



Volume One



Building Code of Australia

2019

Amendment 1

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PUBLIC COMMENT DRAFT

Part C2 Compartmentation and separation

Deemed-to-Satisfy Provisions

C2.5 Class 9a and 9c buildings

- (a) ...
- (b) A Class 9b early childhood centre must comply with the following:
 - (i) The Class 9b early childhood centre must be divided into at least 2 fire compartments.
 - (ii) Each fire compartment required by (i) must have at least 2 horizontal exits not less than 9 m apart.
- (c) The requirements of (b) do not apply to a Class 9b early childhood centre that is wholly within a storey that provides direct egress to a road or open space.
NSW C2.5(d)
- (d) ~~(b)~~

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Specification C1.1 Fire-resisting construction

Deemed-to-Satisfy Provisions

3.10 Class 2 and 3 buildings: Concession

- (a) Notwithstanding C1.9(a) and (b), C2.6 and Clause 3.1(d) of Specification C1.1, An element of a Class 2 or 3 building having a *rise in storeys* of not more than 3 ~~need not comply with Clause 3.1(d) of Specification C1.1 and the requirements of C1.9(a), (b) and C2.6 for non-combustible material, if it is~~ may be constructed using—
- (i) timber framing throughout in conjunction with non-combustible material; or
 - (ii) non-combustible material throughout; ~~or~~
 - (iii) ~~a combination of (i) and (ii),~~
- provided— the building is fitted with an automatic smoke detection and alarm system complying with Specification E2.2a.
- ~~(iv) * * * * *~~
- ~~(v) any insulation installed in the cavity of a wall required to have an FRL is non-combustible; and~~
- ~~(vi) the building is fitted with an automatic smoke detection and alarm system complying with Specification E2.2a.~~
- (b) ...

4.3 Class 2 and 3 buildings: Concession

- (a) Notwithstanding C1.9(a) and (b), C2.6 and Clause 4.1(e) of Specification C1.1, An element of a Class 2 or 3 building having a *rise in storeys* of not more than 3 ~~need not comply with Clause 3.1(d) of Specification C1.1 and the requirements of C1.9(a), (b) and C2.6 for non-combustible material, if it is~~ may be constructed using—
- (i) timber framing throughout in conjunction with non-combustible material; or
 - (ii) non-combustible material throughout; ~~or~~
 - (iii) ~~a combination of (i) and (ii),~~
- provided— the building is fitted with an automatic smoke detection and alarm system complying with Specification E2.2a.
- ~~(iv) * * * * *~~
- ~~(v) any insulation installed in the cavity of a wall required to have an FRL is non-combustible; and~~
- ~~(vi) the building is fitted with an automatic smoke detection and alarm system complying with Specification E2.2a.~~
- (b) ...

Section D Access and egress

Verification Methods

DV3 Ramp gradient, crossfall, surface profile and slip resistance for ramps used by wheel-chairs

(a) ...

(d) The time taken to ascend the ramp must be less than 17 s when calculated in accordance with the formula:

$$T = \frac{Lm}{t(F_p - mg \sin \alpha - C_{\pi 1} N_1 - C_{\pi 2} N_2)}$$

where—

T = the time taken to ascend the ramp in seconds; and

L = the length of the ramp in metres; and

m = the design mass of the wheelchair and wheelchair user, equal to 127 kg for ramps required to be usable by the general public; and

t = the time taken for the wheelchair to achieve maximum velocity, equal to 0.8 s; and

F_p = the maximum pushing force during ascent, equal to 40 N for ramps required to be usable by the general public; and

g = the gravitational constant, equal to 9.8 m/s²; and

α = the angle of incline of the ramp; and

$C_{\pi 1}$, $C_{\pi 2}$ = the coefficient of rolling resistance between the wheelchair wheel and ramp surface, for the rear wheels and front wheels respectively; and

N_1 , N_2 = the normal force between the wheelchair wheels and ramp surface, for the rear wheels and front wheels respectively.

(e) ...

Part D1 Provision for escape

Deemed-to-Satisfy Provisions

D1.2 Number of exits required

- (a) ...
- (e) **Exits from Class 9c buildings, Class 9b early childhood centres and patient care areas in Class 9a health-care buildings** — In a Class 9a *health-care building*, *Class 9b early childhood centre* and a Class 9c building, at least one *exit* must be provided from every part of a *storey* which has been divided into *fire compartments* in accordance with C2.2 or C2.5.
- (f) ...

D1.11 Horizontal exits

- (a) ~~H~~Horizontal exits must not be counted as *required exits*—
 - (i) between *sole-occupancy units*; or
 - (ii) for the purposes of Part D1 in a Class 9b building used as an *early childhood centre*, primary or secondary *school*.
- (b) In a Class 9a *health-care building* or Class 9c building, *horizontal exits* may be counted as *required exits* if the path of travel from a *fire compartment* leads by one or more *horizontal exits* directly into another *fire compartment* which has at least one *required exit* which is not a *horizontal exit*.
- (c) In cases other than in (b)—, ~~horizontal exits must not comprise more than half of the required exits from any part of a storey divided by a fire wall.~~
 - (i) in a Class 9b early childhood centre, horizontal exits must not comprise more than two thirds of the required exits from any part of the early childhood centre; and
 - (ii) for all other buildings, horizontal exits must not comprise more than half of the required exits from any part of a storey divided by a fire wall.
- (d) *Horizontal exits* must have a clear area on the side of the *fire wall* to which occupants are evacuating, to accommodate the total number of persons (calculated under D1.13) served by the *horizontal exit* of not less than—
 - (i) 2.5 m² per patient/resident in a Class 9a *health-care building* or Class 9c *aged care building*; and
 - (ii) 0.5 m² per person in any other case.
- (e) Where a *fire compartment* is provided with only two *exits*, and one of those *exits* is a *horizontal exit*, the clear area *required* by (d) is to be of a size that accommodates all the occupants from the *fire compartment* being evacuated.
- (f) In a Class 9b early childhood centre, the clear area required by (d) is to be of a size that accommodates all occupants of the early childhood centre.
- (g) ~~(f)~~The clear area *required* by (d) must be connected to the *horizontal exit* by an unobstructed path that has at least the dimensions *required* for the *horizontal exit* and may include the area of the unobstructed path.

Part E1 Fire fighting equipment

Deemed-to-Satisfy Provisions

E1.5 Sprinklers

A sprinkler system must—

- (a) be installed in a building or part of a building when *required* by Table E1.5; and
- (b) comply with Specification E1.5 and Specification E1.5a as applicable.

Table E1.5 Requirements for sprinklers

Occupancy	Where sprinklers are required
All classes— (a) including an <i>open-deck carpark</i> within a multi-classified building; but (b) excluding— (i) an <i>open-deck carpark</i> being a separate building; and (ii) a Class 8 <i>electricity network substation</i> , with a floor area not more than 200 m ² , located within a multi-classified building.	Throughout the whole building if any part of the building has an <i>effective height</i> of more than 25 m.
Class 2 or 3 building (excluding a building used as a <i>residential care building</i>) and any other class of building (excluding a building used as a <i>residential care building</i>) containing a Class 2 or 3 part.	Throughout the whole building, including any part of another class, if any part of the building has a <i>rise in storeys</i> of 4 or more and an <i>effective height</i> of not more than 25 m.
Class 3 building used as a <i>residential care building</i>	Throughout the building and in any <i>fire compartment</i> containing a Class 3 part used for residential care.
Class 6	In <i>fire compartments</i> where either of the following apply: (a) A floor area of more than 3500 m ² . (b) A volume more than 21000 m ³ .
Class 7a, other than <i>open-deck carparks</i>	In <i>fire compartments</i> where more than 40 vehicles are accommodated.
Class 9a <i>health-care building</i> used as a <i>residential care building</i>	Throughout the building and in any <i>fire compartment</i> containing a Class 9a part used for residential care.
Class 9c building	Throughout the building and any <i>fire compartment</i> containing a Class 9c part.
Class 9b <u>other than an early childhood centre</u>	see Part H1
<u>Class 9b early childhood centre</u>	<u>Throughout the whole building, including any part of another class, unless the early childhood centre is wholly within a storey that provides direct egress to a road or open space.</u>
Atrium construction	see Part G3
Large isolated buildings	see Clause C2.3
Occupancies of excessive hazard ^{Note 4}	In <i>fire compartments</i> where either of the following apply: (a) A floor area of more than 2000 m ² . (b) A volume of more than 12000 m ³ .

Notes to Table E1.5:

- 1. ...

Specification E1.5 Fire sprinkler systems

Deemed-to-Satisfy Provisions

2. Application of automatic fire sprinkler standards

Subject to this Specification, an *automatic* fire sprinkler system must comply with—

- (a) for all building classifications: AS 2118.1; or
- (b) for a Class 2 or 3 building with an *effective height* of not more than 25 m and a *rise in storeys* of 4 or more:
Specification E1.5a and the relevant provisions of this Specification as applicable; or
- (c) for Class 5, 6, 7, 8, 9a (other than a *residential care building*) or 9b (other than a Class 9b early childhood centre which is not wholly within a storey that provides direct egress to a road or open space) parts of a building with an *effective height* not more than 25 m, which also contains Class 2 or 3 parts: a sprinkler system in accordance with Specification E1.5a as for a Class 2 or 3 building and the relevant provisions of this Specification except—
 - (i) a FPAA101D sprinkler system cannot be used where the Class 5, 6, 7, 8, 9a (other than a *residential care building*) or 9b parts—
 - (A) contain more than 2 *storeys*; or
 - (B) are more than 25% of the total floor area of the building; or
 - (C) are located above the fourth *storey*; and
 - (ii) a FPAA101D or FPAA101H sprinkler system cannot be used where the Class 7a part (other than an *open-deck carpark*) accommodates more than 40 vehicles; or
- (d) for a combined sprinkler and fire hydrant system: AS 2118.6; or
- (e) for a Class 9a *health-care building* used as a *residential care building*: AS 2118.4 as applicable; or
- (f) for a Class 2, 3 or 9c building: AS 2118.4 as applicable.

14. Early childhood centres

An automatic fire sprinkler system in a Class 9b early childhood centre which is not wholly within a storey that provides direct egress to a road or open space—

- (a) must use fast response sprinklers; and
- (b) must not use concealed (flush-type) sprinklers.

Part E2 Smoke hazard management

Deemed-to-Satisfy Provisions

Table E2.2b Specific provisions

Other assembly buildings (not listed above) and excluding schools	
(a)	Each <i>fire compartment</i> , other than one in a building described in (b), having a <i>floor area</i> of more than 2000 m ² must be provided with— <ul style="list-style-type: none"> (i) an <i>automatic</i> smoke exhaust system complying with Specification E2.2b; or (ii) <i>automatic smoke-and-heat vents</i> complying with Specification E2.2c, if the building is single <i>storey</i>; or (iii) if the <i>floor area</i> of the <i>fire compartment</i> is not more than 5000 m² and the building has a <i>rise in storeys</i> of not more than 2— <ul style="list-style-type: none"> (A) an <i>automatic</i> smoke detection and alarm system complying with Specification E2.2a; or (B) a sprinkler system (other than a FPAA101D or FPAA101H system) complying with Specification E1.5.
(b)	The following buildings are exempt from the provisions of (a): <ul style="list-style-type: none"> (i) Sporting complexes (including sports halls, gymnasiums, <i>swimming pools</i>, ice and roller rinks, and the like) other than an indoor sports stadium with a total spectator seating for more than 1000. (ii) Churches and other places used solely for religious worship. (iii) <u><i>Schools</i></u>.
(c)	<u>A building containing Class 9b <i>early childhood centre</i> which is not wholly within a <i>storey</i> that provides direct egress to a road or <i>open space</i> must be provided with an <i>automatic</i> smoke detection and alarm system complying with Specification E2.2a throughout the whole building, including any part of another class.</u>

Part E4 Visibility in an emergency, exit signs and warning systems

Performance Requirements

EP4.1 Visibility in an emergency

To facilitate safe evacuation in an emergency, a building must be provided with a system that—

- (a) ensures a level of visibility sufficient to enable *exits*, paths of travel to *exits* and any obstacles along a path of travel to an *exit* to be identified; and
- (b) activates instantaneously upon the failure of an artificial lighting system, to the degree necessary, appropriate to—
 - (i) the function or use of the building; and
 - (ii) the floor area of the building; and
 - (iii) the distance of travel to an exit.
- ~~(c) the function or use of the building; and~~
- ~~(d) the floor area of the building; and~~
- ~~(e) the distance of travel to an exit.~~

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Part F2 Sanitary and other facilities

Deemed-to-Satisfy Provisions

F2.4 Accessible sanitary facilities

In a building *required* to be *accessible*—

- (a) ...
- (d) an *accessible unisex sanitary compartment* must contain a closet pan, washbasin, shelf or bench top and adequate means of disposal of sanitary products; and
- (e) ...

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Specification Jvc Modelling profiles

Verification Methods

2. Modelling profiles

Table 21 Internal heat gains for appliances and equipment

Application	Internal sensible heat gain rate
Sole-occupancy unit of a Class 3 building, a Class 9a building ward area of Class 9c building	5 W/m ² averaged for 24 hours per day, 7 days per week, continuous operation
Class 8 laboratory and a Class 9a clinic, day surgery and a procedure unit	15 W/m ²
Class 6 shop and shopping centre, Class 6 cafe and restaurant and Class 9b <i>school</i>	5 W/m ²
Other applications	No load
Class 3 (<i>sole-occupancy unit</i>)	160 W per room
Class 3 dormitories	No load
Class 5 building	11 W/m ²
Class 9c building	160 W per room
Class 9b (conference facilities only)	150 W per room plus 10 W per person

Part J1 Building fabric

Deemed-to-Satisfy Provisions

J1.5 Walls and glazing

(a) ...

Table J1.5c Maximum wall-glazing construction solar admittance - Class 3 or 9_{bc} building or Class 9a ward area

<i>Climate zone</i>	<i>Eastern aspect solar admittance</i>	<i>Northern aspect solar admittance</i>	<i>Southern aspect solar admittance</i>	<i>Western aspect solar admittance</i>
1	0.07	0.07	0.10	0.07
2	0.10	0.10	0.10	0.10
3	0.07	0.07	0.07	0.07
4	0.07	0.07	0.07	0.07
5	0.10	0.10	0.10	0.10
6	0.07	0.07	0.07	0.07
7	0.07	0.07	0.08	0.07
8	0.08	0.08	0.08	0.08

Part J5 Air-conditioning and ventilation systems

J5.4 Fan systems

(a) ...

(b) Fans -

(i) Fans in systems that have a static pressure of not more than 200 Pa must have an efficiency at the full load operating point not less than the efficiency calculated with the following formula:

$$\eta_{min} = 0.13 \times \ln(p) - 0.30$$

where—

η_{min} = the minimum *required* system static efficiency for installation type A or C or the minimum *required* system total efficiency for installation type B or D; and

p = the static pressure of the system (Pa); and

ln = natural logarithm.

(ii) ...

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NSW H101.11.1 Number of seats

Subject to [NSW H101.11.5](#), where seating is arranged in *rows*, the maximum of seats in each *row* must not exceed—

- (a) 8 where there is an *aisle* at one end only of the *row*; or
- (b) 16 where there are *aisles* on both ends of the *row*.

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Schedule 4

Referenced Documents

NT Schedule 4 Referenced documents

Insert in Table 1 of [Schedule 4](#) as follows:

NT Table 1 Schedule of referenced documents

No	Date	Title	Volume One
AS/NZS 1170 Part 2	2011	Structural design actions: Wind actions Amdt 1, 2, and 3, 4 and 5	NT Spec B1.2

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