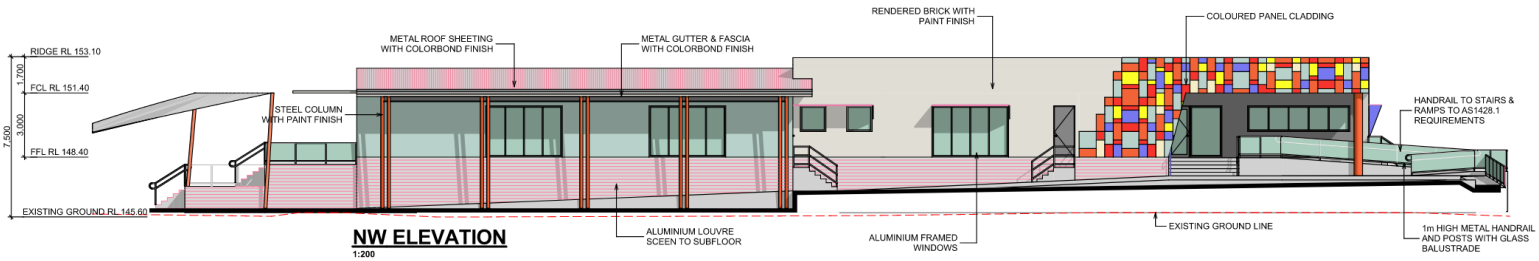
PERCEPTION PLANNING

BUILDING CODE OF AUSTRALIA (BCA) ASSESSMENT FOR

Proposed Early Childcare Centre

at 36/38 Maitland St, Muswellbrook 2333
(Lot: 7 DP: 1098460 / Lot: 8 DP6758)
Prepared by Perception Planning Pty Ltd on behalf of Rohit Mahajan



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EXECUTIVE SUMMARY

The following items should be noted, however do not constitute a full and comprehensive BCA assessment of the building;

The subject of this BCA review is based largely on the subject of the proposed use *as being an early childcare centre (ECC) (Class 9b Assembly building)* and review of the design of the facilities as noted in the supplied plans.

New requirements exist for early childcare centres in BCA 2022 over what may have been considered in early design phases under BCA 2019 Amd 1 or earlier versions of the BCA.

These relate to additional handrail requirements in stairways to cater for children, an automatic smoke detection and alarm system and specific requirements for enclosure of an outdoor play space where the floor is 2m or more above the surface beneath. This requirement includes outdoor play spaces on upper floors similar to what exists in the current design.

The key matters for BCA consideration and potential works, upgrades or similar are referenced below. The items listed below do not constitute all items however attempts to provide a snapshot of issues noted.

i. Any calculations referring to occupancy within the building are assumed based on the following figures derived from child occupancy and current educator-to-child ratios prescribed by the National Quality Framework:

   18 Staff

   100 Children

   This is broken down as: 2 staff in the admin/reception area; 5 staff in the age 0-2 activity room with 20 children; 4 staff in each of the age 2-5 activity room with 30 children each; and 3 staff in the age 2-5 activity room with 20 children.

   Where a more accurate representation of occupancy of the building can be provided, the provisions of the BCA relating to occupancy can be re-assessed to calculate a more accurate representation of requirements under the BCA.

ii. As the building exceeds 500 m² in floor area, Fire Hydrants in accordance with AS 2419 and Fire Hose reels in accordance with AS 2444 must be provided. It is anticipated that street hydrants are intended to be relied upon for coverage. Where street hydrants do not meet the pressure or distance requirements of AS 2419, a fire hydrant system must be installed to serve the building.

iii. The building requires an automatic smoke alarm and detection system installed throughout in accordance with Specification 20. This is a new requirement for BCA 2022.

   See NSW E2D19 for more information.

iv. The building requires an accessible shower, bath, or shower-bath to be installed in accordance with AS 1428.1.

v. As there are multiple facilities provided for staff in addition to the unisex accessible sanitary facility, ambulatory facilities must also be provided. Not less than one ambulatory facility each for use by males and females (for a total of two facilities)

must be installed alongside the accessible facility. The requirements for ambulatory facilities include a handrail and minimum widths, which could be accommodated within the existing facility block by widening each facility and providing appropriate signage for each facility.

vi. It should be noted that unisex facilities are generally not accounted for under the DTS provisions of the BCA, and as such a performance solution would be required to allow the installation of unisex ambulatory sanitary facilities. Where a performance solution is not provided, separate facilities for male and female occupants is required.

vii. As the current facilities for children accommodate for an occupancy of 90, it is recommended that an additional facility, comprising at least one closet pan and one washbasin, which allows for the supervision of children under 2 years old is implemented. An additional toilet for use by children increases the design occupancy to 105 children within the facility.

viii. There are other specific requirements for childcare centres in relation to the facilities required. Ensure bathroom layouts are sufficient to allow for the installations required. There are also inclusions for specific casual surveillance while undertaking certain functions. This could be facilitated by specific layouts or utilising view panels in doors or a similar solution. Note requirements for laundry facilities. See F4D4, F4D5, F4D6 and F4D7 for further information.

ix. The width of any evacuation pathways must be 1.25 m, and the doorways of required exits must have an aggregate width of 1 m, in accordance with NSW D2D8 and D2D9. Refer to these clauses for further information.

x. Exit signs (and directional signs) in relation to both exits is required.

xi. Given the use of the building, it is anticipated that mechanical ventilation may be required due to openable windows being impractical or not available. Where mechanical ventilation systems are installed, they must comply with AS 1668.2 and AS 3666.1. It is recommended that, if a mechanical ventilation system is installed, that the children's bathrooms are also ventilated, although this is not a requirement under DTS provisions.

xii. Where individual air conditioning units are provided with a capacity in excess of 1000 L/s, they must incorporate an automatic shutdown device/function.

xiii. A mid-mounted handrail for use by children must be installed along ramps, stairways, and any other location where handrails are provided.

xiv. There are new BCA 2022 requirements for outdoor play spaces where the space is 2m or more above the surface beneath.

See G1D4 for more information.

TERMS & ABBREVIATIONS

Ambulatory Disability	an impairment that prevents, or impedes walking
Accessible	means having features to enable use by people with a disability.
Accessway	means a continuous *accessible* path of travel (as defined by AS1428.1) to, into or within a building
AS	Australian Standard
BCA	Building Code of Australia
Building Works	means any physical activity involved in the erection of a building. *(S 6.1 EP and A Act 1979)*
Critical flux index	is an index tabling the lowest thermal load per unit area capable of initiating a combustion reaction on a given material (either flame or smoulder ignition).
DTS	Deemed to satisfy (prescriptive provisions of the BCA)
EP and A	Environmental Planning and Assessment Act and Regulations
Fire Source Feature	the far side of a boundary of a **road**; the rear or side boundary of an allotment or the external wall of another building on the same allotment.
FRL	Fire Resistance Level
Fire Isolated Stairs (FI)	A stairway within a fire-resisting shaft and includes the floor and roof or top enclosing structure.
Lightweight Construction	construction that incorporates, sheet or board material, concrete containing pumice, perlite, vermiculite or the like and masonry less than 70mm thick
Mezzanine	An intermediate floor within a room
NCC	National Construction Code
Photoluminescent	the light produced by the absorption of infrared radiation, visible light, or ultraviolet radiation *("glow in the dark")*
Smoke-Developed Index	means the index number for smoke as determined by AS/NZS 1530.3.
Spread-of-Flame Index	means the index number for spread of flame as determined by AS/NZS 1530.3.
Waterproof	Does not allow moisture to penetrate through it *(when tested in accordance with AS4858)*
Water Resistant	Restricts moisture movement and will not degrade under conditions of moisture.

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1.0 INTRODUCTION

This report is an assessment of the proposed use of a structure defined by supplied plans, as an early childcare centre to determine how the proposal generally complies with the (NCC/BCA) Building Code of Australia 2022. The building and its proposed uses are considered, being assessed against the Deemed-to-Satisfy (DTS) Provisions of the BCA as applicable.

The sections of the BCA addressed are generally limited to the items required to be addressed by this class of building and is based off a site inspection only.

The review predominantly relates to the BCA/NCC 2022 and NSW Environmental Planning and Assessment legislation current at the time. The assessment relates specifically to the items depicted on the supplied plan (the subject of this report) and therefore should not be construed to apply to any other building.

Plans reviewed for the purpose described above are noted as;

Proposed childcare centre at 36-38 Maitland Road Muswellbrook; prepared by Sorensen Design and Planning; file No. 2103338; sheets 1 through 4; Issue C and dated 11/12/2023.

The assessment is based on a review of these plans only. The assessment generally relates to the specific use noted and should not be considered to be an assessment of any existing structures unless noted otherwise.

Andrew Ashton
Senior Building Consultant

1.1 SITE DETAILS AND ANALYSIS

The site is located at 36 and 38 Maitland Street, Muswellbrook, NSW 2333; and is legally identified as Lot: 7 DP: 1098460 and Lot: 8 DP6758 (the site) (FIGURE 1). The sites have a combined total area of approximately 2853 m^2 and are accessible from Maitland St and Wilder Street. The sites are zoned: R1 – General Residential.

1.2 PROPERTY ZONING

The site of the proposed development is zoned R1: General Residential.

1.3 DESCRIPTION OF BUILDING

Location:	36-38 Maitland Street, Muswellbrook, NSW 2333
Proposed Use of Building:	Childcare centre
NCC/ BCA Use Classification:	*9b* [A6G10] - *assembly building. Class 9 buildings are assembly buildings and can include theatres, cinemas and halls, churches, schools, early childhood centres, kindergartens, preschools and child-minding centres;*
Rise in Storeys:	1 (C2D3)
Type of Construction:	Type C [Table C2D2]
Effective Height:	Less than 12m
Floor Area/s:	*Ground Floor Total – approx. 675.21 m^2*
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;***	
Known previous uses:	N/A

FIGURE 1 – Locality Map *(Source: ePlanning Spatial Viewer, 2024)*

2.0 NCC/BCA ASSESSMENT

The following table provides an assessment of the building against the relevant parts of the (NCC/BCA) Building Code of Australia 2022;

Table 1 – NCC/BCA Assessment

BCA CLAUSE	DESCRIPTION	ASSESSMENT COMMENTS	
A GOVERNING REQUIREMENTS			
Part A6 Building Classification			
A6G9	Building Classification	Classification is a Class 9b (early childhood centre)	*Note*
B STRUCTURE			
Part B1 Structural provisions			
Part B1	Structural Provisions	The structural provisions have not been assessed it is understood these are being addressed under separate cover via an engineer's assessment addressing the structural provisions as identified below through the various manufacturer's specifications and plans. The performance requirement B1P1 and B1P2 can be satisfied through DTS provisions B1D1 through B1D5 and assessment (certification) against AS1170.1; AS1170.2; AS1170.3; AS1170.4 as appropriate.	*Note*
C FIRE RESISTANCE			
Part C2 Fire resistance and stability			
C2D2	Type of construction required	Type C construction is required. See Specification 5	*Note*
C2D3	Calculation of rise of storeys	The building has a rise in stories of 1.	*Note*
C2D4	Buildings of multiple classification	The building is of singular class 9b classification (1) In a building of multiple classifications, the Type of construction required for the building is the most fire-resisting Type resulting from the application of Table C2D2 on the	*Note*

		basis that the classification applying to the top storey applies to all storeys. (2) N/A to this Class of building	
C2D5	Mixed types of construction	N/A – The building is of singular Type C construction.	*Note*
C2D9	Lightweight construction	Where installed, Lightweight construction must comply with Specification 6 if it is used in a wall system that is required to have an FRL. ***Note 1:*** *Most plasterboard manufacturers have tested fire rated lightweight wall systems that are tested in accordance with Specification 6. Prior to selecting a system from a manufacturer, ensure that testing has been undertaken in accordance with BCA 2022 Specification 6.*	*Note*
C2D10	Non-combustible building elements	(1) In a building required to be of Type A or B construction, the following building elements and their components must be non-combustible: (a) External walls and common walls, including all components incorporated in them including the facade covering, framing and insulation. (b) The flooring and floor framing of lift pits. (c) Non-loadbearing internal walls where they are required to be fire-resisting. (2) A shaft, being a lift, ventilating, pipe, garbage, or similar shaft that is not for the discharge of hot products of combustion, that is non-loadbearing, must be of non-combustible construction in- (a) a building required to be of Type A construction; and (b) a building required to be of Type B construction, subject to C3D11, in- (i) a Class 2, 3 or 9 building; and (ii) a Class 5, 6, 7 or 8 building <u>if the shaft connects more than 2 storeys</u>. (3) A loadbearing internal wall and a loadbearing fire wall, including those that are part of a loadbearing shaft, must comply with Specification 5. (4) The requirements of (1) and (2) do not apply to the following: (a) Gaskets. (b) Caulking. (c) Sealants. (d) Termite management systems. (e) Glass, including laminated glass, and associated adhesives, including tapes. (f) Thermal breaks associated with-	*N/A – Type C construction*

(i) glazing systems; or

(ii) external wall systems, where the thermal breaks-

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

(B) do not extend beyond one storey; and

(C) do not extend beyond one fire compartment.

(g) Damp-proof courses.

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

(i) Isolated-

(i) construction packers and shims; or

(ii) blocking for fixing fixtures; or

(iii) fixings, including fixing accessories; or

(iv) acoustic mounts.

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

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

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

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

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

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

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

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

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

(a) Concrete.

(b) Steel, including metallic coated steel.

(c) Masonry, including mortar.

(d) Aluminium, including aluminium alloy.

(e) Autoclaved aerated concrete, including mortar.

(f) Iron.

(g) Terracotta.

(h) Porcelain.

		(i) Ceramic. (j) Natural stone. (k) Copper. (l) Zinc. (m) Lead. (n) Bronze. (o) Brass. (6) The following materials may be used wherever a non-combustible material is required: (a) Plasterboard. (b) Perforated gypsum lath with a normal paper finish. (c) Fibrous-plaster sheet. (d) Fibre-reinforced cement sheeting. (e) Pre-finished metal sheeting having a combustible surface finish not exceeding 1 mm thickness and where the Spread-of-Flame Index of the product is not greater than 0. (f) Sarking-type materials that do not exceed 1 mm in thickness and have a Flammability Index not greater than 5. (g) Bonded laminated materials where- (i) each lamina, including any core, is non-combustible; and (ii) each adhesive layer does not exceed 1 mm in thickness and the total thickness of the adhesive layers does not exceed 2 mm; and (iii) the Spread-of-Flame Index and the Smoke-Developed Index of the bonded laminated material as a whole do not exceed 0 and 3 respectively; and (iv) when located externally, are fixed in accordance with C2D15.	
C2D11	Fire hazard properties	(1) Materials used will require compliance with Spec. 7; materials noted below (where used) should comply with Spec. 7 The fire hazard properties of the following internal linings, materials and assemblies within a Class 2 to 9 building must comply with Specification 7: (a) Floor linings and floor coverings. (b) Wall linings and ceiling linings. (c) Air-handling ductwork. (d) Lift cars. (e) In Class 9b buildings used as a theatre, public hall or the like- (i) fixed seating in the audience area or auditorium; and	*Note the requirements for materials selection to comply with the clause.* *This building in its current form is Type C construction and is a Class 9b.*

		(ii) a proscenium curtain required by Specification 32 (f) Escalators, moving walkways and non-required non-fire-isolated stairways or pedestrian ramps subject to Specification 14. (g) Sarking-type materials. (h) Attachments to floors, ceilings, internal walls, common walls, fire walls and to internal linings of external walls. (i) Other materials including insulation materials other than sarking-type materials. (2) Paint or fire-retardant coatings must not be used to achieve compliance with the required fire hazard properties (3) The requirements of (1) do not apply to a material or assembly if it is- (a) plaster, cement render, concrete, terrazzo, ceramic tile or the like; or (b) a fire-protective covering; or (c) a timber-framed window; or (d) a solid timber handrail or skirting; or (e) a timber-faced door; or (f) an electrical switch, socket-outlet, cover plate or the like; or (g) a material used for- (i) a roof insulating material applied in continuous contact with a substrate; or (ii) an adhesive; or (iii) a damp-proof course, flashing, caulking, sealing, ground moisture barrier, or the like; or (h) a paint, varnish, lacquer or similar finish, other than nitro-cellulose lacquer; or (i) a clear or translucent roof light of glass fibre-reinforced polyester if- (i) the roof in which it is installed forms part of a single storey building required to be Type C construction; and (ii) the material is used as part of the roof covering; and (iii) it is not closer than 1.5 m from another roof light of the same type; and each roof light is not more than 14 m2 (iv) in area; and the area of the roof lights per 70 m2 of roof surface is not more than 14 m2 (v); or (j) a face plate or neck adaptor of supply and return air outlets of an air handling system; or	

		(k) a face plate or diffuser plate of light fitting and emergency exit signs and associated electrical wiring and electrical components; or (l) a joinery unit, cupboard, shelving, or the like; or (m) an attached non-building fixture and fitting such as- (i) a curtain, blind, or similar decor, other than a proscenium curtain required by Specification 32; and (ii) a whiteboard, window treatment or the like; or (n) timber treads, risers, landings and associated supporting framework installed in accordance with D3D30 where the Spread-of-Flame Index and the Smoke-Developed Index of the timber does not exceed 9 and 8 respectively; or (o) any other material that does not significantly increase the hazards of fire.	
C2D12	Performance of external walls in fire	Concrete external walls that could collapse as complete panels (e.g. tilt-up and pre-cast concrete), in a building having a rise in storeys of not more than 2, must comply with Specification 8.	*Note only* *N/A in this instance considering current construction*
C2D13	Fire-protected timber: Concessions	Fire-protected timber may be used wherever an element is required to be non-combustible, provided- (a) the building is- (i) a separate building; or (ii) a part of a building- (A) which only occupies part of a storey, and is separated from the remaining part by a fire wall; or (B) which is located above or below a part not containing fire-protected timber and the floor between the adjoining parts is provided with an FRL not less than that prescribed for a fire wall for the lower storey; and (b) the building has an effective height of not more than 25 m; and (c) the building has a sprinkler system (other than a FPAA101D or FPAA101H system) throughout complying with Specification 17; and (d) any insulation installed in the cavity of the timber building element to have an FRL is non-combustible; and (e) cavity barriers are provided in accordance with Specification 9.	*Note.* *The building in its current form is Type C construction and is a Class 9b.*

C2D14	Ancillary elements	An ancillary element must not be fixed, installed, attached to or supported by the concealed internal parts or external face of an external wall that is required to be non-combustible unless it is one of the following: (a) An ancillary element that is non-combustible. (b) A gutter, downpipe or other plumbing fixture or fitting. (c) A flashing. (d) A grate, grille or similar cover not more than 2 m2 in area associated with a building service. (e) An electrical switch, socket-outlet, cover plate or the like. (f) A light fitting. (g) A required sign. (h) A sign other than one provided under (a) or (g) that- (i) achieves a group number of 1 or 2; and (ii) does not extend beyond one storey; and (iii) does not extend beyond one fire compartment; and (iv) is separated vertically from other signs permitted under (h) by at least 2 storeys. (i) An awning, sunshade, canopy, blind or shading hood other than one provided under (a) that- (i) meets the relevant requirements of Table S7C7 as for an internal element; and (ii) serves a storey- (A) at ground level; or (B) immediately above a storey at ground level; and (iii) does not serve an exit, where it would render the exit unusable in a fire. (j) A part of a security, intercom or announcement system. (k) Wiring. (l) Waterproofing material installed in accordance with AS 4654.2 and applied to an adjacent floor surface, including vertical upturn, or a roof surface. (m) Collars, sleeves and insulation associated with service installations. (n) Screens applied to vents, weepholes and gaps complying with AS 3959.	*Note that this clause provides information of what materials in the building should be non-combustible and what items can be fixed to the side walls (requiring an FRL) to be compliant with this classification, use and current building configuration.* *No external walls require an FRL in the current design.*
C2D15	Fixing of bonded laminated cladding panels	(1) In a building required to be of Type A or B construction, externally located bonded laminated cladding panels must have all layers of cladding mechanically supported or restrained to the supporting frame. (2) An externally located bonded laminated cladding panel need not comply with (1) if it is one of the following: (a) A laminated glass system. (b) Layered plasterboard product.	*N/A – Building requires Type C construction in the current design.*

		(c) Perforated gypsum lath with a normal paper finish. (d) Fibrous-plaster sheet. (e) Fibre-reinforced cement sheeting. (f) A component of a garage door.	
	Notes For C2D15(1), mechanical support or restraint means fixing that does not solely rely on chemical adhesive and includes concealed fixing systems such as cassette fixing, channel-type fixing and face fixing.		
Specification 5 Fire-resisting construction			
	The below information is not a complete list of Spec. 5 however items considered to potentially be applicable to this structure. *This building in its current form is Type C construction.*		
S5C2	Exposure to fire-source features	(1) A part of a building element is exposed to a fire-source feature if any of the horizontal straight lines between that part and the fire-source feature, or vertical projection of the feature, is not obstructed by another part of the building that- (a) has an FRL of not less than 30/–/–; and (b) is neither transparent nor translucent. (2) A part of a building element is not exposed to a fire-source feature if the fire-source feature is- (a) an external wall of another building that stands on the allotment and the part concerned is more than 15 m above the highest part of that external wall; or (b) a side or rear boundary of the allotment and the part concerned is below the level of the finished ground at every relevant part of the boundary concerned. (3) If various distances apply for different parts of a building element- (a) the entire element must have the FRL applicable to that part having the least distance between itself and the relevant fire-source feature; or (b) each part of the element must have the FRL applicable according to its individual distance from the relevant fire-source feature. (4) The requirements of (3) do not override or permit any exemption from S5C3.	*Note*
S5C3	Fire protection for a support of another part	(1) Where a part of a building required to have an FRL depends upon direct vertical or lateral support from another part to maintain its FRL, that supporting part, subject to (2), must-	*Note*

		(a) have an FRL not less than that required by other provisions of this Specification; and (b) if located within the same fire compartment as the part it supports have an FRL in respect of structural adequacy the greater of that required- (i) for the supporting part itself; and (ii) for the part it supports; and (c) be non-combustible- (i) if required by other provisions of this Specification; or (ii) if the part it supports is required to be non-combustible. (2) The following building elements need not comply with (1)(b) and (1)(c)(ii): (a) An element providing lateral support to an external wall complying with S5C24(1)(b) or C2D12. (b) An element providing support within a carpark and complying with S5C19, S5C22 or S5C25. (c) A roof providing lateral support in a building- (i) of Type A construction if it complies with S5C15(a), (b) or (d); and (ii) of Type B and **C** construction. (d) A column providing lateral support to a wall where the column complies with S5C6(1) and (2). (e) An element providing lateral support to a fire wall or fire-resisting wall, provided the wall is supported on both sides and failure of the element on one side does not affect the fire performance of the wall.	
S5C4	Lintels	(1) A lintel must have the FRL required for the part of the building in which it is situated. (2) A lintel need not comply with (1) if it does not contribute to the support of a fire door, fire window or fire shutter, and- (a) it spans an opening in- (i) a wall of a building containing only one storey; or (ii) a non-loadbearing wall of a Class 2 or 3 building; or (b) it spans an opening in masonry which is not more than 150 mm thick and- (i) not more than 3 m wide if the masonry is non-loadbearing; or (ii) not more than 1.8 m wide if the masonry is loadbearing and part of a solid wall or one of the leaves of a cavity wall.	*Note*

S5C5	Method of attachment not to reduce the fire-resistance of building elements	The method of attaching or installing a finish, lining, ancillary element or service installation to the building element must not reduce the fire-resistance of that element to below that required.	*Note*
S5C6	General concessions	(1) Steel columns - A steel column, other than one in a *fire wall* or *common wall*, need not have an FRL in a building that contains- (a) only 1 storey; or (b) 2 storeys in some of its parts and 1 storey only in its remaining parts if the sum of the floor areas of the upper storeys of its 2 storey parts does not exceed the lesser of- (i) 1/8 of the sum of the floor areas of the 1 storey parts; or (ii) in the case of a building to which one of the maximum floor areas specified in Table C3D3 is applicable - 1/10 of that area; or (iii) in the case of a building to which two or more of the maximum floor area specified in Table C3D3 is applicable - 1/10 of the lesser of those areas.	*Note*
S5C8	Enclosure of shafts	(1) Shafts required to have an FRL must be enclosed at the top and bottom by construction having an FRL not less than that required for the walls of a non-loadbearing shaft in the same building. (2) The provisions of (1) need not apply to- (a) the top of a shaft extending beyond the roof covering, other than one enclosing a fire-isolated stairway or ramp; or (b) the bottom of a shaft if it is non-combustible and laid directly on the ground.	
S5C21	Type C fire-resisting construction - fire-resistance of building elements	(1) In a building required to be of Type C construction- (a) a building element listed in Tables S5C24a, S5C24b, S5C24c, S5C24d and S5C24e and any beam or column incorporated in it, must have an FRL not less than that listed in those Tables for the particular Class of building concerned; and (b) an external wall that is required by Table S5C24a to have an FRL need only be tested from the outside to satisfy the requirement; and (c) a fire wall or an internal wall bounding a sole-occupancy unit or separating adjoining units must comply with Specification 6 if it is of lightweight construction and is required to have an FRL; and	*Note requirements for Class 9b buildings of Type C construction*

		(d) in a Class 2 or 3 building, an internal wall which is required by Table 5C24c or S5C24d to have an FRL must extend— (i) to the underside of the floor next above if that floor has an FRL of at least 30/30/30 or a fire-protective covering on the underside of the floor; or (ii) to the underside of a ceiling having a resistance to the incipient spread of fire to the space above itself of not less than 60 minutes; or (iii) to the underside of the roof covering if it is non-combustible, and except for roof battens with dimensions of 75 mm x 50 mm or less or sarking-type material, must not be crossed by timber or other combustible building elements; or (iv) 450 mm above the roof covering if it is combustible; and (e) in a Class 2 or 3 building, except where within the one sole-occupancy unit, or a Class 9a health-care building, **or a Class 9b building**, a floor separating storeys, or above a space for the accommodation of motor vehicles or used for storage or any other ancillary purpose, and any column supporting the floor, must— (i) have an FRL of at least 30/30/30; or (ii) have a fire-protective covering on the underside of the floor including beams incorporated in it and around the column, if the floor or column is combustible or of metal; and (f) in a Class 9c building a floor above a space for the accommodation of motor vehicles or used for storage or any other ancillary purpose, and any column supporting the floor, must— (i) have an FRL of at least 30/30/30; or (ii) have a fire-protective covering on the underside of the floor including beams incorporated in it and around the column, if the floor or column is combustible or of metal. (2) For the purposes of Table S5C24a and Table S5C24b, external wall includes any column and other building element incorporated within it or other external building element.	

Table S5C24a: Type C construction: FRL of parts of external walls

Distance from a *fire-source feature*	FRL (in minutes): *Structural adequacy* / *Integrity* / *Insulation*			
	Class 2, 3 or 4 part	Class 5, 7a or 9	Class 6	Class 7b or 8
Less than 1.5 m	90/90/90	90/90/90	90/90/90	90/90/90
1.5 to less than 3 m	–/–/–	60/60/60	60/60/60	60/60/60
3 m or more	–/–/–	–/–/–	–/–/–	–/–/–

Table S5C24b: Type C construction: FRL of external columns not incorporated into an external wall

Distance from a *fire-source feature*	FRL (in minutes): *structural adequacy* / *Integrity* / *Insulation*			
	Class 2, 3 or 4 part	Class 5, 7a or 9	Class 6	Class 7b or 8
Less than 1.5 m	90/–/–	90/–/–	90/–/–	90/–/–
1.5 to less than 3 m	–/–/–	60/–/–	60/–/–	60/–/–
3 m or more	–/–/–	–/–/–	–/–/–	–/–/–

Table S5C24c: Type C construction: FRL of common walls and fire walls

Wall type	FRL (in minutes): *Structural adequacy* / *Integrity* / *Insulation*			
	Class 2, 3 or 4 part	Class 5, 7a or 9	Class 6	Class 7b or 8
Loadbearing or non-*loadbearing*	90/90/90	90/90/90	90/90/90	90/90/90

Table S5C24d: Type C construction: FRL of internal walls

Location	FRL (in minutes): *Structural adequacy* / *Integrity* / *Insulation*			
	Class 2, 3 or 4 part	Class 5, 7a or 9	Class 6	Class 7b or 8
Bounding *public corridors*, public lobbies and the like	60/60/60	–/–/–	–/–/–	–/–/–
Between or bounding *sole-occupancy units*	60/60/60	–/–/–	–/–/–	–/–/–
Bounding a stair if *required* to be rated	60/60/60	60/60/60	60/60/60	60/60/60

Table S5C24e: Type C construction: FRL of roof

Location	FRL (in minutes): *Structural adequacy* / *Integrity* / *Insulation*			
	Class 2, 3 or 4 part	Class 5, 7a or 9	Class 6	Class 7b or 8
Roofs	–/–/–	–/–/–	–/–/–	–/–/–

Specification 7 Fire hazard properties

S7C2	Application	Linings, materials and assemblies must comply with the appropriate requirement described in Table S7C2.	

Table S7C2: Fire hazard property requirements

Lining, material or assembly	Requirement
Floor linings and floor coverings	S7C3
Wall linings and ceiling linings	S7C4
Air-handling ductwork	S7C5
Lift cars	S7C6
In fire control rooms subject to Specification 6 and fire isolated *exits*	S7C7
In Class 9b buildings used as a theatre, public hall or the like — fixed seating in the audience area or auditorium; and a proscenium curtain *required* by Specification 32	S7C7
Escalators, moving walkways and non-*required* non-*fire-isolated stairways* or pedestrian ramps subject to Specification 14	S7C7
Sarking-type material	S7C7
Attachments to internal floors, walls and ceilings	S7C7
Other materials including insulation	S7C7

S7C3	Floor linings and floor coverings	A floor lining or floor covering must have- (a) a critical radiant flux not less than that listed in Table S7C3; and (b) in a building not protected by a sprinkler system (other than a FPAA101D or FPAA101H system) complying with Specification 17, a maximum smoke development rate of 750 percent-minutes; and (c) a group number complying with S7C6(b), for any portion of the floor covering that is continued more than 150mm up a wall.	Note

Table S7C3: Critical radiant flux (CHF in kW/m^2) of floor linings and floor coverings

Class of building	Building not fitted with a sprinkler system (other than a FPAA101D or FPAA101H system) complying with Specification 17	Building fitted with a sprinkler system (other than a FPAA101D or FPAA101H system) complying with Specification 17	Fire-isolated *exits* and fire control rooms
Class 2, 3, 5, 6, 7, 8 or 9b, excluding Class 3 accommodation for the aged and Class 9b as specified below	2.2 kW/m^2	1.2 kW/m^2	2.2 kW/m^2

S7C4	Wall and ceiling linings	(1) A wall or ceiling lining system must comply with the group number specified in Table S7C4 and for buildings not fitted with a sprinkler system (other than a FPAA101D or FPAA101H system) complying with Specification 17 have- (a) a smoke growth rate index not more than 100; or an average specific extinction area less than 250 m2 (b) /kg.	*Complies*

		(2) A group number of a wall or ceiling lining and the smoke growth rate index or average specific extinction area must be determined in accordance with AS 5637.1.	

Table S7C4: Wall and ceiling lining materials (material groups permitted)

Class of building	Fire-isolated *exits* and fire control rooms	Public corridors	Specific areas	Other areas
Class 9b other than *schools*, unsprinklered	Walls: 1	Walls: 1	Walls: 1, 2	Walls: 1, 2, 3
	Ceilings: 1	Ceilings: 1	Ceilings: 1, 2	Ceilings: 1, 2, 3

Table Notes

(1) "Sprinklered" means a building fitted with a sprinkler system (other than a FPAA101D or FPAA101H system) complying with Specification 17.

(2) "Specific areas" means within—

(i) for Class 2 and 3 buildings, a *sole-occupancy unit*; and

(ii) for Class 5 buildings, open plan offices with a minimum floor dimension/floor to ceiling height ratio > 5; and

(iii) for Class 6 buildings, shops or other building with a minimum floor dimension/floor to ceiling height ratio > 5; and

(iv) for Class 9a *health-care buildings*, *patient care areas*; and

(v) for Class 9b theatres and halls, etc, an auditorium; and

(vi) for Class 9b *schools*, a classroom; and

(vii) for Class 9c buildings, *resident use area*.

S7C5	Air-handling duct-work	Rigid and flexible ductwork in a Class 2 to 9 building must comply with the fire hazard properties set out in AS 4254.1 and AS 4254.2.	*Note*
S7C6	Lift Cars	Materials used as- (a) floor linings and floor coverings must have a critical radiant flux not less than 2.2; and (b) wall and ceiling linings must be a Group 1 material or a Group 2 material in accordance with AS 5637.1.	*Note*
NSW S7C7	Other materials		

NSW Table S7C7: Other materials

Material or assembly location	*Flammability Index*	*Spread-of-Flame Index*	*Smoke-Developed Index*
Escalators, moving walkways or non-*required* non *fire-isolated stairways* or pedestrian ramps subject to Specification 14.	N/A	0	5

Sarking-type materials other than in a fire control room subject to Specification 19 or a fire-isolated *exit* used in the form of an exposed wall or ceiling. Note 2	5	N/A	N/A
Other materials or locations and insulation materials other than *Sarking-type materials*. Notes 2 and 3	N/A	9	8 if the *Spread-of-Flame Index* is more than 5

See table notes below

Table Notes

(1) In a fire control room or *fire-isolated stairway*, a material used as an attachment or part of an attachment to a building element must, if *combustible*, be attached directly to a *non-combustible* substrate and not exceed 1 mm finished thickness.

(2) A material, other than one located within a fire-isolated *exit* or fire control room, may be covered on all faces by concrete or masonry not less than 50 mm thick, as an alternative to meeting the specified indices.

(3) In the case of a composite member or assembly, the member or assembly must be constructed so that when assembled as proposed in a building—

(a) any material which does not comply with this Table is protected on all sides and edges from exposure to the air; and

(b) the member or assembly, when tested in accordance with Specification 3, has a *Spread-of-Flame Index* and *Smoke-Developed Index* not exceeding those prescribed in this Table; and

(c) the member or assembly retains the protection in position so that it prevents ignition of the material and continues to screen it from access to free air for a period of not less than 10 minutes.

(4) Any fire-retardant coating used in an *entertainment venue* to make a material comply with a *required Flammability Index*, *Spread-of-Flame Index* or *Smoke-Developed Index* must be certified by—

(a) its manufacturer or distributor—

(i) as approved for use with the fabric to achieve the *required* indices; and

(ii) to retain its retardancy effect after a minimum of 5 commercial dry cleaning or laundering operations carried out in accordance with AS 2001.5.4, Procedure 7A, using non-phosphate ECE reference detergent A (without optical brightener); and

(b) the applicator as having been carried out in accordance with the manufacturer's specification.

(5) Materials used in an *entertainment venue* must have a label affixed to a representative sample of each different material indicating, in legible characters—

(a) name of manufacturer; and

(b) trade name and description of material's composition; and

(c) retardant treatment (if any), name of applicator and date of application; and

(d) AS 1530 Part 2 and/or AS/NZS 1530 Part 3 test number and its *Flammability Index*, *Spread-of-Flame Index* and *Smoke-Developed Index*; and

(e) approved methods of cleaning.

(6) A cinematograph screen must have a supporting frame of metal construction.

Part C3 Compartmentation and separation

C3D3	General floor area and volume limitations	The size of fire compartments must not exceed the maximum floor area nor volume set out in table C3D3. The building is a Class 9b building which requires Type C construction, and as such must have a floor area of no more than 3000 m^2, and a volume of no more than 18,000m^2 for the 9b component.	*Complies*

Table C3D3: Maximum size of fire compartments or atria

Classification	Type A construction	Type B construction	Type C construction
5, 9b or 9c	Max *floor area*—8000 m^2	Max *floor area*—5500 m^2	Max *floor area*—3000 m^2
	Max *volume*—48000 m^3	Max *volume*—33000 m^3	max *volume*—18000 m^3
Classification	**Type A construction**	**Type B construction**	**Type C construction**
6, 7, 8 or 9a (except for *patient care areas*)	Max *floor area*—5000 m^2	Max *floor area*—3500 m^2	Max *floor area*—2000 m^2
	Max *volume*—30000 m^3	Max *volume*—21000 m^3	Max *volume*—12000 m^3

Table Notes

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

C3D4	Large isolated buildings	N/A – Buildings are below the thresholds in C3D3 and as such do not require the exemptions of this clause.	*N/A*
C3D5	Requirements for open spaces and vehicular access	N/A – Only applies to spaces required by C3D4 Large Isolated Buildings.	*N/A*
C3D6	Class 9 Buildings	(2) In a building containing a Class 9b early childhood centre- (a) unless the Class 9b early childhood centre is the only use in the building, it must be separated from the remainder of the building by walls and/or floor with an FRL not less than that required for a fire wall; and (b) each storey within the Class 9b early childhood centre must contain not less than 2 fire compartments. ***Note 1:*** *The below exemption applies to the building.*	*Note – exemption C3D6 applies*

Exemptions

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

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

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

C3D7	Vertical separation of openings in external walls	N/A - applicable to Type A construction	

C3D8	Separation by fire walls	A fire wall requires the FRL prescribed by specification 5 for each adjoining part. Any openings in a fire wall must not reduce the FRL required by specification 5 for the fire wall, except where permitted by part C4. A fire wall must extend through all storeys and spaces in the nature of storeys that are common to that part and any adjoining part of the building. The fire wall must be carried through to the underside of the roof covering.	*Note: no firewalls required in the current design provided for info only*
C3D9	Separation of classifications in the same storey	(1) If a building has parts of different classifications located alongside one another in the same storey- (a) each building element in that storey must have the higher FRL prescribed in Specification 5 for that element for the classifications concerned; or (b) the parts must be separated in that storey by a fire wall. (2) A fire wall required by (1)(b) must have the FRL prescribed in accordance with Specification 5 as applicable for that element for the Type of construction and the classifications concerned. (3) For the purposes of (2), the FRL in Specification 5 must be either- (a) the higher FRL prescribed in Table S5C11d or S5C21d; or (b) the FRL prescribed in Table S5C24c. (4) For the purposes of (1), where one part is a carpark complying with S5C19, S5C22 or S5C25, the parts may be separated by a fire wall complying with S5C19(3)(c), S5C22(3)(c) or S5C25(3)(c) as appropriate.	*N/A – The building is of singular Class 9b classification*
C3D10	Separation of classifications in different storeys	If parts of different classification are situated one above the other in adjoining storeys they must be separated as follows: (a) Type A construction - The floor between the adjoining parts must have an FRL of not less than that prescribed in Specification 5 for the classification of the lower storey. (b) **Type** B or **C construction** - If one of the adjoining parts is of Class 2, 3 or 4, the floor separating the part from the storey below must- (i) 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; or (ii) have an FRL of at least 30/30/30; or (iii) have a fire-protective covering on the underside of the floor, including beams incorporated in it, if the floor is combustible or of metal.	N/A See Note 1

		Note 1: *applies where a residential use is associated above.*	
C3D11	Separation of lift shafts	(1) Any lift connecting more than 2 storeys, or more than 3 storeys if the building is sprinklered, (other than lifts which are wholly within an atrium) must be separated from the remainder of the building by enclosure in a shaft in which- (a) in a building required to be of Type A construction - the walls have the relevant FRL prescribed by Specification 5; and (b) in a building required to be of Type B construction - the walls- (i) if loadbearing, have the relevant FRL prescribed by Table S5C21e; or (ii) if non-loadbearing, be of non-combustible construction. (2) N/A applies to Class 9a health-care building or a resident use area in Class 9c building (3) N/A applies to an emergency lift (4) Openings for lift landing doors and services must be protected in accordance with the Deemed-to-Satisfy Provisions of Part C4. (4) Openings for lift landing doors and services must be protected in accordance with the Deemed-to-Satisfy Provisions of Part C4	*N/A – single storey building*
C3D12	Stairways and lifts in one shaft	A stairway and lift must not be in the same shaft if either the stairway or the lift is required to be in a fire-resisting shaft.	*N/A*
C3D13	Separation of equipment	Note: While there is no note of such equipment to be installed, items such as on-site fire pumps, a battery system that has a volt-age of more than 12 volts and a capacity of 200kWh or more, boilers, or an emergency generator will need separation by a 120/120/120 FRL wall. ***Note:*** *Other items are listed as requiring separation under this clause however it is not considered they would be installed on this site.*	*Note*
Part C4 Protection of openings			
C4D3	Protection of openings in external walls	(1) Subject to (2), openings in an external wall that is required to have an FRL must be protected in accordance with C4D5, and if wall-wetting sprinklers are used, they must be located externally. (2) The requirements of (1) only apply if the distance between the opening and the fire-source feature to which it is exposed is less than- (a) 3 m from a side or rear boundary of the allotment; or	*N/A see Note 1*

		(b) 6 m from the far boundary of a road, river, lake or the like adjoining the allotment, if not located in a storey at or near ground level; or (c) 6 m from another building on the allotment that is not Class 10. (3) Openings required to be protected under (1), must not occupy more than 1/3 of the area of the external wall of the storey in which they are located unless they are in a Class 9b building used as an open spectator stand. ***Note 1:*** *Protection of openings is only required where openings are present in an external wall requiring an FRL. As there are no external walls requiring an FRL, no protection of openings is required. This clause and below clauses detailing protection requirements are provided for information only.*	
C4D4	Separation of external walls and associated openings in different fire compartments	The distance between parts of external walls and any openings within them in different fire compartments separated by a fire wall must not be less than that set out in Table C4D4, unless- (a) those parts of each wall have an FRL not less than 60/60/60; and (b) any openings are protected in accordance with C4D5.	*N/A*

Table C4D4: Distance between external walls and associated openings in different fire compartments

Angle between walls	Minimum distance (m)
0° (walls opposite)	6
more than 0° to 45°	5
more than 45° to 90°	4
more than 90° to 135°	3
more than 135° to less than 180°	2
180° or more	Nil

C4D5	Acceptable methods of protection	Where protection is required, doorways, windows, and other openings must be protected as follows: (a) Doorways- (i) Internal or external wall-wetting sprinklers as appropriate, used with doors that are self-closing or automatic closing; or (ii) -/60/30 Fire doors that are self-closing or automatic closing. (b) Windows (i) Internal or external wall-wetting sprinklers as appropriate used with windows that are automatic closing or permanently fixed in the closed position; or	Note only

		(ii) -/60/- fire windows that are automatic closing or permanently fixed in the closed position; or (iii) -/60/- automatic closing fire shutters. (c) Other openings- (i) Excluding voids – internal or external wall-wetting sprinklers, as appropriate; or (ii) Construction having an FRL of not less than -/60/-.	
C4D6	Doorways in fire walls	N/A – No fire walls are present in the current design.	*N/A*
C4D13	Openings in floors and ceilings for services	Where a service passes through a floor required to have an FRL (with respect to integrity or insulation; where FRLs are denoted as Str/Int/Ins), or a ceiling required to have resistance to the incipient spread of fire, the service must be installed in accordance with the below: A service must be protected, in a building of Type B construction, by a shaft that will not reduce the fire performance of the building elements it penetrates. Where a service passes through a floor which is required to be protected by a fire-protective covering, the penetration must not reduce the fire performance of the covering.	*N/A – single storey building*
C4D15	Openings for service installations	(1) The requirements of (2) apply where an electrical, electronic, plumbing, mechanical ventilation, air-conditioning or other service penetrates a building element (other than an external wall or roof) that is required to have an FRL with respect to integrity or insulation or a resistance to the incipient spread of fire. (2) An installation mentioned in (1) must comply with any one of the following: (a) Tested systems - the following applies: (i) The service, building element and any protection method at the penetration- (A) are identical with a prototype assembly of the service, building element and protection method which has been tested in accordance with AS 4072.1 and AS 1530.4 and has achieved the required FRL or resistance to the incipient spread of fire; or (B) differ from a prototype assembly of the service, building element and protection method in accordance with Section 4 of AS 4072.1. (ii) It complies with (i) except for the insulation criteria relating to the service if- (A) the service is a pipe system comprised entirely of metal (excluding pipe seals or the like); and	*N/A – no building elements requiring an FRL*

		(B) any combustible building element is not located within 100 mm of the service for a distance of 2 m from the penetration; and (C) combustible material is not able to be located within 100 mm of the service for a distance of 2 m from the penetration; and (D) it is not located in a required exit. (iii) The determination of the required FRL must be confirmed in a report from an Accredited Testing Laboratory in accordance with Specifications 1 and 2. (b) Ventilation and air-conditioning - in the case of ventilating or air-conditioning ducts or equipment, the installation is in accordance with AS 1668.1. (c) Compliance with Specification 13 - the following applies: (i) The service is a pipe system comprised entirely of metal (excluding pipe seals or the like) and is installed in accordance with Specification 13 and it- (A) penetrates a wall, floor or ceiling, but not a ceiling required to have a resistance to the incipient spread of fire; and (B) connects not more than 2 fire compartments in addition to any fire-resisting service shafts; and (C) does not contain a flammable or combustible liquid or gas. (ii) The service is sanitary plumbing installed in accordance with Specification 13 and it- (A) is of metal or UPVC pipe; and (B) penetrates the floors of a Class 5, 6, 7, 8 or 9b building; and (C) is in a sanitary compartment separated from other parts of the building by walls with the FRL required by Specification 5 for a stair shaft in the building and a self-closing –/60/30 fire door. (iii) The service is a wire or cable, or a cluster of wires or cables installed in accordance with Specification 13 and it- (A) penetrates a wall, floor or ceiling, but not a ceiling required to have a resistance to the incipient spread of fire; and (B) connects not more than 2 fire compartments in addition to any fire-resisting service shafts. (iv) The service is an electrical switch, outlet, or the like, and it is installed in accordance with Specification 13.	

C4D16	Construction joints	Construction joints, spaces and the like in and between building elements required to be fire-resisting with respect to integrity and insulation must be identical to a prototype tested against AS 4072.1 and AS 1530.4 to achieve the required FRL, or must differ while still achieving the required FRL in accordance with Section 4 of AS 4072.1	*Note*
C4D17	Columns protected with lightweight construction to achieve an FRL	A column protected by lightweight construction to achieve an FRL which passes through a building element that is required to have an FRL or a resistance to the incipient spread of fire, must be installed using a method and materials identical with a prototype assembly of the construction which has achieved the required FRL or resistance to the incipient spread of fire.	*Note*

D ACCESS AND EGRESS

Part D2 Provision for escape

D2D3	Number of exits required	Complies; every building must have at least one exit. 3 exits are provided from the building; at the north-western, southern, and eastern sides of the building. Class 2 to 8 buildings- *N/A the clause has additional requirements over 25m or inclusion of a residential class* *[NSW] Class 9 buildings* **(a) In addition to any horizontal exit, not less than 2 exits must be provided from the following:** (i) Each storey if the building has a rise in storeys of more than 6 or an effective height of more than 25 m. (ii) Any storey which includes a patient care area in a Class 9a health-care building. (iii) Any storey that contains sleeping areas in a Class 9c building. **(iv) Any storey used as a Class 9b early childhood centre, or any Class 9b early childhood centre which forms part of a storey.** (v) Each storey in a primary or secondary school with a rise in storeys of 2 or more. (vi) Any storey or mezzanine that accommodates more than 50 persons, calculated under D2D18. (vii) Any storey or mezzanine within an auditorium in an entertainment venue.	*Complies*

		(b) The requirements of (a) do not apply to a part of a storey that- (i) is a plant room, machinery room, storeroom, lift-machine room or the like; and (ii) is provided with direct egress to a road, open space or a fire-isolated exit complying with D2D12(2); and (iii) satisfies D2D5 by the provision of 1 exit. The north-western main entry and the southern side exit are required exits.	
D2D4	When fire-isolated stairways and ramps and required	(1) N/A – relates to Class 2 and 3 buildings (2) Class 5, 6, 7, 8 or 9 buildings - **Every stairway or ramp serving as a required exit must be fire-isolated unless-** (a) in a Class 9a health-care building - it connects, or passes through or passes by not more than 2 consecutive storeys in areas other than patient care areas; or (b) it is part of an open spectator stand; or **(c) in any other case, except in a Class 9b early childhood centre** or a Class 9c building**,** it connects, passes through or passes by not more than 2 consecutive storeys and one extra storey of any classification may be included if- (i) the building has a sprinkler system (other than a FPAA101D system) complying with Specification 17 installed throughout; or (ii) the required exit does not provide access to or egress for, and is separated from, the extra storey by construction having- (A) an FRL of –/60/60, if non-loadbearing; and (B) an FRL of 90/90/90 for Type A construction or 60/60/60 for Type B or C construction, if loadbearing; and (C) no opening that could permit the passage of fire or smoke ***Note 1:*** *The below exemption (b) applies in this instance and therefore, clause (2) above does not apply to this development in consideration of its current use. This means that while the 2 exits are 'required exits' they do not need to be fire isolated.*	***See Note 1 and exemption (b) below.***

	Exemptions D2D4(2) does not apply to— (a) a Class 9b *early childhood centre* wholly within a *storey* that provides direct egress to a road or *open space*; or (b) a Class 9b *early childhood centre* with a *rise in storeys* of not more than 2, where the Class 9b *early childhood centre* is the only use in that building.		
D2D5	Exit travel distances	(3) Class 5, 6, 7, 8 or 9 buildings - Subject to (4), (5) and (6)- *(note that clauses 4 and 5 as noted at left are not applicable to this classification of building)* (a) no point on a floor must be more than 20 m from an exit, or a point from which travel in different directions to 2 exits is available, in which case the maximum distance to one of those exits must not exceed 40 m; and (b) in a Class 5 or 6 building, the distance to a single exit serving a storey at the level of access to a road or open space may be increased to 30 m. (4) N/A (5) N/A (6) Assembly buildings - In a Class 9b building other than a school or early childhood centre, the distance to one of the exits may be 60 m if- (a) the path of travel from the room concerned to that exit is through another area which is a corridor, hallway, lobby, ramp or other circulation space; and (b) the room is smoke-separated from the circulation space by construction having an FRL of not less than 60/60/60 with every doorway in that construction protected by a tight fitting, self-closing, solid-core door not less than 35 mm thick; and (c) the maximum distance of travel does not exceed 40 m within the room and 20 m from the doorway to the room through the circulation space to the exit. ***Note 1:*** *Where the term 'exit is used it refers to the definition below.* *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.*	Travel distances comply subject to internal layout. i.e internal layout design must allow the travel distances from this clause.
D2D6	Distance between alternative exits	Exits that are required as alternative means of egress must be-	*Complies*

		(a) distributed as uniformly as practicable within or around the storey served and in positions where unobstructed access to at least 2 exits is readily available from all points on the floor including lift lobby areas; and (b) not less than 9 m apart; and (c) not more than- (i) N/A or (ii) N/A (iii) in all other cases - 60 m apart; and (d) located so that alternative paths of travel do not converge such that they become less than 6 m apart.	
D2D7	Height of exits, paths of travel to exits	In a required exit or path of travel to an exit the unobstructed height throughout must be not less than 2 m, except the unobstructed height of any doorway may be reduced to not less than 1980 mm.	*Note*
D2D8	Width of exits and paths of travel exits	(1) Widths of each exit and path of travel to exits are 1m at a minimum. (2) If the storey, mezzanine or open spectator stand accommodates more than 100 persons but not more than 200 persons, the aggregate unobstructed width of required exits or paths of travel to an exit, except for doorways, must be not less than- (a) 1 m plus 250 mm for each 25 persons (or part) in excess of 100; or (b) 1.8 m in a passageway, corridor or ramp normally used for the transportation of patients in beds within a treatment area or ward area. (3) If the storey, mezzanine or open spectator stand accommodates more than 200 persons, the aggregate unobstructed width of required exits or paths of travel to an exit, except for doorways, must be not less than- (a) 2 m plus 500 mm for every 60 persons (or part) in excess of 200 persons if egress involves a change in floor level by a stairway or ramp with a gradient steeper than 1 in 12; or (b) in any other case, 2 m plus 500 mm for every 75 persons (or part) in excess of 200. (4) In an open spectator stand which accommodates more than 2000 persons, the aggregate unobstructed width of required exits or paths of travel to an exit, except for doorways, must be not less than 17 m plus a width (in metres) equal to the number in excess of 2000 divided by 600. *[NSW variation]* (5) In a Class 9b building used as an entertainment venue- *(See Note 1 for definition of an entertainment venue)*	*Exit pathways must be 1.25 m in width* *See Notes 1, 2 and 3 adjacent*

		(a) the aggregate width must be not less than 2 m plus 500 mm for every 50 persons or part in excess of 200; and (b) D2D8(1), (2) and (3) do not apply; and (c) where one or more paths of travel merge, the width of the combined path of travel must be not less than the sum of the required widths of those paths of travel; and (d) the required widths of those paths of travel connecting the exits from the building to a public road or open space must comply with (c); ***Note 1:*** *entertainment venue means a building used as a cinema, theatre or concert hall or an indoor sports stadium.* ***Note 2:*** *The width of the evacuation pathway must be minimum 1.25m (including stairs and corridors) and must be measured in accordance with D2D11 (measured clear of handrails, balustrades and the like). Widths throughout the entire egress path is required to be no less than 1m (The egress pathway is considered to be the most logical exit taken to the exit points.)* ***Note 3:*** *It is assumed that a more accurate occupancy rate will be provided as part of the lodgement documentation for the application, although such information has not been provided at the time of this BCA review. Where more accurate occupancy information is provided, the requirements of the clause can be recalculated to form a more accurate assessment.*	
***NSW* D2D9**	Width of doorways in exits or paths of travel to exits	*[NSW variation]* In a required exit or path of travel to an exit, the unobstructed width of a doorway must be not less than- (a) N/A Applies to patient care areas (b) N/A Applies to patient care areas **(c) the unobstructed width of each exit provided to comply with D2D8(1), (2), (3) or (4), minus 250 mm; or** (d) N/A applies to Class 9c buildings (e) in a Class 9b building used as an entertainment venue- (i) in parts of the building used by the public, the width of the required exit or path of travel, and the unobstructed width of each doorway must not be less than 1 m and not more than 3 m; and (ii) in other parts of the building, doorways must comply with NSW D2D9; **or** **(g) in any other case except where it opens to a sanitary compartment or bathroom - 750 mm wide.**	*Exit doorways must be 1 m in width* *Note see NSW* ***D2D8 Note 1*** *for definition of an entertainment venue.* *Note the development is not an entertainment venue*

		Note 1: *In accordance with the occupancy calculated under D2D18, 118 adults/children total, the door width requirement is 1 m.*	
D2D10	Exit width not to diminish in direction of travel	The unobstructed width of a required exit must not diminish in the direction of travel to a road or open space, except where the width is increased in accordance with D2D8(1)(b) or D2D9(a)(i).	*Note*
D2D11	Determination and measurement of exits and paths of travel to exits	For the purposes of D2D7 to D2D10 the following apply: (a) The required width of a stairway or ramp in a required exit or path of travel to an exit must- (i) be measured clear of all obstructions such as handrails, projecting parts of barriers and the like; and (ii) extend without interruption, except for ceiling cornices, to a height not less than 2 m vertically above a line along the nosings of the treads or the floor surface of the ramp or landing. (b) To determine the aggregate unobstructed width, the number of persons accommodated must be calculated according to D2D18.	*Note*
D2D14	Travel by non-fire-isolated stairways or ramps	(1) A non-fire-isolated stairway or non-fire-isolated ramp serving as a required exit must provide a continuous means of travel by its own flights and landings from every storey served to the level at which egress to a road or open space is provided. *(2) N/A clause relates to- Class 2, 3 or 4 buildings* (3) In a Class 5, 6, 7, 8 or 9 building, the distance from any point on a floor to a point of egress to a road or open space by way of a required non-fire-isolated stairway or non-fire-isolated ramp must not exceed 80 m. *(4) N/A clause relates to- Class 2, 3 or 9a buildings* (5) In a Class 5 to 8 or 9b building, a required non-fire-isolated stairway or non-fire-isolated ramp must discharge at a point not more than- (a) 20 m from a doorway providing egress to a road or open space or from a fire-isolated passageway leading to a road or open space; or (b) 40 m from one of 2 such doorways or passageways if travel to each of them from the non-fire-isolated stairway or non-fire-isolated ramp is in opposite or approximately opposite directions. *(6) N/A clause relates to- Class 2 or 3 buildings* ***Note 1:*** *Note the definition of 'open space below.*	*Note – no required stairways.*

		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.*	
D2D15	Discharge from exits	(1) An exit must not be blocked at the point of discharge and where necessary, suitable barriers must be provided to prevent vehicles from blocking the exit, or access to it. (2) If a required exit leads to an open space, the path of travel to the road must have an unobstructed width throughout of not less than- (a) the minimum width of the required exit; or (b) 1 m, whichever is the greater. (3) If an exit discharges to open space that is at a different level than the public road to which it is connected, the path of travel to the road must be by- (a) a ramp or other incline having a gradient not steeper than 1:8 at any part, or not steeper than 1:14 if required by the Deemed-to-Satisfy Provisions of Part D4; or (b) except if the exit is from a Class 9a building, a stairway complying with the Deemed-to-Satisfy Provisions of the NCC. (4) The discharge point of alternative exits must be located as far apart as practical. (5) N/A *[NSW variation]* (6) In a Class 9b building used as an entertainment venue, at least half of the required number of exits from each storey or mezzanine, and at least half of the aggregate width of such exits must discharge otherwise than through the main entrance, or the area immediately adjacent to the main entrance to the building. (7) The number of persons accommodated must be calculated according to D2D18.	*Note*
D2D17	Non-required stairways, ramps or escalators	An escalator, moving walkway or non-required non fire-isolated stairway or pedestrian ramp- (a) must not be used between storeys in- (i) N/A (ii) N/A; and (b) may connect any number of storeys if it is- (i) N/A; or (ii) in a carpark or an atrium; or (iii) outside a building; or (iv) in a Class 5 or 6 building that is sprinklered throughout, where the escalator, walkway, stairway or ramp complies with Specification 14; and (c) except where permitted in (b) must not connect more than-	*Note that all stairways are required stairways.*

		(i) 3 storeys if- (A) each of those storeys is provided with a sprinkler system (other than a FPAA101D system) complying with Specification 17 throughout; and (B) at least one of those storeys is situated at a level at which there is a direct egress to a road or open space; or (ii) 2 storeys, provided that those storeys are consecutive, and one of the storeys is situated at a level at which there is direct egress to a road or open space; and (d) except where permitted in (b) or (c), must not connect, directly or indirectly, more than 2 storeys at any level in a Class 5, 6, 7, 8 or 9 building and those storeys must be consecutive.	
D2D18	Number of persons accommodated	For the purposes of the Deemed-to-Satisfy Provisions, the number of persons accommodated in a storey, room or mezzanine must be determined with consideration to the purpose for which it is used and the layout of the floor area by- (a) calculating the sum of the numbers obtained by dividing the floor area of each part of the storey by the number of square metres per person listed in Table D2D18 according to the use of that part, excluding spaces set aside For- (i) lifts, stairways, ramps and escalators, corridors, hallways, lobbies and the like; and (ii) service ducts and the like, sanitary compartments or other ancillary uses; or (b) reference to the seating capacity in an assembly building or room; or **(c) any other suitable means of assessing its capacity.** ***Note 1:*** *Based on the layout of the rooms in the plans provided, and typical childcare staff-child ratios, 18 staff and 100 children are anticipated to occupy the building at any one time.* *This is based on 2 reception/admin staff; 5 staff in the age 0-2 activity room with 30 children; 4 staff in each of the age 2-5 activity rooms with 30 children each; and 3 staff in the age 2-5 activity room with 20 children.* *Where a more accurate representation of the staffing / occupancy of the centre can be provided, this clause and any related requirements can be re-assessed.*	*See Note 1*
Part D3 Construction of exits			

D3D3	Fire-isolated stairways and ramps	A stairway or ramp (including any landings) that is required to be within a fire-resisting shaft must be constructed- (a) of non-combustible materials; and (b) so that if there is local failure it will not cause structural damage to, or impair the fire-resistance of, the shaft.	*Note* No fire isolated stairs required
D3D4	Non-fire-isolated stairways and ramps	In a building having a rise in storeys of more than 2, required stairs and ramps (including landings and any supporting building elements) which are not required to be within a fire-resisting shaft, must be constructed according to D3D3, or only of- (a) reinforced or prestressed concrete; or (b) steel in no part less than 6 mm thick; or (c) timber that- (i) has a finished thickness of not less than 44 mm; and has an average density of not less than 800 kg/m3 (ii) at a moisture content of 12%; and (iii) has not been joined by means of glue unless it has been laminated and glued with resorcinol formaldehyde or resorcinol phenol formaldehyde glue.	*N/A - Single storey building*
D3D5	Separation of rising and descending stair flights	If a stairway serving as an exit is required to be fire-isolated- (a) there must be no direct connection between- (i) a flight rising from a storey below the lowest level of access to a road or open space; and (ii) a flight descending from a storey above that level; and (b) any construction that separates or is common to the rising and descending flights must be- (i) non-combustible; and (ii) smoke proof in accordance with S11C2.	*Complies, no stairs descend below the level of egress*
D3D8	Installations in exits and paths of travel	(1) Access to service shafts and services other than to fire-fighting or detection equipment as permitted in the Deemed to-Satisfy Provisions of Section E, must not be provided from a fire-isolated stairway, fire-isolated passageway or fire-isolated ramp. (2) An opening to any chute or duct intended to convey hot products of combustion from a boiler, incinerator, fireplace or the like, must not be located in any part of a required exit or any corridor, hallway, lobby or the like leading to a required exit. (3) **Gas or other fuel services must not be installed in a required exit.** (4) Except for in a fire-isolated exit specified in (1), **services or equipment enclosed in accordance with (5) may be installed in a required exit, or in any corridor,**	*Note- requirements for hallway*

		hallway, lobby or the like leading to a required exit, where that service or equipment comprises- **(a) electricity meters, distribution boards or ducts; or** **(b) central telecommunications distribution boards or equipment; or** **(c) electrical motors or other motors serving equipment in the building.** (5) **An enclosure for the purposes of (4) must be suitably sealed against smoke spreading from the enclosure and be-** **(a) non-combustible construction; or** **(b) a fire-protective covering.** (6) Electrical wiring may be installed in a fire-isolated exit if the wiring is associated with- (a) a lighting, detection, or pressurisation system serving the exit; or (b) a security, surveillance or management system serving the exit; or (c) an intercommunication system or an audible or visual alarm system in accordance with D3D27; or (d) the monitoring of hydrant or sprinkler isolating valves.	
D3D9	Enclosure of space under stairs and ramps	(1) Fire-isolated stairways and ramps - If the space below a required fire-isolated stairway or fire-isolated ramp is within the fire-isolated shaft, it must not be enclosed to form a cupboard or similar enclosed space. (2) **Non fire-isolated stairways and ramps - The space below a required non fire-isolated stairway (including an external stairway) or non fire-isolated ramp must not be enclosed to form a cupboard or other enclosed space unless-** **(a) the enclosing walls and ceilings have an FRL of not less than 60/60/60; and** **(b) any access doorway to the enclosed space is fitted with a self-closing –/60/30 fire door.**	*N/A – single storey building*
D3D10	Width of required stairways and ramps	A required stairway or ramp that exceeds 2 m in width is counted as having a width of only 2 m unless it is divided by a handrail or barrier continuous between landings and each division has a width of not more than 2 m.	*N/A*
D3D14	Goings and risers	(a) The goings of all straight treads must be constant throughout the same flight. The dimensions of goings is considered constant if the variation between adjacent goings, is no greater than 5 mm and the largest and smallest going within a flight, does not exceed 10 mm. (b) The risers must not have any openings that would allow a 125 mm sphere to pass through between the treads.	*Note for stair set out and construction*

		(c) The treads must have a surface with a slip resistance classification not less than P3 or R10 when tested in accordance with AS 4586 or a nosing strip with a slip-resistance classification not less than P3 when tested in accordance with AS 4586.	

Table D3D14: Riser and going dimensions

Stairway location	Riser (R)		Going (G)[Note 3]		Quantity (2R + G)	
	Max	Min	Max	Min	Max	Min
Public	190	115	355	250	700	550
Private [Note 1]	190	115	355	240	700	550

Table Notes

(1) Private stairways are—

(a) stairways in a *sole-occupancy unit* in a Class 2 building or Class 4 part of a building; and

(b) in any building, stairways which are not part of a *required exit* and to which the public do not normally have access.

(2) *Going* and *riser* dimensions must be measured in accordance with Figure D3D14.

(3) The *going* in tapered treads (except *winders* in lieu of a quarter or half *landing*) in a curved or spiral stairway is measured—

(a) 270 mm in from the outer side of the unobstructed width of the stairway if the stairway is less than 1 m wide (applicable to a non-*required* stairway only); and

(b) 270 mm from each side of the unobstructed width of the stairway if the stairway is 1 m wide or more.

D3D15	Landings	Landings having a maximum gradient of 1:50 may be used in any building to limit the number of risers in each flight and each landing must – (i) Be not less than 750mm long, and where this involves a change in direction, the length is measured 500mm from the inside edge of the landing. (ii) Have- a. A surface with a slip-resistance classification not less than that listed in table D2.14 when tested in accordance with AS 4586; or b. A strip at the edge of the landing with a slip-resistance classification not less than that listed in table D2.14 when tested in accordance with AS 4586, where the edge leads to a flight below.	*Note for stair construction*

Table D3D15: Slip-resistance classification

Application	Dry surface conditions	Wet surface conditions
Ramp steeper than 1:14	P4 or R11	P5 or R12
Ramp steeper than 1:20 but not steeper than 1:14	P3 or R10	P4 or R11
Tread or *landing* surface	P3 or R10	P4 or R11
Nosing or *landing* edge strip	P3	P4

D3D16	Thresholds	The threshold of a doorway must not incorporate a step or ramp at any point closer to the doorway than the width of the door leaf unless, in a building required to be accessible by part D4, the doorway opens to a road or open space, and is provided with a threshold ramp or step ramp in accordance with AS 1428.1.	*Note requirements for thresholds understanding that the building is required to be accessible.*
D3D17	Barriers to prevent falls	(1) A continuous barrier must be provided along the side of- (a) a roof to which general access is provided; and (b) a stairway or ramp; and (c) a floor, corridor, hallway, balcony, deck, verandah, mezzanine, access bridge or the like; and (d) any delineated path of access to a building, if the trafficable surface is 1 m or more above the surface beneath. (2) The requirements of (1) do not apply to- (a) the perimeter of a stage, rigging loft, loading dock or the like; or (b) areas referred to in D3D23; or (c) a retaining wall, unless the retaining wall forms part of, or is directly associated with a delineated path of access to a building from the road, or a delineated path of access between buildings; or (d) a barrier provided to an openable window covered by D3D29. (3) A barrier required by (1) must be constructed in accordance with D3D18, D3D19, D3D20 and, if a wire barrier is used, D3D21. The barriers should be confirmed during manufacture and installation to be at least the height stipulated by D3D18 (below).	*Note*
D3D18	Height of barriers	A barrier required by D3D17 must not be less than the following: (a) For stairways or ramps with a gradient of 1:20 or steeper – 865mm. (b) For landings to a stair or ramp where the barrier is provided along the inside of the landing and does not exceed 500mm in length – 865mm. (c) For all other locations – 1m. For a barrier provided under this clause: (a) Barrier heights are measured vertically from the surface beneath, except that for stairways, the height must be measured above the nosing line of the stair treads; and	*Note where a fall is greater than 1m that a barrier of no less than 1m in height must be installed.*

		(b) A transition zone may be incorporated where the barrier height changes from 865mm on a stair flight or ramp to 1m at a landing or floor.	
D3D19	Openings in barriers	Openings in a required barrier must not allow for a 125mm sphere to pass through.	*Note*
D3D20	Barrier climbability	(1) A barrier required by D3D17, located on a floor more than 4 m above the surface beneath, must not incorporate horizontal or near horizontal elements that could facilitate climbing between 150 mm and 760 mm above the floor. (2) The requirements of (1) do not apply to- (a) fire-isolated stairways, fire-isolated ramps and other areas used primarily for emergency purposes, other than- (i) external stairways; and (ii) external ramps; and (b) Class 7 (other than carparks) and Class 8 buildings.	*Note additional requirements where possible fall is 4m or greater.*
D3D22	Handrails	Handrails along stairs must be at least 865mm height from the nosing of the tread and have no obstruction on or above them that will tend to break a handhold, except for newel posts, ball type stanchions, or the like. * in a Class 9b building used as a primary school or a building that contains an early childhood centre- (i) have one handrail fixed at a height of not less than 865 mm; and (ii) in addition to (i), have a handrail- (A) fixed at a height between 665 mm and 750 mm in a primary school; and (B) with a cross-sectional dimension not less than 16 mm and not greater than 45 mm as measured in any direction across its centre, fixed at a height between 450 mm and 700 mm in a Class 9b early childhood centre;	**Note requirement for an additional, mid mounted handrail specifically for small children.**
D3D24	Doorways and doors	(1) N/A applies to Class 9c buildings [NSW variation] (2) A doorway serving as a required exit or forming part of a required exit, or a doorway in a patient care area of a Class 9a health-care building- (a) must not be fitted with a revolving door; and (b) must not be fitted with a roller shutter or tilt-up door unless- (i) it serves a Class 6, 7 or 8 building or part with a floor area not more than 200 m²; and (ii) the doorway is the only required exit from the building or part; and	*Note*

		(iii) it is held in the open position while the building or part is lawfully occupied; and (c) must not be fitted with a sliding door unless- (i) it leads directly to a road or open space; and (ii) the door is able to be opened manually under a force of not more than 110 N; and (d) if fitted with a door which is power-operated- (i) it must be able to be opened manually under a force of not more than 110 N if there is a malfunction or failure of the power source; and (ii) if it leads directly to a road or open space it must open automatically if there is a power failure to the door or on the activation of a fire or smoke alarm anywhere in the fire compartment served by the door; and (e) in a Class 9b building used as an entertainment venue- (i) must not be fitted with a collapsible gate, accordion door, turnstile or rigid barrier; and (ii) if fitted with a door, must be- (A) a swing door which opens in the direction of egress; and (B) doors hung in two folds where the unobstructed width of the doorway is more than 1 m; and (iii) a doorway or opening within sight of the audience but not intended for egress must have a notice displayed clearly indicating its purpose and such a notice must not be internally illuminated; and (iv) notwithstanding (2)(c), a sliding door may be fitted where- (A) it leads directly to a road or open space and forms a main entrance; and (B) it is capable of swinging in the direction of egress when pressure is applied to the inside face of the door; and (C) the door is provided with signage that clearly indicates to persons seeking egress, the potential for swinging the door open in an emergency (3) A power-operated door in a path of travel to a required exit, except for a door in a patient care area of a Class 9a health-care building as provided in (2), must be able to be opened manually under a force of not more than 110 N if there is a malfunction or failure of the power source.	
D3D25	Swinging doors	(1) A swinging door in a required exit or forming part of a required exit-	*Complies*

		(a) must not encroach- (i) at any part of its swing by more than 500 mm on the required width (including any landings) of a required stairway, ramp or passageway if it is likely to impede the path of travel of the people already using the exit; and (ii) when fully open, by more than 100 mm on the required width of the required exit; and (b) must swing in the direction of egress unless- (i) it serves a building or part with a floor area not more than 200 m², it is the only required exit from the building or part and it is fitted with a device for holding it in the open position; or (ii) it serves a sanitary compartment or airlock (in which case it may swing in either direction); and (c) must not otherwise impede the path or direction of egress. (2) The measurement of encroachment referred to in (1)(a) in each case is to include door handles or other furniture or attachments to the door.	
D3D26	Operation of latch	**(1) A door in a required exit, forming part of a required exit or in the path of travel to a required exit must be readily openable without a key from the side that faces a person seeking egress, by-** **(a) a single hand downward action on a single device which is located between 900 mm and 1.1 m from the floor and if serving an area required to be accessible by Part D4-** **(i) be such that the hand of a person who cannot grip will not slip from the handle during the operation of the latch; and** **(ii) have a clearance between the handle and the back plate or door face at the centre grip section of the handle of not less than 35 mm and not more than 45 mm; or** **(b) a single hand pushing action on a single device which is located between 900 mm and 1.2 m from the floor.** **(2) Where the latch operation device referred to in (1)(b) is not located on the door leaf itself-** **(a) manual controls to power-operated doors must be at least 25 mm wide, proud of the surrounding surface and** **Located-** **(i) not less than 500 mm from an internal corner; and** **(ii) for a hinged door, between 1 m and 2 m from the door leaf in any position; and**	*See notes*

		(iii) for a sliding door, within 2 m of the doorway and clear of a surface mounted door in the open position; and **(b) braille and tactile signage complying with S15C3 and S15C6 must identify the latch operation device.** (3) The requirements of (1) and (2) do not apply to a door that- (a) serves a vault, strong-room, sanitary compartment, or the like; or (b) serves only, or is within- (i) a sole-occupancy unit in a Class 2 building or a Class 4 part of a building; or (ii) a sole-occupancy unit in a Class 3 building (other than an entry door to a sole-occupancy unit of a boarding house, guest house, hostel, lodging house or backpacker accommodation); or (iii) a sole-occupancy unit with a floor area not more than 200 m2 (iii) in a Class 5, 6, 7 or 8 building; or (iv) a space which is otherwise inaccessible to persons at all times when the door is locked; or (c) complies with (4) and serves- (i) Australian Government Security Zones 4 or 5; or (ii) the secure parts of a bank, detention centre, mental health facility, early childhood centre or the like; or (d) is fitted with a fail-safe device which automatically unlocks the door upon the activation of any sprinkler system (other than a FPAA101D system) complying with Specification 17 or smoke, or any other detector system deemed suitable in accordance with AS 1670.1 installed throughout the building, and is readily openable when unlocked; or (e) is in a Class 9a or 9c building and- (i) is one leaf of a two-leaf door complying with D2D9(a) or D2D9(d) provided that it is not held closed by a locking mechanism and is readily openable; and with D2D9(a) or D2D9(d) provided that it is not held closed by a locking mechanism and is readily openable; and (ii) the door is not required to be a fire door or smoke door (4) A door referred to in (3)(c) must be able to be immediately unlocked- (a) by operating a fail-safe control switch, not contained within a protective enclosure, to actuate a device to unlock the door; or (b) by hand by a person or persons, specifically nominated by the owner, properly instructed as to the duties and responsibilities involved and available at all times	

		when the building is lawfully occupied so that persons in the building or part may immediately escape if there is a fire. *[NSW variation]* (5) The requirements of (1) and (2) do not apply in a Class 9b building (other than a school, an early childhood centre or a building used for religious purposes) to a door in a required exit, forming part of a required exit or in the path of travel to a required exit serving a storey or room accommodating more than 100 persons, determined in accordance with D2D18, in which case it must be readily openable- (a) without a key from the side that faces a person seeking egress; and (b) by a single hand pushing action on a single device such as a panic bar located between 900 mm and 1.2 m from the floor; and (c) where a two-leaf door is fitted, the provisions of (a) and (b) need only apply to one door leaf if the appropriate requirements of D2D9 are satisfied by the opening of that one leaf; and (d) where the door is a door in a path of travel providing re-entry to the building from a balcony, terrace or the like, it may be fitted with key-operated fastenings only, the tongues of which must be locked in the retracted position whenever the building is occupied by the public, so the door can yield to pressure. *[NSW variation]* (6) The requirements of (1), (2) and (5) do not apply to a door serving a Class 9b building used as an entertainment venue where the following provisions apply to a door or gate used by the public- (a) on a door, the single device operating the latch or bolts must be a panic bar if those doors are to be secured; or (b) an exit door or gate used by the public as the main entrance may be fitted with key-operated fastenings only, the tongues of which must be locked in the retracted position whenever the building is occupied by the public so the door or gate can yield to pressure from within; or (c) a door from a balcony, terrace or the like, being a door in a path of travel providing re-entry to the building, may comply with the locking provision of (b) above. ***Note 1:*** *Latches must operate by a single hand downward action on a single device which is located between 900mm and 1100mm from the floor (where required to be accessible by D3 1.2m in other circumstances).*	

		Note 2: *the child care centre is Class 9b (not an entertainment venue).*	
D3D28	Signs on doors	(1) A sign, to alert persons that the operation of certain doors must not be impaired, must be installed where it can readily be seen on, or adjacent to- (a) a required- (i) fire door providing direct access to a fire-isolated exit, except a door providing direct egress from a sole-occupancy unit in a Class 2 or 3 building or Class 4 part of a building; and (ii) smoke door; and (b) any door which is a- (i) fire door forming part of a horizontal exit; and (ii) smoke door that swings in both directions; and (iii) door leading from a fire isolated exit to a road or open space. (2) A sign required by (1)(a) must be fixed on the side of the door that faces a person seeking egress and, if the door is fitted with a device for holding it in the open position, either a sign must be fixed on the wall adjacent to the doorway, or signs must be fixed to both sides of the door. (3) A sign required by (1)(b) must be fixed on each side of the door. (4) A sign referred to in (1) must be in capital letters not less than 20 mm high in a colour contrasting with the background and state the following: (a) For an automatic door held open by an automatic hold-open device— **FIRE SAFETY DOOR — DO NOT OBSTRUCT** (b) For a self-closing door- **DO NOT OBSTRUCT** **DO NOT KEEP OPEN** **FIRE SAFETY DOOR** (c) For a door discharging from a fire-isolated exit- **FIRE SAFETY DOOR — DO NOT OBSTRUCT** ***Note 1:*** *No doors meet the provisions of this clause in the current design. No requirements for signs.*	*Note only. No requirements for signs on doors in current design.*
D3D29	Protection of openable windows	(1) A window opening must be provided with protection, if the floor below the window is 2 m or more above the surface beneath in- (a) a bedroom in a Class 2 or 3 building or Class 4 part of a building; or (b) **a Class 9b early childhood centre.**	*N/A – No affected windows within the building.*

		(2) Where the lowest level of the window opening is less than 1.7 m above the floor, a window opening covered by (1) must comply with the following: (a) The openable portion of the window must be protected with- (i) a device capable of restricting the window opening; or (ii) a screen with secure fittings. (b) A device or screen required by (a) must- (i) not permit a 125 mm sphere to pass through the window opening or screen; and (ii) resist an outward horizontal action of 250 N against the- (A) window restrained by a device; or (B) screen protecting the opening; and (iii) have a child resistant release mechanism if the screen or device is able to be removed, unlocked or overridden. (3) A barrier with a height not less than 865 mm above the floor is required to an openable window- (a) in addition to window protection, when a child resistant release mechanism is required by (2)(b)(iii); and (b) where the floor below the window is 4 m or more above the surface beneath if the window is not covered by (1). (4) A barrier covered by (3) except for (5) must not- (a) permit a 125 mm sphere to pass through it; and (b) have any horizontal or near horizontal elements between 150 mm and 760 mm above the floor that facilitate climbing. (5) A barrier required by (3) to an openable window in- (a) fire-isolated stairways, fire-isolated ramps and other areas used primarily for emergency purposes, excluding external stairways and external ramps; and (b) Class 7 (other than carparks) and Class 8 buildings and parts of buildings containing those classes, must not permit a 300 mm sphere to pass through it.	
D3D30	Timber stairways: Concession	(1) Notwithstanding D3D3(a), timber treads, risers, landings and associated supporting framework within a required fire-isolated stairway or fire-isolated passageway may be constructed from fire-protected timber in accordance with C2D13- (a) if the timber- (i) has a finished thickness of not less than 44 mm; and	*Note only*

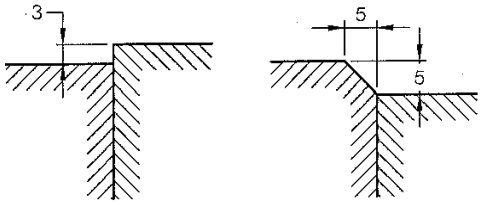
		(ii) has an average density of not less than 800 kg/m3 (ii) at a moisture content of 12%; and (b) subject to- (i) the building being protected throughout by a sprinkler system (other than a FPAA101D system) complying with Specification 17 which extends to within the fire-isolated enclosure; and (ii) fire protection being provided to the underside of stair flights and landings located immediately above a landing level which- (A) is at or near the level of egress; or (B) provides direct access to a carpark. (2) Fire protection required by (1) must be not less than one layer of 13 mm fire-protective grade plasterboard fixed in accordance with the system requirements for a fire-protective covering.	
NSW D3D31	Doors in paths of travel to an entertainment venue	In a Class 9b building used as an entertainment venue, a doorway in a path of travel must comply with NSW D3D24(2)(e). ***Note 1:*** *entertainment venue means a building used as a cinema, theatre or concert hall or an indoor sports stadium.*	*N/A*
Part D4 Access for people with a disability			
D4D2	General building access requirements	For a Class 9b building, access requirements are as follows: (a) Schools and early childhood centres - to and within all areas normally used by the occupants (b) An assembly building, not being a school or early childhood centre - to and within - (i) N/A; and (ii) all other areas normally used by the occupants, except that access need not be provided to tiers or platforms of seating areas that do not contain wheelchair seating spaces	*Note*
D4D3	Access to buildings	An accessway must be provided to the building- (i) From the main points of a pedestrian entry at the allotment boundary *(where applicable)*; and (ii) From another accessible building connected by a pedestrian link; and (iii) From any required accessible carparking space on the allotment. **(iv) Where a doorway on an accessway has multiple leaves, one of those leaves must have a clear opening width of not less than 850mm in accordance with AS1428.1.**	*Note* *Doors must have a clear width of 850 mm.*

Note 1: *Entrance and path of travel from any accessible carpark (where installed) needs to be graded to comply with AS1428 the path is required to be no less than 1m wide. Transitions between surfaces should have step of no more than 5mm if edges are chamfered at 45°. See below detail.*

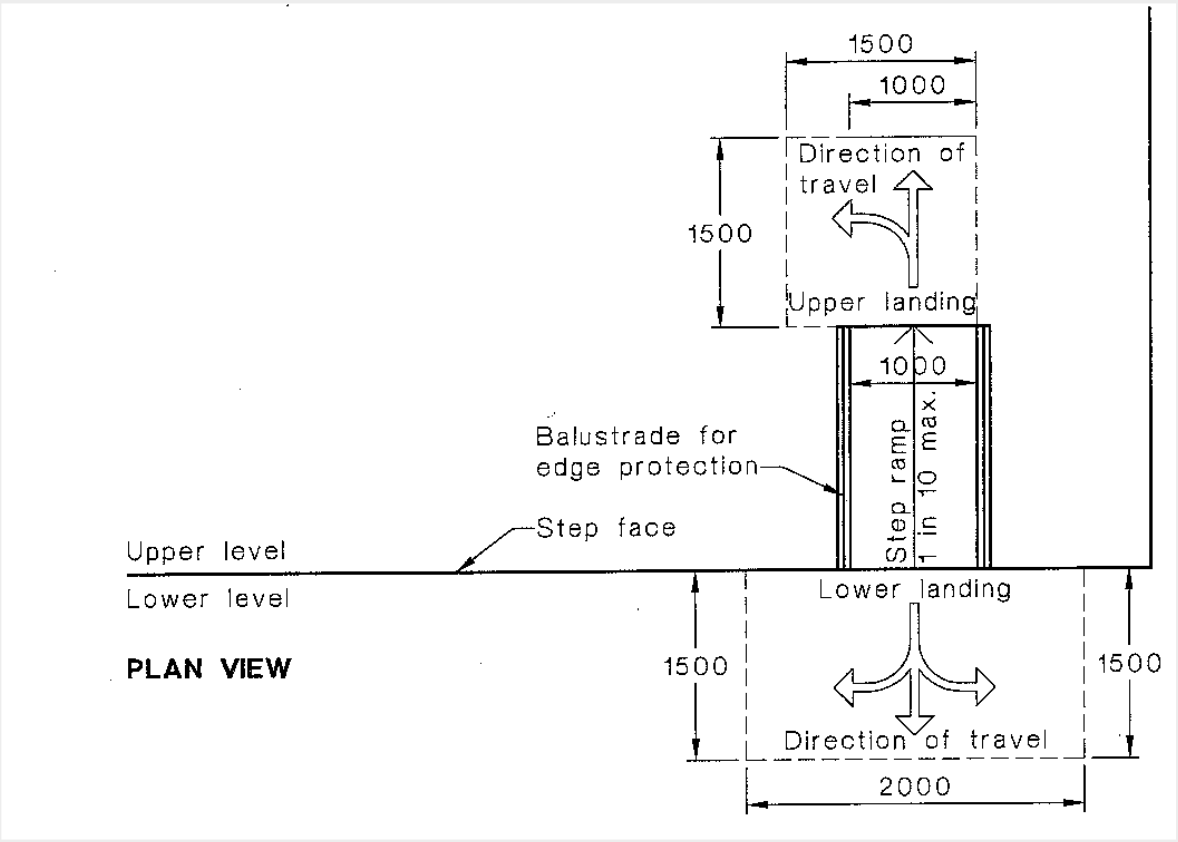
Note 2: *a continuous path of travel requires a slip resistant surface. The texture of the surface needs to be able to be easily used by people who use a wheelchair and those with an ambulant or sensory disability.*

The images below from AS1428.1 demonstrates how a step ramp can be constructed if required

Tolerances for raked joint pavers shall be as shown in Figure 7.

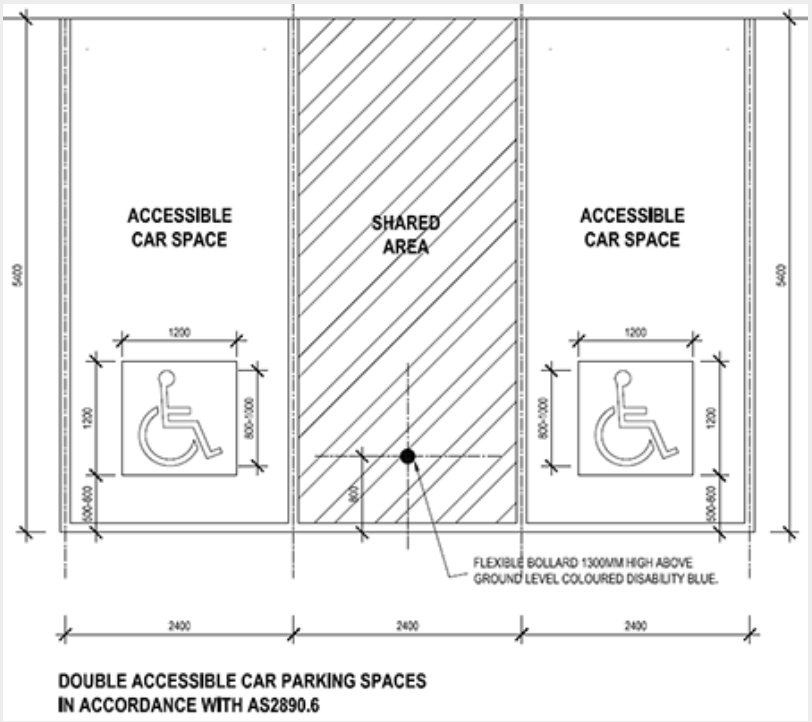


(a) Change in level



D4D4	Parts of buildings to be accessible	In a building required to be accessible- (a) **every ramp and stairway, except for ramps and stairways in areas exempted by D4D5, must comply with-** (i) **for a ramp**, except a fire-isolated ramp, **clause 10 of AS 1428.1; and** (ii) **for a stairway**, except a fire-isolated stairway, **clause 11 of AS 1428.1; and** (iii) for a fire-isolated stairway, clause 11.1(f) and (g) of AS 1428.1; and (b) **every passenger lift must comply with E3D7 and E3D8; and** (c) accessways must have- (i) passing spaces complying with AS 1428.1 at maximum 20 m intervals on those parts of an accessway where a direct line of sight is not available; and (ii) turning spaces complying with AS 1428.1- (A) within 2 m of the end of accessways where it is not possible to continue travelling along the accessway; and (B) at maximum 20 m intervals along the accessway; and (d) an intersection of accessways satisfies the spatial requirements for a passing and turning space; and	*Note that building is required to be accessible.*

		(e) a passing space may serve as a turning space; and (f) a ramp complying with AS 1428.1 or a passenger lift need not be provided to serve a storey or level other than the entrance storey in a Class 5, 6, 7b or 8 building- (i) containing not more than 3 storeys; and (ii) with a floor area for each storey, excluding the entrance storey, of not more than 200 m2 (ii) ; and (g) clause 7.4.1(a) of AS 1428.1 does not apply and is replaced with 'the pile height or pile thickness shall not exceed 11 mm and the carpet backing thickness shall not exceed 4 mm'; and (h) the carpet pile height or pile thickness dimension, carpet backing thickness dimension and their combined dimension shown in Figure 8 of AS 1428.1 do not apply and are replaced with 11 mm, 4 mm and 15 mm respectively ***Note 1:*** *Ramps and Stairways must comply with clauses 10 (Ramps) and 11 (Stairways) of AS 1428.1. While compliance with AS1428.1 should be consulted, the requirements generally relate to tactile ground surface indicators at the top and bottom of the stairs and specific set-out handrails to otherwise complaint stairways.*	
D4D5	Exemptions	The following areas are not required to be accessible: (a) An area where access would be inappropriate because of the particular purpose for which the area is used. (b) An area that would pose a health of safety risk for people with a disability. (c) Any path of travel providing access only to an area exempted by (a) or (b). ***Note 1:*** *Any legitimate exemption would usually only be considered in relation to a certain disability type however, may be considered safe in relation to another disability. For example, an unsafe situation for a person with a visual impairment may be considered safe for someone with a hearing impairment.*	*Note – provided for information only.* *Exemptions cannot be confirmed prior to the confirmation of the use of the buildings; however, this clause should be noted.*
D4D6	Accessible carparking	*Where carpark spaces are required to be provided as part of the development.* 1 Accessible car park is required for every 100 car parks or part thereof. ***Note 1:*** *An accessible carparking space is required to have an area the size of the space itself to one side, to allow for circulation of the vehicle. The required dedicated areas for accessible carparks can be utilised between 2 adjacent*	*Note* *1 accessible carpark is provided.*

		carparking spaces, so as to save area on site. See figure below for reference.	
		 *Double Accessible Car Parking Spaces – Image Courtesy of Equal Access Group*	
D4D7	Signage	Braille and tactile signage complying with Specification 15 must – (a) Incorporate the international symbol of access or deafness, as appropriate, in accordance with AS 1428.1 and identify each – a. Sanitary facility, except a sanitary facility associated with a bedroom in a class 1b building or a sole-occupancy unit in a class 3 or class 9c building; and b. Space with a hearing augmentation system; and (b) Identify each door required by E4D5 to be provided with an exit sign and state – a. "Exit"; and b. "Level"; and c. The floor level number of floor level descriptor, or a combination of the two. Signage in accordance with AS 1428.1 must be provided for accessible unisex sanitary facilities to identify if the facility is suitable for left or right-handed use. Signage to identify ambulant accessible sanitary facility in accordance with AS1428.1 must be located on the door of the facility.	*Note*

D4D9	Tactile indicators	TGSIs must be located at the top and bottom of the internal mezzanine stairs of each unit. (1) For a building required to be accessible, tactile ground surface indicators must be provided to warn people who are blind or have a vision impairment that they are approaching- (a) a stairway, other than a fire-isolated stairway; and (b) an escalator; and (c) a passenger conveyor or moving walk; and (d) a ramp other than a fire-isolated ramp, step ramp, kerb ramp or swimming pool ramp; and (e) in the absence of a suitable barrier- (i) an overhead obstruction less than 2 m above floor level, other than a doorway; and (ii) an accessway meeting a vehicular way adjacent to any pedestrian entrance to a building, excluding a pedestrian entrance serving an area referred to in D4D5, if there is no kerb or kerb ramp at that point, except for areas exempted by D4D5. (2) Tactile ground surface indicators required by (1) must comply with sections 1 and 2 of AS/NZS 1428.4.1. *(3) N/A for this Class of building*	*Note* *TGSIs are not present on current plans.* *Complies where installed in accordance with AS1428.4*
D4D13	Glazing on an accessway	On an accessway, where there is no chair rail, handrail or transom, all frameless or fully glazed doors, sidelights and any glazing capable of being mistaken for a doorway or opening, must be clearly marked in accordance with AS 1428.1.	*Note*

E SERVICES AND EQUIPMENT

Part E1 Firefighting equipment

E1D2	Fire hydrants	A fire hydrant in compliance with AS 2419.1 is required to be installed due to the total floor area of the building being greater than 500m². The fire hydrant system must be installed in accordance with AS2419.1	*It is anticipated that street hydrants will be utilised for coverage.* *Where this cannot be achieved, a fire hydrant system will need to be installed.*

Note 1: *Any street hydrant utilised for coverage must be within 90m of all areas of the building (as the hose would be laid) and must meet the flows and pressures tabled in AS2419.1*

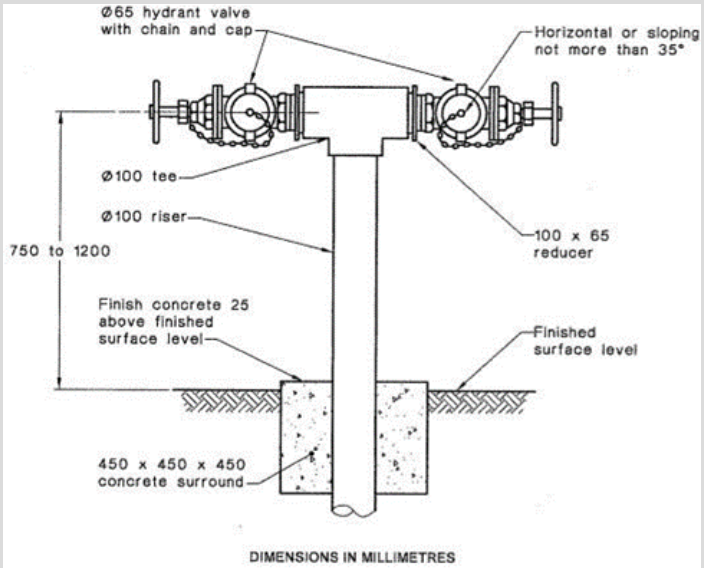
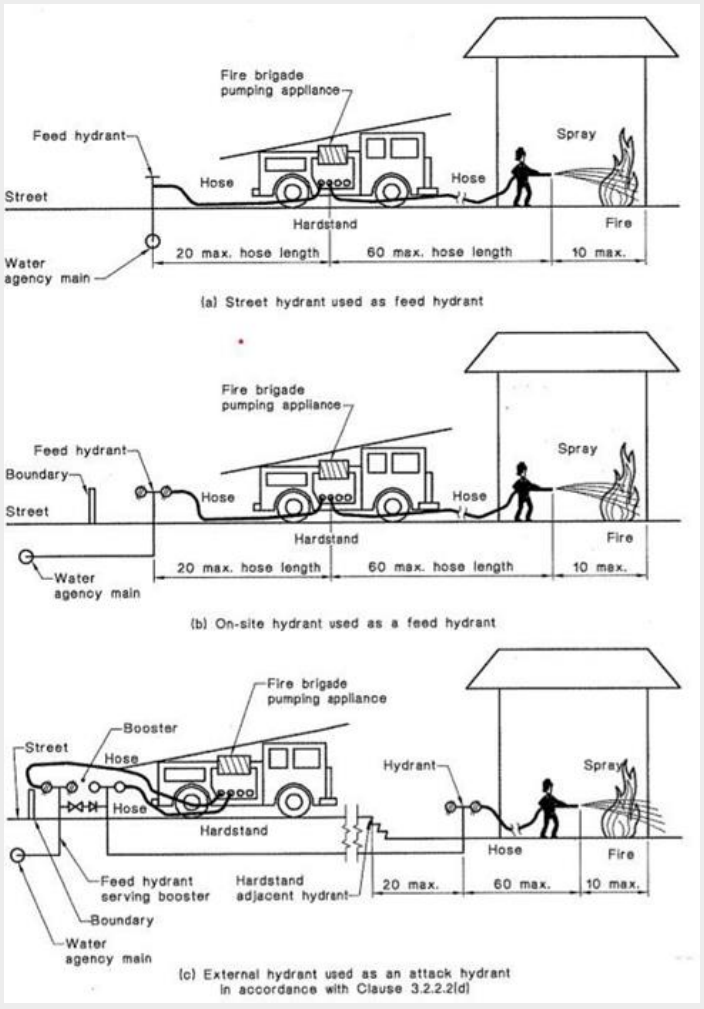


FIGURE 3.2.2.1 EXAMPLE OF AN EXTERNAL FIRE HYDRANT



Source AS2419.1-2005

Hydrant pressures to be achieved are highlighted below

TABLE 2.2

MINIMUM FIRE HYDRANT OUTLET FLOW RATES AND PRESSURES

Fire hydrant type	Minimum required flow rate (L/s)	Minimum required residual pressure (kPa)	
		NSW	All other states and territories
Feed fire hydrant, unassisted	10	150	200
Attack fire hydrant, unassisted	10	250	350
Internal and external fire hydrants when boosted by a fire brigade pumping appliance	10	700	700

NOTES:

1 'Unassisted' specifies the system performance characteristics achieved by a water agency's system or other elevated reservoir, before a fire brigade pumping appliance is connected to the system. On-site pumps must not be used to achieve this performance. If pumps are required, then fire hydrants will need to have attack fire hydrant performance and be located in accordance with Clause 3.2.2.2(c).

2 In a system that incorporates a fire brigade booster assembly, external above-ground fire hydrants, accessible by a fire brigade pumping appliance, if located as attack fire hydrants, need only have feed fire hydrant unassisted performance (see Clause 3.2.2.2(d)).

TABLE 2.3

FIRE HYDRANT OUTLET FLOW RATES AND PRESSURES

Fire hydrant type	Minimum required flow rate (L/s)	Minimum required residual pressure (kPa)
Attack fire hydrant performance achieved without the use of a fire brigade pumping appliance	5	700
Internal and external fire hydrants when boosted by a fire brigade pumping appliance	10	700

NOTE: Where the supply from a water agency's reticulated water system does not meet the requirements of this Standard and tanks and pumps are installed, the performance requirements for feed fire hydrants at a booster assembly fed by that water supply may be waived.

Source AS2419-2005

(b) The fire hydrant system-

(i) must be installed in accordance with AS 2419.1, except-

(A) where a sprinkler system is installed throughout a building in accordance with AS 2118.1, AS 2118.4, AS2118.6, FPAA101H or FPAA101D the fire hydrant booster protection requirements of clauses 7.3(c)(ii) and 7.3(d)(iii) of AS 2419.1 do not apply; and

(B) a fire hydrant booster assembly may be located between 3.5 m and 10 m of the building, and need not comply with clause 7.3(d)(iii) of AS 2419.1 where the assembly is protected by an adjacent fire-rated freestanding wall that-

(aa) achieves an FRL of not less than 90/90/90; and

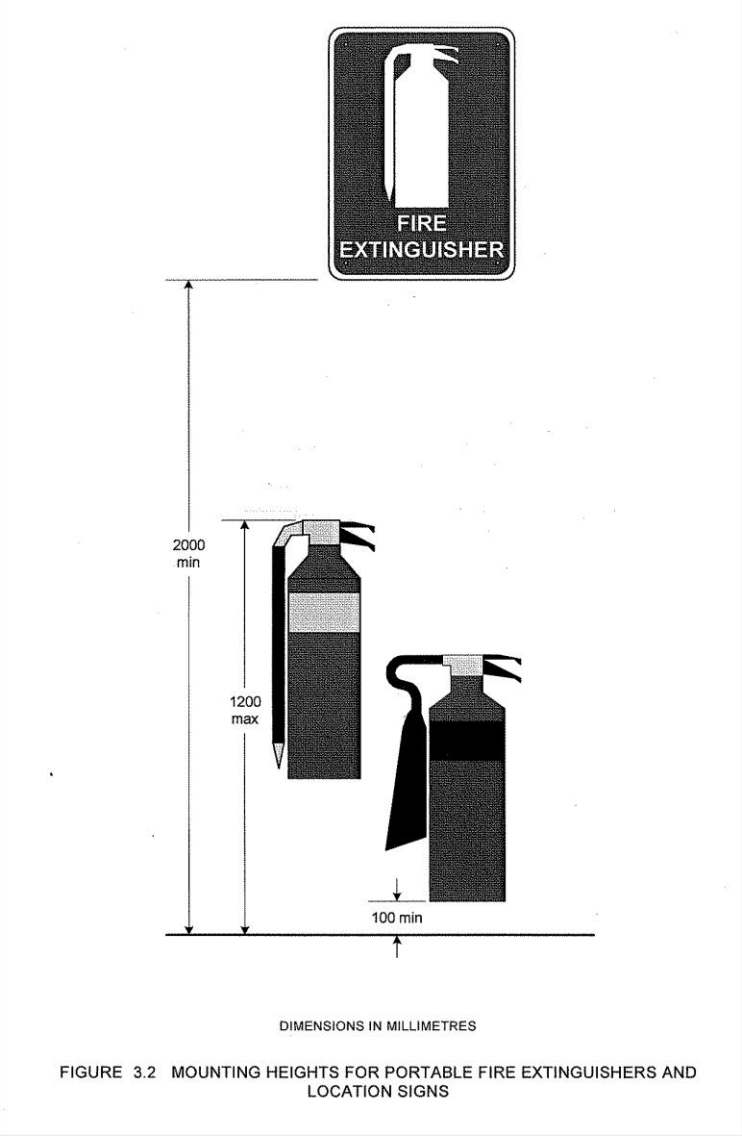
(bb) extends not less than 1 m each side of the outermost fire hydrant booster risers within the assembly and is not less than 3 m wide; and (cc) extends to a height of not less than 2 m above finished ground level; and

(ii) where internal fire hydrants are provided, they must serve only the storey on which they are located except that a sole-occupancy unit-

(A) of not more than 2 storeys in a Class 5, 6, 7, 8 or 9 building may be served by a single fire hydrant located at the level of egress from that sole-occupancy unit provided the fire hydrant can provide coverage to the whole of the sole-occupancy unit.

E1D3	Fire hose reels	**Fire hose reels are required where the floor area exceeds 500m²** (a) The fire hose reel system must- (i) have fire hose reels installed in accordance with AS 2441; and (ii) 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. (b) Fire hose reels must be located internally, externally or in combination, to achieve the system coverage specified in AS 2441. (c) 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: (i) 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. (ii) 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. (iii) Where system coverage is not achieved by compliance with (i) and (ii), additional fire hose reels may be located in paths of travel to an exit to achieve the required coverage. (d) 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- (i) doorways in walls referred to in C2.5(a)(v) in a Class 9a building and C2.5(b)(iv) in a Class 9c building, separating ancillary use areas of high potential fire hazard; and (ii) doorways in walls referred to in C2.12 or C2.13 separating equipment or electrical supply systems; and (iii) doorway openings to shafts referred to in C3.13. (e) Where the normal water supply cannot achieve the flow and pressures required by AS 2441, or is unreliable- (i) a pump; or (ii) water storage facility; or	*Fire Hose reels required.*

		(iii) 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	
E1D4	Sprinklers	N/A – Sprinklers are not required in consideration of the below clauses.	*N/A*
E1D5	Where sprinklers are required: all classifications	N/A – Sprinklers are only required where a building or any part of a building had an effective height of more than 25 m.	*N/A*
E1D11	Where sprinklers are required: Class 9b buildings	(1) In a Class 9b building, other than an early childhood centre, see Part I1. (2) In a Class 9b early childhood centre and in a building containing a Class 9b early childhood centre, sprinklers are required throughout the whole building, including any part of another class.	*Note exemption (b) in below exemption table. No sprinklers required in the current building configuration.*
	Exemptions E1D11(2) does not apply to a Class 9b *early childhood centre*— (a) wholly within a *storey* that provides direct egress to a road or *open space*; or (b) with a *rise in storeys* of not more than 2, where the Class 9b *early childhood centre* is the only use in the building.		
E1D13	Where sprinklers are required: occupancies of excessive hazard	N/A – Sprinklers are required in buildings which contain hazardous processes where they have a floor area of more than 2000 m^2 or a volume of more than 12,000 m^3.	*N/A*
E1D14	Portable fire extinguishers	Portable fire extinguishers (to cover Class A risks) are not required in fire compartments over 500m^2 served by fire hose reels. **Note E1D3** ***Note that where the floor area can be reduced to under 500m^2, fire hose reels would not be required however, portable fire extinguishers would be.*** *AS2444- 2001* In Class 2 to 9 buildings, portable fire extinguishers must be provided as follows: (a) To cover class AE or E risks associated with emergency services switchboards. (b) To cover class F fire risks involving cooking oils and fats in kitchens. (c) To cover class B fire risks in locations where flammable liquids in excess of 50 litres are stored or used (excluding that held in fuel tanks of vehicles) **(d) To cover class A fire risks in fire compartments less than 500 m^2 that are not provided with fire hose reels.** **AS2444- 2001**	*Note and read in conjunction with E1D3- fire hose reels.*

		For Class A fire risks, a fire extinguisher should not be more than 15m from any point and should have a 2A rating (covers up to 300m²) to cover the 'ordinary fire hazard' and the floor area limitations. ***Note 1:*** *In areas, which are less than 150m^2, and are not within the 15m coverage required by Portable Fire Extinguishers, multiple 1A extinguishers (covers up to 150m^2 each) may be used instead, so long as both the floor area and distance coverage criteria are satisfied.*	
		General location and height of fire extinguishers and signs Source: AS2444  DIMENSIONS IN MILLIMETRES FIGURE 3.2 MOUNTING HEIGHTS FOR PORTABLE FIRE EXTINGUISHERS AND LOCATION SIGNS	
E1D16	Fire precautions during construction	During construction not less than one fire extinguisher to suit Class A, B and C fires and electrical fires must be provided at all times on each storey adjacent to each required exit or temporary stairway or exit.	*Note*

E1D17	Provision for special hazards	It is considered that no special hazards exist. This assumes no particularly hazardous chemicals or equipment are intended to be stored in the building.	*Note*
		Part E2 Smoke hazard management	
E2D2	Application of part	(1) The Deemed-to-Satisfy Provisions of this Part do not apply to- (a) an open-deck carpark; or (b) an open spectator stand; or (c) a Class 8 electricity network substation with a floor area not more than 200m^2, located within a multi-classified building. (2) In addition to the Deemed-to-Satisfy Provisions of E2D3 to E2D13, the following specific Deemed-to-Satisfy Provisions apply to the following Class 6 and Class 9b buildings: (a) For Class 6 buildings, in fire compartments more than 2000 m²- (i) not containing an enclosed common walkway or mall serving more than one Class 6 sole-occupancy unit - must comply with E2D14; or (ii) containing an enclosed common walkway or mall serving more than one Class 6 sole-occupancy unit - must comply with E2D15. (b) For **Class 9b assembly buildings**- (i) nightclubs, discotheques and the like - must comply with E2D16; and (ii) exhibition halls - must comply with E2D17; and (iii) theatres and public halls - must comply with E2D18; and (iv) theatres and public halls (not covered by E2D18) including lecture theatres and cinema/auditorium complexes - must comply with E2D19; and **(v) other assembly buildings (not listed in (i) to (iv)) excluding schools - must comply with E2D20.** (3) The smoke exhaust and smoke-and-heat vent provisions of this Part do not apply to any area not used by occupants for an extended period of time such as a storeroom with a floor area less than 30 m², sanitary compartment, plant room or the like.	
E2D3	General Requirements	(1) An air-handling system which does not form part of a smoke hazard management system in accordance with E2D4 to E2D20 and which recycles air from one fire compartment to another fire compartment or operates in a manner that may unduly contribute to the spread of smoke	*Note*

		from one fire compartment to another fire compartment must, subject to (2), be designed and installed- (a) to operate as a smoke control system in accordance with AS 1668.1; or (b) such that it- (i) incorporates smoke dampers where the air-handling ducts penetrate any elements separating the fire compartments served; and (ii) is arranged such that the air-handling system is shut down and the smoke dampers are activated to close automatically by smoke detectors complying with clause 7.5 of AS 1670.1. (2) For the purposes of (1), each sole-occupancy unit in a Class 2 or 3 building is treated as a separate fire compartment. (3) Miscellaneous air-handling systems covered by Sections 5 and 6 of AS 1668.1 serving more than one fire compartment (other than a carpark ventilation system) and not forming part of a smoke hazard management system must comply with these Sections of the Standard. (4) A smoke detection system must be installed in accordance with S20C6 to operate AS 1668.1 systems that are provided for zone pressurisation and automatic air pressurisation for fire-isolated exits. ***Note 1:*** *The building is one single fire compartment.*	
E2D4	Fire-isolated exits	(1) A part of a building listed in (2) must be provided with- (a) an automatic air pressurisation system for fire-isolated exits in accordance with AS 1668.1; or (b) open access ramps or balconies in accordance with D3D6. (2) The requirements of (1) apply to- (a) a required fire-isolated stairway, including any associated fire-isolated passageway or fire-isolated ramp serving- (i) any storey above an effective height of 25 m; or (ii) more than 2 below ground storeys, not counted in the rise in storeys in accordance with C2D3; or (iii) an atrium to which Part G3 applies; or (iv) a Class 9a building with a rise in storeys of more than 2; or (v) a Class 9c building with a rise in storeys of more than 2; or (vi) a Class 3 building used as a residential care building with a rise in storeys of more than 2; and	*N/A*

		(b) a required fire-isolated passageway or fire-isolated ramp with a length of travel more than 60 m to a road or open space. (3) An automatic air pressurisation system for a fire-isolated exit must serve the entire exit.	
E2D9	Buildings not more than 25m in effective height: Class 5, 6, 7b, 8, and 9b buildings	(1) A building not more than 25 m in effective height that- (a) is a Class 5 or 9b school building or part of a building having a rise in storeys of more than 3; or (b) is a Class 6, 7b, 8 or 9b building (other than a school) or part of a building having a rise in storeys of more than 2; or (c) has a rise in storeys of more than 2 and contains- (i) a Class 5 or 9b school part; and (ii) a Class 6, 7b, 8 or 9b (other than a school) part, must meet the requirements of (2). (2) A building referred to in (1) must be provided with- (a) in each required fire-isolated stairway, including any associated fire-isolated passageway or fire-isolated ramp, an automatic air pressurisation system for fire-isolated exits in accordance with AS 1668.1; or (b) a zone pressurisation system between vertically separated fire compartments in accordance with AS 1668.1, if the building has more than one fire compartment; or (c) an automatic smoke detection and alarm system complying with Specification 20; or (d) a sprinkler system (other than a FPAA101D or FPAA101H system) complying with Specification 17. (3) For the purposes of (2), vertically separated fire compartments are fire compartments above and below each other, and not fire compartments within the same storey.	*No requirements*
NSW E2D10	Buildings not more than 25 m in effective height: large isolated buildings subject to C3D4	N/A not a large isolated building	
NSW E2D16	Class 9b – assembly buildings: all	The following provisions apply to all Class 9b assembly buildings: (a) A building or part of a building used as an assembly building must be provided with automatic shutdown of any air-handling system (other than non-ducted individual room units with a capacity not more than 1000 L/s and miscellaneous exhaust air systems installed in accordance with Sections 5 and 6 of AS 1668.1) which does not form part of	*See Note 1*

		the smoke hazard management system, on the activation of- (i) smoke detectors installed complying with S20C6; and (ii) any other installed fire detection and alarm system, including a sprinkler system (other than a FPAA101D or FPAA101H system) complying with Specification 17. (b) A basement not counted in the rise in storeys in accordance with C2D3, less than 2000m^2 (b) used as an assembly building or part of an assembly building containing an auditorium or other public area, must be equipped with- (i) an automatic smoke detection system in accordance with Specification 20; or (ii) an automatic zone pressurisation system in accordance with AS 1668.1 if the basement has more than one fire compartment; or if the basement forms part of a multi fire compartmented building served by the zone pressurisation system; or (iii) a sprinkler system (other than a FPAA101D or FPAA101H system) complying with Specification 17. (c) Stages and backstages: (i) For the purposes of this clause, where a stage is separated from the auditorium by a proscenium wall incorporating a proscenium opening, a backstage room or area that is not separated from the stage by construction having an FRL of not less than 60/60/60, is taken to form part of the stage. (ii) A building or part of a building used as an assembly building which has a stage with a floor area of more than 50m^2 and not more than 150m^2 must, over the stage, be provided with- (A) an automatic smoke exhaust system complying with Specification 21 (including Figure S21C2); or (B) roof mounted automatic smoke-and-heat vents complying with NSW I4D59, in a single storey building or the top storey of a multi storey building. (iii) A building or part of a building used as an assembly building which has a stage with a floor area of more than 150m^2 must, over the stage, be provided with an automatic smoke exhaust system complying with Specification 21 (including Figure S21C2). (iv) A building or part of a building used as an assembly building which has a stage equipped with means of flying scenery must, over the stage, be provided with an automatic smoke exhaust system complying with Specification 21 (including Figure S21C2).	

		Note 1: *Where the building has an air conditioning system that delivers more than 1000L/s of air it must incorporate an auto shutdown device in accordance with this clause.*	
NSW E2D17	Class 9b – assembly buildings: night clubs, discotheques and the like	A building or part of a building being a night club, discotheque or the like, must be provided with- (a) in an auditorium- (i) an automatic smoke exhaust system complying with Specification 21; or (ii) roof mounted automatic smoke-and-heat vents complying with Specification 22, in a single storey building or the top storey of a multi storey building; or (iii) a sprinkler system (other than a FPAA101D or FPAA101H system) complying with Specification 17 with fast response sprinkler heads; and (b) in all other areas- (i) where a building or part of a building has a floor area not more than 2000m^2- (A) one of the smoke hazard management measures listed under (a) above; or (B) an automatic smoke detection and alarm system complying with Specification 20; or (ii) where a building or part of a building has a floor area of more than 2000m^2, smoke hazard management measures as provided for under NSW E2D19. ***Note 1:*** *The building does not have an auditorium nor does it have a floor area in excess of 2000m². It is considered there are no requirements in accordance with this clause.*	*N/A*
NSW E2D18	Class 9b – assembly buildings: exhibition halls, museums and art galleries	N/A	*N/A*
NSW E2D19	Class 9b – assembly buildings: other assembly buildings (not listed in NSW E2D16 to E2D18)	(1) Unless otherwise described in (2), in a building or part of a building used as an assembly building (not being a night club, discotheque or the like; or an exhibition hall, museum or art gallery) where the floor area of a fire compartment is more than 2000m^2, the fire compartment must be provided with- (a) an automatic smoke exhaust system complying with Specification 21; or (b) roof mounted automatic smoke-and-heat vents complying with Specification 22, in a single storey building or the top storey of a multi storey building; or if the floor area of the fire compartment is not more than	*Note requirements in subclause (3) for a smoke detection and alarm system*

		5000m^2 (c) and the building has a rise in storeys of not more than 2- (i) an automatic smoke detection and alarm system complying with Specification 20; or (ii) a sprinkler system (other than a FPAA101D or FPAA101H system) complying with Specification 17. (2) The following buildings are exempt from the provisions of (1): (a) Sporting complexes, (including sports halls, gymnasiums, swimming pools, ice and roller rinks, and the like) other than indoor sports stadiums with total spectator seating for more than 1000 persons. (b) Churches and other places used solely for religious worship. (c) School classrooms. (3) **A building containing a Class 9b early childhood centre must be provided with an automatic smoke detection and alarm system complying with Specification 20 throughout the whole building, including any part of another Class.**	
NSW E2D20	Class 9b assembly buildings: other assembly buildings (not listed in E2D16 to E2D19)	N/A	
E2D21	Provision for special hazards	It is not considered that any special functions or uses exist in any unit.	*Note*
Specification 20- Smoke detection and alarm systems			
S20C2	*Type of system*	*A required automatic smoke detection and alarm system must be provided in accordance with the following:* *(a) Applies to Class 2 buildings and Class 4 parts of a building-* *(b) Applies to Class 3 buildings-* *(c) Class 5, 6, **7**, 8, **9b** and 9c buildings - **a smoke detection system complying with S20C4*** *(d) Applies to Class 9a health-care buildings-*	*Note*
S20C3	*Smoke alarm system*	*(1) In all Class 2 to 9 buildings provided with a smoke alarm system, the following applies:* *(a) A smoke alarm system must-* *(i) consist of smoke alarms complying with AS 3786; and* *(ii) be powered from the consumer mains source.*	*Note*

		(b) In kitchens and other areas where the use of the area is likely to result in smoke alarms causing spurious signals, subject to (c)- *(i) any other alarm deemed suitable in accordance with AS 1670.1 may be installed provided that smoke alarms are installed elsewhere in the sole-occupancy unit in accordance with (2)(a) and (2)(b); or* *(ii) an alarm acknowledgement facility may be installed.* *(c) Where a kitchen or other area referred to in (b) is in a building protected with a sprinkler system complying with Specification 17 (other than a FPAA101D system), alarms need not be installed in the kitchen or other area likely to result in spurious signals.* *(2) Applies to a Class 2 or 3 building or Class 4 part of a building.* *(3) Applies to a Class 9a building.*	
S20C4	*Smoke detection system*	*(1) In all Class 2 to 9 buildings provided with a smoke detection system, the following applies:* *(a) A smoke detection system must-* *(i) subject to (2), (3) and (4), comply with AS 1670.1; and* *(ii) activate a building occupant warning system in accordance with S20C7.* *(b) In kitchens and other areas where the use of the area is likely to result in smoke detectors causing spurious signals, subject to (c)-* *(i) any other detector deemed suitable in accordance with AS 1670.1 may be installed provided that smoke detectors are installed elsewhere in the sole-occupancy unit in accordance with the requirements for alarms in S20C3(2)(a) and (2)(b); or* *(ii) an alarm acknowledgement facility may be installed.* *(c) Where a kitchen or other area referred to in (b) is in a building protected with a sprinkler system complying with Specification 17 (other than a FPAA101D or FPAA101H system), detectors need not be installed in the kitchen or other areas likely to result in spurious signals.* *(2) Applies to a Class 2 or 3 building or Class 4 part of a building.* *(3) Applies to a Class 9a health-care building.* *(4) Applies to a Class 9c building.*	*Note*
S20C6	*Smoke detection for smoke control systems*	*(1) Smoke detectors required to activate air pressurisation systems for fire-isolated exits and zone pressurisation systems must-*	*Subclause (2) applies to automatic shutdown systems for air*

		(a) be installed in accordance with AS 1670.1; and *(b) have additional smoke detectors installed adjacent to each bank of lift landing doors set back horizontally from the door openings by a distance of not more than 3 m.* *(2) Smoke detectors required to activate-* *(a) automatic shutdown of air-handling systems in accordance with E2D16, E2D17 or E2D19; or* *(b) a smoke exhaust system in accordance with Specification 21, must comply with the requirements of (3).* *(3) Smoke detectors referred to in (2) must-* *(a) be spaced-* *(i) not more than 20 m apart and not more than 10 m from any wall, bulkhead or smoke curtain; and* *(ii) in enclosed malls and walkways in a Class 6 building not more than 15 m apart and not more than 7.5 m from any wall, bulkhead or curtain; and* *(b) have a sensitivity-* *(i) in accordance with AS 1670.1 in areas other than a multi-storey walkway and mall in a Class 6 building; and* *(ii) not exceeding 0.5% smoke obscuration per metre with compensation for external airborne contamination as necessary, in a multi-storey walkway and mall in a Class 6 building.* *(4) Smoke detectors provided to activate a smoke control system must-* *(a) either-* *(i) form part of a building fire or smoke detection system complying with AS 1670.1; or* *(ii) be a separate dedicated system incorporating control and indicating equipment complying with AS 1670.1; and* *(b) activate a building occupant warning system complying with S20C7, except that smoke detectors provided solely to initiate automatic shutdown of air-handling systems in accordance with (2)(a) need not activate a building occupant warning system*	*handling systems over 1000L/s.*
S20C7	*Building occupant warning system*	*No requirement for Class 9b child care centres*	*N/A*
NSW S20C8	*System monitoring*	*No requirement for Class 9b child care centres*	*N/A*

Part E4 Visibility in an emergency, exit signs and warning systems			
E4D2	Emergency lighting requirements	An emergency lighting system must be installed- (a) in every fire-isolated stairway, fire-isolated passageway or fire-isolated ramp; and (b) in every storey of a Class 5, 6, 7, 8 or 9 building where the storey has an area more than 300m^2- (i) in every passageway, corridor, hallway, or the like, that is part of the path of travel to an exit; and (ii) in any room having a floor area more than 100m^2 that does not open to a corridor or space that has emergency lighting or to a road or open space; and (iii) in any room having a floor area more than 300m^2; and (c) Applies to a Class 2 or 3 building or Class 4 part of a building; and (d) **in every required non-fire-isolated stairway**; and (e) in a sole-occupancy unit in a Class 5, 6 or 9 building if- (i) the floor area of the unit is more than 300m^2; and (ii) an exit from the unit does not open to a road or open space or to an external stairway, passageway, balcony or ramp, leading directly to a road or open space; and (f) in every room or space to which there is public access in every storey in a Class 6 or 9b building if- (i) the floor area in that storey is more than 300m^2; or (ii) any point on the floor of that storey is more than 20 m from the nearest doorway leading directly to a stairway, ramp, passageway, road or open space; or (iii) egress from that storey involves a vertical rise within the building of more than 1.5 m, or any vertical rise if the storey concerned does not admit sufficient light; or (iv) the storey provides a path of travel from any other storey required by (i), (ii) or (iii) to have emergency lighting; and (g) Applies to a Class 9a health-care building- (h) Applies to a Class 9c building; and (i) in every required fire control centre.	*Note the floor area per storey requirement of 300m^2.* *Emergency lighting will be required to serve both (required non-fire-isolated) exits of the building.*
E4D4	Design and operation of emergency lighting	Every required emergency lighting system must comply with AS2293.1	*Note* Must comply where required by E4D2 above
E4D5	Exit signs	**An exit sign must be clearly visible to persons approaching the exit, and must be installed on, above or adjacent to each-** (a) **door providing direct egress from a storey to-**	*Exit signs required at each egress point.*

		(i) **an enclosed stairway**, passageway or ramp serving as a required exit; and (ii) **an external stairway**, passageway or ramp serving as a required exit; and (iii) **an external access balcony leading to a required exit**; and (b) **door from an enclosed stairway**, passageway or ramp **at every level of discharge to a road or open space**; and (c) horizontal exit; and (d) door serving as, or forming part of, a required exit in a storey required to be provided with emergency lighting in accordance with E4D2. Exit signs must be clearly visible to persons approaching the exit, and must be installed on, above, or adjacent to each door serving as a required exit where emergency lighting is required/installed.	
NSW E4D6	Direction signs	If an exit is not readily apparent to persons occupying or visiting the building, then exit signs must be installed- (a) in appropriate positions in corridors, hallways, lobbies, foyers, auditoria, and the like, indicating the direction to a required exit; and (b) in a Class 9b building used as an entertainment venue - in any external egress path to a road where the exit does not open directly onto a road. **Note 1:** All exits should be readily apparent to expected visitors.	*It is considered that a directional sign may be required in the main hallway of the building.*
E4D8	Design and operation of exit signs	Every required exit sign must comply with- (a) AS/NZS 2293.1; or (b) for a photoluminescent exit sign, Specification E4.8; and be clearly visible at all times when the building is occupied by any person having the right of legal entry to the building.	*Note*

F HEALTH AND AMENITY

Part F1 Surface water management, rising damp

F1D3	Stormwater drainage	Stormwater drainage must comply with AS 3500.3	Note
F1D4	Exposed joints	Exposed joints in the drainage surface on a roof, balcony, podium, or similar horizontal surface part of a building must – (a) be protected in accordance with section 2.9 of AS 4654.2; and (b) not be located beneath or run through a planter box, water feature, or similar part of the building.	*Note.*
F1D5	External waterproofing membranes	A roof, balcony, podium, or similar horizontal surface part of a building must be provided with a waterproofing membrane – (a) consisting of materials complying with AS4654.1; and (b) Designed and installed in accordance with AS4654.2.	*Note*
F1D6	Damp-proofing	Moisture from the ground must be prevented from reaching- (a) the lowest floor timbers and the walls above the lowest floor joists; and (b) the walls above the damp-proof course; and (c) The underside of a suspended floor constructed of a material other than timber, and the supporting beams or girders.	*Note*
F1D7	Damp-proofing of floors on the ground	If a floor of a room is laid on the ground or on fill, moisture from the ground must be prevented from reaching the upper surface of the floor and adjacent walls by the insertion of a vapour barrier in accordance with AS 2870.	*Note*
F1D8	Subfloor ventilation	(1) Subfloor spaces must- (a) be provided with openings in external walls and internal subfloor walls in accordance with Table F1D8 for the climatic zones given in Figure F1D8; and (b) have clearance between the ground surface and the underside of the lowest horizontal member in the subfloor in accordance with Table F1D8. (2) In addition to (1), a subfloor space must- (a) be cleared of all building debris and vegetation; and	*Climatic zone for east coast NSW is Zone C.*

(b) have the ground beneath the suspended floor graded to prevent surface water ponding under the building; and

(c) contain no dead air spaces; and

(d) have openings evenly spaced as far as practicable; and

(e) have openings placed not more than 600 mm in from corners.

(3) In double leaf masonry walls, openings specified in (1) must be provided in both leaves of the masonry, with openings being aligned to allow an unobstructed flow of air.

(4) Openings in internal subfloor walls specified in (1) must have an unobstructed area equivalent to that required for the adjacent external openings.

(5) Where the ground or subfloor space is excessively damp or subject to frequent flooding, in addition to the requirements of (1) to (4)-

(a) the subfloor ventilation required in (1) must be increased by 50%; or

(b) the ground within the subfloor space must be sealed with an impervious membrane; or

(c) subfloor framing must be-

(i) where above ground, above-ground durability Class 1 or 2 timbers or H3 preservative treated timbers in accordance with AS 1684.2, AS 1684.3 or AS 1684.4; or

(ii) where in ground, in-ground durability Class 1 or 2 timbers or H5 preservative treated timbers in accordance with AS 1684.2, AS 1684.3 or AS 1684.4; or

(iii) steel in accordance with NASH Standard 'Residential and Low-Rise Steel Framing' Part 2.

Table F1D8: Subfloor openings and ground clearance

Climatic zone (see Figure F1D8)	Minimum aggregate subfloor ventilation openings without a *membrane* (mm^2/m of wall)	Minimum aggregate subfloor ventilation openings having the ground sealed with an impervious *membrane* (mm^2/m of wall)	Minimum ground clearance height where termite inspection or management system is not required (mm)	Minimum ground clearance height where termite inspection is required (mm) Note 1
A	2000	1000	150	400
B	4000	2000	150	400
C	6000	3000	150	400

Table Notes

(1) 400 mm clearance *required* only where termite management systems are installed that need to be inspected (see B1D4).

(2) On sloping sites, the 400 mm clearance *required* by (1) may be reduced to 150 mm within 2 m of *external walls*.

(3) In situations where openings in *external walls* and internal subfloor walls are not able to be provided, additional measures must be provided to ensure that the overall level of ventilation of the subfloor space is maintained.

(4) Additional measures referred to in (3) may include measures similar to those in F1D8(5), such as providing durability class timbers, or having the ground sealed in the subfloor space with an impervious *membrane*.

Part F2 Wet areas and overflow protection			
F2D2	Wet area construction	In a class 5, 6, 7, 8, or 9 building, building elements in a bathroom or shower room must – (a) Be water resistant or waterproof in accordance with Spec. 26; and (b) Comply with AS3740 As if they were in a Class 2 or 3 building.	*Note*
F2D3	Rooms containing urinals	(1) Where a slab or stall type urinal is installed- (a) the floor surface of the room containing the urinal must be an impervious material; and (i) where no step is installed, must- (A) be graded to the urinal channel for a distance of 1.5 m from the urinal channel; and (B) have the remainder of the floor graded to a floor waste; and (ii) where a step is installed- (A) the step must have an impervious surface and be graded to the urinal channel; and (B) the floor behind the step must be graded to a floor waste; and (b) the junction between the floor surface and the urinal channel must be impervious. (2) Where a wall hung urinal is installed- (a) the wall must be surfaced with impervious material extending from the floor to not less than 50 mm above the top of the urinal and not less than 225 mm on each side of the urinal; and (b) the floor must be surfaced with an impervious material and be graded to a floor waste. (3) In a room with timber or steel-framed walls and containing a urinal- (a) the wall must be surfaced with an impervious material extending from the floor to not less than 100 mm above the floor surface; and (b) the junction of the floor surface and the wall surface must be impervious.	*Note*
F2D4	Floor Wastes	Where a floor waste is installed, the continuous fall of a floor plane to the waste must be between 1:50 and 1:80.	*Note only required in residential building classes*

Part F3 Roof and wall cladding			
F3D2	Roof Coverings	A roof must be covered with- (a) roof tiles complying with AS 2049, fixed in accordance with AS 2050; or (b) metal sheet roofing complying with AS 1562.1; or (c) plastic sheet roofing designed and installed in accordance with AS 1562.3; or (d) terracotta, fibre-cement and timber slates and shingles designed and installed in accordance with AS 4597, except in cyclonic areas; or (e) an external waterproofing membrane complying with F1D5.	Compliance is ensured by the builder at the construction stage.
F3D3	Sarking	Sarking-type material used for weatherproofing of roofs and walls must comply with AS4200.1 and AS4200.2	*Note*
F3D4	Glazed Assemblies	Windows, glazed (framed) doors, louvres, and windows walls must comply with AS2047 requirements for resistance to water penetration. (1) Subject to (2) and (3), the following glazed assemblies in an external wall, must comply with AS 2047 requirements for resistance to water penetration: (a) Windows. (b) Sliding and swinging glazed doors with a frame, including French and bi-fold doors with a frame. (c) Adjustable louvres. (d) Shopfronts. (e) Window walls with one piece framing. (2) The following buildings need not comply with (1): (a) A Class 7 or 8 building where in the particular case there is no necessity for compliance. (b) A garage, tool shed, sanitary compartment, or the like, forming part of a building used for other purposes, except where the construction of the garage, tool shed, sanitary compartment or the like contributes to the weatherproofing of the other part of the building. (c) An open spectator stand or open-deck carpark. (3) The following glazed assemblies need not comply with (1): (a) All glazed assemblies not in an external wall. (b) Revolving doors. (c) Fixed louvres. (d) Skylights, roof lights and windows in other than the vertical plane. (e) Sliding and swinging glazed doors without a frame.	*Note for window selection. Selected windows must comply with AS2047*

		(f) Windows constructed on site and architectural one-off windows, which are not design tested in accordance with AS 2047. (g) Second-hand windows, re-used windows and recycled windows. (h) Heritage windows.	
F3D5	Wall Cladding	(1) External wall cladding must comply with one or a combination of the following: (a) Masonry, including masonry veneer, unreinforced and reinforced masonry: AS 3700. (b) Autoclaved aerated concrete: AS 5146.3. (c) Metal wall cladding: AS 1562.1. (2) The following buildings need not comply with (1): (a) A Class 7 or 8 building where in the particular case there is no necessity for compliance. (b) A garage, tool shed, sanitary compartment, or the like, forming part of a building used for other purposes, except where the construction of the garage, tool shed, sanitary compartment or the like contributes to the weatherproofing of another part of the building that is required to be weatherproofed. (c) An open spectator stand or open deck carpark.	Note
Part F4 Sanitary and other facilities			
F4D3	Calculation of number of occupants and	The number of persons accommodated must be calculated according to D2D18 if it cannot be more accurately determined by other means. Unless the premises are used by predominantly one sex, sanitary facilities must be provided on the basis of equal numbers of males and females. The facilities on site accommodate for an equal number of male and female occupants.	*Note that 100 children and 18 educators have been used for calculation purposes in this report.*
F4D4	Facilities in Class 3 to 9 buildings	The current facilities consist of two unisex WCs and an accessible unisex facility for staff, and 3 toilets comprising 6 closet pans for use by children. These facilities allow for an occupancy of 30 staff (based on an even split of male and female staff), and 90 children. Additionally, F4D4 (9) requires that facilities must allow for the supervision of children from facilities if the early childcare centre accommodates children younger than 2 years old. Noting this requirement, and the number of children accommodated by the current facilities, it is	Note specific requirements in subclause (9) in relation to childcare centres and where children under 2 years old are accommodated. Specific requirements exist for casual

		recommended that an additional facility, comprising at least one closet pan and one washbasin, which allows for the supervision of children under 2 years old is implemented. An additional toilet for use by children increases the design occupancy to 105 children within the facility. (1) Except where permitted by (3), (4), (7), F4D5(a), F4D5(b) and F4D12(1), separate sanitary facilities for males and females must be provided for Class 3, 5, 6, 7, 8 or 9 buildings in accordance with Tables F4D4a, F4D4b, F4D4c, F4D4d, F4D4e, F4D4f, F4D4g, F4D4h, F4D4i, F4D4j, F4D4k and F4D4l, as appropriate. (2) In Tables F4D4a, F4D4b, F4D4c, F4D4d, F4D4e, F4D4f, F4D4g, F4D4h, F4D4i, F4D4j, F4D4k and F4D4l- (a) 'Number' means the number of facilities required; and (b) '>' means greater than; and (c) a hyphen means no data (refer to the row above for the highest value applicable); and (d) 'N/A' means not applicable; and (e) a reference to- (i) 'employees' includes owners and managers using the building; and (ii) 'add 1 per 100 or 150, 250, 500, etc.' includes any part thereof of that number. (3) If not more than 10 people are employed, a unisex facility may be provided instead of separate facilities for each sex. (4) If the majority of employees are of one sex, not more than 2 employees of the other sex may share toilet facilities if the facilities are separated by means of walls, partitions and doors to afford privacy. (5) Employees and the public may share the same facilities in a Class 6 and 9b building (other than a school or early childhood centre) provided the number of facilities provided is not less than the total number of facilities required for employees plus those required for the public. (6) Adequate means of disposal of sanitary products must be provided in sanitary facilities for use by females. (7) Applies to a Class 9a building. (8) Applies to a Class 9a health-care building. (9) **A Class 9b early childhood centre must be provided with-** **(a) a kitchen or food preparation area with a kitchen sink, separate hand washing facilities, space for a refrigerator and space for cooking facilities, with-**	observation from kitchen and toilet areas. There is a requirement for a bath, shower or shower/bath and laundry facilities. There is a requirement for a unisex accessible facility.

(i) the facilities protected by a door or gate with child proof latches to prevent unsupervised access to the facilities by children younger than 5 years old; and

(ii) the ability to facilitate supervision of children from the facilities if the early childhood centre accommodates children younger than 2 years old; and

(b) one bath, shower or shower-bath; and

(c) if the centre accommodates children younger than 3 years old-

(i) a laundry facility comprising a washtub and space in the same room for a washing machine; and

(ii) a bench type baby bath, which is within 1 m of the nappy change bench; and

(iii) a nappy changing bench which-

(A) is within 1 m of separate adult hand washing facilities and bench type baby bath; and

(B) must be not less than 0.9m^2 in area and at a height of not less than 850mm, but not more than 900mm above the finished floor level; and

(C) must have a space not less than 800mm high, 500 mm wide and 800mm deep for the storage of steps; and

(D) is positioned to permit a staff member changing a nappy to have visibility of the play area at all times.

(10) Applies to Class 9b theatres and sporting venues.

(11) Not less than one washbasin must be provided where closet pans or urinals are provided.

Note 1: *Separate sanitary facilities for male and female patrons are required. The current design provides only unisex facilities.*

Note that current BCA Deemed to Satisfy (DTS) requirements would require general use unisex facilities to be a 'performance solution'. Generally speaking, the performance verification method would require a demonstration that waiting times for use of the facilities are similar to the DTS provisions. This suggests that the total unisex facilities provided are equal in total number to the male/female required facilities calculated via this part.

Table F4D4a: Sanitary facilities in Class 3, 5, 6 and 9 buildings other than schools

User group	Facility type	Design occupancy	Number
Male employees	Closet pans	1 - 20	1
		>20	Add 1 per 20
	Urinals	1 - 10	0
		11 - 25	1
		26 - 50	2
		>50	Add 1 per 50
	Washbasins	1 - 30	1
		>30	Add 1 per 30
Female employees	Closet pans	1 - 15	1
		>15	Add 1 per 15
	Washbasins	1 - 30	1
		>30	Add 1 per 30

Table F4D4g: Sanitary facilities in Class 9b buildings – early childhood centres

User group	Facility type	Design occupancy	Number
Children	Closet pans	1 - 30	2
		>30	Add 1 per 15
	Washbasins	1 - 30	2
		>30	Add 1 per 15

Table Notes

(1) Urinals are not *required* for a Class 9b *early childhood centre*.

(2) Facilities for use by children must be—

(a) junior pans; and

(b) washbasins with a rim height not exceeding 600 mm; and

(c) accessible from both indoor and outdoor play areas.

F4D5	Accessible sanitary facilities	**In a building required to be accessible-** **(a) accessible unisex sanitary compartments must be provided in accessible parts of the building in accordance with F4D6; and** (b) accessible unisex showers must be provided in accordance with F4D7; and **(c) at each bank of toilets where there is one or more toilets in addition to an accessible unisex sanitary compartment at that bank of toilets, not less than one sanitary compartment suitable for a person with an ambulant disability for use by males and not less than one sanitary compartment suitable for a person with an ambulant disability for use by females, each in accordance with AS 1428.1, must be provided; and** (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) **the circulation spaces, fixtures and fittings of all accessible sanitary facilities provided in accordance with F4D6 and F4D7 must comply with the requirements of AS 1428.1- 2009; and**	See Note 1 Toilet facilities provided alongside the accessible unisex facility must be ambulatory facilities in accordance with AS 1428.1

		(f) an accessible unisex sanitary facility must be located so that it can be entered without crossing an area reserved for one sex only; and (g) where two or more of each type of accessible unisex sanitary facility are provided, the number of left and right-handed mirror image facilities must be provided as evenly as possible; and (h) where male sanitary facilities are provided at a separate location to female sanitary facilities, accessible unisex sanitary facilities are only required at one of those locations; and (i) an accessible unisex sanitary compartment or an accessible unisex shower need not be provided on a storey or level that is not required by D4D4(f) to be provided with a passenger lift or ramp complying with AS 1428.1- 2009. ***Note 1:*** *The minimum size noted in AS1428.1-2009 for a unisex sanitary compartment is 1900mm wide and 2300 deep with additional space required for wash basins noted in Figure 43 of AS1428.1- 2009.*	
F4D6	Accessible unisex sanitary compartments	(1) Where required by F4D5(a), the minimum number of accessible unisex sanitary compartments for each class of building is as follows: (a) Applies to a Class 1b building. (b) Applies to a Class 2 building. (c) Applies to a Class 3 and Class 9c building. **(d) For Class 5, 6, 7, 8 or 9 buildings, where F4D4 requires closet pans-** **(i) 1 on every storey containing sanitary compartments; and** **(ii) where a storey has more than 1 bank of sanitary compartments containing male and female sanitary compartments, at not less than 50% of those banks.** (e) Applies to a Class 10a building. (2) The requirements of (1)(d) do not apply within a ward area of a Class 9a health-care building. (3) The requirements of (1)(e) do not apply to- (a) a Class 10a appurtenant to another class of building; or (b) a sanitary compartment dedicated to a single caravan/camping site.	*See F4D5 Note 1* *Unisex accessible facility required.*

F4D7	Accessible unisex showers	(1) Where required by F4D5(b), the minimum number of accessible unisex showers for each class of building is as follows: (a) Applies to a Class 1b building. (b) Applies to a Class 2 building. (c) Applies to Class 3 and 9c buildings. (d) **For Class 5, 6, 7, 8 or 9 buildings, where F4D4 requires 1 or more showers, not less than 1 for every 10 showers or part thereof.** (e) Applies to a Class 10a building. (2) The requirements of (1)(d) do not apply within a ward area of a Class 9a health-care building. (3) The requirements of (1)(e) do not apply to- (a) a Class 10a appurtenant to another class of building; and (b) a sanitary compartment dedicated to a single caravan/camping site.	*The shower required under F4D4 (9)(b) must be an accessible unisex shower in accordance with this clause.*
F4D8	Construction of sanitary compartments	(1) Other than in an early childhood centre, sanitary compartments must have doors and partitions that separate adjacent compartments and extend- (a) from floor level to the ceiling in the case of a unisex facility; or (b) to a height of not less than 1.5 m above the floor if primary school children are the principal users; or (c) 1.8 m above the floor in all other cases. (2) Unless there is a clear space of at least 1.2 m, measured in accordance with Figure F4D8, between the closet pan within the sanitary compartment and the doorway, the door to a fully enclosed sanitary compartment must- (a) open outwards; or (b) slide; or (c) be readily removable from the outside of the sanitary compartment. (3) **In an early childhood centre *(ECC)*, facilities for use by children must have each sanitary compartment screened by a partition which, except for the doorway, is opaque for a height of at least 900 mm but not more than 1200 mm above the floor level.**	*Note specific requirements for ECC buildings*
F4D9	Interpretation: urinals and washbasins	(1) A urinal may be- (a) an individual stall or wall-hung urinal; or (b) each 600 mm length of a continuous urinal trough; or (c) a closet pan used in place of a urinal. (2) A washbasin may be- (a) an individual basin; or	*Note*

		(b) a part of a hand washing trough served by a single water tap.	
Part F5 Room heights			
F5D2	Height of rooms and other spaces	*(1) N/A applies to Class 2 or 3 building or Class 4 part of a building* *(2) N/A applies to Class 2 or 3 building or Class 4 part of a building* (3) The height of rooms and other spaces in a Class 5, 6, 7 or 8 building must be not less than- (a) except as allowed in (b) and (8) - 2.4 m; and (b) for a corridor, passageway, or the like - 2.1 m. *(4) N/A applies to Class 9a health-care buildings* (5) The height of rooms and other spaces in a Class 9b building must be not be less than- (a) for a school classroom or other assembly building or part that accommodates not more than 100 persons - 2.4m; and (b) for a theatre, public hall or other assembly building or part that accommodates more than 100 persons - 2.7 m; and (c) for a corridor- (i) that serves an assembly building or part that accommodates not more than 100 persons - 2.4 m; or (ii) that serves an assembly building or part that accommodates more than 100 persons - 2.7 m. (6) For the purposes of (5) the number of persons accommodated must be calculated according to D2D18. *(7) N/A applies to Class 9c buildings* (8) The height of rooms and other spaces in any building must be not be less than- (a) for a bathroom, shower room, sanitary compartment, other than an accessible adult change facility, airlock, tea preparation room, pantry, store room, garage, car parking area, or the like - 2.1 m; and (b) for a commercial kitchen - 2.4 m; and (c) above a stairway, ramp, landing or the like - 2 m measured vertically above the nosing line of stairway treads or the floor surface of the ramp, landing or the like; and (d) for a required accessible adult change facility - 2.4 m.	*Note*

Part F6 Light and ventilation			
F6D2	Provision of natural light	While Class 9 buildings have no requirements for the provision of natural light, when it is provided it can reduce the requirement for artificial lighting to be provided. See F6D5 below.	*N/A*
F6D3	Methods and extent of natural light	(1) Required natural light must be provided by- (a) windows, excluding roof lights, that- (i) have an aggregate light transmitting area measured exclusive of framing members, glazing bars or other obstructions of not less than 10% of the floor area of the room; and (ii) are open to the sky or face a court or other space open to the sky or an open verandah, carport or the like; or (b) roof lights, that- (i) have an aggregate light transmitting area measured exclusive of framing members, glazing bars or other obstructions of not less than 3% of the floor area of the room; and (ii) are open to the sky; or (c) a proportional combination of windows and roof lights required by (a) and (b). (2) Except in a Class 9c aged care building, in a Class 2, 3 or 9 building or Class 4 part of a building, a required window that faces a boundary of an adjoining allotment or a wall of the same building or another building on the allotment must not be less than a horizontal distance from that boundary or wall that is the greater of- (a) generally - 1m; and (b) in a patient care area or other room used for sleeping purposes in a Class 9a building - 3m; and (c) 50% of the square root of the exterior height of the wall in which the window is located, measured in metres from its sill. (3) In a Class 9c aged care building, a required window must be transparent and located- (a) in an external wall with the window sill not more than 1 m above the floor level; and (b) where the window faces an adjoining allotment, another building or another wall of the same building, it must not be less than a horizontal distance of 3 m from the adjoining allotment, other building or wall. (4) **In a Class 9b early childhood centre, the sills of 50% of windows in children's rooms must be located not more than 500mm above the floor level.**	*Note specific ECC requirements for window height placements.*

F6D5	Artificial lighting	Artificial light must be provided in required stairways, passageways, and ramps. If natural light through openings with an aggregate area of 10% the floor area of the room are provided, artificial lighting need not be provided to: (a) All rooms that are frequently occupied (b) all spaces required to be accessible (c) all corridors, lobbies, internal stairways, and other circulation spaces and paths of egress. Where natural light compliant with the above cannot be provided to these spaces, artificial lighting must be provided. The artificial lighting system must comply with AS/NZS 1680.0. The system may provide a lesser level of illumination to the following spaces during times when the level of lighting would be inappropriate for the use: A discotheque, nightclub or the like, where to create an ambience and character for the space, low lighting levels are used.	Note While sufficient natural light appears to be provided, it is anticipated that artificial lighting systems will be installed for convenience.
F6D6	Ventilation of rooms	A habitable room, office, shop, factory, workroom, sanitary compartment, bathroom, shower room, laundry and any other room occupied by a person for any purpose must have – (a) Natural ventilation complying with F6D7; or (b) A mechanical ventilation or air-conditioning system complying with AS1668.2 and AS3666.1 ***Note 1:*** *in this type of building use compliance with sub-clause (b) is common as openable windows may be impracticable or not available.*	*See F6D7 below*
F6D7	Natural ventilation	(1) Natural ventilation provided in accordance with F6D6(a) must consist of openings, windows, doors or other devices which can be opened- (a) with a ventilating area not less than 5% of the floor area of the room required to be ventilated; and (b) open to- (i) a suitably sized court, or space open to the sky; or (ii) an open verandah, carport, or the like; or (iii) an adjoining room in accordance with F6D8.	*Note*

F6D8	Ventilation borrowed from adjoining room	Natural ventilation to a room may come through a window, opening, door or other device from an adjoining room (including an enclosed verandah) if both rooms are within the same sole-occupancy unit or the enclosed verandah is common property, and- (a) N/A (b) in a Class 5, 6, 7, 8 (except a Class 8 electricity network substation) or 9 building- (i) the window, opening, door or other device has a ventilating area of not less than 10% of the floor area of the room to be ventilated, measured not more than 3.6 m above the floor; and (ii) the adjoining room has a window, opening, door or other device with a ventilating area of not less than 10% of the combined floor areas of both rooms; and (c) the ventilating areas specified in (a) and (b) may be reduced as appropriate if direct natural ventilation is provided from another source.	*Note*
F6D9	Restriction on location of sanitary compartments	A sanitary compartment must not open directly into – (a) A kitchen or pantry; or (b) A public dining room or restaurant; or (c) A dormitory in a class 3 building; or (d) A room used for public assembly (**which is not an early childhood centre,** primary school, or open spectator stand); or (e) A workplace normally occupied by more than one person.	*Complies*
F6D10	Airlocks	If a sanitary compartment is prohibited under F6D9 from opening directly to another room- (a) N/A Applies to a Class 2, 3 or 4 building. (b) in a Class 5, 6, 7, 8 or 9 building (**which is not an early childhood centre**, primary school or open spectator stand)- (i) access must be by an airlock, hallway or other room with a floor area of not less than 1.1 m2 (i) and fitted with self-closing doors at all access doorways; or (ii) the sanitary compartment must be provided with mechanical exhaust ventilation and the doorway to the room adequately screened from view.	*Note*

F6D12	Kitchen local exhaust ventilation	A commercial kitchen must be provided with a kitchen exhaust hood complying with AS 1668.1 and AS 1668.2 where- (a) any cooking apparatus has- (i) a total maximum electrical power input exceeding 8 kW; or (ii) a total gas power input exceeding 29 MJ/hour; or (b) the total maximum power input to more than one apparatus exceeds, per m2 (b) of floor area of the room or enclosure- (i) 0.5 kW electrical power; or (ii) 1.8 MJ/hour gas.	

G ANCILLARY PROVISIONS

Part G1 Minor Structures and Components

G1D4	Outdoor play spaces	(1) Any outdoor play space in a Class 9b early childhood centre must be enclosed on all sides with a barrier which- (a) where the edge of the trafficable surface of the outdoor play space is at the same level or less than 2 m above the surface beneath - complies with AS 1926.1; and (b) where the edge of the trafficable surface of the outdoor play space is 2 m or more above the surface beneath- (i) is not less than 1.8 m high, as measured from above the trafficable surface; and (ii) is non-climbable and does not contain horizontal or other elements that could facilitate climbing; and (iii) does not have any openings or apertures through which a 100 mm or greater sphere could pass; and (iv) is not within 1.8 m, as measured directly from the top of the barrier, of any elements within the outdoor play space that facilitate climbing; and (v) is not within 900 mm of elements in a wall that facilitate climbing; and (c) has strength and rigidity complying with AS 1926.1. (2) For the purposes of (1)(a), AS 1926.1 is applied as if there is a swimming pool located outside the outdoor play space, so that the barrier restricts children from exiting the premises without the knowledge of staff in the centre.	*Note specific ECC requirements for outdoor play spaces.*

		(3) The requirements of (1) do not apply to a wall, including doors and windows, which form part of the Class 9b early childhood centre, except where the wall is within a non-climbable zone for a barrier provided under (1)(a).	
NSW G1D5	Provision for cleaning windows	Applies to buildings 3 or more stories	

Special Use Buildings

Part I1 Class 9b buildings

NSW I1D1	Application of part	(1) For a Class 9b building or part of a building that is not an entertainment venue- (a) the Deemed-to-Satisfy Provisions of Part I1 apply to every enclosed Class 9b building or part of a building which- (i) is a school assembly, church or community hall with a stage and any backstage area with a total floor area of more than 300 m2; or (ii) otherwise, has a stage and any backstage area with a total floor area of more than 200 m2; or (iii) has a stage with an associated rigging loft; and **(b) notwithstanding (1)(a)-** **(i) I1D4 applies to every open or enclosed Class 9b building; and** **(ii) I1D7 applies to every enclosed Class 9b building.** (2) For a Class 9b building that is an entertainment venue, NSW Part I4 applies in replacement of Part I1.	*No requirements apply through this part.*
I1D4	Seating area	In a seating area- (a) the gradient of the floor surface must not be steeper than 1 in 8, or the floor must be stepped so that- (i) a line joining the nosings of consecutive steps does not exceed an angle of 30° to the horizontal; and (ii) the height of each step in the stepped floor is not more than 600 mm; and (iii) the height of any opening in such a step is not more than 125 mm; and (b) if an aisle divides the stepped floor and the difference in level between any 2 consecutive steps- (i) exceeds 230 mm but not 400 mm - an intermediate step must be provided in the aisle; and (ii) exceeds 400 mm - 2 equally spaced intermediate steps must be provided in the aisle; and (iii) the going of intermediate steps must be not less than 270 mm and such as to provide as nearly as	

		practicable equal treads throughout the length of the aisle; and (c) the clearance between rows of fixed seats used for viewing performing arts, sport or recreational activities must be not less than- (i) 300 mm if the distance to an aisle is not more than 3.5 m; or (ii) 500 mm if the distance to an aisle is more than 3.5 m.	
I1D7	Aisle lights	N/A	

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