National Construction Code

Volume One
Building Code of Australia

Australian Building Codes Board

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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 One

About NCC Volume One

NCC Volume One contains technical design and construction requirements for all Class 2 to 9 buildings (multi-residential, commercial, industrial, and public assembly buildings) and their associated structures.

NCC Volume One contains the requirements for—

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

Components of NCC Volume One

NCC Volume One contains the following Sections:

- Section A – Governing Requirements
- Section B – Structure
- Section C – Fire resistance
- Section D – Access and egress
- Section E – Services and equipment
- Section F – Health and amenity
- Section G – Ancillary provisions
- Section I – Special use buildings
- Section J – Energy efficiency
- Schedules—
  - Abbreviations and symbols
  - Definitions
  - Referenced documents
  - State and Territory variations and additions

Section A contains the mandatory Governing Requirements for the NCC. Sections B to G and I to J contain the mandatory Performance Requirements and the pathways that can be used to comply with the NCC.

There is no Section H in NCC Volume One because the letter ‘H’ is used in NCC Volume Two. This avoids number clashes between NCC Volume One and NCC Volume Two.

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	-

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 of NCC Volume One

Adoption of NCC Volume One

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

Table 1: History of adoption of NCC Volume One

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	1 Jan 2002	1 Jan 2002	1 Jan 2002
BCA 96 Amdt 11	1 Jul 2002	1 Jul 2002	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	1 Jul 2003	To Be advised	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	01 May 2006	1 May 2006	1 May 2006	1 May 2006	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	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

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	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 2016 Amendment 1	12 Mar 2018	12 Mar 2018	12 Mar 2018	12 Mar 2018	12 Mar 2018	12 Mar 2018	12 Mar 2018	12 Mar 2018	12 Mar 2018
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 Amendment 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 May 2006 (except that the date for mandatory compliance with Section J provisions for Class 5 to 9 buildings is 1 November 2006)

(2) 1 May 2006, except for Part I2 and Section J which were adopted on 1 August 2006.

(3) 1 May 2010 except for Section J, which was adopted on 1 September 2010, and the restriction on child resistant door sets in G1.1 and the additional bushfire requirements for 'excluded areas' prescribed in SA G5.2(d) and (e), which were adopted on 2 December 2010.

Adoption of BCA 96 Volume One

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

BCA 96 Amendment No. 1

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

The purpose of Amendment No. 1 is to—

- correct minor typographical errors including spelling, punctuation 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: Only substantive typographical corrections are noted in the margin.

BCA 96 Amendment No. 2

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

The purpose of Amendment No. 2 is to—

- correct minor typographical errors; and
- update references to Standards.

BCA 96 Amendment No. 3

Amendment No. 3 of the 1996 edition of the BCA Volume One 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 One 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.

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

BCA 96 Amendment No. 5

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

The purpose of Amendment No. 5 is to—

- update references to Standards; and
- include minor technical changes; and
- amend clauses to improve clarity and to reduce the possibility of differences in interpretation; and
- expand on the requirements for subfloor ventilation based on climatic conditions.

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

BCA 96 Amendment No. 6

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

The purpose of Amendment No. 6 is to—

- update references to Standards; and
- expand on the requirements for carparking for people with disabilities; and
- replace Sound Transmission Class (STC) with weighted sound reduction index (R_w) within Part F5; and
- include minor technical changes.

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

BCA 96 Amendment No. 7

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

The purpose of Amendment No. 7 is to—

- update references to Standards; and
- include requirements for non-required and private stairways; and
- include minor technical changes.

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

BCA 96 Amendment No. 8

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

The purpose of Amendment No. 8 is to—update references to Standards; and

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

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

BCA 96 Amendment No. 9

Amendment No. 9 of the 1996 edition of the BCA Volume One 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 glazed assemblies must comply with AS 2047 and which must comply with AS 1288.

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

BCA 96 Amendment No. 10

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

The purpose of Amendment No. 10 is to—

- update references to Standards; and
- clarify that windows must comply with AS 2047 for resistance to water penetration; and
- subject to certain conditions, allow a non-fire-isolated stairway to connect an additional storey; and
- update signage required for people with disabilities, including the need for signs to contain Braille and tactile information; and
- include minor technical changes.

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

BCA 96 Amendment No. 11

Amendment No. 11 of the 1996 edition of the BCA Volume One 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 Class 7a, 7b and 9c classifications; and
- update the provisions for residential buildings used for the accommodation of the aged to align with the Commonwealth Aged Care Act, 1997; and
- include minor technical changes.

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

BCA 96 Amendment No. 12

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

The purpose of Amendment No. 12 is to—

- update references to Standards; and
- apply the swimming pool safety provisions to swimming pools associated with Class 4 parts as well as Class 2 and 3

buildings; and

- allow the use of either the 1989 editions or the 2002 editions of the 1170 series of standards; 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 One was adopted as set out in Table 1

The purpose of Amendment No. 13 is to—

- update references to Standards; and
- reform the provisions for fire hazard properties of materials; and
- revise a requirement for the use of non-combustible materials; and
- include additional requirements for the protection of electrical switchboards which sustain electricity supply to emergency equipment; and
- include minor changes to the requirements for aged care buildings; and
- include minor technical changes.

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

Adoption of BCA 2004 Volume One

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

The purpose of BCA 2004 Volume One is to—

- update references to Standards; and
- update references from BCA 96 to BCA 2004; and
- include a Performance Requirement considering human impact with glazing; and
- reform the provisions for sound insulation; and
- reform the maintenance provisions; and
- include minor technical changes.

Adoption of BCA 2005 Volume One

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

The purpose of BCA 2005 Volume One is to—

- update references to Standards; and
- clarify when fire sprinklers are required to be installed in buildings; and
- update the provisions for waterproofing of wet areas; and
- include energy efficiency measures for Class 2 and 3 buildings and Class 4 parts; and
- more closely align the requirements for lifts with those of Occupational Health and Safety legislation; and
- include minor technical changes.

Adoption of BCA 2006 Volume One

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

The purpose of BCA 2006 Volume One is to—

- update schedule of referenced documents; and
- include a national testing regime for cladding in cyclonic areas; and
- withdraw of AS 1530.3 tests on floor materials and floor coverings and wall and ceiling linings; and

- include energy efficiency measures for Class 5 to 9 buildings; and
- include minor technical changes.

Adoption of BCA 2007 Volume One

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

The purpose of BCA 2007 Volume One is to—

- update references to other documents; and
- update energy efficiency provisions including providing additional information; and
- include minor technical changes.

Adoption of BCA 2008 Volume One

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

The purpose of BCA 2008 Volume One is to—

- update references to other documents; and
- due to changes in the types of detector now available, rather than only allowing the use of a heat detectors when smoke detector would be unsuitable in the atmosphere, to allow the use of any type of detector deemed suitable by AS 1670.1; and
- clarify the intent of the BCA when a service penetrates a building element required to have an FRL; and
- amend the requirements for door handle heights to be consistent with AS 1428.1; and
- align some BCA terms with current industry terminology; and
- include lists of other Commonwealth, State and Territory legislation affecting buildings; and
- include suitable provisions for swimming pool water recirculation systems; and
- include minor technical changes.

Adoption of BCA 2009 Volume One

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

The purpose of BCA 2009 Volume One 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
- clarify the application of the vertical separation provisions; and
- clarify the intent of separation of equipment; and
- simplify the wire balustrade provisions, including the addition of a Verification Method; and
- clarify the provisions for the construction of sanitary compartments to enable an unconscious occupant to be removed; and
- clarify the height of rooms in an attic and with a sloping ceiling; and
- further update the energy efficiency provisions; and
- include minor technical changes.

Adoption of BCA 2010 Volume One

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

The purpose of BCA 2010 Volume One 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 the greenhouse gas intensity of the energy source for services such as water and space heaters; and
- update Part G5, as a consequence of referencing the 2009 edition of AS 3959 construction in bushfire-prone areas, to include provisions which apply to a Class 10a building or deck associated with a Class 2 or 3 building located in a designated bushfire prone area; and
- include minor technical changes.

Adoption of NCC 2011 Volume One

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

The purpose of NCC 2011 Volume One is to—

- update references to other documents; and
- align the NCC with the Access Code in the Disability (Access to Premises — Buildings) Standards; and
- restructure the fire hazard property provisions; and
- include minor technical changes.

Adoption of NCC 2012 Volume One

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

The purpose of NCC 2012 Volume One is to—

- update references to other documents; and
- include revised provisions aimed at reducing slips, trips and falls in buildings; and
- include a Verification Method for emergency lighting; and
- align the NCC with changes to the National Quality Standard for early childhood education and care; and
- include exemptions for Class 8 electricity network substations; and
- include minor technical changes.

Adoption of NCC 2013 Volume One

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

The purpose of NCC 2013 Volume One 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
- consolidate the building related components of the AS 1735 lift series into the BCA; and
- enhance the egress provisions for people with disability; and
- include minor technical changes.

Adoption of NCC 2014 Volume One

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

The purpose of NCC 2014 Volume One is to—

- update references to other documents; and
- quantify slip resistance on ramps, stairways and landings; and
- include provisions for photoluminescent exit signs; and
- expand the fire-resistance concession for timber-framed construction to include Class 3 buildings; and
- remove the requirement for fire hose reels in a Class 2 or Class 3 building or a Class 4 part of a building; and

- include minor technical changes.

Adoption of NCC 2015 Volume One

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

The purpose of NCC 2015 Volume One is to—

- update references to other documents; and
- include a Verification Method for structural reliability; and
- improve the usability of the barrier provisions; and
- expand the requirements for sprinkler protection to aged care buildings; and
- include a Verification Method for weatherproofing of external walls; and
- improve the usability of energy efficiency provisions for air-conditioning and ventilation systems.

Adoption of NCC 2016 Volume One

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

The purpose of NCC 2016 Volume One 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 provisions for fire-protected timber; and
- include requirements for farm-type buildings; and
- include minor technical changes.

NCC 2016 Volume One Amendment No. 1

Amendment No. 1 to the 2016 edition of NCC Volume One was adopted as set out in Table 1.

The purpose of Amendment No. 1 is to—

- introduce a new Verification method, CV3, for limiting fire spread via external wall assemblies; and
- include reference to the revised edition of AS 2118.1; and
- clarify provisions relating to the use of external wall claddings and attachments; and
- revise the evidence of suitability provisions.

Adoption of NCC 2019 Volume One

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

The purpose of NCC 2019 Volume One is to—

- include the Governing Requirements, that result from revision of Section A to improve readability and are common to all NCC volumes; and
- introduce the use of schedules that are common to all NCC volumes; and
- include new Verification Methods, including the Fire Safety Verification Method; and
- clarify provisions, including provisions relating to measurement of distance between required alternative exits; and
- expand the requirements for sprinkler protection to residential buildings; and
- introduce requirements for accessible adult change facilities; and
- introduce requirements for management of water vapour and condensation; and
- introduce requirements for occupiable outdoor areas; and

- increase stringency of energy efficiency requirements; 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 One was adopted as set out in Table 1.

The purpose of Amendment No. 1 is to—

- require that a process be followed to improve the quality of and documentation for Performance Solutions; and
- include a new provision regarding egress from early childhood centres; and
- require labelling of Aluminium Composite Panels; and
- clarify the concession that permits timber framing for low-rise Class 2 and 3 buildings.

NCC 2022

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

The purpose of NCC Volume One 2022 is to—

- include quantified Performance Requirements; and
- clarify and improve provisions relating to fire performance of building elements, including external walls; and
- include provisions to improve fire safety for early childhood centres and primary schools; and
- include expanded weatherproofing and waterproofing provisions; and
- include bushfire protection requirements for certain Class 9 buildings; and
- incorporate amended energy efficiency provisions; and
- update references to other documents; and
- include other minor technical changes.

List of amendments - NCC 2022 Volume One

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 NCC Volume One.

The notes provide a description of major changes made from the previous edition of Volume One. If additional information is required to assist in understanding, interpreting or applying the provisions of the 2022 edition of Volume One, reference should be made to the Guide to Volume One.

While the Australian Building Codes Board has attempted to include all major changes made from the previous edition of Volume One, 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 One

Reference	Changes and Commentary
General	
Throughout	An "Introduction to this Part" has been added to introduce the intent and purpose of every Part of the NCC.
Throughout	The Objectives and Functional Statements have been relocated from the Guide to Volume One into NCC Volume One.
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.
Section A—Governing requirements	
A1G1	A new clause added to specify scope of NCC Volume One.
A1G2	A new clause added to specify scope of NCC Volume Two.
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.
Section B—Structure	

Reference	Changes and Commentary
B1P1(2)(a)	A new requirement for a Class 7b buildings to have the ability to support the addition of solar photovoltaic panels. An exemption is also provided to certain Class 7b buildings.
B1D3(a)(iv)	A new requirement for a Class 7b buildings to have the ability to support the addition of solar photovoltaic panels. An exemption is also provided to certain Class 7b buildings.
B1D3(c)	Amended to clarify all parts of AS 1170.4 are applicable.
Section C—Fire resistance	
C1V4	Amended as a consequence of restructuring Schedule 7 of NCC 2019 Volume One Amendment 1 into the referenced document, ABCB Fire Safety Verification Method standard.
C2D10(4)	Amended to provide additional concessions to C2D10(1) and (2).
C2D10(5)	A new sub-clause added to specify non-combustible materials.
C2D10(6)	Amended to provide cross-reference for fixing requirements of externally located bonded laminated materials.
C2D14	Amended for clarity and to provide additional ancillary elements permitted on an external wall required to be non-combustible.
C2D15	A new clause added to specify fixing requirements for externally located bonded laminated cladding panels.
C3D3	Amended to make reference to new defined term ‘Volume’.
C3D4	Amended to make reference to new defined term ‘Volume’.
C3D6	A new sub-clause (2) has been inserted to provide compartmentation and separation requirements to Class 9b early childhood centres. As a consequence, the heading has also been amended. An exemption statement has also been included to provide exemption to certain Class 9b early childhood centres.
C4D10	Amended to provide concession for test drain pipes used for fire services.
C4D16	Amended to permit use of reports where the tested system differs from the subject system in accordance with AS 4072.1. Also, a new sub-clause has been inserted to clarify that tests must be reported in accordance with Specifications 1 and 2.
S5C20(1)	Sub-clause (c) has been inserted to permit the use of timber framing for roof trusses and floor frames.
S5C23(1)	Sub-clause (c) has been inserted to permit the use of timber framing for roof trusses and floor frames.
Section D—Access and egress	
D2D3	Amended to provide concession to parts of a storey of certain buildings to require 1 exit in lieu of not less than 2 provided there is direct egress to a road or open space and satisfies D2D5 provision for 1 exit.

Reference	Changes and Commentary
D2D3(4)(iv)	Amended to require each part of storey or fire compartment used as a Class 9b early childhood centre be provided with not less than 2 exits.
D2D4(2)	Amended to require stairways or ramps serving Class 9b early childhood centres as a required exit to be fire-isolated. An exemption has been included for certain Class 9b early childhood centres.
D2D8	Amended to provide exemption to ladders that are in accordance with D2D21, D3D23 or I3D3.
D2D16(6)	Amended and includes a new sub-clause to specify the clear area to horizontal exits to Class 9b early childhood centres must accommodate all occupants.
D2D16(8)	A new sub-clause has been inserted to require not less than 2 horizontal exits to fire compartments required by C3D6(2).
D2D23	Amended to include new provisions for primary schools. References to early childhood centres have been deleted as a consequence to new and amended Deemed-to-Satisfy Provisions and limitation statement located in A6G1, C3D6, D2D3, D2D4, D2D16, D3D19, D3D22, D3D27, E1D11, Specification 17 and E2D20.
D3D16(b)	Amended to provide exemption only to resident use areas in a Class 9c building.
D3D19(4)	Amended to specify requirements of D3D19(2) and (3) cannot be applied to fire-isolated stairways or ramps serving Class 9b early childhood centres.
D3D19(6) and (7)	New sub-clauses have been inserted to provide a maximum opening between barrier and vertical face of a landing, balcony, deck, stairway or the like.
D3D22(1)(c)	Amended to include a new handrail requirement for Class 9b early childhood centres.
D3D27	Amended and includes provision for doors of a fire-isolated exit to not be locked from the inside in a Class 9b early childhood centre.
Section E—Services and equipment	
E1D2	Concessions, included in previous editions, regarding protection of booster assemblies have been removed on account of these now being included in AS 2419.1.
E1D8	Amended to make reference to new defined term ‘Volume’.
E1D11	Amended to require sprinkler protection for buildings containing a Class 9b early childhood centre. An exemption has been included for certain Class 9b early childhood centres.
E1D13	Amended to make reference to new defined term ‘Volume’.
E2D10	Amended to make reference to new defined term ‘Volume’.
E2D20	A new sub-clause has been inserted to require automatic smoke detection and alarm system to a building containing Class 9b early childhood centre. An exemption has been included for certain Class 9b early childhood centres.

Reference	Changes and Commentary
S17C2(c)	Amended to specify that a Class 2 or 3 building with a Class 9b early childhood centre cannot adopt a sprinkler system in accordance with Specification 18.
S17C14	A new clause has been inserted to require quick response sprinklers to Class 9b early childhood centres required to have an automatic fire sprinkler system. An exemption has been provided to certain Class 9b early childhood centres.
Section F—Health and amenity	
Part F1	Part F1 has been re-named as a consequence of restructuring, includes new external waterproofing Deemed-to-Satisfy Provisions, and group provisions relating to rainwater management and rising damp.
F1P2	Amended to reflect contemporary terminology of annual exceedance probability in lieu of average recurrence interval.
F1P3	Amended to reflect contemporary terminology of annual exceedance probability in lieu of average recurrence interval.
F1D2	A new clause added to specify application of Part F1.
F1D3	Amended to clarify design and construction of stormwater drainage.
F1D4	A new clause has been inserted to specify requirements for exposed joints incorporated in a roof, balcony, podium or similar horizontal part of building.
F1D5	Amended to clarify locations at which external waterproofing membranes are required.
Part F2	A new Part has been inserted as a consequence of restructuring Part F1 and contains group provisions for wet areas and overflow protection previously contained in NCC 2019 Amdt 1 Part F1. The remaining Parts of Section F have been renumbered accordingly.
F2O1	A new Objective has been included for wet areas.
F2F1	A new Functional Statement has been included for wet areas.
F2D4	Amended to include new requirement for a floor to fall to waste where a floor waste is installed.
Part F3	A new Part has been inserted containing new and relocated Deemed-to-Satisfy Provisions relating to roof and external wall weatherproofing.
F3O1	A new Objective has been included for roof and wall cladding
F3F1	A new Functional Statement has been included for roof and wall cladding
F3D2	A new sub-clause has been added to include external waterproofing membrane complying with F1D5. Cellulose cement corrugated sheeting has been removed from the clause.
F3D5	A new provision has been included to provide options for masonry, autoclaved aerated concrete and metal wall cladding complying with certain NCC referenced documents for satisfying external wall weatherproofing requirements.

Reference	Changes and Commentary
F4D5(c)	Amended to clarify ambulant sanitary compartment must be provided for each sex, and for male ambulant sanitary compartment to be separate from female ambulant sanitary compartment.
F7P1	Amended and now contains quantified level of performance for sound transmission through floors.
F7P2	Amended and now contains quantified level of performance for sound transmission through walls.
FP5.3	This Performance Requirement in NCC 2019 Amdt 1 has been deleted as a consequence of amendments to F7P1 and F7P2.
F7P3	Amended and now contains quantified level of performance for sound transmission through floors in a residential care building.
F7P4	Amended and now contains quantified level of performance for sound transmission through walls in a residential care building.
FP5.6	This Performance Requirement in NCC 2019 Amdt 1 has been deleted as a consequence of amendments to F7P3 and F7P4.
F8V1	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.
F8D3	Amended to include vapour permeance requirements for several materials in climate zones 4 to 8.
F8D4	Amended to include additional exhaust requirements, including ducting of exhausts to outdoor air, exhaust run-on timers in some rooms and provision of make-up air to some rooms.
F8D5	Amended to require a ventilated roof space in climate zones 6, 7 and 8, with exceptions for concrete roofs, roofs made from structural insulated panels and roofs subject to Bushfire Attack Level FZ.
Specification 26	A new specification has been inserted and contains the requirements of Table F1.7 of NCC 2019 Volume One Amendment 1.
S26C3	Amended to require walls in shower areas to be waterproof to not less than 1800 mm above the floor substrate.
S26C4 and S26C5	Sub-clause (1) has been amended to include fibre-cement sheet flooring.
S26C6	A new sub-clause (3) has been inserted to specify wet area requirements where a hand-held bidet spray is installed in a WC. Sub-clause (2) has been amended as a consequence of sub-clause (3).
S28C7	Amended and includes new forms of timber and steel wall construction.
S28C10	Amended and includes new form of timber floor construction.
Section G—Ancillary provisions	
G1D4	Amended to require barriers to outdoor play spaces located more than 2 m above the surface beneath to be 1.8 m high and non-climbable.

Reference	Changes and Commentary
G2D3	Consequential amendments as a result of changes to the Part 12.4 of the ABCB Housing Provisions as part of the Acceptable Construction Practice review project.
G5O1(c)	Amended to include new sub-clause to reflect protection of building occupants who may be unable to readily evacuate prior to a bushfire.
G5F1	Amended to include protection of building occupants who may be unable to readily evacuate prior to a bushfire.
G5P1	Amended and now contains quantified level of performance for bushfire resistance.
G5P2	New Performance Requirement for Class 9 buildings has been added.
G5V1	A limitation box has been inserted to specify that G5V1 does not apply to a Class 9 building.
G5D1	Amended on account of the introduction of G5P2.
G5D2	Amended to include Class 9 buildings located in an area subject to BAL not exceeding 12.5.
G5D3	Title amended to include reference to residential buildings.
G5D4	A new provision has been added for the protection of certain Class 9 buildings.
Part G7	A new Part has been inserted containing the Livable housing design requirements. This includes a new Objective, Functional Statement, Performance Requirement and Deemed-to-Satisfy Provisions.
Specification 43	A new Specification has been inserted as a consequence of new bushfire protection provisions for certain Class 9 buildings.
Section I—Special use buildings	
Section I	Section H of NCC 2019 Volume One Amendment 1 has been amended to Section I as a result of structural changes to NCC Volume Two.
Section J—Energy efficiency	
J1O1	Amended to expand the energy efficiency Objectives of Section J.
J1F1	Amended to expand the energy efficiency functional requirements of Section J.
J1P1	Amended to clarify requirements for a Class 2 building or a Class 4 part of a building.
J1P2	A new Performance Requirement for the thermal performance of Class 2 sole-occupancy units.
J1P3	A new Performance Requirement for the energy usage of Class 2 sole-occupancy units.
J1P4	A new Performance Requirement for renewable energy and electric vehicle charging equipment.
J1V1(2)	Expands the NABERS pathway to Class 2 common areas.
J1V1(3)	Expands the NABERS pathway to Class 3 buildings.
J1V1(4)	Expands the NABERS pathway to Class 6 buildings.

Reference	Changes and Commentary
J1V2(1)	Aligns the Green Star pathway with the most recent Green Building Council of Australia modelling requirements.
J1V2(2)	Amended to remove reference to Specification 34 as a required calculation method.
J1V4	Expands the existing building sealing verification method by setting additional ventilation requirements for well-sealed buildings.
J1V5	A new verification method for a sole-occupancy unit of Class 2 building.
Part J2	Expanded section on the application of Section J.
Part J3	New Deemed-to-Satisfy Provisions J3D1 to J3D15, for energy efficiency in a sole-occupancy unit of Class 2 building or a Class 4 part of a building.
J4D6	Amended to clarify how the requirements apply to internal envelope walls.
J4D7	Amended to set a deemed R-Value for concrete slab-on-ground construction in most circumstances.
J9D3	Amended to provide concession to individual sole-occupancy units with a floor area of 500 m^2 or less.
J9D4	Provisions to provide ease of retrofit for electric vehicle charging equipment.
J9D5	Provisions to provide ease of retrofit for solar photovoltaic and battery storage equipment.
S34C2(d)(ii)	Amended to clarify infiltration rate applies throughout all zones.
S34C3(4)(d)	Amended to clarify building form inclusions for ground floor and basements.
S34C3(6)(f)	Amended to clarify scope of air-conditioning configuration and zoning requirements.
Table S34C3	Amends table to use the most up to date greenhouse gas emissions factors.
Table S35C2k	Amends the artificial lighting schedule from weekly to daily.
Specification 36	Amended to align the tables of R-Values for material, surface air film and airspace with current calculation methodologies.
Table S39C2b	Amended to include a table note on wall thickness.
Specification 44	A new specification referenced by J1P2 has been inserted that describes the calculation of heating, cooling and thermal load limits.
Specification 45	A new specification has been inserted to provide modelling profiles for J1V5.
Schedule 1—Definitions	
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.

Reference	Changes and Commentary
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.
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.

Reference	Changes and Commentary
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.
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.

Reference	Changes and Commentary
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.
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.

Reference	Changes and Commentary
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'.
Schedule 2—Referenced documents	
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.
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.

Reference	Changes and Commentary
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.
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 1859.4 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.

Reference	Changes and Commentary
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 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.
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.

Reference	Changes and Commentary
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.
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 2012 edition of AS 2118 Part 6 'Automatic fire sprinkler systems — Combined sprinkler and hydrant systems in multistorey buildings.'
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.

Reference	Changes and Commentary
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/ANS/CAN 372 'Drinking Water System Components — Lead Content' has been referenced.

Section A Governing requirements

Part A1 Interpreting the NCC

Governing Requirements

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A1G2	Scope of NCC Volume Two
A1G3	Scope of NCC Volume Three
A1G4	Interpretation

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Governing Requirements

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Part A3 Application of the NCC in States and Territories

Governing Requirements

A3G1	State and Territory compliance

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Governing Requirements

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Governing Requirements

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Governing Requirements

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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
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	S3C4	Test specimens
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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.

(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

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*.

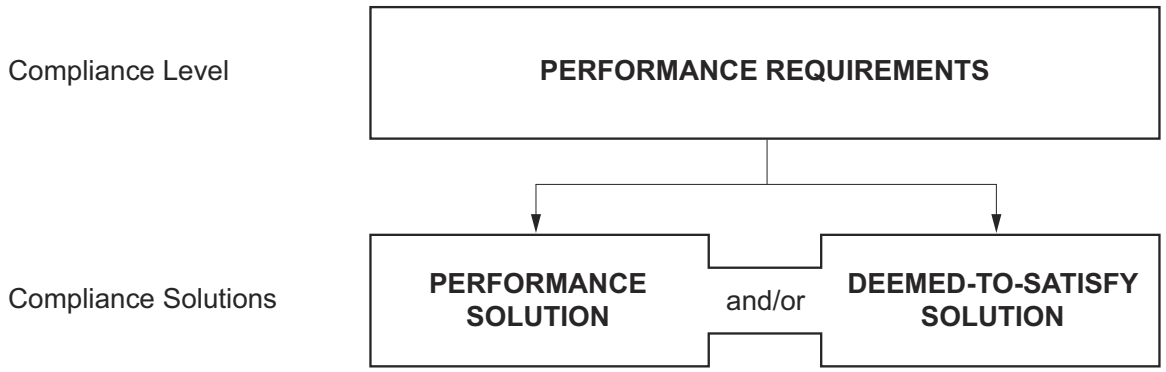
(2) *Performance Requirements* are satisfied by one of the following, as shown in Figure A2G1:

(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*.

(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

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. 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

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.

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).

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).

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*.

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.

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

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.

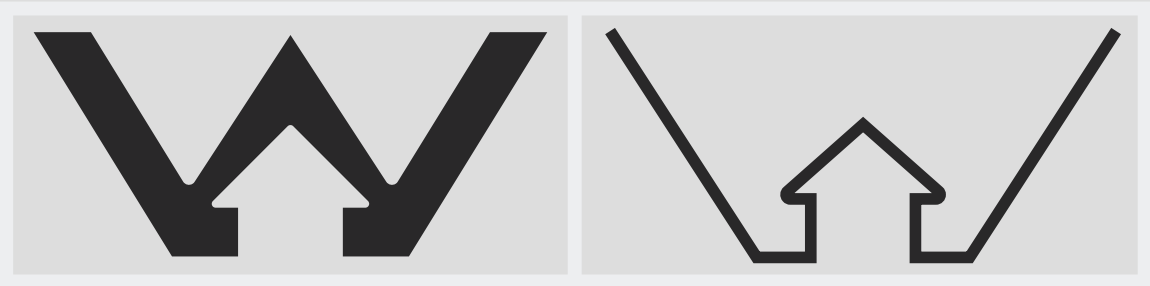
The *WaterMark Certification Scheme* is governed by the WaterMark Scheme Rules, which are available for download from the ABCB website at: www.abcb.gov.au. These rules set out the requirements for risk assessments, evaluation, certification, and the drafting of WaterMark Technical Specifications.

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.

(c) For a material's *group number* or *smoke growth rate index* ($SMOGRA_{RC}$), 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.

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—

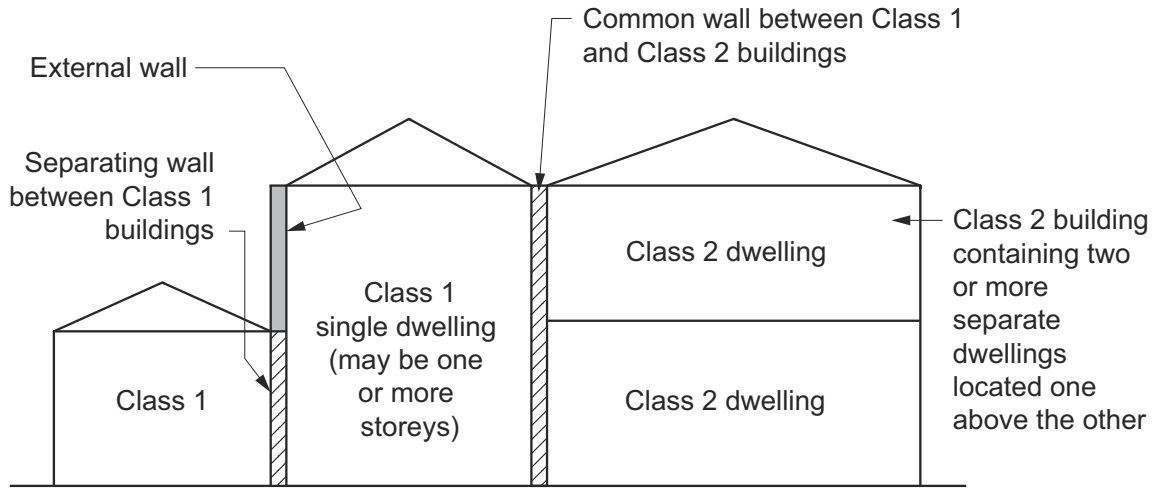
(i) a boarding house, guest house, hostel or the like that—

(A) would ordinarily accommodate not more than 12 people; and

(B) have a total area of all floors not more than 300 m^2 (measured over the enclosing walls of the building or buildings); or

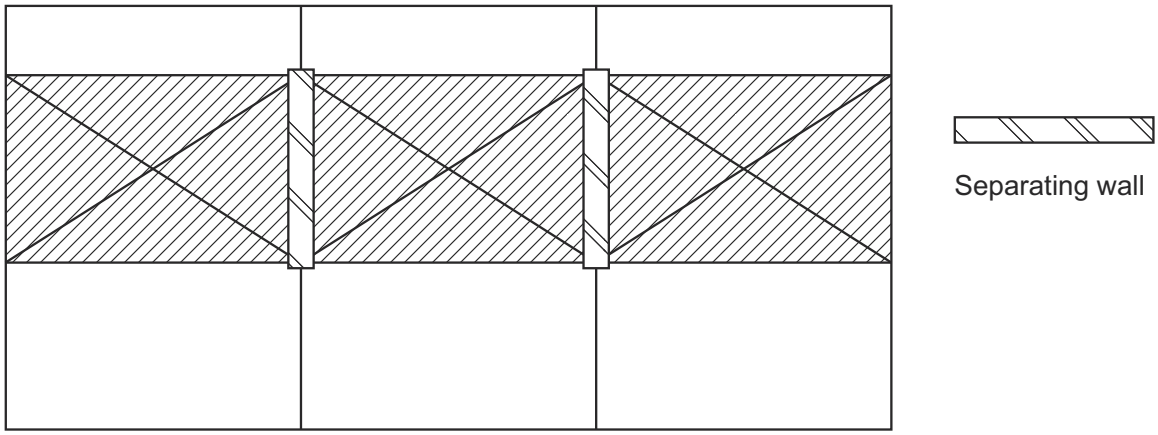
(ii) four or more single dwellings located on one allotment and used for short-term holiday accommodation.

Figure A6G2a: Identification of Class 1 buildings

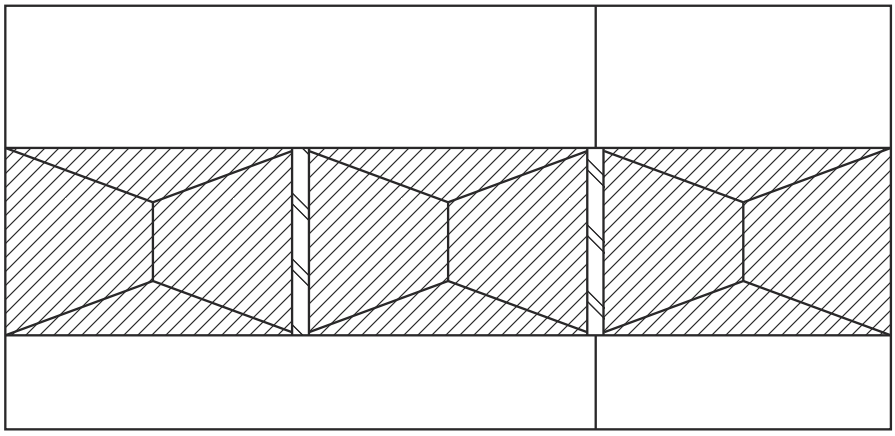


Elevation

Figure A6G2b: Typical Class 1 building configurations



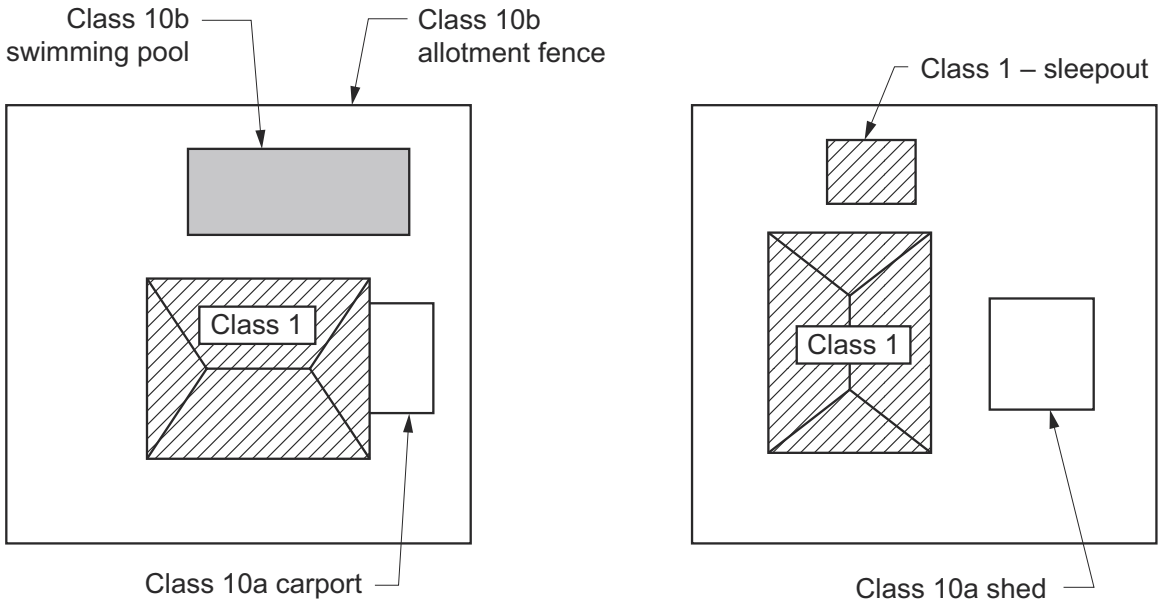
(a) 3 Class 1 buildings on 3 separate allotments



(b) 3 Class 1 buildings on 2 separate allotments

Plan view

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.

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.

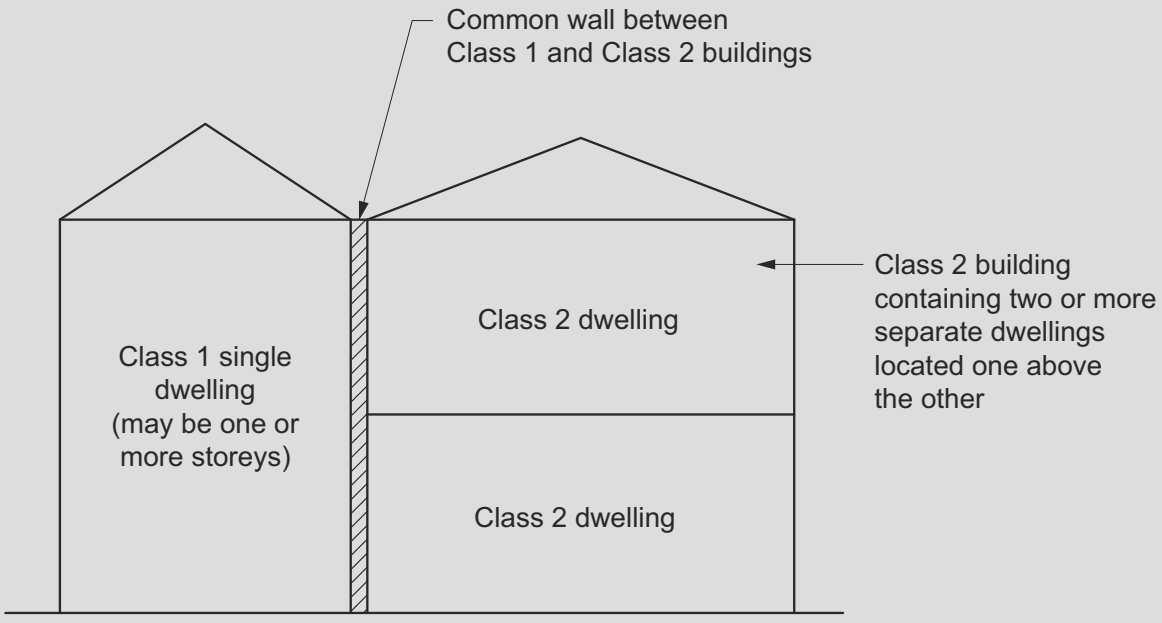
Where a sole-occupancy residential unit is located above another sole-occupancy residential unit, the building containing the units can be either a Class 2 or a Class 3 building, depending on the other circumstances of the building proposal.

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*.

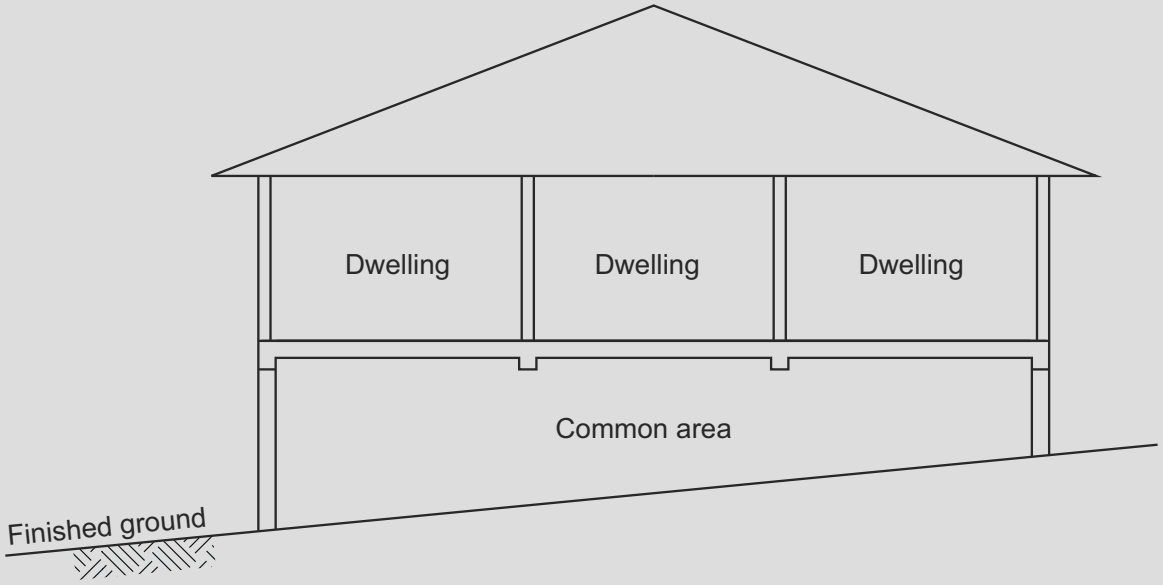
When two or more dwellings are attached to another class, they cannot be Class 4 parts, as any building can only contain one Class 4 dwelling.

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



Elevation

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

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*.

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.

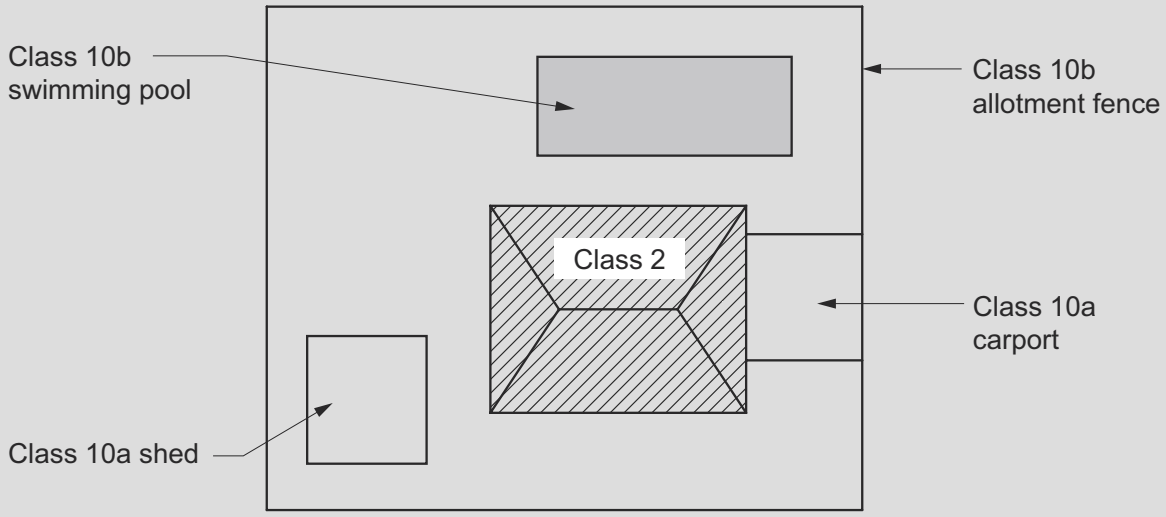
Typical outbuilding classifications include the following:

- 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



Plan view

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

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:

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.

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 — *loadbearing*	25	30	40	55	75
Concrete cast in-situ — non-*loadbearing* unplastered	25	30	40	50	75
Concrete cast in-situ — non-*loadbearing* 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

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 — *loadbearing*	25	40	45	65	90
Concrete cast in-situ — non-*loadbearing* unplastered	35	30	40	50	65
Concrete cast in-situ — non-*loadbearing* plastered 13 mm	25	25	30	40	50
Gypsum cast in-situ	-	-	-	-	50

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 S1C2(d)(ii)				
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

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 S1C2(d)(ii)				
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

(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^3 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^3 of perlite or vermiculite to 800 kg of gypsum and the second in the proportions of 1 m^3 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—

(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^2; 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 ⅓ 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.

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; or

(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.

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 10º to the vertical; and

(b) "horizontal" includes a surface at not more than 10º 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
Undersize	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

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 B Structure

Part B1 Structural provisions

Specification 4 Design of buildings in cyclonic areas

Part B1 Structural provisions

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

B1O1 Objective

[2019: BO1]

The Objective of this Part is to—

(a) safeguard people from injury caused by structural failure; and

(b) safeguard people from loss of amenity caused by structural behaviour; and

(c) protect *other property* from physical damage caused by structural failure; and

(d) safeguard people from injury that may be caused by failure of, or impact with, glazing.

Functional Statements

B1F1 Structure

[2019: BF1.1]

A building or structure is to withstand the combination of loads and other actions to which it may be reasonably subjected.

B1F2 Glazing

[2019: BF1.2]

(1) Glazing is to be installed in a building to avoid undue risk of injury to people.

(2) Glazing in a building should not cause injury to people due to its failure or people impacting with it because they did not see it.

Performance Requirements

B1P1 Structural reliability

[2019: BP1.1]

(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—

(a) perform adequately under all reasonably expected design actions; and

(b) withstand extreme or frequently repeated design actions; and

(c) be designed to sustain local damage, with the structural system as a whole remaining stable and not being damaged to an extent disproportionate to the original local damage; and

(d) avoid causing damage to *other properties*.

(2) The actions to be considered to satisfy (1) include but are not limited to—

(a) permanent actions (dead loads) including, for a Class 7b building, an additional notional permanent roof load of not less than 0.15 kPa to support the addition of solar photovoltaic panels; and

(b) imposed actions (live loads arising from occupancy and use); and

(c) wind action; and

(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.

Exemptions

The requirement for an additional notional permanent roof load to support photovoltaic panels in B1P1(2)(a) does not apply to a Class 7b building—

(a) where 100% of the roof area is shaded for more than 70% of daylight hours; or

(b) with a roof area of not more than 55 m^2; or

(c) where more than 50% of the roof area is used as a terrace, *carpark*, roof garden, roof light or the like.

Notes

The requirement in B1P1(2)(a) to consider, for a Class 7b building, an additional notional permanent roof load of not less than 0.15 kPa to support the addition of solar photovoltaic panels does not take effect until 1 October 2023.

B1P2 Structural resistance

[2019: BP1.2]

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.

B1P3 Glass installations at risk of human impact

[2019: BP1.3]

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 B1P4

SA B1P4

B1P4 Buildings in flood areas

[2019: BP1.4]

(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.

Applications

B1P4 only applies to—

(a) a Class 2 or 3 building or a Class 4 part of a building; and

(b) a Class 9a *health-care building*; and

(c) a Class 9c building.

Verification Methods

B1V1 Structural reliability

[2019: BV1]

(1) This *Verification Method* is applicable to components with a resistance coefficient of variation of at least 10% and not more than 40%.

(2) Where a component has a calculated resistance coefficient of variation of less than 10%, then a minimum value of 10% must be used.

(3) Compliance with B1P1 and B1P2 is verified for the design of a structural component for strength where—

(a) the capacity reduction factor ϕ satisfies $\phi \leq Average(\phi_G, \phi_Q, \phi_W, \ldots)$, where $\phi_G, \phi_Q, \phi_W, \ldots$ 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 $\phi_G, \phi_Q, \phi_W, \ldots$ are calculated for target reliability indices for permanent action β_{TG},

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

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

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

$C_S = 1 + V_S^2$, where—

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

(B) $\frac{\overline{S}}{S_N}$ = 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 B1V1a; and

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

(G) γ = appropriate load factor for the action as given in AS/NZS 1170.0; and

(H) ϕ = capacity factor for the appropriate action; and

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

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

(ii) The target reliability indices $\beta_{TG}, \beta_{TQ}, \beta_{TW}, \cdots$ thus established, must be not less than those given in Table B1V1b minus 0.5.

(iii) For situations where it is not appropriate to compare with an equivalent Deemed-to-Satisfy product, the target reliability index β must be as given in Table B1V1b.

(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 B1V1a: Annual action models

Design action	Ratio of mean action to nominal	Coefficient of variation of the action
Permanent action $(\gamma_G = 1.35)$	$(\overline{G}/G_N) = 1.00$	$V_G = 0.10$
Imposed action $(\gamma_Q = 1.50)$	$(\overline{Q}/Q_N) = 0.50$	$V_Q = 0.43$
Wind action $(\gamma_W = 1.00)$ (non-cyclonic)	$(\overline{W}/W_N) = 0.33$	$V_W = 0.49$
Wind action $(\gamma_W = 1.00)$ (cyclonic)	$(\overline{W}/W_N) = 0.16$	$V_W = 0.71$
Snow action $(\gamma_S = 1.00)$	$(\overline{S}/S_N) = 0.29$	$V_S = 0.57$

Design action	Ratio of mean action to nominal	Coefficient of variation of the action
Earthquake action $(\gamma_E = 1.00)$	$(\overline{E}/E_N) = 0.05$	$V_E = 1.98$

Table B1V1b: Annual target reliability indices

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

Table Notes

(1) Table B1V1b 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 must be increased to 5.0.

(3) The above target reliability indices are based on materials or systems that exhibit creep or brittle failure similar to timber or concrete.

(4) Table B1V1b may also be applicable to materials or systems that exhibit creep or brittle failure differently to steel, timber or concrete provided the creep 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.

B1V2 Structural robustness

[2019: BV2]

(1) Compliance with B1P1(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.

(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.

Deemed-to-Satisfy Provisions

B1D1 Deemed-to-Satisfy Provisions

[2019: B1.0]

(1) Where a *Deemed-to-Satisfy Solution* is proposed, *Performance Requirements* B1P1 to B1P4 are satisfied by complying with B1D2 to B1D6.

(2) Where a *Performance Solution* is proposed, the relevant *Performance Requirements* must be determined in accordance with A2G2(3) and A2G4(3) as applicable.

B1D2 Resistance to actions

[2019: B1.1]

The resistance of a building or structure must be greater than the most critical action effect resulting from different combinations of actions, where—

(a) the most critical action effect on a building or structure is determined in accordance with B1D3 and the general design procedures contained in AS/NZS 1170.0; and

(b) the resistance of a building or structure is determined in accordance with B1D4.

WA B1D3

B1D3 Determination of individual actions

[2019: B1.2]

The magnitude of individual actions must be determined in accordance with the following:

(a) Permanent actions:

(i) the design or known dimensions of the building or structure; and

(ii) the unit weight of the construction; and

(iii) AS/NZS 1170.1; and

(iv) for a Class 7b building, a notional additional permanent roof load of not less than 0.15 kPa to support the addition of solar photovoltaic panels.

(b) Imposed actions:

(i) the known loads that will be imposed during the occupation or use of the building or structure; and

(ii) *construction activity actions*; and

(iii) AS/NZS 1170.1.

(c) Wind, snow and ice and earthquake actions:

(i) the applicable annual probability of design event for safety, determined by—

(A) assigning the building or structure an Importance Level in accordance with Table B1D3a; and

(B) determining the corresponding annual probability of exceedance in accordance with Table B1D3b; and

(ii) AS/NZS 1170.2; and

(iii) AS/NZS 1170.3 as appropriate; and

(iv) AS 1170.4 as appropriate; and

(v) in cyclonic areas, metal roof cladding, its connections and immediate supporting members must comply with Specification 4; and

(vi) for the purposes of (v), cyclonic areas are those determined as being located in wind regions C and D in accordance with AS/NZS 1170.2.

(d) Actions not covered in (a), (b) and (c) above:

(i) the nature of the action; and

(ii) the nature of the building or structure; and

(iii) the Importance Level of the building or structure determined in accordance with Table B1D3a; and

(iv) AS/NZS 1170.1.

(e) For the purposes of (d) the actions include but are not limited to—

(i) liquid pressure action; and

(ii) ground water action; and

(iii) rainwater action (including ponding action); and

(iv) earth pressure action; and

(v) differential movement; and

(vi) time dependent effects (including creep and shrinkage); and

(vii) thermal effects; and

(viii) ground movement caused by—

(A) swelling, shrinkage or freezing of the subsoil; and

(B) landslip or subsidence; and

(C) *siteworks* associated with the building or structure; and

(ix) *construction activity actions*.

Table B1D3a: Importance Levels of buildings and structures

Importance level	Building Types
1	Buildings or structures presenting a low degree of hazard to life and *other property* in the case of failure.
2	Buildings or structures not included in Importance Level 1, 3 and 4.
3	Buildings or structures that are designed to contain a large number of people.
4	Buildings or structures that are essential to post-disaster recovery or associated with hazardous facilities.

Table B1D3b: Design events for safety

Importance level	Annual probability of exceedance for non-cyclonic wind	Annual probability of exceedance for cyclonic wind	Annual probability of exceedance for snow	Annual probability of exceedance for earthquake
1	1:100	1:200	1:100	1:250
2	1:500	1:500	1:150	1:500
3	1:1000	1:1000	1:200	1:1000
4	1:2000	1:2000	1:250	1:1500

Notes

B1D3(a)(iv) does not take effect until 1 October 2023.

Exemptions

B1D3(a)(iv) does not apply to a Class 7b building—

(a) where 100% of the roof area is shaded for more than 70% of daylight hours; or

(b) with a roof area of not more than 55m^2; or

(c) where more than 50% of the roof area is used as a terrace, *carpark*, roof garden, roof light or the like.

NT B1D4

QLD B1D4

WA B1D4

B1D4 Determination of structural resistance of materials and forms of construction

[2019: B1.4]

The structural resistance of materials and forms of construction must be determined in accordance with the following, as appropriate:

(a) Masonry (including masonry-veneer, unreinforced masonry and reinforced masonry): 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 Tables 10.3 and 4.1(a)(i)(C) of AS 3700.

(b) Concrete:
  (i) Concrete construction (including reinforced and prestressed concrete): AS 3600.
  (ii) Autoclaved aerated concrete: AS 5146.1 and AS 5146.3.
  (iii) Post-installed and cast-in fastenings: AS 5216.

(c) Steel construction:
  (i) Steel structures: AS 4100.
  (ii) Cold-formed steel structures: AS/NZS 4600.
  (iii) Residential and low-rise steel framing: NASH Standard – Residential and Low-Rise Steel Framing Part 1 or Part 2.

(d) Composite steel and concrete: AS/NZS 2327.

(e) Aluminium construction: AS/NZS 1664.1 or AS/NZS 1664.2.

(f) Timber construction:
  (i) Design of timber structures: AS 1720.1.
  (ii) Timber structures: AS 1684.2, AS 1684.3 or AS 1684.4.
  (iii) Nailplated timber roof trusses: AS 1720.5.

(g) Piling: AS 2159.

(h) Glazed assemblies:
  (i) The following glazed assemblies in an *external wall* must comply with AS 2047:
    (A) Windows excluding those listed in (ii).
    (B) Sliding and swinging glazed doors with a frame, including french and bi-fold doors with a frame.
    (C) Adjustable louvres.
    (D) Shopfronts.
    (E) Window walls with one piece framing.
  (ii) All glazed assemblies not covered by (i) and the following glazed assemblies must comply with AS 1288:
    (A) All glazed assemblies not in an *external wall*.
    (B) Revolving doors.
    (C) Fixed louvres.
    (D) Skylights, roof lights and windows in other than the vertical plane.
    (E) Sliding and swinging doors without a frame.
    (F) Windows constructed on site and architectural one-off windows, which are not design tested in accordance with AS 2047.
    (G) Second-hand windows, re-used windows and recycled windows.
    (H) Heritage windows.
    (I) Glazing used in balustrades and sloping overhead glazing.

(i) Termite Risk Management: Where a *primary building element* is subject to attack by subterranean termites: AS 3660.1, and—
  (i) for the purposes of this provision, a *primary building element* consisting entirely of, or a combination of, any of the following materials is considered not subject to termite attack:
    (A) Steel, aluminium or other metals.
    (B) Concrete.

(C) Masonry.

(D) Fibre-reinforced cement.

(E) Timber — naturally termite resistant in accordance with Appendix C of AS 3660.1.

(F) Timber — preservative treated in accordance with Appendix D of AS 3660.1; and

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

(A) the termite management system used; and

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

(C) where a chemical is used, its life expectancy as listed on the *appropriate authority's* pesticides register label; and

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

(j) Roof construction (except in cyclonic areas):

(i) Terracotta, fibre-cement and timber slates and shingles: AS 4597.

(ii) Roof tiling: AS 2050.

(iii) Cellulose cement corrugated sheets: AS/NZS 2908.1 with safety mesh installed in accordance with AS 1562.3 clause 2.4.3.2 except for sub-clause (c)(vii) for plastic sheeting.

(iv) Metal roofing: AS 1562.1.

(k) Particleboard structural flooring: AS 1860.2.

(l) Garage doors and other large access doors in openings not more than 3 m in height in *external walls* of buildings determined as being located in wind region C or D in accordance with AS/NZS 1170.2: AS/NZS 4505.

(m) Lift *shafts* which are not *required* to have an FRL, must—

(i) except as required by (ii), be completely enclosed with non-perforated material between the bottom of the pit and the ceiling of the lift *shaft*, other than—

(A) at landing doors, emergency doors and pit access doors; and

(B) *low-rise, low-speed constant pressure lifts*; and

(C) *small-sized, low-speed automatic lifts*; and

(ii) in *atrium* and observation areas, be protected with non-perforated material not less than 2.5 m in height—

(A) above any places on which a person can stand, which are within 800 mm horizontal reach of any vertical moving lift component including ropes and counterweights; and

(B) at the lowest level of the *atrium* area that the lift serves, on all sides except the door opening, for not less than 2.5 m in height, by enclosure with non-perforated material; and

(iii) be of non-brittle material; and

(iv) where glazing is used—

(A) comply with Table B1D4; or

(B) not fail the deflection criteria *required* by S6C11(c)(iii).

Table B1D4: Material and minimum thickness of glazing and polycarbonate sheet

Application	Lift *shaft* vision panels more than 65 000 mm^2, door panels, and lift *shafts*	Lift *shaft* vision panels less than or equal to 65 000 mm^2
Laminated glass	10 mm (0.76 mm interlayer)	6 mm (0.76 mm interlayer)
Toughened/ laminated glass	10 mm (0.76 mm interlayer)	6 mm (0.76 mm interlayer)
Annealed glass with security polyester film coating	10 mm	6 mm
Safety wire glass	Not applicable	Subject to fire test
Polycarbonate sheet	13 mm	6 mm

B1D5 Structural software

[2019: B1.5]

(1) Structural software used in computer aided design of a building or structure, that uses design criteria based on the *Deemed-to-Satisfy Provisions* of the BCA, 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.

(2) Structural software referred to in (1) can only be used for buildings within the following geometric limits:

(a) The distance from ground level to the underside of eaves must not exceed 6 m.

(b) The distance from ground level to the highest point of the roof, neglecting chimneys, must not exceed 8.5 m.

(c) The building width including roofed verandahs, excluding eaves, must not exceed 16 m.

(d) The building length must not exceed five times the building width.

(e) The roof pitch must not exceed 35 degrees.

(3) The requirements of (1) do not apply to design software for individual frame members such as electronic tables similar to those provided in—

(a) AS 1684; or

(b) NASH Standard Residential and Low-Rise Steel Framing Part 2.

QLD B1D6

SA B1D6

VIC B1D6

B1D6 Construction of buildings in flood hazard areas

[2019: B1.6]

(1) A building in a *flood hazard area* must comply with the ABCB Standard for Construction of Buildings in Flood Hazard Areas.

(2) The requirements of (1) only apply to a Class 2 or 3 building, Class 9a *health-care building*, Class 9c building or a Class 4 part of a building.

Specification 4 Design of buildings in cyclonic areas

S4C1 Scope

[2019: Spec B1.2: 1]

(1) This specification contains requirements for the design of buildings in cyclonic areas in addition to the requirements of AS/NZS 1170.2.

WA S4C1(2)

(2) For the purposes of Specification 4, cyclonic areas are those determined as being located in wind regions C and D in accordance with AS/NZS 1170.2.

S4C2 Roof cladding

[2019: Spec B1.2: 2]

Test for strength: Metal roof cladding, its 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 S4C2.

Table S4C2: 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 minimum of 10 seconds.

NT S4C3

Section C Fire resistance

Part C1 Fire resistance

Objectives

C1O1 Objective

Functional Statements

C1F1 Structural stability during a fire

C1F2 Prevention of fire spread

Performance Requirements

C1P1 Structural stability during a fire

C1P2 Spread of fire

C1P3 Spread of fire and smoke in health and residential care buildings

C1P4 Safe conditions for evacuation

C1P5 Behaviour of concrete external walls in a fire

C1P6 Fire protection of service equipment

C1P7 Fire protection of emergency equipment

C1P8 Fire protection of openings and penetrations

C1P9 Fire brigade access

Verification Methods

C1V1 Fire spread between buildings on adjoining allotments

C1V2 Fire spread between buildings on the same allotment

C1V3 Fire spread via external walls

C1V4 Fire Safety Verification Method

Part C2 Fire resistance and stability

Deemed-to-Satisfy Provisions

C2D1 Deemed-to-Satisfy Provisions

C2D2 Type of construction required

C2D3 Calculation of rise in storeys

C2D4 Buildings of multiple classification

C2D5 Mixed types of construction

C2D6 Two storey Class 2, 3 or 9c buildings

C2D7 Class 4 parts of buildings

C2D8 Open spectator stands and indoor sports stadiums

C2D9 Lightweight construction

C2D10 Non-combustible building elements

C2D11 Fire hazard properties

C2D12 Performance of external walls in fire

C2D13 Fire-protected timber: Concession

C2D14 Ancillary elements

C2D15 Fixing of bonded laminated cladding panels

Part C3 Compartmentation and separation

Deemed-to-Satisfy Provisions

C3D1 Deemed-to-Satisfy Provisions

C3D2 Application of Part

Part C1 Fire resistance

Introduction to this Part

This Part focuses on minimising risk of illness, injury or loss of life due to fire in a building including during evacuation, reducing fire spread within and between buildings and minimising risk to the public and occupants of nearby buildings when a fire occurs.

Objectives

C1O1 Objective

[2019: CO1]

The Objective of Parts C1, C2, C3 and C4 is to—

(a) safeguard people from illness or injury due to a fire in a building; and

(b) safeguard occupants from illness or injury while evacuating a building during a fire; and

(c) facilitate the activities of emergency services personnel; and

(d) avoid the spread of fire between buildings; and

(e) protect *other property* from physical damage caused by structural failure of a building as a result of fire

Functional Statements

C1F1 Structural stability during a fire

[2019: CF1]

A building is to be constructed to maintain structural stability during fire to—

(a) allow occupants time to evacuate safely; and

(b) allow for *fire brigade* intervention; and

(c) avoid damage to *other property*.

C1F2 Prevention of fire spread

[2019: CF2]

A building is to be provided with safeguards to prevent fire spread—

(a) so that occupants have time to evacuate safely without being overcome by the effects of fire; and

(b) to allow for *fire brigade* intervention; and

(c) to *sole-occupancy units* providing sleeping accommodation; and

(d) to adjoining *fire compartments*; and

(e) between buildings.

Applications

C1F2(c) only applies to a Class 2 or 3 building or Class 4 part of a building.

Performance Requirements

C1P1 Structural stability during a fire

[2019: CP1]

A building must have elements which will, to the degree necessary, maintain structural stability during a fire appropriate to—

(a) the function or use of the building; and
(b) the *fire load*; and
(c) the potential *fire intensity*; and
(d) the *fire hazard*; and
(e) the height of the building; and
(f) its proximity to *other property*; and
(g) any active *fire safety systems* installed in the building; and
(h) the size of any *fire compartment*; and
(i) *fire brigade* intervention; and
(j) other elements they support; and
(k) the *evacuation time*.

C1P2 Spread of fire

[2019: CP2]

(1) A building must have elements which will, to the degree necessary, avoid the spread of fire—
(a) to *exits*; and
(b) to *sole-occupancy units* and *public corridors*; and
(c) between buildings; and
(d) in a building.

(2) Avoidance of the spread of fire referred to in (1) must be appropriate to—
(a) the function or use of the building; and
(b) the *fire load*; and
(c) the potential *fire intensity*; and
(d) the *fire hazard*; and
(e) the number of *storeys* in the building; and
(f) its proximity to *other property*; and
(g) any active *fire safety systems* installed in the building; and
(h) the size of any *fire compartment*; and
(i) *fire brigade* intervention; and
(j) other elements they support; and
(k) the *evacuation time*.

Applications

C1P2(1)(b) only applies to a Class 2 or 3 building or Class 4 part of a building.

C1P3 Spread of fire and smoke in health and residential care buildings

[2019: CP3]

A building must be protected from the spread of fire and smoke to allow sufficient time for the orderly evacuation of the building in an emergency.

Applications

C1P3 only applies to—

(a) a *patient care area* of a Class 9a *health-care building*; and

(b) a Class 9c building.

C1P4 Safe conditions for evacuation

[2019: CP4]

To maintain tenable conditions during occupant evacuation, a material and an assembly must, to the degree necessary, resist the spread of fire and limit the generation of smoke and heat, and any toxic gases likely to be produced, appropriate to—

(a) the *evacuation time*; and

(b) the number, mobility and other characteristics of occupants; and

(c) the function or use of the building; and

(d) any active *fire safety systems* installed in the building.

Applications

C1P4 applies to linings, materials and assemblies in a Class 2 to 9 building.

C1P5 Behaviour of concrete external walls in a fire

[2019: CP5]

A concrete *external wall* that could collapse as a complete panel (e.g. tilt-up and pre-cast concrete) must be designed so that in the event of fire within the building the likelihood of outward collapse is avoided.

Limitations

C1P5 does not apply to a building having more than two *storeys* above ground level.

C1P6 Fire protection of service equipment

[2019: CP6]

A building must have elements, which will, to the degree necessary, avoid the spread of fire from service equipment having—

(a) a high *fire hazard*; or

(b) a potential for explosion resulting from a high *fire hazard*.

C1P7 Fire protection of emergency equipment

[2019: CP7]

A building must have elements, which will, to the degree necessary, avoid the spread of fire so that emergency equipment provided in a building will continue to operate for a period of time necessary to ensure that the intended function of the

equipment is maintained during a fire.

C1P8 Fire protection of openings and penetrations

[2019: CP8]

Any building element provided to resist the spread of fire must be protected, to the degree necessary, so that an adequate level of performance is maintained—

(a) where openings, construction joints and the like occur; and

(b) where penetrations occur for building services.

C1P9 Fire brigade access

[2019: CP9]

Access must be provided to and around a building, to the degree necessary, for *fire brigade* vehicles and personnel to facilitate *fire brigade* intervention appropriate to—

(a) the function or use of the building; and

(b) the *fire load*; and

(c) the potential *fire intensity*; and

(d) the *fire hazard*; and

(e) any active *fire safety systems* installed in the building; and

(f) the size of any *fire compartment*.

Verification Methods

C1V1 Fire spread between buildings on adjoining allotments

[2019: CV1]

Compliance with C1P2(1)(c) 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 C1V1 at the location on an adjoining property set out in Column 1 of Table C1V1; and

(b) when located at the distances from the allotment boundary set out in Column 1 of Table C1V1, a building is capable of withstanding the heat flux set out in Column 2 of Table C1V1 without ignition.

Table C1V1: Fire spread between buildings on adjoining allotments

Column 1 (Location)	Column 2 (Heat flux (kW/m^2))
On boundary	80
1 m from boundary	40
3 m from boundary	20
6 m from boundary	10

C1V2 Fire spread between buildings on the same allotment

[2019: CV2]

Compliance with C1P2(1)(c) to avoid the spread of fire between buildings on the same allotment is verified when, for the distances between buildings set out in Column 1 of Table C1V2, it is calculated that a building—

(a) is capable of withstanding the heat flux set out in Column 2 of Table C1V2 without ignition; and

(b) will not cause heat flux in excess of those set out in Column 2 of Table C1V2.

Table C1V2: Fire spread between buildings on the same allotment

Column 1 (Distance between buildings on the same allotment (m))	Column 2 (Heat flux (kW/m^2))
0	80
2	40
6	20
12	10

C1V3 Fire spread via external walls

[2019: CV3]

Compliance with C1P2 to avoid the spread of fire via the *external wall* of a building is verified when—

(a) compliance with C1P2(1)(c) to avoid the spread of fire between buildings, where applicable, is verified in accordance with C1V1 or C1V2, as appropriate; and

(b) the *external wall* system—

(i) has been tested for external wall (EW) performance in accordance with AS 5113; and

(ii) has achieved the classification EW; and

(iii) if containing a cavity, incorporates cavity barriers and these cavity barriers have been included in the test performed under (i) at the perimeter of each floor; and

(c) in a building of Type A construction, the building is protected throughout by a sprinkler system (other than a FPAA101D or FPAA101H system) complying with Specification 17 and has—

(i) sprinkler protection to balconies, patios and terraces, and where overhead sprinkler coverage is not achieved alongside the *external wall*, sidewall sprinkler heads are provided at the *external wall* for the extent of the balcony, patio or terrace where overhead sprinkler coverage is not achieved; and

(ii) for a building with an *effective height* more than 25 m—

(A) monitored stop valves provided at each floor level arranged to allow the isolation of the floor level containing the stop valve while maintaining protection to the remainder of the building; and

(B) the sprinkler system being capable of providing sufficient flow to serve the design area required by AS 2118.1 for the relevant hazard class on each floor level plus the design area required by AS 2118.1 for the floor level above, except where the former level is either the floor level below the uppermost roof, or any floor level that is wholly below ground; and

(d) in a building of Type B construction, the building is—

(i) a Class 5, 6, 7 or 8 building or Class 4 part of a building; or

(ii) a Class 2, 3 or 9 building that—

(A) is protected throughout by a sprinkler system (other than a FPAA101D or FPAA101H system) complying with Specification 17; or

(B) has any openings in *external walls* separated by a slab or other horizontal construction complying with C3D7(1)(d) as if the building were of Type A construction.

C1V4 Fire Safety Verification Method

[2019: CV4, Sch. 7 - cl. 1.3]

(1) Compliance with C1P1, C1P2, C1P3, C1P4, C1P5, C1P6, C1P7, C1P8 and C1P9 is verified when a building is designed in accordance with—

(a) the requirements of (2), (3), (4), (5) and (6); and

(b) the Fire Safety Verification Method Standard.

(2) *Performance-based design brief (PBDB)*:

(a) When using this *Verification Method*, the fire safety engineer must undertake a *performance-based design brief (PBDB)* that must—

(i) involve all stakeholders relevant to the building design; and

(ii) outline the fire strategy to be adopted.

(b) While full agreement on all aspects of the *PBDB* is the preferred outcome, it is acknowledged that in some instances this may not be possible to obtain.

(c) In the event that full agreement cannot be achieved through the *PBDB*, dissenting views must be appropriately recorded and carried throughout the process and considered as part of the due processes of the *appropriate authority* when determining compliance and providing approval.

(d) Consideration of whether a peer review (by an independent fire safety engineer) of some or all of the proposed *Performance Solutions* and the supporting analysis is required or not, must be undertaken at this *PBDB* stage.

(3) Fire strategy:

(a) The *PBDB* must cover the fire safety strategy for the building, outlining the philosophy and approach that will be adopted to achieve the required level of performance.

(b) The fire safety strategy must pay particular attention to the evacuation strategy to be used and the management regimes necessary.

(4) Stakeholder involvement:

(a) The *PBDB* must be developed collaboratively by the relevant stakeholders in the particular project.

(b) The following parties must be involved:

(i) Client or client's representative (such as project manager).

(ii) Fire engineer.

(iii) Architect or designer.

(iv) Various specialist consultants.

(v) Fire service (public or private).

(vi) *Appropriate authority* (Authority Having Jurisdiction – subject to state/territory legislation).

(vii) Tenants or tenants representative for the proposed building (if available)

(viii) Building operations management (if available).

(c) Conducting a simple stakeholder analysis can be used to determine who must be involved in the *PBDB* process.

(d) This analysis must identify stakeholders with a high level of interest in the design process, and/or likely to be affected by the consequences of a fire should it occur in the building.

(5) Required level of safety:

(a) Given the absence of specific safety targets in the NCC and the qualitative nature of the NCC fire safety *Performance Requirements*, for this *Verification Method* to ensure the level of safety expected, the proposed building design must be at least equivalent to the relevant *Deemed-to-Satisfy Provisions*.

(b) As the NCC *Deemed-to-Satisfy Provisions* evolved originally from State and Territory regulations and are regularly updated to reflect technical advances and experience they are commonly accepted as providing an acceptable benchmark.

(c) It is accepted that the NCC *Deemed-to-Satisfy Provisions* reflect societal expectations in terms of fire safety, which address individual risk, societal risk and the robustness in the design by adopting a defence in depth approach.

(d) In the majority of *design scenarios* the *Verification Method* requires a demonstration that the proposed level of safety is at least equivalent to the *Deemed-to-Satisfy Provisions*.

(e) In relation to the required level of safety, the *PBDB* process must—

(i) identify the relevant *Deemed-to-Satisfy Provisions* to be used in the equivalency process to determine whether the relevant *Performance Requirements* have been met; and

(ii) consider the specific size, complexity and use of the building with regards to the *Deemed-to-Satisfy Provisions* to be used in the equivalency process; and

(iii) consider the specific occupant profile of the building, paying particular attention to occupants with a disability and the vulnerable, in regards to the *Deemed-to-Satisfy Provisions* to be used in the equivalency process.

(6) Final report: Once the analysis of all relevant *design scenarios* for all the required *Performance Solutions* has been completed, the fire safety engineer must prepare a final report that includes the following:

(a) The agreed *PBDB*.

(b) All modelling and analysis.

(c) Analysis required to demonstrate that the proposed building provides a level of safety at least equivalent to the relevant *Deemed-to-Satisfy Provisions*.

(d) Any other information required to clearly demonstrate that the building and its *fire safety system* satisfies the relevant *Performance Requirements* as set out in the Fire Safety Verification Method Standard.

Explanatory Information

When developing a *Performance Solution*, a *PBDB* is an important step in the process. It allows all relevant stakeholders to be involved in the development of the building design and its *fire safety system*.

A *PBDB* is a documented process that defines the scope of work for the fire engineering analysis. Its purpose is to set down the basis, as agreed by the relevant stakeholders, on which the fire safety analysis of the proposed building and its *Performance Solutions* will be undertaken.

Relevant stakeholders will vary from design to design. However, some examples of relevant stakeholders are: a fire safety engineer, architect, developer, client, *appropriate authority* (some state legislation prevents *appropriate authorities* from being involved in the design process), fire authority and other stakeholders that fire safety design may affect such as insurers. Further information on the relevant stakeholders is provided in the Fire Safety Verification Method Standard.

Guidance on the development of a *PBDB* is presented in the Australian Fire Engineering Guidelines.

Part C2 Fire resistance and stability

Introduction to this Part

This Part contains *Deemed-to-Satisfy Provisions* for Part C1. Its sets out Types of *fire-resisting* construction based on building height, size, use and other relevant factors, FRLs and *fire hazard properties*, which describe how certain materials react to fire. It also contains construction requirements to facilitate *fire brigade* intervention.

Deemed-to-Satisfy Provisions

C2D1 Deemed-to-Satisfy Provisions

[2019: C1.0]

(1) Where a *Deemed-to-Satisfy Solution* is proposed, *Performance Requirements* C1P1 to C1P9 are satisfied by complying with—

(a) C2D2 to C2D15, C3D2 to C3D15 and C4D2 to C4D17; and

(b) in a building containing an *atrium*, Part G3; and

(c) for a building containing an *occupiable outdoor area*, Part G6; and

(d) for additional requirements for Class 9b buildings, Part I1; and

(e) for *farm sheds*, Part I3.

(2) Where a *Performance Solution* is proposed, the relevant *Performance Requirements* must be determined in accordance with A2G2(3) and A2G4(3) as applicable.

C2D2 Type of construction required

[2019: C1.1]

SA C2D2(1)

(1) The minimum Type of *fire-resisting construction* of a building must be determined in accordance with Table C2D2, except as allowed for—

(a) certain Class 2, 3 or 9c buildings, in C2D6; and

(b) a Class 4 part of a building located on the top *storey*, in C2D4(2); and

(c) *open spectator stands* and indoor sports stadiums, in C2D8.

(2) Each building element must comply with Specification 5 as applicable.

SA C2D2(3)

SA C2D2(4)

Table C2D2: Type of construction required

Rise in storeys	Class of building 2, 3, 9	Class of building 5, 6, 7, 8
4 or more	A	A
3	A	B
2	B	C
1	C	C

C2D3 Calculation of rise in storeys

[2019: C1.2]

(1) The *rise in storeys* is the sum of the greatest number of *storeys* at any part of the *external walls* of the building and any *storeys* within the roof space—

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

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

(2) A *storey* is not counted if—

(a) it is situated at the top of the building and contains only heating, ventilating or lift equipment, water tanks, or similar service units or equipment; or

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

(3) In a Class 7 or 8 building, a *storey* that has an average internal height of more than 6 m is counted as—

(a) one *storey* if it is the only *storey* above the ground; or

(b) 2 *storeys* in any other case.

(4) For the purposes of calculating the *rise in storeys* of a building—

(a) a *mezzanine* is regarded as a *storey* in that part of the building in which it is situated if its *floor area* is more than 200 m^2 or more than ⅓ of the *floor area* of the room, whichever is the lesser; and

(b) two or more *mezzanines* are regarded as a *storey* in that part of the building in which they are situated if they are at or near the same level and have an aggregate *floor area* more than 200 m^2 or more than ⅓ of the *floor area* of the room, whichever is the lesser.

C2D4 Buildings of multiple classification

[2019: C1.3]

(1) In a building of multiple classifications, the Type of construction *required* for the building is the most *fire-resisting* Type resulting from the application of Table C2D2 on the basis that the classification applying to the top *storey* applies to all *storeys*.

(2) In a building containing a Class 4 part on the top *storey*, for the purpose of (1), the classification applying to the top *storey* must be—

(a) when the Class 4 part occupies the whole of the top *storey*, the classification applicable to the next highest *storey*; or

(b) when the Class 4 part occupies part of the top *storey*, the classification applicable to the adjacent part.

C2D5 Mixed types of construction

[2019: C1.4]

A building may be of mixed Types of construction where it is separated in accordance with C3D8 and the Type of construction is determined in accordance with C2D2 or C2D4.

C2D6 Two storey Class 2, 3 or 9c buildings

[2019: C1.5]

A building having a *rise in storeys* of 2 may be of Type C construction if—

(a) it is a Class 2 or 3 building or a mixture of these classes and each *sole-occupancy unit* has—

(i) access to at least 2 *exits*; or

(ii) its own direct access to a road or *open space*; or

(b) it is a Class 9c building protected throughout with a sprinkler system (other than a FPAA101D or FPAA101H system) complying with Specification 17 and complies with the maximum compartment size specified in Table C3D3 for Type C construction.

C2D7 Class 4 parts of buildings

[2019: C1.6]

For the Type of construction *required* by C2D4, a Class 4 part of a building requires the same FRL for building elements and the same construction separating the Class 4 part from the remainder of the building as a Class 2 part in the same Type of construction.

C2D8 Open spectator stands and indoor sports stadiums

[2019: C1.7]

(1) An *open spectator stand* or indoor sports stadium may be of Type C construction and need not comply with the other provisions of this Part if it contains not more than one tier of seating, is of *non-combustible* construction, and has only changing rooms, sanitary facilities or the like below the tiered seating.

(2) In (1), one tier of seating means numerous rows of tiered seating incorporating cross-overs but within one viewing level.

C2D9 Lightweight construction

[2019: C1.8]

(1) *Lightweight construction* must comply with Specification 6 if it is used in a wall system—

(a) that is *required* to have an FRL; or

(b) for a lift *shaft*, stair *shaft* or service *shaft* or an *external wall* bounding a *public corridor* including a non *fire-isolated passageway* or non *fire-isolated ramp*, in a spectator stand, sports stadium, cinema or theatre, railway station, bus station or airport terminal.

(2) If *lightweight construction* is used for the *fire-resisting* covering of a steel column or the like, and if—

(a) the covering is not in continuous contact with the column, then the void must be filled solid, to a height of not less than 1.2 m above the floor to prevent indenting; and

(b) the column is liable to be damaged from the movement of vehicles, materials or equipment, then the covering must be protected by steel or other suitable material.

C2D10 Non-combustible building elements

[2019: C1.9]

(1) In a building *required* to be of Type A or B construction, the following building elements and their components must be *non-combustible*:

(a) *External walls* and *common walls*, including all components incorporated in them including the facade covering, framing and insulation.

(b) The flooring and floor framing of lift pits.

(c) Non-*loadbearing internal walls* where they are *required* to be *fire-resisting*.

(2) A *shaft*, being a lift, ventilating, pipe, garbage, or similar *shaft* that is not for the discharge of hot products of combustion, that is non-*loadbearing*, must be of *non-combustible* construction in—

(a) a building *required* to be of Type A construction; and

(b) a building *required* to be of Type B construction, subject to C3D11, in—

(i) a Class 2, 3 or 9 building; and

(ii) a Class 5, 6, 7 or 8 building if the *shaft* connects more than 2 *storeys*.

(3) A *loadbearing internal wall* and a *loadbearing fire wall*, including those that are part of a *loadbearing shaft*, must comply with Specification 5.

(4) The requirements of (1) and (2) do not apply to the following:

(a) Gaskets.

(b) Caulking.

(c) Sealants.

(d) Termite management systems.

(e) Glass, including laminated glass, and associated adhesives, including tapes.

(f) Thermal breaks associated with—

(i) glazing systems; or

(ii) *external wall* systems, where the thermal breaks—

(A) are no larger than necessary to achieve thermal objectives; and

(B) do not extend beyond one *storey*; and

(C) do not extend beyond one *fire compartment*.

(g) *Damp-proof courses*.

(h) Compressible fillers and backing materials, including those associated with articulation joints, closing gaps not wider than 50 mm.

(i) Isolated—

(i) construction packers and shims; or

(ii) blocking for fixing fixtures; or

(iii) fixings, including fixing accessories; or

(iv) acoustic mounts.

(j) Waterproofing materials applied to the external face, used below ground level and up to 250 mm above ground level.

(k) Joint trims and joint reinforcing tape and mesh of a width not greater than 50 mm.

(l) Weather sealing materials, applied to gaps not wider than 50 mm, used within and between concrete elements.

(m) Wall ties and other masonry components complying with AS 2699 Part 1 and Part 3 as appropriate, and associated with masonry wall construction.

(n) Reinforcing bars and associated minor elements that are wholly or predominately encased in concrete or grout.

(o) A paint, lacquer or a similar finish or coating.

(p) Adhesives, including tapes, associated with stiffeners for cladding systems.

(q) Fire-protective materials and components *required* for the protection of penetrations.

(5) The following materials, when entirely composed of itself, are *non-combustible* and may be used wherever a *non-combustible* material is *required*:

(a) Concrete.

(b) Steel, including metallic coated steel.

(c) Masonry, including mortar.

(d) Aluminium, including aluminium alloy.

(e) Autoclaved aerated concrete, including mortar.

(f) Iron.

(g) Terracotta.

(h) Porcelain.

(i) Ceramic.

(j) Natural stone.

(k) Copper.

(l) Zinc.

(m) Lead.

(n) Bronze.

(o) Brass.

(6) The following materials 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 thickness and where the *Spread-of-Flame Index* of the product is not greater 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; and

(iv) when located externally, are fixed in accordance with C2D15.

Explanatory Information

For C2D10(4)(i), isolated refers to localised situations where these elements are used. For example, construction packers and shims used for levelling *window* frames at fixing points and blocking used to fix a handrail. Blocking an entire wall is not considered to be used in an isolated situation. Isolated fixings and fixing accessories may include, but are not limited to, screws, anchors, wall plugs, nails and washers.

Associated minor elements in C2D10(4)(n) refers to elements such as bar chairs, tie wire and spacers commonly used to support reinforcement in concrete construction.

C2D10(4)(p) applies only to adhesives and tapes associated with stiffeners that may be installed to prevent buckling, bowing or distortion of a cladding material. This provision does not allow for the use of adhesives and tapes as the primary method of support or fixing the cladding material. Refer also to C2D15.

C4D15 is a provision that necessitates the installation of fire-protective materials and components referred to in C2D10(4)(q).

NSW C2D11

C2D11 Fire hazard properties

[2019: C1.10]

(1) The *fire hazard properties* of the following internal linings, materials and assemblies within a Class 2 to 9 building must comply with Specification 7:

(a) Floor linings and floor coverings.

(b) Wall linings and ceiling linings.

(c) Air-handling ductwork.

(d) Lift cars.

(e) In Class 9b buildings used as a theatre, public hall or the like—

(i) fixed seating in the audience area or auditorium; and

(ii) a proscenium curtain *required* by Specification 32.

(f) Escalators, moving walkways and non-*required* non *fire-isolated stairways* or pedestrian ramps subject to

Specification 14.

(g) *Sarking-type materials*.

(h) Attachments to floors, ceilings, *internal walls*, *common walls*, *fire walls* and to internal linings of *external walls*.

(i) Other materials including insulation materials other than *sarking-type materials*.

(2) Paint or fire-retardant coatings must not be used to achieve compliance with the *required fire hazard properties*.

VIC C2D11(3)

(3) The requirements of (1) do not apply to a material or assembly if it is—

(a) plaster, cement render, concrete, terrazzo, ceramic tile or the like; or

(b) a *fire-protective covering*; or

(c) a timber-framed *window*; or

(d) a solid timber handrail or skirting; or

(e) a timber-faced door; or

(f) an electrical switch, socket-outlet, cover plate or the like; or

(g) a material used for—

(i) a roof insulating material applied in continuous contact with a substrate; or

(ii) an adhesive; or

(iii) a *damp-proof course*, *flashing*, caulking, sealing, ground moisture barrier, or the like; or

(h) a paint, varnish, lacquer or similar finish, other than nitro-cellulose lacquer; or

(i) a clear or translucent roof light of glass fibre-reinforced polyester if—

(i) the roof in which it is installed forms part of a single *storey* building *required* to be Type C construction; and

(ii) the material is used as part of the roof covering; and

(iii) it is not closer than 1.5 m from another roof light of the same type; and

(iv) each roof light is not more than 14 m^2 in area; and

(v) the area of the roof lights per 70 m^2 of roof surface is not more than 14 m^2; or

(j) a face plate or neck adaptor of supply and return air outlets of an air handling system; or

(k) a face plate or diffuser plate of light fitting and emergency *exit* signs and associated electrical wiring and electrical components; or

(l) a joinery unit, cupboard, shelving, or the like; or

(m) an attached non-building fixture and fitting such as—

(i) a curtain, blind, or similar decor, other than a proscenium curtain *required* by Specification 32; and

(ii) a whiteboard, *window* treatment or the like; or

(n) timber treads, risers, landings and associated supporting framework installed in accordance with D3D30 where the *Spread-of-Flame Index* and the *Smoke-Developed Index* of the timber does not exceed 9 and 8 respectively; or

(o) any other material that does not significantly increase the hazards of fire.

C2D12 Performance of external walls in fire

[2019: C1.11]

Concrete *external walls* that could collapse as complete panels (e.g. tilt-up and pre-cast concrete), in a building having a *rise in storeys* of not more than 2, must comply with Specification 8.

C2D13 Fire-protected timber: Concession

[2019: C1.13]

Fire-protected timber may be used wherever an element is *required* to be *non-combustible*, provided—

(a) the building is—

(i) a separate building; or

(ii) a part of a building—

(A) which only occupies part of a *storey*, and is separated from the remaining part by a *fire wall*; or

(B) which is located above or below a part not containing *fire-protected timber* and the floor between the adjoining parts is provided with an FRL not less than that prescribed for a *fire wall* for the lower *storey*; and

(b) the building has an *effective height* of not more than 25 m; and

(c) the building has a sprinkler system (other than a FPAA101D or FPAA101H system) throughout complying with Specification 17; and

(d) any insulation installed in the cavity of the timber building element to have an FRL is *non-combustible*; and

(e) cavity barriers are provided in accordance with Specification 9.

C2D14 Ancillary elements

[2019: C1.14]

An *ancillary element* must not be fixed, installed, attached to or supported by the concealed internal parts or external face of an *external wall* that is *required* to be *non-combustible* unless it is one of the following:

(a) An *ancillary element* that is *non-combustible*.

(b) A gutter, downpipe or other plumbing fixture or fitting.

(c) A flashing.

(d) A grate, grille or similar cover not more than 2 m^2 in area associated with a building service.

(e) An electrical switch, socket-outlet, cover plate or the like.

(f) A light fitting.

(g) A *required* sign.

(h) A sign other than one provided under (a) or (g) that—

(i) achieves a *group number* of 1 or 2; and

(ii) does not extend beyond one *storey*; and

(iii) does not extend beyond one *fire compartment*; and

(iv) is separated vertically from other signs permitted under (h) by at least 2 *storeys*.

(i) An awning, sunshade, canopy, blind or shading hood other than one provided under (a) that—

(i) meets the relevant requirements of Table S7C7 as for an internal element; and

(ii) serves a *storey*—

(A) at ground level; or

(B) immediately above a *storey* at ground level; and

(iii) does not serve an *exit*, where it would render the *exit* unusable in a fire.

(j) A part of a security, intercom or announcement system.

(k) Wiring.

(l) Waterproofing material installed in accordance with AS 4654.2 and applied to an adjacent floor surface, including vertical upturn, or a roof surface.

(m) Collars, sleeves and insulation associated with service installations.

(n) Screens applied to vents, weepholes and gaps complying with AS 3959.

(o) Wiper and brush seals associated with doors, windows or other openings.

(p) A gasket, caulking, sealant or adhesive directly associated with (a) to (o).

Limitations

C2D14 does not apply to *ancillary elements* fixed, installed or attached to the internal face or lining of an *external wall*.

Notes

C2D14 does not prevent the mounting of domestic air-conditioning condenser units on *external walls*.

Explanatory Information

Ancillary elements fixed, installed or attached to the internal face or lining of an *external wall* may be subject to other provisions such as C2D11.

C2D15 Fixing of bonded laminated cladding panels

[New for 2022]

(1) In a building *required* to be of Type A or B construction, externally located bonded laminated cladding panels must have all layers of cladding mechanically supported or restrained to the supporting frame.

(2) An externally located bonded laminated cladding panel need not comply with (1) if it is one of the following:

(a) A laminated glass system.

(b) Layered plasterboard product.

(c) Perforated gypsum lath with a normal paper finish.

(d) Fibrous-plaster sheet.

(e) Fibre-reinforced cement sheeting.

(f) A component of a garage door.

Notes

For C2D15(1), mechanical support or restraint means fixing that does not solely rely on chemical adhesive and includes concealed fixing systems such as cassette fixing, channel-type fixing and face fixing.

Explanatory Information

For structural requirements relating to the fixing of cladding, refer to Section B. For most cladding systems, the requirements of Section B will necessitate mechanical fixing of the cladding panel to the supporting frame.

SA C2D16

Part C3 Compartmentation and separation

Introduction to this Part

This Part contains *Deemed-to-Satisfy Provisions* for Part C1. It covers compartmentation to limit fire size and spread, separation to limit fire spread between *fire compartments*, parts with different classifications, stairways, lift *shafts*, equipment, electricity supplies and *public corridors*. It also contains construction requirements to facilitate *fire brigade* intervention.

Deemed-to-Satisfy Provisions

C3D1 Deemed-to-Satisfy Provisions

[2019: C2.0]

(1) Where a *Deemed-to-Satisfy Solution* is proposed, *Performance Requirements* C1P1 to C1P9 are satisfied by complying with—

(a) C2D2 to C2D15, C3D2 to C3D15 and C4D2 to C4D17; and

(b) in a building containing an *atrium*, Part G3; and

(c) for a building containing an *occupiable outdoor area*, Part G6; and

(d) for additional requirements for Class 9b buildings, Part I1; and

(e) for *farm sheds*, Part I3.

(2) Where a *Performance Solution* is proposed, the relevant *Performance Requirements* must be determined in accordance with A2G2(3) and A2G4(3) as applicable.

C3D2 Application of Part

[2019: C2.1]

(1) C3D3, C3D4 and C3D5 do not apply to a *carpark* provided with a sprinkler system (other than a FPAA101D or FPAA101H system) complying with Specification 17, an *open-deck carpark* or an *open spectator stand*.

(2) C3D13(1)(e) does not apply to a Class 8 *electricity network substation*.

C3D3 General floor area and volume limitations

[2019: C2.2]

(1) The size of any *fire compartment* or *atrium* in a Class 5, 6, 7, 8 or 9 building must not exceed the relevant maximum *floor area* nor the relevant maximum *volume* set out in Table C3D3 and C3D6 except as permitted in C3D4.

(2) A part of a building which contains only heating, ventilating, or lift equipment, water tanks, or similar service units is not counted in the *floor area* or *volume* of a *fire compartment* or *atrium* if it is situated at the top of the building.

(3) In a building containing an *atrium*, the part of the *atrium well* bounded by the perimeter of the openings in the floors and extending from the level of the first floor above the *atrium* floor to the roof covering is not counted in the *volume* of the *atrium* for the purposes of this clause.

Table C3D3: Maximum size of fire compartments or atria

Classification	Type A construction	Type B construction	Type C construction
5, 9b or 9c	Max *floor area*—8 000 m^2	Max *floor area*—5 500 m^2	Max *floor area*—3 000 m^2
	Max *volume*—48 000 m^3	Max *volume*—33 000 m^3	max *volume*—18 000 m^3

Classification	Type A construction	Type B construction	Type C construction
6, 7, 8 or 9a (except for *patient care areas*)	Max *floor area*—5 000 m^2	Max *floor area*—3 500 m^2	Max *floor area*—2 000 m^2
	Max *volume*—30 000 m^3	Max *volume*—21 000 m^3	Max *volume*—12 000 m^3

Table Notes

See C3D6 for maximum size of compartments in *patient care areas* in Class 9a *health-care buildings*.

C3D4 Large isolated buildings

[2019 C2.3]

The size of a *fire compartment* in a building may exceed that specified in Table C3D3 where—

(a) the building does not exceed 18 000 m^2 in *floor area* nor exceed 108 000 m^3 in *volume*, if—

(i) the building is Class 7 or 8 and—

(A) contains not more than 2 *storeys*; and

(B) is provided with open space complying with C3D5(1) not less than 18 m wide around the building; or

(ii) the building is Class 5, 6, 7, 8 or 9 and is—

(A) protected throughout with a sprinkler system complying with Specification 17; and

(B) provided with a perimeter vehicular access complying with C3D5(2); or

(b) the building is Class 5, 6, 7, 8 or 9 and exceeds 18 000 m^2 in *floor area* or 108 000 m^3 in *volume*, if it is—

(i) protected throughout with a sprinkler system complying with Specification 17; and

(ii) provided with a perimeter vehicular access complying with C3D5(2); or

(c) there is more than one building on the allotment and—

(i) each building complies with (a) or (b); or

(ii) if the buildings are closer than 6 m to each other they are regarded as one building and collectively comply with (a) or (b).

C3D5 Requirements for open spaces and vehicular access

[2019: C2.4]

(1) An open space *required* by C3D4 must—

(a) be wholly within the allotment except that any road, river, or public place adjoining the allotment, but not the farthest 6 m of it may be included; and

(b) include vehicular access in accordance with (2); and

(c) not be used for the storage or processing of materials; and

(d) not be built upon, except for guard houses and service structures (such as electricity substations and pump houses) which may encroach upon the width of the space if they do not unduly impede fire-fighting at any part of the perimeter of the allotment or unduly add to the risk of spread of fire to any building on an adjoining allotment.

(2) Vehicular access *required* by this Part—

(a) must be capable of providing continuous access for emergency vehicles to enable travel in a forward direction from a public road around the entire building; and

(b) must have a minimum unobstructed width of 6 m with no part of its furthest boundary more than 18 m from the building and in no part of the 6 m width be built upon or used for any purpose other than vehicular or pedestrian movement; and

(c) must provide reasonable pedestrian access from the vehicular access to the building; and

(d) must have a load bearing capacity and unobstructed height to permit the operation and passage of *fire brigade* vehicles; and

(e) must be wholly within the allotment except that a public road complying with (a), (b), (c) and (d) may serve as

the vehicular access or part thereof.

C3D6 Class 9 buildings

[2019: C2.5]

(1) A Class 9a *health-care building* must comply with the following:

(a) *patient care areas* must be divided into *fire compartments* not exceeding 2000 m^2.

(b) A *fire compartment* must be separated from the remainder of the building by *fire walls* and—

(i) in Type A construction—floors and roof or ceiling as *required* in Specification 5; and

(ii) in Type B construction—floors with an FRL of not less than 120/120/120 and with the openings in *external* walls bounding *patient care areas* being vertically separated in accordance with the requirements of C3D7 as if the building were of Type A construction.

(c) *Ward areas*—

(i) where the *floor area* exceeds 1000 m^2, must be divided into *floor areas* not more than 1000 m^2 by walls with an FRL of not less than 60/60/60; and

(ii) where the *floor area* exceeds 500 m^2, must be divided into *floor areas* not more than 500 m^2 by smoke-proof walls complying with Specification 11; and

(iii) where the *floor area* is not more than 500 m^2, must be separated from the remainder of the *patient care area* by smoke-proof walls complying with Specification 11; and

(iv) where division of *ward areas* by *fire-resisting* walls under (a) or (c)(i) is not *required*, any smoke-proof wall *required* under (c)(ii) or (iii) must have an FRL of not less than 60/60/60.

(d) *Treatment areas*—

(i) where the *floor area* exceeds 1000 m^2, must be divided into *floor areas* not more than 1000 m^2 by smoke-proof walls complying with Specification 11; and

(ii) where the *floor area* is not more than 1000 m^2, must be separated from the remainder of the *patient care area* by smoke-proof walls complying with Specification 11.

(e) Ancillary use areas located within a *patient care area* and containing equipment or materials that are a high potential *fire hazard*, must be separated from the remainder of the *patient care area* by walls with an FRL of not less than 60/60/60.

(f) The ancillary use areas referred to in (e) include, but are not limited to, the following:

(i) A kitchen and related food preparation areas having a combined *floor area* of more than 30 m^2.

(ii) A room containing a hyperbaric facility (pressure chamber).

(iii) A room used predominantly for the storage of medical records having a *floor area* of more than 10 m^2.

(iv) A laundry, where items of equipment are of the type that are potential fire sources (e.g. gas fire dryers).

(g) A wall *required* by (e) to separate ancillary use areas from the remainder of the building must extend to the underside of—

(i) the floor above; or

(ii) a *non-combustible* roof covering; or

(iii) a ceiling having a *resistance to the incipient spread of fire* to the space above itself of not less than 60 minutes.

(h) Openings in walls *required* by (c) and (e) to have an FRL must be protected as follows:

(i) Doorways—*self-closing* or *automatic* closing –/60/30 fire doors.

(ii) Windows—*automatic* or permanently fixed closed –/60/– fire windows or –/60/– *automatic* fire shutters.

(iii) Other openings—construction having an FRL not less than –/60/–.

(2) In a building containing a Class 9b *early childhood centre*—

(a) unless the Class 9b *early childhood centre* is the only use in the building, it must be separated from the remainder of the building by walls and/or floors with an FRL not less than that *required* for a *fire wall*; and

(b) each *storey* within the Class 9b *early childhood centre* must contain not less than 2 *fire compartments*.

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(3) A Class 9c building must comply with the following:

(a) A building must be divided into areas not more than 500 m^2 by smoke-proof walls complying with Specification 11.

(b) A *fire compartment* must be separated from the remainder of the building by *fire walls* and, notwithstanding C3D8 and Specification 5, floors with an FRL of not less than 60/60/60.

(c) Internal walls (other than those bounding lift and stair shafts) supported by floors provided in accordance with (b) need not comply with Specification 5 if they have an FRL not less than 60/–/–.

(d) Ancillary use areas containing equipment or materials that are a high potential *fire hazard*, must be separated from the *sole-occupancy units* by smoke-proof walls complying with Specification 11.

(e) The ancillary use areas referred to in (d) include, but are not limited to, the following:

(i) A kitchen and related food preparation areas having a combined *floor area* of more than 30 m^2.

(ii) A laundry, where items of equipment are of the type that are potential fire sources (e.g. gas fired dryers).

(iii) Storage rooms greater than 10 m^2 used predominantly for the storage of administrative records.

(f) Openings in *fire walls* must be protected as follows:

(i) Doorways —*self-closing* or *automatic* closing –/60/30 fire doors.

(ii) Windows —*automatic* or permanently fixed closed –/60/– fire windows or –/60/– *automatic* fire shutters.

(iii) Other openings — construction having an FRL not less than –/60/–.

Exemptions

C3D6(2) does not apply to a Class 9b *early childhood centre*—

(a) wholly within a *storey* that provides direct egress to a road or *open space*; or

(b) with a *rise in storeys* of not more than 2, where the Class 9b *early childhood centre* is the only use in the building.

C3D7 Vertical separation of openings in external walls

[2019: C2.6]

(1) If in a building of Type A construction, any part of a *window* or other opening in an *external wall* is above another opening in the *storey* next below and its vertical projection falls no further than 450 mm outside the lower opening (measured horizontally), the openings must be separated by—

(a) a spandrel which—

(i) is not less than 900 mm in height; and

(ii) extends not less than 600 mm above the upper surface of the intervening floor; and

(iii) is of *non-combustible* material having an FRL of not less than 60/60/60; or

(b) part of a *curtain wall* or *panel wall* that complies with (a); or

(c) construction that complies with (a) behind a *curtain wall* or *panel wall* and has any gaps packed with a *non-combustible* material that will withstand thermal expansion and structural movement of the walling without the loss of seal against fire and smoke; or

(d) a slab or other horizontal construction that—

(i) projects outwards from the external face of the wall not less than 1100 mm; and

(ii) extends along the wall not less than 450 mm beyond the openings concerned; and

(iii) is *non-combustible* and has an FRL of not less than 60/60/60.

(2) The requirements of (1) do not apply to—

(a) an *open-deck carpark*; or

(b) an *open spectator stand*; or

(c) a building which has a sprinkler system (other than a FPAA101D or FPAA101H system) complying with

Specification 17 installed throughout; or

(d) openings within the same stairway; or

(e) openings in *external walls* where the floor separating the *storeys* does not require an FRL with respect to *integrity* and *insulation*.

(3) For the purposes of C3D7, *window* or other opening means that part of the *external wall* of a building that does not have an FRL of 60/60/60 or greater.

C3D8 Separation by fire walls

[2019: C2.7]

(1) Construction — A *fire wall* must be constructed in accordance with the following:

(a) The *fire wall* has the relevant FRL prescribed by Specification 5 for each of the adjoining parts, and if these are different, the greater FRL, except where S5C19(3)(c)(i), S5C22(3)(c)(i) and S5C25(3)(c)(i) permit a lower FRL on the *carpark* side.

(b) Any openings in a *fire wall* must not reduce the FRL *required* by Specification 5 for the *fire wall*, except where permitted by the *Deemed-to-Satisfy Provisions* of Part C4.

(c) Building elements, other than roof battens with dimensions of 75 mm x 50 mm or less or *sarking-type material*, must not pass through or cross the *fire wall* unless the *required fire-resisting* performance of the *fire wall* is maintained.

(2) Separation of buildings — A part of a building separated from the remainder of the building by a *fire wall* may be treated as a separate building for the purposes of the *Deemed-to-Satisfy Provisions* of Sections C, D and E if it is constructed in accordance with (1) and the following:

(a) The *fire wall* extends through all *storeys* and spaces in the nature of *storeys* that are common to that part and any adjoining part of the building.

(b) The *fire wall* is carried through to the underside of the roof covering.

(c) Where the roof of one of the adjoining parts is lower than the roof of the other part, the *fire wall* extends to the underside of—

(i) the covering of the higher roof, or not less than 6 m above the covering of the lower roof; or

(ii) the lower roof if it has an FRL not less than that of the *fire wall* and no openings closer than 3 m to any wall above the lower roof; or

(iii) the lower roof if its covering is *non-combustible* and the lower part has a sprinkler system (other than a FPAA101D or FPAA101H system) complying with Specification 17.

(3) Separation of *fire compartments* — A part of a building separated from the remainder of the building by a *fire wall* may be treated as a separate *fire compartment* if it is constructed in accordance with (a) and the *fire wall* extends to the underside of—

(a) a floor having an FRL *required* for a *fire wall*; or

(b) the roof covering.

C3D9 Separation of classifications in the same storey

[2019: C2.8]

(1) If a building has parts of different classifications located alongside one another in the same *storey*—

(a) each building element in that *storey* must have the higher FRL prescribed in Specification 5 for that element for the classifications concerned; or

(b) the parts must be separated in that *storey* by a *fire wall*.

(2) A *fire wall required* by (1)(b) must have the FRL prescribed in accordance with Specification 5 as applicable for that element for the Type of construction and the classifications concerned.

(3) For the purposes of (2), the FRL in Specification 5 must be either—

(a) the higher FRL prescribed in Table S5C11d or S5C21d; or