

Part D -

Means of Access

This Part contains six Sections:

- **Section 1 – General**
- **Section 2 – Provision of Access Staircase, Fireman’s Lifts and Firefighting and Rescue Stairway**
- **Section 3 – Access Staircase**
- **Section 4 – Fireman’s Lift**
- **Section 5 – Firefighting and Rescue Stairway**
- **Section 6 – Provision of Emergency Vehicular Access**

Section 1 – General

Subsection D1 – Use of this Part

Clause D1.1

This Part provides the Deemed-to-Comply provisions on means of access and EVA and is to be read in conjunction with all other Parts of this Code.

Clause D1.2

Authorized persons, fire safety consultants and any person responsible for the design of buildings may find this Part useful in ascertaining the requirements under the Buildings Ordinance for the provisions of access to buildings for the purposes of firefighting and rescue.

Clause D1.3

This Part provides guidance on how the Performance Requirements on the means of access may be complied with.

Commentary

Fire safety in a building is determined by a number of factors, one of which is the means of access to it to enable fire services personnel to effect rescue and fight fire. Requirements for means of access to buildings are laid down in the Building (Planning) Regulations 41A, 41B, 41C and 41D.

The Building (Planning) Regulations 41A, 41B and 41C deal with the means of access to the building. They require that every building shall be provided with an adequate number of access staircases, fireman's lifts and/or firefighting and rescue stairways having regard to the intended use of the building, its height and size. These staircases, lifts or stairways shall be so designed and constructed or installed as to allow firemen safe and unobstructed access to various floors of the building in the event of a fire. Sections 2 to 5 provide guidance on compliance with these requirements.

The Building (Planning) Regulation 41D deals with the means of access for emergency vehicles to a building. It requires every building to be provided with an EVA which is so designed and constructed as to allow safe and unobstructed access of a vehicle of the Fire Services Department to the building and to provide for the safe operation of such a vehicle, in the event of a fire or other emergency. The Building (Planning) Regulation 41D(2) provides that the design and construction of an EVA shall be in accordance with such requirements as may be specified by the Building Authority from time to time having regard to the intended use of the building. Section 6 specifies such requirements.

Subsection D2 – Performance Requirements for Means of Access

Clause D2.1

Performance Requirements relevant to means of access including EVA are stipulated in Subsection A10 of Part A.

Section 2 – Provision of Access Staircase, Fireman’s Lift and Firefighting and Rescue Stairway

Subsection D3 - Number of Access Staircases, Fireman’s Lifts and Firefighting and Rescue Stairways

Clause D3.1

Such numbers of access staircases, fireman’s lifts and firefighting and rescue stairways should be provided in a building as required by the Building (Planning) Regulations 41A, 41B and 41C. The number of these means of access for firefighting and rescue as required are summarised in Table D1.

Clause D3.2

In any building which the Building Authority considers to be likely to bear a high risk to life from fire, such as Use Classification 5a, 5d or 6, additional number of fireman’s lifts and/or firefighting and rescue stairways may be required.

Table D1 : Number of Access Staircases, Fireman's Lift and Firefighting and Rescue Stairways Required

Type of Building		No. of Access Staircases required	No. of Fireman's Lifts required	No. of Firefighting and Rescue Stairways required
(1)	All buildings and all basements	Not exceeding 1 storey	-	-
(2)	Domestic buildings for single family	Not exceeding 3 main storeys	-	-
(3)	Domestic buildings or offices with G/F shop or carport	(a) exceeding 1 storey but not exceeding 6 storeys and uppermost floor not exceeding 13m above ground and usable floor area not exceeding 250m ² per floor	One	-
		(b) exceeding 1 storey but not exceeding 6 storeys and uppermost floor exceeding 13m but not exceeding 17m above ground and usable floor area not exceeding 150 m ² per floor	One	-
(4)	Domestic buildings or domestic part of composite building other than buildings in (2) and (3)	(a) exceeding 1 storey but not exceeding 30m above mean level of lowest street, irrespective of cubical extent	Two or more (as many as escape staircases)	-
		(b) exceeding 2 storeys and exceeding 30m above mean level of lowest street, irrespective of cubical extent	Two or more (as many as escape staircases)	One within 60m of any part of floor
(5)	Non-domestic buildings or non-domestic part of composite buildings other than Use Classification 6, Use Classification 5a, hotels, hospitals or buildings in (3)	(a) exceeding 1 storey but not exceeding 15m above mean level of lowest street, irrespective of cubical extent	Two or more (as many as escape staircases)	-
		(b) exceeding 1 storey and exceeding 15m but not exceeding 30m above the mean level of the lowest street and not exceeding 7000m ³ in cubical extent including basements	Two or more (as many as escape staircases)	-
		(c) exceeding 2 storeys and exceeding 15m but not exceeding 30m above mean level of the lowest street and exceeding 7000m ³ in cubical extent including basements	Two or more (as many as escape staircases)	One within 60m of any part of floor
		(d) exceeding 2 storeys and exceeding 30m above mean level of lowest street, irrespective of cubical extent	Two or more (as many as escape staircases)	One within 60m of any part of floor
(6)	Use Classification 5a, hotels or hospitals	(a) exceeding 1 storey but not exceeding 2 storeys	Two or more (as many as escape staircases)	-

Type of Building		No. of Access Staircases required	No. of Fireman's Lifts required	No. of Firefighting and Rescue Stairways required
	(b) exceeding 2 storeys, irrespective of height above mean level of lowest street and cubical extent	Two or more (as many as escape staircases)	One within 60m of any part of floor	-
(7) Use Classification 6	(a) exceeding 2 storeys but not exceeding 30m above the mean level of the lowest street and not exceeding 7000m ³ in cubical extent including basements	Two or more (as many as escape staircases)	One within 60m of any part of floor	-
	(b) exceeding 1 storey but not exceeding 30m above the mean level of the lowest street and exceeding 7000m ³ in cubical extent including basements	Two or more (as many as escape staircases)	One within 60m of any part of floor	One within 60m of any part of floor
	(c) exceeding 1 storey and exceeding 30m above the mean level of the lowest street but not exceeding 7000m ³ in cubical extent including basements	Two or more (as many as escape staircases)	One within 60m of any part of floor	One within 60m of any part of floor
	(d) exceeding 1 storey, 30m above the mean level of the lowest street and 7000m ³ in cubical extent including basements	Two or more (as many as escape staircases)	One within 60m of any part of floor	One within 60m of any part of floor
(8) All basements	(a) exceeding 2 storeys and exceeding 7000m ³ in cubical extent	Two or more (as many as escape staircases)	One within 60m of any part of floor	One within 60m of any part of floor
	(b) exceeding a depth of 9m from the floor level of the ground storey above the basement to the floor level of the lowest storey in the basement and exceeding 7000m ³ in cubical extent	Two or more (as many as escape staircases)	One within 60m of any part of floor	One within 60m of any part of floor

Note:

1. An access staircase in a firefighting and rescue stairway will be counted as one access staircase for the purpose of the Building (Planning) Regulation 41A and a fireman's lift in a firefighting and rescue stairway will be counted as one fireman's lift for the purpose of the Building (Planning) Regulation 41B.

Section 3 – Access Staircase

Subsection D4 - Required Staircase as Access Staircase

Clause D4.1

The required staircases in every building provided in accordance with the Building (Planning) Regulation 41(1) and Part B can be taken as access staircases for the purposes of the Building (Planning) Regulation 41A but can only be taken as access staircases in firefighting and rescue stairways if the requirements of the Building (Planning) Regulation 41C and this Part are also complied with.

Subsection D5 – Firefighting and Rescue Stairway as Required Staircase

Clause D5.1

Every access staircase in a firefighting and rescue stairway provided in accordance with the Building (Planning) Regulation 41C and this Part may be taken as a staircase for means of escape for the purposes of the Building (Planning) Regulation 41(1) if the requirements for required staircases in Part B are also complied with.

Section 4 – Fireman’s Lift

Subsection D6 - Designation of Fireman’s Lift

Clause D6.1

Where more than one lift installed in a building is required to have a fireman’s lift, the lift which is to be the fireman’s lift should be that designated by the Director of Fire Services.

Clause D6.2

A lift mainly intended for the transport of goods in a building of Use Classification 6 should not be designated as a fireman’s lift.

Subsection D7 - Access to a Fireman’s Lift at Ground Storey

Clause D7.1

Access to a fireman’s lift (“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 openable without the use of a key.

Clause D7.2

A fireman’s lift 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 from the fire service access point to the doors of the fireman’s lift is not more than 18m. In cases where the physical characteristics and constraints of a site render it desirable, the Building Authority may allow a longer horizontal distance provided that level of fire safety is not adversely affected.

Clause D7.3

The passage from the fire service access point to the fireman’s lift should –

- (a) have a clear width of not less than 1500mm and a clear headroom of not less than 2000mm; and
- (b) be separated from the remainder of the ground storey by walls having an FRR of not less than that required for the elements of construction in the ground storey. Any opening in these walls for communication with ground storey should be through a protected lobby complying with Clauses C9.3 and C16.5.

Clause D7.4

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 D8 - Floors Served by a Fireman's Lift

Clause D8.1

Fireman's lifts should be provided to enable firefighters to reach any floor that may be on fire in the building without having to traverse more than two floors and should be arranged in such a way that:

- (a) in the case of a single fireman's lift, it serves at least the alternate floors;
- (b) in the case of multiple fireman's lifts within a common liftwell, the lifts may serve different zones of the building provided that the zones to be served are clearly indicated;
- (c) in all cases, subject to Clause D8.1(d), the pattern of service should be uniform and regular, i.e. a lift serves either the odd floors, even floors or all floors; and
- (d) Where refuge floors are provided, every such refuge floor should be served by at least one fireman's lift. The lift doors opening onto the refuge floors should comply with Clause B18.2(i).

Clause D8.2

Where the pattern of service adopted for a fireman's lift is such that the top floor is to be served, the top floor should be served unless the lift machine room has to be located at the top floor due to height restrictions.

Clause D8.3

The lowest landing of a fireman's lift serving the storeys above ground storey or topmost landing of a fireman's lift serving the basement, as the case may be, should be situated at the level of the fire service access point in Subsection D7. If this is not possible due to site constraints 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 D8.4

No part of the floor served by a fireman's lift should be more than 60m from the door of the lift lobby 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 D9 - Liftwell of a Fireman's Lift

Clause D9.1

A separate liftwell should be provided for each fireman's lift and up to three fireman's lifts may share the same liftwell. See Diagram D3.

Clause D9.2

A notice should be displayed outside the liftwell indicating the fireman's lift by the words 'FIREMAN'S LIFT' and "消防員升降機" in English and Chinese and the floors served. The height of the words and characters on the notice should be not less than 15mm.

Subsection D10 – Lift Car of a Fireman's Lift

Clause D10.1

The car of a fireman's lift should have a minimum internal dimension of 1.1m, a net internal floor area of not less than 1.35m² and a rated load of not less than 680 kg.

Subsection D11 – Lobby to a Fireman's Lift

Clause D11.1

Each point of discharge from a fireman's lift to the floor served, except at the fire service access point in Subsection D7, should be through a lobby having a floor area of not less than 2.25m² and a minimum dimension of 1.5m. The lobby should be separated from that floor by walls and doors having an FRR of not less than that required for the elements of construction in that floor, subject to a maximum of 120 minutes and complying with the requirements in Table C2.

Clause D11.2

Openings for lighting and/or ventilation may be made in an external wall enclosing the lobby provided that the requirements in Clauses C9.6 to C9.8 of Part C are complied with.

Clause D11.3

Where only one or some of the lifts in a bank of lifts are fireman's lifts, they may share a common lift lobby, provided that such lobby is provided on every floor served by any of these lifts.

Clause D11.4

Every lobby to a fireman's lift should have direct access, without any obstruction and lockable door, to a protected exit. Such lobby should be designed as a common area and an integral part of the fireman's lift so that it could not be readily incorporated as part of any adjacent unit(s) of accommodation.

Subsection D12 – Doors of a Fireman's Lift

Clause D12.1

The door opening of a fireman's lift should not be less than 800mm wide and 2000mm high. The doors should be fitted with power operated automatic self-closing device.

Subsection D13 – Control and Operation of a Fireman's Lift

Clause D13.1

A fireman's lift should be designed and installed in accordance with the special control, operational, electrical and mechanical requirements for fireman's lifts specified in the Code of Practice on the Design and Construction of Lifts and Escalators published by the Director of Electrical and Mechanical Services.

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 openable from the floor side without the use of a key. If a locking device is electrically operated, the lock should be capable of automatic release upon actuation of an automatic heat or smoke detection system or the operation of an alarm system or a central manual override designed and installed to the satisfaction of the Director of Fire Services. Upon power failure, the electrical locking device shall also release automatically.

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.