

13.4.3

Energy efficiency

- (c) a shutter system readily operated either manually, mechanically or electronically by the occupant.

Explanatory Information

A *roof light* should be sealed regardless of which room it serves in *climate zones* 4, 5, 6, 7 and 8. For example, a *roof light* located in a hallway should be sealed to stop the transfer of cold air into adjoining *conditioned spaces*. This principle also applies to external doors and *windows*, exhaust fans, wall and floor junctions and evaporative coolers.

13.4.4 External windows and doors

[2019: 3.12.3.3]

- (1) An external door, internal door between a Class 1 building and an unconditioned Class 10a building, openable *window* and other such opening must be sealed when serving—
 - (a) a *conditioned space*; or
 - (b) a *habitable room* in *climate zones* 4, 5, 6, 7 and 8.
- (2) A seal to restrict air infiltration—
 - (a) for the bottom edge of a door, must be a draft protection device; and
 - (b) for the other edges of a door or the edges of an openable *window* or other such opening, may be a foam or rubber compressible strip, fibrous seal or the like.
- (3) A *window* complying with the maximum air infiltration rates specified in AS 2047 need not comply with (2)(b).

13.4.5 Exhaust fans

[2019: 3.12.3.4]

An exhaust fan must be fitted with a sealing device such as a self-closing damper, filter or the like when serving—

- (a) a *conditioned space*; or
- (b) a *habitable room* in *climate zones* 4, 5, 6, 7 and 8.

Explanatory Information

An exhaust fan is considered to be adequately sealed if it is fitted with a filter such as the type commonly used in kitchen range hoods.

13.4.6 Construction of ceilings, walls and floors

[2019: 3.12.3.5]

- (1) Ceilings, walls, floors and any opening such as a *window* frame, door frame, *roof light* frame or the like must be constructed to minimise air leakage in accordance with (2) when forming part of the external fabric of—
 - (a) a *conditioned space*; or
 - (b) a *habitable room* in *climate zones* 4, 5, 6, 7 and 8.
- (2) Construction *required* by (1) must be—
 - (a) enclosed by internal lining systems that are close fitting at ceiling, wall and floor junctions; or
 - (b) sealed at junctions and penetrations with—
 - (i) close-fitting architrave, skirting or cornice; or
 - (ii) expanding foam, rubber compressive strip, caulking or the like.

Explanatory Information

- A close fitting internal lining system is considered suitable to include an allowance for minimum lining movement

Energy efficiency

gaps at wall, floor and ceiling junctions.

- Caulking includes sealant, mastic or other gap filling material.
- In 13.4.6(2)(b), penetrations include *windows*, doors, *roof lights*, flues, exhaust fans, heating and cooling ductwork and the like.

13.4.7 Evaporative coolers

[2019: 3.12.3.6]

An evaporative cooler must be fitted with a self-closing damper or the like when serving—

- (a) a heated space; or
- (b) a *habitable room* in *climate zones* 4, 5, 6, 7 or 8.

Explanatory Information

The self-closing damper should create an effective seal against air infiltration.

Energy efficiency

Part 13.5 Ceiling fans

NSW Part 13.5

NT Part 13.5

TAS Part 13.5

13.5.1 Application of Part 13.5

[2019: 3.12.4]

- (1) This Part applies to a *habitable room* in a Class 1 building.
- (2) Part 13.5 must be applied as directed in H6D2(1)(b).

13.5.2 Ceiling fans

[2019: 3.12.4.3]

Ceiling fans must be installed in accordance with Table 13.5.2 in—

- (a) *climate zones* 1, 2 and 3; and
- (b) *climate zone* 5 in New South Wales and Queensland.

Table 13.5.2: Minimum ceiling fan requirements in climate zones 1, 2, 3 and 5

Size of room (m ²)	Minimum number and diameter (mm) of ceiling fans <i>required</i> in a bedroom in <i>climate zones</i> 1, 2 and 3	Minimum number and diameter (mm) of ceiling fans <i>required</i> in a <i>habitable room</i> other than a bedroom in <i>climate zones</i> 1, 2, 3 and 5 (NSW and Qld)
<15	1 x 900	1 x 900
≥15<20	1 x 1200	1 x 1200
≥20<25	1 x 1200	1 x 1400
≥25<30	1 x 1400	2 x 1200
≥30<45	1 x 1400	2 x 1400
≥45<50	2 x 1400	3 x 1200
≥50	2 x 1400	3 x 1400

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Part 13.6 Whole-of-home energy usage

NSW Part 13.6

NT Part 13.6

TAS Part 13.6

13.6.1 Application of Part 13.6

[New for 2022]

- (1) This Part applies to—
 - (a) a Class 1 building; and
 - (b) a Class 10a building with a *conditioned space*.
- (2) Part 13.6 must be applied as directed in H6D2(2).

13.6.2 Net equivalent energy usage

[New for 2022]

- (1) The net equivalent energy usage of a building, calculated in accordance with (a), must not exceed the allowance calculated in accordance with (b)—
 - (a) $(A \times E_E) + E_P + E_S - E_R$, where—
 - (i) A = the floor area factor obtained by multiplying the total floor area of the building by the adjustment factor in Table 13.6.2a; and
 - (ii) E_E = the *main space conditioning* and *main water heater* efficiency factor obtained from the ABCB Standard for Whole-of-Home Efficiency Factors; and
 - (iii) E_P = the swimming pool pump energy usage in (2); and
 - (iv) E_S = the spa pump energy usage in (3); and
 - (v) E_R = the installed capacity of on-site photovoltaics (kW); and
 - (b) $A \times E_F$, where—
 - (i) A = the floor area factor obtained from multiplying the total floor area of the building by the adjustment factor in Table 13.6.2a; and
 - (ii) E_F = the energy factor obtained from in Table 13.6.2b.
- (2) The swimming pool pump energy usage (E_P) must be determined in accordance with the following formula:
$$E_P = V \times F_P / 1000$$
, where—
 - (a) E_P = the swimming pool pump energy usage; and
 - (b) V = the volume of the swimming pool to the nearest 1000 litres; and
 - (c) F_P = the swimming pool pump factor as per Table 13.6.2c.
- (3) The spa pump energy usage (E_S) must be determined in accordance with the following formula: $E_S = V \times F_S / 100$, where—
 - (a) E_S = the spa pump energy usage; and
 - (b) V = the volume of the spa to the nearest 100 litres; and

Energy efficiency

(c) F_S = the spa pump factor as per Table 13.6.2d.

Table 13.6.2a: Floor area adjustment factor

Total floor area m ²	Floor area factor	Total floor area m ²	Floor area factor	Total floor area m ²	Floor area factor	Total floor area m ²	Floor area factor
<50	0.0123	160–169	0.0097	280–289	0.0087	400–409	0.0080
50–59	0.0119	170–179	0.0096	290–299	0.0086	410–419	0.0079
60–69	0.0116	180–189	0.0095	300–309	0.0085	420–429	0.0079
70–79	0.0113	190–199	0.0094	310–319	0.0085	430–439	0.0078
80–89	0.0111	200–209	0.0093	320–329	0.0084	440–449	0.0078
90–99	0.0108	210–219	0.0092	330–339	0.0083	450–459	0.0077
100–109	0.0106	220–229	0.0091	340–349	0.0083	460–469	0.0077
110–119	0.0105	230–239	0.0090	350–359	0.0082	470–479	0.0077
120–129	0.0103	240–249	0.0090	360–369	0.0082	480–489	0.0076
130–139	0.0101	250–259	0.0089	370–379	0.0081	490–499	0.0076
140–149	0.0100	260–269	0.0088	380–389	0.0081	500	0.0075
150–159	0.0099	270–279	0.0087	390–399	0.0080	—	—

Table Notes

- (a) The total floor area is measured within the inside face of the *external walls* of the Class 1 building and includes any conditioned, attached Class 10a building.
- (b) Where values fall between ranges given, the floor area must be rounded up to the nearest whole square metres of floor area.

Table 13.6.2b: Energy factor (E_F)

Climate zone	ACT	NSW	NT	Qld	SA	Tas	Vic	WA
1	—	—	1.91	2.77	—	—	—	3.25
2	—	1.32	—	1.78	—	—	—	—
3	—	—	1.23	2.46	—	—	—	2.87
4	—	1.80	—	—	1.86	—	1.25	2.34
5	—	1.75	—	2.28	1.79	—	—	2.35
6	—	2.40	—	—	2.51	—	1.63	3.20
7	2.56	2.33	—	—	—	3.08	1.62	—
8	—	3.99	—	—	—	3.92	2.82	—

Table 13.6.2c: Swimming pool pump factor (F_p) (kW/1000 litres.annum)

Pool pump GEMS star rating	ACT	NSW	NT	Qld	SA	Tas	Vic	WA
1 or unrated	0.056	0.060	0.028	0.046	0.068	0.061	0.049	0.063
1.5	0.048	0.050	0.023	0.039	0.057	0.052	0.041	0.053
2	0.041	0.044	0.020	0.034	0.050	0.045	0.036	0.046
2.5	0.037	0.039	0.018	0.030	0.044	0.040	0.032	0.041
3	0.033	0.035	0.016	0.027	0.039	0.035	0.028	0.036
3.5	0.029	0.031	0.014	0.024	0.035	0.032	0.025	0.033

Energy efficiency

Pool pump GEMS star rating	ACT	NSW	NT	Qld	SA	Tas	Vic	WA
4	0.026	0.028	0.013	0.021	0.032	0.029	0.023	0.029
4.5	0.024	0.025	0.012	0.019	0.029	0.026	0.021	0.027
5	0.022	0.023	0.011	0.018	0.026	0.023	0.019	0.024
5.5	0.020	0.021	0.010	0.016	0.023	0.021	0.017	0.022
6	0.018	0.019	0.009	0.014	0.021	0.019	0.015	0.020
6.5	0.016	0.017	0.008	0.013	0.019	0.017	0.014	0.018
7	0.014	0.015	0.007	0.012	0.017	0.016	0.012	0.016
7.5	0.013	0.013	0.006	0.010	0.015	0.014	0.011	0.014
8	0.011	0.012	0.006	0.009	0.014	0.012	0.010	0.013
8.5	0.010	0.011	0.005	0.008	0.012	0.011	0.009	0.011
9	0.009	0.009	0.004	0.007	0.011	0.010	0.008	0.010
9.5	0.008	0.008	0.004	0.006	0.009	0.008	0.007	0.009
10	0.007	0.007	0.003	0.005	0.008	0.007	0.006	0.007

Table 13.6.2d: Spa pump factor (F_s) (kW/100 litres.annum)

Spa pump GEMS star rating	ACT	NSW	NT	Qld	SA	Tas	Vic	WA
All types	0.067	0.071	0.033	0.055	0.081	0.073	0.058	0.075

Explanatory Information

The ABCB Standard for Whole-of-Home Efficiency Factors can be accessed at www.abcb.gov.au.

Part 13.7 Services

NT Part 13.7

TAS Part 13.7

NSW 13.7.1

13.7.1 Application of Part 13.7

[2019: 3.12.5]

- (1) This Part applies to—
 - (a) a Class 1 building; and
 - (b) a Class 10a building; and
 - (c) a Class 10b *swimming pool* associated with a Class 1 or 10a building.
- (2) Part 13.7 must be applied as directed in H6D2(2).

13.7.2 Insulation of services

[2019: 3.12.5.1]

Thermal insulation for central heating water *piping* and heating and cooling ductwork must—

- (a) be protected against the effects of weather and sunlight; and
- (b) be able to withstand the temperatures within the *piping* or ductwork; and
- (c) use thermal insulation material in accordance with AS/NZS 4859.1.

Explanatory Information

The central heating water *piping* provisions apply to systems designed to heat the building via water, such as a hydronic heating system.

13.7.3 Central heating water piping

[2019: 3.12.5.2]

- (1) Central heating water *piping* that is not within a *conditioned space* must be thermally insulated to achieve the minimum material *R-Values* as set out in (2) to (6).
- (2) Internal *piping* including—
 - (a) flow and return *piping* that is—
 - (i) within an unventilated wall space; or
 - (ii) within an internal floor between storeys; or
 - (iii) between ceiling insulation and a ceiling; and
 - (b) heated water piping encased within a concrete floor slab (except that which is part of a floor heating system), must, in all *climate zones*, have a minimum material *R-Value* of 0.4.
- (3) *Piping* located within a ventilated wall space, an enclosed building subfloor or a roof space, including—
 - (a) flow and return *piping*; and
 - (b) cold water supply *piping* within 500 mm of the connection to the central water heating system; and
 - (c) relief valve *piping* within 500 mm of the connection to the central water heating system, must have a minimum material *R-Value* in accordance with (5).

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- (4) *Piping* located outside the building or in an unenclosed building subfloor or roof space, including—
- flow and return *piping*; and
 - cold water supply *piping* within 500 mm of the connection to the central water heating system; and
 - relief valve *piping* within 500 mm of the connection to the central water heating system,
- must have a minimum material *R-Value* in accordance with (6).
- (5) *Piping* referred to in (3) must have a minimum material *R-Value* of—
- in *climate zones* 1, 2, 3 and 5 — 0.6; and
 - in *climate zones* 4, 6 and 7 — 0.9; and
 - in *climate zone* 8 — 1.3.
- (6) *Piping* referred to in (4) must have a minimum material *R-Value* of—
- in *climate zones* 1, 2, 3 and 5 — 0.6; and
 - in *climate zones* 4, 6 and 7 — 1.3; and
 - in *climate zone* 8 — 1.3.

Explanatory Information

- The insulation levels in Explanatory Table 13.7.3 are typical examples of materials that can be used to insulate central heating water *piping* calculated in accordance with AS/NZS 4859.1.
- The *R-Value* is that of the insulation and not the *Total R-Value* of the pipe, air film and insulation. Where *piping* has a significant inherent *R-Value* it may be subtracted from the material *R-Value required*. However, the inherent *R-Value* of most piping is not sufficient to satisfy the requirements of 13.7.3.
- Piping* within a timber member, such as that passing through a wall stud, is considered to have sufficient insulation for the purposes of 13.7.3.
- Explanatory Table 13.7.3 provides examples for the *R-Value* of the insulation used for smaller diameter *piping*.

Table 13.7.3 (explanatory): R-Value of insulation used for smaller diameter piping

Insulation	R-Value
9 mm of closed cell polymer	0.4
13 mm of closed cell polymer	0.6
19 mm of closed cell polymer	0.9
25 mm of closed cell polymer	1.3
25 mm of glasswool	1.3

13.7.4 Heating and cooling ductwork

[2019: 3.12.5.3]

- (1) Heating and cooling ductwork and fittings must—
- achieve the material *R-Value* in (4); and
 - be sealed against air loss—
 - by closing all openings in the surface, joints and seams of ductwork with adhesives, mastics, sealants or gaskets in accordance with AS 4254.1 and AS 4254.2 for a Class C seal; or
 - for flexible ductwork, with a draw band in conjunction with a sealant or adhesive tape.
- (2) Duct insulation must—
- abut adjoining duct insulation to form a continuous barrier; and
 - be installed so that it maintains its position and thickness, other than at flanges and supports; and
 - where located outside the building, under a suspended floor, in an attached Class 10a building or in a roof

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space—

- (i) be protected by an outer sleeve of protective sheeting to prevent the insulation becoming damp; and
 - (ii) have the outer protective sleeve sealed with adhesive tape not less than 48 mm wide creating an airtight and waterproof seal.
- (3) The requirements of (1) do not apply to heating and cooling ductwork and fittings located within the insulated building *envelope* including a service riser within the *conditioned space*, internal floors between *storeys* and the like.
- (4) The material *R-Value required* by (1)(a) must be determined in accordance with the following:
- (a) In a heating-only system or cooling-only system including an evaporative cooling system—
 - (i) ductwork must have a minimum material *R-Value* of—
 - (A) in *climate zones* 1 to 7 — 1.0; and
 - (B) in *climate zone* 8 — 1.5; and
 - (ii) fittings must have a minimum material *R-Value* of 0.4.
 - (b) In a combined heating and refrigerated cooling system—
 - (i) ductwork must have a minimum material *R-Value* of—
 - (A) in *climate zones* 1, 3, 4, 6 and 7 — 1.5; and
 - (B) in *climate zones* 2 and 5 — 1.0; and
 - (C) in *climate zone* 8 — 1.5; and
 - (ii) fittings must have a minimum material *R-Value* of 0.4.
 - (c) For the purposes of (b)(i), the minimum material *R-Value required* for ductwork may be reduced by 0.5 for combined heating and refrigerated cooling systems in *climate zones* 1, 3, 4, 6 and 7 if the ducts are—
 - (i) under a suspended floor with an enclosed perimeter; or
 - (ii) in a roof space that has an insulation of greater than or equal to R0.5 directly beneath the roofing.

Explanatory Information

- Ductwork within a fully insulated building may still benefit from insulation particularly when the system is only operating for short periods.
- In some *climate zones* condensation may create problems with uninsulated ductwork, in which case insulation should still be considered.
- An enclosed perimeter treatment means that the airspace under the floor is enclosed between ground and floor level by walls which have only the required subfloor vents.
- Insulation for refrigerated cooling ductwork should have a vapour barrier to prevent possible damage by condensation.
- The insulation levels in the Explanatory Tables 13.7.4a, 13.7.4b and 13.7.4c are typical examples of materials that can be used to insulate ductwork and the *R-Values* they contribute. Other methods are available for meeting the minimum material *R-Value required* by 13.7.4(4). These values do not take into account all issues that may reduce the effectiveness of insulation. AS/NZS 4859.1 should be used to confirm in-situ values.
- For fittings, 11 mm polyurethane typically provides an *R-Value* of 0.4.
- Any flexible ductwork used for the transfer of products, initiating from a heat source that contains a flame, must also have the fire hazard properties *required* by H3D2(2).

Table 13.7.4a (explanatory): R-Values for typical ductwork insulation materials – flexible ductwork

Insulating material and thickness	<i>R-Value</i>
45 mm glasswool (11 kg/m ³)	1.0
70 mm polyester (6.4 kg/m ³)	1.0
63 mm glasswool (11 kg/m ³)	1.5
90 mm polyester (8.9 kg/m ³)	1.5
85 mm glasswool (11 kg/m ³)	2.0

Energy efficiency**Table 13.7.4b (explanatory): R-Value for typical ductwork insulation materials – sheetmetal ductwork – external insulation**

Insulating material and thickness	R-Value
38 mm glasswool (22 kg/m ³)	1.0
50 mm polyester (20 kg/m ³)	1.1
50 mm glasswool (22 kg/m ³)	1.5
75 mm polyester (20 kg/m ³)	1.7

Table 13.7.4c (explanatory): R-Values for typical ductwork insulation materials – sheetmetal ductwork – internal insulation

Insulating material and thickness	R-Value
38 mm glasswool (32 kg/m ³)	1.0
50 mm polyester (32 kg/m ³)	1.3
50 mm glasswool (32 kg/m ³)	1.5

NSW 13.7.5**13.7.5 Electric resistance space heating**

[2019: 3.12.5.4]

An electric resistance space heating system that serves more than one room must have—

- (a) separate isolating switches for each room; and
- (b) a separate temperature controller and time switch for each group of rooms with common heating needs; and
- (c) power loads of not more than 110 W/m² for living areas, and 150 W/m² for bathrooms.

NSW 13.7.6**13.7.6 Artificial lighting**

[2019: 3.12.5.5]

- (1) The *lamp power density* or *illumination power density* of artificial lighting, excluding heaters that emit light, must not exceed the allowance of—
 - (a) 5 W/m² in a Class 1 building; and
 - (b) 4 W/m² on a verandah, balcony or the like attached to a Class 1 building; and
 - (c) 3 W/m² in a Class 10a building associated with a Class 1 building.
- (2) The *illumination power density* allowance in (1) may be increased by dividing it by the relevant *illumination power density* adjustment factor for a control device in (6) as applicable.
- (3) When designing the *lamp power density* or *illumination power density*, the power of the proposed installation must be used rather than nominal allowances for exposed batten holders or luminaires.
- (4) If halogen lamps are installed, they must be separately switched from fluorescent lamps.
- (5) Artificial lighting around the perimeter of a building must—
 - (a) be controlled by a daylight sensor; or
 - (b) have an average light source efficacy of not less than 40 Lumens/W.
- (6) The following *illumination power density* adjustment factors apply to control devices for artificial lighting:
 - (a) Lighting timer for corridor lighting: 0.7.
 - (b) Motion detector —

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- (i) 0.9, where —
 - (A) at least 75% of the area of a space is controlled by one or more motion detectors; or
 - (B) an area of less than 200 m² is switched as a block by one or more motion detectors; and
 - (i) 0.7, where up to 6 lights are switched as a block by one or more detectors; and
 - (ii) 0.55, where up to 2 lights are switched as a block by one or more detectors.
 - (c) Manual dimming system where not less than 75% of the area of a space is controlled by manually operated dimmers: 0.85.
 - (d) Programmable dimming system where not less than 75% of the area of a space is controlled by programmable dimmers: 0.85.
 - (e) Dynamic dimming system, with automatic compensation for lumen depreciation, the design lumen depreciation factor is not less than —
 - (i) 0.9 for fluorescent lights; or
 - (ii) 0.8 for high pressure discharge lights.
 - (f) Fixed dimming where at least 75% of the area is controlled by fixed dimmers that reduce the overall lighting level and the power consumption of the lighting — equal to the % of full power to which the dimmer is set divided by 0.95.
 - (g) Daylight sensor and dynamic lighting control device, with dimmed or stepped switching of lights adjacent to *windows*:
 - (i) Lights within the space adjacent to *windows* other than *roof lights* for a distance from the *window* equal to the depth of the floor at *window* head height: 0.5.
 - (ii) Lights within the space adjacent to *roof lights*: 0.6.
- (7) For the purposes of (6)(c), manual dimming is where lights are controlled by a knob, slider or other mechanism or where there are pre-selected scenes that are manually selected.
- (8) For the purposes of (6)(d), programmed dimming is where pre-selected scenes or levels are automatically selected by the time of day, photoelectric cell or occupancy sensor.
- (9) For the purposes of (6)(e), dynamic dimming is where the lighting level is varied automatically by a photoelectric cell to either proportionately compensate for the availability of daylight or the lumen depreciation of the lamps.
- (10) For the purposes of (6)(f), fixed dimming is where lights are controlled to a level and that level cannot be adjusted by the user.
- (11) For the purposes of (6)(g)(i) and (ii), the *illumination power density* adjustment factor is only applied to lights controlled by that item — this adjustment factor does not apply to tungsten halogen or other incandescent sources.

Explanatory Information

- There are two approaches available for achieving compliance with (1) in Class 1 and associated Class 10a buildings. These are through the determination of the *lamp power density* or the *illumination power density*.
- The first step in achieving compliance is to determine the relevant *lamp power density* or *illumination power density* allowance. Generally, the *lamp power density* or *illumination power density* is the relevant value in (1)(a), (b) or (c), however the *illumination power density* allowance can be increased in accordance with (2) if a control device is used.
- When *illumination power density* and one or more control devices are used, the adjustment factor is only applied to the space(s) served by the control device. The adjusted allowance for this space is then combined with the allowances for the remaining spaces using an area weighted average, which subsequently increases the allowance provided in (1)(a), (b) or (c).
- Where no control device is used the adjustment factor is equal to 1.
- The second step in achieving compliance is to assess the overall *lamp power density* or overall *illumination power density* of the building.
- The overall *lamp power density* is calculated by adding the maximum power ratings of all of the permanently wired lamps in a space and dividing this sum by the area of the space.
- The overall *illumination power density* is calculated by adding the illumination power load for each space and dividing this sum by the area of the space.

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- Control device factors in (2) are only applied to the *illumination power density*, not the overall *illumination power density*.
- To comply with (1), the overall *lamp power density* or overall *illumination power density* must be less than or equal to the allowance.
- Trading of allowances between (1)(a), (b) and (c) is not permitted.
- (1)(b) includes outdoor living spaces such as verandahs, balconies, patios, alfresco spaces or the like that are attached to a Class 1 building.
- The artificial lighting requirements in 13.7.6 are to be read in conjunction with the artificial lighting requirements in 10.5.2.
- The artificial lighting around the perimeter of a building does not need to comply to a maximum power density as neither the lighting required or the area of the space can be easily defined. Instead, external lights are required to be controlled by daylight sensors or to be efficient.
- In (4), separate switching is required for halogen lamps to facilitate less frequent usage. This is because they are significantly less energy efficient than fluorescent lamps.

NSW 13.7.7

13.7.7 Water heater in a heated water supply system

[2019: 3.12.5.6]

A water heater in a heated water supply system must be designed and installed in accordance with Part B2 of NCC Volume Three — Plumbing Code of Australia.

NSW 13.7.8

13.7.8 Swimming pool heating and pumping

[2019: 3.12.5.7]

- (1) Heating for a *swimming pool* must be by—
 - (a) a solar heater not boosted by electric resistance heating; or
 - (b) a heater using reclaimed energy; or
 - (c) a gas heater; or
 - (d) a heat pump; or
 - (e) a combination of (a) to (d).
- (2) Where some or all of the heating *required* by (1) is by a gas heater or a heat pump, the *swimming pool* must have—
 - (a) a cover with a minimum *R-Value* of 0.05, unless located in a *conditioned space*; and
 - (b) a time switch to control the operation of the heater.
- (3) A time switch must be provided to control the operation of a circulation pump for a *swimming pool*.
- (4) For the purposes of 13.7.8, a *swimming pool* does not include a spa pool.

NSW 13.7.9

13.7.9 Spa pool heating and pumping

[2019: 3.12.5.8]

- (1) Heating for a spa pool that shares a water recirculation system with a *swimming pool* must be by—
 - (a) a solar heater; or
 - (b) a heater using reclaimed energy; or
 - (c) a gas heater; or

Energy efficiency

- (d) a heat pump; or
 - (e) a combination of (a) to (d).
- (2) Where some or all of the heating *required* by (1) is by a gas heater or a heat pump, the spa pool must have—
 - (a) a cover; and
 - (b) a push button and a time switch to control the operation of the heater.
- (3) A time switch must be provided to control the operation of a circulation pump for a spa pool having a capacity of 680 L or more.

Definitions

Schedule 1 Definitions

Abbreviations

Symbols

Glossary

Definitions

Abbreviations

Abbreviation	Definitions
ABCB	Australian Building Codes Board
AC	Alternating Current
ACC	Acrylic conformal coating
ACL	Acrylic latex
ACP	Aluminium Composite Panel
AIRAH	Australian Institute of Refrigeration, Air conditioning and Heating
ANSI	American National Standards Institute
AS	Australian Standard
ASET	Available Safe Egress Time
ASHRAE	American Society of Heating, Refrigerating and Air Conditioning Engineers
ASTM	American Society for Testing and Materials
BAL	Bushfire Attack Level
BCA	Building Code of Australia
BE	Fire blocks evacuation route
CAN	National Standard of Canada
CCT	Correlated Colour Temperature
CF	Challenging fire
CHF	Critical Heat Flux
CIBSE	Chartered Institution of Building Services Engineers
CRF	Critical Radiant Flux
CRI	Colour Rendering Index
CS	Fire starts in a concealed space
C_{SHGC}	Constant for solar heat gain
CSIRO	Commonwealth Scientific and Industrial Research Organisation
C_U	Constant for conductance
DC	Direct Current
FED	Fractional Effective Dose
FI	Fire brigade intervention
FRL	Fire Resistance Level
FZ	Flame Zone
GEMS	Greenhouse and Energy Minimum Standards
GRP	Glass fibre reinforced polyester
HDG	Hot dip galvanising
HRR	Heat Release Rate
HS	Horizontal fire spread
IS	Rapid fire spread involving internal surface linings
ISO	International Organisation for Standardisation
Izs	Inorganic zinc silicate
LED	Light-Emitting Diode
MEPS	Minimum Energy Performance Standards

Definitions

Abbreviation	Definitions
NABERS	National Australian Built Environment Rating System
NASH	National Association of Steel-Framed Housing
NATA	National Association of Testing Authorities Australia
NatHERS	Nationwide House Energy Rating Scheme
NCC	National Construction Code
NSF	National Sanitation Foundation
PBDB	Performance-based design brief
PCA	Plumbing Code of Australia
PMV	Predicted Mean Vote
ppm	parts per million
PUR	Polyurethane
PVC	Polyvinyl chloride
RC	Robustness check
RSET	Required Safe Egress Time
R_w	Weighted sound reduction index
SF	Smouldering fire
SHGC	Solar Heat Gain Coefficient
SL	Square mesh
SS	Structural stability and other property
STC	Sound Transmission Class
TM	Trench mesh
UF	Unexpected catastrophic failure
UPVC	Unplasticized polyvinyl chloride
UT	Fire in normally unoccupied room threatening occupants of other rooms
U-Value	Thermal transmittance
VS	Vertical fire spread involving external cladding or external openings
WC	Water closet

Definitions

Symbols

Symbols	Definitions
°	degree(s)
°C	degree(s) Celsius
°CDB	degree(s) Celsius Dry Bulb
°CWB	degree(s) Celsius Wet Bulb
-e/MJ	equivalent per Megajoule(s)
µm	micrometre
µg/N.s	Micrograms per newton-second
dB(A)	decibels "A" scale weighting network
f'c	Characteristic compressive strength of concrete at 28 days
f'y	Yield stress used in design
G	Permanent load
J	Joule(s)
J/kg.K	Joules per kilogram degree Kelvin
J/s.m ²	Joules per second square metre
K	Kelvin(s)
kg	kilogram(s)
kg/m	kilogram(s) per metre
kg/m ²	kilogram(s) per square metre
kg/m ³	kilogram(s) per cubic metre
kJ/m ² .hour	kilojoules per square metre hour
km	kilometre(s)
kPa	kilopascal(s)
kW/m ²	kilowatt(s) per square metre
kW _{heating}	kilowatt(s) of heating
kWr	kilowatt(s) of refrigeration
L	litre(s)
L/min	litre(s) per minute
L/s	litre(s) per second
L/s.m ²	litre(s) per second square metre
Lumens/W	Lumens per Watt
lx	lux
m	metre(s)
m/s	metre(s) per second
m ²	square metre(s)
m ² .K/W	square metre Kelvin(s) per Watt
m ³	cubic metre(s)
m ³ /hour	cubic metre(s) per hour
m ³ /s	cubic metre(s) per second
mcd/m ²	millicandolas per square metre
min	minute(s)

Definitions

Symbols	Definitions
MJ/hour	Megajoules per hour
MJ/m².annum	Megajoules per square metre annum
mm	millimetre(s)
mm²	square millimetre(s)
MW	megawatt(s)
N	newton(s)
N/m	Newton(s) per metre
Pa	pascal(s)
Pa/m	pascal(s) per metre
Q	Imposed load
s	second(s)
ULS	Ultimate limit state
V	Volt(s)
W	Watt(s)
W_{input power}	Watts of input power
Wr/W_{input power}	Watts of thermal refrigeration per watt of input power
W/kW_{rej}	Watts per kilowatt of heat rejected
Wm⁻¹K⁻¹	Watts per metre degree Kelvin
W/m²	Watts per square metre
°south	degree south
%	percent
>	greater than
<	less than
≤	less than or equal to
≥	equal to or more than

Definitions

Glossary

Above ground rainwater tank: A rainwater tank that is not in any way set into the ground.

Accessible: Having features to enable use by people with a disability.

Accessway: A continuous *accessible* path of travel (as defined in AS 1428.1) to, into or within a building.

Accredited Testing Laboratory: One of the following:

- (a) An organisation accredited by the National Association of Testing Authorities Australia (NATA) to undertake the relevant tests.
- (b) An organisation outside Australia accredited to undertake the relevant tests by an authority recognised by NATA through a mutual recognition agreement.
- (c) An organisation recognised as being an Accredited Testing Laboratory under legislation at the time the test was undertaken.

Activity support level: The degree to which occupants can undertake activities with respect to the likely *activity traits* and *occupant traits*.

Explanatory Information

This term is used to articulate whether the height of a room or space is sufficient and by what degree. This is achieved by having regard to the room or space's intended use by occupants, through consideration of the defined terms '*activity traits*' and '*occupant traits*'.

Activity traits: For the purposes of—

- (a) Volume One, the features of the activities that will be undertaken in a *habitable room* or space; or
- (b) Volume Two, the features of the activities that will be undertaken in a room or space.

Explanatory Information

This term is used to describe the characteristics of the activities that will be undertaken in a room or space.

For example, the activities likely to be undertaken in a bedroom, and the associated features are—

- sleeping — a person laying horizontally; and
- resting — a person laying horizontally or sitting upright on the bed; and
- leisure activities, such as reading a book — a person sitting upright on the bed, with enough space to stretch their arms vertically; and
- dressing/changing clothes — a person standing with enough space to stretch their arms vertically.

Administering body: The body responsible for administering the *WaterMark Certification Scheme*.

Aged care building: A Class 9c building for residential accommodation of aged persons who, due to varying degrees of incapacity associated with the ageing process, are provided with *personal care services* and 24 hour staff assistance to evacuate the building during an emergency.

NSW Aisle

SA Agriculture

Air-conditioning: For the purposes of Section J of Volume One, a *service* that actively cools or heats the air within a space, but does not include a *service* that directly—

- (a) cools or heats cold or hot rooms; or
- (b) maintains specialised conditions for equipment or processes, where this is the main purpose of the *service*.

Alarm zone: For the purposes of Specification 23, an area of a building protected by one or more smoke alarms connected to one alarm circuit.

Alpine area: An area given in *Figure 1* and in *Table 1* for specific locations, and is—

- (a) likely to be subject to significant snowfalls; and

Definitions

- (b) in New South Wales, the ACT or Victoria more than 1200 m above the Australian Height Datum; and
- (c) in Tasmania more than 900 m above the Australian Height Datum.

Table 1: Alpine areas where snow loads are significant

Location	Map identifier
Kiandra (NSW)	1
Mount Kosciuszko (NSW)	2
Perisher Valley (NSW)	3
Thredbo (NSW)	4
Cabramurra (NSW)	5
Charlotte Pass Village (NSW)	6
Diggers Creek (NSW)	7
Guthega Village (NSW)	8
Mount Blue Cow (NSW)	9
Mount Selwyn (NSW)	10
Perisher Range (NSW)	11
Rules Point (NSW)	12
Sawpit Creek (NSW)	13
Smiggin Holes (NSW)	14
Smiggin Range (NSW)	15
Three Mile Dam (NSW)	16
Wilsons Valley (NSW)	17
Falls Creek (Vic.), including Summit Area, Sun Valley and Village Bowl	18
Mount Baw Baw (Vic.)	19
Mount Buffalo (Vic.), including Chalet, Dingo Dell and Tatra	20
Mount Buller (Vic.), including Baldy and Village	21
Mount Hotham (Vic.), including Davenport and Village Centre	22
Dinner Plain (Vic.)	23
Lake Mountain (Vic.)	24
Mount Stirling (Vic.)	25
Ben Lomond Ski Field (Tas.)	26
Cradle Valley (Tas.)	27
Great Lake Area (Tas.)	28
Mount Field Ski Field (Tas.)	29

Definitions

Figure 1: Alpine areas

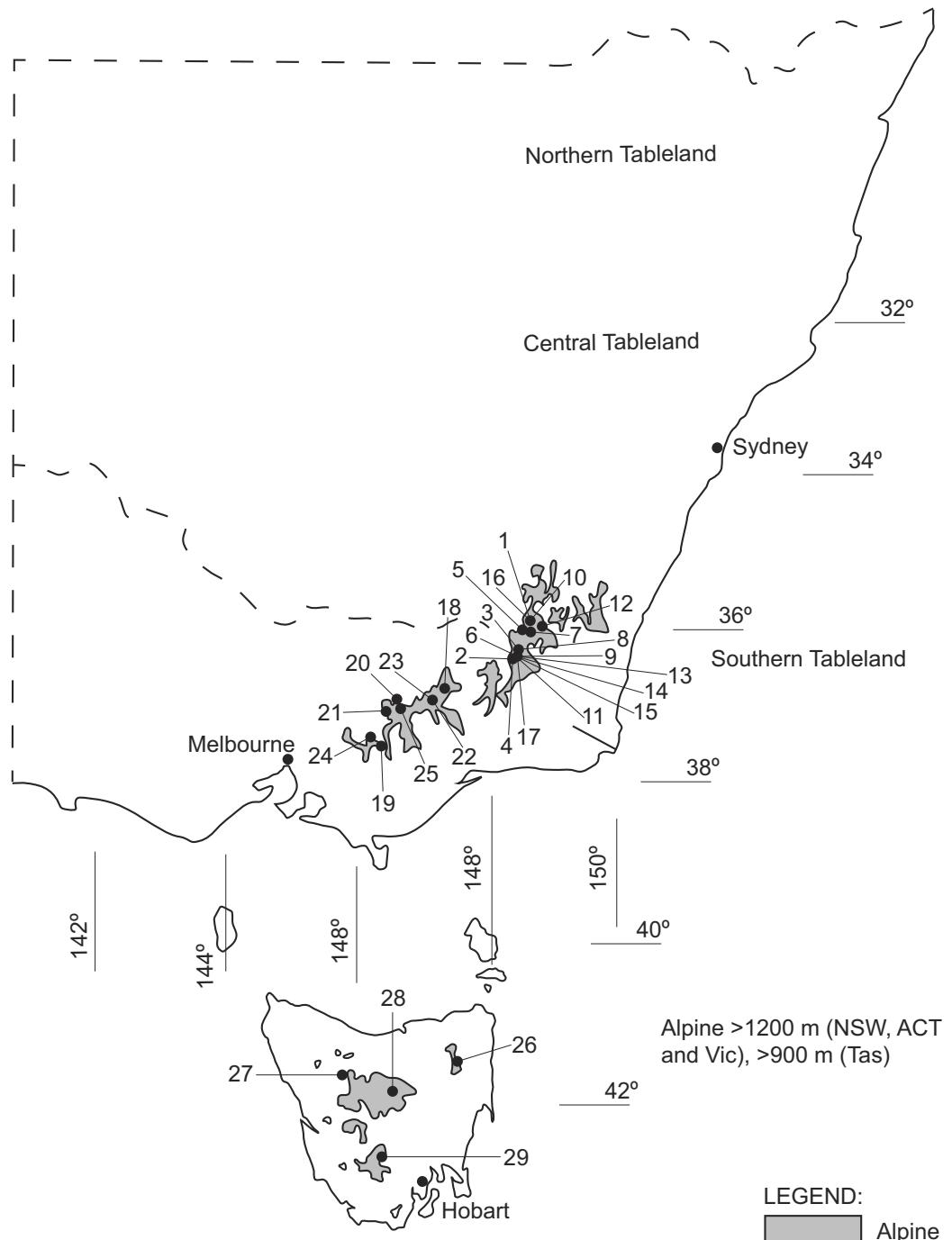


Figure Notes

This map is approximate only and altitude above Australian Height Datum must be used to determine whether the building falls into an *alpine area* region.

Explanatory Information

Alpine areas are located in New South Wales, Victoria and Tasmania.

Alpine areas are areas 1200 m or more above Australian Height Datum (AHD) for New South Wales, Australian Capital Territory and Victoria, and 900 m or more above AHD for Tasmania, as shown in Figure 1.

Alpine areas are considered to receive significant snowfalls (snowfalls that result in an average snow accumulation on

Definitions

the ground of 175 mm or greater). Regions in New South Wales, the Australian Capital Territory and Victoria between 600 – 1200 m AHD are considered to be sub-alpine areas and may receive significant snowfalls, however unlike alpine areas the snow is unlikely to accumulate.

It is recommended that the *appropriate authority* be consulted to determine whether the building is located in an alpine area. AS/NZS 1170.3 also contains further detail in the identification of alpine areas and the altitude of the alpine regions of Australia.

In the Australian Capital Territory, Canberra is not designated as an alpine area as snow loads are not considered significant.

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

Aluminium Composite Panel (ACP): Flat or profiled aluminium sheet material in composite with any type of materials.

Amenity: An attribute which contributes to the health, physical independence, comfort and well-being of people.

Ancillary element: An element that is secondary to and not an integral part of another element to which it is attached.

Annual exceedance probability: The probability that a given rainfall total accumulated over a given duration will be exceeded in any one year.

Annual greenhouse gas emissions: The theoretical amount of greenhouse gas emissions attributable to the energy used annually by a building's *services*, excluding kitchen exhaust and the like.

Appropriate authority: For the purposes of the Fire Safety Verification Method, means the relevant authority with the statutory responsibility to determine the particular matter satisfies the relevant *Performance Requirement*.

Explanatory Information

The *Appropriate Authority* is typically the building surveyor or building certifier charged with the statutory responsibility to determine building compliance and issue the building permit / approval and occupancy certificate / approval.

NSW Appropriate authority

Appropriate authority: The relevant authority with the statutory responsibility to determine the particular matter.

Appropriately qualified person: A person recognised by the *appropriate authority* as having qualifications and/or experience in the relevant discipline in question.

Approved disposal system: A system for the disposal of sewage, sullage or stormwater approved by an authority having jurisdiction.

Articulated masonry: Masonry construction in which special provisions have been made for movement by articulation.

NSW Assembly building

SA Assembly building

Assembly building: A building where people may assemble for—

- (a) civic, theatrical, social, political or religious purposes including a library, theatre, public hall or place of worship; or
- (b) educational purposes in a *school*, *early childhood centre*, preschool, or the like; or
- (c) entertainment, recreational or sporting purposes including—
 - (i) a discotheque, nightclub or a bar area of a hotel or motel providing live entertainment or containing a dance floor; or
 - (ii) a cinema; or
 - (iii) a sports stadium, sporting or other club; or
- (d) transit purposes including a bus station, railway station, airport or ferry terminal.

Assessment Method: A method that can be used for determining that a *Performance Solution* or *Deemed-to-Satisfy Solution* complies with the *Performance Requirements*.

Assumed cooling thermostat set point: The cooling thermostat set point used to calculate *cooling degree hours*, and equal to $17.8 + 0.31T_m$, where T_m is the mean January outdoor air temperature measured in degrees Celsius.

Atrium: A space within a building that connects 2 or more *storeys* and—

Definitions

- (a) is enclosed at the top by a floor or roof (including a glazed roof structure); and
- (b) includes any adjacent part of the building not separated by an appropriate barrier to fire; but
- (c) does not include a stairwell, rampwell or the space within a *shaft*; and
- (d) for the purposes of (a) a space is considered enclosed if the area of the enclosing floor or roof is greater than 50% of the area of the space, measured in plan, of any of the *storeys* connected by the space.

Atrium well: A space in an *atrium* bounded by the perimeter of the openings in the floors or by the perimeter of the floors and the *external walls*.

NSW Auditorium

Automatic: Designed to operate when activated by a heat, smoke or fire sensing device.

Available safe egress time (ASET)

- (1) The time between ignition of a fire and the onset of untenable conditions in a specific part of a building.
- (2) The time referred to in (1) is the calculated interval between the time of ignition of a fire and the time at which conditions become such that the occupant is unable to take effective action to escape to a place of safety.

Average daylight factor: The ratio of the illumination level within a room provided by daylight to the level of daylight outside the building during overcast conditions.

Average specific extinction area: The average specific extinction area for smoke as determined by AS 5637.1.

Backflow prevention device: An air gap, break tank or mechanical device that is designed to prevent the unplanned reversal of flow of water or *contaminants* into the water service or a *Network Utility Operator's* water supply.

Backpressure: A reversal of water flow caused by the downstream pressure becoming greater than the supply pressure.

Backsiphonage: A reversal of flow of water caused by negative pressure in the distributing pipes of a water service or supply.

Backstage: A space associated with, and adjacent to, a *stage* in a Class 9b building for scenery, props, equipment, dressing rooms, or the like.

Battery system: One or more chemical cells connected in series, parallel or a combination of the two for the purpose of electrical energy storage.

Blockage: An obstruction within a water service or sanitary *plumbing* or *drainage* system.

Boiler: A vessel or an arrangement of vessels and interconnecting parts, wherein steam or other vapour is generated, or water or other liquid is heated at a pressure above that of the atmosphere, by the application of fire, the products of combustion, electrical power, or similar high temperature means, and—

- (a) includes superheaters, reheaters, economisers, boiler piping, supports, mountings, valves, gauges, fittings, controls, the boiler settings and directly associated equipment; but
- (b) excludes a fully flooded or pressurised system where water or other liquid is heated to a temperature lower than the normal atmospheric boiling temperature of the liquid.

Bond breaker: A material used as part of a *waterproofing system* that prevents the *membrane* bonding to the substrate, bedding or lining.

Breaking surf: Any area of salt water in which waves break on an average of at least 4 days per week but does not include white caps or choppy water.

Explanatory Information

Breaking surf normally occurs in areas exposed to the open sea. Breaking surf does not normally occur in sheltered areas, such as that which occurs around Port Phillip Bay, Sydney Harbour, Swan River, Derwent River and similar locations.

Building complexity criteria: Are used to determine the building complexity level of all or part of a building in accordance with *Table 2*, where building complexity criteria are as follows:

- (a) Attributes — the building is designed or constructed with any of the following sub-criteria:
 - (i) An *effective height* of more than 25 m.
 - (ii) One or more *Performance Solutions* are used to demonstrate compliance with the *Performance Requirements* relating to material and systems for structural safety.

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- (iii) One or more *Performance Solutions* are used to demonstrate compliance with the *Performance Requirements* relating to material and systems for fire safety.
- (iv) Is located in an area prone to natural disaster or adverse environmental conditions.
- (b) Class 2 — all or part of the building is Class 2 of three or more *storeys*.
- (c) Occupant numbers — the building is to be occupied by more than 100 people determined in accordance with D2D18.
- (d) Occupant characteristics — the building is to be occupied by more than 10 people who will require assistance to evacuate the building in an emergency.
- (e) Importance Level — the building is determined to be Importance Level 4 or 5.

Notes

The NCC currently does not include corresponding technical requirements relating to the defined term 'building complexity criteria' and the various building complexity levels. It is intended that these terms will be integrated into future editions of the NCC.

Table 2: Building complexity level

Building complexity level	Criteria
Low	The building meets only one of the following <i>building complexity criteria</i> : (a) (Attributes), (b) (Class 2), (c) (Occupant numbers) or (d) (Occupant characteristics)
Medium	The building meets two of the following <i>building complexity criteria</i> : (a) (Attributes), (b) (Class 2), (c) (Occupant numbers) or (d) (Occupant characteristics)
High	The building meets three of the following <i>building complexity criteria</i> : (a) (Attributes), (b) (Class 2), (c) (Occupant numbers) or (d) (Occupant characteristics)
Very high	The building meets all of the following <i>building complexity criteria</i> : (a) (Attributes), (b) (Class 2), (c) (Occupant numbers) and (d) (Occupant characteristics); or (e) (Building Importance Level 4 or 5)

Buried rainwater tank: A rainwater tank that is set into and completely covered by earth.

Burnout: Exposure to fire for a time that includes *fire growth*, full development, and decay in the absence of intervention or automatic suppression, beyond which the fire is no longer a threat to building elements intended to perform *loadbearing* or fire separation functions, or both.

SA Brush fence

SA Bulk grain storage facility

Carpark: A building that is used for the parking of motor vehicles but is neither a *private garage* nor used for the servicing of vehicles, other than washing, cleaning or polishing.

Cavity: A void between 2 leaves of masonry, or in masonry veneer construction, a void between a leaf of masonry and the supporting frame.

Cavity wall: For the purposes of F3V1 and H2V1, a wall that incorporates a drained cavity.

SA Cell type silo

TAS Centre-based care class 4 facility

TAS Centre-based care class 5 facility

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

Certificate of Conformity: A certificate issued under the ABCB scheme for products and systems certification stating that the properties and performance of a building material or method of construction or design fulfil specific requirements of the NCC.

Certification body: A person or organisation operating in the field of material, product, form of construction or design

Definitions

certification that has been accredited by the Joint Accreditation System of Australia and New Zealand (JAS-ANZ), and is accredited for a purpose other than as part of the CodeMark Australia Certification Scheme or [WaterMark Certification Scheme](#).

Characteristic: The occupant data to be used in the modelling of access solutions which define how an occupant interacts with a building, i.e. occupant movement speeds, turning ability, reach capability, perception of luminance contrast and hearing threshold.

VIC Children's service

Clad frame: Timber or metal frame construction with exterior timber or sheet wall cladding that is not sensitive to minor movement and includes substructure masonry walls up to 1.5 m high.

Climate zone: An area defined in [Figure 2](#) and in [Table 3](#) for specific locations, having energy efficiency provisions based on a range of similar climatic characteristics.

Table 3: Climate zones for thermal design

State	Location	Climate zone
ACT	Canberra	7
NSW	Albury	4
NSW	Armidale	7
NSW	Batemans Bay	6
NSW	Bathurst	7
NSW	Bega	6
NSW	Bellingen Shire - Dorrigo Plateau	7
NSW	Bellingen Shire - Valley & seaboard	2
NSW	Bourke	4
NSW	Broken Hill	4
NSW	Byron Bay	2
NSW	Cobar	4
NSW	Coffs Harbour	2
NSW	Dubbo	4
NSW	Goulburn	7
NSW	Grafton	2
NSW	Griffith	4
NSW	Ivanhoe	4
NSW	Lismore	2
NSW	Lord Howe Island	2
NSW	Moree	4
NSW	Newcastle	5
NSW	Nowra	6
NSW	Orange	7
NSW	Perisher - Smiggins	8
NSW	Port Macquarie	5
NSW	Sydney East	5
NSW	Sydney West	6
NSW	Tamworth	4
NSW	Thredbo	8
NSW	Wagga Wagga	4
NSW	Williamtown	5

Definitions

State	Location	Climate zone
NSW	Wollongong	5
NSW	Yass	6
NT	Alice Springs	3
NT	Darwin	1
NT	Elliot	3
NT	Katherine	1
NT	Renner Springs	3
NT	Tennant Creek	3
QLD	Birdsville	3
QLD	Brisbane	2
QLD	Bundaberg	2
QLD	Cairns	1
QLD	Cooktown	1
QLD	Cunnamulla	3
QLD	Gladstone	2
QLD	Hervey Bay	2
QLD	Hughenden	3
QLD	Longreach	3
QLD	Mackay	2
QLD	Mount Isa	3
QLD	Normanton	1
QLD	Rockhampton	2
QLD	Roma	3
QLD	Southport	2
QLD	Toowoomba	5
QLD	Townsville	1
QLD	Warwick	5
QLD	Weipa	1
SA	Adelaide	5
SA	Bordertown	6
SA	Ceduna	5
SA	Cook	4
SA	Elliston	5
SA	Kingscote	6
SA	Leigh Creek	5
SA	Lobethal	6
SA	Loxton	5
SA	Naracoorte	6
SA	Marree	4
SA	Mount Gambier	6
SA	Murray Bridge	6
SA	Oodnadatta	4
SA	Port Augusta	4
SA	Port Lincoln	5

Definitions

State	Location	Climate zone
SA	Renmark	5
SA	Tarcoola	4
SA	Victor Harbour	6
SA	Whyalla	4
TAS	Burnie	7
TAS	Bicheno	7
TAS	Deloraine	7
TAS	Devonport	7
TAS	Flinders Island	7
TAS	Hobart	7
TAS	Huonville	7
TAS	King Island	7
TAS	Launceston	7
TAS	New Norfolk	7
TAS	Oatlands	7
TAS	Orford	7
TAS	Rossarden	7
TAS	Smithton	7
TAS	St Marys	7
TAS	Zeehan	7
VIC	Anglesea	6
VIC	Ararat	7
VIC	Bairnsdale	6
VIC	Ballarat	7
VIC	Benalla	6
VIC	Bendigo	6
VIC	Bright	7
VIC	Colac	6
VIC	Dandenong	6
VIC	Echuca	4
VIC	Geelong	6
VIC	Hamilton	7
VIC	Horsham	6
VIC	Melbourne	6
VIC	Mildura	4
VIC	Portland	6
VIC	Sale	6
VIC	Shepparton	4
VIC	Swan Hill	4
VIC	Traralgon	6
VIC	Wangaratta	7
VIC	Warrnambool	6
VIC	Wodonga	6
WA	Albany	6

Definitions

State	Location	Climate zone
WA	Balladonia	4
WA	Broome	1
WA	Bunbury	5
WA	Carnarvon	3
WA	Christmas Island	1
WA	Cocos Island	1
WA	Derby	1
WA	Esperance	5
WA	Exmouth	1
WA	Geraldton	5
WA	Halls Creek	3
WA	Kalgoorlie-Boulder	4
WA	Karratha	1
WA	Meekatharra	4
WA	Northam	4
WA	Pemberton	6
WA	Perth	5
WA	Port Hedland	1
WA	Wagin	4
WA	Wyndham	1

Figure 2: Climate zones for thermal design

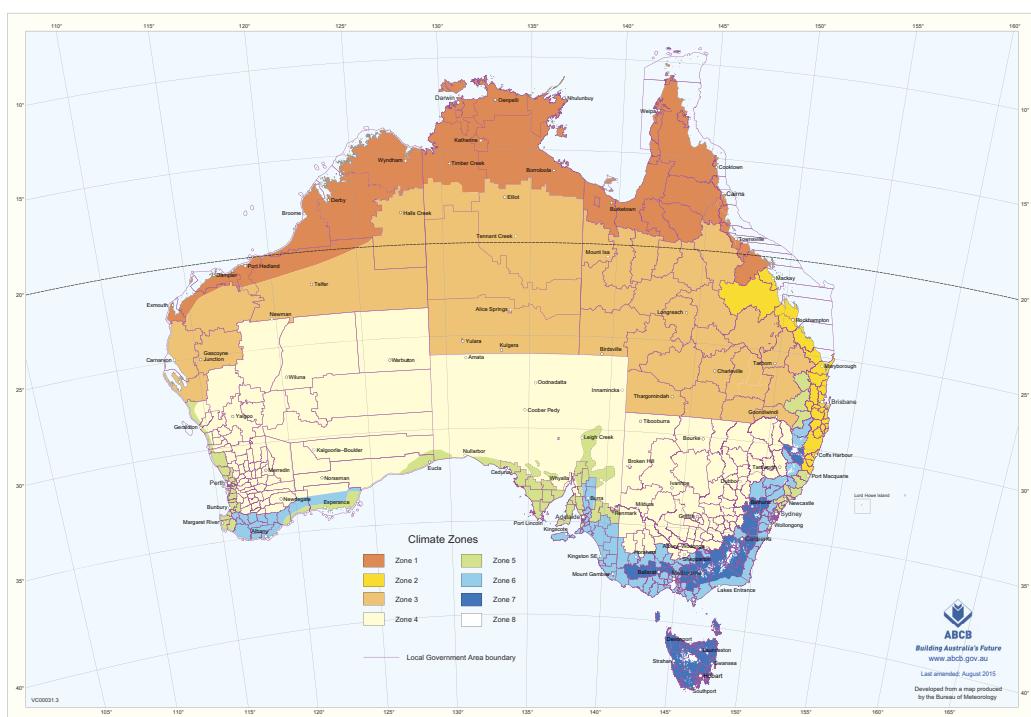


Figure Notes

- (1) This map can be viewed in enlargeable form on the ABCB website at [abcb.gov.au](http://www.abcb.gov.au).
- (2) A Zone 4 area in South Australia, other than a council area, at an altitude greater than 300 m above the

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Australian Height Datum is to be considered as Zone 5.

- (3) The areas referred to in (2) have been defined in an enlarged format on the following maps produced by the Department of Planning, Transport and Infrastructure (these maps can be viewed on the Government of South Australia website at www.sa.gov.au):
 - (a) Adelaide Hills Climate Zone Map.
 - (b) Barossa Council Climate Zone Map.
 - (c) Regional Council of Goyder Climate Zone Map.
- (4) Locations in *climate zone 8* are in *alpine areas*.

Combustible: Applied to—

- (a) a material — means combustible as determined by AS 1530.1; and
- (b) construction or part of a building — means constructed wholly or in part of combustible materials.

VIC Combustible cladding product

Common wall: For the purposes of—

- (a) Volume One, a wall that is common to adjoining buildings.
- (b) Volume Two and the ABCB Housing Provisions, a wall that is common to adjoining buildings other than Class 1 buildings.

Condensation: The formation of moisture on the surface of a building element or material as a result of moist air coming into contact with a surface which is at a lower temperature.

Conditioned space: For the purposes of—

- (a) Volume One, a space within a building, including a ceiling or under-floor supply air plenum or return air plenum, where the environment is likely, by the intended use of the space, to have its temperature controlled by *air-conditioning*; or
- (b) Volume Two, a space within a building that is heated or cooled by the building's *domestic services*, excluding a non-*habitable room* in which a heater with a capacity of not more than 1.2 kW or 4.3 MJ/hour is installed.

Construction activity actions: Actions due to stacking of building materials or the use of equipment, including cranes and trucks, during construction or actions which may be induced by floor to floor propping.

Containment protection: The installation of a *backflow prevention device* at the *point of connection* of a *Network Utility Operator's* water supply to a site.

Contaminant: Any substance (including gases, liquids, solids or micro-organisms), energy (excluding noise) or heat, that either by itself or in combination with the same, similar or other substances, energy or heat, changes or is likely to change the physical, chemical or biological condition of water.

NSW Continental seating

Controlled fill: Material that has been placed and compacted in layers with compaction equipment (such as a vibrating plate) within a defined moisture range to a defined density requirement.

Cooling degree hours: For any one hour when the mean outdoor air temperature is above the *assumed cooling thermostat set point*, the degree Celsius air temperature difference between the mean outdoor air temperature and the *assumed cooling thermostat set point*.

Cooling load: The calculated amount of energy removed from the cooled spaces of the building annually by artificial means to maintain the desired temperatures in those spaces.

Critical radiant flux (CRF): The critical heat flux at extinguishment (CHF in kW/m²) as determined by AS ISO 9239.1.

Cross-connection: Any actual or potential connection between a water supply and any *contaminant*.

NSW Cross-over

Curtain wall: A non-*loadbearing external wall* that is not a *panel wall*.

Daily outdoor temperature range: The difference between the maximum and minimum temperatures that occur in a day.

Damp-proof course (DPC): A continuous layer of impervious material placed in a masonry wall or pier, or between a wall or pier and a floor, to prevent the upward or downward migration of water.

Deemed-to-Satisfy Provisions: Provisions which are deemed to satisfy the *Performance Requirements*.

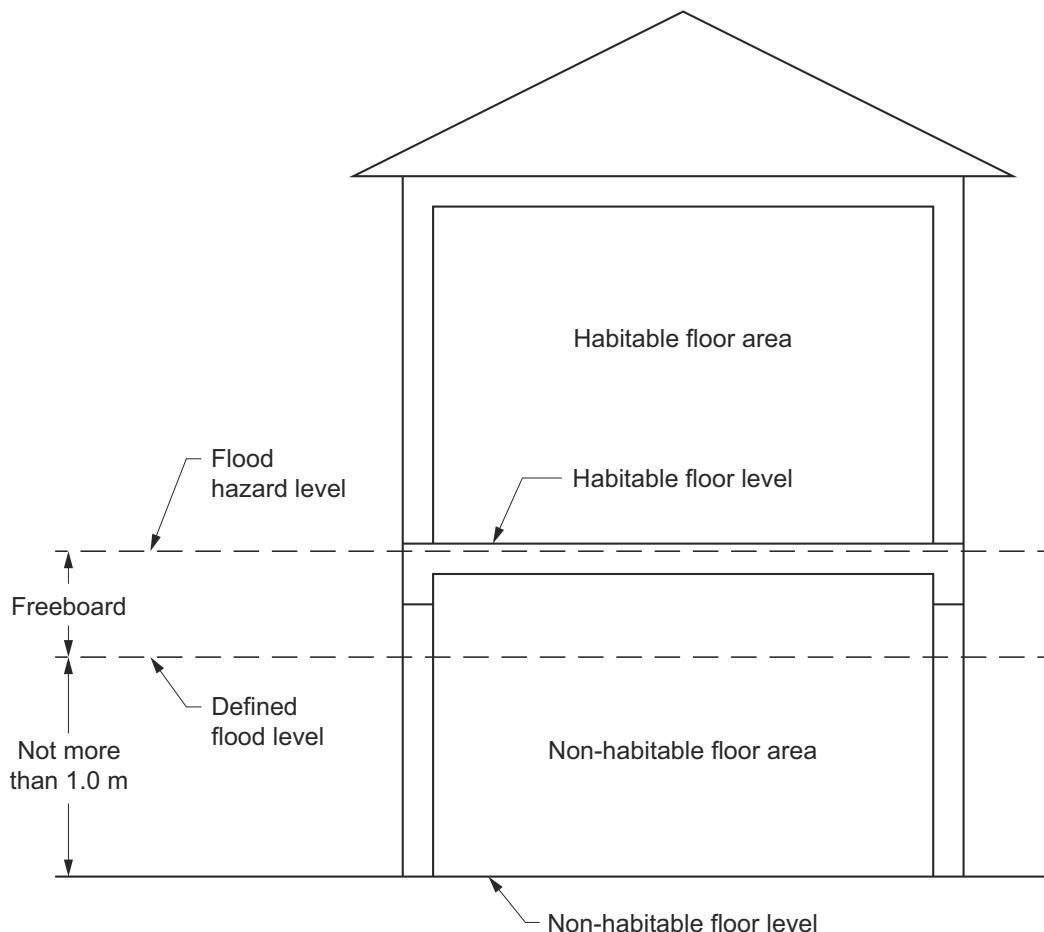
Definitions

Deemed-to-Satisfy Solution: A method of satisfying the *Deemed-to-Satisfy Provisions*.

Defined flood event (DFE): The flood event selected for the management of flood hazard for the location of specific development as determined by the *appropriate authority*.

Defined flood level (DFL): The flood level associated with a *defined flood event* relative to a specified datum (see Figure 3).

Figure 3: Identification of defined flood level, flood hazard level and freeboard



Dehumidification gram hours: For any one hour when the mean humidity is more than 15.7g/kg, the grams per kilogram of absolute humidity difference between the mean outdoor absolute humidity and 15.7g/kg.

NSW Designated bushfire prone area

Designated bushfire prone area: Land which has been designated under a power of legislation as being subject, or likely to be subject, to bushfires.

Design bushfire: The characteristics of a bushfire, its initiation, spread and development, which arises from weather conditions, topography and fuel (vegetation) in a given setting, used to determine *fire actions*.

Design fire: The quantitative description of a representation of a fire within the *design scenario*.

Design scenario: The specific scenario of which the sequence of events is quantified and a *fire safety engineering* analysis is conducted against.

WA Design wind speed

Design wind speed: The design gust wind speed for the area where the building is located, calculated in accordance with AS/NZS 1170.2 or AS 4055 (see Table 4 for wind classes).

Definitions

Table 4: Wind classes

Non-cyclonic Region A and B	Cyclonic Region C and D
N1, N2, N3	C1
N4, N5, N6 (these wind classes are covered in the ABCB Housing Provisions Part 2.2).	C2, C3, C4 (these wind classes are covered in the ABCB Housing Provisions Part 2.2).

Table Notes

- (1) Wind classification map identifying wind regions is contained in ABCB Housing Provisions Part 2.2 (see Figure 2.2.3).
- (2) Information on wind classes for particular areas may be available from the *appropriate authority*.
- (3) "N" = non-cyclonic winds and "C" = cyclonic winds.

Detention centre: A building in which persons are securely detained by means of the built structure including a prison, remand centre, juvenile detention centre, holding cells or psychiatric detention centre.

NSW Development consent

Direct fix cladding wall: For the purposes of F3V1 and H2V1, means a wall with cladding attached directly to the wall framing without the use of a drained cavity.

Discontinuous construction: Means—

- (a) a wall having a minimum 20 mm cavity between 2 separate leaves, and—
 - (i) for masonry, where wall ties are used to connect leaves, the ties are of the resilient type; and
 - (ii) for other than masonry, there is no mechanical linkage between the leaves, except at the periphery; and
- (b) a staggered stud wall is not deemed to be discontinuous construction.

Display glazing: *Glazing* used to display retail goods in a shop or showroom directly adjacent to a walkway or footpath, but not including that used in a café or restaurant.

Domestic services: The basic engineering systems that use energy or control the use of energy; and—

- (a) includes—
 - (i) heating, *air-conditioning*, mechanical ventilation and artificial lighting; and
 - (ii) pumps and heaters for *swimming pools* and spa pools; and
 - (iii) heated water systems; and
 - (iv) on-site *renewable energy* equipment; but
- (b) excludes cooking facilities and portable appliances.

Drainage: Any part of—

- (a) a sanitary drainage system, including any liquid trade waste drainage; or
- (b) a stormwater drainage system.

Drainage flange: A flange connected to a waste pipe, at the point at which it passes through the floor substrate, to prevent leakage and which enables tile bed drainage into the waste pipe.

Drainage riser: A waste pipe between the floor waste and the drainage system.

Drinking water: Water intended primarily for human consumption but which has other domestic uses.

Explanatory Information

See also the Australian Drinking Water Guidelines produced by the National Health and Medical Research Council.

TAS Early childhood centre

VIC Early childhood centre

Early childhood centre: Any premises or part thereof providing or intending to provide a centre-based education and care service within the meaning of the Education and Care Services National Law Act 2010 (Vic), the Education and Care Services National Regulations and centre-based services that are licensed or approved under State and Territory children's services law, but excludes education and care primarily provided to school aged children in outside school

Definitions

hours settings.

Effective height: The vertical distance between the floor of the lowest *storey* included in the calculation of *rise in storeys* and the floor of the topmost *storey* (excluding the topmost *storey* if it contains only heating, ventilating, lift or other equipment, water tanks or similar service units).

Efficacy: The degree to which a system achieves a design objective given that it performs to a level consistent with the system specification during the relevant fire scenario.

Electricity network substation: A building in which high voltage supply is converted or transformed and which is controlled by a licensed network service provider designated under a power of legislation.

Electric passenger lift: A power-operated lift for raising or lowering people in a car in which the motion of the car is obtained from an electric motor mechanically coupled to the hoisting mechanism.

Electrohydraulic passenger lift: A power-operated lift for raising or lowering people in a car in which the motion of the car is obtained from the action of liquid under pressure acting on a piston or ram, the pressure being generated by a pump driven by an individual electric motor.

Energy value: The net cost to society including, but not limited to, costs to the building user, the environment and energy networks.

Engaged pier: A pier bonded to a masonry wall by course bonding of masonry units or by masonry ties.

NSW Entertainment venue

Envelope: For the purposes of—

- (a) Section J in NCC Volume One, the parts of a building's *fabric* that separate a *conditioned space* or *habitable room* from—
 - (i) the exterior of the building; or
 - (ii) a non-*conditioned space* including—
 - (A) the floor of a rooftop plant room, lift-machine room or the like; and
 - (B) the floor above a *carpark* or warehouse; and
 - (C) the *common wall* with a *carpark*, warehouse or the like; or
- (b) Part H6 in NCC Volume Two and Section 13 of the ABCB Housing Provisions, the parts of a building's *fabric* that separate artificially heated or cooled spaces from—
 - (i) the exterior of the building; or
 - (ii) other spaces that are not artificially heated or cooled.

Equivalent: Equivalent to the level of health, safety and amenity provided by the *Deemed-to-Satisfy Provisions*.

Evacuation route: The continuous path of travel (including *exits*, *public corridors* and the like) from any part of a building, including within a *sole-occupancy unit* in a Class 2 or 3 building or Class 4 part, to a *safe place*.

Evacuation time: The time calculated from when the emergency starts for the occupants of the building to evacuate to a *safe place*.

Exit: Means—

- (a) Any, or any combination of the following if they provide egress to a road or *open space*:
 - (i) An internal or external stairway.
 - (ii) A ramp.
 - (iii) A *fire-isolated passageway*.
 - (iv) A doorway opening to a road or *open space*; or
- (b) A *horizontal exit* or a *fire-isolated passageway* leading to a *horizontal exit*.

TAS Expert judgement

Expert judgement: The judgement of an expert who has the qualifications and experience to determine whether a *Performance Solution* or *Deemed-to-Satisfy Solution* complies with the *Performance Requirements*.

Explanatory Information

Contemporary and relevant qualifications and/or experience are necessary to determine whether a *Performance*

Definitions

Solution complies with the **Performance Requirements**. The level of qualification and/or experience may differ depending on the complexity of the proposal and the requirements of the regulatory authority. Practitioners should seek advice from the authority having jurisdiction or **appropriate authority** for clarification as to what will be accepted.

External wall: For the purposes of—

- (a) Volume One, an outer wall of a building which is not a **common wall**; or
- (b) Volume Two, an outer wall of a building which is not a **separating wall**.

Extra-low voltage: A **voltage** not exceeding 50 V AC or 120 V ripple-free DC.

Fabric: The basic building structural elements and components of a building including the roof, ceilings, walls, glazing and floors.

SA Farm building

Farm building: A Class 7 or 8 building located on land primarily used for **farming**—

- (a) that is—
 - (i) used in connection with **farming**; or
 - (ii) used primarily to store one or more **farm vehicles**; or
 - (iii) a combination of (i) and (ii); and
- (b) in which the total number of persons accommodated at any time does not exceed one person per 200 m² of floor area or part thereof, up to a maximum of 8 persons; and
- (c) with a total **floor area** of not more than 3500 m².

Farming: Includes—

- (a) cultivating, propagating and harvesting plants or fungi or their products or parts, including seeds, spores, bulbs or the like, but does not include forestry; or
- (b) maintaining animals in any physical environment for the purposes of—
 - (i) breeding them; or
 - (ii) selling them; or
 - (iii) acquiring and selling their bodily produce such as milk, wool, eggs or the like; or
- (c) a combination of (a) and (b),

but does not include forestry or maintaining animals for sport or recreational purposes.

Farm shed: A single **storey** Class 7 or 8 building located on land primarily used for **farming**—

- (a) that is—
 - (i) used in connection with **farming**; or
 - (ii) used primarily to store one or more **farm vehicles**; or
 - (iii) a combination of (i) and (ii); and
- (b) occupied neither frequently nor for extended periods by people; and
- (c) in which the total number of persons accommodated at any time does not exceed 2; and
- (d) with a total **floor area** of more than 500 m² but not more than 2000 m².

Farm vehicle: A vehicle used in connection with **farming**.

NSW Film

Finished ground level: The ground level adjacent to footing systems at the completion of construction and landscaping.

Fire actions: Each of the following:

- (a) airborne embers; and
- (b) burning debris and/or accumulated embers adjacent to building elements; and
- (c) heat transfer from combustible materials within the site; and
- (d) radiant heat from a bushfire front; and
- (e) flame contact from a bushfire front; and

Definitions

(f) the period of time post fire front subject to collapsing vegetation due to persistent combustion.

Fire brigade: A statutory authority constituted under an Act of Parliament having as one of its functions, the protection of life and property from fire and other emergencies.

Fire brigade station: For the purposes of E1D2(1)(b) and I3D9, means a state or territory government operated premises which is a station for a *fire brigade*.

Fire compartment: Either—

- (a) the total space of a building; or
- (b) when referred to in—
 - (i) the *Performance Requirements* — any part of a building separated from the remainder by barriers to fire such as walls and/or floors having an appropriate resistance to the spread of fire with any openings adequately protected; or
 - (ii) the *Deemed-to-Satisfy Provisions* — any part of a building separated from the remainder by walls and/or floors each having an FRL not less than that *required* for a *fire wall* for that type of construction and where all openings in the separating construction are protected in accordance with the *Deemed-to-Satisfy Provisions* of the relevant Part.

Fire growth: The stage of fire development during which the *heat release rate* and the temperature of the fire are generally increasing.

Fire hazard: The danger in terms of potential harm and degree of exposure arising from the start and spread of fire and the smoke and gases that are thereby generated.

Fire hazard properties: The following properties of a material or assembly that indicate how they behave under specific fire test conditions:

- (a) *Average specific extinction area*, *critical radiant flux* and *Flammability Index*, determined as defined in Schedule 1.
- (b) *Smoke-Developed Index*, *smoke development rate* and *Spread-of-Flame Index*, determined in accordance with Specification 3.
- (c) *Group number* and *smoke growth rate index* ($\text{SMOGRA}_{\text{RC}}$), determined in accordance with Specification 7.

Fire intensity: The rate of release of calorific energy in watts, determined either theoretically or empirically, as applicable.

Fire-isolated passageway: A corridor, hallway or the like, of *fire-resisting construction*, which provides egress to or from a *fire-isolated stairway* or *fire-isolated ramp* or to a road or *open space*.

Fire-isolated ramp: A ramp within a *fire-resisting* enclosure which provides egress from a *storey*.

Fire-isolated stairway: A stairway within a *fire-resisting shaft* and includes the floor and roof or top enclosing structure.

Fire load: The sum of the net calorific values of the *combustible* contents which can reasonably be expected to burn within a *fire compartment*, including furnishings, built-in and removable materials, and building elements.

Notes

The calorific values must be determined at the ambient moisture content or humidity (the unit of measurement is MJ).

Fire-protected timber: *Fire-resisting* timber building elements that comply with Specification 10.

Fire-protective covering: Any one or more of the following:

- (a) 13 mm fire-protective grade plasterboard.
- (b) 12 mm cellulose cement flat sheeting complying with AS/NZS 2908.2 or ISO 8336.
- (c) 12 mm fibrous plaster reinforced with 13 mm x 13 mm x 0.7 mm galvanised steel wire mesh located not more than 6 mm from the exposed face.
- (d) Other material not less fire-protective than 13 mm fire-protective grade plasterboard, fixed in accordance with the normal trade practice for a fire-protective covering.

Fire-resistance level (FRL): The grading periods in minutes determined in accordance with Specifications 1 and 2, for the following criteria—

- (a) *structural adequacy*; and
- (b) *integrity*; and

Definitions

- (c) *insulation*,
and expressed in that order.

Notes

A dash means there is no requirement for that criterion. For example, 90/-/- means there is no requirement for an FRL for *integrity* and *insulation*, and -/-/- means there is no requirement for an FRL.

Fire-resisting construction: For the purposes of Volume One, means one of the Types of construction referred to in Part C2 of Volume One.

Fire-resisting: For the purposes of—

- Volume One, applied to a building element, having an FRL appropriate for that element; or
- Volume Two, applied to a *structural member* or other part of a building, having the FRL *required* for that *structural member* or other part.

Fire safety engineering: Application of engineering principles, rules and *expert judgement* based on a scientific appreciation of the fire phenomenon, often using specific *design scenario*, of the effects of fire and of the reaction and behaviour of people in order to—

- save life, protect property and preserve the environment and heritage from destructive fire; and
- quantify the hazards and risk of fire and its effects; and
- mitigate fire damage by proper design, construction, arrangement and use of buildings, materials, structures, industrial processes and transportation systems; and
- evaluate analytically the optimum protective and preventive measures, including design, installation and maintenance of active and passive fire and life safety systems, necessary to limit, within prescribed levels, the consequences of fire.

Fire safety system: One or any combination of the methods used in a building to—

- warn people of an emergency; or
- provide for safe evacuation; or
- restrict the spread of fire; or
- extinguish a fire,

and includes both active and passive systems.

Fire-source feature: Any one or more of the following:

- The far boundary of a road, river, lake or the like adjoining the allotment.
- A side or rear boundary of the allotment.
- An *external wall* of another building on the allotment which is not a Class 10 building.

Fire wall: A wall with an appropriate resistance to the spread of fire that divides a *storey* or building into *fire compartments*.

Fixed wired: For the purposes of Specification 23, a system of electrical wiring (either AC or DC), in which cables are fixed or supported in position.

Flammability Index: The index number as determined by AS 1530.2.

VIC Flashing

Flashing: A strip or sleeve of impervious material dressed, fitted or built-in to provide a barrier to water movement, or to divert the travel of water, or to cover a joint where water would otherwise penetrate to the interior of a building, and includes the following:

- Perimeter flashing: a flashing used at the floor-wall junction.
- Vertical flashing: a flashing used at wall junctions within *shower areas*.

Flashover: In relation to *fire hazard properties*, means a *heat release rate* of 1 MW.

Flight: That part of a stair that has a continuous series of *risers*, including *risers* of *winders*, not interrupted by a *landing* or floor.

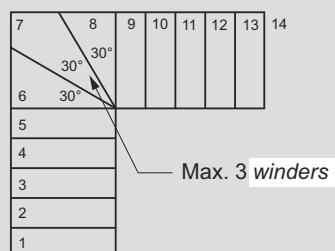
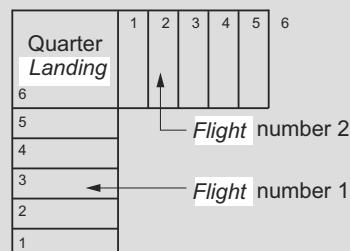
Definitions

Explanatory Information

A *flight* is the part of a stair that has a continuous slope created by the nosing line of treads. The length of a *flight* is limited to restrict the distance a person could fall down a stair.

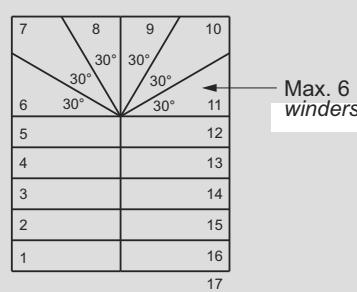
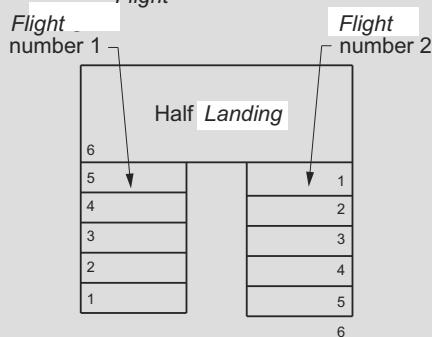
Quarter *landings*, as shown in [Explanatory Figure 1](#), are considered sufficient to halt a person's fall and therefore are considered for the purposes of NCC Volume Two and the ABCB Housing Provisions not to be part of the *flight*.

Figure 1 (explanatory): Identification of stair flights — Plan view



(a) Quarter landing stairway – 2 flights
Flight

(b) Continuous stairway – 1 flight
(90° change in direction)



(c) Half landing stairway – 2 flights

(d) Continuous stairway – 1 flight
(180° change in direction)

VIC Flood hazard area

Flood hazard area: The *site* (whether or not mapped) encompassing land lower than the *flood hazard level* which has been determined by the *appropriate authority*.

Flood hazard level (FHL): The flood level used to determine the height of floors in a building and represents the *defined flood level* plus the *freeboard* (see [Figure 3](#)).

Floor area: For the purposes of—

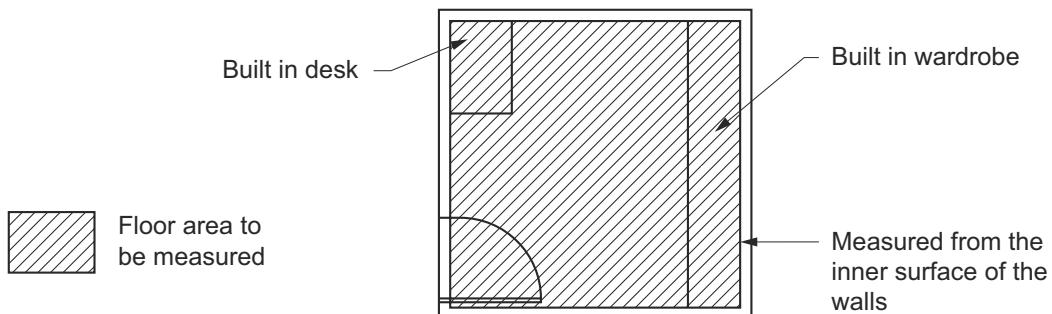
- (1) Volume One—
 - (a) in relation to a building — the total area of all *storeys*; and
 - (b) in relation to a *storey* — the area of all floors of that *storey* measured over the enclosing walls, and includes—
 - (i) the area of a *mezzanine* within the *storey*, measured within the finished surfaces of any *external walls*; and
 - (ii) the area occupied by any *internal wall* or partitions, any cupboard, or other built-in furniture, fixture or fitting; and
 - (iii) if there is no enclosing wall, an area which has a use that contributes to the *fire load* or impacts on the safety, health or amenity of the occupants in relation to the provisions of the BCA; and
 - (c) in relation to a room — the area of the room measured within the internal finished surfaces of the walls, and includes the area occupied by any cupboard or other built-in furniture, fixture or fitting; and
 - (d) in relation to a *fire compartment* — the total area of all floors within the *fire compartment* measured within the finished internal surfaces of the bounding construction, and if there is no bounding construction, includes an area which has a use which contributes to the *fire load*; and
 - (e) in relation to an *atrium* — the total area of all floors within the *atrium* measured within the finished surfaces

Definitions

of the bounding construction and if no bounding construction, within the *external walls*.

- (2) Volume Two and the ABCB Housing Provisions, in relation to a room, the area of the room measured within the finished surfaces of the walls, and includes the area occupied by any cupboard or other built-in furniture, fixture or fitting (see Figure 4).

Figure 4: Identification of floor area of a room

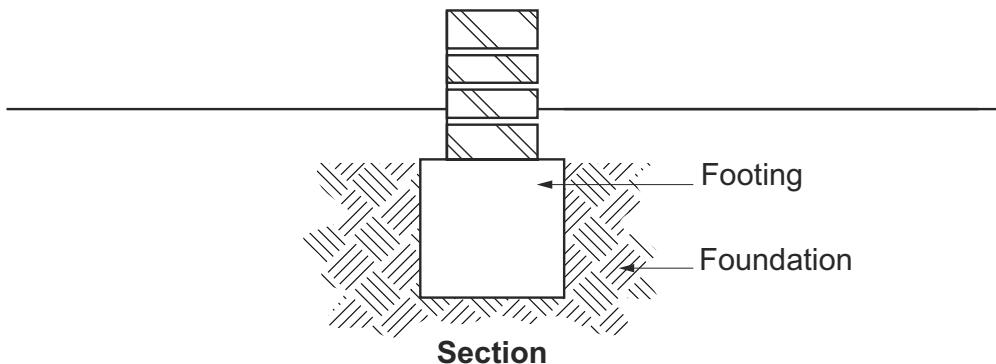


Floor waste: A grated inlet within a graded floor intended to drain the floor surface.

NSW Flying scenery

Foundation: The ground which supports the building (see Figure 5).

Figure 5: Identification of foundation



Fractional effective dose (FED): The fraction of the dose (of thermal effects) that would render a person of average susceptibility incapable of escape.

Explanatory Information

The definition for FED has been modified from the ISO definition to be made specific for the Fire Safety *Verification Method*. The use of CO or CO₂ as part of FED is not part of that *Verification Method*. This is because the ability to measure CO in a repeatable test varies by two orders of magnitude for common cellosic fuel.

VIC Freeboard

Freeboard: The height above the *defined flood level* as determined by the *appropriate authority*, used to compensate for effects such as wave action and localised hydraulic behaviour.

Fully developed fire: The state of total involvement of the majority of available combustible materials in a fire.

NSW Garage top dwelling

Glazing: For the purposes of—

- (a) Section J of Volume One, except for a *sole-occupancy unit* of a Class 2 building or a Class 4 part of a building—
 - (i) a transparent or translucent element and its supporting frame located in the *envelope*; and
 - (ii) includes a *window* other than a *roof light*; or
- (b) Section J of NCC Volume One, for a *sole-occupancy unit* of a Class 2 building or a Class 4 part of a building—

Definitions

- (i) a translucent element and its supporting frame located in the external *fabric* of the building; and
 - (ii) includes a *window* other than a *roof light*; or
- (c) Part H6 of NCC Volume Two and Section 13 of the ABCB Housing Provisions—
 - (i) a transparent or translucent element and its supporting frame located in the external *fabric* of the building; and
 - (ii) includes a *window* other than a *roof light*.

Going: The horizontal dimension from the front to the back of a tread less any overhang from the next tread or *landing* above (see [Figure 11.2.2f](#) in the ABCB Housing Provisions).

Green Star: The building sustainability rating scheme managed by the Green Building Council of Australia.

NSW Grid

Group number: The number of one of 4 groups of materials used in the regulation of *fire hazard properties* and applied to materials used as a finish, surface, lining, or attachment to a wall or ceiling.

Habitable room: A room used for normal domestic activities, and—

- (a) includes a bedroom, living room, lounge room, music room, television room, kitchen, dining room, sewing room, study, playroom, family room, home theatre and sunroom; but
- (b) excludes a bathroom, laundry, water closet, pantry, walk-in wardrobe, corridor, hallway, lobby, photographic darkroom, clothes-drying room, and other spaces of a specialised nature occupied neither frequently nor for extended periods.

Hazard Rating: A level of potential toxicity that may cause contamination in a *drinking water* system, having a rating of *Low Hazard*, *Medium Hazard* or *High Hazard*, determined in accordance with NCC Volume Three.

Health-care building: A building whose occupants or patients undergoing medical treatment generally need physical assistance to evacuate the building during an emergency and includes—

- (a) a public or private hospital; or
- (b) a nursing home or similar facility for sick or disabled persons needing full-time care; or
- (c) a clinic, day surgery or procedure unit where the effects of the predominant treatment administered involve patients becoming non-ambulatory and requiring supervised medical care on the premises for some time after the treatment.

Heated water: Water that has been intentionally heated; normally referred to as hot water or warm water.

Heating degree hours: For any one hour when the mean outdoor air temperature is less than 15°C, the degrees Celsius temperature difference between the mean outdoor air temperature and 15°C.

Heating load: The calculated amount of energy delivered to the heated spaces of the building annually by artificial means to maintain the desired temperatures in those spaces.

Heat release: The thermal energy produced by combustion (measured in kJ).

Heat release rate (HRR): The rate of thermal energy production generated by combustion, measured in kW (preferred) or MW.

High Hazard: Any condition, device or practice which, in connection with a water supply, has the potential to cause death.

High wind area: A region that is subject to *design wind speed* more than N3 or C1 (see [Table 4](#)).

Hob: The upstand at the perimeter of a *shower area*.

Horizontal exit: A *required* doorway between 2 parts of a building separated from each other by a *fire wall*.

VIC Hotel offering shared accommodation

Hours of operation: The number of hours when the occupancy of the building is greater than 20% of the peak occupancy.

House energy rating software: For the purposes of—

- (a) Volume One, software accredited under the Nationwide House Energy Rating Scheme (NatHERS); or
- (b) Volume Two—
 - (i) applied to H6V2—software accredited or previously accredited under the Nationwide House Energy Rating Scheme (NatHERS) and the additional functionality provided in non-regulatory mode; and
 - (ii) applied to Specification 42—software accredited under the Nationwide House Energy Rating Scheme (NatHERS).

Definitions

Explanatory Information

The Nationwide House Energy Rating Scheme (NatHERS) refers to the Australian Governments' scheme that facilitates consistent energy ratings from software tools which are used to assess the potential thermal efficiency of dwelling envelopes.

Illuminance: The luminous flux falling onto a unit area of surface.

Illumination power density: The total of the power that will be consumed by the lights in a space, including any lamps, ballasts, current regulators and control devices other than those that are plugged into socket outlets for intermittent use such as floor standing lamps, desk lamps or work station lamps, divided by the area of the space, and expressed in W/m².

Explanatory Information

Illumination power density relates to the power consumed by the lighting system and includes the light source or luminaire and any control device. The power for the lighting system is the illumination power load. This approach is more complicated than the *lamp power density* approach but provides more flexibility for a dwelling with sophisticated control systems.

The area of the space refers to the area the lights serve. This could be considered a single room, open plan space, verandah, balcony or the like, or the total area of all these spaces.

Inclined lift: A power-operated device for raising or lowering people within a carriage that has one or more rigid guides on an inclined plane.

Individual protection: The installation of a *backflow prevention device* at the point where a water service connects to a single fixture or appliance.

NSW Information and education facility

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

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

Internal wall: For the purposes of—

- (a) Volume One, excludes a *common wall* or a party wall; or
- (b) Volume Two, excludes a *separating wall*, *common wall* or party wall.

Interstitial condensation: The *condensation* of moisture on surfaces between material layers inside the building component.

Irrigation system: An irrigation system of the following types:

- (a) Type A— all permanently open outlets and piping more than 150 mm above finished surface level, not subject to ponding or *backpressure* and not involving injection systems.
- (b) Type B— irrigation systems in domestic or residential buildings with piping or outlets installed less than 150 mm above finished surface level and not involving injection systems.
- (c) Type C— irrigation systems in other than domestic or residential buildings with piping outlets less than 150 mm above finished surface level and not involving injection systems.
- (d) Type D— irrigation systems where fertilizers, herbicides, nematicides or the like are injected or siphoned into the system.

JAS-ANZ: The Joint Accreditation System of Australia and New Zealand.

Lamp power density: The total of the maximum power rating of the lamps in a space, other than those that are plugged into socket outlets for intermittent use such as floor standing lamps, desk lamps or work station lamps, divided by the area of the space, and expressed in W/m².

Explanatory Information

Lamp power density is a simple means of setting energy consumption at an efficient level for Class 1 and associated Class 10a buildings.

Lamp refers to the globe or globes that are to be installed in a permanently wired light fitting. The maximum power of

Definitions

a lamp is usually marked on the fitting as the maximum allowable wattage.

The area of the space refers to the area the lights serve. This could be considered a single room, open plan space, verandah, balcony or the like, or the total area of all these spaces.

Landing: An area at the top or bottom of a *flight* or between two *flights*.

Latent heat gain: The heat gained by the vapourising of liquid without change of temperature.

Lateral support: A support (including a footing, buttress, cross wall, beam, floor or braced roof structure) that effectively restrains a wall or pier at right angles to the face of the wall or pier.

Lead free: Where a plumbing product or material in contact with *drinking water* has a *weighted average* lead content of not more than 0.25%.

NSW Licensed premises

WA Licensed premises

Lightweight construction: Construction which incorporates or comprises—

- (a) sheet or board material, plaster, render, sprayed application, or other material similarly susceptible to damage by impact, pressure or abrasion; or
- (b) concrete and concrete products containing pumice, perlite, vermiculite, or other soft material similarly susceptible to damage by impact, pressure or abrasion; or
- (c) masonry having a width of less than 70 mm.

Loadbearing: Intended to resist vertical forces additional to those due to its own weight.

Loadbearing wall: For the purposes of H1D4 and H2D3 of NCC Volume Two and Section 4 of the ABCB Housing Provisions, means any wall imposing on the footing a load greater than 10 kN/m.

Loss: Physical damage, financial loss or loss of *amenity*.

Low Hazard: Any condition, device or practice which, in connection with a water supply, would constitute a nuisance by colour, odour or taste but does not have the potential to injure or endanger health.

Low rainfall intensity area: An area with a 5 minute rainfall intensity for an *annual exceedance probability* of 5% of not more than 125 mm/hour.

Explanatory Information

Rainfall intensity figures can be obtained from [Table 7.4.3d](#) in the ABCB Housing Provisions.

Low-rise, low-speed constant pressure lift: A power-operated low-rise, low-speed device for raising or lowering people with limited mobility on a carriage that is controlled by the application of constant pressure to a control.

Low-rise platform lift: A power-operated device for raising or lowering people with limited mobility on a platform, that is controlled automatically or by the application of constant pressure to a control.

Low voltage: A *voltage* exceeding *extra-low voltage*, but not exceeding 1000 V AC or 1500 V DC.

Luminance contrast: The light reflected from one surface or component, compared to the light reflected from another surface or component.

Main water heater: The domestic hot water unit in a dwelling that is connected to at least one shower and the largest number of hot water outlets.

Main space conditioning: Either—

- (a) the heating or cooling equipment that serves at least 70% of the *conditioned space* of a dwelling; or
- (b) if no one heating or cooling equipment serves at least 70% of the *conditioned space* of the dwelling, the equipment that results in the highest net equivalent energy usage when calculated in accordance with J3D14(1)(a) of NCC Volume One or [13.6.2\(1\)\(a\)](#) of the ABCB Housing Provisions.

Notes

- (1) If a multi-split *air-conditioning* unit is installed, it is considered to be a single heating or cooling *service*.
- (2) A series of separate heaters or coolers of the one type can be considered a single heater or cooler type with a performance level of that of the unit with the lowest efficiency.

Definitions

Explanatory Information

The purpose of defining for main space conditioning is to provide criteria upon which the heating or cooling equipment should be selected when showing compliance with J3D14(1)(a) of NCC Volume One and 13.6.2(1)(a) of the ABCB Housing Provisions when more than one type and efficiency of equipment is present. In J3D14(1)(a) the formula that determines E_R allows the selection of only one heating or cooling system. This definition requires that if any one system serves at least 70% of the *floor area* that is heated or cooled it should be used as the basis of determining E_R . If, however, no one system serves at least 70% of the *floor area*, then the appliance that results in the highest net equivalent energy usage, when calculated in accordance with J3D14(1)(a)/13.6.2(1)(a), should be selected.

Massive timber: An element not less than 75 mm thick as measured in each direction formed from solid and laminated timber.

Maximum retained water level: The point where surface water will start to overflow out of the *shower area*.

Medium Hazard: Any condition, device or practice which, in connection with a water supply, has the potential to injure or endanger health.

Membrane: A barrier impervious to moisture.

Explanatory Information

A barrier may be a single or multi-part system.

Mezzanine: An intermediate floor within a room.

Minimum Energy Performance Standards (MEPS): The Minimum Energy Performance Standards for equipment and appliances established through the Greenhouse and Energy Minimum Standards Act 2012.

NSW Minimum lateral clearance

Mixed construction: A building consisting of more than one form of construction, particularly in double-storey buildings.

Mould: A fungal growth that can be produced from conditions such as dampness, darkness, or poor ventilation.

NABERS Energy: The National Australian Built Environment Rating Systems for energy efficiency, which is managed by the New South Wales Government.

Network Utility Operator: A person who—

- (a) undertakes the piped distribution of *drinking water* or *non-drinking water* for supply; or
- (b) is the operator of a sewerage system or a stormwater *drainage* system.

Explanatory Information

A Network Utility Operator in most States and Territories is the water and sewerage authority licensed to supply water and receive sewage and/or stormwater. The authority operates or proposes to operate a network that undertakes the distribution of water for supply and undertakes to receive sewage and/or stormwater drainage. This authority may be a licensed utility, local government body or council.

Non-combustible: Applied to—

- (a) a material — means not deemed *combustible* as determined by AS 1530.1 — Combustibility Tests for Materials; or
- (b) construction or part of a building — means constructed wholly of materials that are not deemed *combustible*.

Non-drinking water: Water which is not intended primarily for human consumption.

Occupant traits: For the purposes of—

- (a) Volume One, the features, needs and profile of the occupants in a *habitable room* or space; or
- (b) Volume Two, the features, needs and profile of the occupants in a room or space.

Explanatory Information

For the purpose of Volume Two, this term is used to describe the characteristics of the occupants and their associated requirements in relation to a room or space.

For example, in relation to a bedroom, the following occupant characteristics and associated requirements should be

Definitions

considered:

- Characteristics: height, mobility and how often the space will be used.
- Requirements: a sleeping space and a space to undertake leisure activities.

Occupiable outdoor area: A space on a roof, balcony or similar part of a building—

- (a) that is open to the sky; and
- (b) to which access is provided, other than access only for maintenance; and
- (c) that is not *open space* or directly connected with *open space*.

VIC On-site wastewater management system

On-site wastewater management system: A system that receives and/or treats wastewater generated and discharges the resulting effluent to an *approved disposal system* or re-use system.

Open-deck carpark: A carpark in which all parts of the parking *storeys* are cross-ventilated by permanent unobstructed openings in not fewer than 2 opposite or approximately opposite sides, and—

- (a) each side that provides ventilation is not less than $\frac{1}{6}$ of the area of any other side; and
- (b) the openings are not less than $\frac{1}{2}$ of the wall area of the side concerned.

Open space: A space on the allotment, or a roof or similar part of a building adequately protected from fire, open to the sky and connected directly with a public road.

Open spectator stand: A tiered stand substantially open at the front.

Other property: All or any of the following—

- (a) any building on the same or an adjoining allotment; and
- (b) any adjoining allotment; and
- (c) a road.

Outdoor air: Air outside the building.

Outdoor air economy cycle: A mode of operation of an *air-conditioning* system that, when the *outdoor air* thermodynamic properties are favourable, increases the quantity of *outdoor air* used to condition the space.

Outfall: That part of the disposal system receiving *surface water* from the *drainage* system and may include a natural water course, kerb and channel, or soakage system.

Overflow device: A device that provides relief to a water service, sanitary *plumbing* and *drainage* system, *rainwater service* or stormwater system to avoid the likelihood of *uncontrolled discharge*.

Panel wall: A non-*loadbearing external wall*, in frame or similar construction, that is wholly supported at each *storey*.

Partially buried rainwater tank: A rainwater tank that is not completely covered by earth but is partially set into the ground.

Patient care area: A part of a *health-care building* normally used for the treatment, care, accommodation, recreation, dining and holding of patients including a *ward area* and *treatment area*.

Performance-based design brief (PBDB): The report that defines the scope of work for the performance-based analysis, the technical basis for analysis, and the criteria for acceptance of any relevant *Performance Solution* as agreed by stakeholders.

Performance Requirement: A requirement which states the level of performance which a *Performance Solution* or *Deemed-to-Satisfy Solution* must meet.

Performance Solution: A method of complying with the *Performance Requirements* other than by a *Deemed-to-Satisfy Solution*.

Perimeter of building: For the purposes of Section 8 of the Housing Provisions, means the external envelope of a building.

TAS Permit Authority

Personal care services: Any of the following:

- (a) The provision of nursing care.
- (b) Assistance or supervision in—
 - (i) bathing, showering or personal hygiene; or

Definitions

- (ii) toileting or continence management; or
 - (iii) dressing or undressing; or
 - (iv) consuming food.
- (c) The provision of direct physical assistance to a person with mobility problems.
 - (d) The management of medication.
 - (e) The provision of substantial rehabilitative or development assistance.

Piping: For the purposes of Section J in Volume One or Part H6 in Volume Two, and Section 13 of the Housing Provisions, means an assembly of pipes, with or without valves or other fittings, connected together for the conveyance of liquids and gases.

NSW Planning for Bush Fire Protection

Pliable building membrane: A water barrier as classified by AS 4200.1.

VIC Plumbing

Plumbing: Any water service plumbing or sanitary plumbing system.

Plumbing or Drainage Solution: A solution which complies with the *Performance Requirement* and is a—

- (a) *Performance Solution*; or
- (b) *Deemed-to-Satisfy Solution*; or
- (c) combination of (a) and (b).

Point of connection: Any of the following:

- (a) For a cold water service, means the point where the cold water service connects to—
 - (i) the *Network Utility Operator's* water supply system; or
 - (ii) the point of isolation to an alternative water source where there is no *Network Utility Operator's* water supply available or is not utilised.
- (b) For a *heated water* service, means the point where the water heater connects to the cold water service downstream of the isolation valve.
- (c) For sanitary *drainage*, means the point where the on-site sanitary *drainage* system connects to—
 - (i) the *Network Utility Operator's* sewerage system; or
 - (ii) an *on-site wastewater management system*.
- (d) For sanitary *plumbing*, means the point where the sanitary *plumbing* system connects to the sanitary *drainage* system.
- (e) For a *rainwater service*, means the point where the *rainwater service*—
 - (i) connects to the point of isolation for the *rainwater storage*; or
 - (ii) draws water from the *rainwater storage*.
- (f) For stormwater disposal, means the point where the on-site stormwater *drainage* system connects to—
 - (i) the *Network Utility Operator's* stormwater system; or
 - (ii) an approved on-site disposal system.
- (g) For a fire-fighting water service, means the point where the service connects to—
 - (i) a cold water service, downstream of a *backflow prevention device*; or
 - (ii) the *Network Utility Operator's* water supply system; or
 - (iii) the point of isolation to an alternative water source.

Notes

A domestic fire sprinkler service conforming to FPAA101D is considered part of the cold water service.

Explanatory Information

The *point of connection* is usually determined by the *Network Utility Operator* according to the water and sewerage

Definitions

Acts, Regulations and codes that apply within the *Network Utility Operator's* licensed area and/or jurisdiction.

WA Potable water

Predicted Mean Vote (PMV): The Predicted Mean Vote of the thermal perception of building occupants determined in accordance with ANSI/ASHRAE Standard 55.

Preformed shower base: A preformed, prefabricated *vessel* installed as the finished floor of a shower compartment, and which is provided with a connection point to a sanitary *drainage* system.

Explanatory Information

Preformed shower bases are commonly made of plastics, composite materials, vitreous enamelled pressed steel, or stainless steel.

Pressure vessel: A vessel subject to internal or external pressure, including interconnected parts and components, valves, gauges and other fittings up to the first point of connection to connecting piping, and—

- (a) includes fire heaters and gas cylinders; but
- (b) excludes—
 - (i) any vessel that falls within the definition of a *boiler*; and
 - (ii) storage tanks and equipment tanks intended for storing liquids where the pressure at the top of the tank is not exceeding 1.4 kPa above or 0.06 kPa below atmospheric pressure; and
 - (iii) domestic-type hot water supply heaters and tanks; and
 - (iv) pressure vessels installed for the purposes of fire suppression or which serve a fire suppression system.

QLD Primary building element

Primary building element: For the purposes of—

- (a) Volume One, a member of a building designed specifically to take part of the loads specified in B1D3 and includes roof, ceiling, floor, stairway or ramp and wall framing members including bracing members designed for the specific purpose of acting as a brace to those members; or
- (b) Part 3.4 of the ABCB Housing Provisions, a member of a building designed specifically to take part of the building loads and includes roof, ceiling, floor, stairway or ramp and wall framing members including bracing members designed for the specific purpose of acting as a brace to those members.

Explanatory Information

The loads to which a building may be subjected are dead, live, wind, snow and earthquake loads. Further information on building loads can be found in the AS 1170 series of Standards.

Primary insulation layer: The most interior insulation layer of a wall or roof construction.

Private bushfire shelter: A structure associated with, but not attached to, or part of a Class 1a dwelling that may, as a last resort, provide shelter for occupants from immediate life threatening effects of a bushfire.

Private garage: For the purposes of—

- (a) Volume One—
 - (i) any garage associated with a Class 1 building; or
 - (ii) any single *storey* of a building of another Class containing not more than 3 vehicle spaces, if there is only one such *storey* in the building; or
 - (iii) any separate single *storey* garage associated with another building where such garage contains not more than 3 vehicle spaces; or
- (b) Volume Two—
 - (i) any garage associated with a Class 1 building; or
 - (ii) any separate single *storey* garage associated with another building where such garage contains not more than 3 vehicle spaces.

Product: *Plumbing* and *drainage* items within the scope of Volume Three including but not limited to—

Definitions

- (a) materials, fixtures and components used in a *plumbing* or *drainage* installation; and
- (b) appliances and equipment connected to a *plumbing* or *drainage* system.

Product Technical Statement: A form of documentary evidence stating that the properties and performance of a building material, product or form of construction fulfil specific requirements of the NCC, and describes—

- (a) the application and intended use of the building material, product or form of construction; and
- (b) how the use of the building material, product or form of construction complies with the requirements of the NCC Volume One and Volume Two; and
- (c) any limitations and conditions of the use of the building material, product or form of construction relevant to (b).

Professional engineer: A person who is—

- (a) if legislation is applicable — a registered professional engineer in the relevant discipline who has appropriate experience and competence in the relevant field; or
- (b) if legislation is not applicable—
 - (i) registered in the relevant discipline on the National Engineering Register (NER) of the Institution of Engineers Australia (which trades as ‘Engineers Australia’); or
 - (ii) eligible to become registered on the Institution of Engineers Australia’s NER and has appropriate experience and competence in the relevant field.

NSW Projection suite

TAS Public

WA Public building

Public corridor: An enclosed corridor, hallway or the like which—

- (a) serves as a means of egress from 2 or more *sole-occupancy units* to a *required exit* from the *storey* concerned; or
- (b) is *required* to be provided as a means of egress from any part of a *storey* to a *required exit*.

Rainwater service: A water service which distributes water from the isolation valve of the rainwater storage to the rainwater points of discharge for purposes such as for clothes washing, urinal and water closet flushing and external hose cocks.

Rainwater storage: Any storage of rainwater collected from a roof catchment area which is used to supply water for the primary purposes of drinking, personal hygiene or other uses.

Explanatory Information

Generally this applies to alternative water sources not supplied by a *Network Utility Operator*. This does not include *rainwater storage* for non-drinking purposes.

SA Rainwater tank

Rapid roller door: A door that opens and closes at a speed of not less than 0.5 m/s.

Recognised expert: A person with qualifications and experience in the area of *plumbing* or *drainage* in question recognised by the authority having jurisdiction.

Explanatory Information

A *recognised expert* is a person recognised by the authority having jurisdiction as qualified to provide evidence under A5G4(5). Generally, this means a hydraulic consultant or engineer, however the specific requirements are determined by the authority having jurisdiction.

Under A5G4(5), a report from a *recognised expert* may be used as evidence of suitability that a *product* listed on the *WaterMark Schedule of Excluded Products*, or a *plumbing* or *drainage* system, complies with a *Performance Requirement* or *Deemed-to-Satisfy Provisions*.

Reference building: For the purposes of—

- (a) Volume One, a hypothetical building that is used to calculate the maximum allowable—
 - (i) *annual greenhouse gas emissions* for the common area of a Class 2 building or a Class 3 to 9 building; or

Definitions

- (ii) *heating load*, *cooling load* and *energy value* for a *sole-occupancy unit* of a Class 2 building or a Class 4 part of a building; or
- (b) Volume Two, a hypothetical building that is used to determine the maximum allowable *heating load* and *cooling load* for the proposed building.

Reflective insulation: A building membrane with a reflective surface such as a reflective foil laminate, reflective barrier, foil batt or the like capable of reducing radiant heat flow.

Explanatory Information

For Volume Two:

- Typical *R-Values* achieved by adding *reflective insulation* are given in the explanatory information accompanying Section 13 of the ABCB Housing Provisions. Information on specific products may be obtained from *reflective insulation* manufacturers.
- The surface of *reflective insulation* may be described in terms of its emittance (or infra-red emittance) or in terms of its reflectance (or solar reflectance). Generally, for the surface of a particular *reflective insulation*: emittance + reflectance = 1.
- Some types of *reflective insulation* may also serve the purposes of waterproofing or vapour proofing.

Regulated energy: The energy consumed by a building's *services* minus the amount of *renewable energy* generated and used on *site*.

Reinforced masonry: Masonry reinforced with steel reinforcement that is placed in a bed joint or grouted into a core to strengthen the masonry.

Reliability: The probability that a system performs to a level consistent with the system specification.

Renewable energy: Energy that is derived from sources that are regenerated, replenished, or for all practical purposes cannot be depleted and the energy sources include, but are not limited to, solar, wind, hydroelectric, wave action and geothermal.

Required: Required to satisfy a *Performance Requirement* or a *Deemed-to-Satisfy Provision* of the NCC as appropriate.

Required safe egress time (RSET): The time required for safe evacuation of occupants to a place of safety prior to the onset of untenable conditions.

Residential aged care building: A Class 3 or 9a building whose residents, due to their incapacity associated with the ageing process, are provided with physical assistance in conducting their daily activities and to evacuate the building during an emergency.

Residential care building: A Class 3, 9a or 9c building which is a place of residence where 10% or more of persons who reside there need physical assistance in conducting their daily activities and to evacuate the building during an emergency (including any *aged care building* or *residential aged care building*) but does not include a hospital.

VIC Residential care building (Vic)

Resident use area: Part of a Class 9c building normally used by residents, and—

- (a) includes *sole-occupancy units*, lounges, dining areas, activity rooms and the like; but
- (b) excludes offices, storage areas, commercial kitchens, commercial laundries and other spaces not for the use of residents.

Resistance to the incipient spread of fire: In relation to a ceiling membrane, means the ability of the membrane to insulate the space between the ceiling and roof, or ceiling and floor above, so as to limit the temperature rise of materials in this space to a level which will not permit the rapid and general spread of fire throughout the space.

Explanatory Information

Resistance to the incipient spread of fire refers to the ability of a ceiling to prevent the spread of fire and thermally insulate the space between the ceiling and the roof or floor above. "Resistance to the incipient spread of fire" is superior to "fire-resistance" because it requires a higher standard of heat insulation.

The definition is used in Volume Two for separating floors/ceilings for a Class 1a dwelling located above a non-appurtenant *private garage*.

Rise in storeys: The greatest number of *storeys* calculated in accordance with C2D3 of Volume One.

Definitions

Riser: The height between consecutive treads and between each *landing* and continuous tread.

VIC Restricted children's service

Rolled fill: Material placed in layers and compacted by repeated rolling by an excavator.

SA Roof catchment area

Roof light: For the purposes of Section J and Part F6 in NCC Volume One, Part H6 in NCC Volume Two, and Part 10.5 and Section 13 of the ABCB Housing Provisions, a skylight, *window* or the like installed in a roof—

- (a) to permit natural light to enter the room below; and
- (b) at an angle between 0 and 70 degrees measured from the horizontal plane.

NSW Row

R-Value: The thermal resistance of a component calculated by dividing its thickness by its thermal conductivity, expressed in $\text{m}^2.\text{K/W}$.

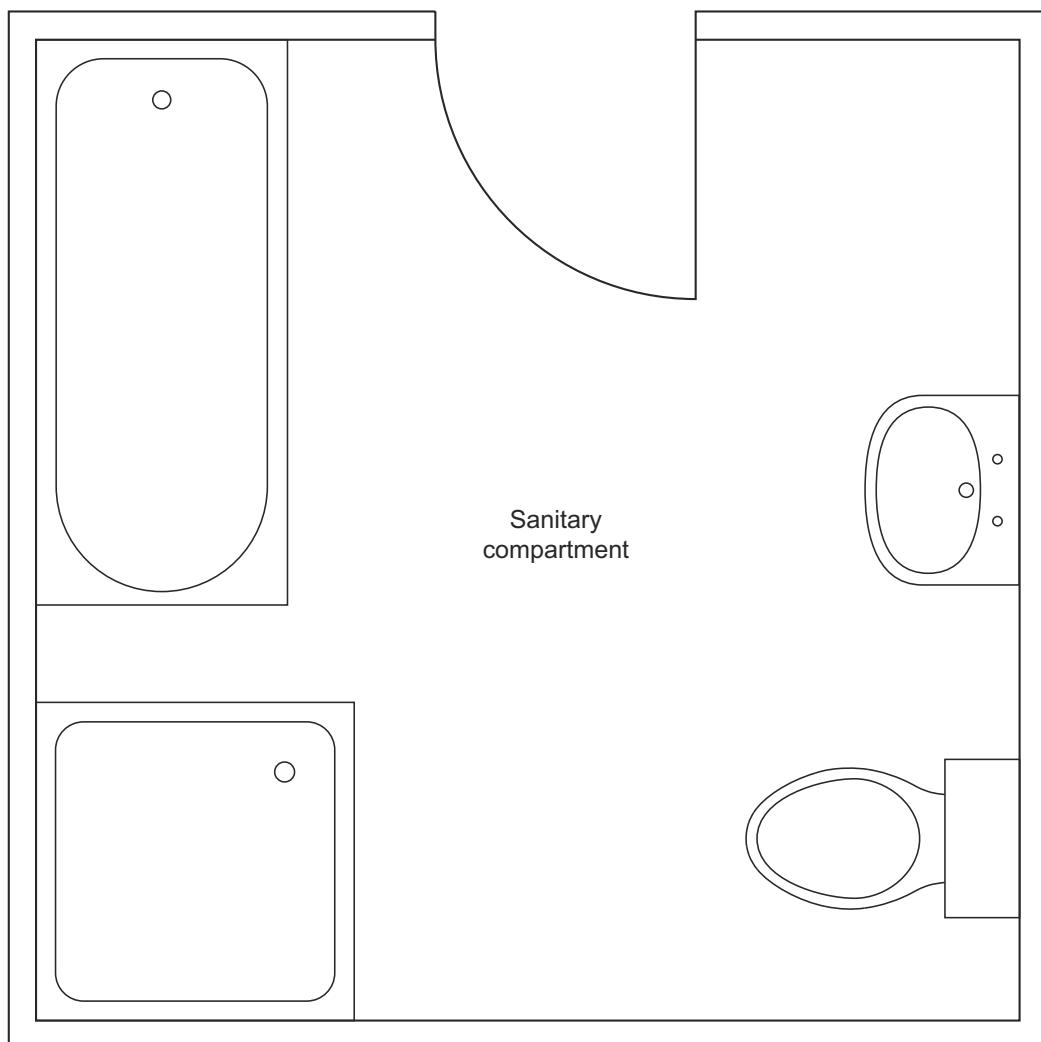
Safe place: Either—

- (a) a place of safety within a building—
 - (i) which is not under threat from a fire; and
 - (ii) from which people must be able to safely disperse after escaping the effects of an emergency to a road or *open space*; or
- (b) a road or *open space*.

Sanitary compartment: A room or space containing a closet pan or urinal (see Figures 6a and 6b).

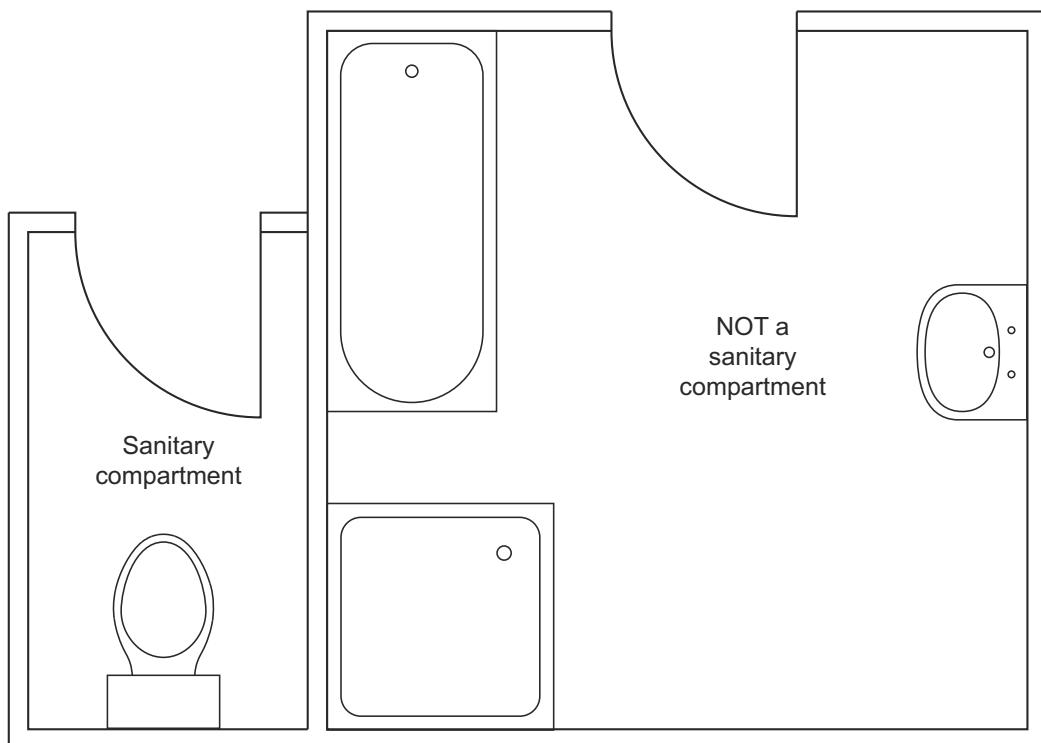
Definitions

Figure 6a: Identification of a sanitary compartment (diagram a)



Definitions

Figure 6b: Identification of a sanitary compartment (diagram b)



Sarking-type material: A material such as a *reflective insulation* or other flexible membrane of a type normally used for a purpose such as waterproofing, vapour management or thermal reflectance.

School: Includes a primary or secondary school, college, university or similar educational establishment.

TAS School age care facility

Screed: A layer of material (usually cement based) which sets in situ between a structural base and the finished floor material.

Self-closing: For the purposes of—

- (a) Volume One, applied to a door, means equipped with a device which returns the door to the fully closed position immediately after each opening; or
- (b) Volume Two, applied to a door or *window*, means equipped with a device which returns the door or *window* to the fully closed and latched position immediately after each manual opening.

Sensible heat gain: The heat gained which causes a change in temperature.

Separating element: A barrier that exhibits fire *integrity*, *structural adequacy*, *insulation*, or a combination of these for a period of time under specified conditions (often in accordance with AS 1530.4).

Separating wall: A wall that is common to adjoining Class 1 buildings (see Figure 7).

Definitions

Figure 7: Separating wall

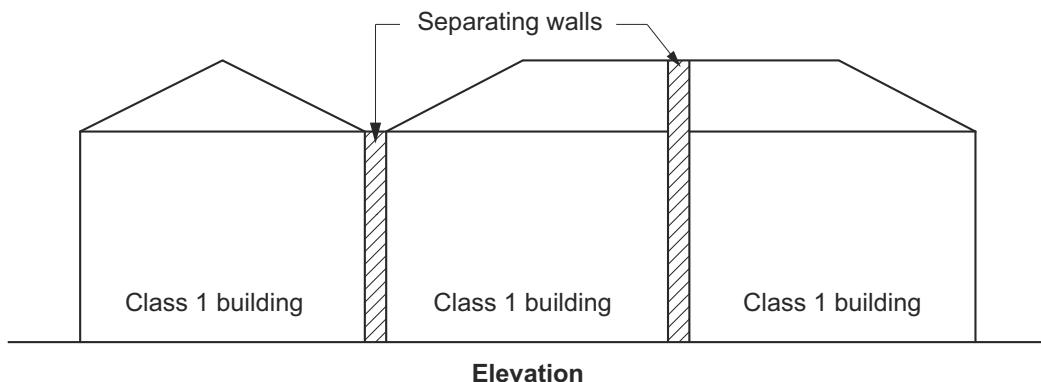


Figure Notes

In Volume Two a separating wall may also be known as a party wall and typically is *required* to be *fire-resisting* construction (see ABCB Housing Provisions Parts 9.2 and 9.3).

Service: For the purposes of Section J in Volume One, means a mechanical or electrical system that uses energy to provide *air-conditioning*, mechanical ventilation, heated water supply, artificial lighting, vertical transport and the like within a building, but which does not include—

- (a) systems used solely for emergency purposes; and
- (b) cooking facilities; and
- (c) portable appliances.

Service station: A garage which is not a *private garage* and is for the servicing of vehicles, other than only washing, cleaning or polishing.

Shaft: The walls and other parts of a building bounding—

- (a) a well, other than an *atrium well*; or
- (b) a vertical chute, duct or similar passage, but not a chimney or flue.

VIC Shared accommodation building

Shower area: The area affected by water from a shower, including a shower over a bath and for a shower area that is—

- (a) Enclosed – the area enclosed by walls or screens including hinged or sliding doors that contain the spread of water to within that space; or
- (b) Unenclosed – the area where, under normal use, water from the shower rose is not contained within the shower area.

Shower screen: The panels, doors or windows enclosing or partially enclosing a *shower area*.

Single leaf masonry: Outer walls constructed with a single thickness of masonry unit.

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

Sitework: Work on or around a *site*, including earthworks, preparatory to or associated with the construction, *alteration*, demolition or removal of a building.

NSW Small live music or arts venue

SA Small arts venue

Small-scale Technology Certificate: A certificate issued under the Commonwealth Government's Small-scale Renewable Energy Scheme.

Small-sized, low-speed automatic lift: A restricted use power-operated device for the infrequent raising or lowering of people with limited mobility on a platform that is controlled automatically but has the capability of being electrically isolated by a key-lockable control.

Smoke-and-heat vent: A vent, located in or near the roof for smoke and hot gases to escape if there is a fire in the building.

Smoke-Developed Index: The index number for smoke as determined by AS/NZS 1530.3.

Definitions

Smoke development rate: The development rate for smoke as determined by testing flooring materials in accordance with AS ISO 9239.1.

Smoke growth rate index (SMOGRA_{RC}): The index number for smoke used in the regulation of *fire hazard properties* and applied to materials used as a finish, surface, lining or attachment to a wall or ceiling.

Solar admittance: The fraction of incident irradiance on a *wall-glazing construction* that adds heat to a building's space.

Sole-occupancy unit: A room or other part of a building for occupation by one or joint owner, lessee, tenant, or other occupier to the exclusion of any other owner, lessee, tenant, or other occupier and includes—

- (a) a dwelling; or
- (b) a room or suite of rooms in a Class 3 building which includes sleeping facilities; or
- (c) a room or suite of associated rooms in a Class 5, 6, 7, 8 or 9 building; or
- (d) a room or suite of associated rooms in a Class 9c building, which includes sleeping facilities and any area for the exclusive use of a resident.

NSW Spa pool

Spandrel panel: For the purposes of Section J, means the opaque part of a façade in curtain wall construction which is commonly adjacent to, and integrated with, *glazing*.

NSW Special fire protection purpose

Spiral stairway: A stairway with a circular plan, winding around a central post with steps that radiate from a common centre or several radii (see Figures 11.2.2d and 11.2.2e in the ABCB Housing Provisions).

Spread-of-Flame Index: The index number for spread of flame as determined by AS/NZS 1530.3.

Sprinkler alarm switch: For the purposes of Specification 23, a device capable of sending an electrical signal to activate an alarm when a residential sprinkler head is activated (e.g. a flow switch).

Stack bonded pier: A pier where the overlap of a masonry unit is not more than 25% of the length of the masonry unit below.

Stage: A floor or platform in a Class 9b building on which performances are presented before an audience.

Stairway platform lift: A power-operated device for raising or lowering people with limited mobility on a platform (with or without a chair) in the direction of a stairway.

Standard Fire Test: The Fire-resistance Tests of Elements of Building Construction as described in AS 1530.4.

SA Storage shed

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

- (a) a space that contains only—
 - (i) a lift *shaft*, stairway or meter room; or
 - (ii) a bathroom, shower room, laundry, water closet, or other *sanitary compartment*; or
 - (iii) accommodation intended for not more than 3 vehicles; or
 - (iv) a combination of the above; or
- (b) a *mezzanine*.

Structural adequacy: In relation to an FRL, means the ability to maintain stability and adequate *loadbearing* capacity as determined by AS 1530.4.

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

Surface water: All naturally occurring water, other than sub-surface water, which results from rainfall on or around the *site* or water flowing onto the *site*.

Swimming pool: Any excavation or structure containing water and principally used, or that is designed, manufactured or adapted to be principally used for swimming, wading, paddling, or the like, including a bathing or wading pool, or spa.

Tapered tread: A stair tread with a walking area that grows smaller towards one end.

NSW Temporary structure

TAS Temporary structure

Definitions

Thermal comfort level: The level of thermal comfort in a building expressed as a *PMV* sensation scale.

Thermal energy load: The sum of the *heating load* and the *cooling load*.

Total R-Value: The sum of the *R-Values* of the individual component layers in a composite element including any building material, insulating material, airspace, thermal bridging and associated surface resistances, expressed in $\text{m}^2.\text{K}/\text{W}$.

Total System Solar Heat Gain Coefficient (SHGC): For the purposes of—

- (a) Volume One, the fraction of incident irradiance on a *wall-glazing construction* or a *roof light* that adds heat to a building's space; or
- (b) Volume Two, the fraction of incident irradiance on *glazing* or a *roof light* that adds heat to a building's space.

Total System U-Value: The thermal transmittance of the composite element allowing for the effect of any airspaces, thermal bridging and associated surface resistances, expressed in $\text{Wm}^{-2}\text{K}^{-1}$.

Treatment area: An area within a *patient care area* such as an operating theatre and rooms used for recovery, minor procedures, resuscitation, intensive care and coronary care from which a patient may not be readily moved.

Uncontrolled discharge: Any unintentional release of fluid from a *plumbing* and *drainage* system and includes leakage and seepage.

Unique wall: For the purposes of F3V1 in Volume One and H2V1 in Volume Two, a wall which is neither a *cavity wall* nor a *direct fix cladding wall*.

Unobstructed opening: For the purposes of Section 8 of the ABCB Housing Provisions, a glazed area that a person could mistake for an open doorway or clearway and walk into the glazed panel.

Unprotected water service: Unprotected water service means that the water service may be contaminated from a surrounding hazard.

Unreinforced masonry: Masonry that is not reinforced.

Vapour permeance: The degree that water vapour is able to diffuse through a material, measured in $\mu\text{g}/\text{N.s}$ and tested in accordance with the ASTM-E96 Procedure B – Water Method at 23°C 50% relative humidity.

Vapour pressure: The pressure at which water vapour is in thermodynamic equilibrium with its condensed state.

Ventilation opening: An opening in the *external wall*, floor or roof of a building designed to allow air movement into or out of the building by natural means including a permanent opening, an openable part of a *window*, a door or other device which can be held open.

Verification Method: A test, inspection, calculation or other method that determines whether a *Performance Solution* complies with the relevant *Performance Requirements*.

Vessel: For the purposes of Volume One and Part 10.2 of the ABCB Housing Provisions, an open, pre-formed, pre-finished concave receptacle capable of holding water, usually for the purpose of washing, including a basin, sink, bath, laundry tub and the like.

Visibility: The maximum distance at which an object of defined size, brightness and contrast can be seen and recognised.

Voltage: A difference of potential, measured in Volts (V) and includes *extra-low voltage* and *low voltage*.

Volume: In relation to—

- (a) a building — the volume of the total space of the building measured above the lowest floor (including, for a suspended floor, any subfloor space), over the enclosing walls, and to the underside of the roof covering; or
- (b) a *fire compartment* — the volume of the total space of the *fire compartment* measured within the inner finished surfaces of the enclosing *fire-resisting* walls and/or floors, and—
 - (i) if there is no *fire-resisting* floor at the base of the *fire compartment*, measured above the finished surface of the lowest floor in the *fire compartment*; and
 - (ii) if there is no *fire-resisting* floor at the top of the *fire compartment*, measured to the underside of the roof covering of the *fire compartment*; and
 - (iii) if there is no *fire-resisting* wall, measured over the enclosing wall and if there is no enclosing wall, includes any space within the *fire compartment* that has a use which contributes to the *fire load*; or
- (c) an *atrium* — the volume of the total space of the *atrium* measured within the finished surfaces of the bounding construction and if there is no bounding construction, within the *external walls*.

Waffle raft: A stiffened raft with closely spaced ribs constructed on the ground and with slab panels supported between ribs.

Definitions

Wall-glazing construction: For the purposes of Section J in Volume One, the combination of wall and *glazing* components comprising the *envelope* of a building, excluding—

- (a) *display glazing*; and
- (b) opaque non-glazed openings such as doors, vents, penetrations and shutters.

Ward area: That part of a *patient care area* for resident patients and may contain areas for accommodation, sleeping, associated living and nursing facilities.

Water control layer: A *pliable building membrane* or the exterior cladding when no *pliable building membrane* is present.

WaterMark Certification Scheme: The ABCB scheme for certifying and authorising *plumbing* and *drainage products*.

WaterMark Conformity Assessment Body (WM CAB): A conformity assessment body registered with and accredited by the *JAS-ANZ* to conduct evaluations leading to *product* certification and contracted with the *administering body* to issue the *WaterMark Licence*.

WaterMark Licence: A licence issued by a *WaterMark Conformity Assessment Body*.

WaterMark Schedule of Excluded Products: The list maintained by the *administering body* of *products* excluded from the *WaterMark Certification Scheme*.

WaterMark Schedule of Products: The list maintained by the *administering body* of *products* included in the *WaterMark Certification Scheme*, and the specifications to which the *products* can be certified.

Explanatory Information

The *WaterMark Schedule of Products* and the *WaterMark Schedule of Excluded Products* can be viewed on the ABCB website at www.abcb.gov.au.

Waterproof: The property of a material that does not allow water to penetrate through it.

Waterproofing system: A combination of elements that are *required* to achieve a *waterproof* barrier as *required* by H4D2 and H4D3 including substrate, *membrane*, bond breakers, sealants, finishes and the like.

Water resistant: The property of a system or material that restricts water movement and will not degrade under conditions of water.

Water sensitive materials: Materials that have an inherent capacity to absorb water vapour and include timber, plasterboard, plywood, oriented strand board and the like.

Waterstop: A vertical extension of the *waterproofing system* forming a barrier to prevent the passage of water in a floor or other horizontal surfaces.

Watertight: Will not allow water to pass from the inside to the outside of the component or joint and vice versa.

Weighted average: Is calculated across the *wetted surface area* of a pipe, pipe fitting or plumbing fixture.

WA WELS

Wet area: An area within a building supplied with water from a water supply system, which includes bathrooms, showers, laundries and *sanitary compartments* and excludes kitchens, bar areas, kitchenettes or domestic food and beverage preparation areas.

Wetted surface area: Is calculated by the total sum of diameter (D) in contact with *drinking water*.

Winders: Treads within a straight *flight* that are used to change direction of the stair (see *Explanatory Figure 1*).

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

Yield: The mass of a combustion product generated during combustion divided by the mass loss of the test specimen as specified in the *design fire*.

Zone protection: The installation of a *backflow prevention device* at the point where a water service is connected to multiple fixtures or appliances, with no *backflow prevention device* installed as *individual protection* downstream of this point.

Referenced documents

Schedule 2 Referenced documents

Referenced documents

Referenced documents

Referenced documents

The Standards and other documents listed in this Schedule are referenced in the NCC.

Referenced documents

Table 1: Schedule of referenced documents

No.	Date	Title	Volume One	Volume Two	Housing Provisions	Volume Three
AS/NZS ISO 717 Part 1	2004	Acoustics — Rating of sound insulation in buildings and of building elements — Airborne sound insulation. (See Note 1)	F7V1, F7V2, F7V3, F7V4, F7D3	H4V4	10.7.2	N/A
AS ISO 717 Part 2	2004	Acoustics — Rating of sound insulation in buildings and of building elements — Impact sound insulation	F7V1, F7V3, F7D4	N/A	N/A	N/A
AS 1056 Part 1	1991	Storage water heaters — General requirements (incorporating amendments 1, 2, 3, 4 and 5)	N/A	N/A	N/A	B2D2
AS/NZS 1170 Part 0	2002	Structural design actions — General principles (incorporating amendments 1, 3 and 4)	B1V1, B1D2, Spec 4	H1V1, H1D7	2.2.2	N/A
AS/NZS 1170 Part 1	2002	Structural design actions — Permanent, imposed and other actions (incorporating amendments 1 and 2)	B1D3	N/A	2.2.3, 2.2.4, 8.3.1, 11.2.2, 11.2.3, 11.3.4	N/A
AS/NZS 1170 Part 2	2021	Structural design actions — Wind actions	B1D3, B1D4, Spec 4, F3V1, Schedule 1	H1D7, H2V1, Schedule 1	2.2.3, Schedule 1	Schedule 1
AS/NZS 1170 Part 3	2003	Structural design actions — Snow and ice actions (incorporating amendments 1 and 2)	B1D3	N/A	2.2.3	
AS 1170 Part 4	2007	Structural design actions — Earthquake actions in Australia (incorporating amendments 1 and 2)	B1D3	H1D4, H1D5, H1D6, H1D9	2.2.3	N/A
AS 1191	2002	Acoustics — Method for laboratory measurement of airborne sound transmission insulation of building elements	Spec 29	N/A	N/A	N/A
AS 1273	1991	Unplasticized PVC (UPVC) downpipe and fittings for rainwater	N/A	N/A	7.4.2	N/A
AS 1288	2021	Glass in buildings — Selection and installation	B1D4, Spec 11, Spec 12	H1D8	8.3.1	N/A
AS 1289.6.3.3	1997	Methods of testing soils for engineering purposes — Method 6.3.3: Soil strength and consolidation tests — Determination of the penetration resistance of a soil — Perth sand penetrometer test (incorporating amendment 1)	N/A	N/A	4.2.4	N/A

Referenced documents

No.	Date	Title	Volume One	Volume Two	Housing Provisions	Volume Three
AS 1397	2021	Continuous hot-dip metallic coated steel sheet and strip — Coatings of zinc and zinc alloyed with aluminium and magnesium (See Note 10)	N/A	N/A	7.2.2	N/A
AS 1428 Part 1	2009	Design for access and mobility — General requirements for access — New building work (incorporating amendments 1 and 2)	D3D11, D3D16, D3D22, D4D2, D4D3, D4D4, D4D7, D4D10, D4D11, D4D13, Spec 16, E3D10, F4D5, G4D5, Schedule 1	Schedule 1	Schedule 1 E1D2	
AS 1428 Part 1	2001	Design for access and mobility — General requirements for access — New building work	I2D7, I2D8, I2D10, I2D15	N/A	E1D2	
AS 1428 Part 1 (Supplement 1)	1993	Design for access and mobility — General requirements for access — Buildings — Commentary	I2D2	N/A	N/A	
AS 1428 Part 2	1992	Design for access and mobility — Enhanced and additional requirements — Buildings and facilities	I2D2, I2D3, I2D4, I2D5, I2D7, I2D10, I2D11, I2D12, I2D13, I2D14	N/A	E1D2	
AS 1428 Part 4	1992	Design for access and mobility — Tactile ground surface indicators for the orientation of people with vision impairment	I2D11	N/A	N/A	
AS/NZS 1428 Part 4.1	2009	Design for access and mobility — Means to assist the orientation of people with vision impairment — Tactile ground surface indicators (incorporating amendments 1 and 2)	D4D9	N/A	N/A	
AS 1530 Part 1	1994	Methods for fire tests on building materials, components and structures — Combustibility test for materials	Schedule 1	Schedule 1	Schedule 1	
AS 1530 Part 2	1993	Methods for fire tests on building materials, components and structures — Test for flammability of materials (incorporating amendment 1)	Schedule 1	Schedule 1	Schedule 1	

Referenced documents

No.	Date	Title	Volume One	Volume Two	Housing Provisions	Volume Three
AS/NZS 1530 Part 3	1999	Methods for fire tests on building materials, components and structures — Simultaneous determination of ignitability, flame propagation, heat release and smoke release	Schedule 1, Spec 3	Schedule 1, Spec 3	Schedule 1, Spec 3	Schedule 1, Spec 3
AS 1530 Part 4	2014	Methods for fire tests on building materials, components and structures — Fire resistance tests for elements of construction	C4D15, C4D16, Spec 9, Spec 10, Spec 13, Spec 14, Schedule 1, Spec 3	9.3.2, Schedule 1, Spec 3	Schedule 1	Schedule 1, Spec 3
AS 1530 Part 8.1	2018	Methods for fire tests on building materials, components and structures — Tests on elements of construction for buildings exposed to simulated bushfire attack — Radiant heat and small flaming sources	Spec 43	N/A	N/A	N/A
AS/NZS 1546 Part 1	2008	On-site domestic wastewater treatment units - Septic tanks	N/A	N/A	N/A	C3D2
AS/NZS 1546 Part 2	2008	On-site domestic wastewater treatment units - Waterless composting toilets	N/A	N/A	N/A	C3D3
AS 1546 Part 3	2017	On-site domestic wastewater treatment units - Secondary treatment systems (incorporating amendment 1)	N/A	N/A	N/A	C3D4
AS 1546 Part 4	2016	On-site domestic wastewater treatment units - Domestic greywater treatment systems	N/A	N/A	N/A	C3D5
AS/NZS 1547	2012	On-site domestic wastewater management	N/A	N/A	N/A	C3D6
AS 1562 Part 1	2018	Design and installation of sheet roof and wall cladding — Metal (See Note 2)	B1D4, F3D2, F3D5	H1D7	N/A	N/A
AS1562 Part 3	2006	Design and installation of sheet roof and wall cladding — Plastic	B1D4, F3D2	H1D7	N/A	N/A
AS 1657	2018	Fixed platforms, walkways, stairways and ladders — Design, construction and installation	D2D21, D2D22, D3D23, I1D6, I3D5	N/A	N/A	N/A
AS/NZS 1664 Part 1	1997	Aluminium structures — Limit state design (incorporating amendment 1)	B1D4	N/A	2.2.4	N/A
AS/NZS 1664 Part 2	1997	Aluminium structures — Allowable stress design (incorporating amendment 1)	B1D4	N/A	2.2.4	N/A

Referenced documents

No.	Date	Title	Volume One	Volume Two	Housing Provisions	Volume Three
AS 1668 Part 1	2015	The use of ventilation and air conditioning in buildings — Fire and smoke control in buildings (incorporating amendment 1)	C3D13, C4D15, Spec 11, D2D12, Spec 19, E2D3, E2D4, E2D6, E2D7, E2D8, E2D9, E2D11, E2D12, E2D13, E2D16, E2D17, E2D19, F6D12, Spec 21, Spec 31	N/A	N/A	N/A
AS 1668 Part 2	2012	The use of ventilation and air conditioning in buildings — Mechanical ventilation in buildings (incorporating amendments 1 and 2)	E2D12, F6V1, F6D6, F6D11, F6D12, F8D4, J6D4	H4V3, H4D7	10.8.2	N/A
AS 1668 Part 4	2012	The use of ventilation and air conditioning in buildings — Natural ventilation of buildings	F6D11	N/A	N/A	N/A
AS 1670 Part 1	2018	Fire detection, warning, control and intercom systems — System design, installation and commissioning — Fire (incorporating amendment 1) (See Note 3)	C4D6, C4D7, C4D8, C4D9, C4D12, D3D26, E2D3, E2D10, G4D7, Spec 12, Spec 20, Spec 23, Spec 31	N/A	9.5.1	N/A
AS 1670 Part 3	2018	Fire detection, warning, control and intercom systems — System design, installation and commissioning — Fire alarm monitoring (incorporating amendment 1) (See Note 3)	Spec 20, Spec 23	N/A	N/A	N/A
AS 1670 Part 4	2018	Fire detection, warning, control and intercom systems — System design, installation and commissioning — Emergency warning and intercom systems (incorporating amendment 1) (See Note 3)	E3V2, E4D9, Spec 31	N/A	N/A	N/A
AS/NZS 1680 Part 0	2009	Interior lighting — Safe movement	F6D5	N/A	10.5.2	N/A
AS 1684 Part 2	2021	Residential timber-framed construction — Non-cyclonic areas	B1D4, B1D5, F1D8	H1D6	2.2.5, 4.2.13, 5.6.6, 6.2.1, 6.3.6, 7.5.2, 7.5.3, 7.5.4, 10.2.19, 10.2.20	N/A

Referenced documents

No.	Date	Title	Volume One	Volume Two	Housing Provisions	Volume Three
AS 1684 Part 3	2021	Residential timber-framed construction — Cyclonic areas	B1D4, B1D5, F1D8	H1D6	2.2.5, 4.2.13, 5.6.6, 6.2.1, 6.3.6, 7.5.2, 7.5.3, 7.5.4, 10.2.19, 10.2.20	N/A
AS 1684 Part 4	2010	Residential timber-framed construction — Simplified — Non-cyclonic areas (incorporating amendment 1)	B1D4, B1D5, F1D8	H1D6	2.2.5, 4.2.13, 5.6.6, 6.2.1, 7.5.2, 7.5.3, 7.5.4, 10.2.19, 10.2.20	N/A
AS 1720 Part 1	2010	Timber structures — Design methods (incorporating amendments 1, 2 and 3)	B1V1, B1D4	H1V1, H1D6	4.2.13, 5.3.3	N/A
AS/NZS 1720 Part 4	2019	Timber structures — Fire resistance of timber elements	Spec 1	Spec 1	N/A	Spec 1
AS 1720 Part 5	2015	Timber structures — Nailed/timber roof trusses (incorporating amendment 1)	B1D4	H1D6	N/A	N/A
AS 1735 Part 11	1986	Lifts, escalators and moving walks — Fire rated landing doors	C4D11	N/A	N/A	N/A
AS 1735 Part 12	1999	Lifts, escalators and moving walks — Facilities for persons with disabilities (incorporating amendment 1)	E3D8, I2D6	N/A	N/A	N/A
AS/NZS 1859 Part 4	2018	Reconstituted wood based panels — Specifications — Wet process fibreboard	N/A	N/A	7.5.3, 7.5.4	N/A
AS 1860 Part 2	2006	Particleboard flooring — Installation (incorporating amendment 1)	B1D4	H1D6	N/A	N/A
AS 1905 Part 1	2015	Components for the protection of openings in fire-resistant walls — Fire-resistant doorsets (incorporating amendment 1)	C4D7, Spec 12	N/A	N/A	N/A
AS 1905 Part 2	2005	Components for the protection of openings in fire-resistant walls — Fire-resistant roller shutters	Spec 12	N/A	N/A	N/A
AS 1926 Part 1	2012	Swimming pool safety — Safety barriers for swimming pools	G1D2, G1D4	H7D2	N/A	N/A
AS 1926 Part 2	2007	Swimming pool safety — Location of safety barriers for swimming pools (incorporating amendments 1 and 2)	G1D2	H7D2	N/A	N/A
AS 1926 Part 3	2010	Swimming pool safety — Water recirculation systems (incorporating amendment 1)	G1D2	H7D2	N/A	N/A

Referenced documents

No.	Date	Title	Volume One	Volume Two	Housing Provisions	Volume Three
AS 2047	2014	Windows and external glazed doors in buildings (incorporating amendments 1 and 2) (See Note 4)	B1D4, F3V1, F3D4, J5D5	H1D8, H2V1	13.4.4	N/A
AS 2049	2002	Roof tiles (incorporating amendment 1)	F3D2	H1D7	N/A	N/A
AS 2050	2018	Installation of roof tiles	B1D4, F3D2	H1D7	7.3.2	N/A
AS 2118 Part 1	2017	Automatic fire sprinkler systems — General systems (incorporating amendments 1 and 2)	C1V3, Spec 17, Spec 18	N/A	N/A	N/A
AS 2118 Part 4	2012	Automatic fire sprinkler systems — Sprinkler protection for accommodation buildings not exceeding four storeys in height	Spec 17, Spec 18	N/A	N/A	B4D3
AS 2118 Part 5	2008 (R 2020)	Automatic fire sprinkler systems - Home fire sprinkler systems	N/A	N/A	N/A	B4D3
AS 2118 Part 6	2012	Automatic fire sprinkler systems — Combined sprinkler and hydrant systems in multistorey buildings	Spec 17	N/A	N/A	B4D3
AS 2159	2009	Piling — Design and installation (incorporating amendment 1)	B1D4	H1D12	N/A	N/A
AS/NZS 2179 Part 1	2014	Specifications for rainwater goods, accessories and fasteners — Metal shape or sheet rainwater goods, and metal accessories and fasteners	N/A	N/A	7.4.2	N/A
AS/NZS 2269 Part 0	2012	Plywood — Structural — Specifications (incorporating amendment 1)	N/A	N/A	7.5.4	N/A
AS/NZS 2293 Part 1	2018	Emergency lighting and exit signs for buildings — System design, installation and operation (incorporating amendment 1)	E4D4, E4D8, Spec 25, I3D15	N/A	N/A	N/A
AS 2312 Part 1	2014	Guide to the protection of structural steel against atmospheric corrosion by the use of protective coatings — Paint coatings	N/A	N/A	6.3.9	N/A
AS/NZS 2312 Part 2	2014	Guide to the protection of structural steel against atmospheric corrosion by the use of protective coatings — Hot dip galvanizing	N/A	N/A	6.3.9	N/A
AS/NZS 2327	2017	Composite structures — Composite steel-concrete construction in buildings (incorporating amendment 1)	B1D4, Spec 1	Spec 1	2.2.4	Spec 1

Referenced documents

No.	Date	Title	Volume One	Volume Two	Housing Provisions	Volume Three
AS 2419 Part 1	2021	Fire hydrant installations — System design, installation and commissioning	C3D13, E1D2, Spec 18, I3D9	N/A	N/A	B4D4
AS 2441	2005	Installation of fire hose reels (incorporating amendment 1)	E1D3	N/A	N/A	B4D5
AS 2444	2001	Portable fire extinguishers and fire blankets — Selection and location	E1D14, I3D11	N/A	N/A	N/A
AS 2665	2001	Smoke/heat venting systems — Design, installation and commissioning	Spec 22, Spec 31	N/A	N/A	N/A
AS 2699 Part 1	2020	Built-in components for masonry construction — Wall ties (See Note 9)	C2D10	N/A	5.6.5	N/A
AS 2699 Part 3	2020	Built-in components for masonry construction — Lintels and shelf angles (durability requirements) (See Note 9)	C2D10	N/A	5.6.7	N/A
AS 2870	2011	Residential slabs and footings	F1D7	H1D4, H1D5	3.4.2, 4.2.2, 4.2.6, 4.2.8, 4.2.11, 4.2.14, 4.2.15, 10.2.9	N/A
AS/NZS 2890 Part 6	2009	Parking facilities — Offstreet parking for people with disabilities	D4D6	N/A	N/A	N/A
AS/NZS 2904	1995	Damp-proof courses and flashings (incorporating amendments 1 and 2)	F1D6	N/A	5.7.3, 7.5.6, 12.3.3	N/A
AS/NZS 2908 Part 1	2000	Cellulose-cement products — Corrugated sheets	B1D4	N/A	N/A	N/A
AS/NZS 2908 Part 2	2000	Cellulose-cement products — Flat sheets	Schedule 1	Schedule 1	7.5.3, 7.5.4, 7.5.5, 10.2.9, 10.2.10, Schedule 1	Schedule 1
AS/NZS 2918	2018	Domestic solid fuel burning appliances — Installation (See Note 8)	G2D2	H7D5	12.4.4, 12.4.5	N/A
AS/NZS 3013	2005	Electrical installations — Classification of the fire and mechanical performance of wiring system elements	C3D14	N/A	N/A	N/A
AS/NZS 3500 Part 0	2021	Plumbing and drainage — Glossary of terms	A1G4	A1G4	N/A	A1G4
AS/NZS 3500 Part 1	2018	Plumbing and drainage — Water services	N/A	N/A	N/A	B5D6

Referenced documents

No.	Date	Title	Volume One	Volume Two	Housing Provisions	Volume Three
AS/NZS 3500 Part 1	2021	Plumbing and drainage — Water services	N/A	N/A	N/A	B1D3, B1D5, B1D6, B3D3, B5V1, B5D2, B5D3, B5D4, Spec 41, B6D2, B6D3, B6D5, B7D3,
AS/NZS 3500 Part 2	2021	Plumbing and drainage — Sanitary plumbing and drainage (incorporating amendment 1)	N/A	N/A	N/A	C1D3, C1V1, C1V2, C1V3, C1V4, C1V5, C2V2, C2D3, C2D4, C3D7
AS/NZS 3500 Part 3	2021	Plumbing and drainage — Stormwater drainage (See Note 11)	F1D3	H2D2, H2D6	7.4.3	N/A
AS/NZS 3500 Part 4	2021	Plumbing and drainage — Heated water services (incorporating amendment 1)	N/A	N/A	N/A	B2D2, B2D6, B2D7, B2D8, B2D9, B2D11
AS 3600	2018	Concrete structures (incorporating amendments 1 and 2)	B1V1, B1D4, Spec 1	H1V1, H1D4, Spec 1	3.4.2, 4.2.6, 4.2.10, 4.2.13, 5.3.3, 10.2.9	Spec 1
AS 3660 Part 1	2014	Termite management — New building work (incorporating amendment 1)	B1D4, F1D6	N/A	3.4.1, 3.4.2	N/A
AS 3660 Part 3	2014	Termite management — Assessment criteria for termite management systems	N/A	N/A	3.4.2	N/A
AS/NZS 3666 Part 1	2011	Air-handling and water systems of buildings — Microbial control — Design, installation and commissioning	F4D10, F6D6	N/A	N/A	N/A
AS 3700	2018	Masonry structures	B1D4, F3D5, Spec 1, Spec 2	H1D5, H2D4, Spec 1, Spec 2	5.3.3, 5.4.2, 5.6.3, 6.3.6, 10.2.9, 10.2.19, 10.2.20, 12.4.3	Spec 1, Spec 2
AS 3740	2021	Waterproofing of domestic wet areas	F2D2	H4D2, H4D3	10.2.20	N/A
AS 3786	2014	Smoke alarms using scattered light, transmitted light or ionization (incorporating amendment 1 and 2) (See Note 5)	Spec 20	N/A	9.5.1	N/A
AS/NZS 3823 Part 1.2	2012	Performance of electrical appliances — Air conditioners and heat pumps — Ducted air conditioners and air-to-air heat pumps — Testing and rating for performance	Spec 33, J6D12	N/A	N/A	N/A

Referenced documents

No.	Date	Title	Volume One	Volume Two	Housing Provisions	Volume Three
AS 3959	2018	Construction of buildings in bushfire-prone areas (incorporating amendments 1 and 2)	C2D14, F8D5, G5D2, G5D3, Spec 43	H7D4	10.8.3	B1D4, B2D10, B3D4, C1D4, C2D5
AS/NZS 4020	2018	Testing of products for use in contact with drinking water (See Note 6)	A5G4	N/A	A5G4	
AS 4055	2021	Wind loads for housing	Schedule 1	H1D6, H1D8, Schedule 1	2.2.3, Schedule 1	Schedule 1
AS 4072 Part 1	2005	Components for the protection of openings in fire-resistant separating elements — Service penetrations and control joints (incorporating amendment 1)	C4D15, C4D16	N/A	9.3.2	N/A
AS 4100	2020	Steel structures	B1D4, Spec 1	H1D6, Spec 1	4.2.13, 5.6.7	Spec 1
AS 4200 Part 1	2017	Pliable building membranes and underlays — Materials (incorporating amendment 1)	F3D3, F8D3, Spec 36, Schedule 1	Schedule 1	7.3.4, 7.5.2, 7.5.8, 10.8.1, Schedule 1	Schedule 1
AS 4200 Part 2	2017	Pliable building membranes and underlays — Installation requirements (incorporating amendments 1 and 2)	F3D3, F8D3	N/A	10.8.1	N/A
AS/NZS 4234	2021	Heated water systems — Calculation of energy consumption	Spec 45	N/A	N/A	B2D2
AS 4254 Part 1	2021	Ductwork for air-handling systems in buildings — Flexible duct	Spec 7, J6D7	H3D2	13.7.4	N/A
AS 4254 Part 2	2012	Ductwork for air-handling systems in buildings — Rigid duct	J6D7	N/A	13.7.4	N/A
AS/NZS 4284	2008	Testing of building facades	Spec 7, J6D5, F3V1	H2V1	N/A	N/A
AS/NZS 4505	2012	Garage doors and other large access doors (incorporating amendment 1)	B1D4	N/A	2.2.4	N/A
AS 4552	2005	Gas fired water heaters for hot water supply and/or central heating	N/A	N/A	N/A	B2D2
AS 4586	2013	Slip resistance classification of new pedestrian surface materials (incorporating amendment 1) (See Note 7)	D3D11, D3D14, D3D15, Spec 27	N/A	11.2.4	N/A
AS 4597	1999	Installation of roof slates and shingles (Non-interlocking type)	B1D4, F3D2	H1D7	N/A	N/A
AS/NZS 4600	2018	Cold-formed steel structures	B1D4, Spec 1	H1D6, Spec 1	5.3.3, 6.3.6	Spec 1

Referenced documents

No.	Date	Title	Volume One	Volume Two	Housing Provisions	Volume Three
AS 4654 Part 1	2012	Waterproofing membranes for external above-ground use — Materials	F1D5	H2D8	N/A	N/A
AS 4654 Part 2	2012	Waterproofing membranes for external above-ground use — Design and installation	C2D14, F1D4, F1D5	H2D8	N/A	N/A
AS 4678	2002	Earth-retaining structures	N/A	H1D3	N/A	N/A
AS 4773 Part 1	2015	Masonry in small buildings — Design (incorporating amendment 1)	N/A	H1D5, H2D4	5.6.3, 12.4.3	N/A
AS 4773 Part 2	2015	Masonry in small buildings — Construction (incorporating amendment 1)	N/A	H1D5, H2D4	5.6.3, 12.4.3	N/A
AS/NZS 4859 Part 1	2018	Thermal insulation materials for buildings — General criteria and technical provisions	J4D3, J6D6, J6D9	N/A	13.2.2, 13.7.2, 13.7.4	N/A
AS/NZS 4859 Part 2	2018	Thermal insulation materials for buildings — Design	J3D8, J4D3, Spec 36, Spec 37	N/A	13.2.5, 13.2.6	N/A
AS/NZS 4858	2004	Wet area membranes	N/A	N/A	10.2.8	N/A
AS 5113	2016	Classification of external walls of buildings based on reaction-to-fire performance (incorporating amendment 1)	C1V3	N/A	N/A	N/A
AS 5146 Part 1	2015	Reinforced autoclaved aerated concrete — Structures (incorporating amendment 1)	B1D4	H1D7	N/A	N/A
AS 5146 Part 3	2018	Reinforced autoclaved aerated concrete — Construction	B1D4, F3D5	N/A	N/A	N/A
AS 5216	2021	Design of post-installed and cast-in fastenings in concrete	B1D4	N/A	2.2.4	N/A
AS/NZS 5601 Part 1	2013	Gas installations — General installations	J1V4	H6V3	N/A	N/A
AS 5637 Part 1	2015	Determination of fire hazard properties — Wall and ceiling linings	Spec 7, Schedule 1	Schedule 1	Schedule 1	Schedule 1
AS ISO 9239 Part 1	2003	Reaction to fire tests for floorings — Determination of the burning behaviour using a radiant heat source	Schedule 1	Schedule 1	Schedule 1	Schedule 1
AS/NZS ISO 9972	2015	Thermal performance of buildings — Determination of air permeability of buildings — Fan pressurization method	J1V4	H6V3	N/A	N/A
AIRAH-DA07	2021	Criteria for moisture control design analysis in buildings	F8V1	H4V5	N/A	N/A

Referenced documents

No.	Date	Title	Volume One	Volume Two	Housing Provisions	Volume Three
AIRAH-DA09	1998	Air conditioning load estimation	Spec 35	N/A	N/A	N/A
AIRAH-DA28	2011	Building management and control systems	Spec 34	N/A	N/A	N/A
ANSI/ASHRAE Standard 55	2013	Thermal environmental conditions for human occupancy	Schedule 1	Schedule 1	Schedule 1	Schedule 1
ANSI/ASHRAE Standard 140	2007	Standard method of test for the evaluation of building energy analysis computer programs	J1V1, J1V2, J1V3, J1V5	H6V2	N/A	N/A
ASTM E2073-10	2010	Standard Test Method for Photopic Luminance of Photoluminescent (Phosphorescent) Markings	Spec 25	N/A	N/A	N/A
ASTM E72-15	2015	Standard Test Methods of Conducting Strength Tests of Panels for Building Construction	Spec 6	N/A	N/A	N/A
ASTM E695-03	2003	Standard Test Method of Measuring Relative Resistance of Wall, Floor and Roof Construction to Impact Loading	Spec 6	N/A	N/A	N/A
ASTM E96	2016	Standard Test Methods for Water Vapor Transmission of Materials	Schedule 1	Schedule 1	Schedule 1	Schedule 1
AHRI 460	2005	Performance rating of remote mechanical-draft air-cooled refrigerant condensers	J6D13	N/A	N/A	N/A
AHRI 551/591	2015	Performance rating of water-chilling and heat pump water-heating packages using the vapor compression cycle.	Spec 33, J6D11	N/A	N/A	N/A
ABCB	2022	Fire Safety Verification Method	C1V4	N/A	N/A	N/A
ABCB	2022	Housing Provisions Standard	N/A	Throughout	Throughout	N/A
ABCB	2022	Livable Housing Design	G7D2	H4D3, H8D2	3.3.3, 11.2.3	N/A
ABCB	2011	Protocol for Structural Software, Version 2011.2	B1D5	H1D6	2.2.5	N/A
ABCB	2012	Standard for Construction of Buildings in Flood Hazard Areas, Version 2012.3	B1D6	H1D10	N/A	N/A
ABCB	2022	Standard for NatHERS Heating and Cooling Load Limits, Version 2022.1	J3D3	Spec 42	N/A	N/A
ABCB	2022	Standard for Whole-of-Home Efficiency Factors	J3D14	N/A	13.6.2	N/A
CIBSE Guide A	2015	Environmental design	Spec 34, Spec 35, J4D3, J4D7	N/A	N/A	N/A

Referenced documents

No.	Date	Title	Volume One	Volume Two	Housing Provisions	Volume Three
N/A	2002	Disability Standards for Accessible Public Transport	F4D12, I2D1	N/A	N/A	N/A
N/A	2010	Education and Care Services National Law Act (Vic)	Schedule 1	Schedule 1	Schedule 1	Schedule 1
European Union Commission Regulation 547/2012	2012	Eco-design requirements for water pumps	J6D8	N/A	N/A	N/A
European Union Commission Regulation 622/Annex II, point 2	2012	Eco-design requirements for glandless standalone circulators and glandless circulators integrated in products	J6D8	N/A	N/A	N/A
FPAA101D	2021	Automatic Fire Sprinkler System Design and Installation — Drinking Water Supply	C1V3, C2D6, C2D13, C3D2, C3D7, C3D8, C4D6, C4D7, C4D8, C4D9, C4D12, Spec 5, Spec 7, D2D4, D2D17, D3D26, D3D30, E2D8, E2D9, E2D13, E2D14, E2D15, E2D16, E2D17, E2D19, E2D20, Spec 17, Spec 18, Spec 20, G3D1, G3D6, Spec 31, I1D2, Schedule 1	Schedule 1	Schedule 1	B4D3, Schedule 1, B1D5

Referenced documents

No.	Date	Title	Volume One	Volume Two	Housing Provisions	Volume Three
FPAA101H	2018	Automatic Fire Sprinkler System Design and Installation — Hydrant Water Supply (incorporating amendment 1)	C1V3, C2D6, C2D13, C3D2, C3D7, C3D8, Spec 5, Spec 7, Spec 17, Spec 18, E2D8, E2D9, E2D13, E2D14, E2D15, E2D16, E2D17, E2D19, E2D20, Spec 20, G3D1, G3D6, Spec 31, I1D2	N/A	N/A	B4D3
ISO 140 Part 6	1998E	Acoustics — Measurement of sound insulation in buildings and of building elements — Laboratory measurements of impact sound insulation of floors	Spec 29	N/A	N/A	N/A
ISO 540	2008	Hard coal and coke — Determination of ash fusibility	Spec 13	N/A	N/A	N/A
ISO 8336	1993E	Fibre-cement flat sheets	Schedule 1	Schedule 1	7.5.3, 7.5.4, 7.5.5, Schedule 1	Schedule 1
ISO 25745 Part 2	2015	Energy performance of lifts, escalators and moving walks: Energy calculation and classification for lifts (elevators)	J7D8	N/A	N/A	N/A
NASH Standard	2021	Steel Framed Construction in Bushfire Areas	N/A	H7D4	N/A	N/A
NASH Standard Part 1	2005	Residential and Low Rise Steel Framing — Design Criteria (incorporating amendments A, B and C)	B1D4	H1D6	N/A	N/A
NASH Standard Part 2	2014	Residential and Low Rise Steel Framing — Design Solutions (incorporating amendment A)	B1D4, B1D5, F1D8	H1D6	2.2.5, 6.2.1, 6.3.6, 7.5.2, 7.5.3, 7.5.4, 10.2.19, 10.2.20	N/A
NSF/ANSI/ CAN 372	2020	Drinking Water System Components - Lead Content	A5G4	A5G4	N/A	A5G4
N/A	N/A	Northern Territory Deemed to Comply Standards Manual	N/A	N/A	2.2.4	N/A
SATS 5344	2019	Permanent Labelling for Aluminium Composite Panel (ACP) products	A5G8	A5G8	N/A	A5G8
TN 61	N/A	Cement Concrete and Aggregates Australia — Technical note — Articulated walling	N/A	H1D4	N/A	N/A

Referenced documents

No.	Date	Title	Volume One	Volume Two	Housing Provisions	Volume Three
WMK NOD 2021/4.2	2021	WaterMark Notice of Direction 2021/4.2 Certification transition arrangements for lead free plumbing products	A5G4	A5G4	N/A	A5G4

Table Notes

- (1) For AS/NZS ISO 717.1:
- (a) Test reports based on AS 1276—1979 and issued prior to AS/NZS 1276.1—1999 being referenced in the NCC remain valid.
 - (b) The STC values in reports based on AS 1276—1979 must be considered to be equivalent to Rw values.
 - (c) Test reports based on AS/NZS 1276.1 prepared after the NCC reference date for AS/NZS 1276.1—1999 must be based on that version.
 - (d) Test reports based on ISO 717.1—1996 and issued prior to AS/NZS ISO 717.1—2004 being referenced in the NCC remain valid.
 - (e) Reports based on AS/NZS ISO 717.1 relating to tests carried out after the NCC reference date for AS/NZS ISO 717.1—2004 must relate to the amended Standard.
- (2) For AS 1562.1, tests carried out based on AS 1562.1—1992 and issued prior to AS 1562.1—2018 being referenced in the NCC remain valid. Reports relating to tests carried out after the NCC reference date for AS 1562.1 must relate to the revised Standard.
- (3) For AS 1670.1, AS 1670.3 and AS1670.4, notwithstanding A4G1(5), until the adoption of NCC 2025 the editions of the documents listed in Table 1.8 of AS 1670.1, AS 1670.3 and AS 1670.4 may be used to meet the requirements of AS 1670.1, AS 1670.3 and AS 1670.4 as applicable.
- (4) For AS 2047:
- (a) Tests carried out under earlier editions of AS 2047 remain valid.
 - (b) Reports based on AS 2047 relating to tests carried out after the NCC reference date for AS 2047—2014 Amendment 2 must relate to the amended Standard.
- (5) For AS 3786:
- (a) Tests carried out under AS 3786—2014 Amendment 1 remain valid.
 - (b) Reports based on AS 3786 relating to tests carried out after the NCC reference date for AS 3786—2014 Amendment 2 must relate to the amended Standard.
- (6) Test reports based on the 2005 edition of AS/NZS 4020 will continue to be accepted until 1 May 2024. Test reports prepared after the NCC reference date for the 2018 edition of AS/NZS 4020 must be based on the 2018 edition.
- (7) For AS 4586:
- (a) Test reports based on the 2004 edition of AS/NZS 4586 and issued prior to the 2013 edition of AS 4586 being referenced in the NCC remain valid.
 - (b) Test reports prepared after the NCC reference date of the 2013 edition of AS 4586 must be based on that version.
 - (c) For the purposes of assessing compliance, the slip-resistance classifications of V, W and X in reports based on the 2004 edition of AS/NZS 4586 may be considered to be equivalent to slip-resistance classifications of P5, P4 and P3 respectively in the 2013 edition of AS 4586.
 - (d) Test reports based on Appendix D of AS 4586—2013 and issued prior to the NCC reference date for AS 4586—2013 (incorporating Amendment 1) remain valid.
 - (e) Test reports based on Appendix D of AS 4586—2013 and prepared after the NCC reference date for AS 4586—2013 (incorporating Amendment 1) must be based on that version.

Referenced documents

- (8) Tests carried out based on AS/NZS 2918—2001 and issued prior to AS/NZS 2918—2018 being referenced in the NCC remain valid. Reports relating to tests carried out after the NCC reference date for AS/NZS 2918 must relate to the revised Standard.
- (9) For AS 2699 Parts 1 and 3:
- (a) For AS 2699.1, the 2000 edition has been retained for a transitional period ending on 30 April 2025.
 - (b) For AS 2699.3, the 2002 edition has been retained for a transitional period ending on 30 April 2025.
- (10) For AS 1397, the 2011 edition has been retained for a transitional period ending on 31 August 2023.
- (11) For AS/NZS 3500.3, the 2018 edition has been retained for a transitional period ending on 31 August 2023.

NSW Table 1

NT Table 1

QLD Table 1

SA Table 1

TAS Table 1

VIC Table 1

WA Table 1

Commonwealth of Australia

Schedule 3

Commonwealth of Australia

Australian Capital Territory

Schedule 4 Australian Capital Territory

Schedule 5 New South Wales

3	Site preparation
	Part 3.1 Scope and application of Section 3
	NSW 3.1.2 Application
4	Footings and slabs
	Part 4.2 Footings, slabs and associated elements
	NSW 4.2.3 Excavation for footings
	NSW 4.2.8 Damp-proofing membrane
9	Fire safety
	Part 9.5 Smoke alarms and evacuation lighting
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NSW Part 9.4	Fire protection of garage top dwellings
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	NSW Part 13.5 Ceiling fans
	NSW Part 13.6 Whole-of-home energy usage
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NSW Part 13.1	Scope and application of Section 13
	NSW 13.1.1 Scope
	NSW 13.1.2 Application
Schedule 1	Definitions
Schedule 2	Referenced documents

3 Site preparation

Part 3.1 Scope and application of Section 3

Delete 3.1.2 and insert NSW 3.1.2 as follows:

NSW 3.1.2 Application

[2019: NSW Part 3.1.1]

- (1) The application of this Section is subject to the following:
 - (a) The Governing Requirements of NCC 2022 Volume Two.
 - (b) Any conditions set out within the following *Deemed-to-Satisfy Provisions* of NCC Volume Two:
 - (i) H1D3(1), for earthworks.
 - (ii) H2D4(1)(b), for drainage.
 - (c) The State and Territory variations, additions and deletions contained in the Schedules to the ABCB Housing Provisions and NCC Volume Two.
- (2) Except for **Table 3.2.1** as referenced by **Figure 3.3.2** and except for H1D3(1) for determination of a normal site as referenced by H1D4, **Part 3.2** does not apply in New South Wales.

Notes

In New South Wales requirements for shoring and adequacy of excavation works are a prescribed condition of *development consent*. In addition, consent authorities can place specific controls on siteworks associated with the construction of a building, by imposing further conditions on the *development consent*.

Explanatory Information

In NCC 2019, the content of Section 3 of the ABCB Housing Provisions (other than content added in NCC 2022 or later) was contained in the acceptable construction practices for Parts 3.1.1, 3.1.3 and 3.1.4 of NCC 2019 Volume Two.

NCC 2019 Volume Two did not include an acceptable construction practice for Part 3.1.2.

4 Footings and slabs

Part 4.2 Footings, slabs and associated elements

Delete 4.2.3 and insert NSW 4.2.3 as follows:

NSW 4.2.3 Excavation for footings

[2019: 3.2.2.1, NSW 3.3.3.1(e)]

- (1) Excavation for footings, including thickenings for slabs and pads must be clean cut with vertical sides, wherever possible.
- (2) The base of the excavation must be—
 - (a) for flat *sites*, generally level but may slope not more than 1:40 to allow excavations to drain; and
 - (b) for sloping *sites* at an angle of not more than 1:10; and
 - (c) for stepped footings in accordance with 4.2.7.
- (3) Footing excavations must be free of loose earth, tree roots, mud or debris.
- (4) Topsoil containing grass roots must be removed from the *site* of the *foundation*.
- (5) On loose sand *sites* or *sites* subject to wind or water erosion, the depth below *finished ground level* to the bottom of footings must be not less than 300 mm.
- (6) The height of a finished slab-on-ground must be in accordance with 3.3.3(b).

Notes

In New South Wales requirements for shoring and adequacy of excavation works are a prescribed condition of *development consent*. In addition consent authorities can place specific controls on siteworks associated with the construction of a building, by imposing further conditions of *development consent*.

Delete 4.2.8 and insert NSW 4.2.8 as follows:

NSW 4.2.8 Damp-proofing membrane

[2019: NSW 3.2.2.6]

- (1) A damp-proofing membrane must be installed under slab-on-ground construction for a Class 1 building and for a Class 10 building where the slab is continuous with the slab of a Class 1 building in accordance with (2), (3), (4) and (5).
- (2) Materials: A damp-proofing membrane must be—
 - (a) 0.2 mm nominal thickness polyethylene film; and
 - (b) high impact resistant,determined in accordance with criteria specified in clause 5.3.3.3 of AS 2870.
- (3) A damp-proofing membrane must be branded continuously “AS 2870 Concrete underlay, 0.2 mm High impact resistance”.
- (4) Installation: A damp-proofing membrane must be installed as follows—
 - (a) Lap not less than 200 mm at all joints.
 - (b) Tape or seal with a close-fitting sleeve around all service penetrations.
 - (c) Fully seal where punctured (unless for service penetrations) with additional polyethylene film and tape.
- (5) The damp-proofing membrane must be placed beneath the slab so that the bottom surface of the slab is entirely underlaid and must extend under internal and edge beams to finish at ground level in accordance with Figure 4.2.8.

New South Wales

Notes

A range of polyethylene films can be used, including black film and orange film, provided they satisfy the requirements for high impact resistance in accordance with the criteria specified in clause 5.3.3.3 of AS 2870.

9 Fire safety

Part 9.5 Smoke alarms and evacuation lighting

Delete 9.5.1 and insert NSW 9.5.1 as follows:

NSW 9.5.1 Smoke and heat alarm requirements

[2019: NSW 3.7.5.2 and NSW 1.1.4]

- (1) Smoke alarms must—
 - (a) be located in—
 - (i) Class 1a buildings excluding any non-associated Class 10a *private garages*, subject to (2), in accordance with 9.5.2 and 9.5.4; and
 - (ii) Class 1b buildings in accordance with 9.5.3 and 9.5.4; and
 - (b) comply with AS 3786, except that in a Class 10a *private garage* where the use of the area is likely to result in smoke alarms causing spurious signals, any other alarm deemed suitable in accordance with AS 1670.1 may be installed provided that smoke alarms complying AS 3786 are installed elsewhere in the Class 1 building; and
 - (c) be powered from the consumer mains source where a consumer mains source is supplied to the building; and
 - (d) be interconnected where there is more than one alarm.
- (2) Heat alarms must—
 - (a) be installed in a Class 10a *private garage* that is located beneath a *garage top dwelling* and not associated with that dwelling; and
 - (b) be located on or near the ceiling; and
 - (c) comply with AS 1603.3; and
 - (d) be powered from the consumer mains source supplying the *garage top dwelling* where a consumer mains source is supplied to the building; and
 - (e) be interconnected to the *garage top dwelling* smoke alarms required by 9.5.2.
- (3) Where heat alarms required by (2) are installed, durable notices must be permanently fixed to the *garage top dwelling* and non-associated Class 10a *private garage* in prominent locations, indicating that—
 - (a) a heat alarm is installed in the non-associated Class 10a *private garage*; and
 - (b) the heat alarm is interconnected to the *garage top dwelling* smoke alarms.

Explanatory Information

A smoke alarm can give spurious alarms if the atmosphere contains particles which obscure vision, such as could occur in a Class 10a *private garage* part of a building. NSW 9.5.1(1)(b) therefore allows the use of a more suitable alarm, such as a heat alarm, in these locations.

NSW 9.5.1(1)(d) requires alarms to be interconnected where there is more than one alarm. This only applies within a single dwelling. Therefore alarms in a Class 1a dwelling need not be interconnected with alarms in another dwelling.

Where a Class 10a *private garage* is located beneath a *garage top dwelling* and is not associated with that dwelling, NSW 9.5.1(2)(a) requires a heat alarm to be provided in the non-associated Class 10a *private garage*. NSW 9.5.1(2)(b) to (e) contains requirements for installing heat alarms. NSW 9.5.1(3) contains requirements for the provision of durable notices.

NSW Part 9.4

Fire protection of garage top dwellings

NSW 9.4.1 Fire separation

[2019: NSW 1.1.1]

- (1) A *garage top dwelling* must be separated from a non-associated *private garage* by a floor complying with NSW 9.4.2.
- (2) Where a *garage top dwelling* is served by an internal stair, the *garage top dwelling* must be separated from a non-associated *private garage* by a wall complying with NSW 9.4.3.
- (3) Where a *garage top dwelling* is located above both associated and non-associated *private garages*—
 - (a) in addition to a floor *required* by (1), the *private garages* must be separated with a wall complying with NSW 9.4.3; or
 - (b) where a *garage top dwelling* is not served by an internal stair, the *garage top dwelling* may be separated from the *private garages* by a floor complying with NSW 9.4.2.

NSW 9.4.2 Construction of floors

[2019: NSW 1.1.2]

- (1) A floor *required* by NSW 9.4.1(1) or NSW 9.4.1(3)(b) must—
 - (a) have an FRL of not less than 30/30/30 when tested from the underside; or
 - (b) have a *fire-protective covering* on the underside of the floor, including beams incorporated in it; or
 - (c) be a floor/ceiling system incorporating a ceiling which has a *resistance to the incipient spread of fire* to the space above itself of not less than 60 minutes.
- (2) Where a floor subject to (1)(a) depends on direct vertical or lateral support from another part to maintain its FRL, that supporting part must have an FRL of not less than 30/-/-.
- (3) Where a service passes through a floor referred to in (1), the penetration must not reduce the performance of the floor or covering.

NSW 9.4.3 Construction of walls

[2019: NSW 1.1.3]

- (1) A wall *required* by NSW 9.4.1(2) or NSW 9.4.1(3)(a) must—
 - (a) have an FRL of not less than 30/30/30 when tested from the non-associated *private garage* side; or
 - (b) be of masonry construction not less than 90 mm thick.
- (2) A wall subject to (1) must—
 - (a) commence at the footings or ground slab; and
 - (b) extend to the underside of a floor complying with NSW 9.4.2.
- (3) A wall referred to in (1)(a), if of *lightweight construction* must be tested in accordance with Specification 6 of Volume One.
- (4) Where a service passes through a wall referred to in (1), the penetration must not reduce the performance of the wall.
- (5) A wall *required* by NSW 9.4.1(2) or NSW 9.4.1(3)(a) need not comply with 9.3.1.

13 Energy efficiency

Part 13.2 Building fabric

Delete 13.2.1 and insert NSW 13.2.1 as follows:

NSW 13.2.1 Application of Part 13.2

[2019: NSW 3.12.1]

- (1) The provisions of 13.2.2, NSW 13.2.3, NSW 13.2.5 and NSW 13.2.6 apply to a Class 1 or 10 building where a *development consent* specifies that the insulation is to be provided as part of the development.
- (2) NSW 13.2.3 and NSW 13.2.5 apply to all Class 1 buildings and Class 10a buildings with a *conditioned space*.

Delete 13.2.3 and insert NSW 13.2.3 as follows:

NSW 13.2.3 Roofs and ceilings

[2019: NSW 3.12.1.1]

- (1) A roof that—
 - (a) has metal sheet roofing directly fixed to metal purlins, metal rafters or metal battens; and
 - (b) does not have a ceiling lining or has a ceiling lining fixed directly to those metal purlins, metal rafters or metal battens,must have a thermal break, consisting of a material with an *R-Value* of greater than or equal to 0.2, installed between the metal sheet roofing and its supporting metal purlins, metal rafters or metal battens.
- (2) (1) does not apply to roofs constructed using insulated sandwich panels.

Delete 13.2.4 and insert NSW 13.2.4 as follows:

NSW 13.2.4 Roof lights

This clause has deliberately been left blank.

13.2.4 does not apply in NSW.

Delete 13.2.5 and insert NSW 13.2.5 as follows:

NSW 13.2.5 External walls

[2019: NSW 3.12.1.1]

- (1) A metal-framed wall that forms part of the building *envelope* must have a thermal break, consisting of a material with an *R-Value* of not less than R0.2, installed at all points of contact between the external cladding and the metal frame if the wall—
 - (a) does not have a wall lining or has a wall lining that is fixed directly to the metal frame; and
 - (b) is clad with weatherboards, fibre-cement or the like, or metal sheeting fixed to the metal frame.
- (2) The requirements of (1) do not apply to walls constructed using insulated sandwich panels.

Explanatory Information

- A lightweight wall has no high thermal mass cladding on the outside or lining on the inside. Typically, this would represent a framed wall, clad externally with timber weatherboards, fibre-cement sheet, metal or autoclaved aerated concrete.
- Because of the high thermal conductance of metal, a thermal break is needed when a metal framing member directly connects the external cladding to the internal lining or the internal environment. For the purposes of NSW 13.2.5(1)(b), expanded polystyrene strips greater than or equal to 12 mm thickness and timber greater than or

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equal to 20 mm thickness are deemed to achieve an *R-Value* greater than or equal to 0.2.

- Continuous insulation placed outside the *primary insulation layer*, including *reflective insulation*, may also be subject to *vapour permeance* requirements of 10.8.1(2). Many continuous insulation products and foils have a low vapour permeance. Some *reflective insulation* products have perforations to increase their *vapour permeance*. Many perforated *reflective insulation* products are not classified as a water barrier by AS 4200.1. Accordingly, these products are not suitable for use as a *water control layer*.
- Many *reflective insulation* products that use perforations to increase their *vapour permeance* are not suitable for use behind vertical or diagonally orientated timber cladding boards, where required by clause 7.5.2 of the ABCB Housing Provisions, or behind open jointed or unsealed cladding systems.

Delete 13.2.6 and insert NSW 13.2.6 as follows:

NSW 13.2.6 Floors and subfloor walls

[2019: NSW 3.12.1.1]

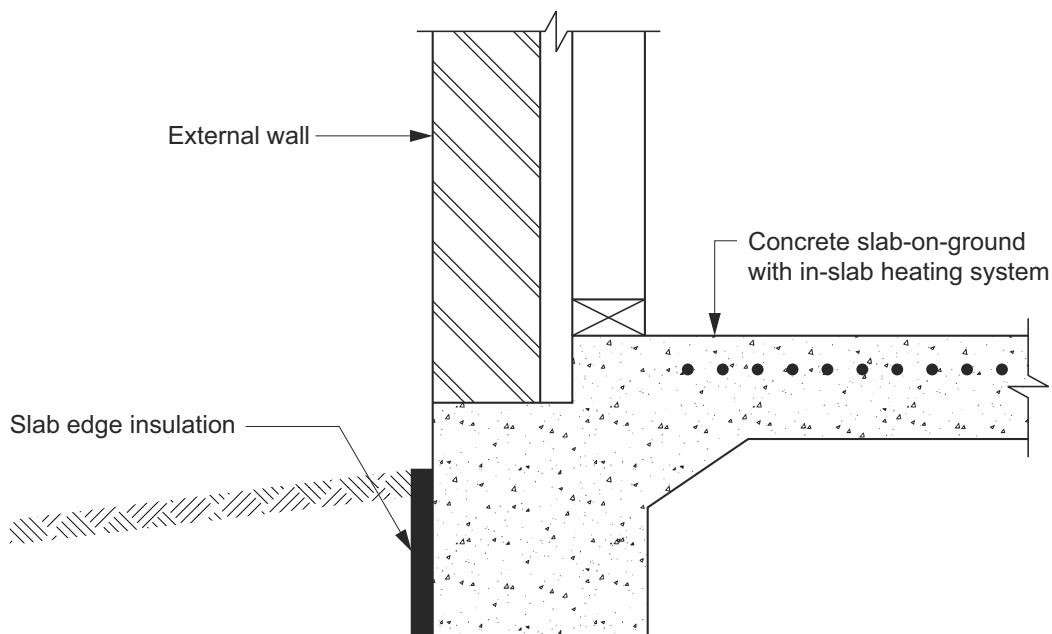
- A concrete slab-on-ground with an in-slab or in-screed heating or cooling system, must have insulation with an *R-Value* greater than or equal to 1.0, installed around the vertical edge of its perimeter.
- Insulation required by (1) must—
 - be *water resistant*; and
 - be continuous from the adjacent finished ground level—
 - to a depth of greater than or equal to 300 mm; or
 - for at least the full depth of the vertical edge of the concrete slab-on-ground (see Figure 13.2.6).
- The requirements of (1) do not apply to an in-screed heating or cooling system used solely in a bathroom, amenity area or the like.

Explanatory Information

- NSW 13.2.6(3) provides an exemption for an in-screed heating or cooling system used solely in bathrooms, amenity areas and the like, as these are typically small areas.
- Care should be taken to ensure that the type of termite management system selected is compatible with the slab edge insulation.

Insert Figure 13.2.6 as follows:

Figure 13.2.6: Insulation of slab edge



Delete 13.2.7 and insert NSW 13.2.7 as follows:

NSW 13.2.7 Attached Class 10a buildings

This clause has deliberately been left blank.

13.2.7 does not apply in NSW.

NSW Part 13.3 External glazing

This Part has been deliberately left blank. Part 13.3 does not apply in NSW.

Part 13.4 Building sealing

Delete 13.4.1 and insert NSW 13.4.1 as follows:

NSW 13.4.1 Application of Part 13.4

[2019: NSW 3.12.3]

- (1) This Part applies to—
 - (a) a Class 1 building; and
 - (b) a Class 10a building with a *conditioned space*.
- (2) The provisions of (1) do not apply to the following:
 - (a) Existing buildings being relocated.
 - (b) Parts of buildings that cannot be fully enclosed.
 - (c) A building in *climate zones* 2 and 5 where the only means of air-conditioning is by using an evaporative cooler.
 - (d) A permanent building *ventilation opening* that is necessary for the safe operation of a gas appliance.

Explanatory Information

- The term “cannot be fully enclosed” means parts of buildings with permanent openings such as balconies, shade rooms, rooms with fixed louvres, mesh or other material that allows air flow. Adjustable louvres are considered to provide full enclosure to the opening they accommodate. Such rooms are unlikely to be conditioned given the high air flow rates; therefore application of the *Performance Requirement* to these parts of buildings would not result in reduction in energy use.
- Appropriate ventilation for gas appliances can be obtained from relevant legislation, referenced standards and product installation manuals.

NSW Part 13.5 Ceiling fans

This Part has been deliberately left blank. Part 13.5 does not apply in NSW.

NSW Part 13.6 Whole-of-home energy usage

This Part has been deliberately left blank. Part 13.6 does not apply in NSW.

Part 13.7 Services

Delete 13.7.1 and insert NSW 13.7.1 as follows:

NSW 13.7.1 Application of Part 13.7

[2019: NSW 3.12.5]

- (1) This Part applies to—
 - (a) a Class 1 building; and

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- (b) a Class 10a building.
- (2) The provisions of (1) do not apply to existing services associated with existing buildings being relocated.

Delete 13.7.5 and insert NSW 13.7.5 as follows:

NSW 13.7.5 Electric resistance space heating

This clause has deliberately been left blank.

13.7.5 does not apply in NSW.

Delete 13.7.6 and insert NSW 13.7.6 as follows:

NSW 13.7.6 Artificial lighting

This clause has deliberately been left blank.

13.7.6 does not apply in NSW.

Delete 13.7.7 and insert NSW 13.7.7 as follows:

NSW 13.7.7 Water heater in a heated water supply system

This clause has deliberately been left blank.

13.7.7 does not apply in NSW.

Delete 13.7.8 and insert NSW 13.7.8 as follows:

NSW 13.7.8 Swimming pool heating and pumping

This clause has deliberately been left blank.

13.7.8 does not apply in NSW.

Delete 13.7.9 and insert NSW 13.7.9 as follows:

NSW 13.7.9 Spa pool heating and pumping

This clause has deliberately been left blank.

13.7.9 does not apply in NSW.

NSW Part 13.1 Scope and application of Section 13

NSW 13.1.1 Scope

[New for 2022]

This Section sets out the following *Deemed-to-Satisfy Provisions* for energy efficiency:

- (a) Building fabric (see Part 13.2).
- (b) Building sealing (see Part 13.4).
- (c) Services (see Part 13.7).

Explanatory Information

Compliance is not *required* with Part 13.3, Part 13.5 and Part 13.6 as those matters are regulated under BASIX.

NSW 13.1.2 Application

[New for 2022]

The application of this Section is subject to the following:

- (a) The Governing Requirements of NCC Volume Two.
- (b) The State and Territory variations, additions and deletions contained in the Schedules to the ABCB Housing Provisions and NCC Volume Two.

Explanatory Information

In NCC 2019, the content of Section 13 of the ABCB Housing Provisions (other than content added in NCC 2022 or later) was contained in the acceptable construction practices for Part 3.12 of NCC 2019 Volume Two.

Schedule 1 Definitions

Aisle: A walkway at the end of *rows* of seating, not being *continental seating*, leading to a cross-over or to an egress doorway.

Appropriate authority

The relevant authority with the responsibility to determine the particular matter.

Assembly building

A building where people may assemble for—

- (a) civic, theatrical, social, political or religious purposes including a library, theatre, public hall or place of worship; or
- (b) educational purposes in a *school*, *early childhood centre*, preschool, or the like; or
- (c) entertainment, recreational or sporting purposes including—
 - (i) a cinema; or
 - (ii) a sports stadium, sporting or other club; or
- (d) transit purposes including a bus station, railway station, airport or ferry terminal.

Auditorium: A part of an *entertainment venue* used or intended to be used for the purposes of accommodating an audience to an entertainment.

Continental seating: *Rows* of seating in which the *rows* extend the full width of an *auditorium* without intervening *aisles*.

Cross-over: In relation to an *entertainment venue* or *temporary structure*, means a walkway between *aisles* or between an *aisle* and an egress doorway.

Designated bushfire prone area

Land that:

- (a) has been designated under legislation; or
- (b) has been identified under an environmental planning instrument, development control plan or in the course of processing and determining a development application,

as land that can support a bushfire or is likely to be subject to bushfire attack.

Development consent: Is as defined in the Environmental Planning and Assessment Act 1979.

Entertainment venue: Is as defined in the Environmental Planning and Assessment Regulation 2021.

Film: A cinematograph film of a size of 35 mm or greater.

Flying scenery: Scenery of a kind that is lifted above the *stage* floor by means of lines run from a *grid*.

Garage top dwelling: A Class 1a dwelling located above a Class 10a *private garage* which is not associated with that Class 1a dwelling and includes any internal entry stair serving the garage top dwelling.

Grid: A framework from which lines are run for the purpose of lifting *flying scenery* above the *stage* floor.

Information and education facility: Is as defined in the Standard Instrument—Principal Local Environment Plan.

Licensed premises: Is as defined in the Liquor Act 2007.

Minimum lateral clearance: A permanently unobstructed space having a height above floor level of not less than 2000 mm and a width of not less than the specified measurement.

Planning for Bush Fire Protection: Is as prescribed by the Environmental Planning and Assessment Regulation 2021.

Projection suite: Such part of an *entertainment venue* as is designed to accommodate apparatus used for projecting *films*.

Row: A row of seating—

- (a) between a wall or other barrier and an *aisle*; or
- (b) between 2 *aisles*.

Small live music or arts venue: The whole or part of a building—

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- (a) in which cultural activities including live music, visual arts' displays, dancing, poetry and spoken word performances are provided to the public; and
- (b) that has a *floor area* of not more than 300 square metres; and
- (c) that has a *rise in storeys* of not more than 2; and
- (d) that occupies not more than 2 *storeys* including the ground floor *storey*; and
- (e) where pyrotechnics or theatrical smoke (smoke machines, hazers or the like) are not used.

Spa pool: Is as defined in the Swimming Pools Act 1992.

Special fire protection purpose: (As per Section 100B(6) of the Rural Fires Act 1997) means any of the following purposes:

- (a) a school,
- (b) a child care centre,
- (c) a hospital (including a hospital for the mentally ill or mentally disordered),
- (d) a hotel, motel or other tourist accommodation,
- (e) a building wholly or principally used as a home or other establishment for mentally incapacitated persons,
- (f) seniors housing within the meaning of State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004 (now SEPP (Housing) 2021),
- (g) a group home within the meaning of State Environmental Planning Policy No 9 - Group Homes (now SEPP (Housing) 2021),
- (h) a retirement village,
- (i) any other purpose prescribed by the regulations (Rural Fires Regulation 2022).

Notes

For application of this definition in the BCA, the term "school" does not include a college, university or similar tertiary educational establishment.

Temporary structure: Either—

- (a) a booth, tent or other temporary enclosure, whether or not a part of the booth, tent or enclosure is permanent; or
- (b) a mobile structure.

Schedule 2 Referenced documents

Insert NSW Table 1 as follows:

NSW Table 1: Schedule of referenced documents

No.	Date	Title	Volume One	Volume Two	Housing Provisions
AS/NZS 1596	2014	The Storage and Handling of LP Gas	NSW I4D61	N/A	N/A
AS 1603	2018	Automatic fire detection and alarm systems — Heat alarms (See Note 1)	N/A	N/A	NSW 9.5.1
AS 2001 Part 5.4	2005	Methods of test for textiles: Dimensional washing and drying procedures for textile texting	NSW S7C7	N/A	N/A
AS/NZS 3000	2018	Electrical installations (known as the Australian/New Zealand Wiring Rules)	NSW I5D14	N/A	N/A
AS/NZS 3002	2008	Electrical installations — Shows and carnivals	NSW I5D14	N/A	N/A
SSL	N/A	Appraisal Specification FAS102	NSW I4D46	N/A	N/A
NSW Legislation	1979	Environmental Planning and Assessment Act	NSW G5D3, NSW Schedule 1	NSW H7D4, NSW Schedule 1	NSW Schedule 1
NSW Legislation	2021	Environmental Planning and Assessment Regulation	NSW I4D1, NSW I4D46, NSW Schedule 1	NSW Schedule 1	NSW Schedule 1
NSW Legislation	2007	Liquor Act	NSW Schedule 1	NSW Schedule 1	NSW Schedule 1
NSW Legislation	1997	Rural Fires Act	NSW G5D3, NSW G5D4, NSW Schedule 1	NSW Schedule 1, NSW H7D4	NSW Schedule 1
NSW Legislation	N/A	Standard Instrument—Principal Local Environmental Plan	NSW Schedule 1	NSW Schedule 1	NSW Schedule 1
NSW Legislation	1992	Swimming Pools Act	NSW G1P2, NSW G1D2, NSW Schedule 1	NSW H7P1, NSW H7D2, NSW Schedule 1	NSW Schedule 1

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No.	Date	Title	Volume One	Volume Two	Housing Provisions
NSW Legislation	2018	Swimming Pools Regulation	NSW G1P2, NSW G1D2	NSW H7P1, NSW H7D2	N/A
NSW Legislation	2011	Work Health and Safety Act	NSW G1D5	N/A	N/A

Table Notes

- (1) Heat alarms complying with AS 1603.3 must be a class type A1 or A2.

Schedule 6 Northern Territory

3	Site preparation
	Part 3.4 Termite risk management
	3.4.1 Requirements for termite management systems
	NT 3.4.2 Termite management systems
10	Health and amenity
NT Part 10.7	Sound insulation
	NT 10.7.1 Sound insulation requirements
	NT 10.7.2 General installation requirements for walls
	NT 10.7.3 Soil and waste pipes
13	Energy efficiency
	NT Part 13.6 Whole-of-home energy usage
NT Part 13.1	Scope and application of Section 13
	NT 13.1.1 Scope
	NT 13.1.2 Application
NT Part 13.2	Building fabric
	NT 13.2.1 Application of Part 13.2
	NT 13.2.2 Building fabric thermal insulation
	NT 13.2.3 Roofs
	NT 13.2.4 Roof lights
	NT 13.2.5 External walls
	NT 13.2.6 Attached Class 10a buildings
NT Part 13.3	External glazing
	NT 13.3.1 Application of Part 13.3
	NT 13.3.2 External glazing
	NT 13.3.3 Shading
NT Part 13.4	Building sealing
	NT 13.4.1 Application of Part 13.4
	NT 13.4.2 Chimneys and flues
	NT 13.4.3 Roof lights
	NT 13.4.4 External windows and doors
	NT 13.4.5 Exhaust fans
	NT 13.4.6 Construction of ceilings, walls and floors
	NT 13.4.7 Evaporative coolers
NT Part 13.5	Air movement
	NT 13.5.1 Application of Part 13.5
	NT 13.5.2 Air movement
	NT 13.5.3 Ventilation openings
NT Part 13.7	Services
	NT 13.7.1 Application of Part 13.7
	NT 13.7.2 Insulation of services
	NT 13.7.3 Central heating water piping

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NT 13.7.4	Heating and cooling ductwork
NT 13.7.5	Water heater in a heated water supply system

Schedule 2 Referenced documents

3 Site preparation

Part 3.4 Termite risk management

3.4.1 Requirements for termite management systems

[2019: 3.1.4.2]

Delete 3.4.1(2) and insert NT 3.4.1(2) as follows:

- (2) For the purposes of (1), 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 in areas where *Mastotermes darwiniensis* are not prevalent.
 - (f) Timber — preservative treated in accordance with Appendix D of AS 3660.1.

Delete 3.4.2 and insert NT 3.4.2 as follows:

NT 3.4.2 Termite management systems

[2019: NT 3.1.4.3(d) and (e)]

Where a termite management system is required it must—

- (a) be selected appropriate to Table 3.4.2; and
- (b) comply with—
 - (i) AS 3660.1; or
 - (ii) have been tested and passed the tests *required* by Section 5 of AS 3660.3; and
- (c) have a durable notice installed in accordance with 3.4.3; and
- (d) include additional termite risk management measures in areas where *Mastotermes darwiniensis* are prevalent; and
- (e) where a chemical termite management system is used—
 - (i) the chemical must be included on the *appropriate authority's* pesticides register; and
 - (ii) when used as an external perimeter termite management system for *Mastotermes darwiniensis*, it is—
 - (A) installed by excavating trenches, treating the exposed trench and backfilling the trench with treated material; and
 - (B) covered by a concrete strip not less than 50 mm thick and 300 mm wide measured from the external wall of the building.

Explanatory Information

3.4.2(b)(i) provides the option of having a chemical termite management system tested to AS 3660.3. In order for the test results to remain valid, the system would then have to be installed as tested.

10 Health and amenity

NT Part 10.7

Sound insulation

NT 10.7.1 Sound insulation requirements

[2019: NT 3.8.6.2]

- (1) A separating wall between two or more Class 1 buildings must—
 - (a) achieve the weighted sound reduction index (R_W) and impact sound resistance required by Table NT 10.7.1; and
 - (b) be installed in accordance with the appropriate requirements of **NT 10.7.2** and **NT 10.7.3**.
- (2) For the purposes of this Part, the R_W may be determined in accordance with AS/NZS ISO 717.1.

Explanatory Information

The wall configurations shown in Figures NT 10.7.1b, 10.7.1c, 10.7.1d, 10.7.1e, 10.7.1f, 10.7.1g, 10.7.1h, 10.7.1i, 10.7.1j, 10.7.1k, 10.7.1l, 10.7.1m, 10.7.1n, 10.7.1o, 10.7.1p, 10.7.1q, 10.7.1r, 10.7.1s and 10.7.1t are typical examples. Other proprietary methods are available for meeting the R_W and sound impact levels required by NT 10.7.1.

Insert Table 10.7.1 as follows:

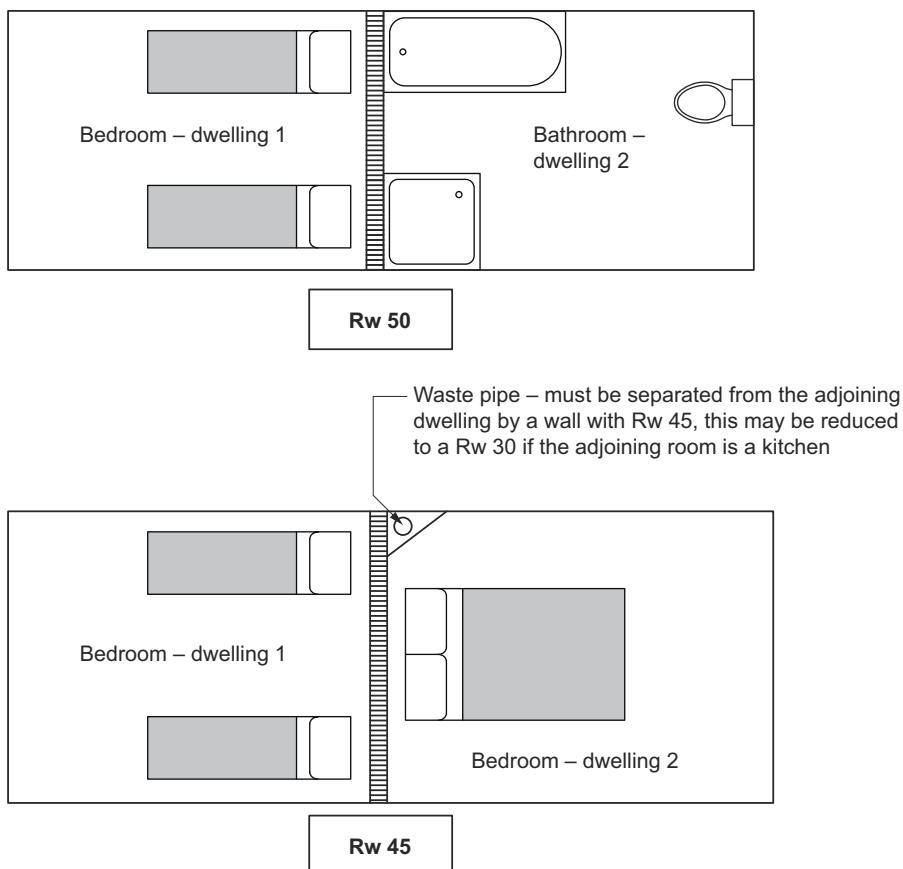
Table 10.7.1: Required R_W and sound impact levels for separating walls

Separating wall — location and penetrations	Impact sound resistance (as per Figures NT 10.7.1b to 10.7.1h)	R_W (as per Figures NT 10.7.1i to 10.7.1u)
Type A: between a bathroom, <i>sanitary compartment</i> , laundry or kitchen and a <i>habitable room</i> (other than a kitchen) in an adjoining Class 1 building (dwelling) (see Figure NT 10.7.1a)	Yes	50
Type B: in all other cases to those listed as Type A (see Figure NT 10.7.1a)	No	45
A soil and waste pipe or other penetration that serves or passes through a <i>separating wall</i> between houses — if the adjacent room is a <i>habitable room</i> (other than a kitchen)	No	45
A soil and waste pipe or other penetration that serves or passes through a <i>separating wall</i> — if the room is a kitchen or any other room	No	30

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Insert NT Figure 10.7.1a as follows:

NT Figure 10.7.1a: Required R_w — plan view



Insert NT Figure 10.7.1b as follows:

NT Figure 10.7.1b: Construction of walls to reduce impact sound and achieve a 50 R_w : cavity brickwork

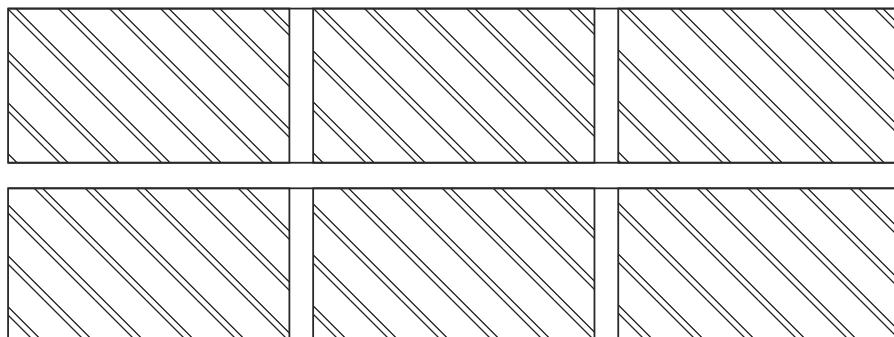


Figure Notes

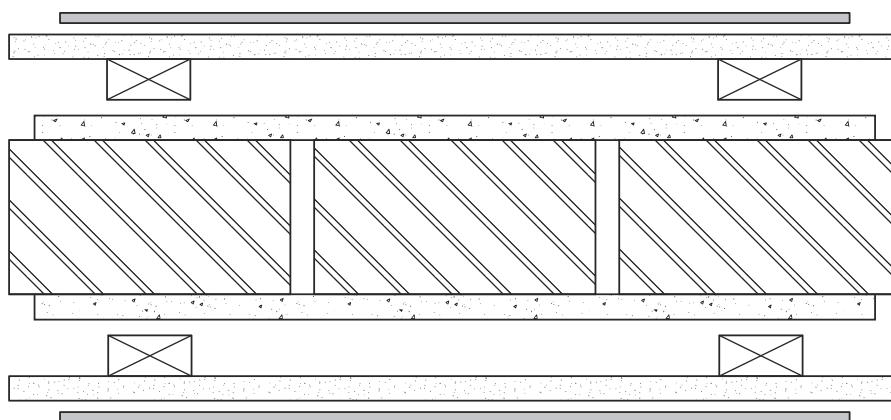
2 leaves of 90 mm brick masonry with—

- (a) all joints filled solid with mortar; and
- (b) an air space not less than 40 mm between the leaves; and
- (c) the leaves connected by ties in accordance with AS 3700, except '(for piers—isolated and engaged)' is removed from Clause 8.5.1(d) and where Clause 8.5.1 requires design 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; and
- (d) wall tie spacing as set out in Part 5.6.

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Insert NT Figure 10.7.1c as follows:

NT Figure 10.7.1c: Construction of walls to reduce impact sound and achieve a 50 R_w: single leaf brickwork

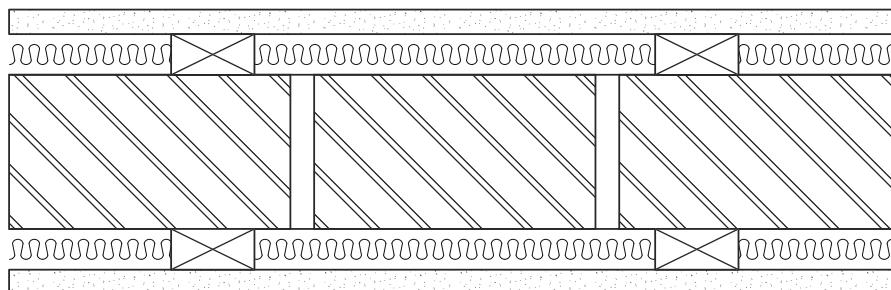
**Figure Notes**

80 mm thick brick masonry with—

- (a) each face rendered 13 mm thick; and
- (b) 50 mm x 12 mm thick timber battens at not more than 610 mm centres fixed to each face but not recessed into the render; and
- (c) one layer of 12 mm thick softboard nailed to the battens; and
- (d) 6 mm thick medium density hardboard adhesive-fixed into the softboard.

Insert NT Figure 10.7.1d as follows:

NT Figure 10.7.1d: Construction of walls to reduce impact sound and achieve a 50 R_w: concrete blockwork

**Figure Notes**

190 mm thick concrete block masonry with—

- (a) each face of the blocks fitted with 50 mm x 50 mm timber battens, spaced at not more than 610 mm centres, screw-fixed into resilient plugs with rubber inserts; and
- (b) the space between the battens completely filled with mineral or glass wool blanket or batts not less than 50 mm thick; and
- (c) the outer face of the battens finished with plasterboard not less than 10 mm thick.

Insert NT Figure 10.7.1e as follows:

NT Figure 10.7.1e: Construction of walls to reduce impact sound and achieve a $50 R_W$: timber-framed walling (method 1)

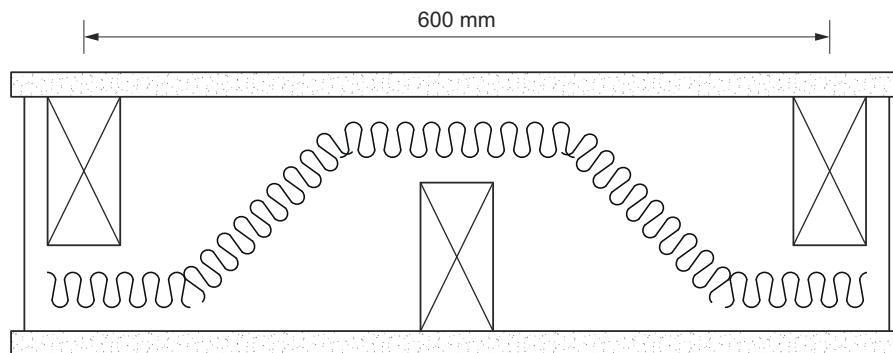


Figure Notes

70 mm x 45 mm F5 staggered timber studs at 600 mm centres both side on 120 mm x 35 mm F5 timber plates with—

- (a) one layer of 16 mm fire-protective grade plasterboard on both faces; and
- (b) 50 mm glass fibre batts.

Insert NT Figure 10.7.1f as follows:

NT Figure 10.7.1f: Construction of walls to reduce impact sound and achieve a $50 R_W$: timber-framed walling (method 2)

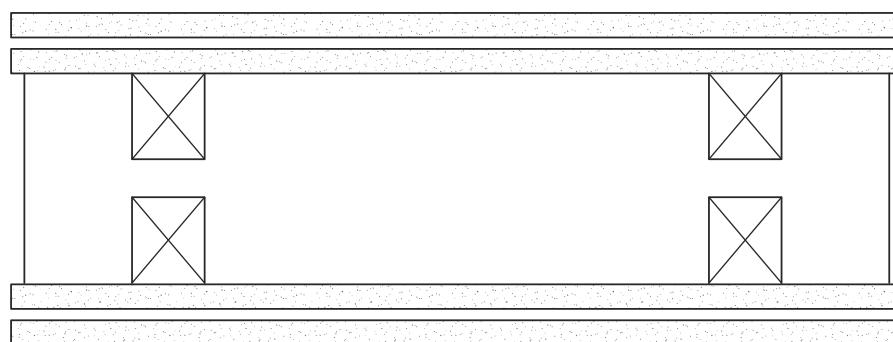
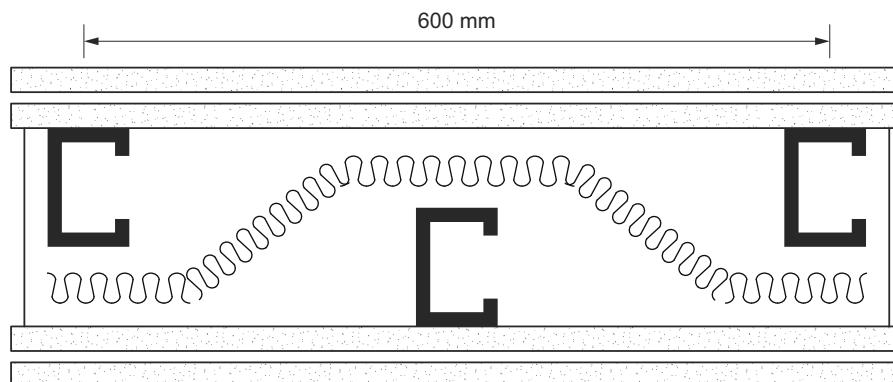


Figure Notes

70 mm x 45 mm F5 timber double studs at 450 mm - 600 mm centres with an air space not less than 20 mm between studs with two layers of 13 mm fire-protective grade plasterboard on both faces.

Insert NT Figure 10.7.1g as follows:

NT Figure 10.7.1g: Construction of walls to reduce impact sound and achieve a $50 R_W$: steel stud walling (method 1)



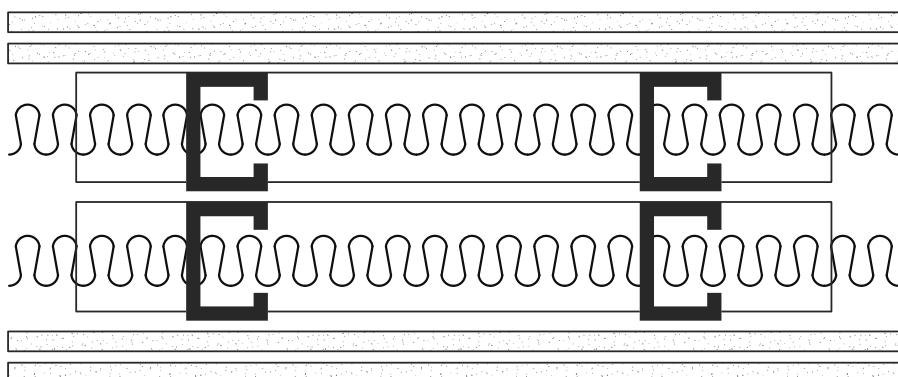
Northern Territory**Figure Notes**

64 mm staggered metal studs (0.75 mm base metal thickness) at 600 mm centres both sides, clipped in 92 mm metal tracks with—

- (a) two layers of 13 mm fire-protective grade plasterboard to each side; and
- (b) 50 mm glass wool cavity batts.

Insert NT Figure 10.7.1h as follows:

NT Figure 10.7.1h: Construction of walls to reduce impact sound and achieve a 50 R_w: steel stud walling (method 2)

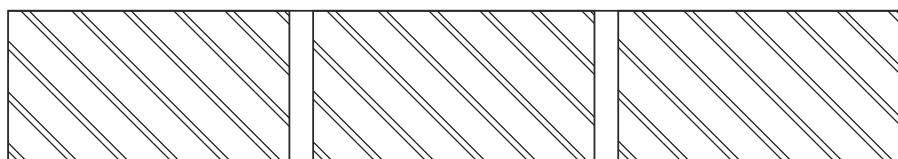
**Figure Notes**

64 mm double metal studs (0.75 mm base metal thickness) at 600 mm centres with an air space not less than 20 mm between studs, in separate frames with no mechanical links, with—

- (a) two layers of 13 mm fire-protective grade plasterboard to each side; and
- (b) 50 mm glass wool cavity batts.

Insert NT Figure 10.7.1i as follows:

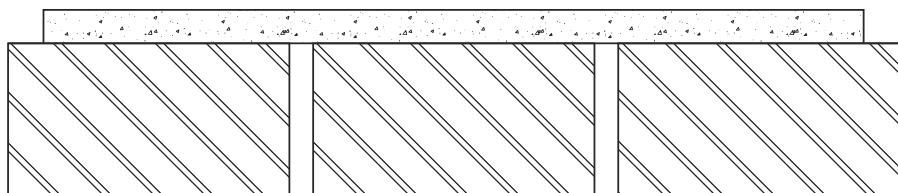
NT Figure 10.7.1i: Clay brickwork to achieve R_w of 45 (method 1)

**Figure Notes**

Clay brickwork 110 mm thick in one or more leaves and with a mass per unit area of not less than 290 kg/m².

Insert NT Figure 10.7.1j as follows:

NT Figure 10.7.1j: Clay brickwork to achieve R_w of 45 (method 2)

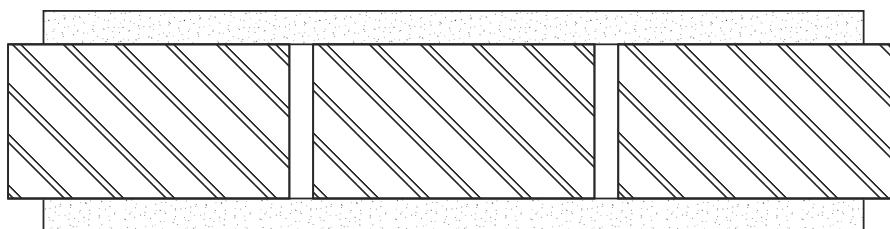
**Figure Notes**

Clay brickwork 80 mm thick, pressed brick and rendered 13 mm on one side, the mass per unit area of the unrendered wall being not less than 215 kg/m².

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Insert NT Figure 10.7.1k as follows:

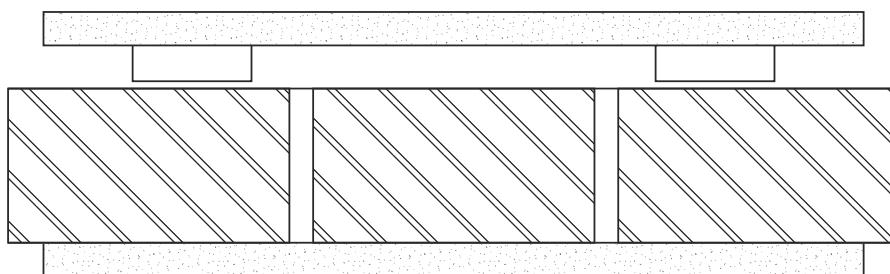
NT Figure 10.7.1k: Calcium silicate brickwork to achieve R_w of 45 (method 1)

**Figure Notes**

Calcium silicate brickwork 90 mm thick with one layer of 10 mm fire-protective grade plasterboard on each side.

Insert NT Figure 10.7.1l as follows:

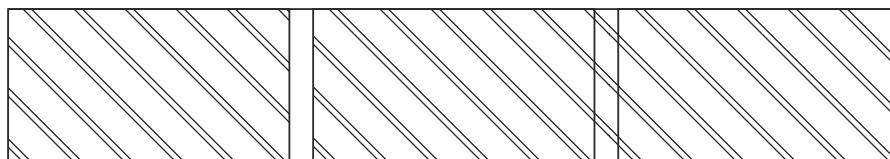
NT Figure 10.7.1l: Calcium silicate brickwork to achieve R_w of 45 (method 2)

**Figure Notes**

Calcium silicate brickwork 90 mm thick with one layer of 10 mm fire-protective grade plasterboard on metal furring channels.

Insert NT Figure 10.7.1m as follows:

NT Figure 10.7.1m: Concrete blockwork to achieve R_w of 45 (method 1)

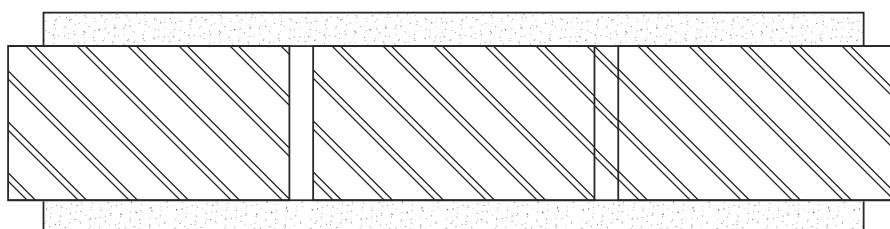
**Figure Notes**

Concrete blockwork with—

- (a) 190 mm solid units (or thicker); and
- (b) material density 2200 kg/m³.

Insert NT Figure 10.7.1n as follows:

NT Figure 10.7.1n: Concrete blockwork to achieve R_w of 45 (method 2)

**Figure Notes**

Concrete blockwork with—

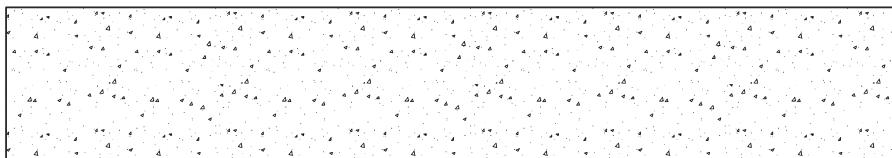
- (a) 110 mm solid units (or thicker); and

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- (b) material density 2200 kg/m³; and
- (c) material thickness — 83 mm minimum; and
- (d) 10 mm plasterboard or 12 mm render on each face.

Insert NT Figure 10.7.1o as follows:

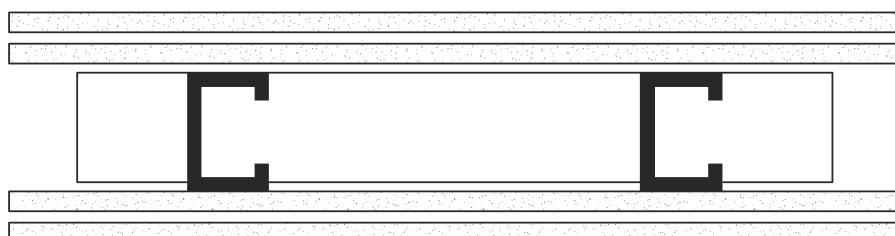
NT Figure 10.7.1o: Concrete wall to achieve R_w of 45

**Figure Notes**

In-situ concrete — 125 mm thick with a density not less than 2200 kg/m³.

Insert NT Figure 10.7.1p as follows:

NT Figure 10.7.1p: Steel stud walling to achieve R_w of 45

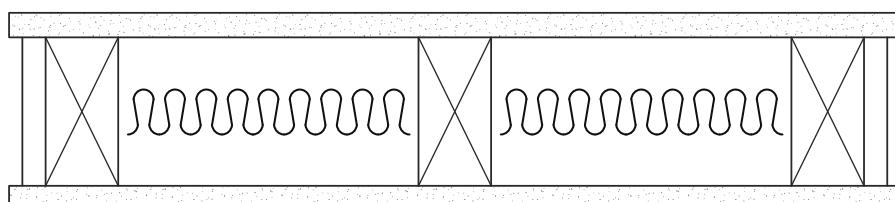
**Figure Notes**

Steel stud walling with—

- (a) 2 layers of 16 mm thick fire-protective grade plasterboard fixed to each face; or
- (b) 2 layers of 13 mm thick plasterboard on both sides of 75 mm studs.

Insert NT Figure 10.7.1q as follows:

NT Figure 10.7.1q: Timber stud walling to achieve R_w of 49

**Figure Notes**

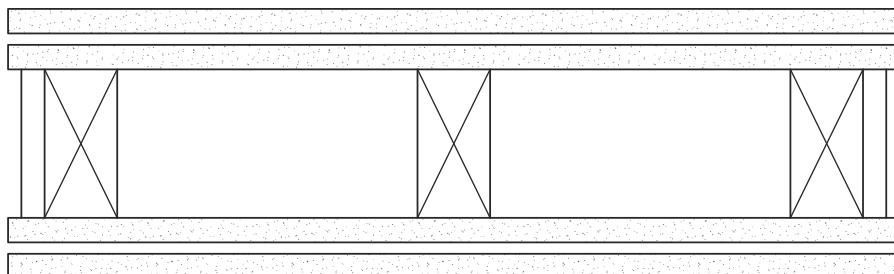
70 mmx 45 mm timber studs at 450 mm - 600 mm centres with—

- (a) one layer of 16 mm fire-protective grade plasterboard on one face; and
- (b) 50 mm glass fibre batts; and
- (c) one layer of 16 mm fire-protective grade plasterboard on metal resilient channel.

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Insert NT Figure 10.7.1r as follows:

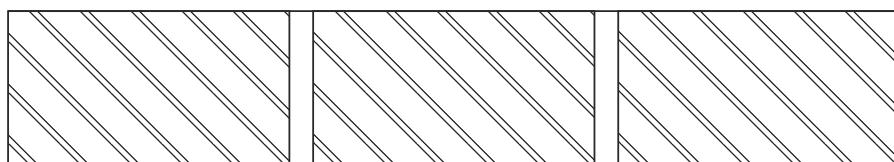
NT Figure 10.7.1r: Timber stud walling to achieve R_w of 46

**Figure Notes**

Timber stud walling with 70 mm x 45 mm timber studs at 450 mm - 600 mm centres with two layers of 16 mm fire-protective grade plasterboard on both sides.

Insert NT Figure 10.7.1s as follows:

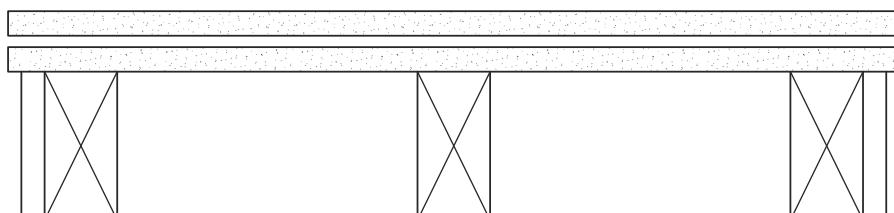
NT Figure 10.7.1s: Ducts or other construction separating soil and waste pipes from units — masonry to achieve R_w of 30

**Figure Notes**

Masonry not less than 90 mm thick.

Insert NT Figure 10.7.1t as follows:

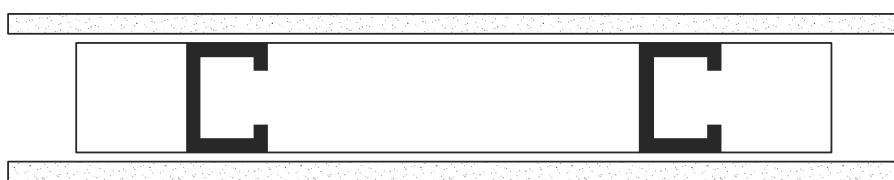
NT Figure 10.7.1t: Ducts or other construction separating soil and waste pipes from units — plasterboard to achieve R_w of 30 (method 1)

**Figure Notes**

2 layers of plasterboard each 10 mm thick, fixed to timber studs not less than 75 mm x 50 mm and spaced at not more than 400 mm centres.

Insert NT Figure 10.7.1u as follows:

NT Figure 10.7.1u: Ducts or other construction separating soil and waste pipes from units — plasterboard to achieve R_w of 30 (method 2)

**Figure Notes**

2 layers of plasterboard each 13 mm thick, one on each side of steel studs not less than 50 mm deep and spaced at not more than 400 mm centres.

NT 10.7.2 General installation requirements for walls

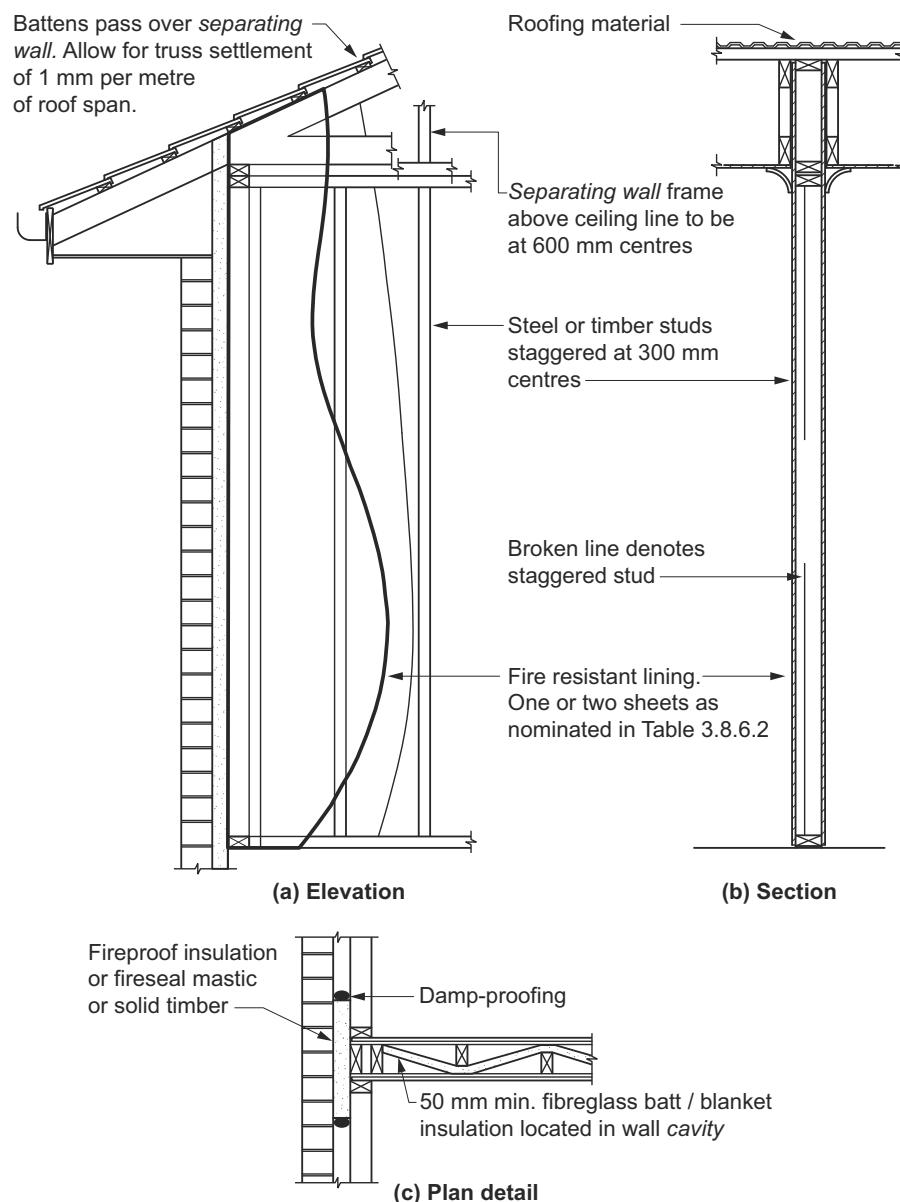
[2019: NT 3.8.6.3]

- (1) To achieve an appropriate R_w and impact sound resistance, walls must—
 - (a) be installed in accordance with the appropriate requirements contained in (2) to (6); and
 - (b) at the junction of sound insulated walls with perimeter walls and roof cladding, be sealed in accordance with any details in [Figure NT 10.7.2a](#).
- (2) Masonry units must—
 - (a) be laid with all joints filled solid, including those between the masonry and any adjoining construction; and
 - (b) not be chased for services.
- (3) Joints between concrete slabs and any adjoining construction must be filed solid.
- (4) Plasterboard must be installed as follows:
 - (a) If one layer is *required* under this Part, joints must be staggered with the joints in sheets on the opposite face of the wall.
 - (b) If 2 layers are *required*, the first layer must be fixed according to (a) and the second layer must be fixed to the first layer with nails, screws or adhesive so that the joints do not coincide with those of the first layer (see [Figure NT 10.7.2b](#)).
 - (c) Joints between sheets or between sheets and any adjoining construction must be taped and filled solid.
 - (d) Fire-protective grade plasterboard (where nominated) must be the grade manufactured for use in fire-resisting construction.
- (5) Steel studs and perimeter members must be installed as follows:
 - (a) The section of steel must be not less than 0.6 mm thick.
 - (b) Studs must be not less than 63 mm in depth unless another depth is specified in [NT 10.7.1](#).
 - (c) Studs must be fixed to steel top and bottom plates of sufficient depth to permit secure fixing of the plasterboard.
 - (d) All steel members at the perimeter of the wall must be securely fixed to the adjoining structure and be bedded in resilient compound or the joints must be caulked so that there are no voids between the steel members and the wall.
- (6) Timber studs and perimeter members must be installed as follows:
 - (a) Studs must be fixed to top and bottom plates of sufficient depth to permit secure fixing of the plasterboard.
 - (b) Noggings and like members must not bridge between studs supporting different wall leaves.
 - (c) All timber members at the perimeter of the wall must be securely fixed to the adjoining structure and bedded in resilient compound or the joints must be caulked so that there are no voids between the timber members and the wall.

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Insert NT Figure 10.7.2a as follows:

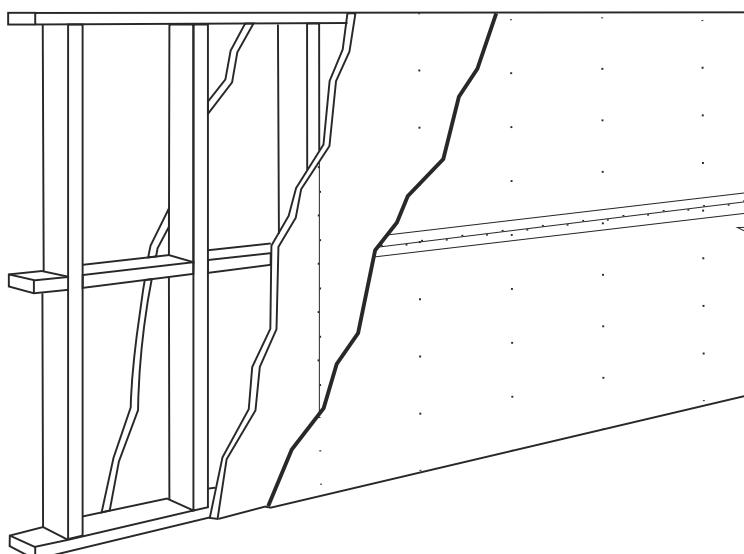
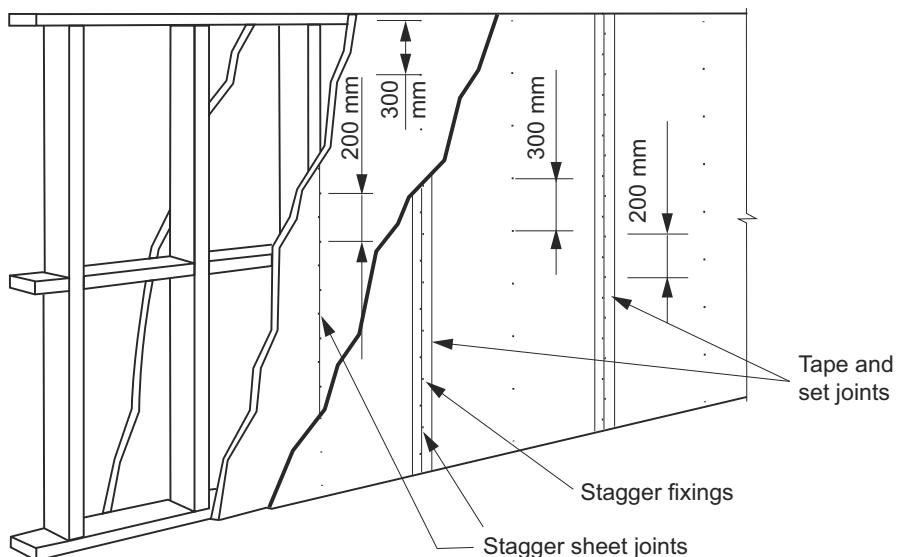
NT Figure 10.7.2a: Sound insulation between units — double stud wall configuration



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Insert NT Figure 10.7.2b as follows:

NT Figure 10.7.2b: Typical installation of plaster sheets for sound insulation



NT 10.7.3 Soil and waste pipes

[2019: NT 3.8.6.4]

If a soil or waste pipe passes through a separating wall—

- a door or panel providing access to the pipe must not open into any *habitable room*, other than a kitchen; and
- an access door or panel in any other part must be firmly fixed so as to overlap the frame or rebate of the frame by not less than 10 mm, be fitted with a sealing gasket along all edges and constructed of—
 - wood, plasterboard or blockboard not less than 38 mm thick; or
 - compressed fibre reinforced cement sheeting not less than 9 mm thick; or

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- (iii) other suitable material with a mass per unit area not less than 24.4. kg/m².

13 Energy efficiency

NT Part 13.6 Whole-of-home energy usage

This Part is deleted from the BCA in Northern Territory.

NT Part 13.1 Scope and application of Section 13

NT 13.1.1 Scope

[New for 2022]

This Section sets out the following *Deemed-to-Satisfy Provisions* for energy efficiency:

- (a) Building fabric (see NT Part 13.2).
- (b) External glazing (see NT Part 13.3).
- (c) Building sealing (see NT Part 13.4).
- (d) Air movement (see NT Part 13.5).
- (e) Services (see NT Part 13.7).

NT 13.1.2 Application

[New for 2022]

The application of this Section is subject to the following:

- (a) The Governing Requirements of NCC Volume Two.
- (b) The Northern Territory variations, additions and deletions contained in the Schedule 6 to NCC Volume Two.

NT Part 13.2 Building fabric

NT 13.2.1 Application of Part 13.2

[New for 2022]

- (1) The provisions of NT 13.2.2 to NT 13.2.6 apply to—
 - (a) a Class 1 building; and
 - (b) a Class 10a building with a *conditioned space*.
- (2) The provisions of NT 13.2.6 apply to a Class 1 building with an attached Class 10a building.
- (3) NT Part 13.2 must be applied as directed in NT H6D2(1)(a) or (b).

NT 13.2.2 Building fabric thermal insulation

[New for 2022]

- (1) Where *required*, insulation must comply with AS/NZS 4859.1 and be installed so that it—
 - (a) abuts or overlaps adjoining insulation other than at supporting members such as studs, noggings, joists and the like where the insulation must butt against the member; and
 - (b) forms a continuous barrier with ceilings, walls, bulkheads, floors or the like that inherently contribute to the thermal barrier; and
 - (c) does not affect the safe or effective operation of a *domestic service* or fitting.
- (2) Where *required*, *reflective insulation* must be installed with—
 - (a) the necessary airspace, to achieve the *required R-Value* between a reflective side of the *reflective insulation* and a building lining or cladding; and
 - (b) the *reflective insulation* closely fitted against any penetration, door or *window* opening; and
 - (c) the *reflective insulation* adequately supported by framing members; and
 - (d) each adjoining sheet of roll membrane being—
 - (i) overlapped not less than 150 mm; or
 - (ii) taped together.
- (3) Where *required*, bulk insulation must be installed so that—
 - (a) it maintains its position and thickness, other than where it crosses roof battens, water pipes, electrical cabling or the like; and
 - (b) in a ceiling, where there is no bulk insulation or *reflective insulation* in the *external wall* beneath, it overlaps the *external wall* by not less than 50 mm.

NT 13.2.3 Roofs

[New for 2022]

- (1) A roof must achieve the *Total R-Value* of 2.7 for the downwards direction of heat flow in *climate zone 1* and downwards and upwards in *climate zone 3*.
- (2) The *Total R-Value* is reduced to 2.2 for each of the following:
 - (a) The roof upper surface has a solar absorptance value of not more than 0.55.
 - (b) The roof space is ventilated by—
 - (i) gable vents, ridge vents, eave vents, roof vents or the like that—
 - (A) are evenly distributed to allow an unobstructed flow of air; and
 - (B) are located to ensure, where practicable, there are no dead airspaces; and
 - (C) have an aggregate fixed open area of not less than 1.0% of the ceiling area; or

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- (ii) not less than 2 wind-driven roof ventilators having an aggregate opening area of not less than 0.14 m² in conjunction with gable vents, ridge vents, eave vents, roof vents or the like having an aggregate fixed open area of not less than 0.2% of the ceiling area; or
- (iii) a tiled roof without *sarking-type material* at roof level.
- (3) A roof that—
- is *required* to achieve a minimum *Total R-Value*; and
 - has metal sheet roofing fixed to metal purlins, metal rafters or metal battens; and
 - does not have a ceiling lining or has a ceiling lining fixed directly to those metal purlins, metal rafters or metal battens,
- must have a thermal break, consisting of a material with an *R-Value* of not less than 0.2, installed between the metal sheet roofing and its supporting member.
- (4) A roof, or roof and associated ceiling, is deemed to have the *Total R-Value required* by Tables NT 13.2.3a, NT 13.2.3b and NT 13.2.3c.
- (5) Where, for operational or safety reasons, ceiling insulation cannot be installed at or around exhaust fans or recessed downlights, a reduction of insulation of 1% or more of the ceiling area must be compensated for by proportionately increasing the *R-Value* of insulation in the remainder of the ceiling in accordance with Table NT 13.2.3d.

Insert NT Table 13.2.3a as follows:

NT Table 13.2.3a: Typical insulation options for typical roof and ceiling construction: Unventilated roof spaces

		Climate zone 1	Climate zone 3
Tiled roof (clay or concrete)	<i>Total R-Value</i> of roof and ceiling materials	0.43	0.37
	Minimum value of added <i>R-Value</i> of insulation	2.27	2.33
Metal roof	<i>Total R-Value</i> of roof and ceiling materials	0.41	0.35
	Minimum value of added <i>R-Value</i> of insulation	2.29	2.35
Minimum <i>required Total R-Value</i>		2.70	2.70

Insert NT Table 13.2.3b as follows:

NT Table 13.2.3b: Typical insulation options for typical roof and ceiling construction: Pitched roof with flat ceiling – ventilated roof space

		Climate zone 1	Climate zone 3
Tiled roof (clay or concrete)	<i>Total R-Value</i> of roof and ceiling materials	0.73	0.22
	Minimum value of added <i>R-Value</i> of insulation	1.97	2.48
Metal roof	<i>Total R-Value</i> of roof and ceiling materials	0.71	0.20
	Minimum value of added <i>R-Value</i> of insulation	1.99	2.50
Minimum <i>required Total R-Value</i>		2.70	2.70

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Insert NT Table 13.2.3c as follows:

NT Table 13.2.3c: Typical insulation options for typical roof and ceiling construction: Pitched roof with flat ceiling – unventilated roof space

		Climate zone 1	Climate zone 3
Tiled roof (clay or concrete)	<i>Total R-Value</i> of roof and ceiling materials	0.55	0.40
	Minimum value of added <i>R-Value</i> of insulation	2.15	2.30
Metal roof	<i>Total R-Value</i> of roof and ceiling materials	0.53	0.38
	Minimum value of added <i>R-Value</i> of insulation	2.17	2.32
Minimum <i>required Total R-Value</i>		2.70	2.70

Insert NT Table 13.2.3d as follows:

NT Table 13.2.3d: Adjusted minimum R-Value of ceiling insulation required to compensate for loss of ceiling insulation area

Percentage of ceiling area uninsulated	Minimum <i>R-Value</i> of ceiling insulation <i>required</i> to satisfy 13.2.3(1)									
	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5
0.5% to less than 1.0%	1.0	1.6	2.2	2.8	3.4	4.0	4.7	5.4	6.2	6.9
1.0% to less than 1.5%	1.1	1.7	2.3	2.9	3.6	4.4	5.2	6.1	7.0	X
1.5% to less than 2.0%	1.1	1.7	2.4	3.1	3.9	4.8	5.8	6.8	X	X
2.0% to less than 2.5%	1.1	1.8	2.5	3.3	4.2	5.3	6.5	X	X	X
2.5% to less than 3.0%	1.2	1.9	2.6	3.6	4.6	5.9	X	X	X	X
3.0% to less than 4.0%	1.2	2.0	3.0	4.2	5.7	X	X	X	X	X
4.0% to less than 5.0%	1.3	2.2	3.4	5.0	X	X	X	X	X	X

Explanatory Information: 13.2.3(2)

- The roof space ventilation option applies to a pitched roof with a flat ceiling to ensure that efficient cross ventilation is achieved in the roof space to remove hot air. Roof space ventilation is generally not suitable for most flat, skillion, cathedral ceiling and similar roof types because of the lack of space between the ceiling and roof.
- Care should be taken to ensure that the roof *ventilation openings* do not allow rain penetration and that they comply with appropriate bushfire provisions.
- Gaps between roof tiles with sarking (or *reflective insulation* at rafter level) and metal sheet roofing are not acceptable methods of providing roof space ventilation.
- Compliance with the ventilation provisions may result in the ingress of wind driven rain or fine dust, or stimulate the growth of mould or fungus in the roof enclosure. Consideration should therefore be given to the surrounding environmental features prior to adopting this as an alternative to the roof insulation provisions.
- A light coloured roof reduces the flow of heat from solar radiation better than a dark colour roof. A roof with a solar absorptance value of less than 0.55 means the roof is of a light colour such as white, off-white, cream or dull zinc aluminium.

Explanatory Information: Tables NT 13.2.3a, NT 13.2.3b and NT 13.2.3c

- Typical construction: The tables above provide examples of various roofs and ceiling, walls and floors. The *Total R-Value required* is achieved by adding the *Total R-Value* of the basic element, i.e. roof and ceiling, walls or floors, and the *R-Value* of any additional insulation incorporated in that element. The *Total R-Value* of the basic roof and ceiling has been determined by adding together the *R-Values* of the outdoor air film, roof cladding, roof airspace, ceiling sheet lining and internal film.
- The *Total R-Value* of the roof and ceiling materials may need to be adjusted if other building elements such as sarking are also installed. For example, sarking or sheet insulation under tiles may change a roof space from "ventilated" to "unventilated".
- Thermal bridging: Irrespective of the framing material used, the minimum added *R-Value* specified is deemed to include the effect of thermal bridging created by framing members in situations other than described in the following point.
- Thermal break: Because of the high thermal conductance of metal, a thermal break is to be provided where the ceiling lining of a house is fixed directly to the underside of the metal purlins or metal battens of a metal deck roof or where there is no ceiling lining. The purpose of the thermal break is to ensure that the thermal performance of this form of roof construction is comparable to that of a similar roof with timber purlins or timber battens. A thermal break may be provided by materials such as timber, expanded polystyrene strips, plywood or compressed bulk insulation. The material used as a thermal break must separate the metal purlins or metal battens from the metal deck roofing and achieve the specified *R-Value*. *Reflective insulation* alone is not suitable for use as a thermal break because it requires an adjoining airspace to achieve the specified *R-Value* (see last point).
- Location of insulation: The thermal performance of the roof may vary depending on the position of the insulation, the climatic conditions, the design of the house and the way in which it is operated. For example, insulation installed under the roof, rather than on the ceiling, of a conditioned house with a large roof space is less effective because of the additional volume of roof air space that would need to be heated or cooled. Conversely, for an unconditioned house, the use of *reflective insulation* is more effective when placed directly under the roof.
- Choice of insulation: There are a number of different insulation products that may be used to achieve the minimum added *R-Value*. However, care should be taken to ensure that the choice made is appropriate for the construction and climatic conditions as the location and relationship other building elements may not be suitable in all circumstances for both practical and technical reasons. For instance, in some *climate zones*, insulation should be installed with due consideration of *condensation* and associated interaction with adjoining building materials. *Reflective insulation* and its adjoining airspace is considered to achieve the following *R-Values* when used in conjunction with the *Total R-Value* of a pitched roof and flat ceiling construction. To achieve these values, the reflective insulation must be laid directly under the roof cladding and have a minimum airspace of 15 mm between a reflective side of the *reflective insulation* and the adjoining lining or roof cladding. The actual *R-Value* added by reflective insulation and its adjoining airspace should be determined for each product which takes into consideration factors such as the number of adjacent airspaces dimensions of the adjacent airspace, whether the space is ventilated and the presence of an anti-glare coating. When reflective insulation has an anti-glare coating on one side, the emittance value of that side will be greater than the value of the uncoated side. Also, where another emittance value for reflective insulation is used (other than the value used in NT Table 13.2.3d), care should be taken to ensure that the number of airspaces allowed for is consistent with the form of construction and whether the airspace is reflective, partially reflective or non-reflective. Where bulk insulation fills the airspace, the *Total R-Value* should be reduced to take account of the loss of airspace.

Explanatory Information: 13.2.3(5) and Table NT 13.2.3d

When considering the reduction of insulation because of exhaust fans and recessed downlights, 1% of the ceiling area for a 200 m² sized house would permit 2 bathroom heater-light assemblies, a laundry exhaust fan, a kitchen exhaust fan and either approximately 25 recessed downlights with 100 mm clearance to the insulation or approximately 10 recessed downlights with 200 mm clearance to the insulation.

NT 13.2.4 Roof lights

[New for 2022]

Roof lights serving a *habitable room* or an interconnecting space such as a corridor, hallway, stairway or the like—

- if the total area of the *roof lights* is more than 1.5% but not more than 10% of the *floor area* of the room or space, must comply with Table NT 13.2.4; or
- if the total area of the *roof lights* is more than 10% of the *floor area* of the room or space they serve, may only

be used where—

- (i) compliance with the natural lighting requirements can only be achieved by a *roof light*; and
- (ii) the transparent and translucent elements of the *roof lights*, imperforate ceiling diffuser, achieve— including any
 - (A) an SHGC of not more than 0.25; and
 - (B) a Total U-Value of not more than 1.3; and
- (c) The aggregate area of *roof lights* serving a building must not exceed 3% of the total area of the floor of the storey served.

Insert NT Table 13.2.4 as follows:

NT Table 13.2.4: Roof lights – thermal performance of transparent and translucent elements

<i>Roof light</i> shaft index	Total area of <i>roof lights</i> serving the room or space as a percentage of the <i>floor area</i> of the room or space	
	Up to 5% of the <i>floor area</i> of the room or space	More than 5% and up to 10%
Less than 0.5	SHGC of not more than 0.5 and a Total U-Value of not more than 5.0	SHGC of not more than 0.25 and a Total U-Value of not more than 2.5
1.0 to 2.5	Total U-Value of not more than 5.0	SHGC of not more than 0.25 and a Total U-Value of not more than 2.5
2.5 and above	Total U-Value of not more than 5.0	SHGC of not more than 0.25 and a Total U-Value of not more than 2.5

Table Notes

- (1) The *roof light* shaft index is determined by measuring the distance from the centre of the shaft at the roof to the centre of the shaft at the ceiling level and dividing it by the average internal dimension of the shaft opening at the ceiling level (or the diameter for a circular shaft) in the same units of measurement.
- (2) The total area of *roof lights* is the combined area for all *roof lights* serving the room or space.
- (3) The area of a *roof light* is the area of the roof opening that allows light to enter the building.
- (4) The thermal performance of an imperforate ceiling diffuser may be included in the Total U-Value of the *roof light*.

NT 13.2.5 External walls

[New for 2022]

- (1) Each part of an *external wall* must satisfy (2) or (3), except for—
 - (a) an *external wall* facing the south orientation sector, as described in NT Figure 13.2.5a; and
 - (b) opaque non-glazed openings such as doors (including garage doors), vents, penetrations, shutters and the like; and
 - (c) *glazing*; and
 - (d) a storey of a building complying with (4).
- (2) For *climate zone 1*, each part of the *external wall* must satisfy one of the following:
 - (a) Achieve a minimum *Total R-Value* of 1.9.
 - (b) Achieve a minimum *Total R-Value* of 1.4 and be constructed on a flooring system that is in direct contact with the ground, such as a concrete slab-on-ground or the like.
 - (c) For masonry *external wall* with a surface density of not less than 220kg/m², shade the *external wall* of the storey with a verandah, balcony, eaves, carport or the like, which—
 - (i) for an *external wall* facing the north and south orientation factors as described in NT Figure 13.2.5a, projects at a minimum angle of 15 degrees; and
 - (ii) for an *external wall* facing north east, east, south east, south west, west, north west orientation factors as described in NT Figure 13.2.5a, projects at a minimum angle of 45 degrees, in accordance with NT Figure 13.2.5b.

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- (d) For a weatherboard, sheet clad or masonry veneer *external wall*—
- incorporate reflective insulation with an emittance of not more than 0.05 inwards; and
 - be constructed on a flooring system that is in direct contact with ground, such as a concrete slab-on-ground or the like; and
 - shade the *external wall* of the storey with a verandah, balcony, eaves, carport or the like which projects at a minimum angle of 15 degrees in accordance with NT Figure 13.2.5b.
- (3) For *climate zone* 3, each part of the *external wall* must satisfy one of the following:
- Achieve a minimum *Total R-Value* of 1.9.
 - Achieve a minimum *Total R-Value* of 1.4 and be constructed on a flooring system that is in direct contact with the ground such as a concrete slab-on-ground or the like.
- (4) The requirements of (1) do not apply to the storey of a building provided—
- the *external walls* achieve a surface density of not less than 220 kg/m²; and
 - the external surface of the *external walls* achieves a solar absorptance of not more than 0.45; and
 - the external glazing achieves a pass when determined with the ABCB 2009 Glazing calculator; and
 - the *external walls* are shaded with a verandah, balcony, eaves, carport or the like which projects at a minimum angle of 15 degrees in accordance with NT Figure 13.2.5b; and
 - the *habitable rooms* contain ceiling fans.

Insert NT Figure 13.2.5a as follows:

NT Figure 13.2.5a: Orientation sectors

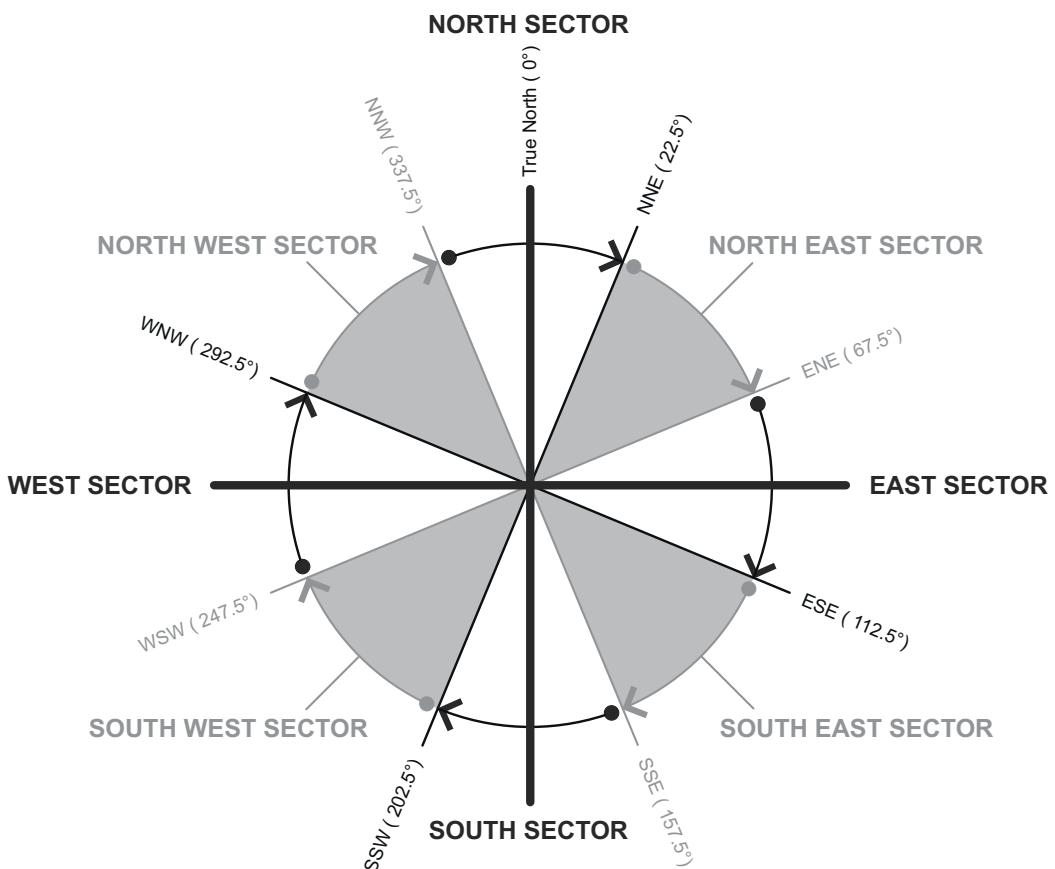


Figure Notes

- The direction that a wall or *glazing* element faces is the direction of a perpendicular line from the wall or *glazing* element.
- This Figure is based on True North and all angles are measured clockwise from True North. Survey angles on site

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plans are usually marked in angles from True North. These angles can be used to establish True North for a particular site.

- (3) Magnetic North, found by a magnetic compass, varies from True North over time and by different amounts in different locations. Magnetic North is not an acceptable approximation of True North.
- (4) The eight orientation sectors shown in this Figure do not overlap at their boundaries. North sector, for example, begins just clockwise after the NNW line and ends exactly on the NNE line. The start and end of other sectors are determined in a similar way, as indicated by the outer curved arrows.

Insert NT Figure 13.2.5b as follows:

NT Figure 13.2.5b: Measurement of a projection for wall shading

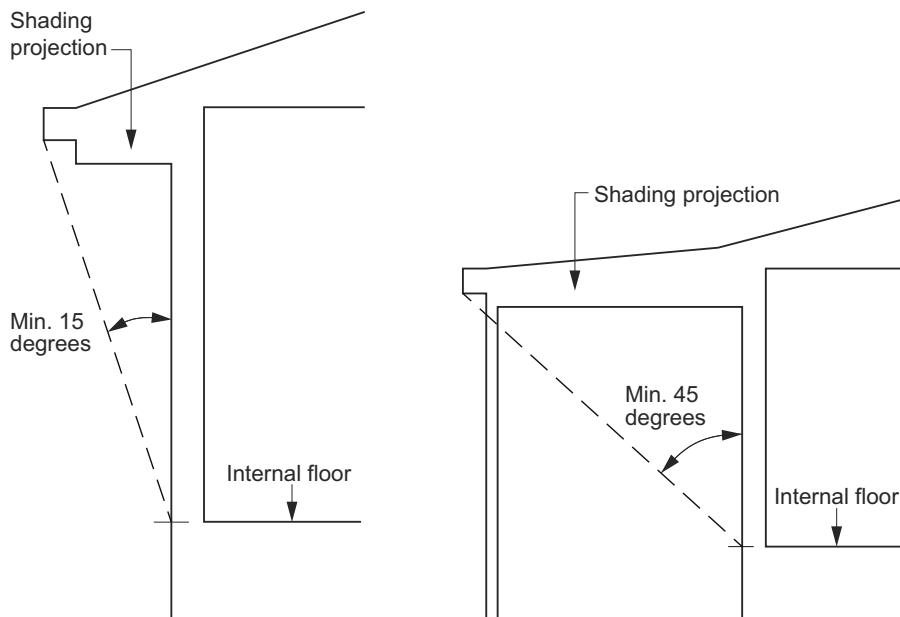


Figure Notes

Guttering can be considered as providing shading if attached to a shading projection.

Explanatory Information

Walls with a surface density of 220 kg/m² or more are deemed to achieve acceptable levels of thermal performance due to their ability to store heat and therefore slow the heat transfer through the building *fabric*. These walls are defined by surface density (kg/m²), which is the mass of one vertical square metre of wall, in order to reduce the complexity when measuring the mass of walls with voids.

The following are examples of some typical wall constructions that achieve a surface density of 220 kg/m²:

- Two leaves each of 90 mm thick or greater clay or concrete masonry.
- 140 mm thick or greater dense-weight hollow concrete or clay blocks with—
 - 10 mm plasterboard or render; and
 - at least one concrete grouted horizontal bond beam; and
 - vertical cores filled with concrete grout at centres not exceeding 1000 mm.
- 140 mm thick or greater concrete wall panels and dense-weight hollow concrete or clay blocks with all vertical cores filled with concrete grout.
- 190 mm thick or greater dense-weight hollow concrete or clay blocks with—
 - at least one concrete grouted horizontal bond beam; and
 - vertical cores filled with concrete grout at centres not exceeding 1800 mm.
- Earth-wall construction with a minimum wall thickness of 200 mm.

NT 13.2.6 Attached Class 10a buildings

[New for 2022]

A Class 10a building attached to a Class 1 building must—

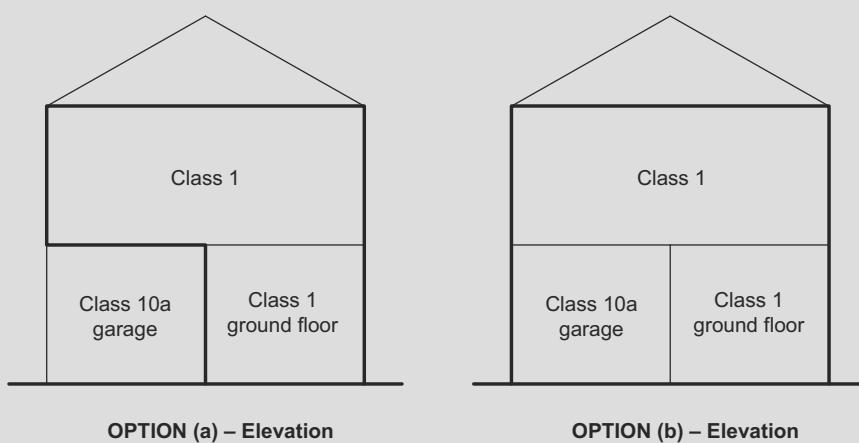
- (a) have an external *fabric* that achieves the *required* level of thermal performance for a Class 1 building; or
- (b) be separated from the Class 1 building with construction having the *required* level of thermal performance for the Class 1 building.

Explanatory Information

The attachment of a Class 10a building, such as a garage, glasshouse, solarium, pool enclosure or the like should not compromise the thermal performance of the Class 1 building. In addition, the Class 10a building may be insulated and so assist the Class 1 building achieve the *required* thermal performance. *Explanatory Figure NT 13.2.6* below depicts examples of a Class 1 building with an attached Class 10a garage.

Insert NT Figure 13.2.6 (explanatory) as follows:

NT Figure 13.2.6 (explanatory): Attached Class 10a building examples

**Figure Notes**

In (a), the thermal performance *required* for the Class 1 building may be achieved by the outside walls and floor of the Class 10a garage.

In (b), the thermal performance *required* for the Class 1 building may be achieved by the walls and floor of the Class 1 building as if the Class 10a garage is an under floor space with an enclosed perimeter.

NT Part 13.3 External glazing

NT 13.3.1 Application of Part 13.3

[New for 2022]

This Part applies to—

- (a) a Class 1 building; and
- (b) a Class 10a building with a *conditioned space*.

NT 13.3.2 External glazing

[New for 2022]

Compliance with this part is demonstrated with a “passed” result produced with the ABCB Glazing calculator certificate for the glazing in the building.

NT 13.3.3 Shading

[New for 2022]

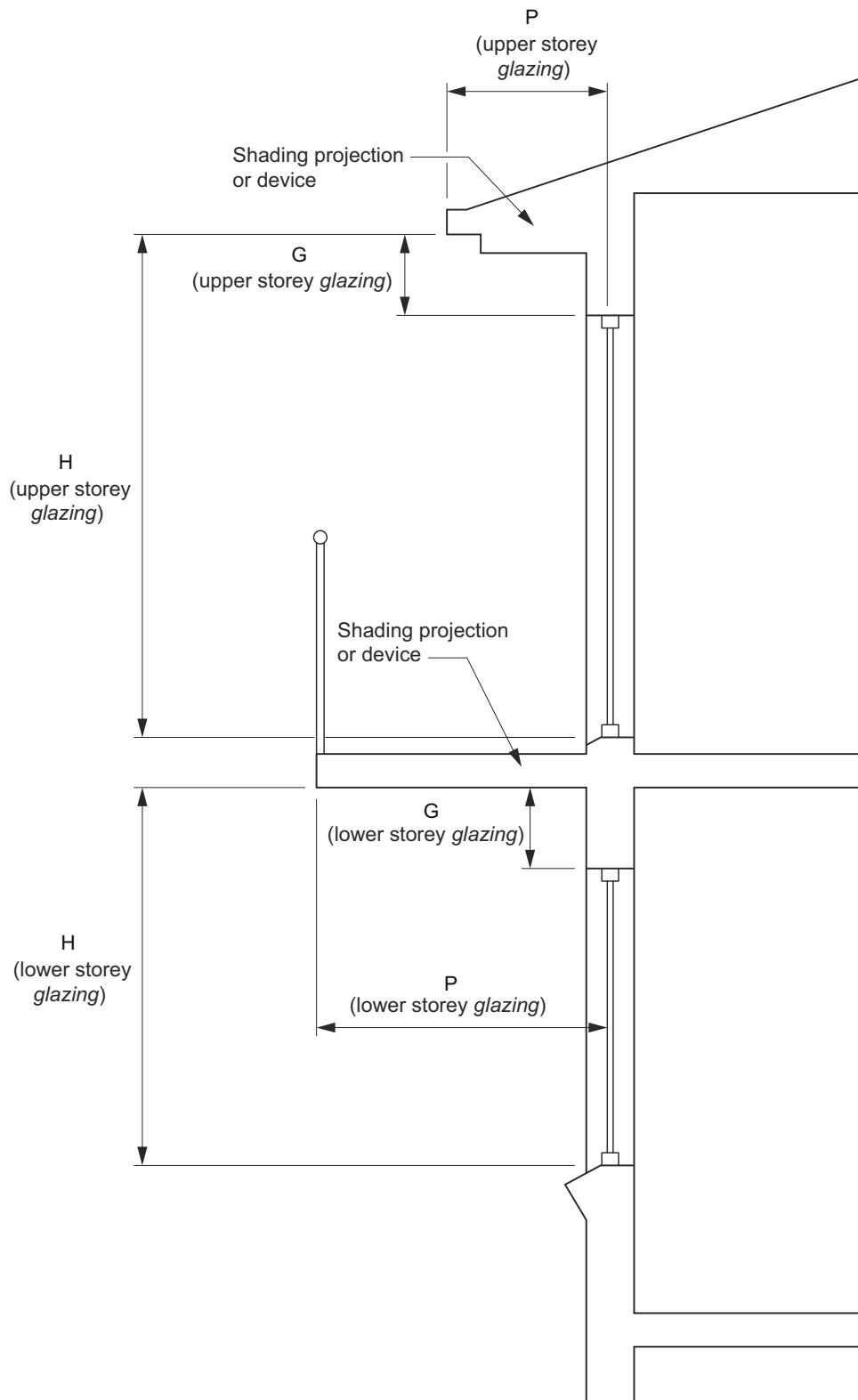
Where shading is *required* to comply with NT 13.3.2, it must—

- (a) be provided by an external permanent projection, such as a verandah, balcony, fixed canopy, eaves, shading hood or carport, which—
 - (i) extends horizontally on both sides of the *glazing* for a distance not less than the projection distance P in NT Figure 13.3.3; or
 - (ii) provide the equivalent shading to (i) with a reveal or the like; or
- (b) be provided by an external shading device, such as a shutter, blind, vertical or horizontal building screen with blades, battens or slats, which—
 - (i) is capable of restricting at least 80% of the summer solar radiation; and
 - (ii) if adjustable, is readily operated either manually, mechanically or electronically by the building occupants.

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Insert NT Figure 13.3.3 as follows:

NT Figure 13.3.3: Method of measuring P and H

**Figure Notes**

- (1) An external shading device that complies with **NT 13.3.3(b)** is considered to achieve a P/H value of 2.00.

Northern Territory

(2) Where G exceeds 500 mm, the value of P must be halved.

Explanatory Information

- Shading devices can include fixed louvres, shading screens and other types of perforated or fixed angle slatted shades. However, such devices need to be designed for the climate and latitude to ensure that summer sun penetration is restricted, while winter sun access is achieved.
- Gutters can only be considered as providing shading if attached to a shading projection such as a verandah, fixed canopy, eaves, shading hood, balcony or the like.
- Shading devices can be either attached or located adjacent to the building. For example, a free-standing lattice screen may be considered to provide shading to *glazing* if it complies with NT 13.3.3(b)(ii).
- An adjustable shading device should be readily operated from a safe location or platform that does not require ladders, rigging, harnessing or the like.

NT Part 13.4 Building sealing

NT 13.4.1 Application of Part 13.4

[New for 2022]

This Part applies to—

- (a) a Class 1 building; and
- (b) a Class 10a building with a *conditioned space*.

Applications

This Part does not apply to:

- (a) A building where the only means of air-conditioning is by using an evaporative cooler.
- (b) A permanent building ventilation opening that is necessary for the safe operation of a gas appliance.
- (c) A Class 10a building used for the accommodation of vehicles.

NT 13.4.2 Chimneys and flues

[New for 2022]

The chimney or flue of an open solid-fuel burning appliance must be provided with a damper or flap that can be closed to seal the chimney or flue.

NT 13.4.3 Roof lights

[New for 2022]

- (1) A *roof light* must be sealed, or capable of being sealed, when serving a *conditioned space*.
- (2) A *roof light required* by (1) must be constructed with—
 - (a) an imperforate ceiling diffuser or the like installed at the ceiling or internal lining level; or
 - (b) a weatherproof seal if it is a roof window; or
 - (c) a shutter system readily operated either manually, mechanically or electronically by the occupant.

NT 13.4.4 External windows and doors

[New for 2022]

- (1) A seal to restrict air infiltration must be fitted to each edge of an external door, openable window and other such opening when serving a *conditioned space*.
- (2) The following need not comply with (1):
 - (a) An external louvre door, louvre window or other such opening.
 - (b) A *window* complying with the maximum air infiltration rates specified in AS 2047.
- (3) A seal *required* by (1) may be a foam or rubber compressible strip, fibrous seal or the like.

NT 13.4.5 Exhaust fans

[New for 2022]

An exhaust fan must be fitted with a sealing device such as a self-closing damper, filter or the like when serving a *conditioned space*.

Explanatory Information

An exhaust fan is considered to be adequately sealed if it is fitted with a filter such as the type commonly used in kitchen range hoods.

NT 13.4.6 Construction of ceilings, walls and floors

[New for 2022]

- (1) Ceilings, walls, floors and any opening such as a *window* frame, door frame, *roof light* frame or the like must be constructed to minimise air leakage in accordance with (2) when forming part of the external fabric a *conditioned space*.
- (2) Construction *required* by (1) must be—
 - (a) enclosed by internal lining systems that are close fitting at ceiling, wall and floor junctions; or
 - (b) sealed at junctions and penetrations with—
 - (i) by close-fitting skirting, architraves, cornices; or
 - (ii) expanding foam, rubber compressive strip, or caulking, or the like.

NT 13.4.7 Evaporative coolers

[New for 2022]

An evaporative cooler must be fitted with a self-closing damper or the like when serving a heated space.

Explanatory Information

The self-closing damper should create an effective seal against air infiltration.

NT Part 13.5 Air movement

NT 13.5.1 Application of Part 13.5

[New for 2022]

This Part applies to a *habitable room* in a Class 1 building.

NT 13.5.2 Air movement

[New for 2022]

- (1) Air movement must be provided to *habitable rooms* in accordance with **Table NT 13.5.2**.
- (2) Air movement *required* by (1) may be provided through an opening from an adjoining room (including an enclosed verandah) if—
 - (a) the adjoining room is not a *sanitary compartment*; and
 - (b) the opening between the adjoining room and the *habitable room* complies with **Table NT 13.5.2** as if it were a *ventilation opening* to the *habitable room* or a proportion thereof if some ventilation is provided from another source; and
 - (c) the *ventilation opening* to the adjoining room complies with **Table NT 13.5.2** for the total area of the floor of the adjoining room and the proportion of the *habitable room* that is ventilated from the adjoining room.

Insert *NT Table 13.5.2* as follows:

NT Table 13.5.2: Minimum total ventilation opening area as a percentage of the floor area for each habitable room

Climate zone	Minimum total <i>ventilation opening</i> area per <i>habitable room</i> (percentage of the area of the floor of the <i>habitable room</i>)		
	Without a ceiling fan or evaporative cooler	With a ceiling fan	With an evaporative cooler
1	15%	12.5%	15%
3	12.5%	7.5%	7.5%

NT 13.5.3 Ventilation openings

[New for 2022]

- (1) The total *ventilation opening* area *required* by **Table NT 13.5.2** to a *habitable room* must—
 - (a) be connected by a breeze path complying with (b) to another *ventilation opening* in another room or space; or
 - (b) be provided by a minimum of two ventilation openings located within the same *habitable room*, with each *ventilation opening* having an area of not less than 25% of the area *required* by **Table NT 13.5.2**.
- (2) A breeze path *required* by (1)(a) must—
 - (a) pass through not more than two openings in the internal walls with each opening having an area of not less than 1.5 m²; and
 - (b) have a distance along the breeze path between *ventilation opening* of not more than 20 m.

Explanatory Information

- *Ventilation openings* should be designed to allow the interior of the building to take full advantage of any natural breeze. Careful consideration should be given to the type and location of openings to ensure optimum effect is achieved and that internal “dead air pockets” are avoided.
- An opening may serve more than one breeze path.
- Two openings are stated in NT 13.5.3(2)(a) as the limit of the number of openings permitted in a breeze path. These

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are typically doorways. Larger openings, such as those between adjoining lounge and dining areas in the same space are unlikely to restrict air movement significantly.

NT Part 13.7 Services

NT 13.7.1 Application of Part 13.7

[New for 2022]

This Part applies to—

- (a) a Class 1 building; and
- (b) a Class 10a building.

NT 13.7.2 Insulation of services

[New for 2022]

Thermal insulation for central heating water *piping* and heating and cooling ductwork must be—

- (a) protected against the effects of weather and sunlight; and
- (b) able to withstand the temperatures within the *piping* or ductwork.

Explanatory Information

The central heating water *piping* provisions apply to systems designed to heat the building via water, such as a hydronic heating system.

NT 13.7.3 Central heating water piping

[New for 2022]

- (1) Central heating water *piping* that is not within a *conditioned space* must be thermally insulated to achieve the minimum *Total R-Value* of 0.6.
- (2) Internal *piping* including—
 - (a) flow and return *piping* that is—
 - (i) within an unventilated wall space; or
 - (ii) within an internal floor between storeys; or
 - (iii) between ceiling insulation and a ceiling; and
 - (b) heated water piping encased in a concrete floor slab (except that which is part of a floor heating system), must in all *climate zones*, have a minimum material *R-Value* of 0.4.
- (3) All *piping* located outside a building, or within a ventilated wall space, subfloor or roof space must have a minimum material *R-Value* of 0.6.

Explanatory Information

- The insulation levels in NT Explanatory Table 13.7.3 are typical examples of materials that can be used to insulate central heating water *R-Value*. Other methods are available for meeting the *Total R-Values required*.
- *Piping* within a timber member, such as that passing through a wall stud, is considered to have sufficient insulation.

Insert NT Table 13.7.3 (explanatory) as follows:

NT Table 13.7.3 (explanatory): R-Value of the insulation used for smaller diameter piping

Insulation	R-Value
9 mm of closed cell polymer	0.4
13 mm of closed cell polymer	0.6
19 mm of closed cell polymer	0.9

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Insulation	R-Value
25 mm of closed cell polymer	1.3
25 mm of glasswool	1.3

NT 13.7.4 Heating and cooling ductwork

[New for 2022]

- (1) Heating and cooling ductwork and fittings must—
- achieve the minimum *Total R-Value* in accordance with NT Table 13.7.4; and
 - use thermal insulation material in accordance with AS/NZS 4859.1; and
 - be sealed against air loss—
 - by closing all openings in the surface, joints and seams of ductwork with adhesives, mastics, sealants or gaskets in accordance with AS 4254 for a Class C seal; or
 - for flexible ductwork, with a draw band in conjunction with a sealant or adhesive tape.
- (2) Duct insulation located under a suspended floor, in an attached Class 10a building and in a roof space must—
- be protected by an outer sleeve of protective sheeting to prevent the insulation becoming damp; and
 - have the outer protective sleeve sealed with adhesive tape not less than 48 mm wide creating an airtight and waterproof seal.
- (3) The requirements of (1) do not apply to heating and cooling ductwork and fittings located within the insulated building *envelope* including a service riser within the *conditioned space*, internal floors between storeys and the like.

*Insert NT Table 13.7.4 as follows:***NT Table 13.7.4: Heating and cooling ductwork and fittings – minimum total R-Value**

Element	Minimum R-Value for ductwork and fittings		
	Evaporative cooling system	Heating-only system or refrigerated cooling-only system	Combined heat and refrigerated cooling system
Ductwork	0.6	1.0	1.5
Fittings		0.4	

Table Notes

The minimum material *R-Value required* for ductwork may be reduced by 0.5 for combined heating and refrigerated cooling systems if the ducts are—

- under a suspended floor with an enclosed perimeter; or
- in a roof space that has an insulation of greater than or equal to R0.5 directly beneath the roofing.

Explanatory Information

- Insulation for refrigerated cooling ductwork should have a vapour barrier to prevent possible damage by condensation.
- The insulation levels in NT Explanatory Tables 13.7.4a, 13.7.4b and 13.7.4c are typical examples of materials that can be used to insulate ductwork and fittings and the *R-Values* they contribute.
- For fittings, 11mm polyurethane typically provides an *R-Value* of 0.4.
- NT Explanatory Tables 13.7.4a, 13.7.4b and provides *R-Values* for typical ductwork insulation materials:

Insert NT Table 13.7.4a (explanatory) as follows:

Northern Territory**NT Table 13.7.4a (explanatory): Flexible ductwork**

Insulating material and thickness	R-Value
45 mm glasswool (11 kg/m ³)	1.0
70 mm polyester (6.4 kg/m ³)	1.0
63 mm glasswool (11 kg/m ³)	1.5
90 mm polyester (8.9 kg/m ³)	1.5
85 mm glasswool (11 kg/m ³)	2.0

Insert NT Table 13.7.4b (explanatory) as follows:

NT Table 13.7.4b (explanatory): Sheetwork ductwork – external insulation

Insulating material and thickness	R-Value
38 mm glasswool (22 kg/m ³)	1.0
50 mm polyester (20 kg/m ³)	1.1
50 mm glasswool (22 kg/m ³)	1.5
75 mm polyester (20 kg/m ³)	1.7

Insert NT Table 13.7.4c (explanatory) as follows:

NT Table 13.7.4c (explanatory): Sheetmetal ductwork – internal insulation

Insulating material and thickness	R-Value
38 mm glasswool (32 kg/m ³)	1.0
50 mm polyester (32 kg/m ³)	1.3
50 mm glasswool (32 kg/m ³)	1.5

NT 13.7.5 Water heater in a heated water supply system

[New for 2022]

A water heater in a heated water supply system must be designed and installed in accordance with Part B2 of NCC Volume Three – Plumbing Code of Australia.

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Schedule 2 Referenced documents

Insert NT Table 1 as follows:

NT Table 1: Schedule of referenced documents

No.	Date	Title	Volume One	Volume Two	Housing Provisions
AS/NZS 1170 Part 2	2011	Structural design actions: Wind actions Amdt 1, 2, 3, 4 and 5	NT S4C3	N/A	N/A
AS 2047	2014	Windows and external glazed doors in buildings (incorporating amendments 1 and 2) See Note	B1D4, F3V1, F3D4	H1D8, H2V1	NT 13.4.4
AS 3660 Part 1	2014	Termite management: New building work	NT B1D4	N/A	NT 3.4.1(2), NT 3.4.2
AS 4254 Part 1	2012	Ductwork for air handling systems in buildings — Flexible duct	N/A	N/A	NT 13.7.4
AS 4254 Part 2	2012	Ductwork for air handling systems in buildings — Rigid duct	Spec 7	N/A	NT 13.7.4
AS/NZS 4859.1	2018	Thermal insulation materials for buildings — General criteria and technical provisions	N/A	N/A	NT 13.2.2, NT 13.7.4
BCA 2009	May 2009	Building Code of Australia	NT Section J	N/A	N/A
BCA 2019	May 2009	Building Code of Australia	NT Section J	N/A	N/A

Table Notes

For AS 2047:

- (a) Tests carried out under earlier editions of AS 2047 remain valid.
- (b) Reports based on AS 2047 relating to tests carried out after the NCC reference date for AS 2047—2014 Amendment 2 must relate to the amended Standard.

Schedule 7 Queensland

3 Site preparation

- | | |
|-----------|---|
| Part 3.4 | Termite risk management |
| 3.4.1 | Requirements for termite management systems |
| QLD 3.4.2 | Termite management systems |

Schedule 1 Definitions

Schedule 2 Referenced documents

3 Site preparation

Part 3.4 Termite risk management

3.4.1 Requirements for termite management systems

[2019: 3.1.4.2]

Insert subclause QLD 3.4.1(3) in clause 3.4.1 as follows:

- (3) A termite management system installed in a Class 1 or 10 building minimise the risk of termite attack to *primary building elements* shall be in accordance with clause 3.4.2.

Insert subclause QLD 3.4.1(4) in clause 3.4.1 as follows:

- (4) The termite management system required by (3) must have—
(a) for a non-temporary Class 1 building, a design life of at least 50 years; or
(b) for other than a non-temporary Class 1 building, a design life of at least 50 years or the specified design life of the building, whichever is the lesser.

Insert subclause QLD 3.4.1(5) in clause 3.4.1 as follows:

- (5) A termite management system need not comply with (4) if it is easily and readily accessible for replenishment or replacement and is capable of being replenished or replaced.

Insert subclause QLD 3.4.1(6) in clause 3.4.1 as follows:

- (6) Where a chemical is used as an external perimeter termite management system, it must be—
(a) installed by excavating trenches, treating the exposed trench and backfilling the trench with treated material; and
(b) covered by a concrete cover strip not less than 50 mm thick and 300 mm wide measured from the external wall of the building.

Delete 3.4.2 and insert QLD 3.4.2 as follows:

QLD 3.4.2 Termite management systems

[2019: QLD 3.1.4.3]

Where a termite management system is required it must—

- (a) be selected appropriate to QLD Table 3.4.2; and
(b) comply with—
(i) AS 3660.1 subject to clauses QLD 3.4.1(4), (5) and (6); or
(ii) have been tested and passed the tests *required* by Section 5 of AS 3660.3; and
(c) have a durable notice installed in accordance with 3.4.3; and
(d) where a chemical termite management system is used, the chemical must be included on the *appropriate authority's* pesticides register.

Insert QLD Table 3.4.2 as follows:

QLD Table 3.4.2: Acceptable termite management systems and components (per AS 3660.1)

Footing system	Slab edge exposure	Termite shielding	Stainless steel mesh	Graded stone	Chemicals
Concrete slab on ground complying with AS 2870: Penetrations and control joints	Not suitable	Not suitable	Component; or full system subject to 3.4.1(4)	Component; or full system subject to 3.4.1(4)	Full system beneath slab subject to 3.4.1(4) and (5)

Footing system	Slab edge exposure	Termite shielding	Stainless steel mesh	Graded stone	Chemicals
Concrete slab on ground complying with AS 2870: Slab perimeter	Suitable subject to 3.4.1(4)	Not suitable	Component; or full system subject to 3.4.1(4)	Component; or full system subject to 3.4.1(4)	Perimeter system subject to 3.4.1(4) and (6)
Concrete slab on ground not complying with AS 2870: Beneath slab (includes penetrations and control joints)	Not suitable	Not suitable	Full system subject to 3.4.1(4)	Full system subject to 3.4.1(4)	Full system beneath slab subject to 3.4.1(4) and (5)
Concrete slab on ground not complying with AS 2870: Slab perimeter	Suitable subject to 3.4.1(4)	Not suitable	Full system subject to 3.4.1(4)	Full system subject to 3.4.1(4)	Perimeter system subject to 3.4.1(4) and (6)
Suspended floors	Not applicable	Suitable subject to 3.4.1(4)	Suitable subject to 3.4.1(4)	Component; or full system subject to 3.4.1(4)	Full system subject to 3.4.1(4)

Schedule 1 Definitions

Primary building element

For the purposes of—

- (1) Volume One, a member of a building designed specifically to take part of the loads specified in B1D3 and includes roof, ceiling, floor, stairway or ramp and wall framing members including bracing members designed for the specific purpose of acting as a brace to those members; or
- (2) Volume Two—
 - (a) A member of a building specifically designed to take part of the building loads and includes roof, ceiling, floor, stairway or ramp and wall framing members including bracing members designed for the specific purpose of acting as a brace to those members; and
 - (b) door jambs, window frames and reveals, architraves and skirtings.

Explanatory Information

The loads to which a building may be subjected are dead, live, wind, snow and earthquake loads. Further information on building loads can be found in the AS 1170 series of Standards.

Queensland

Schedule 2 Referenced documents

Insert QLD Table 1 as follows:

QLD Table 1: Schedule of referenced documents

No.	Date	Title	Volume One	Volume Two	Housing Provisions
BCA 2009	May 2009	Building Code of Australia	QLD Section J	N/A	N/A
N/A	December 2017	Queensland Government, Department of Agriculture, Fisheries and Forestry – Construction timbers in Queensland: Book 1 and Book 2: Properties and specifications for satisfactory performance of construction timbers in Queensland – Class 1 and 10 buildings (Houses, carports, garages, greenhouses and sheds)	QLD B1D4	QLD H1D6	N/A
N/A	N/A	Building Act 1975	N/A	QLD H7P1, QLD H7D2	N/A
		Queensland Development Code MP 4.1 – Sustainable buildings	Section J	Part H6	Section 13

Schedule 8 South Australia

4

Footings and slabs

- | | |
|-----------|---|
| Part 4.2 | Footings, slabs and associated elements |
| SA 4.2.8 | Damp-proofing membrane |
| SA 4.2.10 | Concrete |

9

Fire safety

- | | |
|----------|-------------------------------------|
| Part 9.2 | Fire separation of external walls |
| SA 9.2.1 | External walls of Class 1 buildings |
| 9.2.2 | Measurement of distances |
| 9.2.4 | Class 10a buildings |
| SA 9.2.8 | Open carports |
| SA 9.2.9 | Allowable encroachments |

10

Health and amenity

- | | |
|------------|---------------------------|
| Part 10.2 | Wet area waterproofing |
| SA 10.2.1 | Wet areas |
| SA 10.2.33 | Provision of floor wastes |

13

Energy efficiency

- | | |
|-----------|-------------------------------------|
| Part 13.1 | Scope and application of Section 13 |
| SA 13.1.2 | Application |

Schedule 1

Definitions

Schedule 2

Referenced documents

4 Footings and slabs

Part 4.2 Footings, slabs and associated elements

Delete 4.2.8 and insert SA 4.2.8 as follows:

SA 4.2.8 Damp-proofing membrane

[2019: SA 3.2.2.6]

A continuous damp-proofing membrane must be installed under slab-on-ground construction for all Class 1 buildings and for Class 10 buildings where the slab is continuous with the slab of a Class 1 building as follows—

- (a) Materials: A damp-proofing membrane must be—
 - (i) 0.2 mm nominal thickness polyethylene film; and
 - (ii) high impact resistant with resistance to puncturing and moisture penetration, determined in accordance with criteria specified in clause 5.3.3.3 of AS 2870; and
 - (iii) branded continuously “AS 2870 Concrete underlay, 0.2 mm High impact resistance” together with the manufacturer’s or distributor’s name, trade mark or code.
- (b) Installation: A damp-proofing membrane must be installed as follows—
 - (i) lap not less than 200 mm at all joints; and
 - (ii) tape or seal with a close fitting sleeve around all service penetrations; and
 - (iii) fully seal where punctured (unless for service penetrations) with additional polyethylene film and tape.
- (c) The damp-proofing membrane must be placed beneath the slab so that the bottom surface of the slab is entirely underlaid and extends under edge beams to finish at ground level in accordance with [Figure 4.2.8](#).

Delete 4.2.10 and insert SA 4.2.10 as follows:

SA 4.2.10 Concrete

[2019: SA 3.2.3.1(d) to (g)]

Concrete must comply with the following:

- (a) Concrete must be manufactured to comply with AS 3600; and—
 - (i) have a strength at 28 days of not less than 20 MPa (denoted as N20 grade); and
 - (ii) have a 20 mm maximum nominal aggregate size; and
 - (iii) have a nominal 100 mm slump.
- (b) Water must not be added to the mix to increase the slump to a value in excess of that specified.
- (c) Concrete must be placed, compacted and cured in accordance with good building practice.
- (d) Concrete in slabs must be adequately compacted, and slab surfaces, including edges, moist cured for 7 days.
- (e) After vertical surfaces are stripped of formwork, slab edges must be finished prior to curing.
- (f) Loading of concrete slabs with stacked materials or building plant must not occur for a minimum of 7 days after pouring although construction of wall frames and setting out brickwork may be undertaken during this period.
- (g) Concrete must not be poured if the air temperature on *site* exceeds 32°C unless written instructions from a *Professional Engineer* are followed.

Explanatory Information

- Complete discharge of the concrete from the truck should be made within one and a half hours of initial mixing with water unless a suitable retarder has been specified.
- Compacting concrete by vibration removes air pockets and works the concrete thoroughly around reinforcement, service penetrations etc. and into corners of formwork to increase durability and resistance to termite infestation and salt damp attack. Care should be taken not to over-vibrate. The finishing and curing of slab edges provides an improved edge finish which is resistant to edge dampness.

South Australia

- Care should be taken when using chemical curing methods, because some products may not be compatible with adhesives used to fix surface finishes to the slab.

9 Fire safety

Part 9.2 Fire separation of external walls

Delete 9.2.1 and insert SA 9.2.1 as follows:

SA 9.2.1 External walls of Class 1 buildings

[2019: SA 3.7.2.2(b) and (c)]

An *external wall* of a Class 1 building, and any openings in that wall, must comply with 9.2.3 if the wall is less than—

- (a) 900 mm from an allotment boundary other than the boundary adjoining a road alignment or other public space; or
- (b) 1.8 m from another building on the same allotment other than an appurtenant Class 10 building associated with the Class 1 building or a detached part of the same Class 1 building; or
- (c) 3 m from a *brush fence*.

9.2.2 Measurement of distances

[2019: 3.7.2.3]

Insert subclause SA 9.2.2(4) in clause 9.2.2 as follows:

- (4) The distance from any point on an *external wall* of a building to a *brush fence* is measured in any direction from the *external wall*.

9.2.4 Class 10a buildings

[2019: 3.7.2.5]

Insert subclause SA 9.2.4(3) in clause 9.2.4 as follows:

- (3) A carport or verandah may have timber posts and timber roof support beams regardless of their distance from the boundary.

Insert subclause SA 9.2.4(4) in clause 9.2.4 as follows:

- (4) A Class 10a *brush fence* must not be constructed within 3 m of a Class 1 building unless any part of the building within 3 m of the *brush fence* complies with the *fire-resisting* requirements of 9.2.1, 9.2.2, 9.2.3 and 9.2.9.

Delete 9.2.8 and insert SA 9.2.8 as follows:

SA 9.2.8 Open carports

[2019: SA 3.7.2.6(a)]

A Class 10a carport is exempt from complying with 9.2.4(1) if—

- (a) it has—
 - (i) two or more sides open and not less than one third of its perimeter open and, for the purpose of this clause, a side is considered to be open if the roof covering adjacent to that side is not less than 500 mm from another building or allotment boundary; or
 - (ii) any part of the *external wall* of the Class 1 building located less than 2 m from the allotment boundary or less than 4 m from another Class 1 building on the same allotment is *fire-resisting* to the underside of a *non-combustible* roof covering or to the underside of a *non-combustible* ceiling lining (see SA Figure 9.2.8a, SA Figure 9.2.8b and SA Figure 9.2.8c); and
- (b) it has polycarbonate or *non-combustible* roof covering and any ceiling lining and wall cladding, including gables, is also *non-combustible* (see Figure 9.2.8a); and
- (c) it does not provide direct vertical support to any part of the Class 1 building; and
- (d) in the case where it has a common roof structure with the Class 1 building and the carport or verandah does not have a ceiling (see Figure 9.2.8b), the opening between the top of the wall of the Class 1 building and the

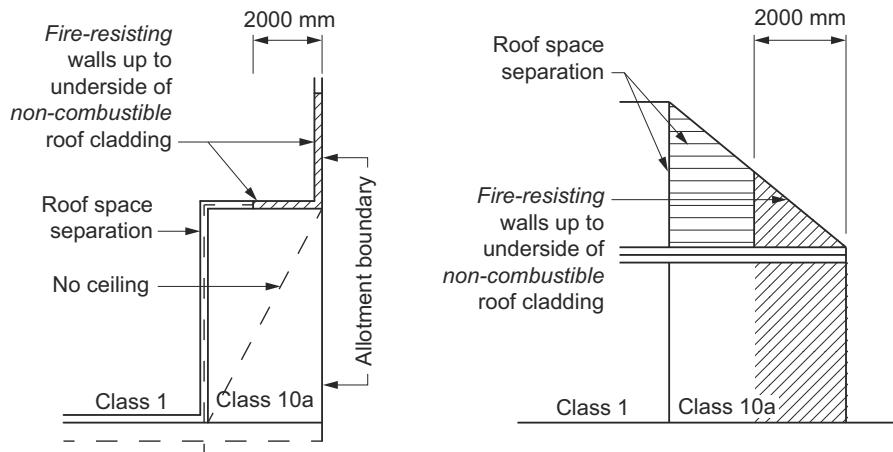
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underside of the roof covering is infilled with—

- (i) *non-combustible* material; or
- (ii) construction with *non-combustible* material on the carport or verandah side; and
- (e) in the case where two carports or verandahs have a common roof structure with two different Class 1 buildings and the carports or verandahs have a ceiling, the roof space or ceiling space between the top of the ceiling and the underside of the roof covering is infilled as follows—
 - (i) vertically between the two Class 1 buildings and between the two appurtenant carports or verandahs in accordance with (d) (see SA Figure 9.2.8d); or
 - (ii) vertically between the two Class 1 buildings and between the two appurtenant carports or verandahs in accordance with (d), except that the construction must be clad with *non-combustible* materials on both sides and must not be crossed by timber or other *combustible* building elements except for roof battens with dimensions of 75 × 50 mm or less, roof sarking-type material or a timber gutter board not less than 20 mm thick.

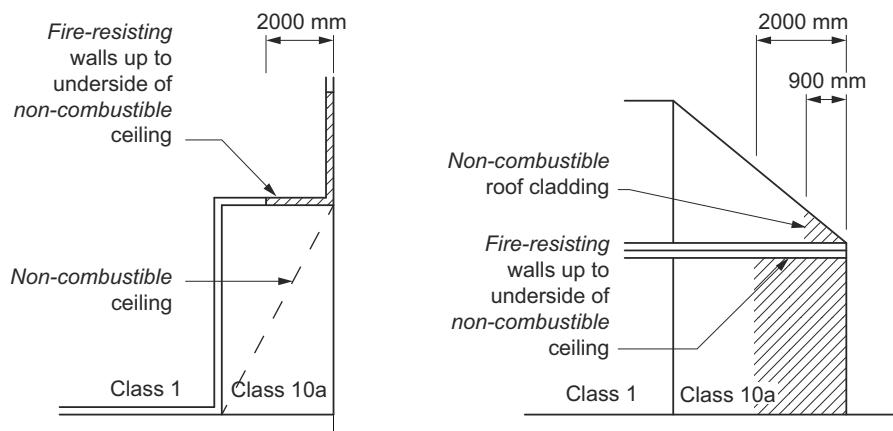
Insert SA Figure 9.2.8a as follows:

SA Figure 9.2.8a: Fire-resisting requirements for carports or verandahs without a ceiling



Insert SA Figure 9.2.8b as follows:

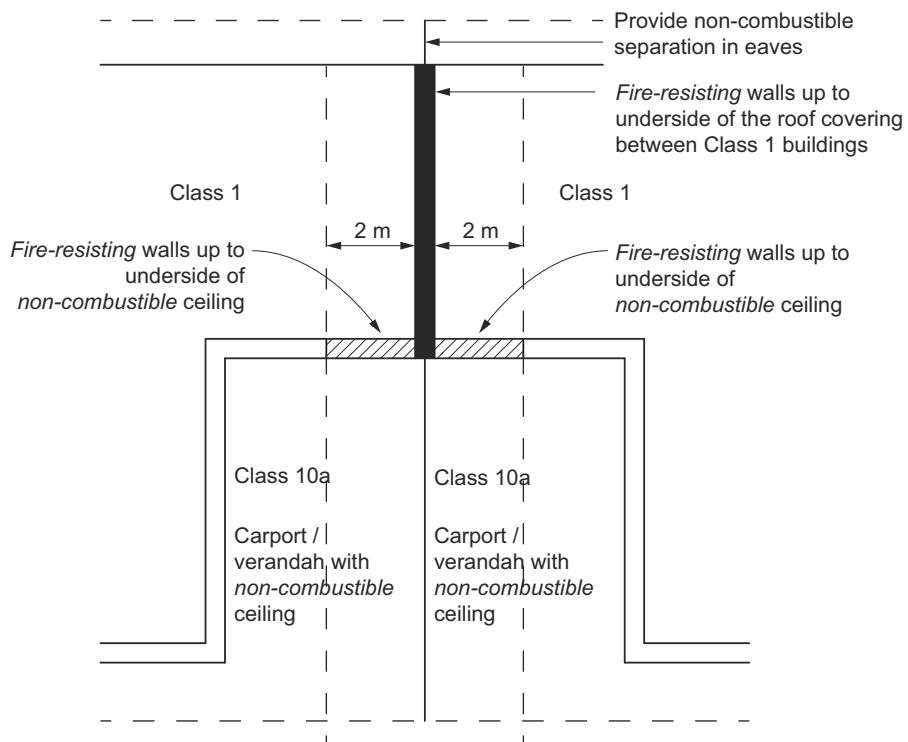
SA Figure 9.2.8b: Fire-resisting requirements for carports or verandahs with a non-combustible ceiling



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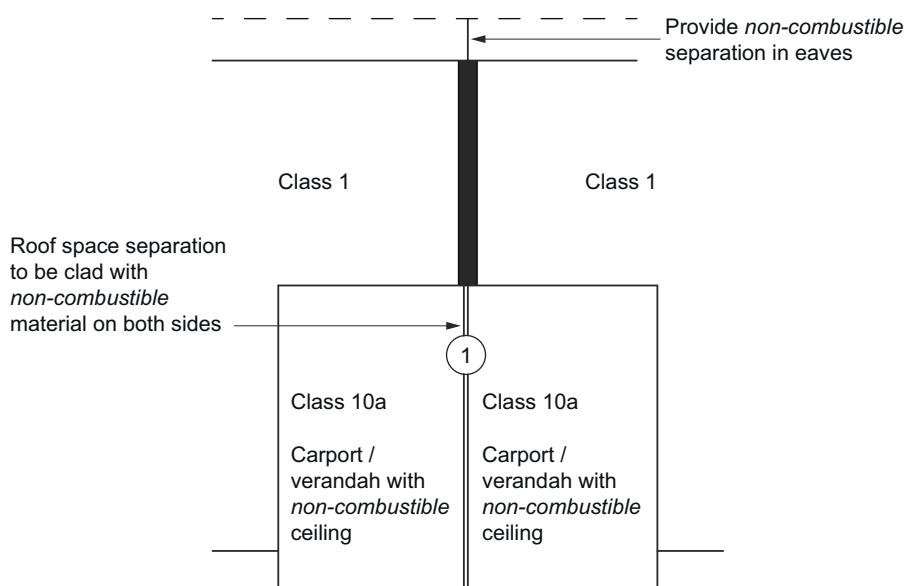
Insert SA Figure 9.2.8c as follows:

SA Figure 9.2.8c: Fire-resisting requirements for external walls in carports and verandahs that share a common roof space



Insert SA Figure 9.2.8d as follows:

SA Figure 9.2.8d: Fire-resisting requirements for roof space openings in carports and verandahs with a ceiling that share a common roof space



NOTE: If under main roof, provide roof separation at 1 from ceiling to underside of non-combustible roof cladding

Delete 9.2.9 and insert SA 9.2.9 as follows:

SA 9.2.9 Allowable encroachments

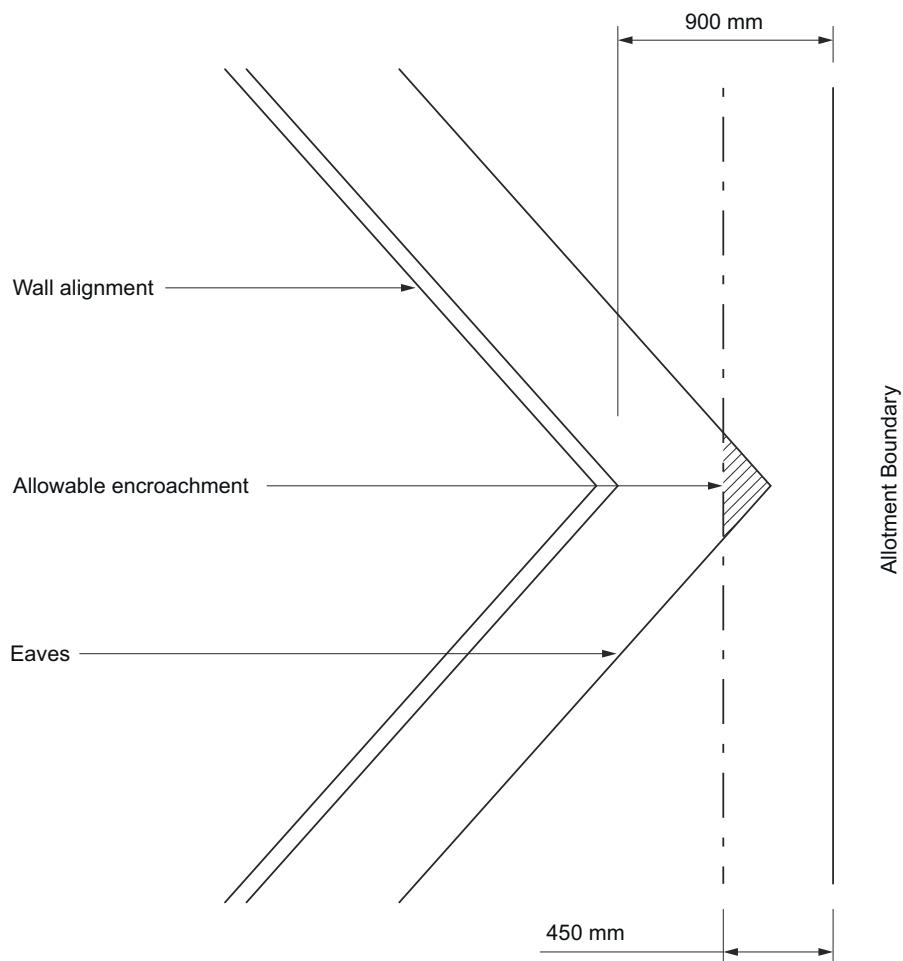
[2019: SA 3.7.2.7]

- (1) An encroachment is any construction between—
 - (a) the *external wall* of the building and the allotment boundary other than a boundary adjoining a road or other public space; or
 - (b) the *external walls* of two buildings on the same allotment; or
 - (c) the *external wall* of the building and a *brush fence*.
- (2) For the purposes of (1), an encroachment related to any *external wall* of—
 - (a) a Class 10a building *required* to comply with 9.2.4; or
 - (b) a Class 1 building.
- (3) The encroachments allowed within 900 mm of an allotment boundary or within 1.8 m of another building on the same allotment or within 3 m of a *brush fence* are—
 - (a) *non-combustible* fascias, gutters and downpipes; and
 - (b) light fittings, electricity or gas meters, aerials or antennas; and
 - (c) pergolas, sun blinds or water tanks; and
 - (d) unroofed terraces, landings, steps and ramps, not more than 1 m in height.
- (4) Except as permitted by (5) or not permitted by (6), encroachments allowed up to but not closer than 450 mm from an allotment boundary or up to but not closer than 900 mm from another building on the same allotment or associated encroachments of another building on the same allotment are—
 - (a) *combustible* fascias, gutters and downpipes (see Figures 9.2.9a, 9.2.9b and 9.2.9c); and
 - (b) eaves with *non-combustible* roof cladding and *non-combustible* lining; and
 - (c) flues, chimneys, pipes, domestic fuel tanks, cooling or heating appliances or other services.
- (5) Eaves with *non-combustible* roof cladding and *non-combustible* soffit or lining may encroach within 450 mm of the allotment boundary where the *external walls* of a building are located not less than 900 mm from the allotment boundary and the walls are positioned at an angle of not less than 20 degrees and not more than 70 degrees to the allotment boundary or other building and the eaves only encroach at the corner of the roof (see SA Figure 9.2.9).
- (6) Fascias listed in (4)(a) must not be built within 3 m of a *brush fence*.

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Insert SA Figure 9.2.9 as follows:

SA Figure 9.2.9: Concession for encroachment of eaves



10 Health and amenity

Part 10.2 Wet area waterproofing

Delete 10.2.1 and insert SA 10.2.1 as follows:

SA 10.2.1 Wet areas

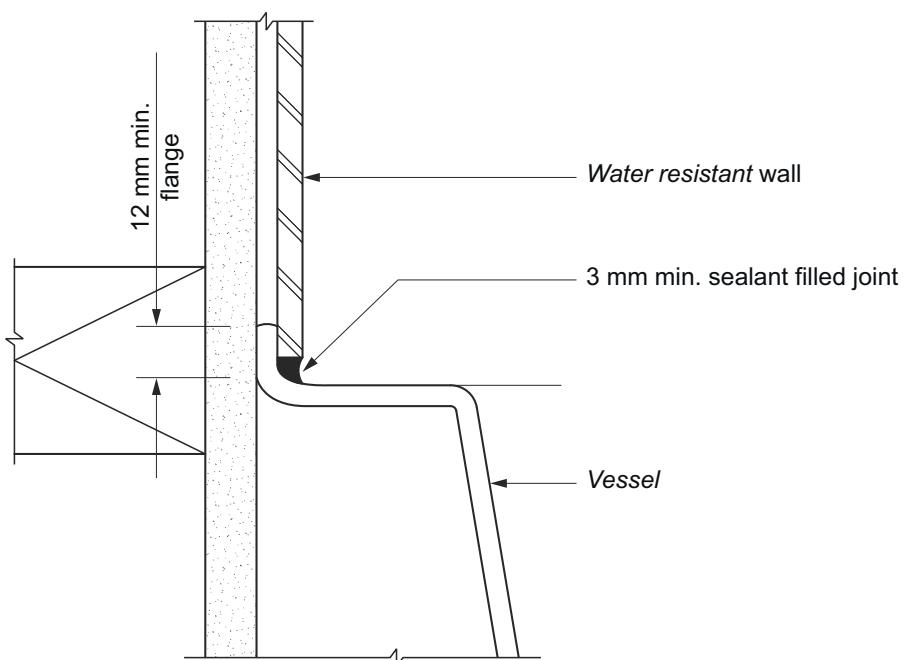
[2019: SA 3.8.1.2]

Building elements in *wet areas* within a building must—

- (a) be *waterproof* or *water resistant* in accordance with 10.2.2 to 10.2.6, except that—
 - (i) in any room containing a washing machine, the wall area from finished floor level to a minimum of 75 mm above and 75 mm each side of the washing machine tap outlets must be *water resistant*; and
 - (ii) where a *vessel* is inset into a bench top in a kitchen, bar area, kitchenette or domestic food and beverage preparation area—
 - (A) wall junctions and joints within 150 mm above the *vessel* must be *water resistant* for the extent of the *vessel*; and
 - (B) the perimeter edges of the *vessel* must be *water resistant* for the extent of the *vessel* (see SA Figures 10.2.1a, 10.2.1b and 10.2.1c); and
 - (C) penetrations in horizontal surfaces for tap and spout outlets in kitchens, bar areas, kitchenettes or domestic food and beverage preparation areas, must be *waterproof*; and
- (b) comply with AS 3740; and
- (c) have floor wastes provided in accordance with SA 10.2.33; and
- (d) where floor wastes are provided for drainage of floors in bathrooms and laundries, the floors, floor/wall junction and penetration must be *waterproof*.

Insert SA Figure 10.2.1a as follows:

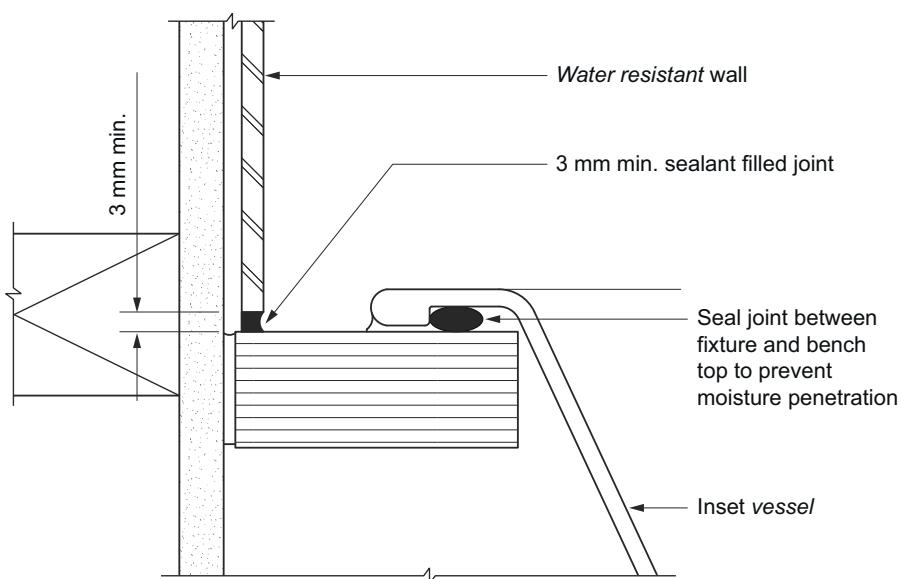
SA Figure 10.2.1a: Typical water resistant junctions and joints for bench tops with inset vessels and vessels abutting walls



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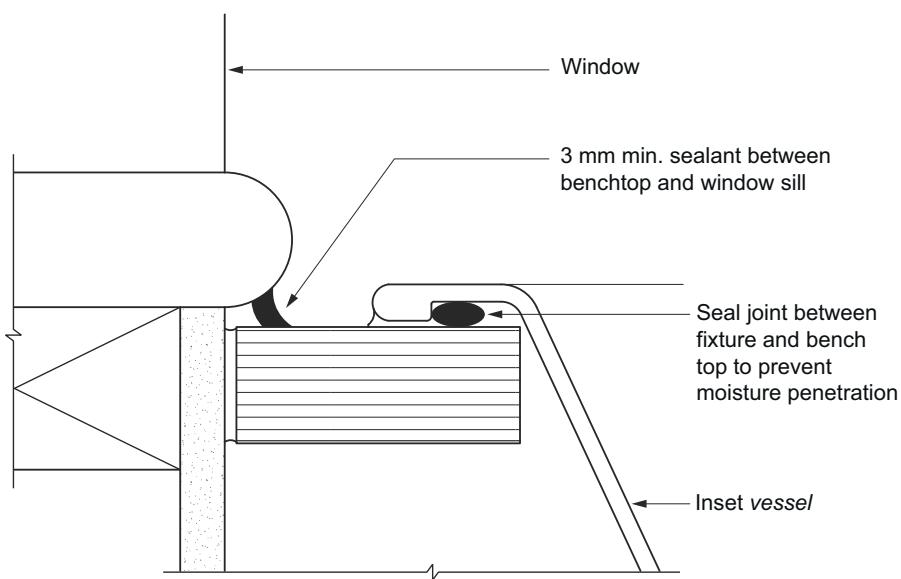
Insert SA Figure 10.2.1b as follows:

SA Figure 10.2.1b: Typical water resistant junctions and joints for bench tops with inset vessels and vessels abutting walls



Insert SA Figure 10.2.1c as follows:

SA Figure 10.2.1c: Typical water resistant junctions and joints for bench tops with inset vessels and vessels abutting walls



Insert SA 10.2.33 as follows:

SA 10.2.33 Provision of floor wastes

[2019: SA 3.2.2]

- (1) The floor of a wet area containing a *vessel* must be graded to a floor waste to permit drainage of water.
- (2) A floor need not be graded to the floor waste as required by (1) if—
 - (a) all vessels are provided with in-built overflow protection or have a permanent open trapped connection to the plumbing and drainage system (such as a WC pan); or
 - (b) the floor waste is provided solely for the connection of plumbing fixtures and all vessels in the wet area are

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provided with in-built overflow protection or have permanent open trapped connection to the plumbing and drainage system (such as a WC pan).

- (3) A floor of a wet area that is graded without ponding to a floor waste within the shower area will satisfy (1).
- (4) The fall of the floor surface graded to the floor waste in accordance with (1) or (3) must be in accordance with 10.2.12.

13 Energy efficiency

Part 13.1 Scope and application of Section 13

Delete 13.1.2 and insert SA 13.1.2 as follows:

SA 13.1.2 Application

[2019: SA Note to Part 3.12]

- (1) The application of this Section is subject to the following:
 - (a) The Governing Requirements of NCC Volume Two.
 - (b) The State and Territory variations, additions and deletions contained in the Schedules to the ABCB Housing Provisions and NCC Volume Two.
- (2) In South Australia, for the purposes of Section 13, a sunroom or the like is deemed to be a Class 10a building and must comply with 13.2.7.

Explanatory Information

In NCC 2019, the content of Section 13 of the ABCB Housing Provisions (other than content added in NCC 2022 or later) was contained in the acceptable construction practices for Part 3.12 of NCC 2019 Volume Two.

Schedule 1 Definitions

Agriculture: Cropping, grazing, animal husbandry, intensive animal keeping, horticulture, aquaculture, wool shearing or dairy, but not viticulture or forestry.

Assembly building

A building where people may assemble for—

- (a) civic, theatrical, social, political or religious purposes including a library, theatre, public hall or place of worship; or
- (b) educational purposes in a *school*, *early childhood centre*, preschool, or the like; or
- (c) entertainment, recreational or sporting purposes including—
 - (i) a discotheque or nightclub; or
 - (ii) a cinema; or
 - (iii) a sports stadium, sporting or other club; or
- (d) transit purposes including a bus station, railway station, airport or ferry terminal.

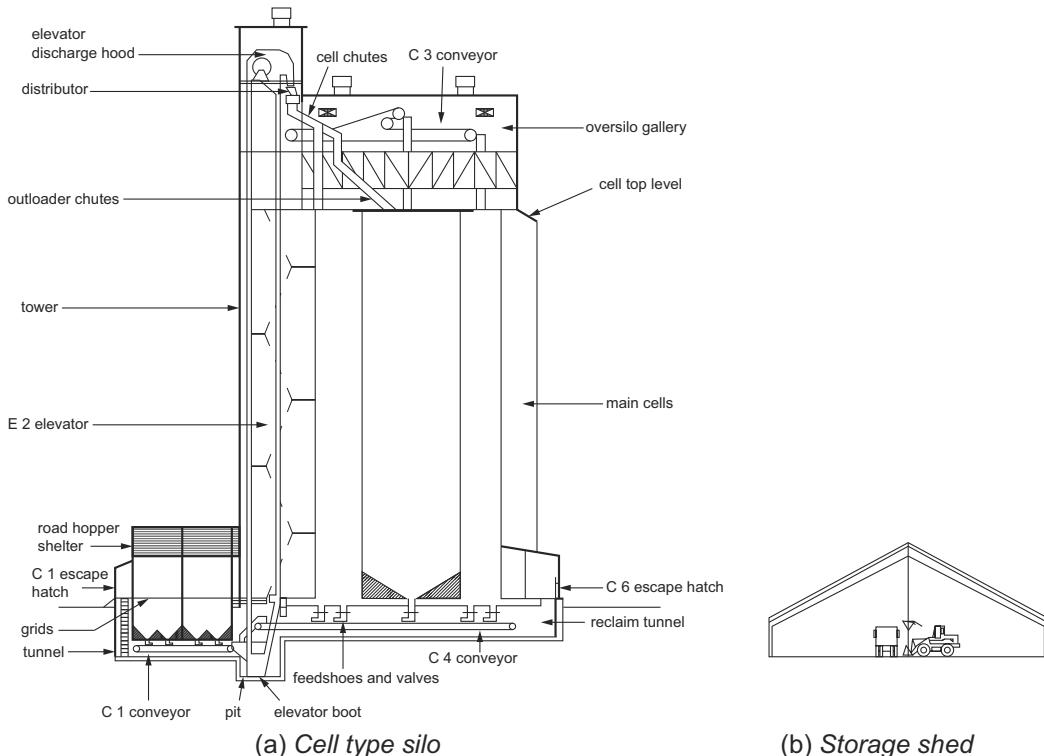
Brush fence: A fence or gate that is primarily constructed of Broombrush (*Melalueca Uncinata*).

Bulk grain storage facility: A building or structure used for the commercial bulk handling or storage of granular materials such as grain, ore, or the like, where only a small number of occupants are present at one time and includes *cell type silos* and *storage sheds*.

Cell type silo: A type of *bulk grain storage facility* similar to that illustrated in diagram (a) of Figure SA 1.

Insert SA Figure 1 as follows:

SA Figure 1: Two types of bulk grain storage facilities



Farm building

A single *storey* Class 7 or 8 building that is—

- (a) primarily associated with *agriculture* and located on land used primarily for *agriculture*; and

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- (b) the total number of people accommodated in the building does not exceed one person per 200 m² of total *floor area*, or six people, whichever is greater; and
- (c) the *floor area* of each building does not exceed the maximum *floor area* and volume specified in Table SA 1 for the type of *farm building*; and
- (d) the building does not contain occupancies of excessive fire hazard as listed in E1D5 to E1D13; and
- (e) if the building is used for the storage of hay, an open space complying with C3D5(1) is provided around the perimeter of each building.

Insert SA Table SA 1 as follows:

SA Table SA 1: Farm building categories and maximum floor area

Building group	Type of farm building	Maximum floor area	Maximum volume
Group A	Buildings used for keeping, growing and/or harvesting of animals and/or plants, and includes greenhouses with rigid covering material and large implement/vehicle storage sheds.	5,000 m ²	30,000 m ³
Group B	Buildings used for packing, sorting and/or storage of produce and may include workshops.	2,000 m ²	12,000 m ³
Group C	Greenhouses with non-rigid, plastic or fabric covering material.	5,000 m ²	30,000 m ³

Rainwater tank: A vessel for the storage of *surface water* collected from the *roof catchment area* of the building.

Roof catchment area: The area of the roof (expressed in square metres), measured on the horizontal (no allowance for slope or vertical surfaces) and includes the plan area of the gutters.

Small arts venue: The whole or the only part of a building that has a rise in storeys of not more than 2—

- (a) in which cultural activities including live music, visual arts displays, dancing, poetry and spoken word performances are provided to the public; and
- (b) the floor area used as a *small arts venue* does not exceed 300 m²; and
- (c) no pyrotechnics or theatrical smoke (smoke machines, hazers or the like) are used.

Storage shed: A type of *bulk grain storage facility* similar to that illustrated in diagram (b) of Figure SA 1.

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Schedule 2 Referenced documents

Insert SA Table 1 as follows:

SA Table 1: Schedule of referenced documents

No.	Date	Title	Volume One	Volume Two	Housing Provisions	Volume Three
AS/NZS 1260	2017	PVC-U pipes and fittings for drain, waste and vent applications Amndt 1	N/A	N/A	N/A	C1D3
AS 1428 Part 1	2001	Design for access and mobility – General requirements for access – New building work	N/A	SA H10D4	N/A	N/A
AS/NZS 1891 Part 4	2000	Industrial fall-arrest systems and devices: Selection, use and maintenance	SA G8D3	N/A	N/A	N/A
enHealth Council, Department of Health and Ageing	2004	Guidance on the use of rainwater tanks	N/A	SA H9D5	N/A	N/A
—	See Note 1	Planning and Design Code	SA G5D5	SA H7D4(3)	N/A	N/A

Table Notes

- (1) The Planning and Design Code is the version current at the time of project documentation approval, unless noted otherwise.

Schedule 9 Tasmania

10 Health and amenity

- | | |
|------------|---------------------------------|
| Part 10.4 | Facilities |
| TAS 10.4.3 | Installation of closet fixtures |

13 Energy efficiency

- | | |
|---------------|-------------------------------------|
| TAS Part 13.1 | Scope and application of Section 13 |
| TAS Part 13.2 | Building fabric |
| TAS Part 13.3 | External glazing |
| TAS Part 13.4 | Building sealing |
| TAS Part 13.5 | Ceiling fans |
| TAS Part 13.6 | Whole-of-home energy usage |
| TAS Part 13.7 | Services |

Schedule 1 Definitions

Schedule 2 Referenced documents

10 Health and amenity

Part 10.4 Facilities

Insert TAS 10.4.3 as follows:

TAS 10.4.3 Installation of closet fixtures

[2019: TAS 3.8.3.4]

- (1) If a sufficient sewerage system is not available, an authorised alternative means of disposal of sewage may be installed.
- (2) If sanitary facilities are not water-flushed, the following provisions apply:
 - (a) A pit latrine, an incinerating toilet, a chemical toilet, a removable pan or a non-flushing urinal must not be within 2 m of a building containing *habitable rooms*.
 - (b) The floor on which a removable pan is placed must be impervious.
 - (c) A room containing a composting toilet must be separated from *habitable rooms* by way of a permanently ventilated air lock (which may be a circulation space).
 - (d) The minimum ventilation *required* under (c) shall be the greater of—
 - (i) 8000 mm²; or
 - (ii) 1/500th of the *floor area* of the circulation space.
 - (e) Access for maintenance or removal of waste from a composting toilet must be by way of an access door which opens directly to the outside of the building.

13 Energy efficiency

TAS Part 13.1 Scope and application of Section 13

In Tasmania, Section 13 is replaced with BCA 2019 Part 3.12.

TAS Part 13.2 Building fabric

In Tasmania, Section 13 is replaced with BCA 2019 Part 3.12.

TAS Part 13.3 External glazing

In Tasmania, Section 13 is replaced with BCA 2019 Part 3.12.

TAS Part 13.4 Building sealing

In Tasmania, Section 13 is replaced with BCA 2019 Part 3.12.

TAS Part 13.5 Ceiling fans

In Tasmania, Section 13 is replaced with BCA 2019 Part 3.12.

TAS Part 13.6 Whole-of-home energy usage

In Tasmania, Section 13 is replaced with BCA 2019 Part 3.12.

TAS Part 13.7 Services

In Tasmania, Section 13 is replaced with BCA 2019 Part 3.12.

Schedule 1 Definitions

Centre-based care class 4 facility: A facility as defined in Centre Based Care Class 4 Standards.

Centre-based care class 5 facility: A facility as defined in Centre Based Care Class 5 Standards.

Early childhood centre

Any premises or part thereof providing or intending to provide a centre-based education and care service within the meaning of the Education and Care Services National Law Act 2010 (Vic), the Education and Care Services National Regulations and centre-based services that are licensed or approved under State and Territory children's services law, but excludes—

- (a) education and care primarily provided to school aged children in outside school hours settings; and
- (b) services licensed as *centre-based care class 4* under the Child Care Act 2001.

Expert judgement

For Volume Three, the judgement of a person who has the qualifications and expertise to determine whether a *Plumbing or Drainage Solution* complies with the *Performance Requirements*.

Explanatory Information

The level of qualification and/or experience required to determine whether a *Plumbing or Drainage Solution* complies with the *Performance Requirements* may differ depending on the degree of complexity and the requirements of the Tasmanian Building Act. Practitioners should seek advice from the *Permit Authority*.

Permit Authority: A permit authority as defined in the Building Act 2016.

Public: Includes any person working in an enclosed public place.

School age care facility: Is a facility providing care for children (primarily) 5 years or older in an outside of school hours setting, either approved or licenced under Education and Care Services National Law (Application) Act 2011 or the Child Care Act 2001.

Temporary structure: Includes any—

- (a) booth, tent or other temporary enclosure, whether or not part of the booth, tent or enclosure is permanent; or
- (b) temporary seating structure; or
- (c) other structure prescribed under the Building Act 2016.

Schedule 2 Referenced documents

Insert TAS Table 1 as follows:

TAS Table 1: Schedule of referenced documents

No.	Date	Title	Volume One	Volume Two	Housing Provisions
AS 1657	2018	Fixed platforms, walkways, stairways and ladders – Design, construction and installation	TAS I10D3	N/A	N/A
AS/NZS 1668 Part 1	2015	The use of ventilation and air-conditioning in buildings: Fire and smoke control in multi-compartment buildings	TAS I4D7	N/A	N/A
AS 1668 Part 2	2012	The use of ventilation and air-conditioning in buildings: Mechanical ventilation in buildings	TAS I4D7, TAS I16D5	N/A	N/A
AS/NZS 1680 Part 1	2006	Interior lighting: General principles and recommendations	TAS I4D8, TAS I7D2, TAS I7D3, TAS I16D4	N/A	N/A
AS/NZS1680 Part 2.1	2008	Interior lighting: Circulation spaces and other general areas	TAS I7D2, TAS I7D3, TAS I16D4	N/A	N/A
AS/NZS1680 Part 2.2	2008	Interior lighting: Office and screen based tasks	TAS I7D2, TAS I7D3, TAS I16D4	N/A	N/A
AS/NZS1680 Part 2.3	2008	Interior lighting: Education and training facilities	TAS I7D2, TAS I7D3, TAS I16D4	N/A	N/A
AS/NZS1680 Part 2.4	2017	Interior lighting: Industrial tasks and processes	TAS I4D8, TAS I7D2, TAS I7D3	N/A	N/A
AS/NZS1680 Part 2.5	2018	Interior lighting: Hospitals and medical tasks	TAS I7D2, TAS I7D3	N/A	N/A
AS 2658	2008	LP Gas – Portable and mobile appliances	TAS I16D7	N/A	N/A
AS 2746	2008	Working areas for gas fuelled vehicles	TAS I17D2	N/A	N/A

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No.	Date	Title	Volume One	Volume Two	Housing Provisions
AS/NZS 3000	2018	Electrical installations (known as the Australian/New Zealand Wiring Rules)	TAS I16D6	N/A	N/A
AS 4464	2007	Hygienic production of game meat for human consumption	TAS I6D2	N/A	N/A
AS 4465	2006	Construction of premises and hygienic production of poultry meat for human consumption	TAS I6D2	N/A	N/A
AS 4466	1998	Hygienic production of rabbit meat for human consumption	TAS I6D2	N/A	N/A
AS 4674	2004	Design, construction and fit-out of food premises (Clauses 4.2 and 4.3)	TAS I4D9, TAS I4D13	N/A	N/A
AS 4696	2007	Hygienic production and transportation of meat and meat products for human consumption	TAS I6D2	N/A	N/A
AS 5008	2007	Hygienic rendering of animal products	TAS I6D2	N/A	N/A
AS 5010	2001	Hygienic production of ratite (emu/ostrich) meat for human consumption	TAS I6D2	N/A	N/A
AS 5011	2001	Hygienic production of natural casings for human consumption	TAS I6D2	N/A	N/A
ABCB	—	Temporary Structures Standard	TAS I16D2	N/A	N/A

Tasmania

No.	Date	Title	Volume One	Volume Two	Housing Provisions
Australasian Health Facility Guidelines	—	N/A	TAS I9D2	N/A	N/A
BCA 2019 Amendment 1	2019	Building Code of Australia	TAS Section J	TAS Part H6	TAS Section 13
Centre Based Care Class 4 Standards	N/A	Tasmanian Licencing Standards for Centre Based Child Care Class 4	TAS Schedule 1	TAS Schedule 1	TAS Schedule 1
Centre Based Care Class 5 Standards	N/A	Tasmanian Licencing Standards for Centre Based Child Care Class 5 (0-12 years)	TAS Schedule 1	TAS Schedule 1	TAS Schedule 1
Child Care Act	2001	N/A	TAS I16P1, TAS I16P2, TAS I16P3, TAS I16D1, TAS Schedule 1	TAS Schedule 1	TAS Schedule 1
Condensation in Buildings Tasmanian Designers Guide	—	N/A	TAS F8P1	TAS H4D9	N/A
Dairy Industry Act	1994	N/A	TAS I4P1, TAS I4D1, TAS I7D1	N/A	N/A
Disability (Access to Premises – Buildings) Standards	2010	N/A	TAS D4D14	N/A	N/A
Disability Discrimination Act (Cth)	1992	N/A	TAS D1P10	N/A	N/A
Early Childhood Centre and School Age Care Facilities Code	N/A	N/A	TAS I5D2	N/A	N/A
Education and Care Services National Law (Application) Act	2011	N/A	TAS I16P1, TAS I16P2, TAS I16P3, TAS I16D1, TAS Schedule 1	TAS Schedule 1	N/A
Export Control (Milk and Diary) Orders	N/A	N/A	TAS I4D17	N/A	N/A
Health Service Establishments Act	2006	N/A	TAS I9D1	N/A	N/A
Hygienic Production of Pet Meat	N/A	Technical Report 88	TAS I6D2	N/A	N/A

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No.	Date	Title	Volume One	Volume Two	Housing Provisions
Liquor Licensing Act	1990	N/A	TAS I4P1, TAS I4D1, TAS I5D1	N/A	N/A
Primary Produce Safety Act	2011	N/A	TAS I4P1, TAS I4D1, TAS I4D16	N/A	N/A
Water and Sewerage Industry Act	2008	N/A	TAS I4D3	N/A	N/A

Table Notes

- (1) All legislation referenced in this Schedule is Tasmanian State Legislation unless noted otherwise.
- (2) All referenced documents including legislation, codes, Australian Standards, guidelines and codes of practice are the version at the time of the project documentation approval, unless noted otherwise.

Schedule 10 Victoria

Schedule 1 Definitions

Schedule 2 Referenced documents

Schedule 1 Definitions

Children's service: Has the same meaning as it has under the Children's Services Act 1996, but excludes a service where education and care is primarily provided to school aged children.

Combustible cladding product: Means—

- (a) aluminium composite panels (ACPs) with a core of less than 93 per cent inert mineral filler (inert content) by mass in external cladding as part of a wall system; and
- (b) expanded polystyrene (EPS) products used in an external insulation and finish (rendered) wall system.

Early childhood centre

Includes—

- (a) any premises, or part thereof, providing or intending to provide a centre-based education and care service within the meaning of the Education and Care Services National Law Act 2010, and the Education and Care Services National Regulations, excluding a service where education and care is primarily provided to school aged children; and
- (b) a *children's service*.

Flashing

A strip or sleeve of impervious material dressed, fitted or built-in to provide a barrier to water movement, or to divert the travel of water, or to cover a joint where water would otherwise penetrate to the interior of a building, and includes the following:

- (a) Perimeter flashing: a flashing used at the floor-wall junction.
- (b) Vertical flashing: a flashing used at wall junctions within *shower areas*.
- (c) Roof flashing: a rigid or flexible material, usually metal, fixed over, against or built into an abutment to form a weathertight joint.

Flood hazard area

The *site* (whether or not mapped) encompassing land in an area liable to flooding within the meaning of Regulation 153 of the Building Regulations 2018.

Freeboard

The minimum height of the lowest floor of the building above the *defined flood level*, regulated by the relevant planning scheme, or specified or otherwise determined by the relevant council under Regulation 153 of the Building Regulations 2018 (see *Figure 3*).

Hotel offering shared accommodation: A hotel which has any *sole-occupancy units* that can be shared by unrelated persons.

On-site wastewater management system

A system that receives and/or treats wastewater generated and discharges the resulting effluent to—

- (a) an *approved disposal system*; or
- (b) re-use system; or
- (c) land application system.

Plumbing

Any water service plumbing, roof plumbing, sanitary plumbing system or heating, ventilation and air-conditioning plumbing.

Residential care building (Vic): A building which is a place of residence where 10% or more of persons who reside there need physical assistance in conducting their daily activities and to evacuate the building during an emergency (including any residential care service, State funded residential care service or supported residential service as defined in the Supported Residential Services (Private Proprietors) Act 2010 and an *aged care building*) but does not include—

- (a) a hospital; or
- (b) a dwelling in which 2 or more members of the same family and not more than 2 other persons would ordinarily be resident; or
- (c) a place of residence where only one resident needs physical assistance in conducting their daily activities and

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to evacuate the building during an emergency.

Restricted children's service: A *children's service* that is—

- (a) any one of the following as defined in the Children's Services Regulations 2020—
 - (i) a limited hours Type 1 service; or
 - (ii) a limited hours Type 2 service; or
 - (iii) a short term Type 1 service; or
 - (iv) a short term Type 2 service; or
- (b) an associated children's service within the meaning of the Children's Services Act 1996 approved to be operated by an approved provider at the same place as an approved education and care service that is required to meet the conditions of a limited hours Type 1 service, a limited hours Type 2 service, a short term Type 1 service, or a short term Type 2 service.

Shared accommodation building: A Class 3 building that is a boarding-house, chalet, guest house, lodging-house, backpacker accommodation or the like, or a residential part of a *hotel offering shared accommodation* (but is not a *residential care building (Vic)*), a motel or a residential part of *school, health-care building* or detention centre) having—

- (a) more than one *sole-occupancy unit* of which any *sole-occupancy unit* has sleeping facilities capable of accommodating 3 or more unrelated persons; or
- (b) sleeping facilities capable of accommodating 13 or more unrelated persons.

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Schedule 2 Referenced documents

Insert VIC Table 1 as follows:

VIC Table 1: Schedule of referenced documents

No.	Date	Title	Volume One	Volume Two	Housing Provisions	Volume Three
AS/NZS ISO 817	2016	Refrigerants - Designation and safety classification	N/A	N/A	N/A	VIC E2D2
AS/NZS 1200	2015	Pressure Equipment	N/A	N/A	N/A	VIC E2D2
AS 1271	2003	Safety valves, other valves, liquid level gauges and other fittings for boilers and unfired pressure vessels	N/A	N/A	N/A	VIC E2D2
AS 1324.1	2001	Air filters for use in general ventilation and air conditioning	N/A	N/A	N/A	VIC E2D2
AS 1345	1995	Identification of the contents of pipes, conduits and ducts	N/A	N/A	N/A	VIC E2D2
AS 1358	2004	Bursting discs and bursting disc devices - Application, selection and installation	N/A	N/A	N/A	VIC E2D2
AS 1428.1	2009	Design for access and mobility, Part 1: General requirements for access – New building work (incorporating amendments 1 and 2)	VIC I4D5	N/A	N/A	N/A
AS/NZS 1571	2020	Copper - seamless tubes for air conditioning and refrigeration	N/A	N/A	N/A	VIC E2D2
AS/NZS 1530.3	1999	Methods for fire tests on building materials, components and structures	N/A	N/A	N/A	VIC B4D2
AS/NZS 1668.1	2015	The use of ventilation and air conditioning in buildings: Fire and smoke control in buildings	N/A	N/A	N/A	VIC E2D2

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No.	Date	Title	Volume One	Volume Two	Housing Provisions	Volume Three
AS 1668.2	2012	The use of ventilation and air conditioning in buildings: Mechanical ventilation in buildings	N/A	N/A	N/A	VIC E2D2
AS 1851	2012	Routine service of fire protection systems and equipment	N/A	N/A	N/A	VIC B4D2
AS 1926.1	2012	Swimming pool safety, Part 1: Safety barriers for swimming pools	VIC G1D2	N/A	N/A	N/A
AS 1926.2	2007	Swimming pool safety, Part 2: Location of safety barriers for swimming pools (incorporating amendments 1 and 2)	VIC G1D2	N/A	N/A	N/A
AS 2118.1	2017	Automatic fire sprinkler systems, Part 1: General systems (incorporating amendment 1)	VIC S17C2, VIC S18C3	N/A	N/A	VIC B1D5, VIC B4D2
AS 2118.2	2021	Automatic fire sprinkler systems: Wall wetting sprinkler systems	N/A	N/A	N/A	VIC B4D2
AS 2118.3	2010	Automatic fire sprinkler systems: Deluge systems	N/A	N/A	N/A	VIC B4D2
AS 2118.4	2012	Automatic fire sprinkler systems, Part 4: Sprinkler protection for accommodation buildings not exceeding four storeys in height	VIC S17C2, VIC S18C3	N/A	N/A	VIC B1D5, VIC B4D2
AS 2118.5	2008	Automatic fire sprinkler systems	N/A	N/A	N/A	VIC B1D5, VIC B4D2
AS 2118.6	2012	Automatic fire sprinkler systems, Part 6: Combined sprinkler and hydrant systems in multistorey buildings	VIC S17C2	N/A	N/A	N/A
AS 2118.8	1997	Automatic fire sprinkler systems: Minor modifications	N/A	N/A	N/A	VIC B4D2

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No.	Date	Title	Volume One	Volume Two	Housing Provisions	Volume Three
AS 2118.10	1995	Automatic fire sprinkler systems: Approval documentation	N/A	N/A	N/A	VIC B4D2
AS 2473.3	2007	Valves for compressed gas cylinders	N/A	N/A	N/A	VIC E2D2
AS 2568	2019	Purity of medical air produced from on-site compressor systems	N/A	N/A	N/A	VIC E2D2
AS 2896	2021	Medical gas systems - Installation and testing of non-flammable medical gas pipeline systems	N/A	N/A	N/A	VIC E2D2
AS 2902	2005	Medical gas systems - Low pressure flexible hose assemblies	N/A	N/A	N/A	VIC E2D2
AS/NZS 2918	2018	Domestic solid fuel burning appliances - Installation	N/A	N/A	N/A	VIC E2D2
AS 2941	2013	Fixed fire protection installations - Pumpset systems	N/A	N/A	N/A	VIC B4D2
AS/NZS 3500.1	2021	Plumbing and drainage: Water services	N/A	N/A	N/A	VIC B1D3, VIC B1D5, VIC B3D3, VIC B4D2, VIC B6D2, VIC B7D3, VIC B7D4, VIC E2D2
AS/NZS 3500.2	2021	Plumbing and drainage: Sanitary plumbing and drainage	N/A	N/A	N/A	VIC C1D3, VIC C2D4, VIC C4P1, VIC E2D2
AS/NZS 3500.3	2021	Plumbing and drainage: Stormwater drainage	N/A	N/A	N/A	VIC C5D2, VIC C6D2
AS/NZS 3500.4	2021	Plumbing and drainage: Heated water services	N/A	N/A	N/A	VIC E2D2, VIC B2D6
AS/NZS 3666.1	2011	Air handling and water systems of buildings - Microbial control: Design, installation and commissioning	N/A	N/A	N/A	VIC E2D2

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No.	Date	Title	Volume One	Volume Two	Housing Provisions	Volume Three
AS/NZS 3666.2	2011	Air handling and water systems of buildings - Microbial control: Operation and maintenance	N/A	N/A	N/A	VIC E2D2
AS 4032.3	2022	Water supply - Valves for the control of heated water supply temperatures	N/A	N/A	N/A	VIC B2D6
AS 4041	2006	Pressure piping	N/A	N/A	N/A	VIC E2D2
AS 4118.1.1	1996	Fire sprinkler systems: Components - Sprinklers and sprayers	N/A	N/A	N/A	VIC B4D2
AS 4118.1.2	1996	Fire sprinkler systems: Components - Alarm valves (wet)	N/A	N/A	N/A	VIC B4D2
AS 4118.1.3	1995	Fire sprinkler systems: Components - Water motor alarms	N/A	N/A	N/A	VIC B4D2
AS 4118.1.4	1994	Fire sprinkler systems: Components - Valve monitors	N/A	N/A	N/A	VIC B4D2
AS 4118.1.5	1996	Fire sprinkler systems: Components - Deluge and pre-action valves	N/A	N/A	N/A	VIC B4D2
AS 4118.1.6	1995	Fire sprinkler systems: Components - Stop valves and non-return valves	N/A	N/A	N/A	VIC B4D2
AS 4118.1.7	1996	Fire sprinkler systems: Components - Alarm valves (dry)	N/A	N/A	N/A	VIC B4D2
AS 4118.1.8	1999	Fire sprinkler systems: Components - Pressure reducing valves	N/A	N/A	N/A	VIC B4D2
AS 4254.1	2021	Ductwork for air-handling systems in buildings: Flexible duct	N/A	N/A	N/A	VIC E2D2
AS 4254.2	2012	Ductwork for air-handling systems in buildings: Rigid duct	N/A	N/A	N/A	VIC E2D2

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No.	Date	Title	Volume One	Volume Two	Housing Provisions	Volume Three
AS 4426	1997	Thermal insulation of pipework, ductwork and equipment - Selection, installation and finish	N/A	N/A	N/A	VIC E2D2
AS 4508	1999	Thermal resistance of insulation for ductwork used in building air-conditioning	N/A	N/A	N/A	VIC E2D2
AS/NZS 4859.1	2018	Thermal insulation materials for buildings: General criteria and technical provisions	N/A	N/A	N/A	VIC E2D2
AS/NZS 5141	2018	Residential heating and cooling systems - Minimum applications and requirements for energy efficiency, performance and comfort criteria	N/A	N/A	N/A	VIC E2D2
AS/NZS 5149.1	2016	Refrigerating systems and heat pumps - Safety and environmental requirements: Definitions, classification and selection criteria	N/A	N/A	N/A	VIC E2D2
AS/NZS 5149.2	2016	Refrigerating systems and heat pumps - Safety and environmental requirements: Design, construction, testing, marking and documentation	N/A	N/A	N/A	VIC E2D2
AS/NZS 5149.3	2016	Refrigerating systems and heat pumps - Safety and environmental requirements: Installation site	N/A	N/A	N/A	VIC E2D2
AS/NZS 5149.4	2016	Refrigerating systems and heat pumps - Safety and environmental requirements: Operation, maintenance, repair and recovery	N/A	N/A	N/A	VIC E2D2
AS/NZS 5601.1	2022	Gas installations: General installations	N/A	N/A	N/A	VIC E2D2

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No.	Date	Title	Volume One	Volume Two	Housing Provisions	Volume Three
ABCB Standard for Construction of Buildings in Flood Hazard Areas, Version 2012.3	2012	Standard for Construction of Buildings in Flood Hazard Areas	VIC B1D6	N/A	N/A	
—	2022	Motorsport Australia Track Operators Guide For Motorsport Race Venues – version 1	VIC I5D4	N/A	N/A	
FPAA101D	2018	Automatic Fire Sprinkler System Design and Installation—Drinking Water Supply	VIC S17C2, VIC S18C3	N/A	N/A	B1D5
FPAA101H	2018	Automatic Sprinkler System Design—Hydrant Water Supply	VIC S17C2, VIC S18C3	N/A	N/A	B4D3
Building Practice Note FS-01	—	Victorian Building Authority Practice Note FS-01	VIC S20C8	N/A	N/A	
SA HB 39	2015	Metal roof and wall cladding installation	N/A	N/A	N/A	VIC E3D2
HB 276	2004	A guide to good practice for energy efficient installation of residential heating, cooling and air conditioning plant and equipment	N/A	N/A	N/A	VIC E2D2
N/A	2007	Australian and New Zealand refrigerant handling code of practice 2007 Part 1 - Self-contained low charge systems	N/A	N/A	N/A	VIC E2D2
N/A	2007	Australian and New Zealand refrigerant handling code of practice 2007 Part 2 - Systems other than Self-contained low charge systems	N/A	N/A	N/A	VIC E2D2
N/A	1993	The Building Act 1993 (Victoria)	N/A	N/A	N/A	B6D2
N/A	2018	Plumbing Regulations	N/A	VIC H6V1	N/A	B2P7

Schedule 11

Western Australia

Introduction

2

Structure

- | | |
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| Part 2.2 | Structural provisions |
| WA 2.2.3 | Determination of individual actions |
| WA 2.2.4 | Determination of structural resistance of materials and forms of construction |

WA Part 2.3

Changes to AS/NZS 1170.2:2021 and AS 4055:2021

- | | |
|----------|--------------------------|
| WA 2.3.1 | Scope |
| WA 2.3.2 | Regional wind speeds |
| WA 2.3.3 | Internal pressure |
| WA 2.3.4 | Openings |
| WA 2.3.5 | Site wind classification |

Schedule 1

Definitions

Schedule 2

Referenced documents

WA Introduction

This Appendix contains variations to the ABCB Housing Provisions Standard which are considered necessary for the effective application of the Standard in Western Australia.

In Western Australia state variations apply to wind Regions B and D.

2 Structure

Part 2.2 Structural provisions

Delete 2.2.3 and insert WA 2.2.3 as follows:

WA 2.2.3 Determination of individual actions

[2019: 3.0.3]

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.
- (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 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 2.2.3a](#); and
 - (B) determining the corresponding annual probability of exceedance for safety in accordance with [WA Table 2.2.3b](#); and
 - (ii) for wind actions, AS/NZS 1170.2 or AS 4055, except where varied by [WA Part 2.3](#); and
 - (iii) for snow and ice actions, AS/NZS 1170.3; and
 - (iv) for earthquake actions, AS 1170.4.
- (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 2.2.3a](#); 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*.

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Insert Table 2.2.3a as follows:

Table 2.2.3a: Importance Levels of buildings and structures

Importance Level	Building types
1	Buildings or structures presenting a low degree of hazard to life and <i>other property</i> in the case of failure.
2	Buildings or structures not included in Importance Level 1.

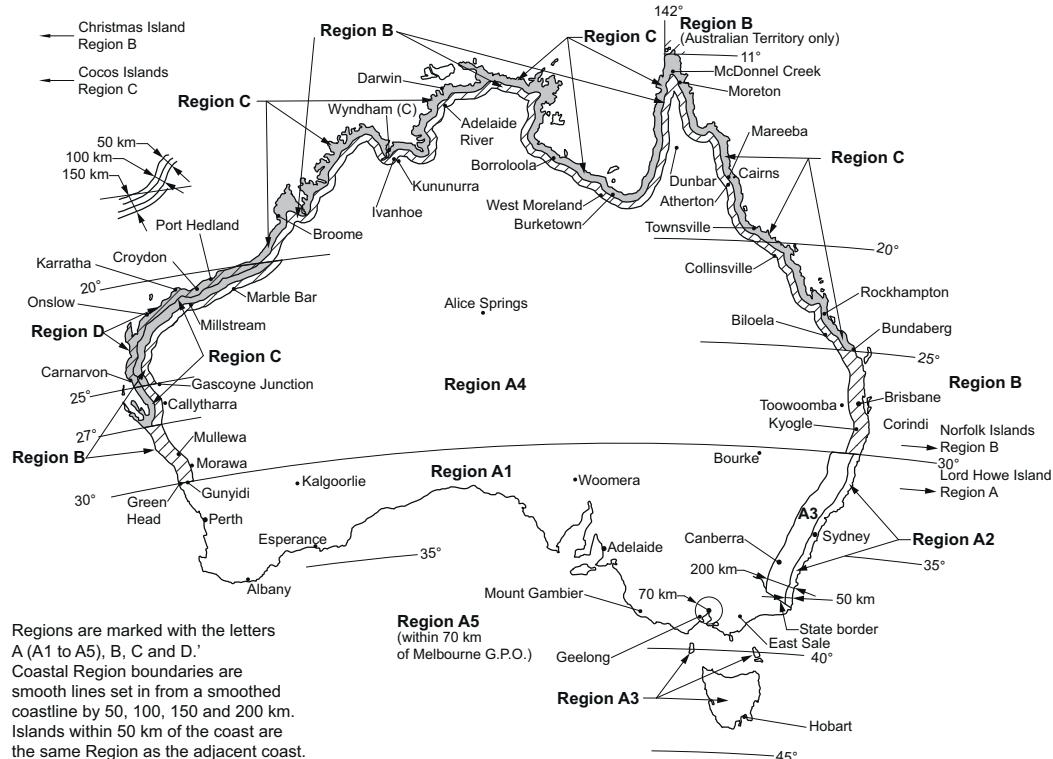
Insert WA Table 2.2.3b as follows:

WA Table 2.2.3b: Design events for safety – annual probability of exceedance

Importance Level	Non- cyclonic wind	Cyclonic wind other than wind Region D north of the Tropic of Capricorn	Cyclonic wind in wind Region D north of the Tropic of Capricorn	Snow	Earthquake
1	1:100	1:200	1:250	1:100	1:250
2	1:500	1:500	1:1000	1:150	1:500

Insert Figure 2.2.3 as follows:

Figure 2.2.3: Wind regions



Explanatory Information: Permanent and imposed actions

Permanent actions include the dead loads of the building or structure. These include the load imposed by the building's components inclusive of the forces imposed by the floors, walls, roofs, suspended ceilings, etc.

Imposed actions include live loads on the building or structure. These include the load arising from construction activity and the intended use or function of the building or structure.

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Explanatory Information: Application of AS 1170.4

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

Explanatory Information: Importance Levels (Table 2.2.3a)

Table 2.2.3a provides a generic description of building types to which Importance Levels have been assigned. The “Importance Level” concept is applicable to building structural safety only. More specific examples are provided in the following list. The examples are indicative and not exhaustive.

- Importance Level 1: Isolated minor Class 10a buildings and Class 10b structures.
- Importance Level 2: Class 1 buildings; Class 10a buildings and Class 10b structures associated with Class 1 buildings.

Importance Levels must be assigned on a case by case basis and relate to the hazards to human life and *other property* in the event of the structure's failure. For example—

- (a) Importance Level 1 is for minor isolated structures that rarely contain people, are not required as part of normal infrastructure and present a low risk to life and *other property*.
- (b) Importance Level includes domestic housing and structures intended to contain reasonable numbers of people under normal operations.

Explanatory Information: Construction in cyclonic areas

The intent of building construction in cyclonic areas (see Figure 2.2.3) is to ensure the structure has sufficient strength to transfer wind forces to the ground with an adequate safety margin to prevent collapse of the building and the building being lifted, or slid off its foundations.

To resist these forces it is necessary to have—

- an anchorage system, where the roof is connected by the walls to the footings by a chain of connections; and
- a bracing system to prevent horizontal collapse due to wind forces; and
- continuity of the system where each structural element is interlocked to its adjoining structural element throughout the building.

Explanatory Information: Anchorage

Anchorage of the system is achieved by using a variety of connectors. Each connector must be capable of carrying the uplift force, because the ability of the building to resist the wind forces is directly related to its weakest link.

Explanatory Information

In Western Australia state variations apply to wind regions B and D, this includes wind region B2 as referenced in AS/NZS 1170.2.

The state variation for wind region B or B2 will ensure that designers consider the combination of peak external pressures and increased internal pressures in design of buildings and use a cyclonic (C) classification instead of non-cyclonic (N) classification. The definition of *design wind speed* is varied in WA Schedule 1 to identify that wind Region B is a C classification in Western Australia. Other changes have also been made to reflect this.

In addition to a variation to clause H1D7 of NCC Volume Two, and clauses 2.2.3 and 2.2.4 of the ABCB Housing Provisions Standard - a variation is made to the application of AS/NZS 1170.2 and AS 4055 (when used as a primary referenced document, secondary or subsequent referenced document). Refer to WA Schedule 2 and WA Part 2.3.

The state variation for wind region D applies only to those parts of region D located north of the Tropic of Capricorn. The 2021 edition of AS/NZS 1170.2 includes a reduction in design wind speeds for wind region D. The variation will retain similar design wind speeds for wind region D as the 2011 edition of AS/NZS 1170.2 previously referenced in the National Construction Code.

Delete 2.2.4 and insert WA 2.2.4 as follows:

WA 2.2.4 Determination of structural resistance of materials and forms of construction

[2019: 3.0.4]

The following requirements, or any combination of them, must be used to determine the structural resistance of materials and forms of construction as appropriate:

- (a) Earthworks: H1D3(1).
- (b) Earth retaining structures: H1D3(2).
- (c) Termite risk management: H1D3(3).
- (d) Concrete construction (including slabs and footings, piled footings and reinforced and prestressed concrete structures): H1D4.
- (e) Piled footings: H1D12.
- (f) Post-installed and cast-in fastenings in concrete: AS 5216.
- (g) Masonry (including masonry veneer, *unreinforced masonry* and *reinforced masonry*): H1D5.
- (h) Steel construction (including steel framing and structural steel members): H1D6.
- (i) Timber construction (including design of timber structures, timber framing and design of nail-plated timber roof trusses): H1D6.
- (j) Composite steel and concrete: AS/NZS 2327.
- (k) Aluminium construction:
 - (i) AS/NZS 1664.1.
 - (ii) AS/NZS 1664.2.
- (l) Roof construction (including plastic sheeting, roofing tiles, metal roofing and terracotta, fibre-cement and timber slates and shingles): H1D7.
- (m) Wall cladding: H1D7.
- (n) Glazed assemblies: H1D8.
- (o) Barriers and handrails (including stairway and ramp construction):
 - (i) H5D3; and
 - (ii) AS/NZS 1170.1 for the determination of loading forces on a barrier.
- (p) Attachment of decks and balconies to *external walls* of buildings: H1D11.
- (q) 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 B, C or D in accordance with Figure 2.2.3: AS/NZS 4505.
- (r) For *high wind areas*: requirements listed in (a) to (q) as appropriate or the Northern Territory Deemed to Comply Standards Manual.

Explanatory Information

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

WA Part 2.3**Changes to AS/NZS 1170.2:2021 and AS 4055:2021****WA 2.3.1 Scope**

[New for 2022]

This Part sets out the changes necessary for Western Australia to the application of AS/NZS 1170.2:2021 for wind Region B2 and AS 4055:2021 for site wind classification.

WA 2.3.2 Regional wind speeds

[New for 2022]

Delete Table 3.1(A) of AS/NZS 1170.2:2021 and replace with [WA Table 2.3.2](#).

Insert WA Table 2.3.2 as follows:

WA Table 2.3.2: Table 3.1(A)—Regional wind speeds—Australia

Regional wind speed (m/s)	Region				
	Non-cyclonic		Cyclonic		
	A (0 to 5)	B1	B2	C (maximum)	D (maximum)
V ₁	30		26	23	23
V ₅	32		28	33	35
V ₁₀	34		33	39	43
V ₂₀	37		38	45	51
V ₂₅	37		39	47	53
V ₅₀	39		44	52	60
V ₁₀₀	41		48	56	66
V ₂₀₀	43		52	61	72
V ₂₅₀	43		53	62	74
V ₅₀₀	45		57	66	80
V ₁₀₀₀	46		60	70	5
V ₂₀₀₀	48		63	73	90
V ₂₅₀₀	48		64	74	91
V ₅₀₀₀	50		67	78	95
V ₁₀₀₀₀	51		69	81	99
V _R (R ≥ 5 years)	67-41R ^{-0.1}		106-92R ^{-0.1}	122-104R ^{-0.1}	156-142R ^{-0.1}

Table Notes

- (1) The peak gust has an equivalent moving average time of approximately 0.2 s (Holmes and Ginger, 2012).
- (2) Values for V₁ have not been calculated by the formular for V_R in the Australian regions.
- (3) For ultimate or serviceability limit states, refer to the National Construction Code (Australia) or AS/NZS 1170.0 for information on values of importance level and annual probability of exceedance appropriate for the design of structures. For buildings in townships in cyclonic regions, users should consider overall risk to a community when selecting importance levels.
- (4) For Regions C and D, only the maximum values for the region are tabulated. Lower values of V_R may apply in those regions, depending on the distance of the site from the smooth coastline.

WA 2.3.3 Internal pressure

[New for 2022]

Delete 5.3.1 of AS/NZS 1170.2:2021 and replace with the following:

5.3.1 Internal pressure**5.3.1.1 General**

Internal pressure is a function of the external pressures, and the leakage and openings in the external surfaces of the building or an isolated part of a larger building, and for some large buildings, the internal volume. The open area of a surface shall be calculated by adding areas of opening to areas of permeability or leakage on that surface of the building (e.g. vents and gaps in the building envelope).

The height at which the design wind speed is determined for calculation of internal pressures shall be the average roof height (h), as defined in Figure 2.1. However, for the cases of windward wall leakage or openings on a building greater than 25 m in height, the design wind speed at the height of the opening shall be used.

Pressure coefficients for internal pressure ($C_{p,i}$) shall be determined by either Clause 5.3.1.2 or 5.3.1.3.

NOTE 1 Damage inspections after wind storms, in Regions B2, C and D, have shown that large openings are very likely to occur accidentally due to failure of elements under direct wind pressure, or in the lower levels of a building envelope, by debris impact. Large openings can also occur in Regions A (0 to 5), B1 and NZ (1 to 4) under the same circumstances, although openings produced by debris impact are less likely.

NOTE 2 The equivalent free area of a ventilator (e.g. ridge or under-eave ventilators) can be determined from the product of discharge coefficient and throat area.

5.3.1.2 Internal pressure coefficients for all cases, except ultimate limit states for parts of buildings below 25 m in Regions B2, C and D

Clause 5.3.1.1 applies to buildings in all regions for serviceability limit states.

For ultimate limit states, it applies to all buildings in Regions A (0 to 5), B1 and NZ (1 to 4), and parts of buildings higher than 25 m above ground level in Regions B2, C and D.

Pressure coefficients for internal pressure ($C_{p,i}$) shall be determined from Tables 5.1(A) or 5.1(B). Table 5.1(A) shall be used for the design case where there are no potential openings in any surface with a combined area greater than 0.5 % of the total area of that surface, and the leakage in the walls lead to internal pressures. Table 5.1(B) shall be used for the design case where there are openings in any surface greater than 0.5 % of the total area of that surface, or they can be created accidentally.

5.3.1.3 Internal pressure coefficients for ultimate limit states for parts of buildings below 25 m in Regions B2, C and D

Pressure coefficients for internal pressure ($C_{p,i}$) for parts of a building in Regions B2, C and D below 25 m for ultimate limit states, shall be determined from Table 5.1(B) only.

The ratio of the sum of opening areas on one surface to total open area of other walls and roof surfaces as defined in Table 5.1(B) shall not be taken to be less than two unless —

- (a) it can be demonstrated that an opening will not be created in the building envelope as a result of impact loading from the windborne debris defined in Clause 2.5.8; or
- (b) a permanently-open roof ventilator, such as a ridge ventilator, has been installed with equivalent total area (see Clause 5.3.1.1 Note 2) of at least that of the largest areas of any potential accidental openings in the walls, considering the combined area of wall openings in each wall surface one at a time; or
- (c) permanently-open, wall ventilators have been installed on at least two walls, with equivalent total area (see Clause 5.3.1.1 Note 2) of the ventilators on each wall at least that of the largest of any potential accidental openings in the walls, considering the combined area of wall openings in each wall surface one at a time.

NOTE 1 Low-rise buildings in Regions B2, C and D should be designed for the high internal pressures resulting from large openings, for ultimate limit states. Even in cases where the opening is small or there is no opening, Table 5.1(A) is not intended to be used for low-rise buildings in Regions B2, C and D for ultimate limit states.

NOTE 2 To date, the majority of windborne debris in Regions B2, C and D in Australia has not often impacted at heights on buildings above 25 m. This is not the case in other parts of the world and could change in the future with increasing numbers of high-rise buildings.

WA 2.3.4 Openings

[New for 2022]

Delete 5.3.2 of AS/NZS 1170.2:2021 and replace with the following:

5.3.2 Openings**5.3.2.1 General**

Openings shall be determined according to either Clause 5.3.2.2 (Regions A (0 to 5), B1 and NZ (1 to 4), and Regions B2, C, D at heights of 25 m or above) or Clause 5.3.2.3 (Regions B2, C, D below 25 m).

Subject to Clauses 5.3.2.2 and 5.3.2.3, combinations of openings and open area shall be assumed to give internal pressures, which, together with external pressures, give the most adverse wind actions.

NOTE Potential openings include doors or windows that are left open or may fail, vents that are normally open and holes in cladding caused by impacts by windborne debris during a major wind event. Openings can be doors (including balcony doors) or windows that are left open, open under pressure, or open due to the failure of latches or hinges. When determining internal pressures, consideration should be given to scenarios in which large openings may develop. Openings may also be generated by debris impacts, particularly in Regions B2, C and D (see Clause 2.5.8).

5.3.2.2 Openings in buildings in Regions A (0 to 5), B1 and NZ (1 to 4), and parts of buildings at heights of 25 m or above in Regions B2, C and D

The full area of doors, including large access doors (e.g. roller doors), and windows that are normally closed, shall be regarded as openings, unless they are demonstrated to be capable of resisting the applied wind pressures.

NOTE 1 When assessing internal pressures, designers should consider the principles of robustness, i.e. to avoid situations where the failure of a single component such as a door or window could lead to consequent and disproportionate failure of other elements, or even complete failure of the structure.

NOTE 2 The structural assessment of doors that are assumed to remain closed and intact should include elements such as supports, frames, jambs, roller door guides, wind locks, latches and hinges, and fixings, where the resistance of doors relies on those. This assessment of roller doors and their supporting structural elements should also account for any structural resistance to any catenary actions developed by the door under wind load.

5.3.2.3 Openings in buildings for ultimate limit states for parts of buildings below 25 m in Regions B2, C and D

Doors (including large access doors) and windows that are normally closed, and cladding elements, shall be regarded as openings with an area equal to the greater of—

- (a) the full area of the element, where it has not been demonstrated that it can resist the applied wind pressures; or
- (b) the area of opening that results from debris impact, where the debris impact loading criteria are defined in Clause 2.5.8.

WA 2.3.5 Site wind classification

[New for 2022]

Delete reference to 'Table 2.2' in clause 2.2 of AS 4055:2021 and insert [WA Table 2.3.5](#) for determining site wind classification.

Insert WA Table 2.3.5 as follows:

WA Table 2.3.5:

Table 2.2—Site wind classification from site conditions

Wind Region	TC	Topographic classification												
		T0 FS	T0 PS	T0 NS	T1 FS	T1 PS	T1 NS	T2 FS	T2 PS	T2 NS	T3 PS	T3 NS	T4 NS	T5 NS
A	3	N1	N1	N1	N1	N2	N2	N2	N2	N2	N3	N3	N3	N4
	2.5	N1	N1	N2	N1	N2	N2	N2	N3	N3	N3	N3	N4	N4
	2	N1	N2	N2	N2	N2	N3	N2	N3	N3	N3	N3	N4	N4
	1	N2	N2	N3	N2	N3	N3	N3	N3	N3	N4	N4	N4	N5
	3	C1	C1	C1	C1	C1	C1	C2	C1	C2	C2	C2	C3	C3
B	2.5	C1	C1	C1	C1	C2	C2	C2	C2	C2	C3	C3	C3	C4
	2	C1	C2	C1	C2	C2	C1	C2	C2	C3	C3	C3	C4	C4
	1	C1	C2	C2	C2	C2	C3	C2	C3	C3	C3	C4	C4	NA
	3	C1 (0-50)	C2 (0-10)	C2 (0-20)	C2 (0-5)	C2 (0-30)	C2 (0-40)	C2 (0-25)	C2 (0-25)	C3 (0-25)	C3 (0-30)	C4 (0-10)	C4 (0-35)	C4 (0-35)
		C1 (10-50)	C1 (20-50)	C1 (5-50)	C1 (30-50)	C1 (40-50)	C1 (25-50)	C2 (25-50)	C2 (20-50)	C2 (25-50)	C2 (30-50)	C3 (10-50)	C3 (35-50)	C3 (35-50)
C	2.5	C1 (0-50)	C2 (0-25)	C2 (0-35)	C2 (0-20)	C2 (0-40)	C2 (0-25)	C2 (25-50)	C2 (20-50)	C3 (0-20)	C3 (0-35)	C4 (0-5)	C4 (0-25)	C4 (0-25)
	2	C1 (0-50)	C2 (0-35)	C1 (35-50)	C1 (20-50)	C1 (40-50)	C2 (10-50)	C1 (35-50)	C2 (20-50)	C3 (0-20)	C3 (0-35)	C4 (0-5)	C4 (0-25)	NA (0-15)
	1	C2 (0-30)	C3 (0-10)	C3 (0-25)	C3 (0-10)	C3 (0-25)	C3 (0-10)	C3 (0-30)	C3 (0-40)	C4 (0-10)	C4 (0-20)	NA (0-5)	NA (0-25)	NA (0-25)
	3	C2 (0-30)	C2 (0-10)	C1 (45-50)	C1 (30-50)	C2 (10-50)	C2 (25-50)	C2 (10-50)	C2 (30-50)	C2 (40-50)	C3 (10-50)	C3 (20-50)	C4 (5-50)	C4 (25-50)
		C1 (30-50)	C2 (10-50)	C2 (25-50)	C2 (10-50)	C3 (0-50)	C3 (0-50)	C2 (5-50)	C3 (5-50)	C2 (35-50)	C3 (5-50)	C3 (25-50)	C4 (15-50)	C4 (15-50)
D – south of the Tropic of Capricorn	3	C2 (0-30)	C3 (0-10)	C3 (0-25)	C3 (0-5)	C3 (0-30)	C4 (0-5)	C3 (5-50)	C2 (25-50)	C3 (30-50)	C4 (0-20)	C4 (0-40)	C4 (0-40)	C4 (45-50)
	2.5	C2 (0-50)	C3 (0-25)	C2 (25-50)	C2 (10-50)	C3 (0-50)	C3 (0-50)	C3 (0-50)	C3 (5-50)	C3 (30-50)	C3 (30-50)	C4 (40-50)	C4 (25-50)	C4 (25-50)
	2	C1 (30-50)	C2 (10-50)	C2 (25-50)	C2 (10-50)	C3 (0-50)	C3 (0-50)	C2 (30-50)	C3 (5-50)	C3 (30-50)	C3 (30-50)	C4 (40-50)	C4 (40-50)	C4 (40-50)
	1	C2 (0-30)	C3 (0-10)	C3 (0-25)	C3 (0-30)	C4 (0-5)	C4 (0-5)	C3 (0-25)	C4 (0-10)	C4 (0-20)	C4 (0-30)	NA (0-20)	NA (0-40)	NA (0-40)
		C1 (30-50)	C2 (10-50)	C2 (25-50)	C2 (10-50)	C3 (0-50)	C3 (0-50)	C2 (30-50)	C3 (5-50)	C3 (30-50)	C3 (30-50)	C4 (40-50)	C4 (40-50)	C4 (40-50)

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Wind Region	TC	Topographic classification										
		T0 FS	T0 PS	T0 NS	T1 FS	T1 PS	T1 NS	T2 FS	T2 PS	T2 NS	T3 C3 (40- 50)	T4 C4 (5-50)
2	C3 (0- 10)	C3 (0- 40)	C4 (0- 5)	C3 (0- 35)	C4 (0- 15)	C3 (0- 50)	C4 (0-30)	C4 (0- 10)	C4 (0-40)	NA (0- 15)	NA (0- 35)	NA (0- 50)
	C2 (10- 50)	C2 (40- 50)	C3 (5- 50)	C2 (35- 50)	C3 (15- 50)	C3 (30-50)	C3 (10- 50)	C3 (40- 50)	C4 (15- 50)	C4 (20-50)	C4 (35- 50)	
1	C3 (0- 35)	C4 (0- 15)	C4 (0- 30)	C4 (0- 10)	C4 (0- 40)	NA (0-15)	C4 (0- 35)	C4 (0- 35)	NA (0-25)	NA (0- 40)	NA (0-45)	NA (0- 50)
	C2 (35- 50)	C3 (15- 50)	C3 (30- 50)	C3 (10- 50)	C3 (40- 50)	C4 (15-50)	C3 (35- 50)	C4 (25- 50)	C4 (40- 50)	C4 (45-50)		
3	C2 (0- 35)	C3 (0- 20)	C3 (0- 30)	C3 (0- 20)	C3 (0- 40)	C4 (0-10)	C3 (0- 35)	C4 (0-20)	C4 (0- 30)	NA (0-5)	NA (0- 15)	NA (0- 35)
	C1 (35- 50)	C2 (20- 50)	C2 (30- 50)	C2 (20- 50)	C2 (40- 50)	C3 (10-50)	C2 (35- 50)	C3 (20- 50)	C3 (30- 50)	C4 (15- 50)	C4 (35- 50)	
2.5	C3 (0- 10)	C3 (0- 35)	C4 (0- 5)	C3 (0- 30)	C4 (0- 15)	C4 (0-25)	C4 (0- 10)	C4 (0-30)	NA (0- 10)	NA (0- 20)	NA (0- 30)	NA (0- 50)
	C2 (10- 50)	C2 (35- 50)	C3 (5- 50)	C2 (30- 50)	C3 (15- 50)	C3 (25-50)	C3 (10- 50)	C3 (30- 50)	C4 (10- 50)	C4 (20-50)	C4 (30- 50)	C4 (45- 50)
2	C3 (0- 25)	C4 (0- 5)	C4 (0- 15)	C4 (0- 5)	C4 (0- 25)	NA (0-5)	C4 (0- 20)	NA (0-15)	NA (0- 25)	NA (0-30)	NA (0- 40)	NA (0- 50)
	C2 (25- 50)	C3 (5- 50)	C3 (15- 50)	C3 (5- 50)	C3 (25- 50)	C4 (5-50)	C3 (20- 50)	C4 (15- 50)	C4 (25- 50)	C4 (30-50)	C4 (40- 50)	
1	C4 (0- 5)	C4 (0- 25)	NA (0- 5)	C4 (0- 25)	C4 (5-50)	NA (0-25)	NA (0- 10)	NA (0-30)	NA (0-40)	NA (0-50)	NA (0- 50)	NA (0- 50)
	C3 (5- 50)	C3 (25- 50)	C4 (5- 50)	C4 (15- 50)	C4 (25-50)	C4 (10- 50)	C4 (30- 50)	C4 (40- 50)	NA (0-50)	NA (0- 50)	NA (0- 50)	

Table Notes

- (1) FS = Full shielding.
- (2) PS = Partial shielding.
- (3) NS = No shielding.
- (4) For wind Region D, site wind classification is given according to the distance (km) from the smooth boundary (coastline or higher wind region).
- (5) This Table includes revisions to wind classifications for wind Region D that take into account the Western Australia State Variation to NCC 2022 which changes

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the ARI Importance Level 2 from 1:500 to 1:1000.

Schedule 1 Definitions

Design wind speed

The design gust wind speed for the area where the building is located, calculated in accordance with AS/NZS 1170.2 or AS 4055 (see [WA Table 4](#) for wind classes).

Insert WA Table 4 as follows:

WA Table 4: **Wind classes**

Non-cyclonic Region A	Cyclonic Region B, C and D
N1, N2, N3	C1
N4, N5, N6 (these wind classes are covered in the ABCB Housing Provisions Part 2.2)	C2, C3, C4 (these wind classes are covered in the ABCB Housing Provisions Part 2.2)

Table Notes

- (1) Wind classification map identifying wind regions is contained in ABCB Housing Provisions [Part 2.2](#) (see [Figure 2.2.3](#)).
- (2) Information on wind classes for particular areas may be available from the appropriate authority.
- (3) “N” = non-cyclonic winds and “C” = cyclonic winds.

Licensed premises: Includes—

- (a) premises in respect of which a cabaret licence as defined by the Liquor Control Act 1988 has been granted under that Act; or
- (b) premises in respect of which a tavern licence, a hotel restricted licence or any other kind of hotel licence as defined by the Liquor Control Act 1988 has been granted under that Act; or
- (c) a cabaret, hotel or tavern—
 - (i) in respect of which a special facility licence as defined by the Liquor Control Act 1988 has been granted under that Act; and
 - (ii) in respect of which paragraph (a) or (b) does not apply.

Potable water: Water intended for human consumption supplied by a water services provider.

Public building: A Class 6 *licensed premises* or 9b building where persons may assemble for—

- (a) civic, theatrical, social, political or religious purposes; or
- (b) educational purposes; or
- (c) entertainment, recreational or sporting purposes; or
- (d) business purposes.

WELS: Has the meaning given in the Water Efficiency Labelling and Standards Act 2005 of the Commonwealth.

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Schedule 2 Referenced documents

Insert WA Table 1 as follows:

WA Table 1: Schedule of referenced documents

No.	Date	Title	Volume One	Volume Two	Housing Provisions	Volume Three
AS/NZS 1170.2	2021	Structural design actions – Wind actions (See Note 1)	WA B1D3, WA B1D4, Spec 4, WA B2D1, WA B2D2, WA B2D3, F3V1, Schedule 1	H1D7, H2V1, Schedule 1	WA 2.2.3, WA 2.3.1, WA 2.3.2, WA 2.3.3, WA 2.3.4, Schedule 1	Schedule 1
AS/NZS 3500.4	2021	Plumbing and drainage – Heated water services, Amdt 1	N/A	WA H9D4	N/A	N/A
AS 4055	2021	Wind loads for housing (See Note 2)	Schedule 1	H1D6, H1D8, Schedule 1	WA 2.2.3, WA 2.3.1, WA 2.3.5, Schedule 1	Schedule 1

Table Notes

- (1) For AS/NZS 1170 Part 2, incorporate the changes as set out in [WA Part B2](#) of Volume One and [WA Part 2.3](#) of the ABCB Housing Provisions.
- (2) For AS 4055, incorporate the changes set out in [WA Part 2.3](#) of the ABCB Housing Provisions.



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