

SECTION D ACCESS AND EGRESS

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OBJECTIVE

A building must be so designed and constructed that the following objectives are fulfilled:

Part D1 Provision for Escape

There must be adequate means of escape in the case of fire or other emergency from all parts of the building to a place of safety.

Part D2 Construction of Exits

- (a) Stairways, ramps and passageways must be such as to provide safe passage for the users of the building.
- (b) Stairways, ramps, floors and balconies, and any roof to which people normally have access, must have bounding walls, balustrades or other barriers where necessary to protect users from the risk of falling.
- (c) Vehicle ramps and any floor to which vehicles have access must have kerbs or other barriers where necessary to provide protection to pedestrians and to the structure of the building.

Part D3 Access for People with Disabilities

Reasonable provision must be made in the design of a building, having regard to its use and location, to facilitate access and circulation by people with disabilities.

PART D1 PROVISION FOR ESCAPE

D1.1 Application

This Part does not apply to-

- (a) Class 1 or 10 buildings; or
- (b) the internal parts of a *sole-occupancy unit* in a Class 2 or 3 building.

D1.2 Number of exits required

- (a) **All buildings** - Every building must have at least one *exit* from each *storey*.
- (b) **Class 2 to 8 buildings** - In addition to any *horizontal exit*, not less than 2 *exits* must be provided from the following:
 - (i) Each *storey* if the building has an *effective height* of more than 25 m.
 - (ii) A Class 2 or 3 building subject to C1.5.
- (c) **Basements** - In addition to any *horizontal exit*, not less than 2 *exits* must be provided from any *storey* if egress from that *storey* involves a vertical rise within the building of more than 1.5 m, unless-
 - (i) the area of the *storey* is not more than 50 m²; and
 - (ii) the distance of travel from any point on the floor to a single *exit* is not more than 20 m.
- (d) **Class 9 buildings** - 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 building.
- (iii) Each *storey* in a Class 9b building used as an *early childhood centre*.
- (iv) Each *storey* in a primary or secondary *school* with a rise of 2 or more *storeys*.
- (v) Any *storey* or *mezzanine* that accommodates more than 50 persons, calculated under D1.13.

NSW D1.2(d)(vi)

- (e) **Exits from divided patient care areas:** In a Class 9a building, at least one *exit* must be provided from every part of a *storey* which has been divided into *fire compartments* in accordance with C2.5.
- (f) **Exits in open spectator stands:** In an *open spectator stand* containing more than one tier of seating, every tier must have not less than 2 stairways or ramps, each forming part of the path of travel to not less than 2 *exits*.
- (g) **Access to exits** - Without passing through another *sole-occupancy unit* every occupant of a *storey* or part of a *storey* must have access to-
 - (i) an *exit*; or
 - (ii) at least 2 *exits*, if 2 or more *exits* are *required*.

D1.3 When fire-isolated exits are required

- (a) **Class 2 and 3 buildings:** Every *required exit* must be fire-isolated unless it connects not more than-
 - (i) 3 consecutive *storeys* in a Class 2 building; or
 - (ii) 2 consecutive *storeys* in a Class 3 building,
 and one extra *storey* may be included if it is only for the accommodation of motor vehicles or for other ancillary purposes.
- (b) **Class 5 to 9 buildings:** Every *required exit* must be fire-isolated unless-
 - (i) in a Class 9a building - it does not connect or pass through more than 2 consecutive *storeys* in areas other than *patient care areas*; or
 - (ii) it is part of an *open spectator stand*; or
 - (iii) in any other case, it does not connect or pass through more than 2 consecutive *storeys* or 3 consecutive *storeys* if the building has a *sprinkler system* installed throughout.

D1.4 Exit travel distances

- (a) **Class 2 and 3 buildings -**
 - (i) The entrance doorway of any *sole-occupancy unit* must be not more than
 - (A) 6 m from an *exit* or from a point from which travel in different directions to 2 *exits* is available; or
 - (B) 20 m from a single *exit* serving the *storey* at the level of egress to a road or *open space*; and
 - (ii) no point on the floor of a room which is not in a *sole-occupancy unit* must be more than 20 m from an *exit* or from a point at which travel in different directions to 2 *exits* is available.

- (b) **Class 4 parts** - The entrance doorway to any Class 4 part must be not more than 6 m from an *exit* or a point from which travel in different directions to 2 *exits* is available.
- (c) **Class 5 to 9 buildings** - Subject to (d), (e) and (f)-
 - (i) 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
 - (ii) 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.
- (d) **Class 9a buildings** - In a *patient care area* in a Class 9a building-
 - (i) no point on the floor must be more than 12 m from a point from which travel in different directions to 2 of the *required exits* is available; and
 - (ii) the maximum distance to one of those *exits* must not be more than 30 m from the starting point.
- (e) **Open spectator stands** - The distance of travel to an *exit* in a Class 9b building used as an *open spectator stand* must be not more than 60 m.
- (f) **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-
 - (i) 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
 - (ii) 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
 - (iii) 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*.

D1.5 Distance between alternative exits

Exits that are *required* as alternative means of egress must be-

- (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) in a Class 2 or 3 building - 45 m apart ; or
 - (ii) in a Class 9a building - if such *required exits* serve a *patient care area*, 45 m apart; or
 - (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.

D1.6 Dimensions of exits

In a *required exit* or path of travel to an *exit*-

- (a) the unobstructed height throughout must be not less than 2 m; and
 - (b) if the *storey* or *mezzanine* accommodates not more than 100 persons, the unobstructed width except for doorways must be not less than-
 - (i) 1 m; or
 - (ii) 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*; and
 - (c) if the *storey* or *mezzanine* accommodates more than 100 persons but not more than 200 persons, the aggregate width, except for doorways, must be not less than-
 - (i) 1 m plus 250 mm for each 25 persons (or part) in excess of 100; or
 - (ii) 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*; and
 - (d) if the *storey* or *mezzanine* accommodates more than 200 persons, the aggregate width, except for doorways, must be increased to-
 - (i) 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
 - (ii) in any other case, 2 m plus 500 mm for every 75 persons (or part) in excess of 200; and
 - (e) in an *open spectator stand* which accommodates more than 2000 persons the aggregate width except for doorways must be increased to 17 m plus a width (in metres) equal to the number in excess of 2000 divided by 600; and
 - (f) a doorway must be not less than-
 - (i) in *patient care areas* through which patients would normally be transported in beds, if the door opens into a corridor of width-
 - (A) greater than 1.8 m and less than 2.2 m - 1200 mm; or
 - (B) not less than 2.2 m - 1070 mm; or
 - (ii) in *patient care areas* in a *horizontal exit* - 1250 mm; or
 - (iii) in areas used by students in a *school* - 870 mm wide; or
 - (iv) the width of *exit required* by (b), (c), (d) or (e), minus 250 mm, or
 - (v) in any other case except where it opens to a *sanitary compartment* or bathroom - 750 mm wide; and
- NSW D1.6(f)(vi)
- (g) the 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 (b)(ii) or (f)(i).
- NSW D1.6(h)

D1.7 Travel via fire-isolated exits

- (a) A doorway from a room must not open directly into a stairway, passageway or ramp that is *required* to be fire-isolated unless it is from-
 - (i) a public lobby, corridor, hallway, or the like; or
 - (ii) a *sole-occupancy unit* occupying all of a *storey*; or

- (iii) a *sanitary compartment*, airlock or the like.
- (b) Each *fire-isolated stairway* or *fire-isolated ramp* must provide independent egress from each *storey* served and discharge directly, or by way of its own *fire-isolated passageway*-
 - (i) to a road or *open space*; or
 - (ii) to a point-
 - (A) in a *storey* or space, within the confines of the building, that is used only for pedestrian movement, car parking or the like and is enclosed for no more than 1/3 of its perimeter; and
 - (B) from which an unimpeded path of travel, not further than 20 m, is available to a road or *open space*; or
 - (iii) into a covered area that-
 - (A) adjoins a road or *open space*; and
 - (B) is open for at least 1/3 of its perimeter; and
 - (C) has an unobstructed clear height throughout, including the perimeter openings, of not less than 3 m; and
 - (D) provides an unimpeded path of travel from the point of discharge to the road or *open space* of not more than 6 m.
- (c) (i) Where travel from the point of discharge necessitates passing within 6 m of any part of an *external wall* of the same building, measured at right angles to the path of travel, that part of the wall must be adequately protected.
- (ii) A wall satisfies (i) if it has-
 - (A) an FRL of at least 60/60/60; and
 - (B) any openings protected internally in accordance with C3.4.
- (d) If more than 2 access doorways, not from a *sanitary compartment* or the like, open to a *required fire-isolated exit* in the same *storey*-
 - (i) a smoke lobby in accordance with D2.6 must be provided; or
 - (ii) the *exit* must be pressurised in accordance with E2.7.
- (e) A ramp must be provided at any change in level less than 600 mm in a *fire-isolated passageway* in a Class 9 building.

D1.8 External stairways

An external stairway may serve as a *required exit* instead of a *fire-isolated stairway* in a building with an *effective height* of not more than 25 m if the stairway (including any connecting access bridges) is of *non-combustible* construction throughout, and-

- (a) if any part of the stairway is exposed to, and less than 6 m from, a *window*, doorway, except a doorway complying with C3.4 serving the external stairway, or the like in an *external wall* of the building served by the stairway-
 - (i) the stairway must be enclosed for its full height above the lowest level of the *window* or doorway by *non-combustible* construction with an FRL of not less than 60/60/60; and
 - (ii) no *window* or the like in the enclosing walls of the stairway must be within 6 m if it is unprotected, or 3 m if it is protected in accordance with C3.4, of any *window*, doorway or the like in the *external walls* of the building; or

- (b) if any part of the stairway is exposed to, and less than 6 m but more than 3 m from, a *window*, doorway or the like in an *external wall* of the building, the *window*, doorway or the like must be protected in accordance with C3.4.

D1.9 Travel by non-fire-isolated stairways or ramps

- (a) A *non-fire-isolated stairway* or *ramp* serving as a *required exit* must provide a continuous means of travel by its own flights of stairs and landings from every *storey* served to the level at which egress to a road or *open space* is provided.
- (b) In a Class 2, 3 or 4 building, the distance between the doorway of a room or *sole-occupancy unit* and the point of egress to a road or *open space* by way of a stairway or ramp that is not fire-isolated and is *required* to serve that room or *sole-occupancy unit* must not exceed-
 - (i) 30 m in a building of Type C construction; or
 - (ii) 60 m in all other cases.
- (c) In a Class 5 to 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 ramp must not exceed 80 m.
- (d) In a Class 2, 3 or 9a building, a *required non-fire-isolated stairway* or ramp must discharge at a point not more than-
 - (i) 15 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
 - (ii) 30 m from one of 2 such doorways or passageways if travel to each of them from the stairway or ramp is in opposite or approximately opposite directions.
- (e) In a Class 5 to 8 or 9b building, a *required non-fire-isolated stairway* or ramp must discharge at a point not more than-
 - (i) 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
 - (ii) 40 m from one of 2 such doorways or passageways if travel to each of them from the stairway or ramp is in opposite or approximately opposite directions.
- (f) In a Class 2 or 3 building, if 2 or more *exits* are *required* and are provided by means of internal *non-fire-isolated stairways* or *non-fire-isolated ramps*, each *exit* must-
 - (i) provide separate egress to a road or *open space*; and
 - (ii) be suitably smoke-separated from each other at the level of discharge.

D1.10 Discharge from exits

- (a) 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.
- (b) 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-
 - (i) the minimum width of the *required exit*; or
 - (ii) 1 m,whichever is the greater.

- (c) 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-
 - (i) 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 Part D3; or
 - (ii) except if the *exit* is from a Class 9a building, a stairway complying with the BCA.
 - (d) The discharge point of alternative *exits* must be located as far apart as practical.
 - (e) In a Class 9b building which is an *open spectator stand* that accommodates more than 500 persons, a *required* stairway or *required* ramp must not discharge to the ground in front of the stand.
- NSW D1.10(f)
- (f) In a Class 9b building containing an auditorium which accommodates more than 500 persons, not more than 2/3 of the *required* width of *exits* must be located in the main entrance foyer.

D1.11 Horizontal exits

- (a) *Horizontal exits* must not be counted as *required exits*-
 - (i) between *sole-occupancy units*; or
 - (ii) in a Class 9b building used as an *early childhood centre*, primary or secondary *school*.
- (b) In a Class 9a building, *horizontal exits* may be counted as *required exits* if the path of travel from a *fire compartment* leads by one or more *horizontal exits* directly into another *fire compartment* which has at least one *required exit* which is not a *horizontal exit*.
- (c) In any other case, *horizontal exits* must not comprise more than half of the *required exits* from any part of a *storey* divided by a *fire wall*; and
- (d) *Horizontal exits* must have a clear area on each side of the *fire wall* to accommodate the total number of persons (calculated under D1.13) from both parts of the *storey*, of not less than-
 - (i) 2.5 m² per patient in a Class 9a building; and
 - (ii) 0.5 m² per person in any other case.

D1.12 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 in a *patient care area* in a Class 9a building; and
- (b) may connect any number of *storeys* if it is-
 - (i) in an *open spectator stand* or indoor sports stadium; 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 D1.12; and
- (c) except where permitted in (b) must not connect more than-

- (i) 3 storeys if each of those storeys is provided with a *sprinkler system* throughout; or
- (ii) 2 storeys,
provided that in each case, those storeys must be consecutive, and one of those 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 Class 5, 6, 7, 8 or 9 building and those storeys must be consecutive.

D1.13 Number of persons accommodated

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 D1.13 according to the use of that part, excluding spaces set aside for-
 - (i) lifts, stairs, 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.

[NSW Table D1.13](#)

[TAS Table D1.13](#)

[WA Table D1.13](#)

Table D1.13 AREA PER PERSON ACCORDING TO USE

TYPE OF USE	m ² per person
Art gallery, exhibition area, museum	4
Bar, cafe, church, dining room	1
Board room	2
Boarding House	15
Computer room	25
Court room -judicial area	10
-public seating	1
Dance floor	0.5
Dormitory	5
Early childhood centre	4
Factory - (a) machine shop, fitting shop or like place for cutting, for cutting, grading, finishing or fitting of metals or glass, except in the fabrication of structural steelwork or manufacture of vehicles or bulky products	5
(b) areas used for fabrication and processing other than those in (a)	50
(c) a space in which the layout and natural use of fixed plant or equipment determine the number of persons who will occupy the space during working hours	Area per person determined by the use of the or equipment

Garage - public	30
Gymnasium	3
Hostel, hotel, motel, guest house	15
Indoor sports stadium - arena	10
Kiosk	1
Kitchen, laboratory, laundry	10
Library -reading space	2
-storage space	30
Office, including one for typewriting or document copying	10
Patient care areas	10
Plant Room for -ventilation, electrical or other service units	30
-boilers or power plant	50
Reading Room	2
Restaurant	1
School - general classroom	2
- multi-purpose hall	1
- staff room	10
- trade and practical area -primary	4
-secondary	As for workshop
Shop - space for sale of goods-	
(a) at a level entered direct from the open air or any lower level	3
(b) all other levels	5
Showroom - display area, covered mall or arcade	5
Skating rink, based on rink area	1.5
Spectator stand, audience viewing area:	
-standing viewing area	0.3
-removable seating	1
-fixed seating (number of seats)	
-bench seating (450 mm/person)	
Storage space	30
Swimming pool, based on pool area	1.5
Switch room, transformer room	30
Telephone exchange - private	30
Theatre and public halls	1.2
Theatre dressing room	4
Transport terminal	2
Workshop - for maintenance staff	30
- or manufacturing processes	As for Factory

D1.14 Measurement of distances

The nearest part of an *exit* means in the case of-

- (a) a *fire-isolated stairway, fire-isolated passageway, or fire-isolated ramp*, the nearest part of the doorway providing access to them;
- (b) a *non-fire-isolated stairway*, the nearest part of the nearest riser;
- (c) a *non-fire-isolated ramp*, the nearest part of the junction of the floor of the ramp and the floor of the *storey*;

- (d) a doorway opening to a road or *open space*, the nearest part of that doorway;
- (e) a *horizontal exit*, the nearest part of the doorway.

D1.15 Method of measurement

The following rules apply:

- (a) In the case of a room that is not a *sole-occupancy unit* in a Class 2 or Class 3 building or a Class 4 part, the distance includes the straight-line measurement from any point on the floor of the room to the nearest part of a doorway leading from it, together with the distance from that part of the doorway to the single *required exit* or point from which travel in different directions to 2 *required exits* is available.
- (b) Subject to (d), the distance from the doorway of a *sole-occupancy unit* in a Class 2 or Class 3 building or a Class 4 part is measured in a straight line to the nearest part of the *required single exit* or point from which travel in different directions to 2 *required exits* is available.
- (c) Subject to (d), the distance between *exits* is measured in a straight line between the nearest parts of those *exits*.
- (d) Only the shortest distance is taken along a corridor, hallway, external balcony or other path of travel that curves or changes direction.
- (e) If more than one corridor, hallway, or other internal path of travel connects *required exits*, the measurement is along the path of travel through the point at which travel in different directions to those *exits* is available.
- (f) If a wall (including a demountable *internal wall*) that does not bound-
 - (i) a room; or
 - (ii) a corridor, hallway or the like,causes a change of direction in proceeding to a *required exit*, the distance is measured along the path of travel past that wall.
- (g) If permanent fixed seating is provided, the distance is measured along the path of travel between the rows of seats.
- (h) In the case of a non *fire-isolated stairway* or non *fire-isolated ramp*, the distance is measured along a line connecting the nosings of the treads, or along the slope of the ramp, together with the distance connecting those lines across any intermediate landings.

ACT D1.101

VIC D1.101

PART D2 CONSTRUCTION EXITS

D2.1 Application of Part

WA D2.1

Except for D2.13 and D2.16, this Part does not apply to-

- (a) a Class 1 or Class 10 building; or
- (b) the internal parts of a *sole-occupancy unit* in a Class 2 or Class 3 building or a Class 4 part.

D2.2 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*.

D2.3 Non-fire-isolated stairways and ramps

In a building having a rise of more than 2 *storeys*, *required* stairs and ramps (including landings and any supporting structural members) which are not *required* to be within a *fire-resisting shaft*, must be constructed according to D2.2, 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
 - (ii) has an average density of not less than 800 kg/m³ 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.

D2.4 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 of stairs rising from a *storey* below the lowest level of access to a road or *open space*; and
 - (ii) a flight of stairs descending from a *storey* above that level; and
- (b) any construction that separates or is common to the rising and descending flights of stairs must be *non-combustible* and have an FRL of not less than 60/60/60.

D2.5 Open access ramps and balconies

Where an open access ramp or balcony forms part of a *required exit*, it must-

- (a) have ventilation openings to the outside air which-
 - (i) have a total unobstructed area not less than the floor area of the ramp or balcony; and
 - (ii) are evenly distributed along the open sides of the ramp or balcony; and
- (b) not be enclosed on its open sides above a height of 1 m except by an open grille or the like having a free air space of not less than 75% of its area.

D2.6 Smoke lobbies

A smoke lobby *required* by D1.7 must-

- (a) have a floor area not less than 6 m²; and

- (b) be separated from the occupied areas in the *storey* by walls which are impervious to smoke, and-
 - (i) have an FRL of not less than 60/60/- (which may be fire-protective grade plasterboard, gypsum block with set plaster, face brickwork, glass blocks or glazing); and
 - (ii) extend from slab to slab, or to the underside of a ceiling with a *resistance to the incipient spread of fire* of 60 minutes which covers the lobby; and
 - (iii) construction joints between the top of the walls and the floor slab, roof or ceiling must be smoke sealed with intumescent putty or other suitable material; and
- (c) at any opening from the occupied areas, have smoke doors complying with Clause 3 of Specification C3.4 except that the smoke sensing device need only be located on the approach side of the opening; and
- (d) be pressurised as part of the *exit* if the *exit* is *required* to be pressurised under E2.2.

D2.7 Installations in exits and paths of travel

- (a) Access to service *shafts* and services other than to fire-fighting or detection equipment as permitted in Section E, must not be provided from a *fire-isolated stairway, passageway or ramp*.
- (b) An opening to any chute or duct conveying hot products of combustion must not be located in any part of a *required exit* or any corridor, hallway, lobby or the like leading to a *required exit*.
- (c) Gas or other fuel services must not be installed in a *required exit*.
- (d) Services or equipment must not be installed in a *required exit* or in any corridor, hallway, lobby or the like leading to a *required exit* if it comprises-
 - (i) electricity meters, distribution boards or ducts; or
 - (ii) central telecommunications distribution boards or equipment; or
 - (iii) electrical motors or other motors serving equipment in the building, unless it is enclosed by *non-combustible* construction or a *fire-protective covering* with doorways or openings suitably sealed against smoke spreading from the enclosure.

D2.8 Enclosure of space under stairs and ramps

- (a) **Fire-isolated stairways and ramps** - If the space below a *required fire-isolated stairway* or ramp is within the fire-isolated *shaft*, it must not be enclosed to form a cupboard or similar enclosed space.
- (b) **Non-fire-isolated stairways and ramps** - The space below a *required non-fire-isolated stairway* (including an external stairway) or *ramp* must not be enclosed to form a cupboard or other enclosed space unless-
 - (i) the enclosing walls and ceilings have an FRL of not less than 60/60/60; and
 - (ii) any access doorway to the enclosed space is fitted with a self-closing 60/60/30 fire door.

D2.9 Width of stairways

- (a) The *required* width of a stairway must-
 - (i) be measured clear of all obstructions such as handrails, projecting parts of balustrades, 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 of the landing.
- (b) A *required* stairway that exceeds 2 m in width is counted as having a width of only 2 m unless it is divided by a balustrade or handrail continuous between landings and each division is less than 2 m wide.

D2.10 Pedestrian ramps

- (a) A *fire-isolated ramp* may be substituted for a *fire-isolated stairway* if the construction enclosing the ramp and the width and ceiling height comply with the requirements for a *fire-isolated stairway*.
- (b) A ramp serving as a *required exit* must have a gradient not steeper than-
 - (i) 1:12 in *patient care areas* in a Class 9a building; or
 - (ii) that *required* by Part D3 if applicable; or
 - (iii) 1:8 in any other case.
- (c) The floor surface of a ramp must have a non-slip finish.

D2.11 Fire-isolated passageways

A *fire-isolated passageway* must be enclosed by walls, floors, and ceilings of *non-combustible* construction with an FRL of-

- (a) if the passageway discharges from a *fire-isolated stairway* or *ramp* - not less than that *required* for the stairway or ramp *shaft*; or
- (b) in any other case - not less than 60/60/60.

D2.12 Roof as open space

If an *exit* discharges to a roof of a building, the roof must-

- (a) have an FRL of not less than 120/120/120; and
- (b) not have any rooflights or other openings within 3 m of the path of travel of persons using the *exit* to reach a road or *open space*.

D2.13 Treads and risers

- (a) A stairway must be suitable to provide safe passage in relation to the nature, volume and frequency of likely usage.
- (b) A stairway satisfies (a) if it has-
 - (i) not more than 18 or less than 2 risers in each flight; and
 - (ii) going (G), riser (R) and quantity (2R + G) in accordance with Table D2.13;
 - (iii) goings and risers that are constant throughout in one flight; and
 - (iv) risers which do not have any openings that would allow a 125 mm sphere to pass through between the treads; and

ACT D2.13(b)(v)

- (v) treads which have a non-slip finish or a suitable non-skid strip near the edge of the nosings; and
- (vi) treads of solid construction (not mesh or other perforated material) if the stairway is more than 10 m high or connects more than 3 *storeys*; and

NSW D2.13(b)(vii)

- (vii) in a Class 9 building - not more than 36 risers in consecutive flights without a change in direction of at least 30°; and

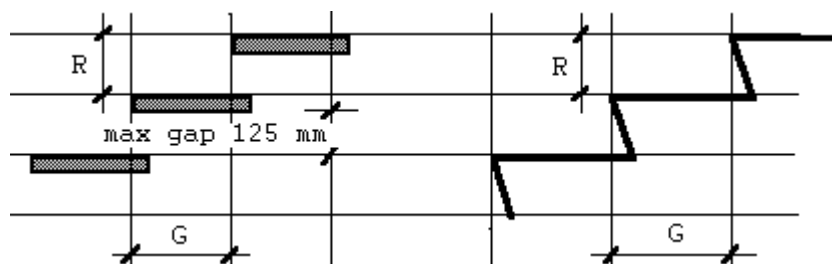
NSW D2.13(b)(viii)

- (viii) in the case of a *required* stairway, no stepped quarter landings; and
- (ix) in the case of a *non-required* stairway, not more than 4 winders in a quarter landing..

NSW D2.13(b)(x),(xi)

Table D2.13 RISER AND GOING DIMENSIONS (mm)

	RISER (R)		GOING (G) ^(b)		QUANTITY (2R+G)	
	Max	Min	Max	Min	Max	Min
Public stairs	190	115	355	250	700	550
Private stairs ^(a)	190	115	355	240	700	550



Note: (a) Private stairs are-

- (i) stairs in a Class 1 or 10 building;
- (ii) stairs in a *sole-occupancy unit* in a Class 2 building or Class 4 part; and
- (iii) in any building, stairs which are not part of a *required exit* and to which the public do not normally have access.

(b) The going in tapered treads (except winders in a quarter landing) in a curved or spiral stair is measured-

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

D2.14 Landings

In a stairway-

- (a) 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 750 mm long measured 500 mm from the inside edge of the landing; and
 - (ii) have a non-slip finish throughout or a suitable non-skid strip near the edge of the landing where it leads to a flight of stairs below; and
- (b) in a Class 9a building-

- (i) the area of any landing must be sufficient to move a stretcher, 2 m long and 600 mm wide, at a gradient not more than the gradient of the stairs, with at least one end of the stretcher on the landing while changing direction between flights; or
- (ii) the stair must have a change of direction of 180°, and the landing a clear width of not less than 1.6 m and a clear length of not less than 2.7 m.

D2.15 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-

- (a) in *patient care areas* in a Class 9a building, the door sill is not more than 25 mm above the finished floor level to which the doorway opens; or
- (b) in other cases-
 - (i) the doorway opens to a road, *open space*, external stair landing or external balcony; and
 - (ii) the door sill is not more than 190 mm above the finished surface of the ground, balcony, or the like, to which the doorway opens.

NSW D2.15(b)

NSW D2.15(c)

D2.16 Balustrades

- (a) A continuous balustrade must be provided along the side of any roof to which public access is provided, any stairway or ramp, any floor, corridor, hallway, balcony, verandah, *mezzanine*, access bridge or the like and along the side of any path of access to a building, if-
 - (i) it is not bounded by a wall; and
 - (ii) its level is more than 1 m above the floor or ground surface beneath, except at the perimeter of a *stage*, rigging loft, loading dock or area accessible only to maintenance staff or the like.
- (b) A *required* balustrade must restrict persons accidentally falling from the floor.
- (c) A balustrade in-
 - (i) *fire-isolated stairways*, *fire-isolated ramps* and other areas used primarily for emergency purposes, excluding external stairways and external ramps; and
 - (ii) Class 7 (other than public carparks) and Class 8 buildings and parts of buildings containing those classes, satisfies (b) if it complies with (g) and (h)(i).
- (d) A balustrade in stairways and ramps, other than those covered in (c), satisfies (b) if it complies with (g) and (h)(ii).
- (e) A balustrade along the side of a horizontal or near horizontal surface such as a-
 - (i) roof to which public access is provided and any path of access to a building; and
 - (ii) floor, corridor, hallway, balcony, verandah, *mezzanine*, access bridge or the like, satisfies (b) if it complies with (g) and (h)(ii).

- (f) A balustrade or other barrier in front of fixed seating on a *mezzanine* or balcony within an auditorium in a Class 9b building satisfies (b) if it complies with (g)(iv) and (h)(ii).
- (g) The height of a balustrade satisfies (b) if it is constructed in accordance with the following:
 - (i) The height is not less than 865 mm above the nosings of the stair treads or the floor of a ramp.
 - (ii) The height is not less than-
 - (A) 1 m above the floor of any access path, balcony, landing or the like; or
 - (B) 865 mm above the floor of a landing to a stair or ramp where the balustrade is provided along the inside edge of the landing and does not exceed a length of 500 mm.
 - (iii) A transition zone may be incorporated where the balustrade height changes from 865 mm on the stair flight or ramp to 1 m at the landing.
NSW D2.16(g)(iv)
 - (iv) For a balustrade provided under (f), the height above the floor is not less than-
 - (A) 1 m; or
 - (B) 700 mm and a horizontal projection extends not less than 1 m outwards from the top of the balustrade.
- (h) Openings in a balustrade satisfy (b) if the balustrade is constructed in accordance with the following:
 - (i) For balustrades provided under (c)-
 - (A) the space between balusters or the width of any opening in the balustrade (including any openable window or panel) is not more than 300 mm; or
 - (B) where rails are used, a rail is provided at a height of not more than 150 mm above the nosings of the stair treads or the floor of the landing, balcony or the like and the space between rails is not more than 460 mm.
 - (ii) For balustrades other than those provided under (c), any opening does not permit a 125 mm sphere to pass through it and for stairs, the space is tested above the nosings.
WA D2.16(i)

D2.17 Handrails

- (a) Suitable handrails must be provided where necessary to assist and provide stability to persons using a ramp or stairway.
- (b) Except for handrails referred to in (d), handrails satisfy (a) if they are-
 - (i) located along at least one side of the ramp or flight of stairs; and
 - (ii) located along each side if the total width of the stairway or ramp is 2 m or more; and
 - (iii) not more than 2 m apart in the case of intermediate handrails; and

- (iv) in a Class 9b building used as a primary *school*, fixed at a height of not less than 865 mm with a second rail fixed at a height of not less than 700 mm; and
- (v) in any other case, fixed at a height of not less than 865 mm above the nosings of stair treads and the floor surface of the ramp, landing, or the like; and
- (vi) continuous between stair flight landings and have no obstruction on or above them that will tend to break a hand-hold.

SA D2.17(c)

- (c) Handrails in a Class 9a building must be provided along at least one side of every passageway or corridor used by patients, and must be-
 - (i) fixed not less than 50 mm clear of the wall; and
 - (ii) where practicable, continuous for their full length.

D2.18 Fixed platforms, walkways, stairways and ladders

QLD D2.18

- (a) In machinery rooms, boiler houses, lift-motor rooms, plant-rooms and the like, fixed platforms, walkways, stairways and ladders must provide safe means of access, egress and working conditions at places normally used by operating, inspection, maintenance and service personnel.
- (b) Fixed platforms, walkways, stairways and ladders, and any tread and riser, landing, balustrade or handrail attached thereto, satisfy (a) if they comply with AS 1657.

D2.19 Doorways and doors

A doorway serving as a *required exit*, forming part of a *required exit*, or in *patient care areas* of a Class 9a 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
 - (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.

D2.20 Swinging doors

A swinging door in a *required exit* or forming part of a *required exit*-

- (a) must not encroach-
 - (i) at any part of its swing by more than 500 mm on the *required* width of a *required* stairway, passageway or ramp, including the landings; and
 - (ii) when fully open, by more than 100 mm on the *required* width of the *required exit*, and

the measurement of encroachment in each case is to include door handles or other furniture or attachments to the door;
- (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.

D2.21 Operation of latch

TAS D2.21

VIC D2.21

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 single hand downward action or pushing action on a single device which is located between 900 mm and 1.2 m from the floor, except if it-

- (a) it serves a vault, strong-room, *sanitary compartment*, or the like; or
- (b) it serves only, or is within-
 - (i) a *sole-occupancy unit* in a Class 2 or 3 building or a Class 4 part; or
 - (ii) a *sole-occupancy unit* with a floor area not more than 200 m² in a Class 5, 6, 7 or 8 building; or
 - (iii) a space which is otherwise inaccessible to persons at all times when the door is locked; or
- (c) it serves an occupancy where special arrangements for security are necessary and it can be immediately unlocked-
 - (i) by operating a fail-safe control switch, not contained within a protective enclosure, to actuate a device to unlock the door; or
 - (ii) 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 or other emergency; or
- (d) it is fitted with a fail-safe device which *automatically* unlocks the door upon the activation of any *sprinkler system* or smoke or thermal detector system installed throughout the building;

- (e) serves a *storey* or room accommodating more than 100 persons, determined in accordance with D1.13, in a Class 9b building, other than a school, an *early childhood centre* or a building used for religious purposes, in which case it must be readily openable-
 - (i) without a key from the side that faces a person seeking egress; and
 - (ii) 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
 - (iii) where double doors are installed the provisions of (i) and (ii) need only apply to one door.

D2.22 Re-entry from fire-isolated exits

Doors must not be locked from inside a *fire-isolated stairway*, *fire-isolated ramp* or *fire-isolated passageway* enclosure to prevent re-entry to the *storey* or room it serves in-

- (a) a Class 9a building; or
- (b) a building more than 25 m in *effective height* unless all the doors are *automatically* unlocked by a fail-safe device upon the activation of a fire alarm, and-
 - (i) at least at every fourth *storey* the doors are not able to be locked and a sign is fixed on it stating that re-entry is available; or
 - (ii) an intercommunication system, or an audible or visual alarm system, operated from within the enclosure is provided near the doors and a sign is fixed adjacent to it explaining its purpose and method of operation.

D2.23 Signs on doors

- (a) 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-
 - (i) (A) *required* 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; and
 - (B) *required* smoke door,
on the side of the door that faces a person seeking egress; and
 - (ii) (A) fire door forming part of a *horizontal exit*; and
 - (B) smoke door that swings in both directions; and
 - (C) door leading from a fire isolated *exit* to a road or *open space*,
on each side of the door.
- (b) A sign satisfies (a) if it is in capital letters not less than 20 mm high in a colour contrasting with the background and states-
 - (i) for an *automatic* door held open by an *automatic* hold-open device-
"FIRE (SMOKE) DOOR - DO NOT OBSTRUCT"; or
 - (ii) for a *self-closing* door-
**"FIRE (SMOKE) DOOR
DO NOT OBSTRUCT
DO NOT KEEP OPEN"**; or

- (iii) for a door discharging from a fire-isolated *exit*-
"FIRE SAFETY DOOR - DO NOT OBSTRUCT".

ACT D2.103

NSW D2.101

PART D3 ACCESS FOR PEOPLE WITH DISABILITIES

SA PART D3

D3.1 Application of Part

NSW D3.1

This Part applies to all Class 3, 5, 6, 7, 8 and 9 buildings.

D3.2 Access to buildings

WA D3.2

Access for people with disabilities must be provided to buildings as set out in Table D3.2 by means of a continuous path of travel in accordance with AS 1428.1-

- (a) from a road boundary of the allotment;
- (b) from any carpark space on the allotment (whether within or outside the building)-
 - (i) that is set aside for people with disabilities using the building; or
 - (ii) if there are no carpark spaces set aside for them, from any carpark area that serves the building; and
- (c) from any other building on the allotment to which access for people with disabilities is *required*.

ACT D3.2(d)

NSW Table D3.2

Table D3.2 REQUIREMENTS FOR ACCESS FOR PEOPLE WITH DISABILITIES

CLASS OF BUILDING	ACCESS REQUIREMENTS
Class 3	
(a) Common areas of buildings that are <i>required</i> to be accessible	the entrance floor and to all public areas on every floor
(b) If the building contains-	To and within-
more than 10 units up to 49 units	one <i>sole-occupancy unit</i>
more than 49 but not more than 99	2 <i>sole-occupancy units</i>
more than 99 units	3 <i>sole-occupancy units</i>
(c) If accommodation is provided for more than 10 persons other than in sole-occupancy units-	
up to 49 beds	2 beds
more than 49 but not more than 99	4 beds
more than 99	6 beds
[Note: For the purposes of this Table, a double bed counts as 1 bed]	
Class 5 and 6	To and within the entrance floor if its <i>floor area</i> is more than 500 m ²

Class 7	To and within the entrance floor if the total <i>floor area</i> of the building is more than 3000 m ² .
Class 8	To and within the entrance floor if the total <i>floor area</i> of the building, excluding any part used as a laboratory, is more than 1000 m ² .
And Class 5, 6, 7 and 8	To and within any floor if irrespective of <i>floor area</i> , the floor is not more than 190 mm at the point of entrance above or below the adjacent finished ground level; and within any other floor to which vertical access by way of a ramp, step ramp or kerb ramp complying with AS 1428.1 or a passenger lift is provided
Class 9a	To and within all areas normally accessible to the public, patients or staff.
Class 9b- An <i>assembly building</i> not being a <i>school</i> or an <i>early childhood centre</i>	To and within every room that accommodates more than 100 persons, and if fixed seating is provided, not less than 1 wheelchair space for each 200 seats, or part, with a minimum of 2 spaces; and within any other floor to which vertical access by way of a ramp, step ramp or kerb ramp complying with AS 1428.1, or passenger lift is provided.
A <i>school</i>	To every room if no alternative similar facilities to those provided in that room are accessible elsewhere in the school.
An <i>early childhood centre</i>	To and within every room used by children.
[Note: The calculation of <i>floor area</i> and the number of persons accommodated is in accordance with D1.13.]	

D3.3 Parts of buildings to be accessible

- (a) Access for people with disabilities must be provided-
- (i) from the doorway at the entrance floor providing access to any *sanitary compartment required* for the use of people with disabilities; and
 - (ii) to areas normally used by the occupants, excluding any plantroom, commercial kitchen, cleaners' store room, maintenance accessway, rigging loft, or the like.
- (b) A path of travel providing *required* access must not include a stairway, turnstile, revolving door, escalator or other impediment which would prevent a person in a wheelchair using it.
- (c) Access, finishes and fittings, including passageways, ramps, step ramps or kerb ramps, passenger lifts, signs, doorways and other parts of the building *required* by this Part must comply at least with the provisions of AS 1428.1, excluding any references within that Standard to AS 1735.12.

NSW D3.3(d)

WA D3.3(d)

D3.4 Concessions

It is not necessary to provide access for people with disabilities to-

- (a) more than 30% of the public space in a restaurant, cafe, bar, function room, or the like, in a Class 6 or Class 9b building; or
- (b) a *mezzanine*; or
- (c) a space not regarded as a *storey* by definition; or

NSW D3.4(d)

WA D3.4(d)

- (d) more than 1 car parking space for each 100 spaces in a *public carpark*; or
- (e) any area if access would be inappropriate because of the particular purpose for which the area is used.

NSW D3.101

SPECIFICATION D1.12 NON-REQUIRED STAIRWAYS, RAMPS AND ESCALATORS

1. Scope

This Specification contains the requirements to allow *non-required* stairways, ramps or escalators to connect any number of *storeys* in a Class 5 or 6 building. The requirements do not apply in an *atrium* or outside a building.

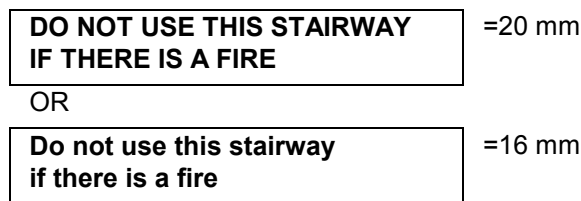
2. Requirements

An escalator, moving walkway or *non-required non-fire-isolated stairway* or pedestrian ramp will comply with the requirement of Clause D1.12(b)(iv) if it is constructed as follows:

- (a) the escalator, walkway, stairway or ramp is bounded by a *shaft* of:
 - (i) construction with an FRL of not less than 120/120/120 if *loadbearing* or - /120/120 if *non-loadbearing* and if of *lightweight construction* complying with Specification C1.8; or
 - (ii) glazed construction with an FRL of not less than - /60/30 and protected by a wall wetting system in accordance with Clause 2.4 of Specification G3.8.
- (b) the void of each *non-required* stairway, ramp or escalator must not connect more than 2 *storeys*.
- (c) rising and descending escalators, walkways, stairways and ramps within one *shaft* must be separated by construction with an FRL of not less than - /60/60.
- (d) openings into the *shaft* must be protected by fire doors with an FRL not less than - /60/30.
- (e) when a fire door is closed the floor or any covering over the floor beneath the fire door must not be *combustible*.
- (f) fire doors must be fitted with smoke seals and the assembly must be tested in accordance with AS 1530.4.

- (g) fire doors must be:
 - (i) closed and locked for security reasons; or
 - (ii) held open and be *automatic* closing.
- (h) smoke detectors must be installed on both sides of the opening, not more than 1.5 m horizontal distance from the opening.
- (i) in the closed position, fire doors must be openable on a single hand downward action or horizontal pushing action on a single device within the *shaft* and by key only from outside the *shaft*.
- (j) a warning sign must be displayed where it can readily be seen outside the *shaft* near all fire doors opening to the *shaft*. The sign must comply with the details and dimensions of Figure D2.

Figure D2 WARNING SIGN FOR NON-REQUIRED STAIRWAY, RAMP OR ESCALATOR



- (k) all doors opening into the *shaft* must be within 20 m of a *required exit*.
- (l) signs showing the direction of the nearest *required exit* must be installed where they can be readily seen.
- (m) materials attached to any wall, ceiling or floor within the *shaft* must have a *Spread-of-Flame Index* of 0 and a *Smoke-Developed Index* of not more than 5.
- (n) emergency lighting must be installed in the *shaft* in accordance with Part E4.4.
- (o) no step or ramp may be closer to the threshold of the doorway than the width of the door leaf.
