

# SINGAPORE CIVIL DEFENCE FORCE

Our Ref. : CD/FSSD/12/02/03/01

Your Ref :

Date : 21 January 2011



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Registrar, Professional Engineers Board (PEB)  
President, Singapore Institute of Architects (SIA)  
President, Institution of Engineers, Singapore (IES)  
President, Association of Consulting Engineers, Singapore (ACES)

Dear Sir/Mdm,

## FIRE SAFETY REQUIREMENTS FOR PERSONS WITH DISABILITIES

Many buildings are now constructed as “accessible” or “barrier free” to allow persons with disabilities (PWDs) ready access. Equally important is the need to have appropriate fire safety features and evacuation planning strategies to facilitate the evacuation of PWDs during an emergency. As the current Fire Code does not address this need, a committee spearheaded by SCDF and comprising representatives from BCA, SIA, IES & LTA was set up to formulate the requirements.

2. We are pleased to announce the release of these requirements for compliance by the industry (please see FSR 7:2011). These requirements take into consideration inputs from representatives from REDAS and respective Voluntary Welfare Organisations, namely, the Handicaps Welfare Association, Society for the Physically Disabled, Association of the Visually Handicapped, Association for the Deaf and the Disabled People’s Association.

3. The requirements complement the current fire safety provisions stipulated in the Fire Code 2007. Additional fire safety features such as PWD holding points, ramps, evacuation lift and evacuation planning have been incorporated to facilitate the evacuation of PWDs during an emergency.

4. The requirements shall be applicable to all buildings except those of Purpose Group I and II buildings 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.

5. The Circular shall take effect on 1 Nov 2011. Any building projects that have obtained formal planning permission from URA on or after the effective



date must comply with the new requirements. Please convey the contents of this Circular to members of your Institution/Association/Board. The Circular is available in CORENET-e-Info: <http://www.corenet.gov.sg/einfo>.

6. For any inquiry or clarification, please contact: Mr. Randy Tan at Tel: 68481461 or email: Randy\_Tan@scdf.gov.sg.

Yours faithfully,

(transmitted via e-mail)  
Poon Keng Soon  
Secretary, FSSD Standing Committee  
for Commissioner  
Singapore Civil Defence Force

cc  
All members of FSSD Standing Committee  
President, REDAS  
President, IFE  
President, SISV  
CEO, BCA  
CEO, URA  
CEO, HDB  
CEO, PSA  
CEO, JTC  
CE, LTA  
CE, TUV SUD PSB – (Attn: Ms Emily Mok/ Mr Lau Keong Ong)  
CE, SPRING Singapore – (Attn: Mr Kenneth Lim)  
President, FSMAS  
Honorary Secretary, SPM



FIRE SAFETY AND SHELTER DEPARTMENT  
SINGAPORE CIVIL DEFENCE FORCE

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# FIRE SAFETY REQUIREMENTS FOR PERSONS WITH DISABILITIES

FSR 7:2011

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Effective Date : 1<sup>st</sup> Nov 2011

*Released by :*

Fire Safety Consultation Branch  
Fire Safety & Shelter Department

( Total 8 pages )

**FIRE SAFETY REQUIREMENTS FOR PERSONS WITH DISABILITIES**

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**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) 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.

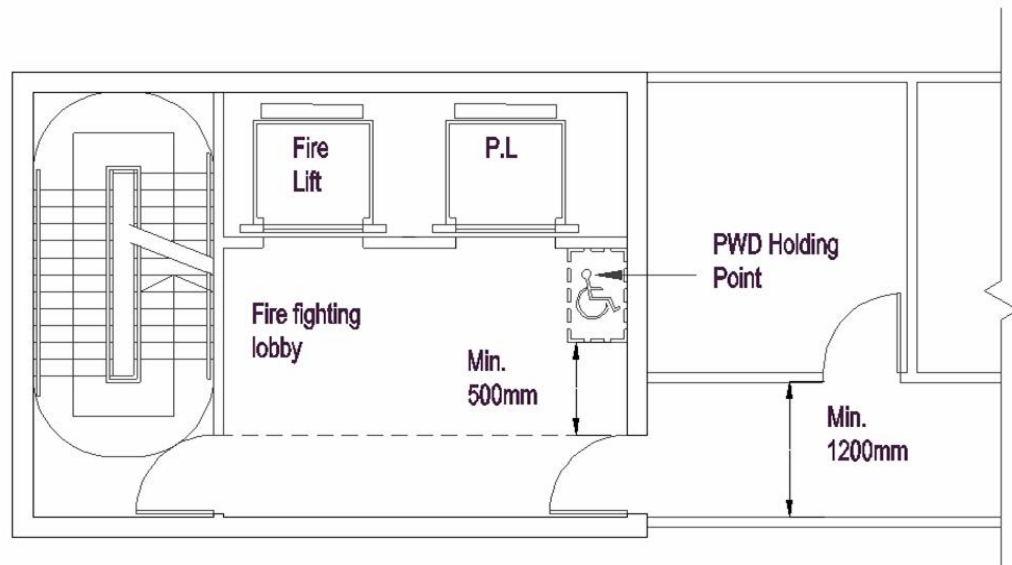
3.2.7

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***

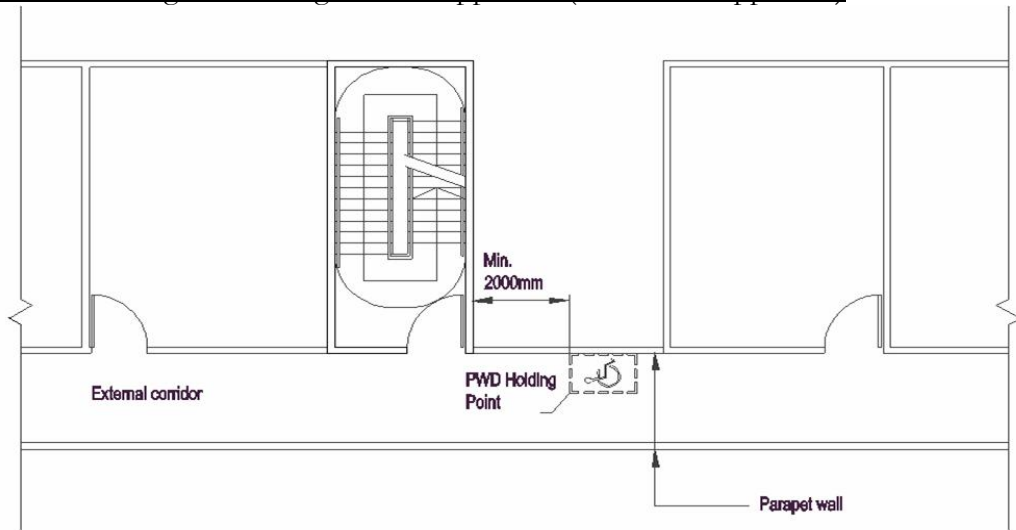
PWD Holding Point sited within a Fire Fighting Lobby



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.

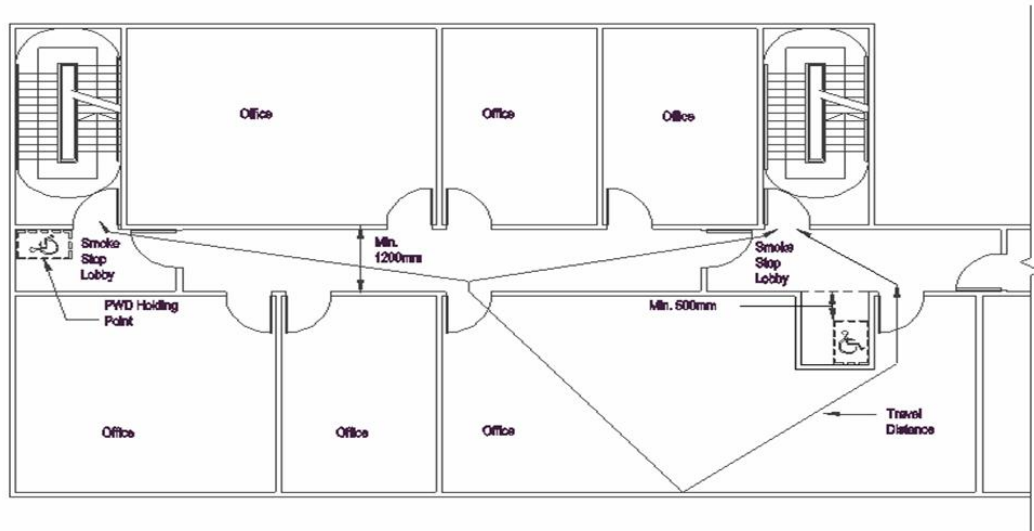
**Diagram 3.2.3(a) - 2**

PWD Holding Point along external approach (smoke free approach)



**Diagram 3.2.3(a) - 3**

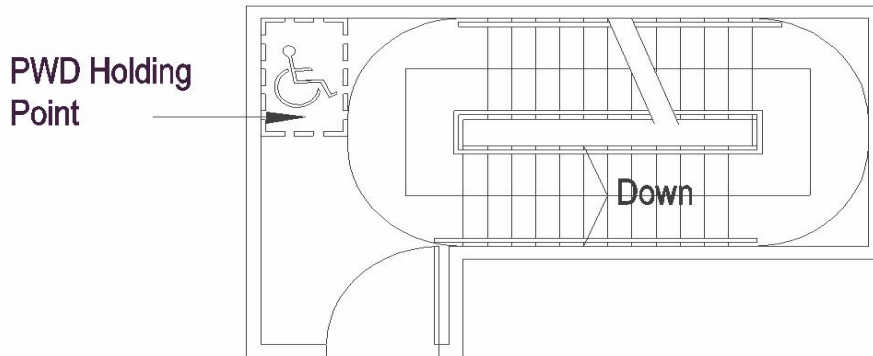
PWD Holding Point sited inside Smoke Stop Lobby and not provided with evacuation lift



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: 2009 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 MANAGEMENT OF EVACUATION**

### **7.1 General**

7.1.1 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.

7.1.2 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:

### **7.2 Building with evacuation lift**

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

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

### **7.3 Building without evacuation lift**

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

7.3.2 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.