



FIRE SAFETY AND SHELTER DEPARTMENT
SINGAPORE CIVIL DEFENCE FORCE

FIRE SAFETY REQUIREMENTS FOR PERSONS WITH DISABILITIES

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FIRE SAFETY REQUIREMENTS FOR PERSONS WITH DISABILITIES

1 SCOPE

- 1.1 The scope of these requirements covers the provision of fire safety features to assist persons with disabilities (PWDs) during emergencies and the development of plans to manage the evacuation of PWDs. It shall be applicable to all buildings except Purpose Group I and II buildings (residential) and Health Care Occupancy (i.e. Hospital, Nursing Home, Ambulatory Health Care Centre, Custodian Care and Supervisory Care facility) as defined in the Fire Code. Non-residential standalone buildings such as carpark buildings and clubhouses that are located within the residential development and intended as ancillary use are not required to comply with these requirements.

2 PRINCIPLES OF EVACUATION

- 2.1 Generally, staircase is not suitable for use by PWDs for purpose of fire evacuation. It is also not appropriate to use the lift for evacuation since it may not be in operation during a fire emergency, unless it is incorporated with additional features to protect the users.
- 2.2 Ramps, evacuation lifts and wheelchair stairlifts can also serve as alternative means of escape in lieu of exit staircases. If ramps are used, it is to be noted that their construction, in particular the ramp gradient, has to comply with the “Code on Accessibility in the Built Environment” so as to facilitate the evacuation of PWDs.

3 ESCAPE ROUTES

3.1 General

- 3.1.1 The escape routes shall be free from any obstacle that may cause undue delay to PWDs during evacuation e.g. raised thresholds or steps. Where there are minor changes in level within any storey, a ramp conforming to the requirements stipulated in the “Code on Accessibility in the Built Environment” shall be provided.

3.2 PWD Holding Point

- 3.2.1 A PWD Holding Point is a temporarily safe space for PWDs to await assistance for their evacuation and shall be provided on all storeys including all basement levels, except first storey or storey at grade level.

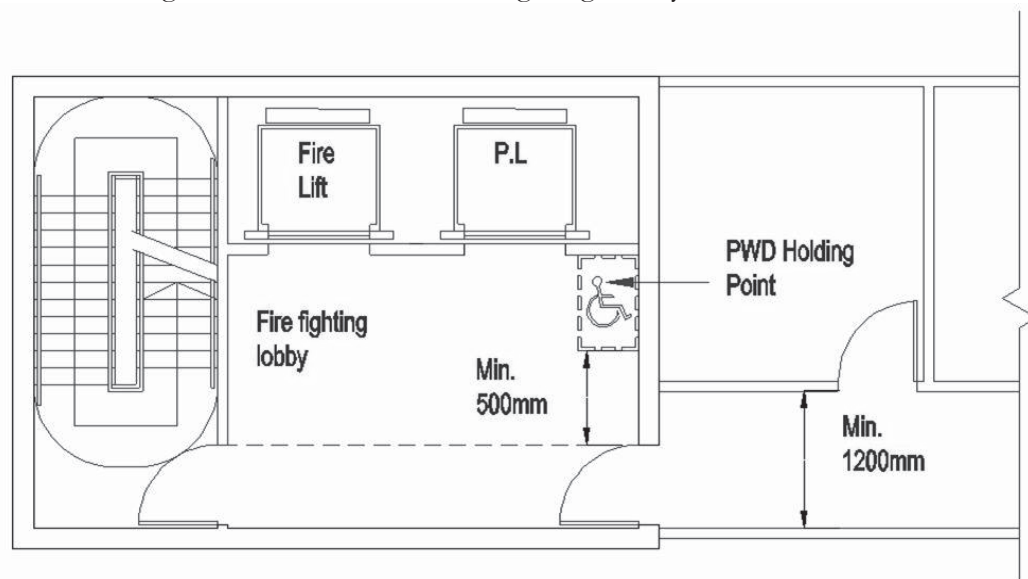
- 3.2.2 There shall be at least two designated PWD Holding Points on every storey of a building except for building designed with single exit staircase allowed under Cl.2.4.4, Cl.2.4.5 and Cl.2.6.1 of the Fire Code. The corridor serving as escape route shall have a minimum width of 1200mm.
- 3.2.3 The PWD Holding Point shall be kept free of obstruction and located in the following order of priority:
- (a) Within the fire-fighting lobby, smoke-stop lobby or external corridor. The PWD Holding Point designated in an external corridor shall be positioned at least 2000mm away from the edge of exit staircase. In the case of PWD Holding Point within the fire fighting lobby and smoke stop lobby, it shall be positioned at least 500mm away from the edge of exit staircase and away from the occupant escape path;
 - (b) Inside the exit staircase, provided there is no fire-fighting lobby, smoke-stop lobby or external corridor.
- (See Diagrams **3.2.3(a) – 1**, **3.2.3(a) – 2**, **3.2.3(a) – 3** and **3.2.3(b) - 1** for illustration of above.)
- 3.2.4 Where a PWD Holding Point is located inside a protected lobby or staircase, a mandatory sign worded “PWD Holding Point” shall be prominently displayed.
- 3.2.5 A PWD Holding Point shall be enclosed with fire-resisting construction (other than any part that is an external wall of a building) and shall be served directly by a safe route to a storey exit, evacuation lift or final exit.
- 3.2.6 A suitable means of communication shall be provided between the PWD holding point and Fire Command Centre (FCC) or any 24-hourly manned station, for PWDs to call for assistance during a fire emergency. It may be in the form of a distress button or voice communication. The means of communication shall:
- (a) be located between 800mm and 1200mm above ground level;
 - (b) be appropriately labeled;
 - (c) be provided with prominently displayed clear instruction sign on its operation; and
 - (d) When the device for communication is activated, it shall generate a clear visual indication to indicate that the distress signal has been relayed. The purpose is to enable the PWDs in the holding point to alert the FCC or the manned station that they are in need of assistance and for them to be reassured that this assistance will be forthcoming.

3.2.7 A PWD Holding Point shall be adequately sized so as to accommodate a wheelchair user and to allow the user to manoeuvre easily. In this respect, the PWD Holding Point shall meet the following requirements:

- (a) The space provided for a wheelchair in a PWD Holding Point shall be at least 900mm X 1400mm to allow manoeuvring of wheelchair.
- (b) Each PWD Holding Point shall have an area accessible to a wheelchair so that a wheelchair-bound person can await assistance.
- (c) Where a PWD Holding Point is sited inside a protected exit staircase, smoke-stop lobby or fire-fighting lobby, the wheelchair space shall not result in reduced size of these spaces and its access shall not obstruct the flow of evacuation.
- (d) There shall be dotted rectangle markings to define the space and a symbol of access in white against contrasting green background on the floor shall be provided to designate the PWD Holding Point for PWDs to wait for rescue.

Diagram 3.2.3(a) – 1

PWD Holding Point sited within a Fire-Fighting Lobby



Protected lobby (Fire fighting lobby) used as PWD Holding Point where the PWDs await for assistance to use either a staircase or an evacuation lift. The designated PWD Holding point serving as wheelchair space shall be placed at a distance of minimum 500mm away from the exit staircase and away from the occupant escape path. This arrangement is intended to facilitate the flow of persons escaping from occupied space to the exit staircase and prevent the wheelchair bound from being knocked down by other evacuees.

Diagram 3.2.3(a) - 2

PWD Holding Point along external approach (smoke free approach)

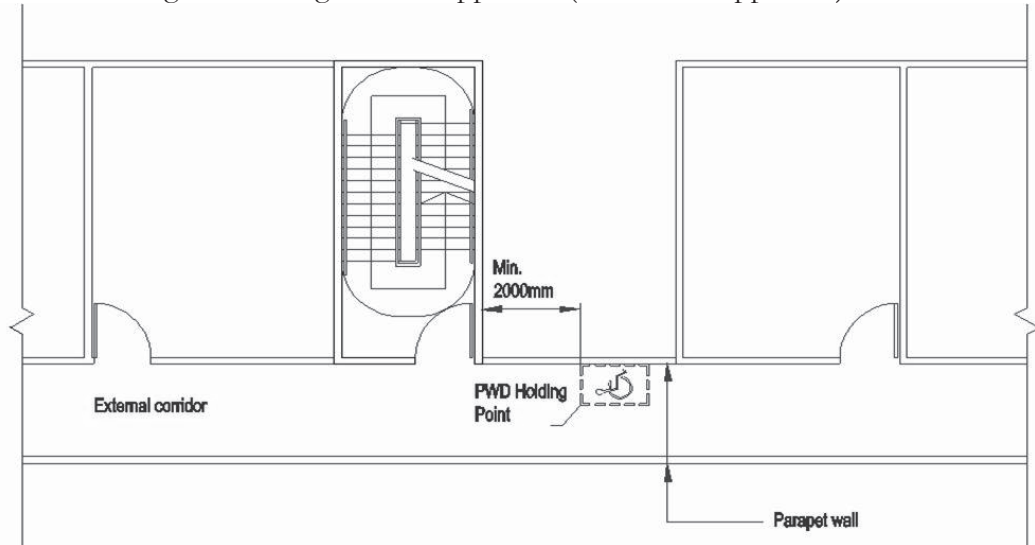
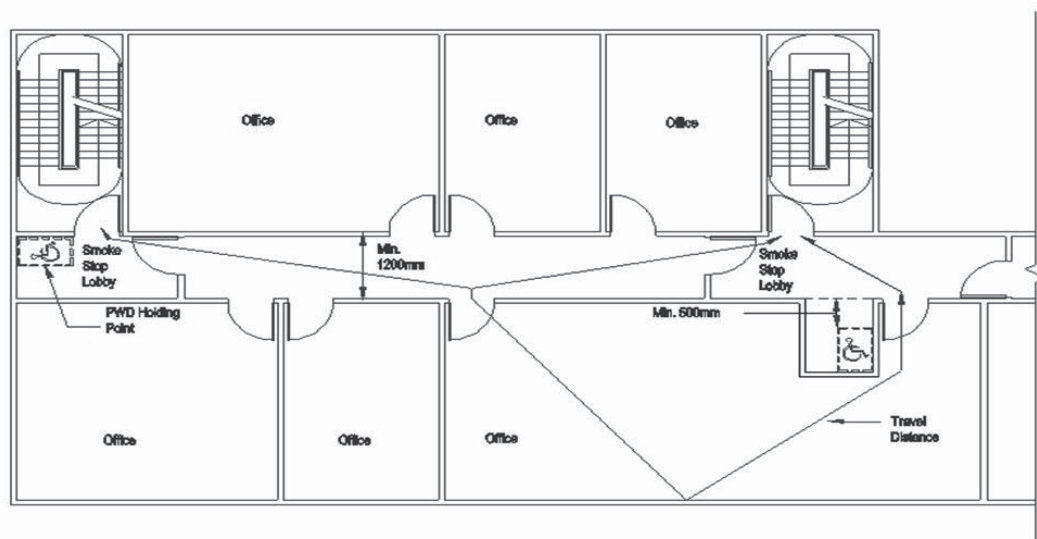


Diagram 3.2.3(a) - 3

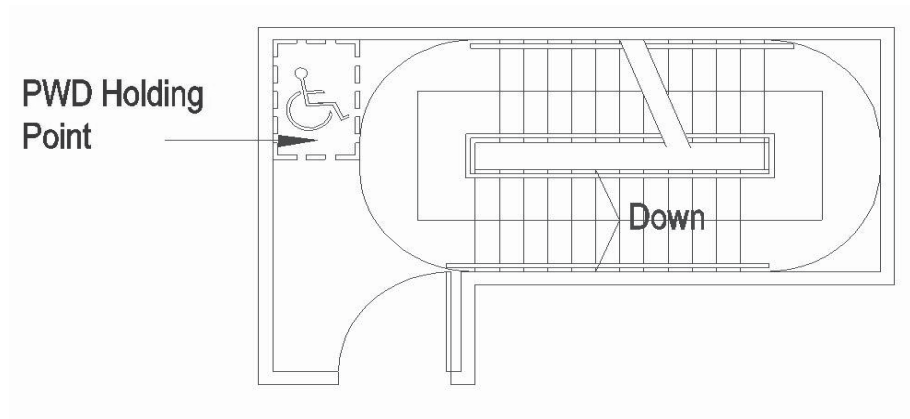
PWD Holding Point sited inside Smoke-Stop Lobby and not provided with evacuation lift



The requirement on travel distance shall be similar to that stipulated in the Fire Code (see Table 2.2A in the Fire Code). The wheelchair space incorporated in the smoke-stop lobby shall not reduce the area of smoke-stop lobby.

Diagram 3.2.3(b) - 1

PWD Holding Point in buildings without Smoke-Stop Lobby or Fire-Fighting Lobby



The positioning of PWD Holding Point inside the staircase is only permitted for buildings not exceeding 5 storeys above ground. The designated PWD Holding Point shall not obstruct or disrupt the escape flow within the staircase.

4 EXIT STAIRCASE

4.1 Handrails

4.1.1 The handrails within a protected staircase shall be continuous.

4.2 Wheelchair Stairlifts

4.2.1 A wheelchair stairlift is intended to transport a person or person with a wheelchair between 2 or more levels/storeys by means of a guided carriage moving along a flight of stairs, either in upward or downward direction. This is not a mandatory requirement but if it is to be installed inside a protected staircase and serve as a means of escape for PWD, any protrusion of the stairlifts in its operating position shall not encroach into the escape path of building occupants.

5 RAMP

5.1 Internal and external exit ramps complying with Cl.5.2 may be used as exits in lieu of internal and external exit staircases or evacuation lift subject to compliance stipulated under Cl.2.3.3 and Cl.2.3.8 of current Fire Code.

5.2 Ramp designs shall conform to the requirements spelled out in the “Code on Accessibility in the Built Environment” and any subsequent amendment/ addendum.

6 EVACUATION LIFT

6.1 General

6.1.1 An evacuation lift is a lift provided for the evacuation of PWDs during emergencies by persons authorised by the building owner. Evacuation lift shall be located within a protected lobby such as smoke-stop lobby, external exit passageway or external corridor. The installation of the evacuation lift shall be in accordance with SS 550 Code of Practice for Installation, Operation and Maintenance of Electric Passenger and Goods Lifts.

6.2 Buildings installed with lifts

- 6.2.1
- (a) At least one of the lifts shall be designated as evacuation lift.
 - (b) Fire lift shall not be designated as evacuation lift unless there is more than 1 fire lift provided in the building. Where the fire lift doubles up as evacuation lift, its design shall follow that as stipulated in this set of requirements.
 - (c) A readily visible sign marked “Evacuation Lift for PWDs” shall be affixed onto the wall adjacent to the lift door at every landing of the evacuation lift.
 - (d) The evacuation lift shall have a clear platform size of minimum 1200mm width X 1400mm depth.
 - (e) The evacuation lift shall be provided with standby power supply for continuous operation during power failure and/or fire emergencies.
(Note: Routing of cables for evacuation lift shall be similar to that of fire lift.)
 - (f) In the event of power failure and/or fire, the evacuation lift shall be brought to the designated floor. After allowing the passengers in the lift to discharge at the designated floor, the lift shall park there with its doors closed.
 - (g) A switching device, similar to the fireman switch, shall be installed next to each evacuation lift landing door on the designated floor (and the alternative designated floor, if provided) for persons authorised by the building owner or fire fighters to activate the evacuation mode of the lift. Under the evacuation mode, the lift shall be disconnected from the lift group supervisory control system and all landing call buttons, except those on the designated and alternate designated floors, shall be disabled. Car call control within the lift car shall operate as per normal. The switching device shall be housed in a “breakable glass-fronted cover” box marked “Evacuation Switch”.

7 MEANS TO ALERT THE HEARING IMPAIRED

7.1 General

Impairment of hearing does not mean that a person is completely insensitive to sound. Many people with severe impairment have sufficiently clear perception of some types of conventional audible alarm signals to require no special provision for warning of fire. While there are also situations where trained staff or other building occupants can alert the impaired hearing in the event of fire, this may not always be feasible, especially when the hearing impaired are not in their identified location or in isolated spaces such as toilet cubicles, car park floor, lift lobby, etc. The provision of visual alarms would therefore serve as another means to alert the hearing impaired.

7.2 Location of visual alarms

The visual alarms shall be located within line of sight in spaces in a building where there is a chance of the hearing impaired being in isolation. These isolation spaces include designated bedrooms for the hearing impaired in buildings with stay-in facilities such as hotels, serviced apartments, hostels, prominent locations such as toilet cubicles in washrooms, car park floors and lift lobbies. The visual alarm devices can take the form of flashing beacon or strobe light for use in conjunction with conventional fire alarm system. In addition, the visual indicator shall also be provided where alarm bells are located.

7.3 Visual alarm system

7.3.1 At least 10% of the guestrooms or accommodation units shall be provided with visual alarms.

7.3.2 The visual alarm system shall comply with the following:

- (a) The visual alarm signal shall be clearly distinguishable from any other visual signal used in the premises.
- (b) The visual alarm signal shall flash at a rate within the range of 30 to 130 flashes per minute.
- (c) Visual alarm signals shall be either in white or amber.
- (d) Visual alarm devices shall be sufficient in number and their distribution should be readily visible from all accessible locations.

- (e) The flashing or strobe lights of visual alarm system shall be synchronized with the flash rate of such multiple fixtures.
- (f) The intensity of the light signal shall be sufficient to draw the attention of people in the vicinity.
- (g) The visual alarm indicating device shall be labelled with the word “Fire” and is legible from the normal standing position.
- (h) The visual indicator shall be mounted at appropriate height such that it is visible from all corners of the floor.

8 MANAGEMENT OF EVACUATION

8.1 General

8.1.1 Evacuation procedures shall be planned by the building owner. Planning includes identifying the needs of PWDs and making arrangements for assistance during emergency. The building owner must keep the following information:

- (a) the number of PWDs;
- (b) the location of the PWDs;
- (c) the nature of their disabilities; and
- (d) the PWD Holding Point(s) in which they are allocated.

8.1.2 Procedures shall be tested at least once a year and involve both horizontal, if provided, and vertical evacuation.

7.1.3 Management shall ensure that the staff, designated to help PWDs in the event of fire, are fully trained to execute the following evacuation procedure:

8.2 Building with evacuation lift

8.2.1 PWDs requiring assistance shall move or be directed to the PWD Holding Point in the evacuation lift lobby.

8.2.2 The trained staff shall attend to PWDs from PWD Holding Point and direct them to the final exit.

8.3 Building without evacuation lift

8.3.1 On hearing the alarm, PWDs requiring assistance shall be moved or be directed to the nearest PWD Holding Point inside the exit staircase.

8.3.2 The trained staff, after completing their search, shall proceed to the PWD Holding Point and assist the PWDs down the stair to the final exit.