

Section 5 – Firefighting and Rescue Stairway

Subsection D14 - Access to a Firefighting and Rescue Stairway at Ground Storey

Clause D14.1

Access to a firefighting and rescue stairway (“fire service access point”) should be available at a ground storey in the perimeter of the building either directly from a street which is accessible by the vehicles of the Fire Services Department or through an open area having a minimum dimension of 1.5m and having access free from any permanent obstruction to such a street. Such access should not be closed with doors or gates unless they are capable of being readily opened without the use of a key.

Clause D14.2

A firefighting and rescue stairway may be set back from the fire service access point at the ground storey in the perimeter of the building provided that the horizontal distance between the fire service access point and the doors of the fireman’s lift or the first step of the access staircase in the stairway is not more than 18m. In cases where the physical characteristics and constraints of the site render it desirable, the Building Authority may allow a longer horizontal distance provided that fire safety standards are not adversely affected. In any case, both the fireman’s lift and the access staircase in the stairway should be accessible from the same street.

Clause D14.3

A firefighting and rescue stairway and the passage from the fire service access point to the stairway should be separated from the remainder of the ground storey (including a lobby or hall to cargo lifts) by walls having an FRR required in Clause D17.2. Any opening in these walls for communication with the ground storey should be through a protected lobby complying with Clauses C9.3 and C16.5.

Clause D14.4

The passage from the fire service access point to the firefighting and rescue stairway should have a clear width of not less than 1500mm and a clear headroom of not less than 2000mm.

Clause D14.5

A notice in the following form indicating the fire service access point should be displayed at a conspicuous position outside the building near the point:



The height of the words and characters on the notice should be not less than 20mm. Such notice should be either illuminated by two separate systems of electric light or a type of safety sign which is self-energized in respect of luminosity and which requires no external source of power.

Subsection D15 - Floors Served by a Firefighting and Rescue Stairway

Clause D15.1

Both the access staircase and the fireman's lift in a firefighting and rescue stairway should serve every floor, including refuge floor, and every part of the building. When the roof of a building is served by other staircases, the access staircases in the firefighting and rescue stairway should also serve the roof. For the avoidance of doubt, the fireman's lift is not required to serve the roof but it should serve the top floor except where the lift machine room has to be located at the top floor due to height restriction.

Clause D15.2

Where a building is required to have a firefighting and rescue stairway, areas for ancillary uses such as carparking and loading and unloading in the building, whether occupying the whole floor or part of a floor, should also be served by the firefighting and rescue stairway.

Clause D15.3

The lowest landing of the fireman's lift in a firefighting and rescue stairway serving the storeys above ground storey or the topmost landing of that serving the basement, as the case may be, should be situated at the level of the fire service access point in Subsection D14. If this is not possible due to site constraint or other special reasons acceptable to the Building Authority, such landing may be situated not more than one floor above or below the level of the fire service access point.

Clause D15.4

Every access staircase in a firefighting and rescue stairway serving the upper floors should not continue directly to serve the basements.

Clause D15.5

Every access staircase in a firefighting and rescue stairway passing through a refuge floor should discontinue at such level so that the access route is diverted to pass over the area for refuge before it is continued to access upwards. The doors of the fireman's lift opening onto the refuge floor should comply with Clause B18.2(i).

Clause D15.6

No part of the floor served by a firefighting and rescue stairway should be more than 60m from the door of the lobby to the stairway measured along actual passages. If the internal layout is not known at the design stage or is not shown on plan, a direct line measurement of 45m may be used for design purposes, provided that the layout of the floor when occupied satisfies the 60m requirement.

Subsection D16 - Access to a Floor from a Firefighting and Rescue Stairway

Clause D16.1

In every floor, except the ground storey, served by a firefighting and rescue stairway, access from the stairway to that floor should be through a lobby which should –

- (a) have a floor area of not less than 5m² and not more than 10m² with a minimum dimension of 1.5m;
- (b) in storeys above ground storey, have an external wall as one of its enclosing walls;
- (c) in storeys above ground storey, be provided with natural ventilation by means of openings on the external wall complying with Clause D16.1(b). Such openings -
 - (i) should have a total area of not less than 25% of the floor area of the lobby;
 - (ii) should be situated as near the ceiling as is practicable and in no case should the top of such openings be less than 1.9m above the level of the lobby floor;
 - (iii) should face directly into the external air which has a horizontal area of not less than 21m² and is vertically uncovered and unobstructed above. If it is enclosed on all sides, it should have an area of not less than 1m² per 1m height of the enclosing walls and have a minimum dimension of 1.5m;
 - (iv) may be provided with windows which should be side hung, open outward a minimum of 30°, be openable from inside without the use of a key and be fitted with simple lever handles or rotary drives to simple rack or gear operated devices; and

- (d) in storeys below ground storey, be provided with natural ventilation by:
- (i) unobstructed smoke outlets having a cross-sectional area of not less than 1m² for each lobby and ventilating into the outside air above ground storey. Lobbies at basement should be individually ventilated by separate smoke outlets provided at the ceiling of the lobby. Such smoke outlets may be covered at or above ground storey with breakable covers and should be located at least 5m clear of the final discharge point of an exit route or a fire service access point. This distance may be reduced to not less than 2.5m if, and only if, any smoke from such smoke outlets is directed away from and is not likely to affect, by natural convection, any exit route or fire service access point. The smoke outlet shafts should have an FRR or be enclosed by construction having an FRR of not less than that of the perimeter walls of the firefighting and rescue stairway. An unenclosed smoke outlet shaft should be capable of resisting accidental mechanical damage to the satisfaction of the Director of Fire Services; or
 - (ii) openings complying with Clause D16.1(c)(i), (c)(ii) and (c)(iv) and ventilating into an open well having an area of not less than 1m² per 1m height of the wall enclosing the open well and having a minimum dimension of 1.5m,

provided that the natural ventilation to the lobby is not required if the access staircase to which the lobby leads is a staircase which is open on 3 sides for a height of not less than 900mm between the top of the balustrade or parapet and the underside of the flight of stair immediately above, and which is open to a void having an area of not less than 10m² and a minimum dimension of 1m and being unobstructed above to provide adequate ventilation.

See Diagram D2 for illustration.

Clause D16.2

Every fireman's lift in a firefighting and rescue stairway should open into the lobby in accordance with Clause D16.1.

Clause D16.3

The access staircase and the fireman's lift in a firefighting and rescue stairway should communicate with each other at every floor served by the stairway.

Subsection D17 - Protection of a Firefighting and Rescue Stairway

Clause D17.1

Every firefighting and rescue stairway should be enclosed by walls and these walls, the landings, flights, balustrades, partition walls and finishing, including wall and ceiling lining and floor finishing, in the stairway should be constructed of wholly non-combustible materials complying with Part E.

Clause D17.2

The perimeter enclosing walls that separate the access staircase, the fireman's lift and the lobby in a firefighting and rescue stairway from the floor served by the stairway, together with any supporting structure and floor slabs forming the enclosures of the stairway should have an FRR of not less than that required for the elements of construction in that floor.

Clause D17.3

Within the perimeter of a firefighting and rescue stairway, walls or partitions which separate the access staircase and the lobby from each other should have the FRR of not less than that required for the elements of construction in that floor.

Clause D17.4

The doors of the lobby to a firefighting and rescue stairway should have an FRR of not less than that required for the walls therein and complying with the requirements in Table C2 and Clause C16.5. They should not be fitted with any bolts, locks or other fastenings except that, if for security reasons, the door between the lobby and the floor served may be fitted with a lock which is operable from the floor side without the use of a key. If a locking device is electrically operated, the lock should comply with requirements in Clause B13.2.

Clause D17.5

Openings formed in the external walls of a firefighting and rescue stairway should also comply with Clauses C9.6 to C9.8 of Part C and in no case should such openings be formed within 450mm measured horizontally from any opening in the external walls of the same building.

Subsection D18 – Construction of Access Staircase in a Firefighting and Rescue Stairway

Clause D18.1

Every access staircase in a firefighting and rescue stairway should:

- (a) have a clear width of not less than 1050mm and a clear headroom of not less than 2000mm;
- (b) be arranged in straight flights without winders and each flight should consist of not more than 16 risers nor less than 2 risers. Treads should be not less than 225mm wide, measured clear of nosings, and risers should be not more than 175mm high;
- (c) be provided with landings at the top and bottom of each flight with a minimum dimension of not less than the width of the flight and no door should at any part of its swing reduce the effective width or effective radius of such landings; and
- (d) be provided with handrails on each side of the staircase at a height of not less than 850mm and not more than 1100mm above the steps or landings. The handrails should not project so as to reduce the clear width of the staircase by more than 90mm for each handrail and should be continuous throughout each flight of the staircase but need not be carried round a landing or half landing.

Subsection D19 – Ventilation of Access Staircase in a Firefighting and Rescue Stairway

Clause D19.1

Every access staircase in a firefighting and rescue stairway should be provided with:

- (a) Pressurization designed as required in Clause D21.1; or
- (b) Natural ventilation :
 - (i) at each storey above the ground storey, by openings in the external enclosure wall having a total area of not less than 15% of the internal area on plan of the access staircase. Such openings may be provided with windows which should be side hung, open outward a minimum of 30°, be openable from inside without the use of a key and be fitted with simple lever handles or rotary drives to simple rack or gear operated devices; and
 - (ii) at it highest point, by a vent capable of being opened manually or automatically by a remote control switch and having an area of not less than 5% of the internal area on plan of the access staircase. The remote control switch should be situated in a conspicuous position at the fire service access point of the stairway at ground storey.

Subsection D20 - Fireman's Lift in a Firefighting and Rescue Stairway

Clause D20.1

Up to three fireman's lifts, but no other lifts, may be installed and may share the same liftwell in a firefighting and rescue stairway. A lift mainly intended for the transport of goods should not be designated as a fireman's lift.

Clause D20.2

Every fireman's lift in a firefighting and rescue stairway should comply with the requirements in Clauses D9.2 and Subsections D10, D12 and D13.

Subsection D21 - Mechanical Ventilation of a Firefighting and Rescue Stairway

Clause D21.1

Any natural ventilation to a firefighting and rescue stairway and its lobby required in this Part may be omitted where a mechanical system to control the ingress of smoke into the stairway or lobby, such as pressurization, is provided to the satisfaction of the Director of Fire Services.