premises or part thereof providing or intending to provide a centre-based education and care service within the meaning of the Education and Care Services National Law Act 2010 (Vic), the Education and Care Services National Regulations and centre-based services that are licensed or approved under State and Territory children’s services law, but excludes education and care primarily provided to school aged children in outside school

## Definitions

hours settings.

**Effective height:** The vertical distance between the floor of the lowest *storey* included in the calculation of *rise in storeys* and the floor of the topmost *storey* (excluding the topmost *storey* if it contains only heating, ventilating, lift or other equipment, water tanks or similar service units).

**Efficacy:** The degree to which a system achieves a design objective given that it performs to a level consistent with the system specification during the relevant fire scenario.

**Electricity network substation:** A building in which high voltage supply is converted or transformed and which is controlled by a licensed network service provider designated under a power of legislation.

**Electric passenger lift:** A power-operated lift for raising or lowering people in a car in which the motion of the car is obtained from an electric motor mechanically coupled to the hoisting mechanism.

**Electrohydraulic passenger lift:** A power-operated lift for raising or lowering people in a car in which the motion of the car is obtained from the action of liquid under pressure acting on a piston or ram, the pressure being generated by a pump driven by an individual electric motor.

**Energy value:** The net cost to society including, but not limited to, costs to the building user, the environment and energy networks.

**Engaged pier:** A pier bonded to a masonry wall by course bonding of masonry units or by masonry ties.

*NSW Entertainment venue*

**Envelope:** For the purposes of—

- (a) Section J in NCC Volume One, the parts of a building's *fabric* that separate a *conditioned space* or *habitable room* from—
  - (i) the exterior of the building; or
  - (ii) a non-*conditioned space* including—
    - (A) the floor of a rooftop plant room, lift-machine room or the like; and
    - (B) the floor above a *carpark* or warehouse; and
    - (C) the *common wall* with a *carpark*, warehouse or the like; or
- (b) Part H6 in NCC Volume Two and Section 13 of the ABCB Housing Provisions, the parts of a building's *fabric* that separate artificially heated or cooled spaces from—
  - (i) the exterior of the building; or
  - (ii) other spaces that are not artificially heated or cooled.

**Equivalent:** Equivalent to the level of health, safety and amenity provided by the *Deemed-to-Satisfy Provisions*.

**Evacuation route:** The continuous path of travel (including *exits*, *public corridors* and the like) from any part of a building, including within a *sole-occupancy unit* in a Class 2 or 3 building or Class 4 part, to a *safe place*.

**Evacuation time:** The time calculated from when the emergency starts for the occupants of the building to evacuate to a *safe place*.

**Exit:** Means—

- (a) 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.
  - (iii) A *fire-isolated passageway*.
  - (iv) A doorway opening to a road or *open space*; or
- (b) A *horizontal exit* or a *fire-isolated passageway* leading to a *horizontal exit*.

*TAS Expert judgement*

**Expert judgement:** The judgement of an expert who has the qualifications and experience to determine whether a *Performance Solution* or *Deemed-to-Satisfy Solution* complies with the *Performance Requirements*.

### Explanatory Information

Contemporary and relevant qualifications and/or experience are necessary to determine whether a *Performance*

## Definitions

*Solution* complies with the *Performance Requirements*. The level of qualification and/or experience may differ depending on the complexity of the proposal and the requirements of the regulatory authority. Practitioners should seek advice from the authority having jurisdiction or *appropriate authority* for clarification as to what will be accepted.

**External wall:** For the purposes of—

- (a) Volume One, an outer wall of a building which is not a *common wall*; or
- (b) Volume Two, an outer wall of a building which is not a *separating wall*.

**Extra-low voltage:** A *voltage* not exceeding 50 V AC or 120 V ripple-free DC.

**Fabric:** The basic building structural elements and components of a building including the roof, ceilings, walls, glazing and floors.

### *SA Farm building*

**Farm building:** A Class 7 or 8 building located on land primarily used for *farming*—

- (a) that is—
  - (i) used in connection with *farming*; or
  - (ii) used primarily to store one or more *farm vehicles*; or
  - (iii) a combination of (i) and (ii); and
- (b) in which the total number of persons accommodated at any time does not exceed one person per 200 m<sup>2</sup> of floor area or part thereof, up to a maximum of 8 persons; and
- (c) with a total *floor area* of not more than 3500 m<sup>2</sup>.

**Farming:** Includes—

- (a) cultivating, propagating and harvesting plants or fungi or their products or parts, including seeds, spores, bulbs or the like, but does not include forestry; or
- (b) maintaining animals in any physical environment for the purposes of—
  - (i) breeding them; or
  - (ii) selling them; or
  - (iii) acquiring and selling their bodily produce such as milk, wool, eggs or the like; or
- (c) a combination of (a) and (b),

but does not include forestry or maintaining animals for sport or recreational purposes.

**Farm shed:** A single *storey* Class 7 or 8 building located on land primarily used for *farming*—

- (a) that is—
  - (i) used in connection with *farming*; or
  - (ii) used primarily to store one or more *farm vehicles*; or
  - (iii) a combination of (i) and (ii); and
- (b) occupied neither frequently nor for extended periods by people; and
- (c) in which the total number of persons accommodated at any time does not exceed 2; and
- (d) with a total *floor area* of more than 500 m<sup>2</sup> but not more than 2000 m<sup>2</sup>.

**Farm vehicle:** A vehicle used in connection with *farming*.

### *NSW Film*

**Finished ground level:** The ground level adjacent to footing systems at the completion of construction and landscaping.

**Fire actions:** Each of the following:

- (a) airborne embers; and
- (b) burning debris and/or accumulated embers adjacent to building elements; and
- (c) heat transfer from combustible materials within the site; and
- (d) radiant heat from a bushfire front; and
- (e) flame contact from a bushfire front; and

## Definitions

(f) the period of time post fire front subject to collapsing vegetation due to persistent combustion.

**Fire brigade:** A statutory authority constituted under an Act of Parliament having as one of its functions, the protection of life and property from fire and other emergencies.

**Fire brigade station:** For the purposes of E1D2(1)(b) and I3D9, means a state or territory government operated premises which is a station for a *fire brigade*.

**Fire compartment:** Either—

- (a) the total space of a building; or
- (b) when referred to in—
  - (i) the *Performance Requirements* — any part of a building separated from the remainder by barriers to fire such as walls and/or floors having an appropriate resistance to the spread of fire with any openings adequately protected; or
  - (ii) the *Deemed-to-Satisfy Provisions* — any part of a building separated from the remainder by walls and/or floors each having an FRL not less than that *required* for a *fire wall* for that type of construction and where all openings in the separating construction are protected in accordance with the *Deemed-to-Satisfy Provisions* of the relevant Part.

**Fire growth:** The stage of fire development during which the *heat release rate* and the temperature of the fire are generally increasing.

**Fire hazard:** The danger in terms of potential harm and degree of exposure arising from the start and spread of fire and the smoke and gases that are thereby generated.

**Fire hazard properties:** The following properties of a material or assembly that indicate how they behave under specific fire test conditions:

- (a) *Average specific extinction area*, *critical radiant flux* and *Flammability Index*, determined as defined in Schedule 1.
- (b) *Smoke-Developed Index*, *smoke development rate* and *Spread-of-Flame Index*, determined in accordance with Specification 3.
- (c) *Group number* and *smoke growth rate index* (SMOGR<sub>RC</sub>), determined in accordance with Specification 7.

**Fire intensity:** The rate of release of calorific energy in watts, determined either theoretically or empirically, as applicable.

**Fire-isolated passageway:** A corridor, hallway or the like, of *fire-resisting construction*, which provides egress to or from a *fire-isolated stairway* or *fire-isolated ramp* or to a road or *open space*.

**Fire-isolated ramp:** A ramp within a *fire-resisting* enclosure which provides egress from a *storey*.

**Fire-isolated stairway:** A stairway within a *fire-resisting shaft* and includes the floor and roof or top enclosing structure.

**Fire load:** The sum of the net calorific values of the *combustible* contents which can reasonably be expected to burn within a *fire compartment*, including furnishings, built-in and removable materials, and building elements.

### Notes

The calorific values must be determined at the ambient moisture content or humidity (the unit of measurement is MJ).

**Fire-protected timber:** *Fire-resisting* timber building elements that comply with Specification 10.

**Fire-protective covering:** Any one or more of the following:

- (a) 13 mm fire-protective grade plasterboard.
- (b) 12 mm cellulose cement flat sheeting complying with AS/NZS 2908.2 or ISO 8336.
- (c) 12 mm fibrous plaster reinforced with 13 mm x 13 mm x 0.7 mm galvanised steel wire mesh located not more than 6 mm from the exposed face.
- (d) Other material not less fire-protective than 13 mm fire-protective grade plasterboard, fixed in accordance with the normal trade practice for a fire-protective covering.

**Fire-resistance level (FRL):** The grading periods in minutes determined in accordance with Specifications 1 and 2, for the following criteria—

- (a) *structural adequacy*; and
- (b) *integrity*; and

## Definitions

- (c) *insulation*,  
and expressed in that order.

### Notes

A dash means there is no requirement for that criterion. For example, 90/—/— means there is no requirement for an FRL for *integrity* and *insulation*, and —/—/— means there is no requirement for an FRL.

**Fire-resisting construction:** For the purposes of Volume One, means one of the Types of construction referred to in Part C2 of Volume One.

**Fire-resisting:** For the purposes of—

- (a) Volume One, applied to a building element, having an FRL appropriate for that element; or
- (b) Volume Two, applied to a *structural member* or other part of a building, having the FRL *required* for that *structural member* or other part.

**Fire safety engineering:** Application of engineering principles, rules and *expert judgement* based on a scientific appreciation of the fire phenomenon, often using specific *design scenario*, of the effects of fire and of the reaction and behaviour of people in order to—

- (a) save life, protect property and preserve the environment and heritage from destructive fire; and
- (b) quantify the hazards and risk of fire and its effects; and
- (c) mitigate fire damage by proper design, construction, arrangement and use of buildings, materials, structures, industrial processes and transportation systems; and
- (d) evaluate analytically the optimum protective and preventive measures, including design, installation and maintenance of active and passive fire and life safety systems, necessary to limit, within prescribed levels, the consequences of fire.

**Fire safety system:** One or any combination of the methods used in a building to—

- (a) warn people of an emergency; or
- (b) provide for safe evacuation; or
- (c) restrict the spread of fire; or
- (d) extinguish a fire,

and includes both active and passive systems.

**Fire-source feature:** Any one or more of the following:

- (a) The far boundary of a road, river, lake or the like adjoining the allotment.
- (b) A side or rear boundary of the allotment.
- (c) An *external wall* of another building on the allotment which is not a Class 10 building.

**Fire wall:** A wall with an appropriate resistance to the spread of fire that divides a *storey* or building into *fire compartments*.

**Fixed wired:** For the purposes of Specification 23, a system of electrical wiring (either AC or DC), in which cables are fixed or supported in position.

**Flammability Index:** The index number as determined by AS 1530.2.

### *VIC Flashing*

**Flashing:** A strip or sleeve of impervious material dressed, fitted or built-in to provide a barrier to water movement, or to divert the travel of water, or to cover a joint where water would otherwise penetrate to the interior of a building, and includes the following:

- (a) Perimeter flashing: a flashing used at the floor-wall junction.
- (b) Vertical flashing: a flashing used at wall junctions within *shower areas*.

**Flashover:** In relation to *fire hazard properties*, means a *heat release rate* of 1 MW.

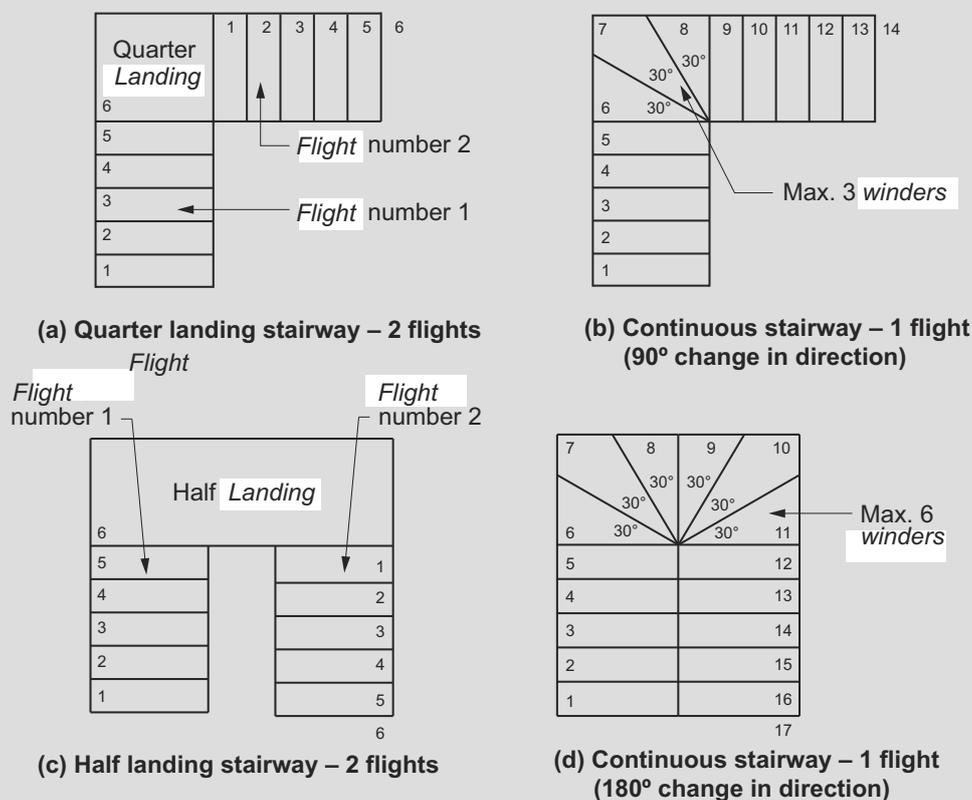
**Flight:** That part of a stair that has a continuous series of *risers*, including *risers* of *winders*, not interrupted by a *landing* or floor.

### Explanatory Information

A *flight* is the part of a stair that has a continuous slope created by the nosing line of treads. The length of a *flight* is limited to restrict the distance a person could fall down a stair.

Quarter *landings*, as shown in Explanatory Figure 1, are considered sufficient to halt a person's fall and therefore are considered for the purposes of NCC Volume Two and the ABCB Housing Provisions not to be part of the *flight*.

Figure 1 (explanatory): Identification of stair flights — Plan view



### VIC Flood hazard area

**Flood hazard area:** The *site* (whether or not mapped) encompassing land lower than the *flood hazard level* which has been determined by the *appropriate authority*.

**Flood hazard level (FHL):** The flood level used to determine the height of floors in a building and represents the *defined flood level* plus the *freeboard* (see Figure 3).

**Floor area:** For the purposes of—

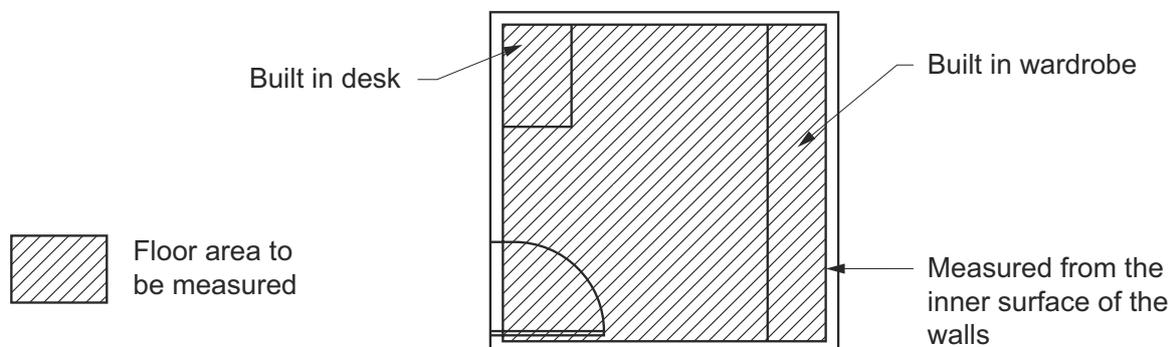
- (1) Volume One—
  - (a) in relation to a building — the total area of all *storeys*; and
  - (b) in relation to a *storey* — the area of all floors of that *storey* measured over the enclosing walls, and includes—
    - (i) the area of a *mezzanine* within the *storey*, measured within the finished surfaces of any *external walls*; and
    - (ii) the area occupied by any *internal wall* or partitions, any cupboard, or other built-in furniture, fixture or fitting; and
    - (iii) if there is no enclosing wall, an area which has a use that contributes to the *fire load* or impacts on the safety, health or amenity of the occupants in relation to the provisions of the BCA; and
  - (c) in relation to a room — the area of the room measured within the internal finished surfaces of the walls, and includes the area occupied by any cupboard or other built-in furniture, fixture or fitting; and
  - (d) in relation to a *fire compartment* — the total area of all floors within the *fire compartment* measured within the finished internal surfaces of the bounding construction, and if there is no bounding construction, includes an area which has a use which contributes to the *fire load*; and
  - (e) in relation to an *atrium* — the total area of all floors within the *atrium* measured within the finished surfaces

## Definitions

of the bounding construction and if no bounding construction, within the *external walls*.

- (2) Volume Two and the ABCB Housing Provisions, 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 (see Figure 4).

**Figure 4:** Identification of floor area of a room

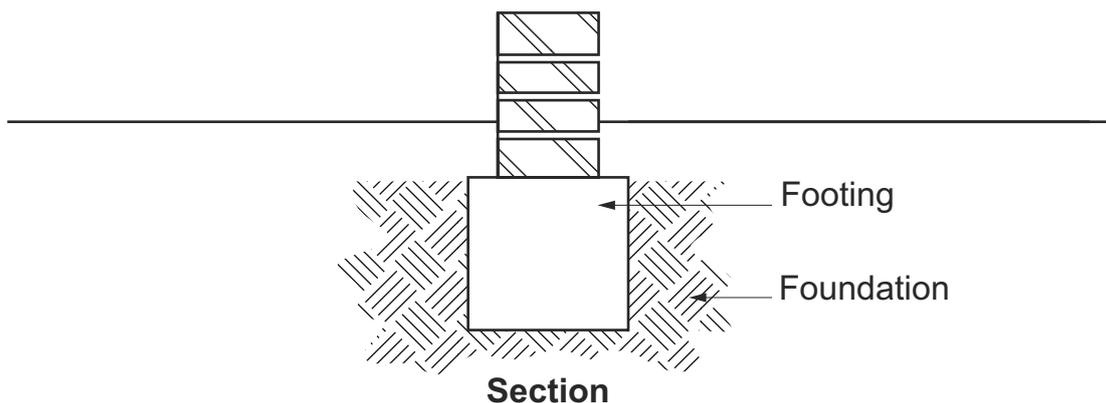


**Floor waste:** A grated inlet within a graded floor intended to drain the floor surface.

*NSW Flying scenery*

**Foundation:** The ground which supports the building (see Figure 5).

**Figure 5:** Identification of foundation



**Fractional effective dose (FED):** The fraction of the dose (of thermal effects) that would render a person of average susceptibility incapable of escape.

### Explanatory Information

The definition for FED has been modified from the ISO definition to be made specific for the Fire Safety *Verification Method*. The use of CO or CO<sub>2</sub> as part of FED is not part of that *Verification Method*. This is because the ability to measure CO in a repeatable test varies by two orders of magnitude for common cellulosic fuel.

*VIC Freeboard*

**Freeboard:** The height above the *defined flood level* as determined by the *appropriate authority*, used to compensate for effects such as wave action and localised hydraulic behaviour.

**Fully developed fire:** The state of total involvement of the majority of available combustible materials in a fire.

*NSW Garage top dwelling*

**Glazing:** For the purposes of—

- Section J of Volume One, except for a *sole-occupancy unit* of a Class 2 building or a Class 4 part of a building—
  - a transparent or translucent element and its supporting frame located in the *envelope*; and
  - includes a *window* other than a *roof light*; or
- Section J of NCC Volume One, for a *sole-occupancy unit* of a Class 2 building or a Class 4 part of a building—

## Definitions

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- (i) a translucent element and its supporting frame located in the external *fabric* of the building; and
  - (ii) includes a *window* other than a *roof light*; or
- (c) **Part H6** of NCC Volume Two and Section 13 of the ABCB Housing Provisions—
- (i) a transparent or translucent element and its supporting frame located in the external *fabric* of the building; and
  - (ii) includes a *window* other than a *roof light*.

**Going:** The horizontal dimension from the front to the back of a tread less any overhang from the next tread or *landing* above (see Figure 11.2.2f in the ABCB Housing Provisions).

**Green Star:** The building sustainability rating scheme managed by the Green Building Council of Australia.

### *NSW Grid*

**Group number:** The number of one of 4 groups of materials used in the regulation of *fire hazard properties* and applied to materials used as a finish, surface, lining, or attachment to a wall or ceiling.

**Habitable room:** A room used for normal domestic activities, and—

- (a) includes a bedroom, living room, lounge room, music room, television room, kitchen, dining room, sewing room, study, playroom, family room, home theatre and sunroom; but
- (b) 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.

**Hazard Rating:** A level of potential toxicity that may cause contamination in a *drinking water* system, having a rating of *Low Hazard*, *Medium Hazard* or *High Hazard*, determined in accordance with NCC Volume Three.

**Health-care building:** A building whose occupants or patients undergoing medical treatment generally need physical assistance to evacuate the building during an emergency and includes—

- (a) a public or private hospital; or
- (b) a nursing home or similar facility for sick or disabled persons needing full-time care; or
- (c) a clinic, day surgery or procedure unit where the effects of the predominant treatment administered involve patients becoming non-ambulatory and requiring supervised medical care on the premises for some time after the treatment.

**Heated water:** Water that has been intentionally heated; normally referred to as hot water or warm water.

**Heating degree hours:** For any one hour when the mean outdoor air temperature is less than 15°C, the degrees Celsius temperature difference between the mean outdoor air temperature and 15°C.

**Heating load:** The calculated amount of energy delivered to the heated spaces of the building annually by artificial means to maintain the desired temperatures in those spaces.

**Heat release:** The thermal energy produced by combustion (measured in kJ).

**Heat release rate (HRR):** The rate of thermal energy production generated by combustion, measured in kW (preferred) or MW.

**High Hazard:** Any condition, device or practice which, in connection with a water supply, has the potential to cause death.

**High wind area:** A region that is subject to *design wind speed* more than N3 or C1 (see Table 4).

**Hob:** The upstand at the perimeter of a *shower area*.

**Horizontal exit:** A *required* doorway between 2 parts of a building separated from each other by a *fire wall*.

### *VIC Hotel offering shared accommodation*

**Hours of operation:** The number of hours when the occupancy of the building is greater than 20% of the peak occupancy.

**House energy rating software:** For the purposes of—

- (a) Volume One, software accredited under the Nationwide House Energy Rating Scheme (NatHERS); or
- (b) Volume Two—
  - (i) applied to *H6V2*—software accredited or previously accredited under the Nationwide House Energy Rating Scheme (NatHERS) and the additional functionality provided in non-regulatory mode; and
  - (ii) applied to *Specification 42*—software accredited under the Nationwide House Energy Rating Scheme (NatHERS).

### Explanatory Information

The Nationwide House Energy Rating Scheme (NatHERS) refers to the Australian Governments' scheme that facilitates consistent energy ratings from software tools which are used to assess the potential thermal efficiency of dwelling envelopes.

**Illuminance:** The luminous flux falling onto a unit area of surface.

**Illumination power density:** The total of the power that will be consumed by the lights in a space, including any lamps, ballasts, current regulators and control devices other than those that are plugged into socket outlets for intermittent use such as floor standing lamps, desk lamps or work station lamps, divided by the area of the space, and expressed in  $W/m^2$ .

### Explanatory Information

Illumination power density relates to the power consumed by the lighting system and includes the light source or luminaire and any control device. The power for the lighting system is the illumination power load. This approach is more complicated than the *lamp power density* approach but provides more flexibility for a dwelling with sophisticated control systems.

The area of the space refers to the area the lights serve. This could be considered a single room, open plan space, verandah, balcony or the like, or the total area of all these spaces.

**Inclined lift:** A power-operated device for raising or lowering people within a carriage that has one or more rigid guides on an inclined plane.

**Individual protection:** The installation of a *backflow prevention device* at the point where a water service connects to a single fixture or appliance.

*NSW Information and education facility*

**Insulation:** In relation to an FRL, 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, the ability to resist the passage of flames and hot gases specified in AS 1530.4.

**Internal wall:** For the purposes of—

- (a) Volume One, excludes a *common wall* or a party wall; or
- (b) Volume Two, excludes a *separating wall*, *common wall* or party wall.

**Interstitial condensation:** The *condensation* of moisture on surfaces between material layers inside the building component.

**Irrigation system:** An irrigation system of the following types:

- (a) Type A— all permanently open outlets and piping more than 150 mm above finished surface level, not subject to ponding or *backpressure* and not involving injection systems.
- (b) Type B— irrigation systems in domestic or residential buildings with piping or outlets installed less than 150 mm above finished surface level and not involving injection systems.
- (c) Type C— irrigation systems in other than domestic or residential buildings with piping outlets less than 150 mm above finished surface level and not involving injection systems.
- (d) Type D— irrigation systems where fertilizers, herbicides, nematicides or the like are injected or siphoned into the system.

**JAS-ANZ:** The Joint Accreditation System of Australia and New Zealand.

**Lamp power density:** The total of the maximum power rating of the lamps in a space, other than those that are plugged into socket outlets for intermittent use such as floor standing lamps, desk lamps or work station lamps, divided by the area of the space, and expressed in  $W/m^2$ .

### Explanatory Information

Lamp power density is a simple means of setting energy consumption at an efficient level for Class 1 and associated Class 10a buildings.

Lamp refers to the globe or globes that are to be installed in a permanently wired light fitting. The maximum power of

## Definitions

a lamp is usually marked on the fitting as the maximum allowable wattage.

The area of the space refers to the area the lights serve. This could be considered a single room, open plan space, verandah, balcony or the like, or the total area of all these spaces.

**Landing:** An area at the top or bottom of a *flight* or between two *flights*.

**Latent heat gain:** The heat gained by the vapourising of liquid without change of temperature.

**Lateral support:** A support (including a footing, buttress, cross wall, beam, floor or braced roof structure) that effectively restrains a wall or pier at right angles to the face of the wall or pier.

**Lead free:** Where a plumbing product or material in contact with *drinking water* has a *weighted average* lead content of not more than 0.25%.

*NSW Licensed premises*

*WA Licensed premises*

**Lightweight construction:** Construction which incorporates or comprises—

- (a) sheet or board material, plaster, render, sprayed application, or other material similarly susceptible to damage by impact, pressure or abrasion; or
- (b) concrete and concrete products containing pumice, perlite, vermiculite, or other soft material similarly susceptible to damage by impact, pressure or abrasion; or
- (c) masonry having a width of less than 70 mm.

**Loadbearing:** Intended to resist vertical forces additional to those due to its own weight.

**Loadbearing wall:** For the purposes of H1D4 and H2D3 of NCC Volume Two and Section 4 of the ABCB Housing Provisions, means any wall imposing on the footing a load greater than 10 kN/m.

**Loss:** Physical damage, financial loss or loss of *amenity*.

**Low Hazard:** Any condition, device or practice which, in connection with a water supply, would constitute a nuisance by colour, odour or taste but does not have the potential to injure or endanger health.

**Low rainfall intensity area:** An area with a 5 minute rainfall intensity for an *annual exceedance probability* of 5% of not more than 125 mm/hour.

### Explanatory Information

Rainfall intensity figures can be obtained from Table 7.4.3d in the ABCB Housing Provisions.

**Low-rise, low-speed constant pressure lift:** A power-operated low-rise, low-speed device for raising or lowering people with limited mobility on a carriage that is controlled by the application of constant pressure to a control.

**Low-rise platform lift:** A power-operated device for raising or lowering people with limited mobility on a platform, that is controlled automatically or by the application of constant pressure to a control.

**Low voltage:** A *voltage* exceeding *extra-low voltage*, but not exceeding 1000 V AC or 1500 V DC.

**Luminance contrast:** The light reflected from one surface or component, compared to the light reflected from another surface or component.

**Main water heater:** The domestic hot water unit in a dwelling that is connected to at least one shower and the largest number of hot water outlets.

**Main space conditioning:** Either—

- (a) the heating or cooling equipment that serves at least 70% of the *conditioned space* of a dwelling; or
- (b) if no one heating or cooling equipment serves at least 70% of the *conditioned space* of the dwelling, the equipment that results in the highest net equivalent energy usage when calculated in accordance with J3D14(1)(a) of NCC Volume One or 13.6.2(1)(a) of the ABCB Housing Provisions.

### Notes

- (1) If a multi-split *air-conditioning* unit is installed, it is considered to be a single heating or cooling *service*.
- (2) A series of separate heaters or coolers of the one type can be considered a single heater or cooler type with a performance level of that of the unit with the lowest efficiency.

### Explanatory Information

The purpose of defining for main space conditioning is to provide criteria upon which the heating or cooling equipment should be selected when showing compliance with J3D14(1)(a) of NCC Volume One and 13.6.2(1)(a) of the ABCB Housing Provisions when more than one type and efficiency of equipment is present. In J3D14(1)(a) the formula that determines  $E_R$  allows the selection of only one heating or cooling system. This definition requires that if any one system serves at least 70% of the *floor area* that is heated or cooled it should be used as the basis of determining  $E_R$ . If, however, no one system serves at least 70% of the *floor area*, then the appliance that results in the highest net equivalent energy usage, when calculated in accordance with J3D14(1)(a)/13.6.2(1)(a), should be selected.

**Massive timber:** An element not less than 75 mm thick as measured in each direction formed from solid and laminated timber.

**Maximum retained water level:** The point where surface water will start to overflow out of the *shower area*.

**Medium Hazard:** Any condition, device or practice which, in connection with a water supply, has the potential to injure or endanger health.

**Membrane:** A barrier impervious to moisture.

### Explanatory Information

A barrier may be a single or multi-part system.

**Mezzanine:** An intermediate floor within a room.

**Minimum Energy Performance Standards (MEPS):** The Minimum Energy Performance Standards for equipment and appliances established through the Greenhouse and Energy Minimum Standards Act 2012.

*NSW Minimum lateral clearance*

**Mixed construction:** A building consisting of more than one form of construction, particularly in double-storey buildings.

**Mould:** A fungal growth that can be produced from conditions such as dampness, darkness, or poor ventilation.

**NABERS Energy:** The National Australian Built Environment Rating Systems for energy efficiency, which is managed by the New South Wales Government.

**Network Utility Operator:** A person who—

- (a) undertakes the piped distribution of *drinking water* or *non-drinking water* for supply; or
- (b) is the operator of a sewerage system or a stormwater *drainage* system.

### Explanatory Information

A Network Utility Operator in most States and Territories is the water and sewerage authority licensed to supply water and receive sewage and/or stormwater. The authority operates or proposes to operate a network that undertakes the distribution of water for supply and undertakes to receive sewage and/or stormwater drainage. This authority may be a licensed utility, local government body or council.

**Non-combustible:** Applied to—

- (a) a material — means not deemed *combustible* as determined by AS 1530.1 — Combustibility Tests for Materials; or
- (b) construction or part of a building — means constructed wholly of materials that are not deemed *combustible*.

**Non-drinking water:** Water which is not intended primarily for human consumption.

**Occupant traits:** For the purposes of—

- (a) Volume One, the features, needs and profile of the occupants in a *habitable room* or space; or
- (b) Volume Two, the features, needs and profile of the occupants in a room or space.

### Explanatory Information

For the purpose of Volume Two, this term is used to describe the characteristics of the occupants and their associated requirements in relation to a room or space.

For example, in relation to a bedroom, the following occupant characteristics and associated requirements should be

## Definitions

considered:

- Characteristics: height, mobility and how often the space will be used.
- Requirements: a sleeping space and a space to undertake leisure activities.

**Occupiable outdoor area:** A space on a roof, balcony or similar part of a building—

- (a) that is open to the sky; and
- (b) to which access is provided, other than access only for maintenance; and
- (c) that is not *open space* or directly connected with *open space*.

*VIC On-site wastewater management system*

**On-site wastewater management system:** A system that receives and/or treats wastewater generated and discharges the resulting effluent to an *approved disposal system* or re-use system.

**Open-deck carpark:** A carpark in which all parts of the parking *storeys* are cross-ventilated by permanent unobstructed openings in not fewer than 2 opposite or approximately opposite sides, and—

- (a) each side that provides ventilation is not less than  $\frac{1}{6}$  of the area of any other side; and
- (b) the openings are not less than  $\frac{1}{2}$  of the wall area of the side concerned.

**Open space:** A space on the allotment, or a roof or similar part of a building adequately protected from fire, open to the sky and connected directly with a public road.

**Open spectator stand:** A tiered stand substantially open at the front.

**Other property:** All or any of the following—

- (a) any building on the same or an adjoining allotment; and
- (b) any adjoining allotment; and
- (c) a road.

**Outdoor air:** Air outside the building.

**Outdoor air economy cycle:** A mode of operation of an *air-conditioning* system that, when the *outdoor air* thermodynamic properties are favourable, increases the quantity of *outdoor air* used to condition the space.

**Outfall:** That part of the disposal system receiving *surface water* from the *drainage* system and may include a natural water course, kerb and channel, or soakage system.

**Overflow device:** A device that provides relief to a water service, sanitary *plumbing* and *drainage* system, *rainwater service* or stormwater system to avoid the likelihood of *uncontrolled discharge*.

**Panel wall:** A non-*loadbearing external wall*, in frame or similar construction, that is wholly supported at each *storey*.

**Partially buried rainwater tank:** A rainwater tank that is not completely covered by earth but is partially set into the ground.

**Patient care area:** A part of a *health-care building* normally used for the treatment, care, accommodation, recreation, dining and holding of patients including a *ward area* and *treatment area*.

**Performance-based design brief (PBDB):** The report that defines the scope of work for the performance-based analysis, the technical basis for analysis, and the criteria for acceptance of any relevant *Performance Solution* as agreed by stakeholders.

**Performance Requirement:** A requirement which states the level of performance which a *Performance Solution* or *Deemed-to-Satisfy Solution* must meet.

**Performance Solution:** A method of complying with the *Performance Requirements* other than by a *Deemed-to-Satisfy Solution*.

**Perimeter of building:** For the purposes of Section 8 of the Housing Provisions, means the external envelope of a building.

*TAS Permit Authority*

**Personal care services:** Any of the following:

- (a) The provision of nursing care.
- (b) Assistance or supervision in—
  - (i) bathing, showering or personal hygiene; or

## Definitions

- (ii) toileting or continence management; or
- (iii) dressing or undressing; or
- (iv) consuming food.
- (c) The provision of direct physical assistance to a person with mobility problems.
- (d) The management of medication.
- (e) The provision of substantial rehabilitative or development assistance.

**Piping:** For the purposes of Section J in Volume One or [Part H6](#) in Volume Two, and Section 13 of the Housing Provisions, means an assembly of pipes, with or without valves or other fittings, connected together for the conveyance of liquids and gases.

*NSW Planning for Bush Fire Protection*

**Pliable building membrane:** A water barrier as classified by AS 4200.1.

*VIC Plumbing*

**Plumbing:** Any water service plumbing or sanitary plumbing system.

**Plumbing or Drainage Solution:** A solution which complies with the *Performance Requirement* and is a—

- (a) *Performance Solution*; or
- (b) *Deemed-to-Satisfy Solution*; or
- (c) combination of (a) and (b).

**Point of connection:** Any of the following:

- (a) For a cold water service, means the point where the cold water service connects to—
  - (i) the *Network Utility Operator's* water supply system; or
  - (ii) the point of isolation to an alternative water source where there is no *Network Utility Operator's* water supply available or is not utilised.
- (b) For a *heated water* service, means the point where the water heater connects to the cold water service downstream of the isolation valve.
- (c) For sanitary *drainage*, means the point where the on-site sanitary *drainage* system connects to—
  - (i) the *Network Utility Operator's* sewerage system; or
  - (ii) an *on-site wastewater management system*.
- (d) For sanitary *plumbing*, means the point where the sanitary *plumbing* system connects to the sanitary *drainage* system.
- (e) For a *rainwater service*, means the point where the *rainwater service*—
  - (i) connects to the point of isolation for the *rainwater storage*; or
  - (ii) draws water from the *rainwater storage*.
- (f) For stormwater disposal, means the point where the on-site stormwater *drainage* system connects to—
  - (i) the *Network Utility Operator's* stormwater system; or
  - (ii) an approved on-site disposal system.
- (g) For a fire-fighting water service, means the point where the service connects to—
  - (i) a cold water service, downstream of a *backflow prevention device*; or
  - (ii) the *Network Utility Operator's* water supply system; or
  - (iii) the point of isolation to an alternative water source.

### Notes

A domestic fire sprinkler service conforming to FPAA101D is considered part of the cold water service.

### Explanatory Information

The *point of connection* is usually determined by the *Network Utility Operator* according to the water and sewerage

## Definitions

Acts, Regulations and codes that apply within the *Network Utility Operator's* licensed area and/or jurisdiction.

*WA Potable water*

**Predicted Mean Vote (PMV):** The Predicted Mean Vote of the thermal perception of building occupants determined in accordance with ANSI/ASHRAE Standard 55.

**Preformed shower base:** A preformed, prefinished *vessel* installed as the finished floor of a shower compartment, and which is provided with a connection point to a sanitary *drainage* system.

### Explanatory Information

*Preformed shower bases* are commonly made of plastics, composite materials, vitreous enamelled pressed steel, or stainless steel.

**Pressure vessel:** A vessel subject to internal or external pressure, including interconnected parts and components, valves, gauges and other fittings up to the first point of connection to connecting piping, and—

- (a) includes fire heaters and gas cylinders; but
- (b) excludes—
  - (i) any vessel that falls within the definition of a *boiler*; and
  - (ii) storage tanks and equipment tanks intended for storing liquids where the pressure at the top of the tank is not exceeding 1.4 kPa above or 0.06 kPa below atmospheric pressure; and
  - (iii) domestic-type hot water supply heaters and tanks; and
  - (iv) pressure vessels installed for the purposes of fire suppression or which serve a fire suppression system.

*QLD Primary building element*

**Primary building element:** For the purposes of—

- (a) Volume One, a member of a building designed specifically to take part of the loads specified in B1D3 and includes roof, ceiling, floor, stairway or ramp and wall framing members including bracing members designed for the specific purpose of acting as a brace to those members; or
- (b) Part 3.4 of the ABCB Housing Provisions, a member of a building designed specifically to take part of the building loads and includes roof, ceiling, floor, stairway or ramp and wall framing members including bracing members designed for the specific purpose of acting as a brace to those members.

### Explanatory Information

The loads to which a building may be subjected are dead, live, wind, snow and earthquake loads. Further information on building loads can be found in the AS 1170 series of Standards.

**Primary insulation layer:** The most interior insulation layer of a wall or roof construction.

**Private bushfire shelter:** A structure associated with, but not attached to, or part of a Class 1a dwelling that may, as a last resort, provide shelter for occupants from immediate life threatening effects of a bushfire.

**Private garage:** For the purposes of—

- (a) Volume One—
  - (i) any garage associated with a Class 1 building; or
  - (ii) any single *storey* of a building of another Class containing not more than 3 vehicle spaces, if there is only one such *storey* in the building; or
  - (iii) any separate single *storey* garage associated with another building where such garage contains not more than 3 vehicle spaces; or
- (b) Volume Two—
  - (i) any garage associated with a Class 1 building; or
  - (ii) any separate single *storey* garage associated with another building where such garage contains not more than 3 vehicle spaces.

**Product:** *Plumbing* and *drainage* items within the scope of Volume Three including but not limited to—

## Definitions

- (a) materials, fixtures and components used in a *plumbing* or *drainage* installation; and
- (b) appliances and equipment connected to a *plumbing* or *drainage* system.

**Product Technical Statement:** A form of documentary evidence stating that the properties and performance of a building material, product or form of construction fulfil specific requirements of the NCC, and describes—

- (a) the application and intended use of the building material, product or form of construction; and
- (b) how the use of the building material, product or form of construction complies with the requirements of the NCC Volume One and Volume Two; and
- (c) any limitations and conditions of the use of the building material, product or form of construction relevant to (b).

**Professional engineer:** A person who is—

- (a) if legislation is applicable — a registered professional engineer in the relevant discipline who has appropriate experience and competence in the relevant field; or
- (b) if legislation is not applicable—
  - (i) registered in the relevant discipline on the National Engineering Register (NER) of the Institution of Engineers Australia (which trades as 'Engineers Australia'); or
  - (ii) eligible to become registered on the Institution of Engineers Australia's NER and has appropriate experience and competence in the relevant field.

*NSW Projection suite*

*TAS Public*

*WA Public building*

**Public corridor:** An enclosed corridor, hallway or the like which—

- (a) serves as a means of egress from 2 or more *sole-occupancy units* to a *required exit* from the *storey* concerned; or
- (b) is *required* to be provided as a means of egress from any part of a *storey* to a *required exit*.

**Rainwater service:** A water service which distributes water from the isolation valve of the rainwater storage to the rainwater points of discharge for purposes such as for clothes washing, urinal and water closet flushing and external hose cocks.

**Rainwater storage:** Any storage of rainwater collected from a roof catchment area which is used to supply water for the primary purposes of drinking, personal hygiene or other uses.

### Explanatory Information

Generally this applies to alternative water sources not supplied by a *Network Utility Operator*. This does not include *rainwater storage* for non-drinking purposes.

*SA Rainwater tank*

**Rapid roller door:** A door that opens and closes at a speed of not less than 0.5 m/s.

**Recognised expert:** A person with qualifications and experience in the area of *plumbing* or *drainage* in question recognised by the authority having jurisdiction.

### Explanatory Information

A *recognised expert* is a person recognised by the authority having jurisdiction as qualified to provide evidence under A5G4(5). Generally, this means a hydraulic consultant or engineer, however the specific requirements are determined by the authority having jurisdiction.

Under A5G4(5), a report from a *recognised expert* may be used as evidence of suitability that a *product* listed on the *WaterMark Schedule of Excluded Products*, or a *plumbing* or *drainage* system, complies with a *Performance Requirement* or *Deemed-to-Satisfy Provisions*.

**Reference building:** For the purposes of—

- (a) Volume One, a hypothetical building that is used to calculate the maximum allowable—
  - (i) *annual greenhouse gas emissions* for the common area of a Class 2 building or a Class 3 to 9 building; or

## Definitions

- (ii) *heating load*, *cooling load* and *energy value* for a *sole-occupancy unit* of a Class 2 building or a Class 4 part of a building; or
- (b) Volume Two, a hypothetical building that is used to determine the maximum allowable *heating load* and *cooling load* for the proposed building.

**Reflective insulation:** A building membrane with a reflective surface such as a reflective foil laminate, reflective barrier, foil batt or the like capable of reducing radiant heat flow.

### Explanatory Information

For Volume Two:

- Typical *R-Values* achieved by adding *reflective insulation* are given in the explanatory information accompanying Section 13 of the ABCB Housing Provisions. Information on specific products may be obtained from *reflective insulation* manufacturers.
- The surface of *reflective insulation* may be described in terms of its emittance (or infra-red emittance) or in terms of its reflectance (or solar reflectance). Generally, for the surface of a particular *reflective insulation*: emittance + reflectance = 1.
- Some types of *reflective insulation* may also serve the purposes of waterproofing or vapour proofing.

**Regulated energy:** The energy consumed by a building's *services* minus the amount of *renewable energy* generated and used on *site*.

**Reinforced masonry:** Masonry reinforced with steel reinforcement that is placed in a bed joint or grouted into a core to strengthen the masonry.

**Reliability:** The probability that a system performs to a level consistent with the system specification.

**Renewable energy:** Energy that is derived from sources that are regenerated, replenished, or for all practical purposes cannot be depleted and the energy sources include, but are not limited to, solar, wind, hydroelectric, wave action and geothermal.

**Required:** Required to satisfy a *Performance Requirement* or a *Deemed-to-Satisfy Provision* of the NCC as appropriate.

**Required safe egress time (RSET):** The time required for safe evacuation of occupants to a place of safety prior to the onset of untenable conditions.

**Residential aged care building:** A Class 3 or 9a building whose residents, due to their incapacity associated with the ageing process, are provided with physical assistance in conducting their daily activities and to evacuate the building during an emergency.

**Residential care building:** A Class 3, 9a or 9c building which is a place of residence where 10% or more of persons who reside there need physical assistance in conducting their daily activities and to evacuate the building during an emergency (including any *aged care building* or *residential aged care building*) but does not include a hospital.

*VIC Residential care building (Vic)*

**Resident use area:** Part of a Class 9c building normally used by residents, and—

- (a) includes *sole-occupancy units*, lounges, dining areas, activity rooms and the like; but
- (b) excludes offices, storage areas, commercial kitchens, commercial laundries and other spaces not for the use of residents.

**Resistance to the incipient spread of fire:** In relation to a ceiling membrane, means the ability of the membrane to insulate the space between the ceiling and roof, or ceiling and floor above, so as to limit the temperature rise of materials in this space to a level which will not permit the rapid and general spread of fire throughout the space.

### Explanatory Information

Resistance to the incipient spread of fire refers to the ability of a ceiling to prevent the spread of fire and thermally insulate the space between the ceiling and the roof or floor above. "Resistance to the incipient spread of fire" is superior to "fire-resistance" because it requires a higher standard of heat insulation.

The definition is used in Volume Two for separating floors/ceilings for a Class 1a dwelling located above a non-appurtenant *private garage*.

**Rise in storeys:** The greatest number of *storeys* calculated in accordance with C2D3 of Volume One.

## Definitions

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**Riser:** The height between consecutive treads and between each *landing* and continuous tread.

*VIC Restricted children's service*

**Rolled fill:** Material placed in layers and compacted by repeated rolling by an excavator.

*SA Roof catchment area*

**Roof light:** For the purposes of Section J and [Part F6](#) in NCC Volume One, [Part H6](#) in NCC Volume Two, and Part 10.5 and Section 13 of the ABCB Housing Provisions, a skylight, *window* or the like installed in a roof—

- (a) to permit natural light to enter the room below; and
- (b) at an angle between 0 and 70 degrees measured from the horizontal plane.

*NSW Row*

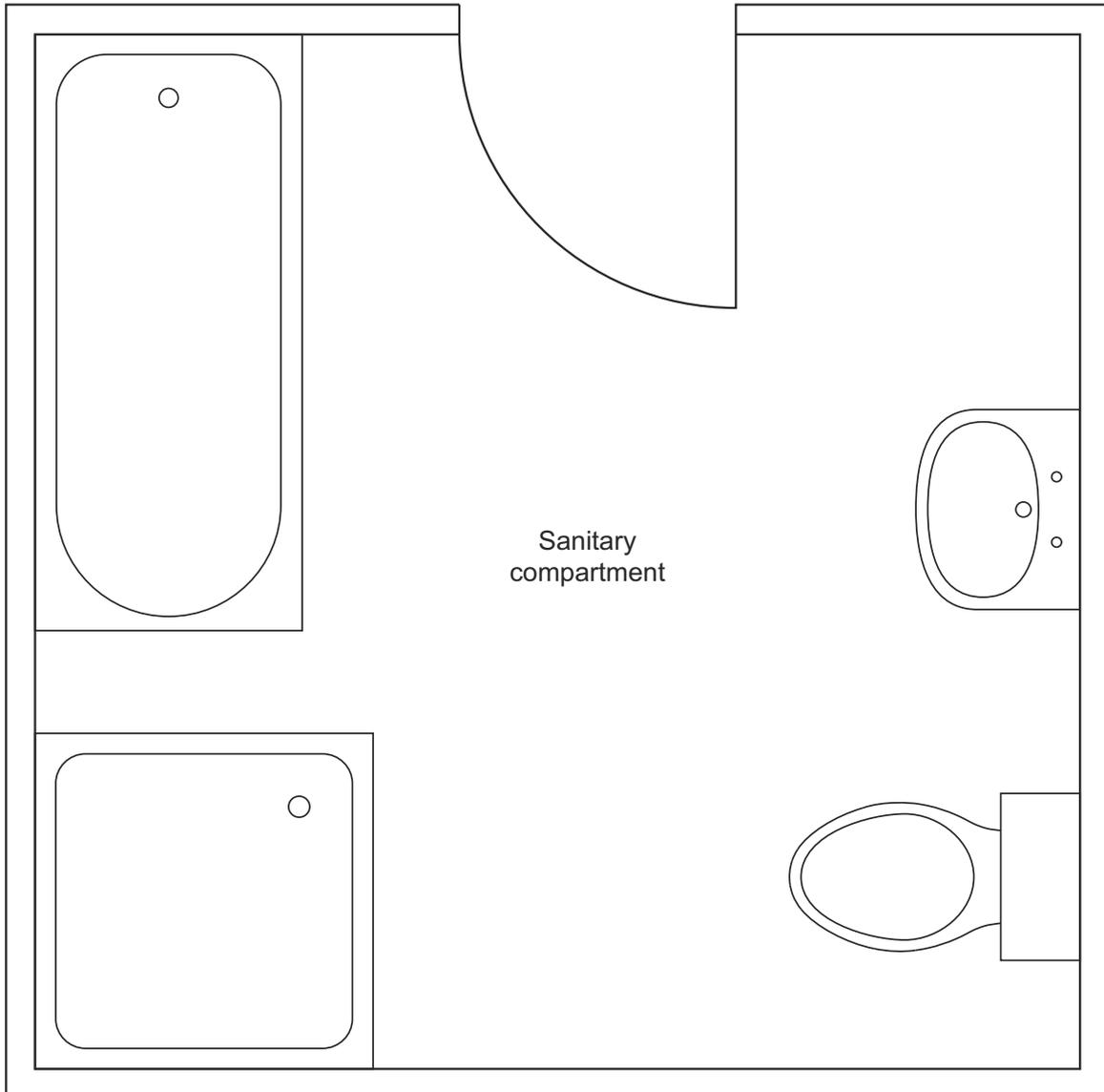
**R-Value:** The thermal resistance of a component calculated by dividing its thickness by its thermal conductivity, expressed in m<sup>2</sup>.K/W.

**Safe place:** Either—

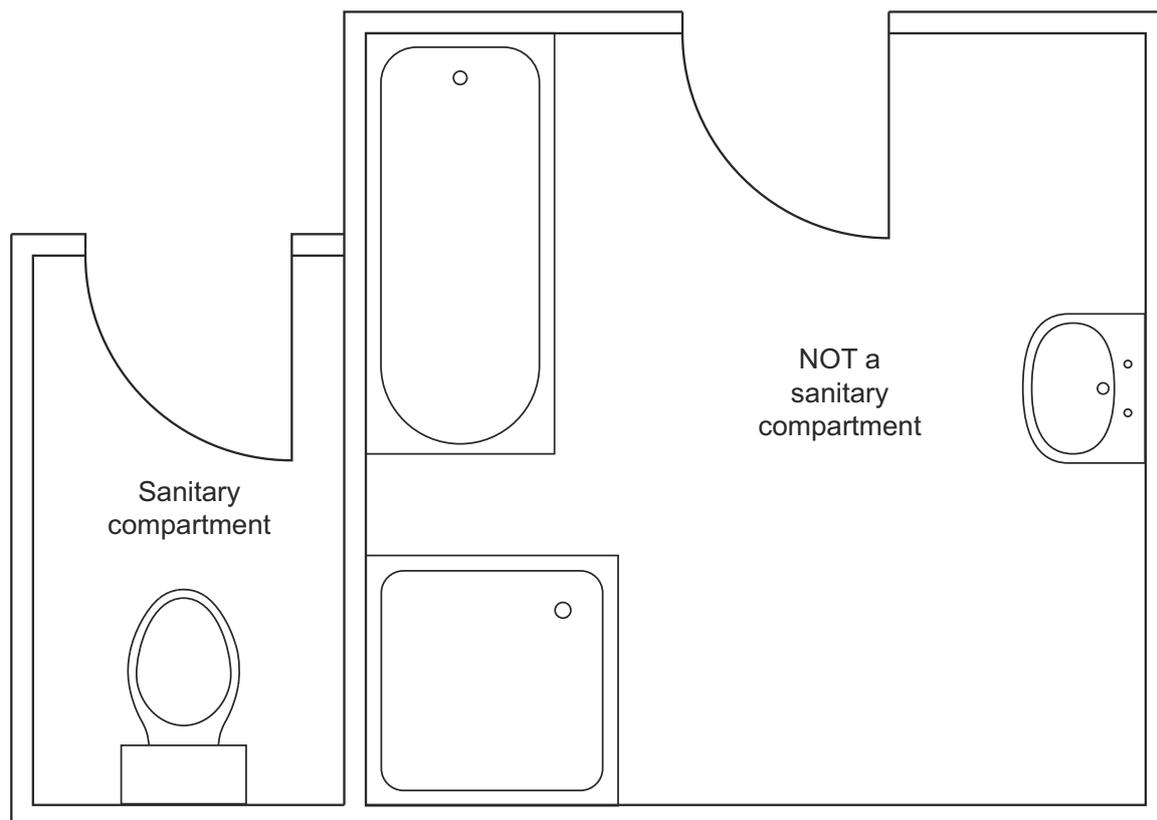
- (a) a place of safety within a building—
  - (i) which is not under threat from a fire; and
  - (ii) from which people must be able to safely disperse after escaping the effects of an emergency to a road or *open space*; or
- (b) a road or *open space*.

**Sanitary compartment:** A room or space containing a closet pan or urinal (see [Figures 6a](#) and [6b](#)).

Figure 6a: Identification of a sanitary compartment (diagram a)



**Figure 6b: Identification of a sanitary compartment (diagram b)**



**Sarking-type material:** A material such as a *reflective insulation* or other flexible membrane of a type normally used for a purpose such as waterproofing, vapour management or thermal reflectance.

**School:** Includes a primary or secondary school, college, university or similar educational establishment.

*TAS School age care facility*

**Screed:** A layer of material (usually cement based) which sets in situ between a structural base and the finished floor material.

**Self-closing:** For the purposes of—

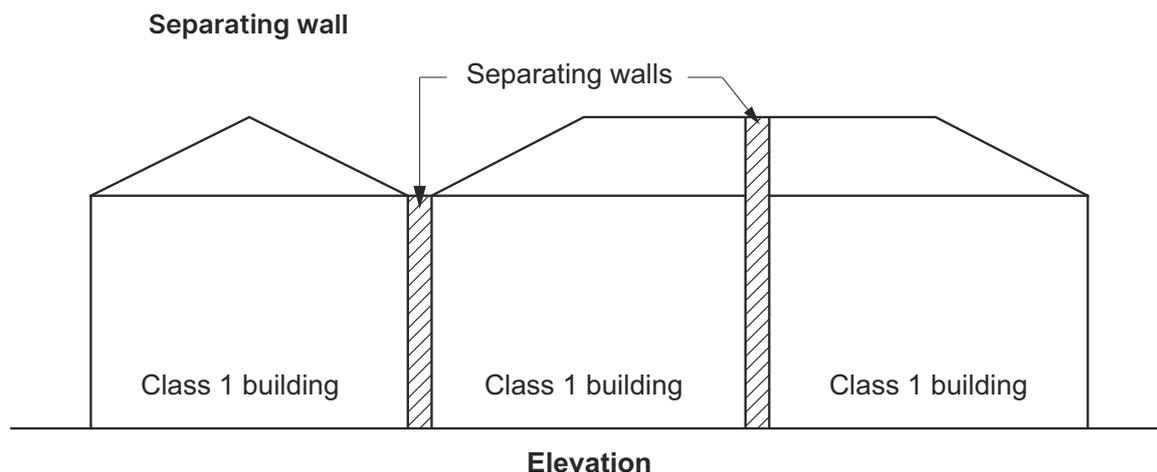
- (a) Volume One, applied to a door, means equipped with a device which returns the door to the fully closed position immediately after each opening; or
- (b) Volume Two, applied to a door or *window*, means equipped with a device which returns the door or *window* to the fully closed and latched position immediately after each manual opening.

**Sensible heat gain:** The heat gained which causes a change in temperature.

**Separating element:** A barrier that exhibits fire *integrity*, *structural adequacy*, *insulation*, or a combination of these for a period of time under specified conditions (often in accordance with AS 1530.4).

**Separating wall:** A wall that is common to adjoining Class 1 buildings (see [Figure 7](#)).

Figure 7:



### Figure Notes

In Volume Two a separating wall may also be known as a party wall and typically is *required* to be *fire-resisting* construction (see ABCB Housing Provisions Parts 9.2 and 9.3).

**Service:** For the purposes of Section J in Volume One, means a mechanical or electrical system that uses energy to provide *air-conditioning*, mechanical ventilation, heated water supply, artificial lighting, vertical transport and the like within a building, but which does not include—

- (a) systems used solely for emergency purposes; and
- (b) cooking facilities; and
- (c) portable appliances.

**Service station:** A garage which is not a *private garage* and is for the servicing of vehicles, other than only washing, cleaning or polishing.

**Shaft:** The walls and other parts of a building bounding—

- (a) a well, other than an *atrium well*; or
- (b) a vertical chute, duct or similar passage, but not a chimney or flue.

### *VIC Shared accommodation building*

**Shower area:** The area affected by water from a shower, including a shower over a bath and for a shower area that is—

- (a) Enclosed – the area enclosed by walls or screens including hinged or sliding doors that contain the spread of water to within that space; or
- (b) Unenclosed – the area where, under normal use, water from the shower rose is not contained within the shower area.

**Shower screen:** The panels, doors or windows enclosing or partially enclosing a *shower area*.

**Single leaf masonry:** Outer walls constructed with a single thickness of masonry unit.

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

**Sitework:** Work on or around a *site*, including earthworks, preparatory to or associated with the construction, *alteration*, demolition or removal of a building.

### *NSW Small live music or arts venue*

### *SA Small arts venue*

**Small-scale Technology Certificate:** A certificate issued under the Commonwealth Government's Small-scale Renewable Energy Scheme.

**Small-sized, low-speed automatic lift:** A restricted use power-operated device for the infrequent raising or lowering of people with limited mobility on a platform that is controlled automatically but has the capability of being electrically isolated by a key-lockable control.

**Smoke-and-heat vent:** A vent, located in or near the roof for smoke and hot gases to escape if there is a fire in the building.

**Smoke-Developed Index:** The index number for smoke as determined by AS/NZS 1530.3.

## Definitions

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**Smoke development rate:** The development rate for smoke as determined by testing flooring materials in accordance with AS ISO 9239.1.

**Smoke growth rate index (SMOGR<sub>RC</sub>):** The index number for smoke used in the regulation of *fire hazard properties* and applied to materials used as a finish, surface, lining or attachment to a wall or ceiling.

**Solar admittance:** The fraction of incident irradiance on a *wall-glazing construction* that adds heat to a building's space.

**Sole-occupancy unit:** A room or other part of a building for occupation by one or joint owner, lessee, tenant, or other occupier to the exclusion of any other owner, lessee, tenant, or other occupier and includes—

- (a) a dwelling; or
- (b) a room or suite of rooms in a Class 3 building which includes sleeping facilities; or
- (c) a room or suite of associated rooms in a Class 5, 6, 7, 8 or 9 building; or
- (d) a room or suite of associated rooms in a Class 9c building, which includes sleeping facilities and any area for the exclusive use of a resident.

### *NSW Spa pool*

**Spandrel panel:** For the purposes of Section J, means the opaque part of a façade in curtain wall construction which is commonly adjacent to, and integrated with, *glazing*.

### *NSW Special fire protection purpose*

**Spiral stairway:** A stairway with a circular plan, winding around a central post with steps that radiate from a common centre or several radii (see Figures 11.2.2d and 11.2.2e in the ABCB Housing Provisions).

**Spread-of-Flame Index:** The index number for spread of flame as determined by AS/NZS 1530.3.

**Sprinkler alarm switch:** For the purposes of Specification 23, a device capable of sending an electrical signal to activate an alarm when a residential sprinkler head is activated (e.g. a flow switch).

**Stack bonded pier:** A pier where the overlap of a masonry unit is not more than 25% of the length of the masonry unit below.

**Stage:** A floor or platform in a Class 9b building on which performances are presented before an audience.

**Stairway platform lift:** A power-operated device for raising or lowering people with limited mobility on a platform (with or without a chair) in the direction of a stairway.

**Standard Fire Test:** The Fire-resistance Tests of Elements of Building Construction as described in AS 1530.4.

### *SA Storage shed*

**Storey:** 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) a space that contains only—
  - (i) a lift *shaft*, stairway or meter room; or
  - (ii) a bathroom, shower room, laundry, water closet, or other *sanitary compartment*; or
  - (iii) accommodation intended for not more than 3 vehicles; or
  - (iv) a combination of the above; or
- (b) a *mezzanine*.

**Structural adequacy:** In relation to an FRL, means the ability to maintain stability and adequate *loadbearing* capacity as determined by AS 1530.4.

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

**Surface water:** All naturally occurring water, other than sub-surface water, which results from rainfall on or around the *site* or water flowing onto the *site*.

**Swimming pool:** Any excavation or structure containing water and principally used, or that is designed, manufactured or adapted to be principally used for swimming, wading, paddling, or the like, including a bathing or wading pool, or spa.

**Tapered tread:** A stair tread with a walking area that grows smaller towards one end.

### *NSW Temporary structure*

### *TAS Temporary structure*

## Definitions

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**Thermal comfort level:** The level of thermal comfort in a building expressed as a *PMV* sensation scale.

**Thermal energy load:** The sum of the *heating load* and the *cooling load*.

**Total R-Value:** The sum of the *R-Values* of the individual component layers in a composite element including any building material, insulating material, airspace, thermal bridging and associated surface resistances, expressed in  $\text{m}^2\cdot\text{K}/\text{W}$ .

**Total System Solar Heat Gain Coefficient (SHGC):** For the purposes of—

- (a) Volume One, the fraction of incident irradiance on a *wall-glazing construction* or a *roof light* that adds heat to a building's space; or
- (b) Volume Two, the fraction of incident irradiance on *glazing* or a *roof light* that adds heat to a building's space.

**Total System U-Value:** The thermal transmittance of the composite element allowing for the effect of any airspaces, thermal bridging and associated surface resistances, expressed in  $\text{Wm}^{-2}\text{K}^{-1}$ .

**Treatment area:** An area within a *patient care area* such as an operating theatre and rooms used for recovery, minor procedures, resuscitation, intensive care and coronary care from which a patient may not be readily moved.

**Uncontrolled discharge:** Any unintentional release of fluid from a *plumbing* and *drainage* system and includes leakage and seepage.

**Unique wall:** For the purposes of F3V1 in Volume One and H2V1 in Volume Two, a wall which is neither a *cavity wall* nor a *direct fix cladding wall*.

**Unobstructed opening:** For the purposes of Section 8 of the ABCB Housing Provisions, a glazed area that a person could mistake for an open doorway or clearway and walk into the glazed panel.

**Unprotected water service:** Unprotected water service means that the water service may be contaminated from a surrounding hazard.

**Unreinforced masonry:** Masonry that is not reinforced.

**Vapour permeance:** The degree that water vapour is able to diffuse through a material, measured in  $\mu\text{g}/\text{N}\cdot\text{s}$  and tested in accordance with the ASTM-E96 Procedure B – Water Method at  $23^\circ\text{C}$  50% relative humidity.

**Vapour pressure:** The pressure at which water vapour is in thermodynamic equilibrium with its condensed state.

**Ventilation opening:** An opening in the *external wall*, floor or roof of a building designed to allow air movement into or out of the building by natural means including a permanent opening, an openable part of a *window*, a door or other device which can be held open.

**Verification Method:** A test, inspection, calculation or other method that determines whether a *Performance Solution* complies with the relevant *Performance Requirements*.

**Vessel:** For the purposes of Volume One and Part 10.2 of the ABCB Housing Provisions, an open, pre-formed, pre-finished concave receptacle capable of holding water, usually for the purpose of washing, including a basin, sink, bath, laundry tub and the like.

**Visibility:** The maximum distance at which an object of defined size, brightness and contrast can be seen and recognised.

**Voltage:** A difference of potential, measured in Volts (V) and includes *extra-low voltage* and *low voltage*.

**Volume:** In relation to—

- (a) a building — the volume of the total space of the building measured above the lowest floor (including, for a suspended floor, any subfloor space), over the enclosing walls, and to the underside of the roof covering; or
- (b) a *fire compartment* — the volume of the total space of the *fire compartment* measured within the inner finished surfaces of the enclosing *fire-resisting* walls and/or floors, and—
  - (i) if there is no *fire-resisting* floor at the base of the *fire compartment*, measured above the finished surface of the lowest floor in the *fire compartment*; and
  - (ii) if there is no *fire-resisting* floor at the top of the *fire compartment*, measured to the underside of the roof covering of the *fire compartment*; and
  - (iii) if there is no *fire-resisting* wall, measured over the enclosing wall and if there is no enclosing wall, includes any space within the *fire compartment* that has a use which contributes to the *fire load*; or
- (c) an *atrium* — the volume of the total space of the *atrium* measured within the finished surfaces of the bounding construction and if there is no bounding construction, within the *external walls*.

**Waffle raft:** A stiffened raft with closely spaced ribs constructed on the ground and with slab panels supported between ribs.

## Definitions

**Wall-glazing construction:** For the purposes of Section J in Volume One, the combination of wall and *glazing* components comprising the *envelope* of a building, excluding—

- (a) *display glazing*; and
- (b) opaque non-glazed openings such as doors, vents, penetrations and shutters.

**Ward area:** That part of a *patient care area* for resident patients and may contain areas for accommodation, sleeping, associated living and nursing facilities.

**Water control layer:** A *pliable building membrane* or the exterior cladding when no *pliable building membrane* is present.

**WaterMark Certification Scheme:** The ABCB scheme for certifying and authorising *plumbing* and *drainage products*.

**WaterMark Conformity Assessment Body (WMCAB):** A conformity assessment body registered with and accredited by the *JAS-ANZ* to conduct evaluations leading to *product* certification and contracted with the *administering body* to issue the *WaterMark Licence*.

**WaterMark Licence:** A licence issued by a *WaterMark Conformity Assessment Body*.

**WaterMark Schedule of Excluded Products:** The list maintained by the *administering body* of *products* excluded from the *WaterMark Certification Scheme*.

**WaterMark Schedule of Products:** The list maintained by the *administering body* of *products* included in the *WaterMark Certification Scheme*, and the specifications to which the *products* can be certified.

### Explanatory Information

The *WaterMark Schedule of Products* and the *WaterMark Schedule of Excluded Products* can be viewed on the ABCB website at [www.abcb.gov.au](http://www.abcb.gov.au).

**Waterproof:** The property of a material that does not allow water to penetrate through it.

**Waterproofing system:** A combination of elements that are *required* to achieve a *waterproof* barrier as *required* by H4D2 and H4D3 including substrate, *membrane*, bond breakers, sealants, finishes and the like.

**Water resistant:** The property of a system or material that restricts water movement and will not degrade under conditions of water.

**Water sensitive materials:** Materials that have an inherent capacity to absorb water vapour and include timber, plasterboard, plywood, oriented strand board and the like.

**Waterstop:** A vertical extension of the *waterproofing system* forming a barrier to prevent the passage of water in a floor or other horizontal surfaces.

**Watertight:** Will not allow water to pass from the inside to the outside of the component or joint and vice versa.

**Weighted average:** Is calculated across the *wetted surface area* of a pipe, pipe fitting or plumbing fixture.

### WA WELS

**Wet area:** An area within a building supplied with water from a water supply system, which includes bathrooms, showers, laundries and *sanitary compartments* and excludes kitchens, bar areas, kitchenettes or domestic food and beverage preparation areas.

**Wetted surface area:** Is calculated by the total sum of diameter (D) in contact with *drinking water*.

**Winders:** Treads within a straight *flight* that are used to change direction of the stair (see Explanatory Figure 1).

**Window:** Includes a *roof light*, glass panel, glass block or 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.

**Yield:** The mass of a combustion product generated during combustion divided by the mass loss of the test specimen as specified in the *design fire*.

**Zone protection:** The installation of a *backflow prevention device* at the point where a water service is connected to multiple fixtures or appliances, with no *backflow prevention device* installed as *individual protection* downstream of this point.

**Schedule 2      Referenced documents**

**Referenced documents**

## Referenced documents

The Standards and other documents listed in this Schedule are referenced in the NCC.

**Table 1: Schedule of referenced documents**

No.	Date	Title	Volume One	Volume Two	Housing Provisions	Volume Three
AS/NZS ISO 717 Part 1	2004	Acoustics — Rating of sound insulation in buildings and of building elements — Airborne sound insulation. (See Note 1)	F7V1, F7V2, F7V3, F7V4, F7D3	H4V4	10.7.2	N/A
AS ISO 717 Part 2	2004	Acoustics — Rating of sound insulation in buildings and of building elements — Impact sound insulation	F7V1, F7V3, F7D4	N/A	N/A	N/A
AS 1056 Part 1	1991	Storage water heaters — General requirements (incorporating amendments 1, 2, 3, 4 and 5)	N/A	N/A	N/A	B2D2
AS/NZS 1170 Part 0	2002	Structural design actions — General principles (incorporating amendments 1, 3 and 4)	B1V1, B1D2, Spec 4	H1V1, H1D7	2.2.2	N/A
AS/NZS 1170 Part 1	2002	Structural design actions — Permanent, imposed and other actions (incorporating amendments 1 and 2)	B1D3	N/A	2.2.3, 2.2.4, 8.3.1, 11.2.2, 11.2.3, 11.3.4	N/A
AS/NZS 1170 Part 2	2021	Structural design actions — Wind actions	B1D3, B1D4, Spec 4, F3V1, Schedule 1	H1D7, H2V1, Schedule 1	2.2.3, Schedule 1	Schedule 1
AS/NZS 1170 Part 3	2003	Structural design actions — Snow and ice actions (incorporating amendments 1 and 2)	B1D3	N/A	2.2.3	
AS 1170 Part 4	2007	Structural design actions — Earthquake actions in Australia (incorporating amendments 1 and 2)	B1D3	H1D4, H1D5, H1D6, H1D9	2.2.3	N/A
AS 1191	2002	Acoustics — Method for laboratory measurement of airborne sound transmission insulation of building elements	Spec 29	N/A	N/A	N/A
AS 1273	1991	Unplasticized PVC (UPVC) downpipe and fittings for rainwater	N/A	N/A	7.4.2	N/A
AS 1288	2021	Glass in buildings — Selection and installation	B1D4, Spec 11, Spec 12	H1D8	8.3.1	N/A
AS 1289.6.3.3	1997	Methods of testing soils for engineering purposes — Method 6.3.3: Soil strength and consolidation tests — Determination of the penetration resistance of a soil — Perth sand penetrometer test (incorporating amendment 1)	N/A	N/A	4.2.4	N/A

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AS 1397	2021	Continuous hot-dip metallic coated steel sheet and strip — Coatings of zinc and zinc alloyed with aluminium and magnesium (See Note 10)	N/A	N/A	7.2.2	N/A
AS 1428 Part 1	2009	Design for access and mobility — General requirements for access — New building work (incorporating amendments 1 and 2)	D3D11, D3D16, D3D22, D4D2, D4D3, D4D4, D4D7, D4D10, D4D11, D4D13, Spec 16, E3D10, F4D5, G4D5, Schedule 1	Schedule 1	Schedule 1	Schedule 1, E1D2
AS 1428 Part 1	2001	Design for access and mobility — General requirements for access — New building work	I2D7, I2D8, I2D10, I2D15	N/A	N/A	E1D2
AS 1428 Part 1 (Supplement 1)	1993	Design for access and mobility — General requirements for access — Buildings — Commentary	I2D2	N/A	N/A	N/A
AS 1428 Part 2	1992	Design for access and mobility — Enhanced and additional requirements — Buildings and facilities	I2D2, I2D3, I2D4, I2D5, I2D7, I2D10, I2D11, I2D12, I2D13, I2D14	N/A	N/A	E1D2
AS 1428 Part 4	1992	Design for access and mobility — Tactile ground surface indicators for the orientation of people with vision impairment	I2D11	N/A	N/A	N/A
AS/NZS 1428 Part 4.1	2009	Design for access and mobility — Means to assist the orientation of people with vision impairment — Tactile ground surface indicators (incorporating amendments 1 and 2)	D4D9	N/A	N/A	N/A
AS 1530 Part 1	1994	Methods for fire tests on building materials, components and structures — Combustibility test for materials	Schedule 1	Schedule 1	Schedule 1	Schedule 1
AS 1530 Part 2	1993	Methods for fire tests on building materials, components and structures — Test for flammability of materials (incorporating amendment 1)	Schedule 1	Schedule 1	Schedule 1	Schedule 1

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AS/NZS 1530 Part 3	1999	Methods for fire tests on building materials, components and structures — Simultaneous determination of ignitability, flame propagation, heat release and smoke release	Schedule 1, Spec 3	Schedule 1, Spec 3	Schedule 1	Schedule 1, Spec 3
AS 1530 Part 4	2014	Methods for fire tests on building materials, components and structures — Fire resistance tests for elements of construction	C4D15, C4D16, Spec 9, Spec 10, Spec 13, Spec 14, Schedule 1, Spec 3	9.3.2, Schedule 1, Spec 3	Schedule 1	Schedule 1, Spec 3
AS 1530 Part 8.1	2018	Methods for fire tests on building materials, components and structures — Tests on elements of construction for buildings exposed to simulated bushfire attack — Radiant heat and small flaming sources	Spec 43	N/A	N/A	N/A
AS/NZS 1546 Part 1	2008	On-site domestic wastewater treatment units - Septic tanks	N/A	N/A	N/A	C3D2
AS/NZS 1546 Part 2	2008	On-site domestic wastewater treatment units - Waterless composting toilets	N/A	N/A	N/A	C3D3
AS 1546 Part 3	2017	On-site domestic wastewater treatment units - Secondary treatment systems (incorporating amendment 1)	N/A	N/A	N/A	C3D4
AS 1546 Part 4	2016	On-site domestic wastewater treatment units - Domestic greywater treatment systems	N/A	N/A	N/A	C3D5
AS/NZS 1547	2012	On-site domestic wastewater management	N/A	N/A	N/A	C3D6
AS 1562 Part 1	2018	Design and installation of sheet roof and wall cladding — Metal (See Note 2)	B1D4, F3D2, F3D5	H1D7	N/A	N/A
AS1562 Part 3	2006	Design and installation of sheet roof and wall cladding — Plastic	B1D4, F3D2	H1D7	N/A	N/A
AS 1657	2018	Fixed platforms, walkways, stairways and ladders — Design, construction and installation	D2D21, D2D22, D3D23, I1D6, I3D5	N/A	N/A	N/A
AS/NZS 1664 Part 1	1997	Aluminium structures — Limit state design (incorporating amendment 1)	B1D4	N/A	2.2.4	N/A
AS/NZS 1664 Part 2	1997	Aluminium structures — Allowable stress design (incorporating amendment 1)	B1D4	N/A	2.2.4	N/A

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AS 1668 Part 1	2015	The use of ventilation and air conditioning in buildings — Fire and smoke control in buildings (incorporating amendment 1)	C3D13, C4D15, Spec 11, D2D12, Spec 19, E2D3, E2D4, E2D6, E2D7, E2D8, E2D9, E2D11, E2D12, E2D13, E2D16, E2D17, E2D19, F6D12, Spec 21, Spec 31	N/A	N/A	N/A
AS 1668 Part 2	2012	The use of ventilation and air conditioning in buildings — Mechanical ventilation in buildings (incorporating amendments 1 and 2)	E2D12, F6V1, F6D6, F6D11, F6D12, F8D4, J6D4	H4V3, H4D7	10.8.2	N/A
AS 1668 Part 4	2012	The use of ventilation and air conditioning in buildings — Natural ventilation of buildings	F6D11	N/A	N/A	N/A
AS 1670 Part 1	2018	Fire detection, warning, control and intercom systems — System design, installation and commissioning — Fire (incorporating amendment 1) (See Note 3)	C4D6, C4D7, C4D8, C4D9, C4D12, D3D26, E2D3, E2D10, G4D7, Spec 12, Spec 20, Spec 23, Spec 31	N/A	9.5.1	N/A
AS 1670 Part 3	2018	Fire detection, warning, control and intercom systems — System design, installation and commissioning — Fire alarm monitoring (incorporating amendment 1) (See Note 3)	Spec 20, Spec 23	N/A	N/A	N/A
AS 1670 Part 4	2018	Fire detection, warning, control and intercom systems — System design, installation and commissioning — Emergency warning and intercom systems (incorporating amendment 1) (See Note 3)	E3V2, E4D9, Spec 31	N/A	N/A	N/A
AS/NZS 1680 Part 0	2009	Interior lighting — Safe movement	F6D5	N/A	10.5.2	N/A
AS 1684 Part 2	2021	Residential timber-framed construction — Non-cyclonic areas	B1D4, B1D5, F1D8	H1D6	2.2.5, 4.2.13, 5.6.6, 6.2.1, 6.3.6, 7.5.2, 7.5.3, 7.5.4, 10.2.19, 10.2.20	N/A

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AS 1684 Part 3	2021	Residential timber-framed construction — Cyclonic areas	B1D4, B1D5, F1D8	H1D6	2.2.5, 4.2.13, 5.6.6, 6.2.1, 6.3.6, 7.5.2, 7.5.3, 7.5.4, 10.2.19, 10.2.20	N/A
AS 1684 Part 4	2010	Residential timber-framed construction — Simplified — Non-cyclonic areas (incorporating amendment 1)	B1D4, B1D5, F1D8	H1D6	2.2.5, 4.2.13, 5.6.6, 6.2.1, 7.5.2, 7.5.3, 7.5.4, 10.2.19, 10.2.20	N/A
AS 1720 Part 1	2010	Timber structures — Design methods (incorporating amendments 1, 2 and 3)	B1V1, B1D4	H1V1, H1D6	4.2.13, 5.3.3	N/A
AS/NZS 1720 Part 4	2019	Timber structures — Fire resistance of timber elements	Spec 1	Spec 1	N/A	Spec 1
AS 1720 Part 5	2015	Timber structures — Nailplated timber roof trusses (incorporating amendment 1)	B1D4	H1D6	N/A	N/A
AS 1735 Part 11	1986	Lifts, escalators and moving walks — Fire rated landing doors	C4D11	N/A	N/A	N/A
AS 1735 Part 12	1999	Lifts, escalators and moving walks — Facilities for persons with disabilities (incorporating amendment 1)	E3D8, I2D6	N/A	N/A	N/A
AS/NZS 1859 Part 4	2018	Reconstituted wood based panels — Specifications — Wet process fibreboard	N/A	N/A	7.5.3, 7.5.4	N/A
AS 1860 Part 2	2006	Particleboard flooring — Installation (incorporating amendment 1)	B1D4	H1D6	N/A	N/A
AS 1905 Part 1	2015	Components for the protection of openings in fire-resistant walls — Fire-resistant doorsets (incorporating amendment 1)	C4D7, Spec 12	N/A	N/A	N/A
AS 1905 Part 2	2005	Components for the protection of openings in fire-resistant walls — Fire-resistant roller shutters	Spec 12	N/A	N/A	N/A
AS 1926 Part 1	2012	Swimming pool safety — Safety barriers for swimming pools	G1D2, G1D4	H7D2	N/A	N/A
AS 1926 Part 2	2007	Swimming pool safety — Location of safety barriers for swimming pools (incorporating amendments 1 and 2)	G1D2	H7D2	N/A	N/A
AS 1926 Part 3	2010	Swimming pool safety — Water recirculation systems (incorporating amendment 1)	G1D2	H7D2	N/A	N/A

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AS 2047	2014	Windows and external glazed doors in buildings (incorporating amendments 1 and 2) (See Note 4)	B1D4, F3V1, F3D4, J5D5	H1D8, H2V1	13.4.4	N/A
AS 2049	2002	Roof tiles (incorporating amendment 1)	F3D2	H1D7	N/A	N/A
AS 2050	2018	Installation of roof tiles	B1D4, F3D2	H1D7	7.3.2	N/A
AS 2118 Part 1	2017	Automatic fire sprinkler systems — General systems (incorporating amendments 1 and 2)	C1V3, Spec 17, Spec 18	N/A	N/A	N/A
AS 2118 Part 4	2012	Automatic fire sprinkler systems — Sprinkler protection for accommodation buildings not exceeding four storeys in height	Spec 17, Spec 18	N/A	N/A	B4D3
AS 2118 Part 5	2008 (R 2020)	Automatic fire sprinkler systems - Home fire sprinkler systems	N/A	N/A	N/A	B4D3
AS 2118 Part 6	2012	Automatic fire sprinkler systems — Combined sprinkler and hydrant systems in multistorey buildings	Spec 17	N/A	N/A	B4D3
AS 2159	2009	Piling — Design and installation (incorporating amendment 1)	B1D4	H1D12	N/A	N/A
AS/NZS 2179 Part 1	2014	Specifications for rainwater goods, accessories and fasteners — Metal shape or sheet rainwater goods, and metal accessories and fasteners	N/A	N/A	7.4.2	N/A
AS/NZS 2269 Part 0	2012	Plywood — Structural — Specifications (incorporating amendment 1)	N/A	N/A	7.5.4	N/A
AS/NZS 2293 Part 1	2018	Emergency lighting and exit signs for buildings — System design, installation and operation (incorporating amendment 1)	E4D4, E4D8, Spec 25, I3D15	N/A	N/A	N/A
AS 2312 Part 1	2014	Guide to the protection of structural steel against atmospheric corrosion by the use of protective coatings — Paint coatings	N/A	N/A	6.3.9	N/A
AS/NZS 2312 Part 2	2014	Guide to the protection of structural steel against atmospheric corrosion by the use of protective coatings — Hot dip galvanizing	N/A	N/A	6.3.9	N/A
AS/NZS 2327	2017	Composite structures — Composite steel-concrete construction in buildings (incorporating amendment 1)	B1D4, Spec 1	Spec 1	2.2.4	Spec 1

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AS 2419 Part 1	2021	Fire hydrant installations — System design, installation and commissioning	C3D13, E1D2, Spec 18, I3D9	N/A	N/A	B4D4
AS 2441	2005	Installation of fire hose reels (incorporating amendment 1)	E1D3	N/A	N/A	B4D5
AS 2444	2001	Portable fire extinguishers and fire blankets — Selection and location	E1D14, I3D11	N/A	N/A	N/A
AS 2665	2001	Smoke/heat venting systems — Design, installation and commissioning	Spec 22, Spec 31	N/A	N/A	N/A
AS 2699 Part 1	2020	Built-in components for masonry construction — Wall ties (See Note 9)	C2D10	N/A	5.6.5	N/A
AS 2699 Part 3	2020	Built-in components for masonry construction — Lintels and shelf angles (durability requirements) (See Note 9)	C2D10	N/A	5.6.7	N/A
AS 2870	2011	Residential slabs and footings	F1D7	H1D4, H1D5	3.4.2, 4.2.2, 4.2.6, 4.2.8, 4.2.11, 4.2.14, 4.2.15, 10.2.9	N/A
AS/NZS 2890 Part 6	2009	Parking facilities — Offstreet parking for people with disabilities	D4D6	N/A	N/A	N/A
AS/NZS 2904	1995	Damp-proof courses and flashings (incorporating amendments 1 and 2)	F1D6	N/A	5.7.3, 7.5.6, 12.3.3	N/A
AS/NZS 2908 Part 1	2000	Cellulose-cement products — Corrugated sheets	B1D4	N/A	N/A	N/A
AS/NZS 2908 Part 2	2000	Cellulose-cement products — Flat sheets	Schedule 1	Schedule 1	7.5.3, 7.5.4, 7.5.5, 10.2.9, 10.2.10, Schedule 1	Schedule 1
AS/NZS 2918	2018	Domestic solid fuel burning appliances — Installation (See Note 8)	G2D2	H7D5	12.4.4, 12.4.5	N/A
AS/NZS 3013	2005	Electrical installations — Classification of the fire and mechanical performance of wiring system elements	C3D14	N/A	N/A	N/A
AS/NZS 3500 Part 0	2021	Plumbing and drainage — Glossary of terms	A1G4	A1G4	N/A	A1G4
AS/NZS 3500 Part 1	2018	Plumbing and drainage — Water services	N/A	N/A	N/A	B5D6

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AS/NZS 3500 Part 1	2021	Plumbing and drainage — Water services	N/A	N/A	N/A	B1D3, B1D5, B1D6, B3D3, B5V1, B5D2, B5D3, B5D4, Spec 41, B6D2, B6D3, B6D5, B7D3,
AS/NZS 3500 Part 2	2021	Plumbing and drainage — Sanitary plumbing and drainage (incorporating amendment 1)	N/A	N/A	N/A	C1D3, C1V1, C1V2, C1V3, C1V4, C1V5, C2V2, C2D3, C2D4, C3D7
AS/NZS 3500 Part 3	2021	Plumbing and drainage — Stormwater drainage (See Note 11)	F1D3	H2D2, H2D6	7.4.3	N/A
AS/NZS 3500 Part 4	2021	Plumbing and drainage — Heated water services (incorporating amendment 1)	N/A	N/A	N/A	B2D2, B2D6, B2D7, B2D8, B2D9, B2D11
AS 3600	2018	Concrete structures (incorporating amendments 1 and 2)	B1V1, B1D4, Spec 1	H1V1, H1D4, Spec 1	3.4.2, 4.2.6, 4.2.10, 4.2.13, 5.3.3, 10.2.9	Spec 1
AS 3660 Part 1	2014	Termite management — New building work (incorporating amendment 1)	B1D4, F1D6	N/A	3.4.1, 3.4.2	N/A
AS 3660 Part 3	2014	Termite management — Assessment criteria for termite management systems	N/A	N/A	3.4.2	N/A
AS/NZS 3666 Part 1	2011	Air-handling and water systems of buildings — Microbial control — Design, installation and commissioning	F4D10, F6D6	N/A	N/A	N/A
AS 3700	2018	Masonry structures	B1D4, F3D5, Spec 1, Spec 2	H1D5, H2D4, Spec 1, Spec 2	5.3.3, 5.4.2, 5.6.3, 6.3.6, 10.2.9, 10.2.19, 10.2.20, 12.4.3	Spec 1, Spec 2
AS 3740	2021	Waterproofing of domestic wet areas	F2D2	H4D2, H4D3	10.2.20	N/A
AS 3786	2014	Smoke alarms using scattered light, transmitted light or ionization (incorporating amendment 1 and 2) (See Note 5)	Spec 20	N/A	9.5.1	N/A
AS/NZS 3823 Part 1.2	2012	Performance of electrical appliances — Air conditioners and heat pumps — Ducted air conditioners and air-to-air heat pumps — Testing and rating for performance	Spec 33, J6D12	N/A	N/A	N/A

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AS 3959	2018	Construction of buildings in bushfire-prone areas (incorporating amendments 1 and 2)	C2D14, F8D5, G5D2, G5D3, Spec 43	H7D4	10.8.3	B1D4, B2D10, B3D4, C1D4, C2D5
AS/NZS 4020	2018	Testing of products for use in contact with drinking water (See Note 6)	A5G4	A5G4	N/A	A5G4
AS 4055	2021	Wind loads for housing	Schedule 1	H1D6, H1D8, Schedule 1	2.2.3, Schedule 1	Schedule 1
AS 4072 Part 1	2005	Components for the protection of openings in fire-resistant separating elements — Service penetrations and control joints (incorporating amendment 1)	C4D15, C4D16	N/A	9.3.2	N/A
AS 4100	2020	Steel structures	B1D4, Spec 1	H1D6, Spec 1	4.2.13, 5.6.7	Spec 1
AS 4200 Part 1	2017	Pliable building membranes and underlays — Materials (incorporating amendment 1)	F3D3, F8D3, Spec 36, Schedule 1	Schedule 1	7.3.4, 7.5.2, 7.5.8, 10.8.1, Schedule 1	Schedule 1
AS 4200 Part 2	2017	Pliable building membranes and underlays — Installation requirements (incorporating amendments 1 and 2)	F3D3, F8D3	N/A	10.8.1	N/A
AS/NZS 4234	2021	Heated water systems — Calculation of energy consumption	Spec 45	N/A	N/A	B2D2
AS 4254 Part 1	2021	Ductwork for air-handling systems in buildings — Flexible duct	Spec 7, J6D7	H3D2	13.7.4	N/A
AS 4254 Part 2	2012	Ductwork for air-handling systems in buildings — Rigid duct	Spec 7, J6D5, J6D7	N/A	13.7.4	N/A
AS/NZS 4284	2008	Testing of building facades	F3V1	H2V1	N/A	N/A
AS/NZS 4505	2012	Garage doors and other large access doors (incorporating amendment 1)	B1D4	N/A	2.2.4	N/A
AS 4552	2005	Gas fired water heaters for hot water supply and/or central heating	N/A	N/A	N/A	B2D2
AS 4586	2013	Slip resistance classification of new pedestrian surface materials (incorporating amendment 1) (See Note 7)	D3D11, D3D14, D3D15. Spec 27	N/A	11.2.4	N/A
AS 4597	1999	Installation of roof slates and shingles (Non-interlocking type)	B1D4, F3D2	H1D7	N/A	N/A
AS/NZS 4600	2018	Cold-formed steel structures	B1D4, Spec 1	H1D6, Spec 1	5.3.3, 6.3.6	Spec 1

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AS 4654 Part 1	2012	Waterproofing membranes for external above-ground use — Materials	F1D5	H2D8	N/A	N/A
AS 4654 Part 2	2012	Waterproofing membranes for external above-ground use — Design and installation	C2D14, F1D4, F1D5	H2D8	N/A	N/A
AS 4678	2002	Earth-retaining structures	N/A	H1D3	N/A	N/A
AS 4773 Part 1	2015	Masonry in small buildings — Design (incorporating amendment 1)	N/A	H1D5, H2D4	5.6.3, 12.4.3	N/A
AS 4773 Part 2	2015	Masonry in small buildings — Construction (incorporating amendment 1)	N/A	H1D5, H2D4	5.6.3, 12.4.3	N/A
AS/NZS 4859 Part 1	2018	Thermal insulation materials for buildings — General criteria and technical provisions	J4D3, J6D6, J6D9	N/A	13.2.2, 13.7.2, 13.7.4	N/A
AS/NZS 4859 Part 2	2018	Thermal insulation materials for buildings — Design	J3D8, J4D3, Spec 36, Spec 37	N/A	13.2.5, 13.2.6	N/A
AS/NZS 4858	2004	Wet area membranes	N/A	N/A	10.2.8	N/A
AS 5113	2016	Classification of external walls of buildings based on reaction-to-fire performance (incorporating amendment 1)	C1V3	N/A	N/A	N/A
AS 5146 Part 1	2015	Reinforced autoclaved aerated concrete — Structures (incorporating amendment 1)	B1D4	H1D7	N/A	N/A
AS 5146 Part 3	2018	Reinforced autoclaved aerated concrete — Construction	B1D4, F3D5	N/A	N/A	N/A
AS 5216	2021	Design of post-installed and cast-in fastenings in concrete	B1D4	N/A	2.2.4	N/A
AS/NZS 5601 Part 1	2013	Gas installations — General installations	J1V4	H6V3	N/A	N/A
AS 5637 Part 1	2015	Determination of fire hazard properties — Wall and ceiling linings	Spec 7, Schedule 1	Schedule 1	Schedule 1	Schedule 1
AS ISO 9239 Part 1	2003	Reaction to fire tests for floorings — Determination of the burning behaviour using a radiant heat source	Schedule 1	Schedule 1	Schedule 1	Schedule 1
AS/NZS ISO 9972	2015	Thermal performance of buildings — Determination of air permeability of buildings — Fan pressurization method	J1V4	H6V3	N/A	N/A
AIRAH-DA07	2021	Criteria for moisture control design analysis in buildings	F8V1	H4V5	N/A	N/A

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AIRAH-DA09	1998	Air conditioning load estimation	Spec 35	N/A	N/A	N/A
AIRAH-DA28	2011	Building management and control systems	Spec 34	N/A	N/A	N/A
ANSI/ASHRAE Standard 55	2013	Thermal environmental conditions for human occupancy	Schedule 1	Schedule 1	Schedule 1	Schedule 1
ANSI/ASHRAE Standard 140	2007	Standard method of test for the evaluation of building energy analysis computer programs	J1V1, J1V2, J1V3, J1V5	H6V2	N/A	N/A
ASTM E2073-10	2010	Standard Test Method for Photopic Luminance of Photoluminescent (Phosphorescent) Markings	Spec 25	N/A	N/A	N/A
ASTM E72-15	2015	Standard Test Methods of Conducting Strength Tests of Panels for Building Construction	Spec 6	N/A	N/A	N/A
ASTM E695-03	2003	Standard Test Method of Measuring Relative Resistance of Wall, Floor and Roof Construction to Impact Loading	Spec 6	N/A	N/A	N/A
ASTM E96	2016	Standard Test Methods for Water Vapor Transmission of Materials	Schedule 1	Schedule 1	Schedule 1	Schedule 1
AHRI 460	2005	Performance rating of remote mechanical-draft air-cooled refrigerant condensers	J6D13	N/A	N/A	N/A
AHRI 551/591	2015	Performance rating of water-chilling and heat pump water-heating packages using the vapor compression cycle.	Spec 33, J6D11	N/A	N/A	N/A
ABCB	2022	Fire Safety Verification Method	C1V4	N/A	N/A	N/A
ABCB	2022	Housing Provisions Standard	N/A	Throughout	Throughout	N/A
ABCB	2022	Livable Housing Design	G7D2	H4D3, H8D2	3.3.3, 11.2.3	N/A
ABCB	2011	Protocol for Structural Software, Version 2011.2	B1D5	H1D6	2.2.5	N/A
ABCB	2012	Standard for Construction of Buildings in Flood Hazard Areas, Version 2012.3	B1D6	H1D10	N/A	N/A
ABCB	2022	Standard for NatHERS Heating and Cooling Load Limits, Version 2022.1	J3D3	Spec 42	N/A	N/A
ABCB	2022	Standard for Whole-of-Home Efficiency Factors	J3D14	N/A	13.6.2	N/A
CIBSE Guide A	2015	Environmental design	Spec 34, Spec 35, J4D3, J4D7	N/A	N/A	N/A

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N/A	2002	Disability Standards for Accessible Public Transport	F4D12, I2D1	N/A	N/A	N/A
N/A	2010	Education and Care Services National Law Act (Vic)	Schedule 1	Schedule 1	Schedule 1	Schedule 1
European Union Commission Regulation 547/2012	2012	Eco-design requirements for water pumps	J6D8	N/A	N/A	N/A
European Union Commission Regulation 622/Annex II, point 2	2012	Eco-design requirements for glandless standalone circulators and glandless circulators integrated in products	J6D8	N/A	N/A	N/A
FPAA101D	2021	Automatic Fire Sprinkler System Design and Installation — Drinking Water Supply	C1V3, C2D6, C2D13, C3D2, C3D7, C3D8, C4D6, C4D7, C4D8, C4D9, C4D12, Spec 5, Spec 7, D2D4, D2D17, D3D26, D3D30, E2D8, E2D9, E2D13, E2D14, E2D15, E2D16, E2D17, E2D19, E2D20, Spec 17, Spec 18, Spec 20, G3D1, G3D6, Spec 31, I1D2, Schedule 1	Schedule 1	Schedule 1	B4D3, Schedule 1, B1D5

No.	Date	Title	Volume One	Volume Two	Housing Provisions	Volume Three
FPAA101H	2018	Automatic Fire Sprinkler System Design and Installation — Hydrant Water Supply (incorporating amendment 1)	C1V3, C2D6, C2D13, C3D2, C3D7, C3D8, Spec 5, Spec 7, Spec 17, Spec 18, E2D8, E2D9, E2D13, E2D14, E2D15, E2D16, E2D17, E2D19, E2D20, Spec 20, G3D1, G3D6, Spec 31, I1D2	N/A	N/A	B4D3
ISO 140 Part 6	1998E	Acoustics — Measurement of sound insulation in buildings and of building elements — Laboratory measurements of impact sound insulation of floors	Spec 29	N/A	N/A	N/A
ISO 540	2008	Hard coal and coke — Determination of ash fusibility	Spec 13	N/A	N/A	N/A
ISO 8336	1993E	Fibre-cement flat sheets	Schedule 1	Schedule 1	7.5.3, 7.5.4, 7.5.5, Schedule 1	Schedule 1
ISO 25745 Part 2	2015	Energy performance of lifts, escalators and moving walks: Energy calculation and classification for lifts (elevators)	J7D8	N/A	N/A	N/A
NASH Standard	2021	Steel Framed Construction in Bushfire Areas	N/A	H7D4	N/A	N/A
NASH Standard Part 1	2005	Residential and Low Rise Steel Framing — Design Criteria (incorporating amendments A, B and C)	B1D4	H1D6	N/A	N/A
NASH Standard Part 2	2014	Residential and Low Rise Steel Framing — Design Solutions (incorporating amendment A)	B1D4, B1D5, F1D8	H1D6	2.2.5, 6.2.1, 6.3.6, 7.5.2, 7.5.3, 7.5.4, 10.2.19, 10.2.20	N/A
NSF/ ANSI/ CAN 372	2020	Drinking Water System Components - Lead Content	A5G4	A5G4	N/A	A5G4
N/A	N/A	Northern Territory Deemed to Comply Standards Manual	N/A	N/A	2.2.4	N/A
SA TS 5344	2019	Permanent labelling for Aluminium Composite Panel (ACP) products	A5G8	A5G8	N/A	A5G8
TN 61	N/A	Cement Concrete and Aggregates Australia — Technical note — Articulated walling	N/A	H1D4	N/A	N/A

No.	Date	Title	Volume One	Volume Two	Housing Provisions	Volume Three
WMK NOD 2021/4.2	2021	WaterMark Notice of Direction 2021/4.2 Certification transition arrangements for lead free plumbing products	A5G4	A5G4	N/A	A5G4

### Table Notes

- (1) For AS/NZS ISO 717.1:
  - (a) Test reports based on AS 1276—1979 and issued prior to AS/NZS 1276.1—1999 being referenced in the NCC remain valid.
  - (b) The STC values in reports based on AS 1276—1979 must be considered to be equivalent to  $R_w$  values.
  - (c) Test reports based on AS/NZS 1276.1 prepared after the NCC reference date for AS/NZS 1276.1—1999 must be based on that version.
  - (d) Test reports based on ISO 717-1—1996 and issued prior to AS/NZS ISO 717.1—2004 being referenced in the NCC remain valid.
  - (e) Reports based on AS/NZS ISO 717.1 relating to tests carried out after the NCC reference date for AS/NZS ISO 717.1—2004 must relate to the amended Standard.
- (2) For AS 1562.1, tests carried out based on AS 1562.1—1992 and issued prior to AS 1562.1—2018 being referenced in the NCC remain valid. Reports relating to tests carried out after the NCC reference date for AS 1562.1 must relate to the revised Standard.
- (3) For AS 1670.1, AS 1670.3 and AS 1670.4, notwithstanding A4G1(5), until the adoption of NCC 2025 the editions of the documents listed in Table 1.8 of AS 1670.1, AS 1670.3 and AS 1670.4 may be used to meet the requirements of AS 1670.1, AS 1670.3 and AS 1670.4 as applicable.
- (4) For AS 2047:
  - (a) Tests carried out under earlier editions of AS 2047 remain valid.
  - (b) Reports based on AS 2047 relating to tests carried out after the NCC reference date for AS 2047—2014 Amendment 2 must relate to the amended Standard.
- (5) For AS 3786:
  - (a) Tests carried out under AS 3786—2014 Amendment 1 remain valid.
  - (b) Reports based on AS 3786 relating to tests carried out after the NCC reference date for AS 3786—2014 Amendment 2 must relate to the amended Standard.
- (6) Test reports based on the 2005 edition of AS/NZS 4020 will continue to be accepted until 1 May 2024. Test reports prepared after the NCC reference date for the 2018 edition of AS/NZS 4020 must be based on the 2018 edition.
- (7) For AS 4586:
  - (a) Test reports based on the 2004 edition of AS/NZS 4586 and issued prior to the 2013 edition of AS 4586 being referenced in the NCC remain valid.
  - (b) Test reports prepared after the NCC reference date of the 2013 edition of AS 4586 must be based on that version.
  - (c) For the purposes of assessing compliance, the slip-resistance classifications of V, W and X in reports based on the 2004 edition of AS/NZS 4586 may be considered to be equivalent to slip-resistance classifications of P5, P4 and P3 respectively in the 2013 edition of AS 4586.
  - (d) Test reports based on Appendix D of AS 4586—2013 and issued prior to the NCC reference date for AS 4586—2013 (incorporating Amendment 1) remain valid.
  - (e) Test reports based on Appendix D of AS 4586—2013 and prepared after the NCC reference date for AS 4586—2013 (incorporating Amendment 1) must be based on that version.

- (8) Tests carried out based on AS/NZS 2918—2001 and issued prior to AS/NZS 2918—2018 being referenced in the NCC remain valid. Reports relating to tests carried out after the NCC reference date for AS/NZS 2918 must relate to the revised Standard.
- (9) For AS 2699 Parts 1 and 3:
  - (a) For AS 2699.1, the 2000 edition has been retained for a transitional period ending on 30 April 2025.
  - (b) For AS 2699.3, the 2002 edition has been retained for a transitional period ending on 30 April 2025.
- (10) For AS 1397, the 2011 edition has been retained for a transitional period ending on 31 August 2023.
- (11) For AS/NZS 3500.3, the 2018 edition has been retained for a transitional period ending on 31 August 2023.

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*NSW Table 1*

*NT Table 1*

*QLD Table 1*

*SA Table 1*

*TAS Table 1*

*VIC Table 1*

*WA Table 1*

**Schedule 3 Commonwealth of Australia**

**Footnote: Other legislation and policies affecting buildings**

## Footnote: Other legislation and policies affecting buildings

In addition to any applicable provisions of this Code, there are a number of other legislative technical requirements and policies affecting the design, construction and/or performance of buildings that practitioners may need to be aware of, including, but not necessarily limited to, the following list. Additional legislative instruments such as regulations, codes and standards may exist under the legislation listed.

### 1. Australian Capital Territory

#### Administering Agency

Department of Finance, section 27 insofar as it relates to the declaration of land in the Australian Capital Territory to be National Land where the land is required for Commonwealth purposes other than for the special purposes of Canberra as the National Capital

Department of Infrastructure, Transport, Regional Development, Communications and the Arts, except to the extent administered by the Minister of Finance.

#### Relevant Legislation

Australian Capital Territory (Planning and Land Management) Act 1988

#### Administering Agency

Department of Infrastructure, Transport, Regional Development, Communications and the Arts

#### Relevant Legislation

Parliament Act 1974

### 2. Defence Buildings

#### Administering Agency

Department of Defence

#### Relevant Legislation

Defence Act 1903

#### Relevant Regulations

Defence Regulation 2016, Part 11A

#### Relevant Codes, Standards and Publications

Manual of Fire Protection Engineering

Building Works Manual

Manual of Infrastructure Engineering - Electrical

The Defence Estate Quality Management System (DEQMS) <https://www.defence.gov.au/estatemangement/>

### 3. Disability Discrimination

#### Administering Agency

Attorney-General's Department

#### Relevant Legislation

Disability Discrimination Act 1992

Disability (Access to Premises - Buildings) Standards 2010

Disability Standards for Accessible Public Transport 2002

Disability Standards for Education 2005, noting this:

- does not affect the application of premises standards to building work (including construction of a new building) undertaken as an adjustment or part of an adjustment; and
- does not require the building work to meet specifications more onerous than those required by the premises standards.

## 4. Environment

### Administering Agency

Department of Climate Change, Energy, the Environment and Water

### Relevant Policy

Energy Efficiency in Government Operations (2007)

### Relevant Legislation

Environmental Protection and Biodiversity Conservation Act 1999

Environmental Protection and Biodiversity Conservation Regulations 2000

## 5. Jervis Bay Territory

### Administering Agency

Department of Infrastructure, Transport, Regional Development, Communications and the Arts

### Relevant Legislation

Jervis Bay Territory Acceptance Act 1915

## 6. Occupational Health and Safety

### Administering Agency

Department of Employment and Workplace Relations

### Relevant Legislation

Work Health and Safety Act 2011

Work Health and Safety Regulations 2011

## 7. Territory of Christmas Island

### Administering Agency

Department of Infrastructure, Transport, Regional Development, Communications and the Arts

### Relevant Legislation

Christmas Island Act 1958

**Schedule 4      Australian Capital Territory**

**Introduction**

**Footnote: Other legislation affecting buildings**

### **ACT**      **Introduction**

The Australian Capital Territory Appendix to the Building Code of Australia (BCA) forms part of the ACT Building Code published in accordance with the Building Act 2004. This Appendix contains variations and additions to the BCA that apply to building work undertaken in the ACT and information about the application of the BCA in the ACT. The ACT Appendix is notified on the ACT Legislation Register and can be found at <https://www.legislation.act.gov.au/a/2004-11/> under the Regulations and Instruments tab.

While the BCA text includes indicators of potential ACT-specific clauses, including variations and additions, not all current ACT-specific clauses may be indicated. Users of the BCA must check that they are using the version of the ACT Appendix currently in force and are applying all relevant variations and additions. Historical version of the ACT Appendix are also available on the register.

## ACT Footnote: Other legislation affecting buildings

In addition to any applicable provisions of the Building Act 2004 and this Code, there are other legislative technical requirements affecting the design, construction and/or performance of buildings that practitioners may need to be aware of. A list of relevant legislation and links to where it can be found on the ACT Legislation Register can be found in the ACT Appendix at <https://www.legislation.act.gov.au/a/2004-11/> under the Regulations and Instruments tab.

In addition to this Code, there are a number of other legislative technical requirements affecting the design, construction, installation, replacement, repair, alteration and maintenance of a building that practitioners may need to be aware of including, but not necessarily limited to, the following list.

### 1. Plumbing and Drainage

#### Administering Agency

Environment, Planning and Sustainable Development Directorate  
Chief Minister, Treasury and Economic Development Directorate (regulator)

#### Relevant Legislation

[Water and Sewerage Act 2000](#)

### 2. Building

#### Administering Agency

Environment, Planning and Sustainable Development Directorate  
Chief Minister, Treasury and Economic Development Directorate (regulator)

#### Relevant Legislation

[Building Act 2004](#)

### 3. Health

#### Administering Agency

ACT Health Directorate  
Canberra Health Services

#### Relevant Legislation

[Health Act 1993](#)

### 4. Environment

#### Administering Agency

Environment, Planning and Sustainable Development Directorate

#### Relevant Legislation

[Environment Protection Act 1997](#)

### 5. Gas

#### Administering Agency

Environment, Planning and Sustainable Development Directorate

Chief Minister, Treasury and Economic Development Directorate (regulator)

### Relevant Legislation

[Gas Safety Act 2000](#)

## 6. Electrical

### Administering Agency

Environment, Planning and Sustainable Development Directorate

Chief Minister, Treasury and Economic Development Directorate (regulator)

### Relevant Legislation

[Electricity Safety Act 1971](#)

## 7. Utilities

### Administering Agency

Environment, Planning and Sustainable Development Directorate

Justice and Community Safety Directorate

Transport Canberra and City Services Directorate

Chief Minister, Treasury and Economic Development Directorate (regulator)

### Relevant Legislation

[Utilities Act 2000](#)

## 8. Planning

### Administering Agency

Environment, Planning and Sustainable Development Directorate

### Relevant Legislation

[Planning and Development Act 2007](#)

## Schedule 5

## New South Wales

**Introduction****Section A****Governing requirements**

Part A6	Building classification
NSW A6G7	Class 6 buildings

**Section H****Class 1 and 10 buildings**

Part H1	Structure
H1D4	Footings and slabs
Part H2	Damp and weatherproofing
NSW H2P3	Rising damp
Part H3	Fire safety
NSW H3D5	Fire separation of garage top dwellings
Part H7	Ancillary provisions and additional construction requirements
NSW H7P1	Swimming pool access
NSW H7D2	Swimming pools
NSW H7D4	Construction in bushfire prone areas
NSW Part H8	Livable housing design

**NSW Part H6****Energy efficiency****Performance Requirements**

NSW H6P1	Building fabric
NSW H6P2	Building sealing
NSW H6P3	Services

**Verification Methods**

NSW H6V1	Application of NSW H6V3
NSW H6V2	Verification using a reference building
NSW H6V3	Verification of building envelope sealing

**Deemed-to-Satisfy Provisions**

NSW H6D1	Deemed-to-Satisfy Provisions
NSW H6D2	Application of Part H6

**Schedule 1****Definitions****Schedule 2****Referenced documents****Footnote: Other legislation affecting buildings**

## NSW Introduction

The NSW Building Code technical package consists of—

- (a) the Building Code of Australia (BCA) Volume One and Volume Two; and
- (b) the New South Wales BCA Appendix which contains variations to the requirements of the BCA and additional provisions applicable in New South Wales.

The technical package is accompanied by administrative provisions contained within the Environmental Planning and Assessment (EP&A) Act 1979, the Environmental Planning and Assessment (EP&A) Regulation 2021 and the Environmental Planning and Assessment (EP&A) (Development Certification and Fire Safety) Regulation 2021

Note:

Where NSW has inserted or replaced a whole clause or part, the clause or part reference will be preceded by the prefix NSW. i.e. NSW H1D4(1). All table and image references which are replaced or inserted will also have a similar prefix. Where NSW has not replaced a complete clause but modified, inserted or replaced part of a clause, the prefix has been omitted and the parent clause reference remains unchanged.

## Section A Governing requirements

### Part A6 Building classification

Delete A6G7 and insert NSW A6G7 as follows:

#### NSW A6G7 Class 6 buildings

[2019: NSW A6.6]

A Class 6 building is a shop or other building for sale of goods by retail or the supply of services direct to the public, including—

- (a) an eating room, cafe, restaurant, milk or soft drink bar; or
- (b) a dining room, bar, shop or kiosk part of a hotel or motel; or
- (c) a hairdresser's or barber's shop, public laundry, or undertaker's establishment; or
- (d) market or sale room, showroom, or *service station*; or
- (e) *small live music or arts venue*.

## Section H Class 1 and 10 buildings

### Part H1 Structure

#### H1D4 Footings and slabs

[2019: 3.2.0, 3.2.1]

Delete H1D4(1) and insert NSW H1D4(1) as follows:

- (1) *Performance Requirement H1P1* is satisfied for footings and slabs if they are installed in accordance with either (a) or (b):
- (a) One of the following:
    - (i) AS 2870 except that for the purposes of Clause 5.3.3.1 of AS 2870 a damp-proofing membrane is required to be provided.
    - (ii) AS 3600 except that barriers installed beneath slab on ground construction must have a high resistance to damage during construction.
  - (b) Subject to (2), Section 4 of the ABCB Housing Provisions.

### Part H2 Damp and weatherproofing

Delete H2P3 and insert NSW H2P3 as follows:

#### NSW H2P3 Rising damp

[2019: NSW P2.2.3]

- (1) Moisture from the ground must be prevented from causing—
- (a) unhealthy or dangerous conditions, or loss of *amenity* for occupants; and
  - (b) undue dampness or deterioration of building elements.
- (2) Barriers installed beneath slab on ground construction for the purposes of (1) must have a high resistance to damage during construction.

#### Limitations

NSW H2P3 does not apply to a Class 10 building where in the particular case there is no necessity for compliance.

#### Explanatory Information

The intent of requiring the barrier to have a high resistance to damage during construction is to increase the barrier's ability to resist punctures during construction. By being less susceptible to puncturing, the barrier will provide increased protection against moisture containing dissolved salts from coming into contact with the concrete slab.

### Part H3 Fire safety

Delete H3D5 and insert NSW H3D5 as follows:

#### NSW H3D5 Fire separation of garage top dwellings

[2019: NSW 3.7.4]

Compliance with NSW Part 9.4 of the ABCB Housing Provisions satisfies *Performance Requirement H3P1* for fire separation of *garage top dwellings*.

## Part H7 Ancillary provisions and additional construction requirements

Delete H7P1 and insert NSW H7P1 as follows:

### NSW H7P1 Swimming pool access

[2019: NSW P2.7.1]

A barrier must be provided to a *swimming pool* and must—

- (a) be continuous for the full extent of the hazard; and
- (b) be of a strength and rigidity to withstand the foreseeable impact of people; and
- (c) restrict the access of young children to the pool and the immediate pool surrounds; and
- (d) have any gates and doors fitted with latching devices not readily operated by young children, and constructed to automatically close and latch.

#### Applications

H7P1 only applies to a swimming pool with a depth of water more than 300 mm, in conjunction with the Swimming Pools Act 1992 and the Swimming Pools Regulation 2018.

Delete H7D2 and insert NSW H7D2 as follows:

### NSW H7D2 Swimming pools

[2019: NSW 3.10.1.0]

- (1) *Performance Requirement H7P1* is satisfied for a *swimming pool* with a depth of water more than 300 mm and which is associated with a Class 1 building, if it has safety barriers installed in accordance with—
  - (a) AS 1926.1 and AS 1926.2; or
  - (b) if the *swimming pool* is a *spa pool*—
    - (i) the requirements of (1)(a); or
    - (ii) clause 9 of the Swimming Pools Regulation 2018.
- (2) *Performance Requirement H7P2* is satisfied for a water recirculation system of a *swimming pool* with a depth of water more than 300 mm, if it complies with AS 1926.3.

#### Applications

NSW H7D2(1) applies in New South Wales to the technical construction requirements for barriers to restrict access to *swimming pools*, subject to—

- (a) out-of-ground pool walls and the walls of above ground pools, including inflatable pools, not being considered to be effective barriers; and
- (b) the reference in clause 2.3.1 of AS 1926.1 to a barrier within a property including a boundary barrier.

#### Notes

The Swimming Pools Act 1992 and the Swimming Pool Regulation 2018, applicable to *swimming pools* with a depth of water of more than 300 mm, regulate the circumstances in which a barrier is required and prevail in the case of any inconsistency.

#### Explanatory Information

##### Definition of 'swimming pool'

The NCC definition of *swimming pools* is specific in including a bathing or wading pool and a spa. The requirements of AS 1926.3 apply to all types of pools defined as *swimming pools* under the NCC, irrespective of the definition in the Standard.

**Explanatory Information****Water recirculation systems**

The *swimming pool* water recirculation system requirements seek to minimise the risk of entrapment or injury of people using the *swimming pool* and provide for the safe operation of skimmer boxes and outlet systems.

**Explanatory Information****Additional requirements**

In addition to the requirements of this Part, a *swimming pool* must comply with the structural requirements of other Parts of NCC Volume Two and the ABCB Housing Provisions. The structural requirements refer to the *swimming pool* being designed and constructed to withstand any combinations of loads and other actions to which it may reasonably be subjected and the structural resistance of the materials and forms of construction used in the *swimming pool*.

**Explanatory Information****Cross-volume considerations**

Part C2 of NCC Volume Three sets out the requirements for pumped discharge from *swimming pools*.

Delete H7D4 and insert NSW H7D4 as follows:

**NSW H7D4 Construction in bushfire prone areas**

[2019: NSW 3.10.5.0]

- (1) The requirements of (2) only apply in a *designated bushfire prone area*.
- (2) *Performance Requirement H7P5* is satisfied for a Class 1 building, or a Class 10a building or deck associated with a Class 1 building, if it is constructed in accordance with—
  - (a) AS 3959 except—
    - (i) as amended by *Planning for Bush Fire Protection*; and
    - (ii) for Section 9 Construction requirements for Bushfire Attack Level FZ (BAL-FZ); or
  - (b) NASH Standard – Steel Framed Construction in Bushfire Areas except—
    - (i) as amended by *Planning for Bush Fire Protection*; and
    - (ii) for buildings subject to Bushfire Attack Level FZ (BAL-FZ); or
  - (c) (a) or (b) as modified by *development consent* following consultation with the NSW Rural Fire Service under section 4.14 of the Environmental Planning and Assessment Act 1979 if required; or
  - (d) (a) or (b) as modified by *development consent* with a bushfire safety authority issued under section 100B of the Rural Fires Act 1997 for the purposes of integrated development.

**Explanatory Information**

In New South Wales, buildings subject to BAL-FZ must comply with specific conditions of *development consent* for construction at this level.

**NSW Part H8 Livable housing design**

This Part has deliberately been left blank. Part H8 does not apply in NSW, as livable housing design requirements do not apply to Class 1a buildings in NSW.

## NSW Part H6

## Energy efficiency

**Introduction to this Part**

This NSW Part H6 replaces Part H6.

This Part is intended to improve the efficient use of energy in building design and construction, as well as the energy usage by key equipment installed in a building.

**Notes**

From 1 May 2023 to 30 September 2023 NSW Parts 2.6 and 3.12 may apply instead of NSW Part H6 of NCC 2022 Volume Two. From 1 October 2023 NSW Part H6 of NCC 2022 Volume Two applies.

**Notes**

- (1) Where a relevant *development consent* or an application for a complying development certificate requires compliance with a BASIX Single Dwelling or Multi Dwelling Certificate issued under Version 3.0 or earlier, NSW Addition NSW 2 Energy efficiency of NCC 2019 Volume Two Amendment 1 applies.
- (2) Where a relevant *development consent* or an application for a complying development certificate requires compliance with a BASIX Single Dwelling or Multi Dwelling Certificate issued under Version 4.0 or later, NSW Part H6 of NCC 2022 Volume Two applies.
- (3) Where a relevant *development consent* or an application for a complying development certificate requires compliance with a BASIX Alterations and Additions Certificate, NSW Additions NSW 2 Energy efficiency of NCC 2019 Volume Two Amendment 1 applies.

**Notes**

In NSW, Class 1 buildings and certain Class 10 buildings are subject to BASIX (the Building Sustainability Index).

BASIX is the web-based planning tool designed to assess the potential performance of certain residential buildings against a range of sustainability indices including thermal comfort and energy. Commitments made under BASIX become a condition of the relevant *development consent* or complying development certificate.

BASIX applies in NSW to all new Class 1 buildings, certain Class 10 buildings; and to alterations and additions to buildings of those classes where the work is subject to BASIX and also where an applicant elects to comply with BASIX.

The provisions of NSW Part H6 are therefore designed to complement requirements that arise under BASIX and which are implemented via the *development consent*.

Where BASIX is not applied to alterations and additions to these buildings, the provisions will also complement council development controls that require energy efficiency measures to be incorporated as part of the alterations and additions.

**Performance Requirements****NSW H6P1****Building fabric**

[2019: NSW P2.6.1(a)]

- (1) Thermal insulation in a building must be installed in a manner and have characteristics, which facilitate the efficient use of energy for artificial heating and cooling.
- (2) A building must have, to the degree necessary, thermal breaks installed between the framing and external cladding, to facilitate efficient thermal performance of the building envelope.

**Notes**

- (a) NSW H6P1 only applies to thermal insulation in a Class 1 or 10 building where a *development consent* specifies that the insulation is to be provided as part of the development.

(b) NSW H6P1(2) only applies to a metal framed roof and metal framed wall.

### Explanatory Information

- (a) In NSW, provision of thermal insulation of the building fabric may be nominated as a commitment on a BASIX (Building Sustainability Index) Certificate and form part of the conditions of *development consent* relating to the development.
- (b) BASIX is applicable to alterations and additions the cost of which exceeds specified minimum values, or where an applicant elects to comply with BASIX. Where BASIX is not applicable, a council's development controls may also specify the provision of thermal insulation in such alterations and additions.
- (c) Thermal breaks between metal framing and cladding material of minimum thickness will reduce energy loss and contribute to the efficient thermal performance of the building.

## NSW H6P2 Building sealing

[2019: NSW P2.6.1(b)]

A building must have, to the degree necessary, a level of building sealing against air leakage to facilitate the efficient use of energy for artificial heating and cooling appropriate to—

- (a) the function and use of the building; and
- (b) the internal environment; and
- (c) the geographic location of the building.

### Limitations

NSW H6P2 does not apply to—

- (a) existing buildings being relocated; or
- (b) Class 10a buildings—
  - (i) without a *conditioned space*; or
  - (ii) for the accommodation of vehicles; or
- (c) parts of buildings that cannot be fully enclosed; or
- (d) a permanent building opening, in a space where a gas appliance is located, that is necessary for the safe operation of a gas appliance; or
- (e) a building in *climate zones* 2 and 5 where the only means of *air-conditioning* is by using an evaporative cooler.

### Explanatory Information

- The term “cannot be fully enclosed” means parts of buildings with permanent openings such as balconies, shade rooms, rooms with fixed louvres, mesh or other material that allows air flow. Adjustable louvres are considered to provide full enclosure to the opening they accommodate. Such rooms are unlikely to be conditioned given the high air flow rates; therefore application of the *Performance Requirement* to these parts of buildings would not result in reduction in energy use.
- Appropriate ventilation for gas appliances can be obtained from relevant legislation, referenced standards and product installation manuals.

## NSW H6P3 Services

[2019: NSW P2.6.2]

*Domestic services*, including any associated distribution system and components must, to the degree necessary, have features that facilitate the efficient use of energy appropriate to—

- (a) the *domestic service* and its usage; and
- (b) the geographic location of the building; and
- (c) the location of the *domestic service*; and

- (d) the energy source.

### Limitations

NSW H6P3 does not apply to existing services associated with existing buildings being relocated.

## Verification Methods

### NSW H6V1 Application of NSW H6V3

[2019: V2.6.1]

The *Verification Method* in this Part only apply to—

- (a) a Class 1 building; and
- (b) an enclosed Class 10a building attached to a Class 1 building.

### Explanatory Information

The *Verification Method* in this Part are intended to apply to whole Class 1 buildings and to whole Class 1 buildings that incorporate attached and enclosed Class 10a parts, such as attached garages. The *Verification Method* are not intended to apply to detached garages or to open carports.

### NSW H6V2 Verification using a reference building

[2019: V2.6.2.2]

This clause has deliberately been left blank.

H6V2 does not apply in NSW.

### NSW H6V3 Verification of building envelope sealing

[2019: NSW V2.6.1]

- (1) Compliance with NSW H6P2 is verified for building *envelope* sealing when a building *envelope* is sealed at an air permeability of not more than  $10 \text{ m}^3/\text{hr.m}^2$  at 50 Pa reference pressure when tested in accordance with AS/NZS ISO 9972 Method 1.
- (2) Where an air permeability of not more than  $5 \text{ m}^3/\text{hr.m}^2$  at 50 Pa reference pressure is achieved—
  - (a) a mechanical ventilation system must be provided that—
    - (i) can be manually overridden; and
    - (ii) provides outdoor air, either—
      - (A) continuously; or
      - (B) intermittently, where the system has controls that enable operation for not less than 25 percent of each 4 hour segment; and
    - (iii) provides a flow rate not less than that achieved with the following formula:  $Q = (0.05 \times A + 3.5 \times (N + 1)) / p$ , where—
      - (A)  $Q$  = the required air flow rate (L/s); and
      - (B)  $A$  = the total floor area of the building ( $\text{m}^2$ ); and
      - (C)  $N$  = the number of bedrooms in the building; and
      - (D)  $p$  = the fraction of time within each 4 hour segment that the system is operational; and
  - (b) any space with a solid-fuel burning combustion appliance must be ventilated with permanent openings directly to outside with a free area of not less than half of the cross-sectional area of the appliance's flue; and
  - (c) any space with a gas-fuelled combustion appliance must be ventilated in accordance with—

- (i) clause 6.4 of AS/NZS 5601.1; and
  - (ii) clause 6.4.5 of AS/NZS 5601.1.
- (3) For the purposes of (2)(c), the volume of the space is considered to be 1 m<sup>3</sup> for determining ventilation requirements.

#### Explanatory Information

The intent is that 10 m<sup>3</sup>/hr.m<sup>2</sup> at 50 Pa is broadly equivalent to 10 air changes per hour at 50 Pa when applied to homes.

### Deemed-to-Satisfy Provisions

#### NSW H6D1 Deemed-to-Satisfy Provisions

[New for 2022]

- (1) Where a *Deemed-to-Satisfy Solution* is proposed, *Performance Requirements* NSW H6P1 to NSW H6P3 are satisfied by complying with NSW H6D2.
- (2) Where a *Performance Solution* is proposed, the relevant *Performance Requirements* must be determined in accordance with A2G2(3) and A2G4(3) as applicable.

#### NSW H6D2 Application of Part H6

[2019: NSW 3.12.1, NSW 3.12.3, NSW 3.12.5]

- (1) *Performance Requirement* NSW H6P1 is satisfied by complying with Part 13.2 of the ABCB Housing Provisions.
- (2) *Performance Requirement* NSW H6P2 is satisfied by complying with Part 13.4 of the ABCB Housing Provisions.
- (3) *Performance Requirement* NSW H6P3 is satisfied by complying with Part 13.7 of the ABCB Housing Provisions.

## Schedule 1 Definitions

**Aisle:** A walkway at the end of *rows* of seating, not being *continental seating*, leading to a cross-over or to an egress doorway.

**Appropriate authority**

The relevant authority with the responsibility to determine the particular matter.

**Assembly building**

A building where people may assemble for—

- (a) civic, theatrical, social, political or religious purposes including a library, theatre, public hall or place of worship; or
- (b) educational purposes in a *school*, *early childhood centre*, preschool, or the like; or
- (c) entertainment, recreational or sporting purposes including—
  - (i) a cinema; or
  - (ii) a sports stadium, sporting or other club; or
- (d) transit purposes including a bus station, railway station, airport or ferry terminal.

**Auditorium:** A part of an *entertainment venue* used or intended to be used for the purposes of accommodating an audience to an entertainment.

**Continental seating:** *Rows* of seating in which the *rows* extend the full width of an *auditorium* without intervening *aisles*.

**Cross-over:** In relation to an *entertainment venue* or *temporary structure*, means a walkway between *aisles* or between an *aisle* and an egress doorway.

**Designated bushfire prone area**

Land that:

- (a) has been designated under legislation; or
- (b) has been identified under an environmental planning instrument, development control plan or in the course of processing and determining a development application,

as land that can support a bushfire or is likely to be subject to bushfire attack.

**Development consent:** Is as defined in the Environmental Planning and Assessment Act 1979.

**Entertainment venue:** Is as defined in the Environmental Planning and Assessment Regulation 2021.

**Film:** A cinematograph film of a size of 35 mm or greater.

**Flying scenery:** Scenery of a kind that is lifted above the *stage* floor by means of lines run from a *grid*.

**Garage top dwelling:** A Class 1a dwelling located above a Class 10a *private garage* which is not associated with that Class 1a dwelling and includes any internal entry stair serving the garage top dwelling.

**Grid:** A framework from which lines are run for the purpose of lifting *flying scenery* above the *stage* floor.

**Information and education facility:** Is as defined in the Standard Instrument—Principal Local Environment Plan.

**Licensed premises:** Is as defined in the Liquor Act 2007.

**Minimum lateral clearance:** A permanently unobstructed space having a height above floor level of not less than 2000 mm and a width of not less than the specified measurement.

**Planning for Bush Fire Protection:** Is as prescribed by the Environmental Planning and Assessment Regulation 2021.

**Projection suite:** Such part of an *entertainment venue* as is designed to accommodate apparatus used for projecting *films*.

**Row:** A row of seating—

- (a) between a wall or other barrier and an *aisle*; or
- (b) between 2 *aisles*.

**Small live music or arts venue:** The whole or part of a building—

- (a) in which cultural activities including live music, visual arts' displays, dancing, poetry and spoken word performances are provided to the public; and
- (b) that has a *floor area* of not more than 300 square metres; and
- (c) that has a *rise in storeys* of not more than 2; and
- (d) that occupies not more than 2 *storeys* including the ground floor *storey*; and
- (e) where pyrotechnics or theatrical smoke (smoke machines, hazers or the like) are not used.

**Spa pool:** Is as defined in the Swimming Pools Act 1992.

**Special fire protection purpose:** (As per Section 100B(6) of the Rural Fires Act 1997) means any of the following purposes:

- (a) a school,
- (b) a child care centre,
- (c) a hospital (including a hospital for the mentally ill or mentally disordered),
- (d) a hotel, motel or other tourist accommodation,
- (e) a building wholly or principally used as a home or other establishment for mentally incapacitated persons,
- (f) seniors housing within the meaning of State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004 (now SEPP (Housing) 2021),
- (g) a group home within the meaning of State Environmental Planning Policy No 9 - Group Homes (now SEPP (Housing) 2021),
- (h) a retirement village,
- (i) any other purpose prescribed by the regulations (Rural Fires Regulation 2022).

### Notes

For application of this definition in the BCA, the term "school" does not include a college, university or similar tertiary educational establishment.

**Temporary structure:** Either—

- (a) a booth, tent or other temporary enclosure, whether or not a part of the booth, tent or enclosure is permanent; or
- (b) a mobile structure.

## Schedule 2 Referenced documents

Insert NSW Table 1 as follows:

**NSW Table 1: Schedule of referenced documents**

No.	Date	Title	Volume One	Volume Two	Housing Provisions
AS/NZS 1596	2014	The Storage and Handling of LP Gas	NSW I4D61	N/A	N/A
AS 1603	2018	Automatic fire detection and alarm systems — Heat alarms (See Note 1)	N/A	N/A	NSW 9.5.1
AS 2001 Part 5.4	2005	Methods of test for textiles: Dimensional washing and drying procedures for textile texting	NSW S7C7	N/A	N/A
AS/NZS 3000	2018	Electrical installations (known as the Australian/New Zealand Wiring Rules)	NSW I5D14	N/A	N/A
AS/NZS 3002	2008	Electrical installations — Shows and carnivals	NSW I5D14	N/A	N/A
SSL	N/A	Appraisal Specification FAS102	NSW I4D46	N/A	N/A
NSW Legislation	1979	Environmental Planning and Assessment Act	NSW G5D3, NSW Schedule 1	NSW H7D4, NSW Schedule 1	NSW Schedule 1
NSW Legislation	2021	Environmental Planning and Assessment Regulation	NSW I4D1, NSW I4D46, NSW Schedule 1	NSW Schedule 1	NSW Schedule 1
NSW Legislation	2007	Liquor Act	NSW Schedule 1	NSW Schedule 1	NSW Schedule 1
NSW Legislation	1997	Rural Fires Act	NSW G5D3, NSW G5D4, NSW Schedule 1	NSW Schedule 1, NSW H7D4	NSW Schedule 1
NSW Legislation	N/A	Standard Instrument— Principal Local Environmental Plan	NSW Schedule 1	NSW Schedule 1	NSW Schedule 1
NSW Legislation	1992	Swimming Pools Act	NSW G1P2, NSW G1D2, NSW Schedule 1	NSW H7P1, NSW H7D2, NSW Schedule 1	NSW Schedule 1

## New South Wales

No.	Date	Title	Volume One	Volume Two	Housing Provisions
NSW Legislation	2018	Swimming Pools Regulation	NSW G1P2, NSW G1D2	NSW H7P1, NSW H7D2	N/A
NSW Legislation	2011	Work Health and Safety Act	NSW G1D5	N/A	N/A

### Table Notes

(1) Heat alarms complying with AS 1603.3 must be a class type A1 or A2.

In addition to any applicable provisions of the Environmental Planning and Assessment Act 1979, the Environmental Planning and Assessment Regulation 2021 and this Code, there is a variety of other regulatory provisions, including legislation, regulation and departmental policies that impose requirements affecting the design, construction and/or performance of buildings in NSW.

The following is a non-definitive list of such provisions. It does not include Commonwealth provisions that may apply in NSW, nor planning and environmental standards that may impose building requirements in individual circumstances. It is meant as an indicative guide only and is not to be relied upon in any way as a substitute for further research, investigation and legal advice needed to determine building standards in individual circumstances.

## 1. Boarding Houses

### Administering Agency

Department of Customer Service and Department of Communities and Justice

### Relevant Legislation

Boarding Houses Regulation 2013

## 2. Children's Services

### Administering Agency

Department of Education

### Relevant Legislation

Children (Education and Care Services National Law Application) Act 2010

Children (Education and Care Services) Supplementary Provisions Regulation 2019

## 3. Crown Land – Construction Approval

### Administering Agency

Department of Planning and Environment

### Relevant Legislation

Crown Land Management Act 2016

Crown Land Management Regulation 2018

### Administering Agency

NSW Rural Fire Service

### Relevant Legislation

Rural Fires Act 1997

## 4. Dining Rooms

### Administering Agency

NSW Food Authority

### Relevant Legislation

Food Regulation 2015

## 5. Electrical Installations

### Administering Agency

Department of Customer Service

### Relevant Legislation

Gas and Electricity (Consumer Safety) Regulation 2018

Gas and Electricity (Consumer Safety) Act 2017

Work Health and Safety Regulation 2017

## 6. Fire Prevention in Existing Buildings

### Administering Agency

Department of Planning and Environment and Department of Customer Service

### Relevant Legislation

Environmental Planning and Assessment Act 1979

Environmental Planning and Assessment Regulation 2021

Environmental Planning and Assessment (Development Certification and Fire Safety) Regulation 2021

## 7. Gas Installations

### Administering Agency

Department of Planning and Environment

### Relevant Legislation

Gas Supply Act 1996

Gas Supply (Safety and Network Management) Regulation 2013

### Administering Agency

Department of Customer Service

### Relevant Legislation

Gas and Electricity (Consumer Safety) Act 2017

Gas and Electricity (Consumer Safety) Regulation 2018

## 8. Historic Buildings

### Administering Agency

Department of Planning and Environment

### Relevant Legislation

Heritage Regulation 2012

## 9. Lift Installations

### Administering Agency

Department of Customer Service

### Relevant Legislation

Work Health and Safety Regulation 2017

## 10. Moveable Dwellings (in Caravan Parks)

### Administering Agency

Department of Planning and Environment

### Relevant Legislation

Local Government Act 1993

Local Government (Manufactured Home Estates, Caravan Parks, Camping Grounds and Moveable Dwellings) Regulation 2021

## 11. Work Health and Safety

### Administering Agency

Department of Customer Service

### Relevant Legislation

Work Health and Safety Regulation 2017

## 12. Planning Controls

### Administering Agency

Department of Planning and Environment

### Relevant Legislation

Environmental Planning and Assessment Act 1979

Environmental Planning and Assessment Regulation 2021

## 13. Sanitary Plumbing, Water Supply and Sewerage

### Administering Agency

Department of Planning and Environment

### Relevant Legislation

Local Government Act 1993

Local Government (General) Regulation 2021

### Administering Agency

Department of Customer Service

### Relevant Legislation

Plumbing and Drainage Act 2011

Plumbing and Drainage Regulation 2017

### Approval to Connect to Network Utility Operator's System

Refer to the Network Utility Operator for the current Act & Regulation

Hunter Water Act 1991

Sydney Water Act 1994

Water Industry Competition Act (WICA) 2006

## **14. Septic Tank Installations**

### **Administering Agency**

Department of Planning and Environment

### **Relevant Legislation**

Local Government Act 1993

Local Government (General) Regulation 2021

## **15. Sleeping Accommodation**

### **Administering Agency**

NSW Ministry of Health

### **Relevant Legislation**

Public Health Regulation 2012

## **16. Swimming Pool Fences**

### **Administering Agency**

Department of Customer Service

### **Relevant Legislation**

Swimming Pools Act 1992

Swimming Pools Regulation 2018

## Schedule 6

## Northern Territory

## Section H

**Class 1 and 10 buildings**

Part H2	Damp and weatherproofing
NT H2P4	Drainage from swimming pools
Part H4	Health and amenity
NT H4P6	Sound insulation
NT H4V4	Sound insulation
Part H7	Ancillary provisions and additional construction requirements
NT H7P1	Swimming pool access
H7D2	Swimming pools

## NT Part H6

**Energy efficiency****Objectives**

NT H6O1	Objective
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**Functional Statements**

NT H6F1	Greenhouse gas emissions
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**Performance Requirements**

NT H6P1	Building
NT H6P2	Energy usage

**Verification Methods**

NT H6V1	Application of H6V2
NT H6V2	Verification using a reference building

**Deemed-to-Satisfy Provisions**

NT H6D1	Deemed-to-Satisfy Provisions
NT H6D2	Application of Part H6

## Schedule 2

**Referenced documents****Footnote: Other legislation affecting buildings**

## Section H Class 1 and 10 buildings

### Part H2 Damp and weatherproofing

Delete H2P4 and insert NT H2P4 as follows:

#### NT H2P4 Drainage from swimming pools

This clause has deliberately been left blank.

### Part H4 Health and amenity

Delete H4P6 and insert NT H4P6 as follows:

#### NT H4P6 Sound insulation

[2019: NT P2.4.6]

- (1) Walls separating dwellings must provide insulation against the transmission of airborne and impact generated sound sufficient to prevent illness or loss of amenity to the occupants.
- (2) The *required* sound insulation of walls must not be compromised by the incorporation or penetration of a pipe or other service element.

Delete H4V4 and insert NT H4V4 as follows:

#### NT H4V4 Sound insulation

This clause has deliberately been left blank.

### Part H7 Ancillary provisions and additional construction requirements

Delete H7P1 and insert NT H7P1 as follows:

#### NT H7P1 Swimming pool access

This clause has deliberately been left blank.

Restriction of access to swimming pools in the Northern Territory is regulated under the Swimming Pool Safety Act.

### H7D2 Swimming pools

[2019: 3.10.1]

Delete H7D2(1) and insert NT H7D2(1) as follows:

- (1) This sub-clause has deliberately been left blank.

Restriction of access to swimming pools in the Northern Territory is regulated under the Swimming Pool Safety Act.

## NT Part H6

## Energy efficiency

## Introduction to this Part

This Part is intended to improve the efficient use of energy in building design and construction, as well as the energy usage by key equipment installed in a building.

## Objectives

## NT H6O1

## Objective

[New for 2022]

This Objective of this Part is to reduce energy consumption and reduce gas emissions.

## Functional Statements

## NT H6F1

## Greenhouse gas emissions

[New for 2022]

To reduce greenhouse gas emissions, a building, including its *domestic services*, is to be capable of efficiently using energy.

## Notes

Domestic services means the basic engineering systems of a house that use energy or control the use of energy; and—

(a) includes—

- (i) heating, air-conditioning, mechanical ventilation and artificial lighting; and
- (ii) pumps and heaters for *swimming pools* and spa pools; and
- (iii) heated water systems; and
- (iv) onsite renewable energy equipment; but

(b) excludes cooking facilities and portable appliances.

## Performance Requirements

## NT H6P1

## Building

[New for 2022]

A building must have, to the degree necessary, a level of thermal performance to facilitate the efficient use of energy for artificial heating and cooling appropriate to—

- (a) the function and use of the building; and
- (b) the internal environment; and
- (c) the geographic location of the building; and
- (d) the effects of nearby permanent features such as topography, structures and buildings; and
- (e) solar radiation being
  - (i) utilised for heating; and
  - (ii) controlled to minimise energy for cooling; and

- (f) the sealing of the building *envelope* against air leakage; and
- (g) the utilisation of air movement to assist cooling.

## NT H6P2 Energy usage

[New for 2022]

*Domestic services*, including any associated distribution system and components must, to the degree necessary, have features that facilitate the efficient use of energy appropriate to—

- (a) the *domestic service* and its usage; and
- (b) the geographic location of the building; and
- (c) the location of the *domestic services*; and
- (d) the energy source.

### Verification Methods

## NT H6V1 Application of H6V2

[New for 2022]

The *Verification Method* in this Part only apply to—

- (a) a Class 1 building; and
- (b) an enclosed Class 10a building attached to a Class 1 building.

### Explanatory Information

The *Verification Method* in this Part is intended to apply to whole Class 1 buildings and to whole Class 1 buildings that incorporate attached and enclosed Class 10a parts such as attached garages. The *Verification Method* is not intended to apply to detached garages or open carports.

## NT H6V2 Verification using a reference building

[New for 2022]

- (1) Compliance with NT H6P1 is verified when a proposed building—
  - (a) when compared with a *reference building* has—
    - (i) in *climate zone* 1, a *cooling load* equal to or less than that of the *reference building*; or
    - (ii) in *climate zones* 3, a *heating load* and a *cooling load* equal to or less than that of the reference building.
- (2) The *heating load* and *cooling load* for the proposed building and the *reference building* must be determined using the same—
  - (a) thermal calculation method; and
  - (b) location specific data, including that of climate and topography appropriate to the location where the proposed building is to be constructed if the data is available, or the nearest location with similar climatic conditions in the same *climate zone* for which the data is available; and
  - (c) impact of adjoining structures and features; and
  - (d) soil conditions; and
  - (e) orientation; and
  - (f) floor plan, including the location of *glazing*; and
  - (g) number of storeys; and
  - (h) solar absorptance of external surfaces; and
  - (i) roof cladding; and
  - (j) *separating walls*; and

## Northern Territory

- (k) external non-glazed doors; and
  - (l) intermediate floors; and
  - (m) floor coverings; and
  - (n) internal zones; and
  - (o) internal heat gains including people and appliances.
- (3) The thermal calculation method used must be capable of assessing the *heating load* and *cooling load* by modelling—
- (a) the building *fabric*; and
  - (b) *glazing* and shading; and
  - (c) air infiltration and ventilation; and
  - (d) the function and use of the building including zoning, hours of occupation, hours of heating and cooling availability and internal heat gains; and
  - (e) space temperature settings in the range 20°C to 21°C for heating and 25°C to 28°C for cooling; and
  - (f) relevant built-environment and topographical features; and
  - (g) the sensible heat component of the *cooling load* and *heating load*.
- (4) Climatic data employed in the thermal calculation method must be based on hourly recorded values and be representative of a typical year for the proposed location.
- (5) The *reference building* must comply with the *Deemed-to-Satisfy Provisions* in the following parts of the ABCB Housing Provisions—
- (a) NT Part 13.2 for the building *fabric*; and
  - (b) NT Part 13.3 for the external *glazing* and shading; and
  - (c) NT Part 13.4 for building sealing; and
  - (d) NT Part 13.5 for air movement.

<b>Deemed-to-Satisfy Provisions</b>
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**NT H6D1 Deemed-to-Satisfy Provisions**

[New for 2022]

- (1) Where a *Deemed-to-Satisfy Solution* is proposed, *Performance Requirements* NT H6P1 and NT H6P2 are satisfied by complying with NT H6D2.
- (2) Where a *Performance Solution* is proposed, the relevant *Performance Requirements* must be determined in accordance with A2G2(3) and A2G4(3) as applicable.

**NT H6D2 Application of Part H6**

[New for 2022]

- (1) *Performance Requirement* NT H6P1 for the thermal performance of the building is satisfied by—
  - (a) a building must achieve an energy rating, using *house energy rating software*, of greater than or equal to 5 stars; or
  - (b) complying with the following parts of the ABCB Housing Provisions—
    - (i) NT Part 13.2 for the building *fabric*; and
    - (ii) NT Part 13.3 for the external *glazing* and shading; and
    - (iii) NT Part 13.4 for building sealing; and
    - (iv) NT Part 13.5 for air movement.
- (2) *Performance Requirement* NT H6P2 for the energy usage of a building is satisfied by –
  - (a) a building must achieve an energy rating, using *house energy rating software*, of greater than or equal to 5 stars; or

(b) complying with NT Part 13.6 of the ABCB Housing Provisions for services.

#### Explanatory Information

There are two options for complying with the energy efficiency *Performance Requirements*:

- Option 1 Energy rating – achieving the *required* energy rating.
- Option 2 Elemental Provisions – satisfy all the detailed provisions including meeting the *Total R-Values* of roofs, walls and floors, the *glazing* allowances and the air movement requirements.

## Schedule 2 Referenced documents

Insert NT Table 1 as follows:

**NT Table 1: Schedule of referenced documents**

No.	Date	Title	Volume One	Volume Two	Housing Provisions
AS/NZS 1170 Part 2	2011	Structural design actions: Wind actions Amdt 1, 2, 3, 4 and 5	NT S4C3	N/A	N/A
AS 2047	2014	Windows and external glazed doors in buildings (incorporating amendments 1 and 2) See Note	B1D4, F3V1, F3D4	H1D8, H2V1	NT 13.4.4
AS 3660 Part 1	2014	Termite management: New building work	NT B1D4	N/A	NT 3.4.1(2), NT 3.4.2
AS 4254 Part 1	2012	Ductwork for air handling systems in buildings — Flexible duct	N/A	N/A	NT 13.7.4
AS 4254 Part 2	2012	Ductwork for air handling systems in buildings — Rigid duct	Spec 7	N/A	NT 13.7.4
AS/NZS 4859.1	2018	Thermal insulation materials for buildings — General criteria and technical provisions	N/A	N/A	NT 13.2.2, NT 13.7.4
BCA 2009	May 2009	Building Code of Australia	NT Section J	N/A	N/A
BCA 2019	May 2009	Building Code of Australia	NT Section J	N/A	N/A

### Table Notes

For AS 2047:

- (a) Tests carried out under earlier editions of AS 2047 remain valid.
- (b) Reports based on AS 2047 relating to tests carried out after the NCC reference date for AS 2047—2014 Amendment 2 must relate to the amended Standard.

## NT Footnote: Other legislation affecting buildings

In addition to any applicable provisions of the Building Act, Building Regulations and this Code, there are a number of other legislative technical requirements affecting the design, construction and/or performance of buildings that practitioners may need to be aware of, including, but not necessarily limited to, the following list. Additional legislative instruments such as regulations, codes and standards may exist under the legislation listed.

### 1. Accommodation

#### Administering Agency

Department of Health

#### Relevant Legislation

Public and Environmental Health Act

Public and Environmental Health Regulations

### 2. Child Care

#### Administering Agency

Department of Education

#### Relevant Legislation

Education and Care Services National Law

Education and Care Services National Regulations

### 3. Crown Land

#### Administering Agency

Department of Infrastructure, Planning and Logistics

#### Relevant Legislation

Crown Lands Act

### 4. Electrical Installations

#### Administering Agency

Department of Attorney-General and Justice (NT Worksafe)

#### Relevant Legislation

Electrical Workers and Contractors Act

Electricity Reform Act

Electricity Reform (Safety and Technical) Regulations

### 5. Fences — dividing

#### Administering Agency

Department of Attorney-General and Justice

#### Relevant Legislation

Fences Act

## 6. Gas Installations

### Administering Agency

Department of Attorney-General and Justice (NT Worksafe)

### Relevant Legislation

Dangerous Goods Act

Work Health (Occupational Health and Safety) Regulations

## 7. Historic Building

### Administering Agency

Department of Tourism and Culture

### Relevant Legislation

Heritage Act

## 8. Occupational Health and Safety

### Administering Agency

Department of Attorney-General and Justice (NT Worksafe)

### Relevant Legislation

Work Health and Safety (National Uniform Legislation) Act

## 9. Planning Controls

### Administering Agency

Department of Infrastructure, Planning and Logistics

### Relevant Legislation

Planning Act

Planning Scheme

## 10. Plumbing Installations

### Administering Agency

Department of Infrastructure, Planning and Logistics

### Relevant Legislation

Building Act

Building Regulations

Plumbers and Drainers Licensing Act

## 11. Stormwater Drainage (Municipal Roads)

### Administering Agency

Council or Municipality in which building is located

### Relevant Legislation

Local Government Act

## 12. Stormwater Drainage (Territory Roads)

### Administering Agency

Department of Infrastructure, Planning and Logistics

### Relevant Legislation

Control of Roads Act

## 13. Swimming Pools

### Administering Agency

Department of Infrastructure, Planning and Logistics

### Relevant Legislation

Swimming Pool Safety Act

## 14. Water Supply and Sewage Services

### Administering Agency

Power and Water Corporation

### Relevant Legislation

Water Supply and Sewerage Services Act

Water Supply and Sewerage Services Regulations

**Schedule 7**

**Queensland**

**Section H**

**Class 1 and 10 buildings**

Part H1	Structure
QLD H1P2	Buildings in flood areas
QLD H1P3	Termite management measures
H1D3	Site preparation
H1D6	Framing
QLD H1D10	Flood hazard areas
Part H7	Ancillary provisions and additional construction requirements
QLD H7P1	Swimming pool access
H7D2	Swimming pools
H7D4	Construction in bushfire prone areas

**Schedule 1**

**Definitions**

**Schedule 2**

**Referenced documents**

**Footnote: Other legislation affecting buildings**

## Section H Class 1 and 10 buildings

### Part H1 Structure

Delete H1P2 and insert QLD H1P2 as follows:

#### QLD H1P2 Buildings in flood areas

This clause has deliberately been left blank.

Building work in designated flood hazard areas is regulated by the Building Act 1975 and Development Code 3.5 - Construction of buildings in flood hazard areas.

Insert QLD H1P3 as follows:

#### QLD H1P3 Termite management measures

[2019: QLD P2.1.3]

- (1) The risk of *primary building element* in a Class 1 or 10 building being damaged by subterranean termites must be adequately minimised by the use of a suitable termite management measure that—
  - (a) if it serves a non-temporary Class 1 building, has a design life of at least 50 years; or
  - (b) if it serves a building not specified in (a), has a design life of at least 50 years or the specified design life of the building, whichever is the lesser; or
  - (c) is easily and readily accessible for replenishment or replacement and is capable of being replenished or replaced.
- (2) A termite management measure *required* by (1), to the degree necessary, must—
  - (a) be accessible to enable the installation, maintenance and inspection of the termite management measure to be carried out; and
  - (b) incorporate suitable measures to adequately minimise the risk of the termite management measure inadvertently being damaged, bridged or breached.

#### Explanatory Information

QLD H1P3(1) requires a termite management measure in Queensland to have a design life of at least 50 years unless it is easily and readily accessible for replenishment or replacement and is capable of being replenished or replaced. In recognition that some buildings other than non-temporary Class 1 buildings may be designed to last less than 50 years, the option of the termite management measure having a design life at least equal to that specified for the building is given. If this option is used, the design life of the building should be agreed upon by all relevant stakeholders at the design stage and should form part of the documentation kept by the *appropriate authority*. It should not be assumed that the design life of 50 years in QLD H1P3(1)(a) and (b) applies to any other provisions of the BCA, unless stated.

An example of a termite management measure that may satisfy QLD H1P3(1)(c) is a chemical reticulation system beneath a concrete floor slab laid directly on the ground, provided that the system is easily and readily accessible for replenishment and is capable of being replenished.

An example of a termite management measure that may not satisfy QLD H1P3(1) for a non-temporary Class 1 building is a hand-sprayed chemical beneath a concrete floor slab laid directly on the ground if the chemical does not have a design life of at least 50 years. The concrete floor slab being laid directly on the ground would prevent the area beneath the slab from being easily and readily accessible for replenishment or replacement of the termite management measure.

An example of a termite management measure being inadvertently bridged or breached is when a person places a garden or mulch over the top of or above the level of a termite management measure enabling termites to bypass the measure.

**H1D3 Site preparation**

[2019: 3.1.1, 3.1.2, 3.1.4]

*Delete H1D3(3) and insert QLD H1D3(3) as follows:*

(3) Compliance with Part 3.4 of the ABCB Housing Provisions satisfies Performance Requirement H1P1 and QLD H1P3.

**H1D6 Framing**

[2019: 3.4.0, 3.4.2-3.4.4]

*Delete H1D6(4) and insert QLD H1D6(4) as follows:*

(4) Performance Requirement H1P1 is satisfied for a timber frame if it is designed and constructed in accordance with the following, as appropriate:

- (a) Design of timber structures: AS 1720.1.
- (b) Design of nailplated timber roof trusses: AS 1720.5.
- (c) Residential timber-framed construction – non-cyclonic areas: AS 1684.2.
- (d) Residential timber-framed construction – cyclonic areas: AS 1684.3.
- (e) Residential timber-framed construction – non-cyclonic areas (simplified): AS 1684.4.
- (f) Installation of particleboard flooring: AS 1860.2.
- (g) Timber species: In addition to sub-clauses (a) to (f) above, timber used for structural purposes must be a species scheduled for the appropriate use in Schedules A, B or C of Book 2 of the December 2017 version of the “Queensland Government, Department of Agriculture, Fisheries and Forestry - Construction timbers in Queensland, Book 1 and Book 2: Properties and specifications for satisfactory performance of construction timbers in Queensland - Class 1 and 10 buildings (Houses, carports, garages, greenhouses and sheds)”.

*Delete H1D10 and insert QLD H1D10 as follows:***QLD H1D10 Flood hazard areas**

This clause has deliberately been left blank.

Building work in designated flood hazard areas is regulated by the Building Act 1975 and the Queensland Development Code 3.5 - Construction of buildings in flood hazard areas.

**Part H7 Ancillary provisions and additional construction requirements***Delete H7P1 and insert QLD H7P1 as follows:***QLD H7P1 Swimming pool access**

This clause has deliberately been left blank.

Restriction of access to swimming pools in Queensland is regulated under the Building Act 1975.

**H7D2 Swimming pools**

[2019: 3.10.1]

*Delete H7D2(1) and insert QLD H7D2(1) as follows:*

(1) This sub-clause has deliberately been left blank.

Restriction of access to swimming pools in Queensland is regulated under the Building Act 1975.

**H7D4 Construction in bushfire prone areas**

[2019: 3.10.5]

*Insert subclause QLD H7D4(3) in clause H7D4 as follows:*

(3) The requirements of (2) do not apply when, in accordance with AS 3959, the classified vegetation is Group F rainforest

**Queensland**

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(excluding wet sclerophyll forest types), mangrove communities or grasslands under 300 mm high.

## Schedule 1

## Definitions

### Primary building element

For the purposes of—

- (1) Volume One, a member of a building designed specifically to take part of the loads specified in B1D3 and includes roof, ceiling, floor, stairway or ramp and wall framing members including bracing members designed for the specific purpose of acting as a brace to those members; or
- (2) Volume Two—
  - (a) A member of a building specifically designed to take part of the building loads and includes roof, ceiling, floor, stairway or ramp and wall framing members including bracing members designed for the specific purpose of acting as a brace to those members; and
  - (b) door jambs, window frames and reveals, architraves and skirtings.

### Explanatory Information

The loads to which a building may be subjected are dead, live, wind, snow and earthquake loads. Further information on building loads can be found in the AS 1170 series of Standards.

## Schedule 2      Referenced documents

*Insert QLD Table 1 as follows:*

**QLD Table 1:            Schedule of referenced documents**

No.	Date	Title	Volume One	Volume Two	Housing Provisions
BCA 2009	May 2009	Building Code of Australia	QLD Section J	N/A	N/A
N/A	December 2017	Queensland Government, Department of Agriculture, Fisheries and Forestry – Construction timbers in Queensland: Book 1 and Book 2: Properties and specifications for satisfactory performance of construction timbers in Queensland – Class 1 and 10 buildings (Houses, carports, garages, greenhouses and sheds)	QLD B1D4	QLD H1D6	N/A
N/A	N/A	Building Act 1975	N/A	QLD H7P1, QLD H7D2	N/A
		Queensland Development Code MP 4.1 – Sustainable buildings	Section J	Part H6	Section 13

**QLD Footnote: Other legislation affecting buildings**

All legislative technical requirements affecting the design, construction and/or performance of buildings are consolidated into the Building Act 1975 and other legislative instruments under that Act, such as regulations, codes (including this Code) and standards.

**Schedule 8**

**South Australia**

**Section A**

**Governing requirements**

Part A6	Building classification
SA A6G7	Class 6 buildings

**Section H**

**Class 1 and 10 buildings**

Part H1	Structure
SA H1P2	Buildings in flood areas
Part H2	Damp and weatherproofing
SA H2P3	Rising damp
H2D4	Masonry
Part H3	Fire safety
H3P1	Spread of fire
Part H4	Health and amenity
H4P1	Wet areas
Part H5	Safe movement and access
SA H5O2	Objective
SA H5F2	Space between buildings
SA H5P3	Access for inspection and maintenance
H5D1	Deemed-to-Satisfy Provisions
SA H5D4	Minimum space between buildings
Part H7	Ancillary provisions and additional construction requirements
H7P1	Swimming pool access
H7D2	Swimming pools
H7D4	Construction in bushfire prone areas

**SA Part H9**

**Water efficiency**

**Objectives**

SA H9O1	Objective
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**Functional Statements**

SA H9F1	Water efficiency
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**Performance Requirements**

SA H9P1	Water efficiency
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**Deemed-to-Satisfy Provisions**

SA H9D1	Deemed-to-Satisfy Provisions
SA H9D2	Application of Part
SA H9D3	Rainwater tank capacity
SA H9D4	Rainwater tank overflow
SA H9D5	Rainwater tank water quality
SA H9D6	Rainwater tank stands

**SA Part H10**

**Access for people with a disability**

**Objectives**

SA H10O1	Objective
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**Functional Statements**

SA H10F1	Equitable and dignified access
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**Performance Requirements**

SA H10P1 Access for people with a disability

**Deemed-to-Satisfy Provisions**

SA H10D1 Deemed-to-Satisfy Provisions

SA H10D2 Application of Part

SA H10D3 Access to buildings

SA H10D4 Parts of buildings to be accessible

**Schedule 1 Definitions**

**Schedule 2 Referenced documents**

**Footnote: Other legislation affecting buildings**

## Section A Governing requirements

### Part A6 Building classification

Delete A6G7 and insert SA A6G7 as follows:

#### SA A6G7 Class 6 buildings

[2019: SA A6.6]

A Class 6 building is a shop or other building for the sale of goods by retail or the supply of services direct to the public, including—

- (a) an eating room, cafe, restaurant, milk or soft drink bar; or
- (b) a dining room, bar, shop or kiosk part of a hotel or motel; or
- (c) a hairdresser's or barber's shop, public laundry, or undertaker's establishment; or
- (d) market or sale room, showroom, or *service station*; or
- (e) a *small arts venue*.

## Section H Class 1 and 10 buildings

### Part H1 Structure

Delete H1P2 and insert SA H1P2 as follows:

#### SA H1P2 Buildings in flood areas

This clause has deliberately been left blank.

Part H1 does not apply in South Australia.

### Part H2 Damp and weatherproofing

Delete H2P3 and insert SA H2P3 as follows:

#### SA H2P3 Rising damp

[2019: SA P2.2.3]

- (1) Moisture from the ground must be prevented from causing—
  - (a) undue dampness or deterioration of building elements; and
  - (b) unhealthy or dangerous conditions, or loss of amenity for occupants.
- (2) Barriers installed to prevent transfer of moisture from the ground must have—
  - (a) high resistance to moisture penetration; and
  - (b) high resistance to damage during construction; and
  - (c) high resistance to degradation by dissolved salts.

#### H2D4 Masonry

[2019: 3.3.4]

Delete H2D4(2) and insert SA H2D4(2) as follows:

- (2) *Performance Requirements* H2P2 and SA H2P3 are satisfied for weatherproofing of masonry if it is carried out in accordance with the appropriate provisions of—
  - (a) AS 3700 - Masonry structures; or
  - (b) AS 4773 - Masonry for small buildings, Parts 1 and 2.

Insert subclause SA H2D4(3) in clause H2D4 as follows:

- (3) For the purposes of SA H2D4(2), metals and bitumen-coated metals referred to in clauses 7.2. and 7.3 of AS/NZS 2904 are not acceptable materials for use as *damp-proof courses* in South Australia.

Insert subclause SA H2D4(4) in clause H2D4 as follows:

- (4) In *low rainfall intensity areas* where the site classification is A, S, M, M-D, H, H1, H2, H-D, H1-D or H2-D in accordance with AS 2870, the height of the *damp-proof course* may be —
  - (a) 15 mm above finished paved, concreted or landscaped areas; or
  - (b) 0 mm if the *damp-proof course* is protected from the direct effects of the weather by a carport, verandah or the like.

**Part H3 Fire safety****H3P1 Spread of fire**

[2019: P2.3.1]

*Delete H3P1(1) and insert SA H3P1(1) as follows:*

- (1) A Class 1 building must be protected from the spread of fire from—
- (a) another building other than an associated Class 10 building; and
  - (b) the allotment boundary, other than a boundary adjoining a road or public space; and
  - (c) a Class 10b *brush fence*.

**Part H4 Health and amenity****H4P1 Wet areas**

[2019: P2.4.1]

*Insert subclause SA H4P1(2) in clause H4P1 as follows:*

- (2) Floors in bathrooms, or rooms containing a shower or sanitary fixture, must be installed in a manner that will prevent accumulation of water on the surface which could create unhealthy or hazardous conditions.

**Part H5 Safe movement and access***Insert SA H5O2 as follows:***SA H5O2 Objective**

[2019: SA 6.1]

The Objective is to safeguard people from injury and illness resulting from the creation of hazardous spaces between buildings.

*Insert SA H5F2 as follows:***SA H5F2 Space between buildings**

[2019: SA 6.1]

The space between buildings must not allow hazardous conditions to arise due to accumulation of rubbish that cannot be easily removed.

*Insert SA H5P3 as follows:***SA H5P3 Access for inspection and maintenance**

[2019: SA 6.1]

The space between buildings must be sufficient to allow access for inspection and maintenance to avoid hazardous conditions arising due to accumulation of rubbish that could—

- (a) bridge termite barriers; or
- (b) harbour vermin; or
- (c) create a fire hazard.

**H5D1 Deemed-to-Satisfy Provisions**

[New for 2022]

*Delete H5D1(1) and insert SA H5D1(1) as follows:*

- (1) Where a *Deemed-to-Satisfy Solution* is proposed, *Performance Requirements* H5P1, H5P2 and SA H5P3 are satisfied

by complying with H5D2, H5D3 and SA H5D4.

*Insert SA H5D4 as follows:*

## SA H5D4 Minimum space between buildings

[2019: SA 6.2.1, 6.2.2]

- (1) Compliance with (2) for acceptable separation between buildings for Class 1 and 10 buildings satisfies *Performance Requirement SA H5P3*.
- (2) Unless the space between external columns is not infilled, every part of an *external wall* of a building must be not less than 600 mm from—
  - (a) any boundary of the allotment, unless that wall is on or abutting that boundary; or
  - (b) the *external wall* of any other building on the same allotment, unless the two buildings are abutting.

## Part H7 Ancillary provisions and additional construction requirements

### H7P1 Swimming pool access

[2019: P2.7.1]

*Insert subclause SA H7P1(2) in clause H7P1 as follows:*

- (2) A swimming pool must have prominent and visible signage that assists persons to provide first-aid and to perform cardiopulmonary resuscitation on young children.

### H7D2 Swimming pools

[2019: 3.10.1]

*Insert subclause SA H7D2(3) in clause H7D2 as follows:*

- (3) For the purpose of clause 6.1.1 of AS 1926.3, a skimmer box is an outlet and must have a means of releasing the vacuum pressure should the suction become blocked.

*Insert subclause SA H7D2(4) in clause H7D2 as follows:*

- (4) A swimming pool must have prominent and visible signage that assists persons to provide first aid and to perform cardiopulmonary resuscitation on young children.

*Insert subclause SA H7D2(5) in clause H7D2 as follows:*

- (5) A first aid and cardiopulmonary resuscitation sign must—
  - (a) be attached to the safety barrier of the swimming pool or be displayed near the swimming pool; and
  - (b) be at least 300 mm by 300 mm in size; and
  - (c) be made of durable and weatherproof material; and
  - (d) show information about the procedures for providing first aid, including performing cardiopulmonary resuscitation.

### H7D4 Construction in bushfire prone areas

[2019: 3.10.5]

*Insert subclause SA H7D4(3) in clause H7D4 as follows:*

- (3) Where a site is located in a *designated bushfire prone area*, the bushfire attack level that applies to the site is—
  - (a) for areas identified as general bushfire risk areas in the Planning and Design Code, the BAL-Low bushfire attack level; and
  - (b) for areas identified as medium bushfire risk areas in the Planning and Design Code, the BAL-12.5 bushfire attack level; and
  - (c) for areas identified as high bushfire risk areas in the Planning and Design Code, the bushfire attack level assessed for the site in accordance with the requirements of AS 3959; and
  - (d) for areas identified as urban interface in the Planning and Design Code that are within 500 m of a high bushfire

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risk area, the BAL-Low bushfire attack level; and

- (e) for areas identified as urban interface in the Planning and Design Code that are within 100 m of a high bushfire risk area, the bushfire attack level assessed for the site in accordance with AS 3959.

## SA Part H9

## Water efficiency

### Introduction to this Part

This Part contains additional requirements for water efficiency.

#### Objectives

##### SA H901

##### Objective

[2019: SA 2.1]

The Objective of this Part is to efficiently use all available water supplies.

#### Functional Statements

##### SA H9F1

##### Water efficiency

[2019: SA 2.1]

A building is to be constructed in a way that efficiently uses all available water supplies to reduce the amount required from the mains reticulated water supply.

#### Performance Requirements

##### SA H9P1

##### Water efficiency

[2019: SA 2.1]

A building must provide an additional water supply (other than the mains reticulated water supply) which must be plumbed to at least a water closet or a water heater or all the cold water laundry outlets.

#### Deemed-to-Satisfy Provisions

##### SA H9D1

##### Deemed-to-Satisfy Provisions

[2019: SA 2.2.1]

Compliance with SA H9D2 to SA H9D6 for water efficiency satisfies *Performance Requirement SA H9P1*.

##### SA H9D2

##### Application of Part

[2019: SA 2 (application)]

- (1) SA H9P1 only applies to applications for new Class 1 buildings and extensions to existing Class 1 buildings that are designated under Regulation 3(1) of the Planning, Development and Infrastructure (General) Regulations 2017 as HomeBuilder grant development, and where—
  - (a) the *roof catchment area* is 50 m<sup>2</sup> or more; and
  - (b) the building or extension is located in a Council area, excluding the Municipal Council of Roxby Downs and the District Council of Coober Pedy; and
  - (c) for an extension, where it incorporates a water closet or a water heater or laundry cold water outlet.
- (2) For the purposes of this Part, Council means: A Municipal or District Council as constituted under the Local Government Act 1999.

**SA H9D3 Rainwater tank capacity**

[2019: SA 2.2.2]

- (1) Where the *roof catchment area* of the building is not less than 50 m<sup>2</sup>, the building must be designed to ensure that *surface water* run-off from not less than 50 m<sup>2</sup> of the *roof catchment area* is—
- (a) collected by a drainage system complying with H1D7; and
  - (b) stored in a *rainwater tank*, the storage capacity of which is not less than 1 kilolitre (1000 litres); and
  - (c) plumbed to at least a water closet or a water heater or all laundry cold water outlets.
- (2) Where the *roof catchment area* of the building is less than 50 m<sup>2</sup>, all the *surface water* run-off from the *roof catchment area* must be collected, stored and plumbed in accordance with (1)(a), (b) and (c).

**Explanatory Information**

SA H9D3 requires the *rainwater tank* to be plumbed to a water closet, water heater or all laundry cold water outlets. The Office of the Technical Regulator regulates plumbing work in South Australia under the Water Industry Act 2012, including plumbing the *rainwater tank* to the water closet, water heater or laundry cold water outlets. Stormwater connections, including from the roof to the *rainwater tank*, and from *rainwater tank* overflow, are regulated by the local council or relevant authority under the Planning, Development and Infrastructure Act 2016.

**SA H9D4 Rainwater tank overflow**

[2019: SA 2.2.3]

The *rainwater tank* must be fitted with an overflow device that disposes of overflow from the *rainwater tank* in accordance with—

- (a) any specific requirements of the relevant authority; and
- (b) Part 3.3 of the ABCB Housing Provisions.

**SA H9D5 Rainwater tank water quality**

[2019: SA 2.2.4]

The inlet and overflow of the *rainwater tank* must be fitted with mosquito proof, non-degradable screens.

**Explanatory Information**

SA H9D5 requires the fitting of mosquito proof, non-degradable screens to the *rainwater tank*. The quality of the water stored in the *rainwater tank* should be managed in accordance with the Department of Health publication 'Guidance on the use of rainwater tanks'.

**SA H9D6 Rainwater tank stands**

[2019: SA 2.2.5]

Where a *rainwater tank* is supported on a stand or other structure, the supporting structure must comply with clause 2.2.2 of the ABCB Housing Provisions.

## SA Part H10

## Access for people with a disability

### Introduction to this Part

This Part contains additional requirements for access for people with a disability.

#### Objectives

##### SA H1001

##### Objective

[2019: SA 5.1]

Provide, as far as is reasonable, people with safe, equitable and dignified access to a degree necessary to—

- (a) buildings; and
- (b) the services and facilities within.

#### Applications

SA H1001 applies to Class 1 buildings in developments of 20 or more dwellings.

#### Functional Statements

##### SA H10F1

##### Equitable and dignified access

[2019: SA 5.1]

A building to the degree necessary is, as far as is reasonable, to provide safe, equitable and dignified access for people to the services and facilities within.

#### Applications

SA H10F1 applies to Class 1 buildings in developments of 20 or more dwellings.

#### Performance Requirements

##### SA H10P1

##### Access for people with a disability

[2019: SA 5.1]

Buildings and immediate surrounds must have appropriate features to a degree necessary to enable people with a disability to safely and equitably—

- (a) negotiate the route from the road boundary to and within the building using a wheelchair; and
- (b) have access to spaces within the building, including facilities required under [H4P3](#).

#### Applications

SA H10P1 applies to Class 1 buildings in developments of 20 or more dwellings.

#### Deemed-to-Satisfy Provisions

**SA H10D1 Deemed-to-Satisfy Provisions**

[2019: SA 5.2.1]

Compliance with SA H10D2 to SA H10D4 for access for people with a disability satisfies *Performance Requirement SA H10P1*.

**SA H10D2 Application of Part**

[2019: SA 5.2.1]

This Part applies to certain Class 1 buildings where access is *required* under SA H10D3.

**SA H10D3 Access to buildings**

[2019: SA 5.2.2]

In developments consisting of 20 or more dwellings, access must be provide to and within one dwelling or 5% of the total number of dwellings, whichever is the greater.

**SA H10D4 Parts of buildings to be accessible**

[2019: SA 5.2.3]

- (1) Access for people with a disability must be provided from the entrance doorway to areas normally used by the occupants.
- (2) A path of travel providing *required* access must not include a stairway or other impediment which would prevent a person in a wheelchair using it.
- (3) Access, finishes and fittings must comply with the provisions of AS 1428.1.
- (4) In every Class 1 building to which access for people with a disability is *required*, one closet pan and washbasin and one shower must be provided for use by people with a disability.

**Schedule 1 Definitions**

**Agriculture:** Cropping, grazing, animal husbandry, intensive animal keeping, horticulture, aquaculture, wool shearing or dairy, but not viticulture or forestry.

**Assembly building**

A building where people may assemble for—

- (a) civic, theatrical, social, political or religious purposes including a library, theatre, public hall or place of worship; or
- (b) educational purposes in a *school*, *early childhood centre*, preschool, or the like; or
- (c) entertainment, recreational or sporting purposes including—
  - (i) a discotheque or nightclub; or
  - (ii) a cinema; or
  - (iii) a sports stadium, sporting or other club; or
- (d) transit purposes including a bus station, railway station, airport or ferry terminal.

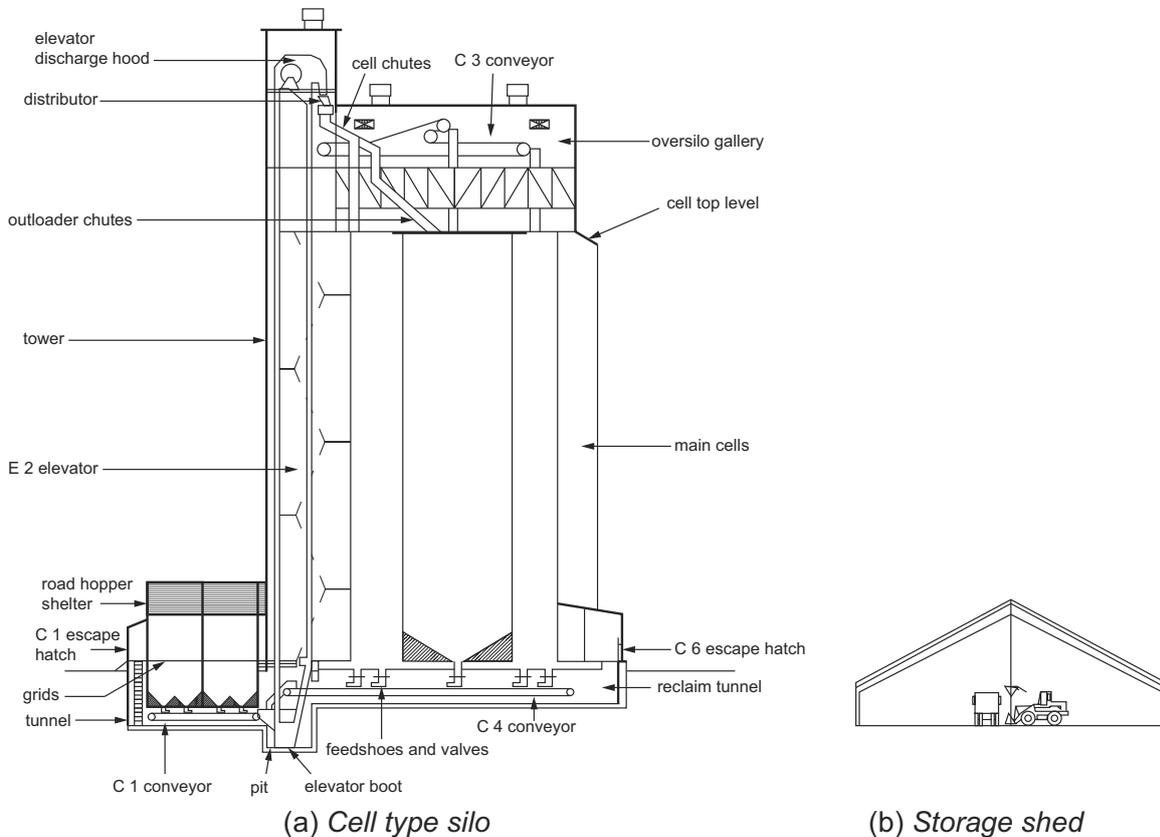
**Brush fence:** A fence or gate that is primarily constructed of Broombrush (*Melalueca Uncinata*).

**Bulk grain storage facility:** A building or structure used for the commercial bulk handling or storage of granular materials such as grain, ore, or the like, where only a small number of occupants are present at one time and includes *cell type silos* and *storage sheds*.

**Cell type silo:** A type of *bulk grain storage facility* similar to that illustrated in diagram (a) of Figure SA 1.

Insert SA Figure 1 as follows:

**SA Figure 1: Two types of bulk grain storage facilities**



**Farm building**

A single *storey* Class 7 or 8 building that is—

- (a) primarily associated with *agriculture* and located on land used primarily for *agriculture*; and

- (b) the total number of people accommodated in the building does not exceed one person per 200 m<sup>2</sup> of total *floor area*, or six people, whichever is greater; and
- (c) the *floor area* of each building does not exceed the maximum *floor area* and volume specified in Table SA 1 for the type of *farm building*; and
- (d) the building does not contain occupancies of excessive fire hazard as listed in E1D5 to E1D13; and
- (e) if the building is used for the storage of hay, an open space complying with C3D5(1) is provided around the perimeter of each building.

*Insert SA Table SA 1 as follows:*

**SA Table SA 1: Farm building categories and maximum floor area**

Building group	Type of farm building	Maximum floor area	Maximum volume
Group A	Buildings used for keeping, growing and/or harvesting of animals and/or plants, and includes greenhouses with rigid covering material and large implement/vehicle storage sheds.	5,000 m <sup>2</sup>	30,000 m <sup>3</sup>
Group B	Buildings used for packing, sorting and/or storage of produce and may include workshops.	2,000 m <sup>2</sup>	12,000 m <sup>3</sup>
Group C	Greenhouses with non-rigid, plastic or fabric covering material.	5,000 m <sup>2</sup>	30,000 m <sup>3</sup>

**Rainwater tank:** A vessel for the storage of *surface water* collected from the *roof catchment area* of the building.

**Roof catchment area:** The area of the roof (expressed in square metres), measured on the horizontal (no allowance for slope or vertical surfaces) and includes the plan area of the gutters.

**Small arts venue:** The whole or the only part of a building that has a rise in storeys of not more than 2—

- (a) in which cultural activities including live music, visual arts displays, dancing, poetry and spoken word performances are provided to the public; and
- (b) the floor area used as a *small arts venue* does not exceed 300 m<sup>2</sup>; and
- (c) no pyrotechnics or theatrical smoke (smoke machines, hazers or the like) are used.

**Storage shed:** A type of *bulk grain storage facility* similar to that illustrated in diagram (b) of Figure SA 1.

## Schedule 2      Referenced documents

Insert SA Table 1 as follows:

**SA Table 1:                      Schedule of referenced documents**

No.	Date	Title	Volume One	Volume Two	Housing Provisions	Volume Three
AS/NZS 1260	2017	PVC-U pipes and fittings for drain, waste and vent applications Amdt 1	N/A	N/A	N/A	C1D3
AS 1428 Part 1	2001	Design for access and mobility – General requirements for access – New building work	N/A	SA H10D4	N/A	N/A
AS/NZS 1891 Part 4	2000	Industrial fall-arrest systems and devices: Selection, use and maintenance	SA G8D3	N/A	N/A	N/A
enHealth Council, Department of Health and Ageing	2004	Guidance on the use of rainwater tanks	N/A	SA H9D5	N/A	N/A
—	See Note 1	Planning and Design Code	SA G5D5	SA H7D4(3)	N/A	N/A

### Table Notes

(1) The Planning and Design Code is the version current at the time of project documentation approval, unless noted otherwise.

## SA Footnote: Other legislation affecting buildings

In addition to any applicable provisions of the Planning, Development and Infrastructure Act 2016, the Planning, Development and Infrastructure (General) Regulations 2017, the Planning, Development and Infrastructure (Swimming pool safety) Regulations 2019 and this Code, there are a number of other legislative technical requirements affecting the design, construction and/or performance of buildings that practitioners may need to be aware of, including, but not necessarily limited to, the following list. Additional legislative instruments such as regulations, codes and standards may exist under the legislation listed.

### 1. Accommodation

#### Administering agency

Department for Human Services

#### Relevant legislation

Supported Residential Facilities Act 1992

Supported Residential Facilities Regulations 2009

### 2. Asbestos Removal

#### Administering agency

SafeWork SA

#### Relevant legislation

Work, Health and Safety Act 2012

Work, Health and Safety Regulations 2012

### 3. Crown Land

#### Administering agency

Department for Environment and Water

#### Relevant legislation

Crown Land Management Act 2009

Crown Land Management Regulations 2010

### 4. Electrical Installations

#### Administering agency

Office of the Technical Regulator, Department for Energy and Mining

#### Relevant legislation

Electricity Act 1996

Electricity (General) Regulations 2012

Energy Products (Safety and Efficiency) Act 2000

Energy Products (Safety and Efficiency) Regulations 2012

## 5. Encroachments

### Administering agency

Attorney-General's Department

### Relevant legislation

Encroachments Act 1944

## 6. Fences

### Administering agency

Attorney-General's Department

### Relevant legislation

Fences Act 1975

Fences Regulations 2018

## 7. Fire Prevention in Existing Buildings

### Administering agency

Department for Trade and Investment

### Relevant legislation

Planning, Development and Infrastructure Act 2016

Planning, Development and Infrastructure (General) Regulations 2017

### Administering agency

SA Fire and Emergency Services Commission

### Relevant legislation

Fire and Emergency Services Act 2005

Fire and Emergency Services Regulations 2021

## 8. Gas Installations

### Administering agency

Office of the Technical Regulator, Department for Energy and Mining

### Relevant legislation

Gas Act 1997

Gas Regulations 2012

Energy Products Act 2012

Energy Products (Safety and Efficiency) Act 2000

Energy Products (Safety and Efficiency) Regulations 2012

## 9. Historic Buildings

### Administering agency

Department for Environment and Water

**Relevant legislation**

Heritage Places Act 1993

Heritage Places Regulations 2020

**10. Housing**

**Administering agency**

Department of Human Services

**Relevant legislation**

Housing Improvement Act 2016

Housing Improvement Regulations 2017

**11. Lift Installations**

**Administering agency**

SafeWork SA

**Relevant legislation**

Work, Health and Safety Act 2012

Work, Health and Safety Regulations 2012

**12. Occupational Health and Safety**

**Administering agency**

SafeWork SA

**Relevant legislation**

Work, Health and Safety Act 2012

Work, Health and Safety Regulations 2012

**13. Sanitary Plumbing, Water Supply and Sewerage**

**Administering agency**

Office of the Technical Regulator, Department for Energy and Mining

**Relevant legislation**

Water Industry Act 2012

Water Industry Regulations 2012

**14. Septic Tank and Grey Water Installations**

**Administering agency**

Department for Health and Wellbeing

**Relevant legislation**

South Australian Public Health Act 2011

South Australian Public Health (Wastewater) Regulations 2013

## 15. Subdivision of Property

### Administering agency

Land Services SA, Attorney-General's Department and Department for Trade and Investment

### Relevant legislation

Community Titles Act 1996

Community Titles Regulations 2011

Real Property Act 1886

Real Property Regulations 2009

Strata Titles Act 1988

Strata Titles Regulations 2018

## 16. Waste Management and Environment Protection

### Administering agency

Environment Protection Authority

### Relevant legislation

Environment Protection Act 1993

Environment Protection Regulations 2009

**Schedule 9****Tasmania****Section A****Governing requirements**

Part A1	Interpreting the NCC
A1G4	Interpretation
Part A4	Referenced documents
A4G1	Referenced documents
Part A5	Documentation of design and construction
A5G4	Evidence of suitability – Volume Three (PCA)

**Section H****Class 1 and 10 buildings**

Part H4	Health and amenity
TAS H4D9	Condensation management
TAS Part H6	Energy efficiency
Part H7	Ancillary provisions and additional construction requirements
TAS H7P2	Swimming pools
TAS H7P3	Heating appliances
TAS H7P5	Buildings in bushfire prone areas
H7D2	Swimming pools

**Schedule 1****Definitions****Schedule 2****Referenced documents****Footnote: Other legislation affecting buildings**

## Section A Governing requirements

### Part A1 Interpreting the NCC

#### A1G4 Interpretation

[2019: A1.0]

*Insert subclause TAS A1G4(7) in clause A1G4 as follows:*

- (7) The Director of Building Control may issue written advice to deal with arising issues such as interpretation of codes, standards and regulations.

### Part A4 Referenced documents

#### A4G1 Referenced documents

[2019: A4.0]

*Delete A4G1(3) and insert TAS A4G1(3) as follows:*

- (3) The following applies:
- (a) All Tasmanian legislative documents referenced within the PCA are taken to be the latest published versions thereof unless noted otherwise.

### Part A5 Documentation of design and construction

#### A5G4 Evidence of suitability – Volume Three (PCA)

[2019: A5.3]

*Insert subclause TAS A5G4(7) in clause A5G4 as follows:*

- (7) A *product* used in roof plumbing, heating ventilation and air-conditioning or on-site liquid trade waste are deemed fit to be for their intended purpose if it has evidence of suitability in the form of—
- (a) *WaterMark Licence* issued in accordance with the *WaterMark Certification Scheme*; or
- (b) a current certificate issued by a certification body stating that the properties and performance of a product meet the requirements of the NCC Volume Three; or
- (c) authorisation from the Director of Building Control.

*Insert subclause TAS A5G4(8) in clause A5G4 as follows:*

- (8) A *product* used in *On-site wastewater management systems* are deemed to be fit for their intended purpose if it has evidence of suitability in the form of—
- (a) an *On-site wastewater management system* used in a *plumbing* installation must be issued with a Certificate of Accreditation in accordance with the AS 1546 series of Standards; or
- (b) a current certificate issued by a JAS-ANZ accredited certification body stating that the properties and performance of a product meets the requirement of NCC Volume Three; and
- (c) accreditation from the Director of Building Control.

*Insert subclause TAS A5G4(9) in clause A5G4 as follows:*

- (9) A holding tank or collection well for use in a *plumbing* or *drainage* installation may be verified as meeting the *Performance Requirements* of the Director of Building Control if complies with AS/NZS 1546.1.

*Insert subclause TAS A5G4(10) in clause A5G4 as follows:*

- (10) Under the Tasmanian Building Act, the Director of Building Control may accredit an *On-site wastewater management system*. On-site wastewater management systems larger than that covered by the Australian Standards AS/NZS 1546 Series are exempt from accreditation and a Performance Solution is required.

Products accredited by the Director of Building Control are published in a list available at [www.cbos.tas.gov.au](http://www.cbos.tas.gov.au).

## Section H Class 1 and 10 buildings

### Part H4 Health and amenity

Delete H4D9 and insert TAS H4D9 as follows:

#### TAS H4D9 Condensation management

[2019: 3.8.7]

Compliance with Part 10.8 of the ABCB Housing Provisions satisfies *Performance Requirement H4P7* for *condensation* management.

#### Notes

- (1) Refer to the guidance in the “Condensation in Buildings Tasmanian Designers’ Guide” – current version available at [www.cbos.tas.gov.au](http://www.cbos.tas.gov.au). This Guide must be read in conjunction with the NCC.
- (2) The strategies listed in the Guide exceed the NCC requirements for condensation management, however are strongly recommended to assist in minimising condensation in cool climates like Tasmania.

#### Explanatory Information

The intent of these requirements is to assist in the mitigation of *condensation* within a building. The implementation of *condensation* management measures may not prevent *condensation* from occurring.

### TAS Part H6 Energy efficiency

In Tasmania, Part H6 is replaced with BCA 2019 Amendment 1 Part 2.6.

### Part H7 Ancillary provisions and additional construction requirements

Delete H7P2 and insert TAS H7P2 as follows:

#### TAS H7P2 Swimming pools

[2019: P2.7.2, TAS 2.1]

- (1) A *swimming pool* water recirculation system must incorporate safety measures to avoid entrapment of, or injury to, a person.
- (2) *Swimming pools* must be provided with an adequate water recirculation, disinfection and filtration system which is suitable and safe to use.

#### Applications

TAS H7P2(1) only applies to a *swimming pool* with a depth of water more than 300 mm.

#### Limitations

TAS H7P2(2) does not apply to a *swimming pool* associated with a Class 1 building if the depth of water is less than 300 mm and the volume of the pool does not exceed 15 m<sup>3</sup>.

Delete H7P3 and insert TAS H7P3 as follows:

#### TAS H7P3 Heating appliances

[2019: TAS P2.7.3]

A heating appliance and its associated components within a building, including an open fire-place, chimney, or the like,

must be installed—

- (a) to withstand the temperatures likely to be generated by the appliance; and
- (b) so that it does not raise the temperature of any building element to a level that would adversely affect the element's physical or mechanical properties or function; and
- (c) so that hot products of combustion will not—
  - (i) escape through the walls of the associated components; and
  - (ii) discharge in a position that will cause fire to spread to nearby *combustible* materials or allow smoke to penetrate through nearby *windows*, ventilation inlets, or the like in the building containing the heating appliance; and
  - (iii) in the case of solid-fuel burning appliances, be discharged above appropriate emission limits.

Delete H7P5 and insert TAS H7P5 as follows:

## TAS H7P5 Buildings in bushfire prone areas

[2019: TAS P2.7.5]

A Class 1 building or a Class 10a building or deck associated with a Class 1 building that is constructed in a *designated bushfire prone area* must, to the degree necessary, be—

- (a) designed and constructed to reduce the risk of ignition from a bushfire, appropriate to the—
  - (i) potential for ignition caused by burning embers, radiant heat or flame generated by a bushfire; and
  - (ii) intensity of the bushfire attack on the building; and
- (b) provided with vehicular access to the *site* to assist fire fighting and emergency personnel defend the building or evacuate occupants; and
- (c) provided with access at all times to a sufficient supply of water for fire fighting purposes on the *site*.

### Notes

For additional requirements relating to bushfire prone areas, refer to the Director's Determinations on Bushfire Hazard Areas – current versions available at [www.cbos.tas.gov.au](http://www.cbos.tas.gov.au)

## H7D2 Swimming pools

[2019: 3.10.1]

Delete H7D2(2) and insert TAS H7D2(2) as follows:

- (2) *Performance Requirement TAS H7P2* is satisfied for a water recirculation, disinfection and filtration system in a *swimming pool* with a depth of water more than 300 mm and volume of the pool exceeding 15 m<sup>3</sup> if the system—
  - (a) complies with AS 1926.3; and
  - (b) provides—
    - (i) the inlet and outlet openings for the purpose of water recirculation to be so located that water movement is continuous from inlet to outlet; and
    - (ii) the recirculation of water to be so designed that the pool contents are recirculated not less than once—
      - (A) in 6 hours for an outdoor *swimming pool*; or
      - (B) in 4 hours for an indoor *swimming pool*; and
    - (iii) the water filtration rates to not exceed 12,250 L/m<sup>2</sup> of sand filter bed per hour, or an equivalent rate in other filter media.

## Schedule 1

## Definitions

**Centre-based care class 4 facility:** A facility as defined in Centre Based Care Class 4 Standards.

**Centre-based care class 5 facility:** A facility as defined in Centre Based Care Class 5 Standards.

**Early childhood centre**

Any premises or part thereof providing or intending to provide a centre-based education and care service within the meaning of the Education and Care Services National Law Act 2010 (Vic), the Education and Care Services National Regulations and centre-based services that are licensed or approved under State and Territory children's services law, but excludes—

- (a) education and care primarily provided to school aged children in outside school hours settings; and
- (b) services licensed as *centre-based care class 4* under the Child Care Act 2001.

**Expert judgement**

For Volume Three, the judgement of a person who has the qualifications and expertise to determine whether a *Plumbing or Drainage Solution* complies with the *Performance Requirements*.

**Explanatory Information**

The level of qualification and/or experience required to determine whether a *Plumbing or Drainage Solution* complies with the *Performance Requirements* may differ depending on the degree of complexity and the requirements of the Tasmanian Building Act. Practitioners should seek advice from the *Permit Authority*.

**Permit Authority:** A permit authority as defined in the Building Act 2016.

**Public:** Includes any person working in an enclosed public place.

**School age care facility:** Is a facility providing care for children (primarily) 5 years or older in an outside of school hours setting, either approved or licenced under Education and Care Services National Law (Application) Act 2011 or the Child Care Act 2001.

**Temporary structure:** Includes any—

- (a) booth, tent or other temporary enclosure, whether or not part of the booth, tent or enclosure is permanent; or
- (b) temporary seating structure; or
- (c) other structure prescribed under the Building Act 2016.

## Schedule 2 Referenced documents

Insert TAS Table 1 as follows:

**TAS Table 1: Schedule of referenced documents**

No.	Date	Title	Volume One	Volume Two	Housing Provisions
AS 1657	2018	Fixed platforms, walkways, stairways and ladders – Design, construction and installation	TAS I10D3	N/A	N/A
AS/NZS 1668 Part 1	2015	The use of ventilation and air-conditioning in buildings: Fire and smoke control in multi-compartment buildings	TAS I4D7	N/A	N/A
AS 1668 Part 2	2012	The use of ventilation and air-conditioning in buildings: Mechanical ventilation in buildings	TAS I4D7, TAS I16D5	N/A	N/A
AS/NZS 1680 Part 1	2006	Interior lighting: General principles and recommendations	TAS I4D8, TAS I7D2, TAS I7D3, TAS I16D4	N/A	N/A
AS/NZS1680 Part 2.1	2008	Interior lighting: Circulation spaces and other general areas	TAS I7D2, TAS I7D3, TAS I16D4	N/A	N/A
AS/NZS1680 Part 2.2	2008	Interior lighting: Office and screen based tasks	TAS I7D2, TAS I7D3, TAS I16D4	N/A	N/A
AS/NZS1680 Part 2.3	2008	Interior lighting: Education and training facilities	TAS I7D2, TAS I7D3, TAS I16D4	N/A	N/A
AS/NZS1680 Part 2.4	2017	Interior lighting: Industrial tasks and processes	TAS I4D8, TAS I7D2, TAS I7D3	N/A	N/A
AS/NZS1680 Part 2.5	2018	Interior lighting: Hospitals and medical tasks	TAS I7D2, TAS I7D3	N/A	N/A
AS 2658	2008	LP Gas – Portable and mobile appliances	TAS I16D7	N/A	N/A
AS 2746	2008	Working areas for gas fuelled vehicles	TAS I17D2	N/A	N/A

## Tasmania

No.	Date	Title	Volume One	Volume Two	Housing Provisions
AS/NZS 3000	2018	Electrical installations (known as the Australian/New Zealand Wiring Rules)	TAS I16D6	N/A	N/A
AS 4464	2007	Hygienic production of game meat for human consumption	TAS I6D2	N/A	N/A
AS 4465	2006	Construction of premises and hygienic production of poultry meat for human consumption	TAS I6D2	N/A	N/A
AS 4466	1998	Hygienic production of rabbit meat for human consumption	TAS I6D2	N/A	N/A
AS 4674	2004	Design, construction and fit-out of food premises (Clauses 4.2 and 4.3)	TAS I4D9, TAS I4D13	N/A	N/A
AS 4696	2007	Hygienic production and transportation of meat and meat products for human consumption	TAS I6D2	N/A	N/A
AS 5008	2007	Hygienic rendering of animal products	TAS I6D2	N/A	N/A
AS 5010	2001	Hygienic production of ratite (emu/ostrich) meat for human consumption	TAS I6D2	N/A	N/A
AS 5011	2001	Hygienic production of natural casings for human consumption	TAS I6D2	N/A	N/A
ABCB	—	Temporary Structures Standard	TAS I16D2	N/A	N/A

## Tasmania

No.	Date	Title	Volume One	Volume Two	Housing Provisions
Australasian Health Facility Guidelines	—	N/A	TAS I9D2	N/A	N/A
BCA 2019 Amendment 1	2019	Building Code of Australia	TAS Section J	TAS Part H6	TAS Section 13
Centre Based Care Class 4 Standards	N/A	Tasmanian Licencing Standards for Centre Based Child Care Class 4	TAS Schedule 1	TAS Schedule 1	TAS Schedule 1
Centre Based Care Class 5 Standards	N/A	Tasmanian Licencing Standards for Centre Based Child Care Class 5 (0-12 years)	TAS Schedule 1	TAS Schedule 1	TAS Schedule 1
Child Care Act	2001	N/A	TAS I16P1, TAS I16P2, TAS I16P3, TAS I16D1, TAS Schedule 1	TAS Schedule 1	TAS Schedule 1
Condensation in Buildings Tasmanian Designers Guide	—	N/A	TAS F8P1	TAS H4D9	N/A
Dairy Industry Act	1994	N/A	TAS I4P1, TAS I4D1, TAS I7D1	N/A	N/A
Disability (Access to Premises – Buildings) Standards	2010	N/A	TAS D4D14	N/A	N/A
Disability Discrimination Act (Cth)	1992	N/A	TAS D1P10	N/A	N/A
Early Childhood Centre and School Age Care Facilities Code	N/A	N/A	TAS I5D2	N/A	N/A
Education and Care Services National Law (Application) Act	2011	N/A	TAS I16P1, TAS I16P2, TAS I16P3, TAS I16D1, TAS Schedule 1	TAS Schedule 1	N/A
Export Control (Milk and Dairy) Orders	N/A	N/A	TAS I4D17	N/A	N/A
Health Service Establishments Act	2006	N/A	TAS I9D1	N/A	N/A
Hygienic Production of Pet Meat	N/A	Technical Report 88	TAS I6D2	N/A	N/A

## Tasmania

No.	Date	Title	Volume One	Volume Two	Housing Provisions
Liquor Licensing Act	1990	N/A	TAS I4P1, TAS I4D1, TAS I5D1	N/A	N/A
Primary Produce Safety Act	2011	N/A	TAS I4P1, TAS I4D1, TAS I4D16	N/A	N/A
Water and Sewerage Industry Act	2008	N/A	TAS I4D3	N/A	N/A

### Table Notes

- (1) All legislation referenced in this Schedule is Tasmanian State Legislation unless noted otherwise.
- (2) All referenced documents including legislation, codes, Australian Standards, guidelines and codes of practice are the version at the time of the project documentation approval, unless noted otherwise.

## **TAS Footnote: Other legislation affecting buildings**

In addition to any applicable provisions of the Building Act 2016 and other legislative and regulatory instruments under that Act, such as regulations, codes (including this Code) and standards there may be a number of other legislative technical requirements, and regulatory instruments affecting the design, construction and/or performance of buildings of which practitioners may need to be aware. Additional legislative and regulatory instruments such as regulations, codes and standards may apply.

All referenced documents including legislation, codes, Australian Standards, guidelines and codes of practice are the version current at the time of the project documentation approval, unless noted otherwise.

### **1. Administering Agency**

Department of Justice - Consumer, Building and Occupational Services

### **Relevant Legislation**

Director's determinations and guidelines

**Schedule 10**

**Victoria**

**Section A**

**Governing requirements**

Part A2	Compliance with the NCC
A2G2	Performance Solution

**Section H**

**Class 1 and 10 buildings**

Part H1	Structure
VIC H1D10	Flood hazard areas
Part H2	Damp and weatherproofing
H2D6	Roof and wall cladding
Part H6	Energy efficiency
VIC H6V1	Application of H6V2 and H6V3
VIC H6D2	Application of Part H6

**Schedule 1**

**Definitions**

**Schedule 2**

**Referenced documents**

**Footnote: Other legislation affecting buildings**

## Section A Governing requirements

### Part A2 Compliance with the NCC

#### A2G2 Performance Solution

[2019: A2.2]

*Insert subclause VIC A2G2(5) in clause A2G2 as follows:*

- (5) A *Performance Solution* cannot be used to satisfy a relevant *Performance Requirement* for the installation of a *combustible cladding product* in an *external wall* of a—
- (a) Class 2, 3 or 9 building with a *rise in storeys* of 2 that does not comply with C2D6; and
  - (b) Class 2, 3, 5, 6, 7, 8 or 9 building with a *rise in storeys* of 3 or more.

## Section H Class 1 and 10 buildings

### Part H1 Structure

Delete H1D10 and insert VIC H1D10 as follows:

#### VIC H1D10 Flood hazard areas

[2019: VIC 3.10.3.0]

- (1) Performance Requirement H1P2 for Class 1 buildings constructed in a *flood hazard area* is satisfied if the building is constructed in accordance with the ABCB Standard for Construction of Buildings in Flood Hazard Areas.
- (2) The definitions of *flood hazard area* and *freeboard* in the ABCB Standard for Construction of Buildings in Flood Hazard Areas are replaced with those in Vic Schedule 1.
- (3) The definition of *defined flood level* in the ABCB Standard for Construction of Buildings in Flood Hazard Areas is replaced with that in Schedule 1.

### Part H2 Damp and weatherproofing

#### H2D6 Roof and wall cladding

[2019: 3.5.1-3.5.5]

Delete H2D6(1) and insert VIC H2D6(1) as follows:

- (1) *Performance Requirement H2P1* is satisfied for gutters and downpipes if they are designed and constructed in accordance with AS/NZS 3500.3.
- (3) This subclause is deleted does not apply in VIC.

### Part H6 Energy efficiency

Delete H6V1 and insert VIC H6V1 as follows:

#### VIC H6V1 Application of H6V2 and H6V3

[2019: VIC V2.6.1]

The *Verification Methods* in this Part only apply to—

- (a) a Class 1 building; and
- (b) an enclosed Class 10a building attached to a Class 1 building.

#### Notes

The Victorian NCC 2019 rainwater tank variation (VIC V2.6.1 and V3.12.0 respectively) remains in effect until 30 September 2023 after which the following takes effect:

A rainwater tank must be installed in a Class 1 building in accordance with the regulations made under the Building Act 1993 (Victoria).

This Victorian rainwater tank requirement is now found in NCC 2022 Volume Three (Clauses VIC B6D2 and VIC B7D4).

Delete H6D2 and insert VIC H6D2 as follows:

#### VIC H6D2 Application of Part H6

[2019: 3.12.0]

- (1) *Performance Requirement H6P1* for the thermal performance of the building is satisfied by—

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- (a) complying with S42C2, using *house energy rating software* and S42C4(1); or
  - (b) complying with the following parts of the ABCB Housing Provisions—
    - (i) Part 13.2, for the building *fabric*; and
    - (ii) Part 13.3, for the external *glazing* and shading; and
    - (iii) Part 13.4, for building sealing; and
    - (iv) Part 13.5, for ceiling fans.
- (2) *Performance Requirement H6P2* for the energy usage of the building is satisfied by—
- (a) complying with S42C3 using *house energy rating software* and S42C4(2); or
  - (b) complying with Parts 13.6 and 13.7 of the ABCB Housing Provisions for a building with a total floor area not greater than 500 m<sup>2</sup>.

**Notes: Victorian rainwater tank variation**

The Victorian NCC 2019 rainwater tank variation (VIC V2.6.1 and V3.12.0 respectively) remains in effect until 30 September 2023 after which the following takes effect:

A rainwater tank must be installed in a Class 1 building in accordance with the regulations made under the Building Act 1993 (Victoria).

This Victorian rainwater tank requirement is now found in NCC 2022 Volume Three (Clauses VIC B6D2 and VIC B7D4).

**Explanatory Information**

There are two Deemed-to-Satisfy pathways for complying with the energy efficiency *Performance Requirements*:

- Option 1 Energy Rating — applying *Specification 42* to achieve the heating and cooling loads, net equivalent energy usage, and other energy saving features such as thermal breaks, compensation for a loss of ceiling insulation, floor edge insulation and building sealing.
- Option 2 Elemental Provisions — using Section 13 of the ABCB Housing Provisions to satisfy all the detailed provisions including building *fabric*, external *glazing*, building sealing, ceiling fans, whole-of-home energy usage and *services*.

## Schedule 1 Definitions

**Children's service:** Has the same meaning as it has under the Children's Services Act 1996, but excludes a service where education and care is primarily provided to school aged children.

**Combustible cladding product:** Means—

- (a) aluminium composite panels (ACPs) with a core of less than 93 per cent inert mineral filler (inert content) by mass in external cladding as part of a wall system; and
- (b) expanded polystyrene (EPS) products used in an external insulation and finish (rendered) wall system.

### Early childhood centre

Includes—

- (a) any premises, or part thereof, providing or intending to provide a centre-based education and care service within the meaning of the Education and Care Services National Law Act 2010, and the Education and Care Services National Regulations, excluding a service where education and care is primarily provided to school aged children; and
- (b) a *children's service*.

### Flashing

A strip or sleeve of impervious material dressed, fitted or built-in to provide a barrier to water movement, or to divert the travel of water, or to cover a joint where water would otherwise penetrate to the interior of a building, and includes the following:

- (a) Perimeter flashing: a flashing used at the floor-wall junction.
- (b) Vertical flashing: a flashing used at wall junctions within *shower areas*.
- (c) Roof flashing: a rigid or flexible material, usually metal, fixed over, against or built into an abutment to form a weathertight joint.

### Flood hazard area

The *site* (whether or not mapped) encompassing land in an area liable to flooding within the meaning of Regulation 153 of the Building Regulations 2018.

### Freeboard

The minimum height of the lowest floor of the building above the *defined flood level*, regulated by the relevant planning scheme, or specified or otherwise determined by the relevant council under Regulation 153 of the Building Regulations 2018 (see [Figure 3](#)).

**Hotel offering shared accommodation:** A hotel which has any *sole-occupancy units* that can be shared by unrelated persons.

### On-site wastewater management system

A system that receives and/or treats wastewater generated and discharges the resulting effluent to—

- (a) an *approved disposal system*; or
- (b) re-use system; or
- (c) land application system.

### Plumbing

Any water service plumbing, roof plumbing, sanitary plumbing system or heating, ventilation and air-conditioning plumbing.

**Residential care building (Vic):** A building which is a place of residence where 10% or more of persons who reside there need physical assistance in conducting their daily activities and to evacuate the building during an emergency (including any residential care service, State funded residential care service or supported residential service as defined in the Supported Residential Services (Private Proprietors) Act 2010 and an *aged care building*) but does not include—

- (a) a hospital; or
- (b) a dwelling in which 2 or more members of the same family and not more than 2 other persons would ordinarily be resident; or
- (c) a place of residence where only one resident needs physical assistance in conducting their daily activities and

to evacuate the building during an emergency.

**Restricted children's service:** A *children's service* that is—

- (a) any one of the following as defined in the Children's Services Regulations 2020—
  - (i) a limited hours Type 1 service; or
  - (ii) a limited hours Type 2 service; or
  - (iii) a short term Type 1 service; or
  - (iv) a short term Type 2 service; or
- (b) an associated children's service within the meaning of the Children's Services Act 1996 approved to be operated by an approved provider at the same place as an approved education and care service that is required to meet the conditions of a limited hours Type 1 service, a limited hours Type 2 service, a short term Type 1 service, or a short term Type 2 service.

**Shared accommodation building:** A Class 3 building that is a boarding-house, chalet, guest house, lodging-house, backpacker accommodation or the like, or a residential part of a *hotel offering shared accommodation* (but is not a *residential care building (Vic)*, a motel or a residential part of *school, health-care building* or detention centre) having—

- (a) more than one *sole-occupancy unit* of which any *sole-occupancy unit* has sleeping facilities capable of accommodating 3 or more unrelated persons; or
- (b) sleeping facilities capable of accommodating 13 or more unrelated persons.

## Schedule 2 Referenced documents

Insert VIC Table 1 as follows:

**VIC Table 1: Schedule of referenced documents**

No.	Date	Title	Volume One	Volume Two	Housing Provisions	Volume Three
AS/NZS ISO 817	2016	Refrigerants - Designation and safety classification	N/A	N/A	N/A	VIC E2D2
AS/NZS 1200	2015	Pressure Equipment	N/A	N/A	N/A	VIC E2D2
AS 1271	2003	Safety valves, other valves, liquid level gauges and other fittings for boilers and unfired pressure vessels	N/A	N/A	N/A	VIC E2D2
AS 1324.1	2001	Air filters for use in general ventilation and air conditioning	N/A	N/A	N/A	VIC E2D2
AS 1345	1995	Identification of the contents of pipes, conduits and ducts	N/A	N/A	N/A	VIC E2D2
AS 1358	2004	Bursting discs and bursting disc devices - Application, selection and installation	N/A	N/A	N/A	VIC E2D2
AS 1428.1	2009	Design for access and mobility, Part 1: General requirements for access – New building work (incorporating amendments 1 and 2)	VIC I4D5	N/A	N/A	N/A
AS/NZS 1571	2020	Copper - seamless tubes for air conditioning and refrigeration	N/A	N/A	N/A	VIC E2D2
AS/NZS 1530.3	1999	Methods for fire tests on building materials, components and structures	N/A	N/A	N/A	VIC B4D2
AS/NZS 1668.1	2015	The use of ventilation and air conditioning in buildings: Fire and smoke control in buildings	N/A	N/A	N/A	VIC E2D2

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No.	Date	Title	Volume One	Volume Two	Housing Provisions	Volume Three
AS 1668.2	2012	The use of ventilation and air conditioning in buildings: Mechanical ventilation in buildings	N/A	N/A	N/A	VIC E2D2
AS 1851	2012	Routine service of fire protection systems and equipment	N/A	N/A	N/A	VIC B4D2
AS 1926.1	2012	Swimming pool safety, Part 1: Safety barriers for swimming pools	VIC G1D2	N/A	N/A	N/A
AS 1926.2	2007	Swimming pool safety, Part 2: Location of safety barriers for swimming pools (incorporating amendments 1 and 2)	VIC G1D2	N/A	N/A	N/A
AS 2118.1	2017	Automatic fire sprinkler systems, Part 1: General systems (incorporating amendment 1)	VIC S17C2, VIC S18C3	N/A	N/A	VIC B1D5, VIC B4D2
AS 2118.2	2021	Automatic fire sprinkler systems: Wall wetting sprinkler systems	N/A	N/A	N/A	VIC B4D2
AS 2118.3	2010	Automatic fire sprinkler systems: Deluge systems	N/A	N/A	N/A	VIC B4D2
AS 2118.4	2012	Automatic fire sprinkler systems, Part 4: Sprinkler protection for accommodation buildings not exceeding four storeys in height	VIC S17C2, VIC S18C3	N/A	N/A	VIC B1D5, VIC B4D2
AS 2118.5	2008	Automatic fire sprinkler systems	N/A	N/A	N/A	VIC B1D5, VIC B4D2
AS 2118.6	2012	Automatic fire sprinkler systems, Part 6: Combined sprinkler and hydrant systems in multistorey buildings	VIC S17C2	N/A	N/A	N/A
AS2118.8	1997	Automatic fire sprinkler systems: Minor modifications	N/A	N/A	N/A	VIC B4D2

## Victoria

No.	Date	Title	Volume One	Volume Two	Housing Provisions	Volume Three
AS 2118.10	1995	Automatic fire sprinkler systems: Approval documentation	N/A	N/A	N/A	VIC B4D2
AS 2473.3	2007	Valves for compressed gas cylinders	N/A	N/A	N/A	VIC E2D2
AS 2568	2019	Purity of medical air produced from on-site compressor systems	N/A	N/A	N/A	VIC E2D2
AS 2896	2021	Medical gas systems - Installation and testing of non-flammable medical gas pipeline systems	N/A	N/A	N/A	VIC E2D2
AS 2902	2005	Medical gas systems - Low pressure flexible hose assemblies	N/A	N/A	N/A	VIC E2D2
AS/NZS 2918	2018	Domestic solid fuel burning appliances - Installation	N/A	N/A	N/A	VIC E2D2
AS 2941	2013	Fixed fire protection installations - Pumpset systems	N/A	N/A	N/A	VIC B4D2
AS/NZS 3500.1	2021	Plumbing and drainage: Water services	N/A	N/A	N/A	VIC B1D3, VIC B1D5, VIC B3D3, VIC B4D2, VIC B6D2, VIC B7D3, VIC B7D4, VIC E2D2
AS/NZS 3500.2	2021	Plumbing and drainage: Sanitary plumbing and drainage	N/A	N/A	N/A	VIC C1D3, VIC C2D4, VIC C4P1, VIC E2D2
AS/NZS 3500.3	2021	Plumbing and drainage: Stormwater drainage	N/A	N/A	N/A	VIC C5D2, VIC C6D2
AS/NZS 3500.4	2021	Plumbing and drainage: Heated water services	N/A	N/A	N/A	VIC E2D2, VIC B2D6
AS/NZS 3666.1	2011	Air handling and water systems of buildings - Microbial control: Design, installation and commissioning	N/A	N/A	N/A	VIC E2D2

## Victoria

No.	Date	Title	Volume One	Volume Two	Housing Provisions	Volume Three
AS/NZS 3666.2	2011	Air handling and water systems of buildings - Microbial control: Operation and maintenance	N/A	N/A	N/A	VIC E2D2
AS 4032.3	2022	Water supply - Valves for the control of heated water supply temperatures	N/A	N/A	N/A	VIC B2D6
AS 4041	2006	Pressure piping	N/A	N/A	N/A	VIC E2D2
AS 4118.1.1	1996	Fire sprinkler systems: Components - Sprinklers and sprayers	N/A	N/A	N/A	VIC B4D2
AS 4118.1.2	1996	Fire sprinkler systems: Components - Alarm valves (wet)	N/A	N/A	N/A	VIC B4D2
AS 4118.1.3	1995	Fire sprinkler systems: Components - Water motor alarms	N/A	N/A	N/A	VIC B4D2
AS 4118.1.4	1994	Fire sprinkler systems: Components - Valve monitors	N/A	N/A	N/A	VIC B4D2
AS 4118.1.5	1996	Fire sprinkler systems: Components - Deluge and pre-action valves	N/A	N/A	N/A	VIC B4D2
AS 4118.1.6	1995	Fire sprinkler systems: Components - Stop valves and non-return valves	N/A	N/A	N/A	VIC B4D2
AS 4118.1.7	1996	Fire sprinkler systems: Components - Alarm valves (dry)	N/A	N/A	N/A	VIC B4D2
AS 4118.1.8	1999	Fire sprinkler systems: Components - Pressure reducing valves	N/A	N/A	N/A	VIC B4D2
AS 4254.1	2021	Ductwork for air-handling systems in buildings: Flexible duct	N/A	N/A	N/A	VIC E2D2
AS 4254.2	2012	Ductwork for air-handling systems in buildings: Rigid duct	N/A	N/A	N/A	VIC E2D2

## Victoria

No.	Date	Title	Volume One	Volume Two	Housing Provisions	Volume Three
AS 4426	1997	Thermal insulation of pipework, ductwork and equipment - Selection, installation and finish	N/A	N/A	N/A	VIC E2D2
AS 4508	1999	Thermal resistance of insulation for ductwork used in building air-conditioning	N/A	N/A	N/A	VIC E2D2
AS/NZS 4859.1	2018	Thermal insulation materials for buildings: General criteria and technical provisions	N/A	N/A	N/A	VIC E2D2
AS/NZS 5141	2018	Residential heating and cooling systems - Minimum applications and requirements for energy efficiency, performance and comfort criteria	N/A	N/A	N/A	VIC E2D2
AS/NZS 5149.1	2016	Refrigerating systems and heat pumps - Safety and environmental requirements: Definitions, classification and selection criteria	N/A	N/A	N/A	VIC E2D2
AS/NZS 5149.2	2016	Refrigerating systems and heat pumps - Safety and environmental requirements: Design, construction, testing, marking and documentation	N/A	N/A	N/A	VIC E2D2
AS/NZS 5149.3	2016	Refrigerating systems and heat pumps - Safety and environmental requirements: Installation site	N/A	N/A	N/A	VIC E2D2
AS/NZS 5149.4	2016	Refrigerating systems and heat pumps - Safety and environmental requirements: Operation, maintenance, repair and recovery	N/A	N/A	N/A	VIC E2D2
AS/NZS 5601.1	2022	Gas installations: General installations	N/A	N/A	N/A	VIC E2D2

## Victoria

No.	Date	Title	Volume One	Volume Two	Housing Provisions	Volume Three
ABCB Standard for Construction of Buildings in Flood Hazard Areas, Version 2012.3	2012	Standard for Construction of Buildings in Flood Hazard Areas	VIC B1D6	N/A	N/A	
—	2022	Motorsport Australia Track Operators Guide For Motorsport Race Venues – version 1	VIC I5D4	N/A	N/A	
FPAA101D	2018	Automatic Fire Sprinkler System Design and Installation— Drinking Water Supply	VIC S17C2, VIC S18C3	N/A	N/A	B1D5
FPAA101H	2018	Automatic Sprinkler System Design— Hydrant Water Supply	VIC S17C2, VIC S18C3	N/A	N/A	B4D3
Building Practice Note FS-01	—	Victorian Building Authority Practice Note FS-01	VIC S20C8	N/A	N/A	
SA HB 39	2015	Metal roof and wall cladding installation	N/A	N/A	N/A	VIC E3D2
HB 276	2004	A guide to good practice for energy efficient installation of residential heating, cooling and air conditioning plant and equipment	N/A	N/A	N/A	VIC E2D2
N/A	2007	Australian and New Zealand refrigerant handling code of practice 2007 Part 1 - Self-contained low charge systems	N/A	N/A	N/A	VIC E2D2
N/A	2007	Australian and New Zealand refrigerant handling code of practice 2007 Part 2 - Systems other than Self-contained low charge systems	N/A	N/A	N/A	VIC E2D2
N/A	1993	The Building Act 1993 (Victoria)	N/A	N/A	N/A	B6D2
N/A	2018	Plumbing Regulations	N/A	VIC H6V1	N/A	B2P7

## VIC Footnote: Other legislation affecting buildings

In addition to any applicable provisions of the Building Act 1993, Building Regulations 2018 and this Code, there are a number of other legislative technical requirements affecting the design, construction and/or performance of buildings that practitioners may need to be aware of, including, but not necessarily limited to, the following list. Additional legislative instruments such as regulations, codes and standards may exist under the legislation listed.

### 1. Accommodation – Residential (Boarding Houses, Guest Houses, Hostels, Motels)

#### Administering Agency

Department of Health and Human Services

Consumer Affairs Victoria

Municipal council

#### Relevant Legislation

Public Health and Wellbeing Act 2008

Public Health and Wellbeing Regulations 2009

Residential Tenancies Act 1997

Residential Tenancies Regulations 2021

Residential Tenancies (Rooming House Standards) Regulations 2012

### 2. Alpine Resorts

#### Administering Agency

Department of Environment, Land, Water and Planning

Alpine Resorts Management Boards

#### Relevant Legislation

Alpine Resorts (Management) Act 1997

### 3. Asbestos Removal

#### Administering Agency

Victorian WorkCover Authority

Environment Protection Authority

#### Relevant Legislation

Occupational Health and Safety Act 2004

Environment Protection Act 1970

### 4. Crown Land

#### Administering Agency

Department of Environment, Land, Water and Planning

Crown Land committees of management

#### Relevant Legislation

Crown Land (Reserves) Act 1978

## 5. Electrical Installations

### Administering Agency

Energy Safe Victoria

Electrical transmission and distribution companies

### Relevant Legislation

Electricity Industry Act 2000

Electricity Industry (Residual Provisions) Act 1993

Electricity Safety Act 1998

State Electricity Commission Act 1958

Electricity Safety (Installations) Regulations 2009

Standards Australia Wiring Rules, AS/NZS 3000/3013

## 6. Fences - dividing

### Administering Agency

Department of Justice and Regulation

Dispute Settlement Centre of Victoria

### Relevant Legislation

Fences Act 1968

## 7. Fire Prevention in Existing Buildings

### Administering Agency

Municipal council

### Relevant Legislation

Building Act 1993

Building Regulations 2018

## 8. Gas Installations

### Administering Agency

Energy Safe Victoria

### Relevant Legislation

Gas Industry Act 2001

Gas Safety Act 1997

Gas Safety (Gas Installation) Regulations 2008

AS/NZS 5601 Gas Installations

## 9. Historic Buildings

### Administering Agency

Department of Environment, Land, Water and Planning

Executive Director under the Heritage Act 2017

## Relevant Legislation

Heritage Act 2017

## 10. Moveable Dwellings (in Caravan Parks)

### Administering Agency

Department of Environment, Land, Water and Planning

Municipal council

### Relevant Legislation

Residential Tenancies Act 1997

Residential Tenancies (Caravan Parks and Moveable Dwellings Registration and Standards) Regulations 2010

## 11. Occupational Health and Safety

### Administering Agency

Victorian WorkCover Authority

### Relevant Legislation

Occupational Health and Safety Act 2004

Occupational Health and Safety Regulations 2017

Codes of practice published by the Victorian WorkCover Authority

## 12. Planning Controls

### Administering Agency

Department of Environment, Land, Water and Planning

Municipal council

### Relevant Legislation

Planning and Environment Act 1987

Planning schemes

## 13. Sanitary Plumbing, Water Supply and Sewerage

### Administering Agency

Victorian Building Authority

### Relevant Legislation

Building Act 1993

Plumbing Regulations 2018

Plumbing Code of Australia

AS/NZS 3500 Plumbing and Drainage

## 14 Septic Tank Installations

### Administering Agency

Environment Protection Authority

Municipal council

**Relevant Legislation**

Environment Protection Act 1970

Guidelines For Environmental Management: Code of Practice-Onsite wastewater management

**15. Subdivision of Buildings**

**Administering Agency**

Department of Environment, Land, Water and Planning

Municipal council

**Relevant Legislation**

Subdivision Act 1988

**16. Rainwater tank installations**

**Administering Agency**

Department of Environment, Land, Water and Planning

**Relevant Legislation**

Building Act 1993

## Schedule 11

## Western Australia

**Introduction****Section H****Class 1 and 10 buildings**

Part H1	Structure
WA H1D7	Roof and wall cladding

**WA Part H9****Water use****Objectives**

WA H9O1	Efficient use of water
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**Functional Statements**

WA H9F1	Potable water demand
---------	----------------------

**Performance Requirements**

WA H9P1	Water use efficiency
WA H9P2	Water loss prevention
WA H9P3	Heated water use efficiency

**Deemed-to-Satisfy Provisions**

WA H9D1	Deemed-to-Satisfy Provisions
WA H9D2	Water use efficiency
WA H9D3	Swimming pool covers and blankets
WA H9D4	Heated water use efficiency

**Schedule 1****Definitions****Schedule 2****Referenced documents****Footnote: Other legislation affecting buildings**

## WA Introduction

This Appendix contains variations and additions to the Building Code of Australia (BCA) provisions which are considered necessary for the effective application of the Code in Western Australia.

In Western Australia state variations apply to wind Regions B and D.

There are also additional provisions for water use.

## Section H Class 1 and 10 buildings

### Part H1 Structure

Delete H1D7 and insert WA H1D7 as follows:

#### WA H1D7 Roof and wall cladding

[2019: 3.5, 3.51-3.5.5]

- (1) Diagrams depicting relevant roofing and supporting members and associated terminology used to describe them are set out in [Figure H1D7a](#) and [Figure H1D7b](#).
- (2) *Performance Requirement H1P1* is satisfied for sheet roofing if it complies with one or a combination of the following:
  - (a) Metal roofing:
    - (i) AS 1562.1; and
    - (ii) in wind regions B, C and D in accordance with Figure 2.2.3 in Section 2 of the ABCB Housing Provisions (cyclonic areas), metal roof assemblies, their connections and immediate supporting members must be capable of remaining in position notwithstanding any permanent distortion, fracture or damage that might occur in the sheet or fastenings under the pressure sequences A to G defined in [Table H1D7](#).
  - (b) Plastic sheet roofing: AS 1562.3.
  - (c) Metal sheet roofing: Part 7.2 of the ABCB Housing Provisions, provided the building is located in an area with a wind class of not more than N3.
- (3) *Performance Requirement H1P1* is satisfied for roof cladding if it complies with one or a combination of the following:
  - (a) Terracotta, fibre-cement and timber slates and shingles: AS 4597.
  - (b) For roof tiles—
    - (i) AS 2050; or
    - (ii) Part 7.3 of the ABCB Housing Provisions, provided—
      - (A) the building is located in an area with a wind class of not more than N3; and
      - (B) the roof tiles comply with AS 2049; and
      - (C) the roof has a pitch of not less than 15 degrees and not more than 35 degrees.
- (4) *Performance Requirement H1P1* is satisfied for timber and composite wall cladding if it is designed and constructed in accordance with—
  - (a) for autoclaved aerated concrete wall cladding, AS 5146.1; or
  - (b) for wall cladding, Part 7.5 of the ABCB Housing Provisions.
- (5) *Performance Requirement H1P1* is satisfied for a metal wall cladding if it is designed and constructed in accordance with AS 1562.1.

Insert [Table H1D7](#) as follows:

**Table H1D7: Low-High-Low pressure sequence**

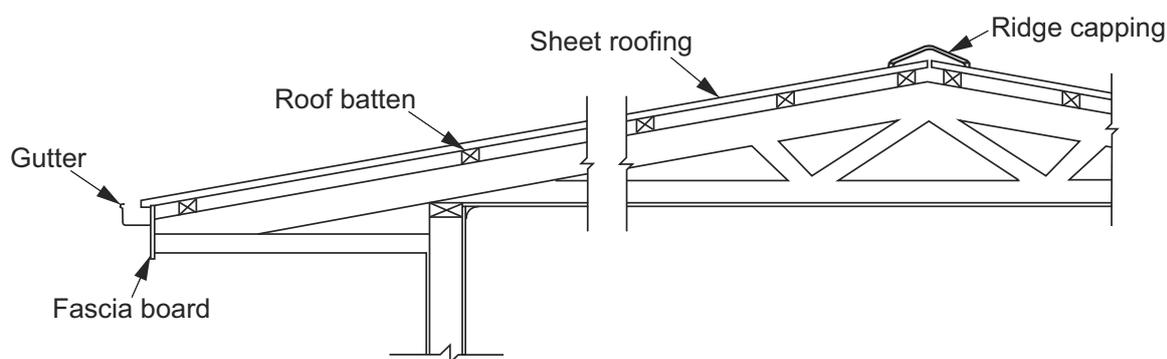
Sequence	Number of cycles	Load
A	4500	0 to 0.45 Pt
B	600	0 to 0.6 Pt
C	80	0 to 0.8 Pt
D	1	0 to 1.0 Pt
E	80	0 to 0.8 Pt
F	600	0 to 0.6 Pt
G	4500	0 to 0.45 Pt

**Table Notes**

- (1)  $P_t$  is the ultimate limit state wind pressure on internal and external surfaces as determined in accordance with AS/NZS 1170.2, modified by an appropriate factor for variability, as determined in accordance with Table B1 of AS/NZS 1170.0.
- (2) The rate of load cycling must be less than 3 Hz.
- (3) The single load cycle (sequence D) must be held for a maximum of 10 seconds.

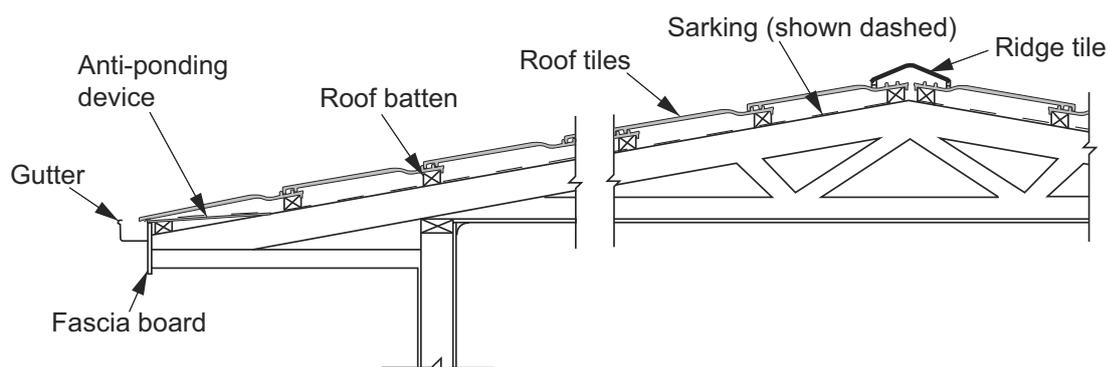
Insert Figure H1D7a as follows:

**Figure H1D7a: Section of a typical sheet roof**



Insert Figure H1D7b as follows:

**Figure H1D7b: Section of a typical tile roof**

**Explanatory Information**

The requirements of H1D7(2)(a)(ii) must be read in conjunction with the provisions of AS/NZS 1170.2. The ABCB commissioned research to establish a nationally consistent testing regime for metal roof cladding assemblies in cyclonic areas. The results of this research are contained in H1D7(2)(a)(ii).

Low cycle fatigue cracking of metal roof cladding elements during tropical cyclones is a complex process where small changes in load, geometry or material properties can significantly affect the fatigue performance of the cladding system (includes immediate supports, fixings and cladding). The consequences of failure of an element can quickly lead to more elements progressively failing. These failed elements become wind driven debris and so pose a threat to people and other structures as potential missiles.

If a system does not successfully resist the fatigue loading sequence in [Table H1D7](#), it does not comply. The test section consists of cladding elements, fastenings and immediate supporting members assembled together in a manner identical to those parts of the particular roof which the test section is intended to replicate.

**Explanatory Information**

In Western Australia state variations apply to wind Regions B and D, this includes wind region B2 as referenced in AS/NZS 1170.2.

The state variation for wind region B or B2 will ensure that designers consider the combination of peak external pressures and increased internal pressures in design of buildings and use a cyclonic (C) classification instead of non-cyclonic (N) classification. The definition of *design wind speed* is varied in WA Schedule 1 to identify that wind Region

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B is a C classification in Western Australia. Other changes have also been made to reflect this.

In addition to a variation to clause H1D7 of NCC Volume Two, and clauses 2.2.3 and 2.2.4 of the ABCB Housing Provisions Standard - a variation is made to the application of AS/NZS 1170.2 and AS 4055 (when used as a primary referenced document, secondary or subsequent referenced document). Refer to the WA Schedule 2 and [WA Part 2.3](#).

The state variation for wind region D applies only to those parts of region D located north of the Tropic of Capricorn. The 2021 edition of AS/NZS 1170.2 includes a reduction in design wind speeds for wind region D. The variation will retain similar design wind speeds for wind region D as the 2011 edition of AS/NZS 1170.2 previously referenced in the National Construction Code.

## WA Part H9

## Water use

## Introduction to this Part

This Part contains requirements for reducing water use.

## Objectives

## WA H901 Efficient use of water

[2019: WA 2.2]

The Objective is to reduce water demand by using water efficiently and minimising water wastage.

## Functional Statements

## WA H9F1 Potable water demand

[2019: WA 2.2]

To reduce *potable water* demand, a building is to be capable of using *potable water* efficiently and preventing excessive loss of *potable water*.

## Performance Requirements

## WA H9P1 Water use efficiency

[2019: WA 2.2(a)]

A building must have features that, to the degree necessary, facilitate the efficient use of *potable water* appropriate to—

- (a) the geographic location of the building; and
- (b) the available *potable water* supply of the building; and
- (c) the function and use of the building.

## Applications

WA H9P1 only applies to Class 1 buildings, associated Class 10a buildings and swimming pools associated with a Class 1 building.

## WA H9P2 Water loss prevention

[2019: WA 2.2(b)]

A building, including any water holding structure, must have features that, to the degree necessary, prevent excessive loss of *potable water* appropriate to—

- (a) the geographic location of the building; and
- (b) the available *potable water* supply for the building; and
- (c) the function and use of the building; and
- (d) the effects of permanent features such as topography, structures and buildings.

**Applications**

WA H9P2 only applies to Class 1 buildings, associated Class 10a buildings and *swimming pools* associated with a Class 1 building.

**WA H9P3 Heated water use efficiency**

[2019: WA 2.2(c)]

A building must have features that, to the degree necessary, facilitate the efficient use of heated water appropriate to—

- (a) the geographic location of the building; and
- (b) the available heated water supply for the building; and
- (c) the function and use of the building.

**Applications**

WA H9P3 only applies to Class 1 buildings, associated Class 10a buildings and *swimming pools* associated with a Class 1 building.

**Deemed-to-Satisfy Provisions****WA H9D1 Deemed-to-Satisfy Provisions**

[2019: WA (unnumbered)]

- (1) *Performance Requirement WA H9P1* is satisfied for a building's water use efficiency by complying with *WA H9D2*.
- (2) *Performance Requirement WA H9P2* is satisfied for a building's water loss prevention by complying with *WA H9D3*.
- (3) *Performance Requirement WA H9P3* is satisfied for a building's heated water use efficiency by complying with *WA H9D4*.

**WA H9D2 Water use efficiency**

[2019: WA 2.3.1]

- (1) All tap fittings other than bath outlets and garden taps must be a minimum of 4 stars *WELS* rated.
- (2) All showerheads must be a minimum of 3 stars *WELS* rated.
- (3) All sanitary flushing systems must be a minimum of 4 star *WELS* rated dual flush.

**WA H9D3 Swimming pool covers and blankets**

[2019: WA 2.3.2]

An outdoor private *swimming pool* or spa associated with a Class 1 building must be supplied with a cover, blanket or the like that—

- (a) is designed to reduce water evaporation; and
- (b) is accredited under the Smart Approved Watermark Scheme governed by the Australian Water Association, the Irrigation Association of Australia, the Nursery and Garden Industry Australia and the Water Services Association of Australia.

**WA H9D4 Heated water use efficiency**

[2019: WA 2.3.3]

- (1) All internal heated water outlets (such as taps, showers and washing machine water supply fittings) must be connected to a heated water system or a recirculating heated water system with pipes installed and insulated in accordance with AS/NZS 3500: Plumbing and Drainage, Part 4 Heated Water Services.
- (2) The pipe from the heated water system or recirculating heated water system to the furthest heated water outlet must

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not be more than 20 m in length or 2 litres of internal volume.

## Schedule 1 Definitions

### Design wind speed

The design gust wind speed for the area where the building is located, calculated in accordance with AS/NZS 1170.2 or AS 4055 (see [WA Table 4](#) for wind classes).

*Insert WA Table 4 as follows:*

**WA Table 4: Wind classes**

Non-cyclonic Region A	Cyclonic Region B, C and D
N1, N2, N3	C1
N4, N5, N6 (these wind classes are covered in the ABCB Housing Provisions <a href="#">Part 2.2</a> )	C2, C3, C4 (these wind classes are covered in the ABCB Housing Provisions <a href="#">Part 2.2</a> )

#### Table Notes

- (1) Wind classification map identifying wind regions is contained in ABCB Housing Provisions [Part 2.2](#) (see [Figure 2.2.3](#)).
- (2) Information on wind classes for particular areas may be available from the appropriate authority.
- (3) “N” = non-cyclonic winds and “C” = cyclonic winds.

**Licensed premises:** Includes—

- (a) premises in respect of which a cabaret licence as defined by the Liquor Control Act 1988 has been granted under that Act; or
- (b) premises in respect of which a tavern licence, a hotel restricted licence or any other kind of hotel licence as defined by the Liquor Control Act 1988 has been granted under that Act; or
- (c) a cabaret, hotel or tavern—
  - (i) in respect of which a special facility licence as defined by the Liquor Control Act 1988 has been granted under that Act; and
  - (ii) in respect of which paragraph (a) or (b) does not apply.

**Potable water:** Water intended for human consumption supplied by a water services provider.

**Public building:** A Class 6 *licensed premises* or 9b building where persons may assemble for—

- (a) civic, theatrical, social, political or religious purposes; or
- (b) educational purposes; or
- (c) entertainment, recreational or sporting purposes; or
- (d) business purposes.

**WELS:** Has the meaning given in the Water Efficiency Labelling and Standards Act 2005 of the Commonwealth.

## Schedule 2 Referenced documents

Insert WA Table 1 as follows:

**WA Table 1: Schedule of referenced documents**

No.	Date	Title	Volume One	Volume Two	Housing Provisions	Volume Three
AS/NZS 1170.2	2021	Structural design actions – Wind actions (See Note 1)	WA B1D3, WA B1D4, Spec 4, WA B2D1, WA B2D2, WA B2D3, F3V1, Schedule 1	H1D7, H2V1, Schedule 1	WA 2.2.3, WA 2.3.1, WA 2.3.2, WA 2.3.3, WA 2.3.4, Schedule 1	Schedule 1
AS/NZS 3500.4	2021	Plumbing and drainage – Heated water services, Amdt 1	N/A	WA H9D4	N/A	N/A
AS 4055	2021	Wind loads for housing (See Note 2)	Schedule 1	H1D6, H1D8, Schedule 1	WA 2.2.3, WA 2.3.1, WA 2.3.5, Schedule 1	Schedule 1

### Table Notes

- (1) For AS/NZS 1170 Part 2, incorporate the changes as set out in [WA Part B2](#) of Volume One and [WA Part 2.3](#) of the ABCB Housing Provisions.
- (2) For AS 4055, incorporate the changes set out in [WA Part 2.3](#) of the ABCB Housing Provisions.

## WA Footnote: Other legislation affecting buildings

In addition to any applicable provisions of the Building Act 2011, Building Regulations 2012 and this Code, there are a number of other legislative technical requirements affecting the design, construction and/or performance of buildings that practitioners may need to be aware of, including, but not necessarily limited to, the following list. Additional legislative instruments such as regulations, codes and standards may exist under the legislation listed.

### 1. Building

#### Administering Agency

Department of Mines, Industry Regulation and Safety

#### Relevant Legislation

Building Services (Complaint Resolution and Administration) Act 2011

Building Services (Complaint Resolution and Administration) Regulations 2011

Building Service (Registration) Act 2011

Building Service (Registration) Regulations 2011

### 2. Caravan Parks and Camping Grounds

#### Administering Agency

Department of Local Government, Sport and Cultural Industries

#### Relevant Legislation

Caravan Park and Camping Grounds Act 1995

Caravan Park and Camping Grounds Regulations 1997

### 3. Child Care

#### Administering Agency

Department of Communities

#### Relevant Legislation

Child Care Services Act 2007

Child Care Services Regulations 2007

Child Care Services (Child Care) Regulations 2006

### 4. Fences

#### Administering Agency

Department of Mines, Industry Regulation and Safety

#### Relevant Legislation

Dividing Fences Act 1961

### 5. Health

#### Administering Agency

Department of Health

### **Relevant Legislation**

Health Act (Miscellaneous Provisions) 1911  
Health Act (Laundries & Bathrooms) Regulations  
Health (Air Handling and Water Systems) Regulations 1994  
Health (Asbestos) Regulations 1992  
Health (Aquatic Facilities) Regulations 2007  
Health (Construction Work) Regulations 1973  
Construction Camp Regulations  
Health (Public Buildings) Regulations 1992  
Health (Treatment of Sewage and Disposal of Effluent and Liquid Waste) Regulations 1974  
Health (Rottnest Island) By-laws 1989  
Sewerage (Lighting, Ventilation and Construction) Regulations 1971  
Health Local Laws where adopted by Local Government

## **6. Heritage**

### **Administering Agency**

Heritage Council of Western Australia

### **Relevant Legislation**

Heritage of Western Australia Act 1990  
Heritage of Western Australia Regulations 1991

## **7. Housing**

### **Administering Agency**

Department of Communities

### **Relevant Legislation**

Housing Act 1980

## **8. Land**

### **Administering Agency**

Western Australian Land Information Authority

### **Relevant Legislation**

Strata Titles Act 1985

## **9. Occupational Health and Safety**

### **Administering Agency**

Department of Mines, Industry Regulation and Safety

### **Relevant Legislation**

Occupational Safety and Health Act 1984

## 10. Planning Controls

### Administering Agency

Department of Planning, Land and Heritage

### Relevant Legislation

Planning and Development Act 2005

Planning and Development (Consequential and Transitional Provisions) Act 2005

## 11. Public Works

### Administering Agency

Department of Finance, Building Management and Works

### Relevant Legislation

Public Works Act 1902



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