



**National  
Construction  
Code**

# **NCC 2025 preview draft — Omissions**



**Australian  
Building  
Codes Board**

**2025**

This is a supplementary document to the preview draft of NCC 2025, which may be adopted by Australian states and territories from 1 May 2026.

Some sections in the body of the preview draft are omitted because publication of NCC 2025 is yet to be completed.

Where an omission occurs, the preview draft includes the text 'Please refer to NCC 2025 Preview Draft Omissions for missing text'. This is the document which contains this missing text.

Please note, when available, a preview draft without omission will be issued and this document will be removed from our website accordingly.

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# Governing Requirements (Common to Volumes One, Two and Three of NCC 2025)

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

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

- (2) Evidence to support that a calculation method complies with an ABCB protocol may be in the form of any one, or any combination of the following:
- (a) A certificate from a *professional engineer* or other *appropriately qualified person* that—
    - (i) certifies that the calculation method complies with a relevant ABCB protocol; and
    - (ii) sets out the basis on which it is given and the extent to which relevant standards, specifications, rules, codes of practice and other publications have been relied upon.
  - (b) Another form of documentary evidence that correctly describes how the calculation method complies with a relevant ABCB protocol.

### **Applications**

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

### **Notes**

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

## Explanatory Information

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

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

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

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

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

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

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

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

If under a *Deemed-to-Satisfy Provision* a building element is *required* to have an FRL, it is necessary that the FRL is determined in accordance with Specification 1 and 2 as applicable (see A5G5). With the FRL thus determined, A5G3 may be used for producing evidence to document that the FRL has been determined in accordance with Specifications 1 and 2.

Where the FRL of a building element is determined using S1C2(b) or (c), an applicable form of evidence described by A5G3 is a report from an *Accredited Testing Laboratory* (see A5G3(1)(d)). For this form of evidence, the following applies:

- For documenting the result of a test performed under S1C2(b), the report from an *Accredited Testing Laboratory* may be either—
  - the test report referred to in clause 2.16.2 of AS 1530.4 (also referred to as a full test report); or
  - the regulatory information report referred to in clause 2.16.3 of AS 1530.4 (also referred to as a short-form report).

- For documenting a FRL determined under S1C2(c), the *Accredited Testing Laboratory* will issue a report (sometimes referred to as an 'assessment report') that certifies the building element achieves the FRL.

Reports are to be unabridged. This is in order to—

- fulfil the description in A5G3(d) (i.e. 'A report issued by an *Accredited Testing Laboratory*'); and
- comply with A5G2(2).

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

In some circumstances, in order to meet the requirements of the NCC, it is necessary for a test to be undertaken by an

*Accredited Testing Laboratory*. These circumstances include:

- The *Standard Fire Test*.
- When determining (by test) if a material is *combustible*.
- When discovering (by test) a material's *fire hazard properties*.
- Classification of an *external wall* system using AS 5113.

In such circumstances a report as specified in A5G3(1)(d) would be suitable evidence. However, A5G3(1) does not require that this form of evidence be used; A5G3(1) permits various forms of evidence independent of how compliance was determined.

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

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

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

## A5G6 Fire hazard properties and combustibility

- (1) Subject to (3), where a *Deemed-to-Satisfy Provision* requires a building material, component, or assembly to have a *fire hazard property* it must be determined as follows:
  - (a) For *critical radiant flux* and *smoke development rate*, in accordance with AS ISO 9239.1.
  - (b) For *Smoke-Developed Index* and *Spread-of-Flame Index*, in accordance with AS/NZS 1530.3.
  - (c) For *group number*, *average specific extinction area* and *smoke growth rate index* (SMOGR<sub>RC</sub>), in accordance with AS 5637.1.
  - (d) For *Flammability Index*, in accordance with AS 1530.2.
- (2) Subject to (4) and (5), where *Deemed-to-Satisfy Provisions* requires a building material, component, or assembly to be *non-combustible*, its combustibility may be determined in accordance with AS1530.1 or C2D10(5).
- (3) A building material, component, or assembly is deemed to have a *fire hazard property* if—
  - (a) it is identical with a prototype that has been tested in accordance with (1) and the *fire hazard property* achieved by the prototype is confirmed in a report issued from an *Accredited Testing Laboratory* that—
    - (i) describes the method and conditions of the test and form of construction of the tested prototype in full; and
    - (ii) confirms that the application of restraint to the prototype complies with the test standard; or
  - (b) it differs in only a minor degree from a prototype tested under (a) and a report from an *Accredited Testing Laboratory*—
    - (i) confirms that the building product, component, or assembly can achieve the *fire hazard property* despite the minor departures from the tested prototype; and
    - (ii) describes the materials, construction, conditions of restraint and other limitations which are necessary to achieve the *fire hazard property*.
- (4) A building material is deemed to be non-combustible if—
  - (a) it is identical with a material that has been tested in accordance with AS 1530.1 and has not been deemed *combustible*, as confirmed in a report issued from an *Accredited Testing Laboratory*; or
  - (b) it is deemed non-combustible in accordance with C2D10(5); or
  - (c) it differs in only a minor degree to a material tested under (a) and a report from an *Accredited Testing Laboratory*—

- (i) confirms that the material can achieve the attribute of being non-combustible despite the minor departures from the tested material;  
and
  - (ii) describes any limitations which are necessary to achieve the attribute of being non-combustible.
- (5) A building component or assembly is deemed to be non-combustible if it is constructed wholly of materials that are deemed to be non-combustible.

**REFER TO NCC 2025 VOLUME ONE FOR NOTES.**



# Volume One

## E1D3 Fire hose reels

- (1) E1D3 does not apply to—
- (a) a Class 2, 3 or 5 building or Class 4 part of a building; or
  - (b) a Class 8 *electricity network substation*; or
  - (c) a Class 9c building; or
  - (d) classrooms and associated corridors in a primary or secondary *school*; or
  - (e) areas less than 100 m<sup>2</sup>, which are—
    - (i) separated from other parts of the building by construction having an FRL of not less than 60/60/60; and
    - (ii) with any door in the construction required by (i) protected with a *self-closing* or automatic closing fire door having an FRL of not less than –/60/30; and
    - (iii) provided with fire extinguishers in accordance with AS 2444 located on the egress side of an entry door to the space.
- (2) A fire hose reel system must be provided—
- (a) to serve the whole building where one or more internal fire hydrants are installed; or
  - (b) where internal fire hydrants are not installed, to serve any *fire compartment* with a *floor area* greater than 500 m<sup>2</sup>.
- (3) The fire hose reel system must—
- (a) have fire hose reels installed in accordance with AS 2441; and
  - (b) provide fire hose reels to serve only the *storey* at which they are located, except a *sole-occupancy unit* of not more than 2 *storeys* in a Class 6, 7, 8 or 9 building may be served by a single fire hose reel located at the level of egress from that *sole-occupancy unit* provided the fire hose reel can provide coverage to the whole of the *sole-occupancy unit*.
- (4) Fire hose reels must be located internally, externally or in combination, to achieve the system coverage specified in AS 2441.
- (5) In achieving system coverage, one or a combination of the following criteria for individual internally located fire hose reels must be met in determining the layout of any fire hose reel system:
- (a) Fire hose reels must be located adjacent to an internal fire hydrant (other than one within a fire-isolated *exit*), except that a fire hose reel need not be located adjacent to every fire hydrant, provided system coverage can be achieved.

- (b) Fire hose reels must be located within 4 m of an *exit*, except that a fire hose reel need not be located adjacent to every *exit*, provided system coverage can be achieved.
  - (c) Where system coverage is not achieved by compliance with (a) and (b), additional fire hose reels may be located in paths of travel to an *exit* to achieve the *required* coverage.
- (6) Fire hose reels must be located so that the fire hose will not need to pass through doorways fitted with fire or smoke doors, except—
- (a) doorways in walls referred to in C3D6(1)(e) in a Class 9a building and C3D6(3)(d) in a Class 9c building, separating ancillary use areas of high potential *fire hazard*; and
  - (b) doorways in walls referred to in C3D13 or C3D14 separating equipment or electrical supply systems; and
  - (c) doorway openings to *shafts* referred to in C4D14.
- (7) Where the normal water supply cannot achieve the flow and pressures required by AS 2441, or is unreliable—
- (a) a pump; or
  - (b) water storage facility; or
  - (c) both a pump and water storage facility, must be installed to provide the minimum flow and pressures required by clause 6.1 of AS 2441.

## **F8D6 Ventilation of a roof space with the primary insulation layer parallel to the roof plane**

- (1) In *climate zones* 6, 7 and 8, a roof system with the *primary insulation layer* installed parallel to the roof plane must have a roof space that—
- (a) is located immediately above—
    - (i) the *primary insulation layer*; or
    - (ii) any *control layer* installed immediately above the *primary insulation layer*; and
  - (b) is not obstructed by insulation; and
  - (c) has a height not less than 18 mm, as measured perpendicular to the plane of the roof; and
  - (d) for roofs less than 10 m<sup>2</sup>, is ventilated to outdoor air through openings not less than—
    - (i) 7,000 mm<sup>2</sup>/m at the eaves or low level; and
    - (ii) 5,000mm<sup>2</sup>/m at the high level or ridge.

(e) for all other roofs, is ventilated to *outdoor air* through openings not less than—

(iii) 20,000 mm<sup>2</sup>/m at the eaves or low level; and

(iv) 5,000mm<sup>2</sup>/m at the high level or ridge.

(2) Where a *control layer* is installed immediately above the *primary insulation layer* in *climate zones* 4, 5, 6, 7 and 8, it must have a *vapour permeance* of not less than 1.14 µg/N.s.

(3) The requirements of (1) do not apply to a—

(a) concrete roof; or

(b) roof that is made of insulated sandwich panels with or without an additional ceiling linings; or

(c) roof that is subject to Bushfire Attack Level FZ requirement in accordance with AS 3959; or

(d) tiled roof without a *control layer* located above the *primary insulation layer*.

REFER TO NCC VOLUME ONE 2025 FOR EXPLANATORY INFORMATION AND FIGURE REFERENCES.

## J1P1 Operational energy use and greenhouse gas emissions

A building, other than a Class 4 part of a building, including its *services*, must have features that—

(a) facilitate the efficient use of energy and near zero operational greenhouse gas emissions appropriate to—

(i) the function and use of the building; and

(ii) the level of human comfort required for the building use; and

(b) for the *conditioned space*, achieve an hourly *regulated energy* consumption and associated greenhouse gas emissions, averaged over the annual *hours of operation*, of not more than—

(i) for a Class 6 building, 40 kJ/m<sup>2</sup>.hr and 4 g of CO<sub>2</sub>-e/m<sup>2</sup>.hr; and

(ii) for a Class 5, 7b, 8 or 9a building other than a *ward area*, or a Class 9b *school*, 22 kJ/m<sup>2</sup>.hr and 2.2 g of CO<sub>2</sub>-e/m<sup>2</sup>.hr; and

(iii) for all other building classifications, 8 kJ/m<sup>2</sup>.hr and 1 g of CO<sub>2</sub>-e/m<sup>2</sup>.hr.

## J1V1 NABERS Energy

- (1) For a Class 5 building, compliance with J1P1 is verified when—
- (a) a minimum 6-star *NABERS Energy* for Offices base building Commitment Agreement is obtained; and
  - (b) the energy model required for (a) demonstrates that the base building's *regulated energy* greenhouse gas emissions are equivalent to at least the 6.6-star when excluding—
    - (i) tenant supplementary heating and cooling systems; and
    - (ii) external lighting; and
    - (iii) *carpark services*; and
  - (c) the energy model *required* for (a) demonstrates either—
    - (i) a *thermal comfort level* of between a *Predicted Mean Vote* of -1 to +1 is achieved across not less than 95% of the *floor area* of all occupied zones for not less than 98% of the *annual hours of operation* of the building; or
    - (ii) a dry bulb room temperature is maintained across not less than 95% of the *floor area* of all occupied zones, other than any room containing an indoor *swimming pool*, for not less than 95% of the *annual hours of operation* between—
      - (A) 18°C and 25°C for *conditioned spaces* with transitory occupancy; and
      - (B) 21°C and 24°C for all other *conditioned spaces*; and
  - (d) the building complies with the additional requirements in Specification 33.
- (2) For a Class 3 building, compliance with J1P1 is verified when—
- (a) a minimum 4-star *NABERS Energy* for Hotels Commitment Agreement is obtained; and
  - (b) the operating hours of the *services* are not less than 12 hours per day in bedrooms, dining rooms and conference facilities, 24 hours per day in corridors and foyers and 18 hours per day in back-of-house areas; and
  - (c) the energy model *required* for (a) demonstrates that—
    - (i) the *regulated energy* greenhouse gas emissions equivalent to at least 5.3-stars; and
    - (ii) a dry bulb room temperature is maintained across not less than 95% of the *floor area* of all occupied zones, other than any room containing an indoor *swimming pool* for not less than 95% of the *annual hours of operation* between—
      - (A) 18°C and 25°C for *conditioned spaces* with transitory occupancy and food preparation areas; and

- (B) 21°C and 24°C for all other *conditioned spaces*; and
    - (iii) the space temperature in any indoor *swimming pool* chamber is maintained at 2°C above the pool temperature during occupied hours of not less than 12 hours per day; and
  - (d) the building complies with the additional requirements in Specification 33.
- (3) For a Class 6 shopping centre, compliance with J1P1 is verified when—
- (a) a minimum 6-stars *NABERS Energy* for Shopping Centres Commitment Agreement is obtained; and
  - (b) the building has:
    - (i) an *air-conditioned* common area of not less than 20% of the gross lettable area; and
    - (ii) a gross lettable area greater than 15 000 m<sup>2</sup>; and
  - (c) the energy model *required* for (a) demonstrates—
    - (i) the *regulated energy* greenhouse gas emissions of the *services* covered within the scope of *NABERS Energy* for Shopping Centres ratings are equivalent to at least 6.7-stars when—
      - (A) excluding carpark services and carpark numbers from *NABERS Energy* calculation; and
      - (B) calculating solar photovoltaic export based on the reduced site energy use arising from (A); and
    - (ii) a dry bulb room temperature is maintained across not less than 95% of the *floor area* of all occupied zones, other than any room containing an indoor *swimming pool*, for not less than 95% of the annual *hours of operation* between—
      - (A) 18°C and 25°C for *conditioned spaces* with transitory occupancy and food preparation areas; and
      - (B) 21°C and 24°C for all other *conditioned spaces*; and
  - (d) the building complies with the additional requirements in Specification 33.
- (4) The calculation method for (1), (2), and (3) must comply with ANSI/ASHRAE Standard 140.

## J1V3 Verification using a reference building

- (1) For a Class 3, 5, 6, 7, 8 or 9 building, compliance with J1P1 is verified when—
- (a) it is determined that—

- (i) the *annual greenhouse gas emissions* of the proposed building are not more than 97% of the *annual greenhouse gas emissions* of a *reference building* when the proposed building is modelled with the proposed *services*; and
    - (ii) the *annual greenhouse gas emissions* of the *services* of the proposed building are not more than the *annual greenhouse gas emissions* of the *services* of the *reference building* when the proposed building is modelled with the same *services* as the *reference building*; and
  - (b) in the proposed building—
    - (i) if a Class 5 building, a thermal comfort level of between a Predicted Mean Vote of -1 to +1 is achieved across not less than 95% of the floor area of all occupied zones for not less than 98% of the annual hours of operation of the building; or
    - (ii) a dry bulb room temperature is maintained across not less than 95% of the *floor area* of all occupied zones other than any room containing an indoor *swimming pool*, for not less than 95% of the annual *hours of operation* between—
      - (A) 18°C and 25°C for *conditioned spaces* with transitory occupancy; and
      - (B) 21°C and 24°C for all other *conditioned spaces*; or
    - (iii) in *climate zone 1*, the 98<sup>th</sup> percentile zone *cooling load* across the *hours of operation* does not exceed 110% of the 98<sup>th</sup> percentile load in the corresponding zone of the *reference building*, across 95% of the assessable *floor area*; or
    - (iv) in *climate zone 8*, the 98<sup>th</sup> percentile zone *heating load* across the *hours of operation* does not exceed 110% of the 98<sup>th</sup> percentile load in the corresponding zone of the *reference building*, across 95% of the assessable *floor area*; or
    - (v) in *climate zones 2 to 7*—
      - (A) the 98<sup>th</sup> percentile zone *cooling load* across the annual *hours of operation* does not exceed 120% of the 98<sup>th</sup> percentile load of the corresponding zone of the *reference building*, across 95% of the assessable *floor area*; and
      - (B) the 98<sup>th</sup> percentile zone *heating load* across the annual *hours of operation* does not exceed 120% of the 98<sup>th</sup> percentile load of the corresponding zone of the *reference building*, across 95% of the assessable *floor area*; and
  - (c) the building complies with the additional requirements in Specification 33.
- (2) The calculation method used for (1) must comply with—
- (a) ANSI/ASHRAE Standard 140; and

- (b) Specification 34.; and
- (c) Specification 48.

## J1V4 Verification of building envelope sealing

- (1) Compliance with J1P1(a) and J1P2 is verified for building *envelope* sealing when the *envelope* is sealed at an air permeability rate, tested in accordance with Method 1 of AS/NZS ISO 9972, of not more than—
  - (a) for a Class 4 part of a building, 10 m<sup>3</sup>/hr.m<sup>2</sup> at 50 Pa reference pressure; or
  - (b) for a Class 5, 6, 8 or 9a or 9b building, other than a *ward area*, in *climate zones* 1, 7 and 8, 5 m<sup>3</sup>/hr.m<sup>2</sup> at 50 Pa reference pressure; or
  - (c) for a Class 3 or 9c building, or a Class 9a *ward area* in *climate zones* 1, 3, 4, 6, 7 and 8, 5 m<sup>3</sup>/hr.m<sup>2</sup> at 50 Pa reference pressure.
- (2) In a Class 4 part of a building, where an air permeability rate of not more than 5 m<sup>3</sup>/hr.m<sup>2</sup> at 50 Pa reference pressure is achieved—
  - (a) a mechanical ventilation system must be provided that—
    - (i) can be manually overridden; and
    - (ii) provides outdoor air, either—
      - (A) continuously; or
      - (B) intermittently, where the system has controls that enable operation for not less than 25 per cent of each 4 hour segment; and
    - (iii) provides a flow rate not less than that achieved with the following formula:  $Q = (0.05 \times A + 3.5 \times (N + 1))/p$ , where—
      - (A)  $Q$  = the required air flow (L/s); and
      - (B)  $A$  = the total area of the Class 4 part of a building (m<sup>2</sup>); and
      - (C)  $N$  = the number of bedrooms in the Class 4 part of a building; and
      - (D)  $p$  = the fraction of time within each 4 hour segment that the system is operational; and
  - (b) any space with a solid-fuel burning combustion appliance must be ventilated with permanent openings directly to outside with a free area of not less than half of the cross-sectional area of the appliance's flue; and
  - (c) any space with a gas-fueled combustion appliance must be ventilated in accordance with—
    - (i) clause 6.4 of AS/NZS 5601.1; and
    - (ii) clause 6.4.5 of AS/NZS 5601.1.



(3) For the purposes of (2)(c), the volume of the space is considered to be 1 m<sup>3</sup> for determining ventilation requirements.

## J4D4 Roof and ceiling construction

- (1) A roof or ceiling must achieve a *Total R-Value* greater than or equal to—
- (a) for a Class 5, 6, 7, 8 or 9b building or a Class 9a building other than a *ward area*—
    - (i) in *climate zones* 1, 2, 3, 4 and 5 — R3.7 for a downward direction of heat flow; and
    - (ii) in *climate zones* 6 — R3.2 for a downward direction of heat flow; and
    - (iii) in *climate zones* 7 — R3.7 for an upward direction of heat flow; and
    - (iv) in *climate zones* 8 — R4.8 for an upward direction of heat flow.
  - (b) for a Class 3 or 9c building or a Class 9a *ward area*—
    - (i) in *climate zones* 1, 3, 4 and 6 — R4.8 for a downward direction of heat flow; and
    - (ii) in *climate zones* 2 — R4.4 for a downward direction of heat flow; and
    - (iii) in *climate zones* 5 — R3.7 for a downward direction of heat flow; and
    - (iv) in *climate zones* 7 and 8 — R5.3 in an upward direction of heat flow.
- (2) In *climate zones* 1, 2, 3, 4, 5, 6 and 7 the upper surface of a roof must have—
- (a) a *Total Solar Reflectance* greater than 0.55 and a thermal emittance greater than 0.85; or
  - (b) a *Solar Reflectance Index* greater than 61; or
  - (c) a solar absorptance of not more than 0.45 and a thermal emittance of greater than 0.85.
- (3) In *climate zones* 1, 2, 3, 5 and 6 the upper surface of a metal roof, which has outside air intakes, unitary air-conditioning units or air-cooled chillers mounted on it or less than 2 m above it, must have—
- (a) a *Total Solar Reflectance* greater than 0.65 and a thermal emittance greater than 0.85; or
  - (b) a *Solar Reflectance Index* greater than 80; or
  - (c) a solar absorptance of not more than 0.35 and a thermal emittance of greater than 0.85.
- (4) The requirements of J4D3(2) and (3) do not apply to the portion of the upper surface of a roof that is beneath a solar photovoltaic panel or a rooftop garden.



## J6D5 Fans and duct systems

- (1) Fans, ductwork and duct components that form part of an *air-conditioning* system or mechanical ventilation system must—
  - (a) separately comply with (2) to (12); or
  - (b) achieve a fan motor input power per unit of flowrate lower than the fan motor input power per unit of flowrate achieved when applying (2) to (12) together.; or
- (2) Subject to (6), fans other than roof mounted ventilation fans with cowlings, must have a peak efficiency determined, in accordance with Specification 46, of not less than,  $n_{min} = a \times \ln(P) - b + N$  where—
  - (a)  $n_{min}$  = the minimum required peak system static efficiency for installation type A or C or the minimum peak (i) system total efficiency for installation type B or D; and
  - (b)  $P$  = the electrical input power of the fan (kW) at peak efficiency point, including any integrated motor control (ii) equipment; and
  - (c)  $N$  = the minimum performance grade obtained from Table J6D5a; and
  - (d)  $a$  = regression coefficient a, obtained from Table J6D5b; and
  - (e)  $b$  = regression coefficient b, obtained from Table J6D5c; and
  - (f)  $\ln$  = natural logarithm.
- (3) Subject to (6), roof mounted ventilation fans with cowlings must—
  - (a) where the electrical input power of the fan at peak efficiency point including any integrated motor control equipment is less than or equal to 30 kW, have peak efficiency, determined in accordance with Specification 46, of not less than,  $n_{minroof} = 0.062 \times \ln(P) + 0.35$ , where—
    - (i)  $n_{minroof}$  = the minimum required system static efficiency for installation type A or C of the minimum required system total efficiency for installation type B or D; and
    - (ii)  $P$  = the electrical input power of the fan (kW) at peak efficiency point, including any integrated motor control equipment; and
    - (iii)  $\ln$  = natural logarithm.
  - (b) where the electrical input power of the fan at peak efficiency point, including any integrated motor control equipment is greater than 30 kW—
    - (i) have a peak system static efficiency of not less than 56% for installation type A or C; or
    - (ii) a peak system total efficiency of not less than 56% for installation type B or D.
- (4) Subject to (6), fans must either—
  - (a) individually, have a fan power ratio in accordance with Specification 46 of less than 0.96; or
  - (b) collectively, have an average fan power ratio in accordance with Specification 46 of less than 0.96.

- (5) Where a fan's electrical power input, including any integrated motor control equipment, at the peak efficiency point and full speed, is greater than 750 W—
- (a) the fan must be capable of variable speed operation; and
  - (b) where serving a single room or space, the fan must be capable of operating at reduced flow when conditions in the room or space served are within the temperature control deadband; if applicable and
  - (c) where serving more than one room or space, the fan and the system it serves must—
    - (i) be capable of variable volume operation; and
    - (ii) operate to a variable pressure to the extent practicable.
- (6) The requirements of (2) to (5) do not apply to fans—
- (a) with electrical input power less than or equal to 125 W; or
  - (b) that need to explosion proof; or
  - (c) that are supply fans inside unitary *air-conditioning* equipment.
- (7) The pressure drop in the index run across all straight sections of rigid ductwork and all sections of flexible ductwork must not exceed 1 Pa/m when averaged over the entire length of straight rigid duct and flexible duct. The pressure drop of flexible ductwork sections may be calculated as if the flexible ductwork is laid straight.
- (8) Flexible ductwork must not account for more than 6 m in total length in any duct run.
- (9) The upstream connection to ductwork fittings in the index run must have an equivalent diameter to the connected duct.
- (10) Turning vanes must be included in all rigid ductwork elbows of 90° or more acute than 90° in the index run except where—
- (a) the inclusion of turning vanes presents a fouling risk; or
  - (b) a long radius bend in accordance with AS 4254.2 is used.
- (11) For ductwork components in the index run:
- (a) the pressure drop across a coil must not exceed the value specified in Table J6D5d.; and
  - (b) a high efficiency particulate arrestance (HEPA) air filter must not exceed the higher of—
    - (i) a pressure drop of 200 Pa when clean; or
    - (ii) the filter design pressure drop when clean at an air velocity of 1.5 m/s.; and
  - (c) any other air filter must not exceed—
    - (i) the pressure drop specified in Table J6D5e when clean; or

- (ii) the filter design pressure drop when clean at an air velocity of 2.5 m/s.; and
- (d) the pressure drop across intake louvres, relief louvres and exhaust louvres must not exceed the higher of—
  - (i) for single stage louvres, 30 Pa; and
  - (ii) for two stage louvres, 60 Pa; and
  - (iii) for acoustic louvres, 50 Pa; and
  - (iv) for other non-weatherproof louvres, 30 Pa.; and
- (e) the pressure drop across a variable air volume box, with the damper in the fully open position, must not exceed—
  - (i) for units with electric reheat, 100 Pa; and
  - (ii) for other units, 25 Pa not including coil pressure losses.; and
- (f) rooftop cowls must not exceed a pressure drop of 30 Pa; and
- (g) attenuators must not exceed a pressure drop of 40 Pa; and
- (h) fire dampers must not exceed a pressure drop of 15 Pa when open; and
- (i) balancing and control dampers in the index run must not exceed a pressure drop of 25 Pa when in the fully open position; and
- (j) supply air diffusers and grilles must not exceed a pressure drop of 40 Pa; and
- (k) exhaust grilles must not exceed a pressure drop of 30 Pa; and
- (l) transfer ducts must not exceed a pressure drop of 12 Pa; and
- (m) door grilles and door undercuts must not exceed a pressure drop of 12 Pa; and
- (n) active chilled beams must not exceed a pressure drop of 150 Pa.
- (12) The requirements of (1) to (11) do not apply to—
  - (a) fans in unducted *air-conditioning* systems with a supply air capacity of less than 1000 L/s; and
  - (b) fans which are dedicated solely to fire and; and
  - (c) the power for process-related components; and
  - (d) kitchen exhaust systems.

**REFER TO NCC VOLUME ONE 2025 FOR EXPLANATORY INFORMATION AND TABLE REFERENCES.**

## J7D3 Artificial lighting

REFER TO NCC VOLUME ONE 2025 FOR THE CLAUSE.

**Table J7D3b: Illumination power density adjustment factor for a control device**

| Item Notes 1 and 2   | Description  | <i>illumination power density adjustment factor</i>  |
|--|--|--|
| Demand-operated controls   | In a toilet or change room, other than a public toilet, in a Class 6 building                                      | 0.4  |
| Demand-operated controls   | Where a group of light fittings serving less than 100 m <sup>2</sup> is controlled by one or more detectors        | 0.6  |
| Demand-operated controls   | Where a group of light fittings serving 100 m <sup>2</sup> or more is controlled by one or more detectors          | 0.7  |
| Programmable dimming system <sup>Note 3</sup>  | Where not less than 75% of the area of a space is controlled by programmable dimmers                               | 0.85   |
| Fixed dimming <sup>Notes 3 and 4</sup>   | All fittings with fixed dimming  | Whichever is greater of (a) 0.5; or (b) $0.2 + 0.8L$ where L = the illuminance turndown for the fixed dimming. |
| Lumen depreciation dimming <sup>Note 3</sup>   | All fittings with lumen depreciation dimming   | 0.85   |
| Two stage sensor - equipped lights with minimum power of 30 % of peak power or less  | Fire stairs and other spaces not used for regular transit  | 0.4  |
| Two stage sensor - equipped lights with minimum power of 30% of peak power or less   | Transitory spaces in regular use or in a <i>carpark</i>  | 0.7  |
| Daylight sensor and dynamic lighting control device - dimmed or stepped switching of lights adjacent <i>windows</i> <sup>Notes 3 and 5</sup> | In a Class 5, 6, 7, 8 or 9b building or a Class 9a building, other than a ward area, where the lights are adjacent | 0.5 <sup>Note 3</sup>  |

|  |  |                            |
|--|--|----------------------------|
|  | <i>windows</i> , other than <i>roof lights</i> , for a distance from the window equal to the depth of the floor to <i>window head height</i>   |                            |
| Daylight sensor and dynamic lighting control device - dimmed or stepped switching of lights adjacent <i>windows</i> <small>Notes 3 and 5</small> | Serving a Class 3 or 9c building, or a Class 9a <i>ward area</i> , where the lights are adjacent <i>windows</i> , other than <i>roof lights</i> , for a distance from the <i>window</i> equal to the depth of the floor to <i>window head height</i> | 0.75 <small>Note 3</small> |
| Daylight sensor and dynamic lighting control device - dimmed or stepped switching of lights adjacent <i>windows</i> <small>Notes 3 and 5</small> | In a Class 5, 6, 7, 8 or 9b building or a Class 9a building, other than a <i>ward area</i> , where the lights are adjacent <i>roof lights</i>  | 0.6 <small>Note 3</small>  |
| Daylight sensor and dynamic lighting control device - dimmed or stepped switching of lights adjacent <i>windows</i> <small>Notes 3 and 5</small> | In a Class 3 or 9c building, or a Class 9a <i>ward area</i> , where the lights are adjacent <i>roof lights</i>   | 0.8 <small>Note 3</small>  |

#### Table Notes

- (1) A maximum of two *illumination power density* adjustment factors for a control device can be applied to an area.
- (2) Where more than one *illumination power density* adjustment factor (other than for room aspect) applies to an area, (2) they are to be combined using the following formula:  
 $A \times (B/2 + 0.5)$ , where—
  - (i) *A* = is the lowest applicable *illumination power density* adjustment factor; and
  - (ii) *B* = is the second lowest applicable *illumination power density* adjustment factor.
- (3) The adjustment factor does not apply to tungsten, halogen or other incandescent sources.
- (4) Includes luminaires with a pre-programmed function which provides dimming from ON to OFF (one-stage dimming).
- (5) For lighting controlled by daylight sensors, the *illumination power density* adjustment factor is only applied between 8:00 am and 7:00 pm.

## S37C7 Shading

For the purpose of calculating *solar admittance*, the shading multiplier for each *glazing* element is the lesser of—

- (a) for shading provided by an external permanent projection that extends horizontally on both sides of the *glazing* for the same projection distance P, as shown in Figure S37C7a—
  - (i) the value in Table S37C7a for shading on the northern, eastern or western aspects; or
  - (ii) the value in Table S37C7b for shading on the southern aspect; or
- (b) for shading provided by an external permanent projection that extends vertically for the height of the *glazing* for the same projection distance D, as shown in Figure S37C7b—
  - (i) the value in Table S37C7c for shading on the northern aspect; or
  - (ii) the value in Table S37C7d for shading on the western aspect; or
  - (iii) the value in Table S37C7e for shading on the eastern aspect; or
  - (iv) 1.0 for shading on the southern aspect; or
- (c) 0.35 for shading that is 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 summer solar radiation; and
  - (ii) if adjustable, will operate automatically in response to the level of solar radiation.

**REFER TO NCC 2025 VOLUME ONE FOR TABLES AND FIGURES.**

## Volume Two

### H5P1 Movement to and within a building

So that people can move safely to and within a building—

- (a) walking surfaces must have safe gradients; and
- (b) any stairway or ramp (other than a *threshold ramp*) must—
  - (i) have suitable handrails where necessary to assist and provide stability to people using the stairway or ramp; and
  - (ii) have suitable landings to avoid undue fatigue of users; and
  - (iii) be suitable for safe passage in relation to the nature, volume and frequency of likely usage; and
  - (iv) have slip-resistant walking surfaces on ramps, and on stairway treads or near the edge of the nosing.

## Housing Provisions

### 4.2.22 Recessed areas of slabs

- (1) Where a recess in a slab is provided, a thickening must be provided in accordance with one of the following:
  - (a) For recess depths (d) less than or equal to half the nominal slab thickness (see Figure 4.2.22a)—
    - (i) a thickening must be provided not less than 400 mm measured horizontally from the inside face of each side of the recess (L); and
    - (ii) the reinforcing mesh must—
      - (A) be bent to accommodate the recess (see Figure 4.2.22a); or
      - (B) be installed in accordance with (b)(i) and (ii).
  - (b) For recess depths (d) greater than half the nominal slab thickness (see Figure 4.2.22b)—
    - (i) top reinforcing mesh must overlap the bottom reinforcing mesh by not less than 400 mm; and
    - (ii) bottom reinforcing mesh must be two layers of SL72.
- (2) Concrete cover to reinforcing in (1)(a) and (b) must comply with 4.2.11(5).
- (3) Thickening required by (1) must be not less than the sum of recess depth (d) and the *required* slab depth (D).
- (4) *Required* slab depth (D) must be provided below the recess.

REFER TO NCC 2025 ABCB HOUSING PROVISION FOR TABLES AND FIGURES.

### 10.8.1 External wall construction

- (1) Where a *pliable building membrane* or a *sarking-type material* is installed as a *control layer* in an external wall, it must—
  - (a) comply with AS 4200.1; and
  - (b) be installed in accordance with AS 4200.2.
- (2) Subject to (5), any *control layer* incorporated between the cladding and the exterior side of the *primary insulation layer* in an *external wall* must achieve the *vapour permeance* specified in Table 10.8.1.



- (3) Subject to (4) and (5), an *external wall* without a *pliable building membrane* or a water barrier, between the cladding and the exterior side of the *primary insulation layer* must incorporate a *drained* and ventilated cavity.
- (4) Subject to (5), for the purposes of (2) and (3) a *drained* and ventilated cavity must—
- (a) be located between the cladding and the external side of the *primary insulation layer* or the outermost *control layer*; and
  - (b) be constructed of *cavity battens*, *spacer battens* or the like, with a depth of at least 12 mm; and
  - (c) be unobstructed by any *control layer*; and
  - (d) be *drained* to the exterior, including where *cavities* are vertically compartmentalised in a multi-storey building; and
  - (e) have openings with a free area of no less than 1,000 mm<sup>2</sup>/m of wall provided at—
    - (i) the base and top of the *cavity*; or
    - (ii) each *storey* or level to where the *cavity* is closed.
- (5) The requirements of (2), (3) and (4) do not apply to a—
- (a) Single skin masonry wall; or
  - (b) Single skin concrete wall; or
  - (c) A wall constructed from insulated sandwich panels where the external wall of the building is entirely comprised of insulated sandwich; or
  - (d) A wall that does not form part of the building *envelope*; or
  - (e) Any portion of the *external wall* below natural ground level.

REFER TO NCC 2025 ABCB HOUSING PROVISION FOR TABLES, FIGURES AND EXPLANATORY INFORMATION.

#### 10.8.4 Ventilation of a roof space with the primary insulation layer parallel to the roof plane

- (1) In *climate zones* 6, 7 and 8, a roof system with the *primary insulation layer* installed parallel to the roof plane must have a roof space that—
- (a) is located immediately above—
    - (i) the *primary insulation layer*; or
    - (ii) any *control layer* installed immediately above the *primary insulation layer*; and
  - (b) is not obstructed by *insulation*; and

(c) is minimum 18 mm in height as measured perpendicular to the plane of the roof; and

(d) for roofs less than 10 m<sup>2</sup>, is ventilated to *outdoor air* through openings not less than—

(i) 7,000 mm<sup>2</sup>/m provided at the eaves or low level; and

(ii) 5,000 mm<sup>2</sup>/m at the high level or ridge; and

(e) for all other roofs is ventilated to *outdoor air* through openings not less than—

(i) 20,000 mm<sup>2</sup>/m provided at the eaves or low level; and

(ii) 5,000 mm<sup>2</sup>/m at the high level or ridge.

(2) Where a *control layer* is installed immediately above the *primary insulation layer* in *climate zones* 6, 7 and 8, it must have a *vapour permeance* of not less than 1.14 µg/N.s.

(3) The requirements of (1) do not apply to a—

(a) concrete roof; or

(b) roof that is made of insulated sandwich panels with or without an additional ceiling lining; or

(c) roof that is subject to Bushfire Attack Level FZ requirements in accordance with AS 3959; or

(d) tiled roof without a *control layer* located above the *primary insulation layer*.

**REFER TO NCC 2025 ABCB HOUSING PROVISION FOR EXPLANATORY INFORMATION AND FIGURES.**

## 13.2.6 Floors and subfloor walls

(1) Floor insulation, where the floor is over an unenclosed space, must achieve the minimum *R-Value* in accordance with Table 13.2.6a.

(2) Floor and subfloor insulation, where the floor is over an enclosed subfloor space, must—

(a) in *climate zone* 1, be subfloor wall insulation with an *R-Value* of R1.5; and

(b) in *climate zone* 2, be subfloor wall insulation in accordance with Table 13.2.6b; and

(c) in *climate zone* 3, be subfloor wall insulation in accordance with Table 13.2.6c; and

(d) in *climate zone* 4, be in accordance with Table 13.2.6d; and

- (e) in *climate zone 5*, be in accordance with Table 13.2.6e; and
  - (f) in *climate zone 6*, be in accordance with Table 13.2.6f; and
  - (g) in *climate zone 7*, be in accordance with Table 13.2.6g; and
  - (h) in *climate zone 8*, be in accordance with Table 13.2.6h.
- (3) The thermal bridging in a metal-framed floor must be addressed by—
- (a) achieving the *Total R-Value* in Table 13.2.6i, calculated by—
    - (i) using a method that accounts for the effect of thermal bridging in a suspended floor above an enclosed subfloor space; or
    - (ii) using AS/NZS 4859.2 for all other floors; or
  - (b) complying with one of the options in Table 13.2.6j.
- (4) 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.
- (5) A concrete slab-on-ground or the like, other than a waffle pod slab, must be insulated in accordance with the following:
- (a) In *climate zones 6 and 7*—
    - (i) insulation with *R-Value* greater than or equal to 0.64 must be installed around the vertical edge of its perimeter; and
    - (ii) insulation with an *R-Value* greater than or equal to 0.64 must be installed underneath the slab.
  - (b) In *climate zone 8*—
    - (i) insulation with an *R-Value* greater than or equal to 1.0 must be installed around the vertical edge of its perimeter; and
    - (ii) insulation with an *R-Value* greater than or equal to 2.0 must be installed underneath the slab.
- (6) Insulation required by (4), (5)(a)(i) and (5)(b)(i) must—
- (a) be *water resistant*; and
  - (b) be continuous from the adjacent finished ground level—
    - (i) to a depth of greater than or equal to 300 mm; or
    - (ii) for at least the full depth of the vertical edge of the concrete slab-on-ground (see Figure 13.2.6).
- (7) The requirements of (4) do not apply to an in-screed heating or cooling system used solely in a bathroom, amenity area or the like.

**REFER TO NCC 2025 ABCB HOUSING PROVISION FOR TABLES, FIGURES AND EXPLANATORY INFORMATION.**

## Volume Three

### B5D7 Cross-connection hazards

- (1) The *Hazard Ratings* prescribed for the *cross-connection* hazards described in (4) to (14) must be used for selecting the required backflow protection for the purposes of compliance with B5D2, B5D3, B5D4, B5D5 and B5D6.
- (2) *Cross-connection* hazards within the *site* must be rated in accordance with—
  - (a) (4), (5) and (6) for *individual protection* at the point of each individual hazard; or
  - (b) (7), (8) and (9) for *zone protection* at the point where a group of hazards can be isolated.
- (3) The hazard posed by the *site* to the *Network Utility Operator's drinking water* supply must be rated for *containment protection* in accordance with (10), (11) and (12).
- (4) The following are *Low Hazard* for the purpose of *individual protection*:
  - (a) Carbonated drink dispensing machines.
  - (b) Drinking fountains and bottle fillers.
  - (c) Coils and jackets in heat exchangers, in sealed and non-toxic environments only.
  - (d) Drink dispensing equipment including vending machines and coffee machines.
  - (e) External hose taps, with no hazards within 18 m.
  - (f) Fixtures used for ablutions including baths, basins, showers and bidettes with a minimum 25 mm air gap.
  - (g) Toilet douche seats where the outlet in all positions is at least 25 mm above the overflow level of the pan.
  - (h) Fixtures used for food preparation, including sinks.
  - (i) Flexible hoses used over domestic waste fixtures.
  - (j) Haemodialysis machines in Class 1, Class 2 and Class 10 buildings.
  - (k) Hair salon basins or troughs.
  - (l) In-line water softeners and filters.
  - (m) Photographic processing machines without developer mixing.
  - (n) Emergency eye wash and shower stations for use with *drinking water*.
  - (o) Food preparation or food storage tanks, vats or vessels (without clean-in-place systems).

- (5) The following are *Medium Hazard* for the purpose of *individual protection*;
- (a) Chemical dispensers (low toxicity).
  - (b) Dental consoles.
- (6) The following are *High Hazard* for the purpose of *individual protection*:
- (a) Chlorinators.
  - (b) Coils and jackets in heat exchangers, in unsealed and toxic environments.
  - (c) Steam calorifiers.
  - (d) Steam *boilers*.
  - (e) Antibiotic injectors (agricultural).
  - (f) Bidets and toilet douche seats where the outlet in any position is not 25 mm above the overflow level of the pan.
  - (g) Bidettes installed without a minimum 25 mm air gap.
  - (h) Handheld bidet/douche hoses and trigger sprays.
  - (i) Chemical dispensers (high toxicity).
  - (j) Cooling towers.
  - (k) Demineralising equipment using ion-exchange resins with acid and alkali regeneration.
  - (l) Equipment used for handling, mixing, measuring and processing chemical and microbiological substances.
  - (m) Fogging and cleaning sprays with chemical injection or additives.
  - (n) Mixing of chemicals.
  - (o) Pan washing apparatus.
  - (p) Photographic developers with *drinking water* supply rinse tanks or mixing facilities.
  - (q) Plants with auxiliary *non-drinking water* supplies.
  - (r) Type D *irrigation system* injected with fertilisers, herbicides, nematicides, insecticides or weedicides.
  - (s) Weed and pest spraying and water cartage tasks.
  - (t) Portable and mobile tankers.
  - (u) Placenta/surgical waste disposal units.
  - (v) Food preparation or food storage tanks, vats or vessels (with clean-in-place systems).
  - (w) *Buried rainwater tank*.
- (7) The following are *Low Hazard* for the purpose of *zone protection*:
- (a) Fire-fighting water storage tanks without chemical additives.

- (b) Food storage tanks, vats or vessels.
  - (c) Hair salon basins or troughs.
  - (d) Type B *irrigation systems*.
  - (e) Water filtration equipment.
- (8) The following are *Medium Hazard* for the purpose of *zone protection*:
- (a) Type C *irrigation systems*.
  - (b) Beauty spas and foot salons.
- (9) The following are *High Hazard* for the purpose of *zone protection*:
- (a) Photographic laboratories.
  - (b) Aircraft facilities.
  - (c) Secondary school laboratories, including fume cupboards.
  - (d) Dental and medical procedure rooms and equipment using drinking water.
  - (e) Clean-in-place systems.
  - (f) Commercial laundries.
  - (g) Cooling or heating systems with recirculating water.
  - (h) Dockside facilities.
  - (i) Drinking nipples and troughs (agricultural).
  - (j) Food preparation or food storage tanks, vats or vessels.
  - (k) Vats and vessels (clean-in-place systems).
  - (l) In a Class 9 building—
    - (i) dissecting rooms; and
    - (ii) utility rooms which contain fixtures other than hand basins; and
    - (iii) operating theatres.
  - (m) Industrial and teaching laboratories.
  - (n) Industrial process water that has been recirculated.
  - (o) Mortuary equipment used in funeral parlours, mortuaries and autopsy areas.
  - (p) Sanitary dump points.
  - (q) Tanks, vats or vessels associated with electroplating, degreasing, descaling, stripping, pickling, dipping or the like.
  - (r) Type D *irrigation systems* injected with fertilisers, herbicides, nematicides, insecticides or weedicides.
- (10) The following are *Low Hazard* for the purpose of *containment protection*:

- (a) A water service provided to a Class 1, Class 2, Class 7a or Class 10 building where—
    - (i) not more than 12 persons reside; and
    - (ii) the building may only use non-commercial amounts of cleaning products.
  - (b) Premises served by a rainwater harvesting system, not including any rainwater storage tanks that are *buried rainwater tanks*.
  - (c) A water service where there are no *non-drinking water* services within the property.
- (11) The following are *Medium Hazard* for the purpose of *containment protection*:
- (a) A water service provided to a Class 3, Class 4, Class 5, Class 6 or Class 7b building where chemicals are not stored.
  - (b) A water service provided to a property that has—
    - (i) other *non-drinking water* services; or
    - (ii) a separate fire-fighting water service not directly connected to *Network Utility Operator's* water supply as mentioned in B5D7(13)(a)(i).
- (12) The following are *High Hazard* for the purpose of *containment protection*:
- (a) A water service provided to a Class 7b building where chemicals may be stored.
  - (b) A water service provided to a Class 8 or Class 9 building.
  - (c) A water service provided to a property used for commercial agriculture, farming, turf irrigation, industrial, processing or chemical industries.
  - (d) A water service provided to a property that has *non-drinking water* services from multiple sources with potential for health related contamination.
- (13) The following fire-fighting water services are *Low Hazard*:
- (a) A fire-fighting water service which has—
    - (i) a direct connection to a *Network Utility Operator's* water supply; and
    - (ii) does not contain a tank, reservoir, connection to another water supply, antifreeze or other additives, or fire brigade booster connection from an auxiliary water supply.
  - (b) Domestic fire sprinkler systems installed in Class 1 buildings.
  - (c) FPAA101D fire sprinkler systems.

(14) Any fire-fighting water services not referred to in (13) are *Medium Hazard*.

## Applications

(a) For B5D7(11), *Medium Hazard* properties for the purposes of containment protection include the following:

- (i) Caravan parks.
- (ii) Food and beverage processing plants.
- (iii) Premises that are connected to a grey water re-use system or a reticulated and disinfected reclaimed water system.
- (v) Public *swimming pools*.

(b) For B5D7(12), *High Hazard* properties for the purpose of *containment protection* include the following:

- (i) Abattoirs.
- (ii) Car and plant washing facilities.
- (iii) Chemical laboratories.
- (iv) Chemical plants.
- (v) Factories using, processing or manufacturing toxic chemicals.
- (vi) Hospitals, mortuaries, dental surgeries, clinics or day surgeries and the like containing patient care areas such as an operating theatre, minor procedures consultation room, resuscitation, intensive care and coronary care.
- (vii) Metal finishing plants.
- (viii) Pathology laboratories.
- (ix) Petroleum processing and storage plants and facilities.
- (x) Piers, docks, marinas and other waterfront facilities.
- (xi) Premises where access to conduct inspections is restricted.
- (xii) Sanitary depots.
- (xiii) Sewerage treatment plants and sewerage lift stations.
- (xiv) Universities.
- (xv) Premises containing wastewater dump points.
- (xvi) Industrial processing.
- (xvii) Chemical industries.



## Exemptions

- (a) B5D7(10)(b) does not apply to a *non-drinking water* service provided to the property by a *Network Utility Operator* as part of a dual water supply.
- (b) B5D7(11)(b)(i) does not apply to a *non-drinking water* service provided to the property by a *Network Utility Operator*.

## Explanatory Information: Clean-in-place systems

For the purposes of B5D7(4)(o) in *individual protection*, clean-in-place is a method of cleaning the internal surfaces of pipes, vessels, process equipment, filters and associated fittings, without disassembly.

## Explanatory Information: Hazard Ratings

B5D7 only prescribes *Hazard Ratings* for a limited list of known hazards. It does not cover every potential *cross-connection* that may arise.

Where a situation arises which is not listed in the clause, the appropriate *Hazard Ratings* may be determined through a *Performance Solution*. A *Performance Solution* can be developed using *Verification Method B5V1*.

## Explanatory Information: Toilet douche seats

For the purposes of B5D7(6)(f), the *high hazard backflow prevention device* can be part of the toilet douche seat or installed separately.

## Explanatory Information: Containment protection

- For B5D7(11)(a); Class 3, 5, 6 and 7b buildings are likely to have greater than 12 occupants (residents and/or workers) and may contain moderate amounts of cleaning or commercial chemicals, or a separate fire-fighting water service.
- For B5D7(12)(b) and B5D7(12)(c); a property presents a risk from wastewater effluent *irrigation system*, process water and/or bore water. The property has an increased potential for *cross-connection* between *drinking water* and *non-drinking water* with high consequences such as chemicals, recycled sewerage, medical, biological, toxic or hazardous substances.
- For B5D7(10), B5D7(11), B5D7(12), B5D7(13) and B5D7(14); in some jurisdictions, regulations issued under water supply legislation, and/or rules set by a *Network Utility Operator*, may prescribe backflow prevention requirements that exceed those contained in B5D6. In these circumstances those regulations and/or rules should be followed.

## Schedule 1 *(Common to all Volumes and the Housing Provisions)*

### Definitions—Envelope

**Envelope:** For the purposes of—

- (a) Section J and Part F8 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) an internal non-*conditioned space* where the temperature is primarily determined by external ambient conditions and thermal loads are not addressed by the *air-conditioning* and ventilation services; or
  - (iii) the floor above a carpark or warehouse; and the common wall with a carpark, warehouse or the like; or
- (b) Part H6 in NCC Volume Two and Section 10 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.