

## ANNEX D

(Clause 4.11)

### GUIDELINES FOR FIRE DRILL AND EVACUATION PROCEDURES FOR HIGH RISE BUILDINGS

#### D-1 INTRODUCTION

In case of fire in a high rise building, safe evacuation of its occupants may present serious problems unless a plan for orderly and systematic evacuation is prepared in advance and all occupants are well drilled in the operation of such plan. These guidelines are intended to assist them in this task.

#### D-2 ALARMS

Any person discovering fire, heat or smoke shall immediately report such condition to the fire brigade, unless he has personal knowledge that such a report has been made. No person shall make, issue, post or maintain any regulation or order, written or verbal, that would require any person to take any unnecessary delaying action prior to reporting such condition to the fire brigade.

#### D-3 DRILLS

**D-3.1** Fire drills shall be conducted, in accordance with the Fire Safety Plan, at least once every three months for buildings during the first two years. Thereafter, fire drills shall be conducted at least once every six months.

**D-3.2** All occupants of the building shall participate in the fire drill. However, occupants of the building, other than building service employees, are not required to leave the floor or use the exits during the drill.

**D-3.3** A written record of such drills shall be kept on the premises for a three years period and shall be readily available for fire brigade inspection.

#### D-4 SIGNS AND PLANS

##### D-4.1 Signs at Lift Landings

A sign shall be posted and maintained in a conspicuous place on every floor at or near the lift landing in accordance with the requirements, indicating that in case of fire, occupants shall use the stairs unless instructed otherwise. The sign shall contain a diagram showing the location of the stairways except that such diagram may be omitted, provided signs containing such diagram are posted in conspicuous places on the respective floor.

A sign shall read 'IN CASE OF FIRE, USE STAIRS UNLESS INSTRUCTED OTHERWISE'. The lettering shall be at least 12.5 mm block letters in red and white

background. Such lettering shall be properly spaced to provide good legibility. The sign shall be at least 250 mm × 300 mm, where the diagram is also incorporated in it and 62.5 mm × 250 mm where the diagram is omitted. In the latter case, the diagram sign shall be at least 200 mm × 300 mm. The sign shall be located directly above the call-button and squarely attached to the wall or partition. The top of the sign shall not be above 2 m from the floor level.

##### D-4.2 Floor Numbering Signs

A sign shall be posted and maintained within each stair enclosure on every floor, indicating the number of the floor, in accordance with the requirements given below.

The numerals shall be of bold type and at least 75 mm high. The numerals and background shall be in contrasting colours. The sign shall be securely attached to the stair side of the door.

##### D-4.3 Stair and Lifts Identification Signs

Each stairway and each lift bank shall be identified by an alphabetical letter. A sign indicating the letter of identification shall be posted and maintained at each lift landing and on the side of the stairway door from which egress is to be made, in accordance with the requirements given in 4.4.2.4.3.2(h)(9).

##### D-4.4 Stair Re-entry Signs

A sign shall be posted and maintained on each floor within each stairway and on the occupancy side of the stairway where required, indicating whether re-entry is provided into the building and the floor where such re-entry is provided, in accordance with the requirements given below.

The lettering and numerals of the signs shall be at least 12.5 mm high of bold type. The lettering and background shall be of contrasting colours and the signs shall be securely attached approximately 1.5 m above the floor level.

#### D-5 FIRE SAFETY PLAN

**D-5.1** A format for the Fire Safety Plan shall be as given in **D-9.10**.

**D-5.2** The applicable parts of the approved Fire Safety Plan shall be distributed to all tenants of the building by the building management when the Fire Safety Plan has been approved by the Fire Authority.

**D-5.3** The applicable parts of the approved Fire Safety Plan shall then be distributed by the tenants to all their employees and by the building management to all their building employees.

**D-5.4** In the event there are changes from conditions existing at the time the Fire Safety Plan for the building was approved, and the changes are such so as to require amending the Fire Safety Plan, within 30 days after such changes, an amended Fire Safety Plan shall be submitted to the fire brigade for approval.

**D-6 FIRE COMMAND CENTRE**

A Fire Command Centre shall be established in the building (see 3.4.12).

**D-7 COMMUNICATIONS AND FIRE ALARM**

A means of communication and fire alarm for use during fire emergencies shall be provided and maintained by the owner or person in charge of the building.

**D-8 FIRE SAFETY PLAN FORMAT**

**D-8.1 Building Address**

Street and Pin Code Number.....

Telephone Number.....

**D-8.2 Purpose and Objective**

**D-8.2.1 Purpose**

To establish method of systematic, safe and orderly evacuation of an area or building by and of its occupants in case of fire or other emergency, in the least possible time, to a safe area by the nearest safe means of egress; also the use of such available fire appliances (including sounding of alarms) as may have been provided for controlling or extinguishing fire and safeguarding of human life.

**D-8.2.2 Objective**

To provide proper education as a part of continuing employee indoctrination and through a continuing written programme for all occupants, to ensure prompt reporting of fire, the response of fire alarms as designated, and the immediate initiation of fire safety procedures to safeguard life and contain fire until the arrival of the fire brigade.

**D-8.3 Fire Safety Director**

- a) Name
- b) Regularly assigned employment — Title
- c) Regularly assigned location
- d) How is he notified when at regular location?
- e) How is he notified when not at regular location?

- f) Normal working hours
- g) Duties of Fire Safety Director (see D-9.1)

**D-8.4 Deputy Fire Safety Director**

- a) Name
- b) Regularly assigned employment — Title
- c) Regularly assigned location
- d) How is he notified when at regular location?
- e) How is he notified when not at regular location?
- f) Normal working hours
- g) Duties of Deputy Fire Safety Director (see D-9.2)

**D-8.5 Fire Wardens and Deputy Fire Wardens**

- a) Are their names on organization charts for each floor and/or tenancy?
- b) Submit typical completed organization chart for Fire Drill and Evacuation Assignment.
- c) Duties of Fire Wardens and Deputy Fire Wardens (see D-9.3).

**D-8.6 Building Evacuation Supervisor**

- a) Name
- b) Regularly assigned employment — Title
- c) Regularly assigned location
- d) How is he notified when at regular location ?
- e) How is he notified when not at regular location?
- f) Normal working hours
- g) Duties of Building Evacuation Supervisor (see D-9.4).

**D-8.7 Fire Party**

- a) Submit a completed organization chart for Fire Parties naming person in charge, and his title in the building.
- b) Indicate standards of selection from building employees based on background and availability.
- c) How are they notified?
- d) How are they notified when they are not at their regular locations?
- e) Means of responding
- f) Duties of each member of Fire Party (see D-9.5).

**D-8.8 Occupants Instructions**

Distribution of instructions of all tenants, tenants' employees and building employees (see D-9.6).

**D-8.9 Evacuation Drills**

- a) Frequency of drills
- b) How conducted?
- c) Participation? Who participated? How?
- d) Controls and supervision
- e) Recording of details of drills

**D-8.10 Fire Command Station**

- a) Location
- b) Requirements:
  - 1) Adequate illumination
  - 2) Adequate communication to mechanical equipment room and lifts control room on each floor
  - 3) Copy of Fire Safety Plan
  - 4) Copy of Building Information Form
  - 5) Representative floor plans showing location of signs, floor remote station, communications, etc

**D-8.11 Signs**

- a) Signs at lifts landings, Floor diagrams
- b) Floor numbering
- c) Stairway identification
- d) Lifts identification
- e) Stair re-entry

**D-8.12 Fire Prevention and Fire Protection Programme**

*See D-9.7.*

**D-8.13 Building Information Form**

*see D-9.8*

**D-8.14 Representative Floor Plan**

*See D-9.9*

**D-8.15 Fire Safety Plan Prepared by**

*See D-9.10*

- a) Date when prepared, and
- b) Date when revised

**D-9 DUTIES**

**D-9.1 Fire Safety Director’s Duties**

**D-9.1.1** Be familiar with the written Fire Safety Plan providing for fire drill and evacuation procedure in accordance with orders on the subject.

**D-9.1.2** Select qualified building service employees for a Fire Party and organize, train and supervise such fire brigade.

**D-9.1.3** Be responsible for the availability and state of readiness of the Fire Party.

**D-9.1.4** Conduct fire and evacuation drills.

**D-9.1.5** Be responsible for the designation and training of a Fire Warden for each floor, and sufficient Deputy Fire Wardens for each tenancy in accordance with orders on the subject.

**D-9.1.6** Be responsible for a daily check for the availability of the Fire Wardens, and see that up-to-date organization charts are posted.

NOTE — If the number of Fire Wardens and Deputy Fire Wardens in the building is such that it is impractical to individually contact each one daily, a suggested method to satisfy the requirements is to make provisions for the Fire Warden, or a Deputy Fire Warden in the absence of the Fire Warden, to notify the Fire Safety Director when the Fire Warden or required number of Deputy Fire Wardens are not available. In order to determine the compliance by the Fire Warden and Deputy Fire Wardens, when this method is used, the Fire Safety Director shall make a spot check of several different floors each day.

**D-9.1.7** Notify the owner or some other person having charge of the building when any designated individual is neglecting his responsibilities contained in Fire Safety Plan. The owner or the other person in-charge of the building shall bring the matter to the attention of the firm employing the individual. If the firm fails to correct the condition, the fire department shall be notified by the owner/person in charge of the building.

**D-9.1.8** In the event of fire, shall report to the fire command centre to supervise, provide for and coordinate with respect to the following:

- a) Ensuring that the fire department has been notified of any fire or fire alarm.
- b) Manning of the fire command station.
- c) Direction of evacuating procedures as provided in the Fire Safety Plan.
- d) Report on conditions on fire floor for information of fire department on their arrival.
- e) Advising the fire department officer in-charge in the operation of the Fire Command Centre.

**D-9.1.9** Be responsible for the training and activities of the Building Evacuation Supervisor.

**D-9.2 Deputy Fire Safety Director’s Duties**

- a) He is the subordinate to the Fire Safety Director.
- b) He shall perform duties of Fire Safety Director in his absence.

**D-9.3 Fire Warden’s and Deputy Fire Warden’s Duties**

The tenant or tenants of each floor shall, upon request of the owner or person in charge of buildings, make responsible and dependable employees available for

designation by the Fire Safety Director as Fire Warden and Deputy Fire Wardens.

**D-9.3.1** Each floor of a building shall be under the direction of a designated Fire Warden for the evacuation of occupants in the event of fire. He shall be assisted in his duties by the Deputy Fire Wardens. A Deputy Fire Warden shall be provided for each tenancy. When the floor area of a tenancy exceeds 700 m<sup>2</sup> of occupiable space, a Deputy Fire Warden shall be assigned for each 700 m<sup>2</sup> or part thereof.

**D-9.3.2** Each Fire Warden and Deputy Fire Warden shall be familiar with the fire safety plan, the location of exits and the location and operation of any available fire alarm system.

**D-9.3.3** In the event of fire, or fire alarm the Fire Warden shall ascertain the location of the fire, and direct evacuation of the floor in accordance with directions received and the following guidelines:

- a) The most critical areas for immediate evacuation are the fire floor and floors immediately above. Evacuation from the other floors shall be instituted when instructions from the fire Command Centre or conditions indicate such action. Evacuation shall be *via* uncontaminated stairs. The Fire Warden shall try to avoid stairs being used by the Fire department. If this is not possible, he shall try to attract the attention of the Fire department personnel before such personnel open the door to the fire floor.
- b) Evacuation to two or more levels below the fire floor is generally adequate. He shall keep the fire command station informed regarding his location.
- c) Fire Wardens and their deputies shall see that all occupants are notified of the fire, and that they proceed immediately to execute the Fire Safety Plan.
- d) The Fire Warden on the fire floor shall, as soon as practicable, notify the Fire Command Centre of the particulars.
- e) Fire Wardens on floors above the fire shall, after executing the Fire Safety Plan, notify the Fire command station of the means being used for evacuation and any other particulars.
- f) In the event that stairways serving fire floor and/or floors above are unusable due to contamination or cut-off by fire and/or smoke or that several floors above fire involve large numbers of occupants who must be evacuated, consideration may be given to using lifts in accordance with the following:
  - 1) If the lifts servicing his floor also service the fire floor, they shall not be used. However, lifts may be used if there is

more than one bank of lifts, and he is informed from the Fire Command Centre that one bank is unaffected by the fire.

- 2) If lifts do not service the fire floor and their shafts have no openings on the fire floor, they may be used, unless directed otherwise.
- 3) Lifts manned by trained building personnel or firemen may also be used.
- 4) In the absence of a serviceable lift, the Fire Warden shall select the safest stairway to use for evacuation on the basis of the location of the fire and any information received from the Fire Command Centre. The Fire Warden shall check the environment in the stairs prior to entry for evacuation. If it is affected by smoke, alternative stair shall be selected, and the Fire Command Centre notified.
- 5) The Fire Warden shall keep the Fire Command Centre informed of the means being employed for evacuation by the occupants of his floor.
  - g) Ensure that an alarm has been transmitted.

**D-9.3.4** *Organization Chart for Fire Drill and Evacuation Assignment*

A chart designating employees and their assignments shall be prepared and posted in a conspicuous place in each tenancy and on each floor of a tenancy that occupies more than one floor and a copy shall be in the possession of the Fire Safety Director.

**D-9.3.5** Keep available an updated listing of all personnel with physical disabilities who cannot use stairs unaided. Make arrangements to have these occupants assisted in moving down the stairs to two or more levels below fire floor. If it is necessary to move such occupants to a still lower level during the fire, move them down the stairs to the uppermost floor served by an uninvolved lifts bank and then evacuate them to the street floor by lifts. Where assistance is required for such evacuation, notify Fire Safety Director.

**D-9.3.6** Provide for Fire Warden identification during fire drills and fires, such as using armband, etc.

**D-9.3.7** Ensure that all persons on the floor are notified of fire and all are evacuated to safe areas. A search must be conducted in the lavatories to ensure all are out. Personnel assigned as searchers can promptly and efficiently perform this duty.

**D-9.3.8** Check availability of applicable personnel on organization chart and provide for a substitute when the position on a chart is not covered.

**D-9.3.9** After evacuation, perform a head count to ensure that all regular occupants known to have occupied the floor have been evacuated.

**D-9.3.10** When alarm is received, the Fire Warden shall remain at a selected position in the vicinity of the communication station on the floor, in order to maintain communication with the Fire Command Centre and to receive and give instructions.

**D-9.4 Building Evacuation Supervisor’s Duties**

A Building Evacuation Supervisor is required at all times other than normal working or business hours when there are occupants in the building and there is no Fire Safety Director on duty in the building.

**D-9.4.1** He should be capable of directing the evacuation of the occupants as provided by the Fire Safety Plan.

**D-9.4.2** During fire emergencies, the primary responsibility of the Building Evacuation Supervisor shall be to man the Fire Command Centre, and the direction and execution of the evacuation as provided in the Fire Safety Plan. The Building Evacuation Supervisor’s training and related activities shall be under the direction of the Fire Safety Director in accordance with these rules, and the Fire Safety Plan. Such activities shall be subject to fire department control.

**D-9.5 Fire Party Duties**

On receipt of an alarm for fire, the Fire Party shall,

- a) report to the floor below the fire to assist in evacuation and provide information to the Fire Command Centre.
- b) after evacuations of fire floor, endeavour to control spread of fire by closing doors, etc.
- c) attempt to control the fire until arrival of the fire department, if the fire is small and conditions do not pose a personal threat.
- d) leave one member on the floor below the fire to direct the fire department to the fire location and to inform them of conditions.
- e) on arrival of the fire department, the Fire Party shall report to the Fire Command Centre for additional instructions.
- f) have a member designated as runner, who shall know the location of the nearest telephone, and be instructed in its use. Such member shall immediately upon receipt of information that there is a fire or evidence of fire, go to the telephone, transmit an alarm and await the arrival of the fire department and direct them to the location of the fire.

NOTE — A chart designating employees and their assignments shall be prepared.

**D-9.6 Occupant’s Instructions**

- a) The applicable parts of the approved Fire Safety Plan shall be distributed to all tenants of the building by the building management when the Fire Safety Plan has been approved by the Fire Commissioner.
- b) The applicable parts of the approved Fire Safety Plan shall then be distributed by the tenants to all their employees and by the building management to all their building employees.
- c) All occupants of the building shall participate and cooperate in carrying out the provisions of the Fire Safety Plan.

**D-9.7 Fire Prevention and Fire Protection Programme**

- a) A plan for periodic formal inspections of each floor area, including exit facilities, fire extinguishers and housekeeping shall be developed. A copy of such plan be submitted.
- b) Provision shall be made for the monthly testing of communication and alarm systems.

**D-9.8 Building Information Form**

It shall include the following information:

- a) Building address.....Pin Code.....
- b) Owner or person in-charge of building — Name, Address and Telephone Number.
- c) Fire Safety Director and Deputy Fire Safety Director’s Name and Telephone Number.
- d) Certificate of occupancy. Location where posted, or duplicate attached.
- e) Height, area, class of construction.
- f) Number type and location of fire stairs and/or firefighting shaft.
- g) Number, type and location of horizontal exits or other areas of refuge.
- h) Number, type, location and operation of lifts and escalators.
- j) Interior fire alarms, or alarms to central stations.
- k) Communications systems and/or walkie-talkie, telephones, etc.
- m) Standpipe system; size and location of risers, gravity or pressure tank, fire pump, location of siamese connections, name of employee with certificate of qualification and number of certificate.

- n) Sprinkler system; name of employee with Certificate of Fitness and certificate number. Primary and secondary water supply, fire pump and areas protected.
- p) Special extinguishing system, if any, components and operation.
- q) Average number of persons normally employed in building (Daytime and night time).
- r) Average number of persons with disabilities in building and their location (Daytime and night time).
- s) Number of persons normally visiting the building (Daytime and night time).
- t) Service equipment such as:
  - 1) Electric power, primary, auxiliary;
  - 2) Lighting, normal, emergency, type and location;
  - 3) Heating, type, fuel, location of heating unit;
  - 4) *Ventilation* — with fixed windows, emergency means of exhausting heat and smoke;
  - 5) *Air conditioning systems* — Brief description of the system, including ducts and floors serviced;
  - 6) Refuse storage and disposal;
  - 7) Firefighting equipment and appliances, other than standpipe and sprinkler system; and
  - 8) Other pertinent building equipment.
- u) Alternations and repair operations, if any, and the protective and preventive measures necessary to safeguard such operations with attention to torch operations.
- w) Storage and use of flammable solids, liquids and/or gases.
- y) Special occupancies in the building and the proper protection and maintenance thereof. Places of public assembly, studios, and theatrical occupancies.

**D-9.9 Representative Floor Plan**

A floor plan, representative of the majority or the floor designs of the entire building, shall be at the Command Post, in the main lobby, under the authority of the Fire Safety Director. One copy of a representative floor plan shall be submitted to the Fire department with the Fire Safety Plan.

**D-9.10 Fire Safety Plan**

In planning, evaluate the individual floor layouts, the population of floors, the number and kinds of exits, the zoning of the floor by area and occupants. Determine the movement of traffic by the most expeditious route to an appropriate exit and alternative

route for each zone, since under fire conditions one or more exits may not be usable. This format should be used in the preparation of the Fire Safety Plan. Nothing contained in this Fire Safety Plan format shall be construed as all inclusive. All rules and other requirements shall be fully complied with.

**D-9.11 Personal Fire Instruction Card**

All the occupants of the building shall be given a Personal Fire Instruction Card giving the details of the floor plan and exit routes along with the instruction to be followed in the event of fire. A typical Personal Fire Instruction Card shall be as follows:

PERSONAL FIRE INSTRUCTION CARD

SEAL

NAME OF THE ORGANIZATION

ADDRESS OF THE ORGANIZATION

NAME: \_\_\_\_\_

DESIGNATION: \_\_\_\_\_

FLOOR NO. : \_\_\_\_\_

DATE : \_\_\_\_\_

FIRE WARDEN

INSTRUCTIONS

FOR YOUR OWN SAFETY YOU SHOULD KNOW

1. Two push button fire alarm boxes are provided per floor. You should read the operating instructions.
2. You should read the operating instructions on the body of the fire extinguishers provided on your floor.
3. The nearest exit from your table.
4. Your assembly point on ground floor (check with your Fire/Deputy Fire Warden).
5. FOR YOUR OWN PROTECTION YOU SHOULD REPORT TO YOUR FIRE/ DEPUTY FIRE WARDEN
  - a) If any exit door/route is obstructed by loose materials, goods, boxes, etc.
  - b) If any staircase door, lift lobby door does not close automatically, or does not close completely.
  - c) If any push button fire alarm point, or fire extinguisher is obstructed, damaged or apparently out of order.

IF YOU DISCOVER A FIRE

- 1) Break the glass of the nearest push button fire alarm and push the button.
- 2) Attack the fire with extinguishers provided on your floor. Take guidance from your Wardens.
- 3) Evacuate, if your Warden asks you to do so.

IF YOU HEAR EVACUATION INSTRUCTIONS

- 1) Leave the floor immediately by the nearest staircase as directed.

- 2) Report to your Warden, at your predetermined assembly point outside the building.
- 3) Do not try to use lifts.
- 4) Do not go to cloakroom.
- 5) Do not run or shout.
- 6) Do not stop to collect personal belongings.
- 7) Keep the lift lobby and staircase doors shut.

YOUR ASSEMBLY POINT IS .....