

MUNICIPAL CORPORATION OF GREATER MUMBAI  
MUMBAI FIRE BRIGADE

BRIGADE ROUTINE CIRCULAR NO. 41 DATED 28/08/2019

Sub.: Open Space requirement for the highrise building as per  
DCPR 2034 regulation.

Ref.: No. BRC No.37 dated 06/08/2019

In continuation to BRC No. 37 dated 06/08/2019 regarding subject  
matter. Following additional documents are enclosed here for information  
and necessary action please.

- 1) Draft No. FBH/1431 dated 25/01/208 along with Hon'ble M.C.'s order  
under No. MGC/A/5801 dated 31/01/2018.
- 2) Annexure E & F. G
- 3) CFO's Draft.

Encl.: as above.

Copy to:

- 1) All Deputy Chief Fire Officer
- 2) All Divisional Fire Officer
- 3) All Asst. Divisional Fire Officer
- 4) All Oi/Cs (Sr. S.O. / S.O.)
- 5) A.O.
- 6) All Head Clerk

  
Chief Fire Officer  
Mumbai Fire Brigade

  
Chief Fire Officer  
Mumbai Fire Brigade

C-21

MUNICIPAL CORPORATION OF GREATER MUMBAI  
MUMBAI FIRE BRIGADE

Office of the Chief Fire Officer, Byculla Command Centre, Bapurao Jagtap Marg, Byculla (W),  
Mumbai-400 008, Tele.No.23001393, Fax No. 23001392.

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No: FB/H/1431  
Date: 25.01.18

Sub.: Provision of "Firemen Evacuation Lift" in Buildings having height  
more than 70 meters.

As directed by Hon. M.C. under No. MGC/A/5801 dated 05/12/2017. The meeting was conducted in Chief Fire Officer Office along with representatives of MCHI & PEATA on 11/12/2017 at 1500 hrs.

The Fire Safety requirements for "Firemen Evacuation Lift" were discussed in detail & considering suggestions of MCHI & PEATA representatives the newly formulated fire safety requirements for provision of "Firemen Evacuation Lift" in newly proposed high-rise building having height more than 70 mtrs. are as follows:

- A) All high rise buildings having height more than 70 M will have at least one lift i.e. "Firemen Evacuation Lift" other than regular passenger lifts and fire lift/s. The requirement of "Firemen Evacuation Lift" shall be decided on the basis of travel distance in line with requirement of number of staircases as per prevailing D.C.R. / N.B.C.
- B) Capacity of "Fireman Evacuation Lift" shall be of 845 to 1000 kg / 8-15 persons and it shall be terminated on ground floor or podium where facility of the assembly of evacuation available in case of emergency and shall not communicate to the Basement.
- C) "Fire Evacuation Lift" shall be housed in a separate core having smoke check lobby with opening on each floor shall be attached with one of the enclosed staircase and required access to the staircase on each landing through fire resistance door of 2 hrs. rating. Alternative Firemen evacuation lift shall be provided on every mid-landing of one of the enclosed staircase of the building and the said staircase shall be protected with smoke check lobby by means of Fire resistance door / Fire curtain / Fire resistance Glass having 2 hrs fire resistance.
- D) The "Fire Evacuation Lift" along with the enclosed staircase shall be marked as "Fire Escape Lift / Staircase" at each landing door terminating to the lobby.

E) All the requirements pertaining to civil and electrical aspects mentioned in National Building Code for "Fire Lift" shall be applicable for "Firemen Evacuation Lift". In addition to that following fire safety measures shall be incorporated.

- a) "Firemen Evacuation Lift" car doors and Landing doors shall have at least two hours fire resistance and shall have provision of Glass vision for both doors of minimum 1 feet x 2 feet and the glass should also have two hours fire resistance.
- b) "Firemen Evacuation Lift" car shall have emergency operation switch which will be only operated by Fire Brigade personnel. On actuation of this switch, the "Firemen Evacuation Lift" will only operate from inside and the lift car door shall not open automatically but shall have control from inside to open it. The emergency operation switch shall also be provided in ground floor lobby.
- c) The backup electric supply shall be provided with UPS for at least 30 min and it should be online supported by another regular and alternate emergency supply.
- d) Two way communication systems shall be provided in "Firemen Evacuation Lift" car as well as at every landing level including ground floor lobby.
- e) All the electric cables shall be fire retardant with low smoke hazard complying relevant BIS standards.
- f) "Firemen Evacuation Lift" car shall be made of non-combustible material including interior having minimum 2 hrs. fire resistance.
- g) Lift maintenance shall be carried out only by Manufacturing / Installation Company.

In view of the above Hon. M.C.'s approval is requested to allow provision of "Fire Evacuation Lift" in proposed buildings more than 70 mtrs.

Submitted please.

In F.B

(P.S. Rahangdale)  
Chief Fire Officer

(Ajoy Mehta)  
Hon. M.C.)  
Sir,

Approved as proposed. However to  
prevent monopoly of same manufactures and  
also to allow other better technologies  
the say: "Fireman evacuation lift or  
such other similar appliances".

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|----------------------|---------------|-----|-----|
| बुधबुधई महानगरपालिका |               |     |     |
| सायबुवतांचे कार्यालय |               |     |     |
| 25 JAN 2018          |               |     |     |
| संग                  | ११.           | १२. | १३. |
|                      | १४.           | १५. | १६. |
| संख्यांक             | M/G 2/A/S 801 |     |     |

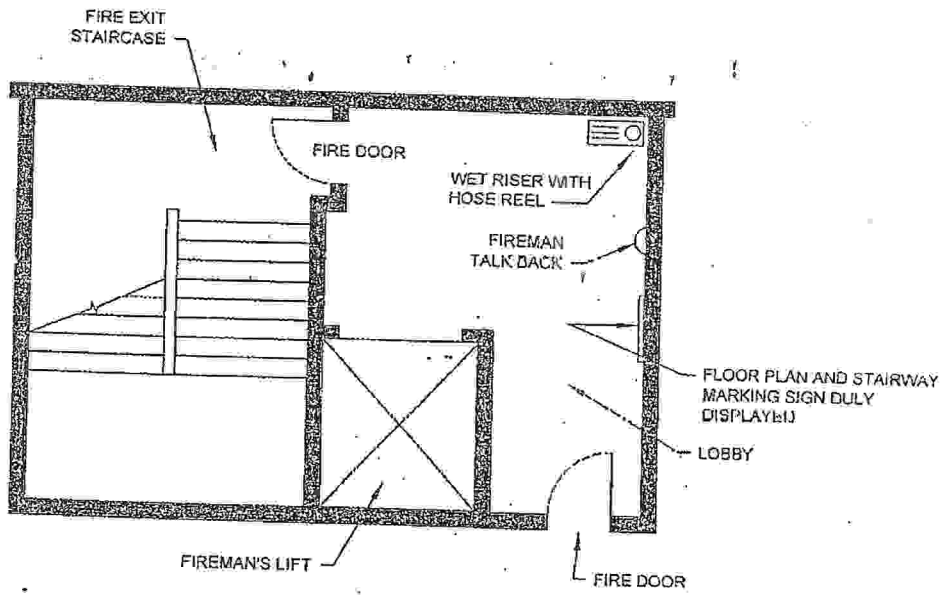
31/01/2018

Ajoy Mehta  
Municipal Commissioner

- 2.17 Exit Access — That portion of a means of egress that leads to an exit (for example, doorways, staircase lobby, ramps, Veranda, corridor or passageway leading to an exit) (see Fig. 1).
- 2.18 Exit Access Corridor — A corridor in exit access which may not necessarily have the requirement of exits being met.
- 2.19 Exit Discharge — The component of a means of egress between the termination of an exit and a public way (see Fig. 1).
- 2.20 Fire Barrier (or Fire Resisting Barrier) — A fire barrier is a vertically or horizontally aligned member such as a wall or a fire curtain, or a floor. These may be with discontinuities created by openings with a specified fire resistance rating, where such members are designed and constructed with a specified fire resistance rating to limit the spread of fire that also restricts the movement of smoke.
- 2.21 Fire Compartment — A space within a building that is enclosed by fire barrier or fire resistant walls on all sides, including the top and bottom.
- 2.22 Fire Door and Fire Door Assembly — Any combination of fire door, frame, hardware and other accessories that together provide a specific fire resistant rating to the opening in terms of its stability, integrity and insulation properties, when installed in the openings in fire separation walls. Fire door is a component of fire door assembly.

- NOTES
- 1 Wherever reference has been made to fire door or fire check door in this Part, the same shall be construed as fire door assembly.
  - 2 Fire doors in exits shall have fire rating as required in this Part to meet the requirement of integrity and stability; and the insulation criteria shall be 20 min.
  - 3 Fire doors in exits shall be provided with intumescent seal.
  - 4 Fire doors in exits shall not be allowed to be on hold open position and kept closed and to close by 'door closure — spring mechanism'.
  - 5 Fire curtains shall not be allowed as fire exits. If so provided for compartmentation, independent fire door shall be provided meeting the requirement for fire door in exits as above (of the width as required) within the prescribed travel distance requirement.

- 2.23 Fire Exit — A way out leading from exit access with or without panic bar provided on the door.
- 2.24 Firefighting Shaft (Fire Tower) — An enclosed shaft having protected area of 120 min fire resistance rating comprising protected lobby, staircase and fireman's lift, connected directly to exit discharge or through exit passageway with 120 min fire resistant wall at the level of exit discharge to exit discharge. These shall also serve the purpose of exit requirement/strategy for the occupants. The respective floors shall be approachable from fire-fighting shaft enabling the fire fighters to access the floor and also enabling the fire fighters to assist in evacuation through fireman's lift. The firefighting shaft shall be equipped with 120 min fire doors. The firefighting shaft shall be equipped with firemen talk back, wet riser and landing valve in its lobby, to fight fire by fire fighters (see Fig. 2 for a typical firefighting shaft).



(LAYOUT TO BE PLANNED AS PER PROJECT BASIS MEETING ALL THE REQUIRED DETAILS)

- NOTES
- 1 Where such lobbies and staircase in the firefighting shaft are naturally ventilated/cross-ventilated, the shaft may not be enclosed and fire door need not be provided
  - 2 For all enclosed firefighting shaft, the shaft's lobby should have floor plan duly displayed for the information of fire fighters.

FIG. 2 TYPICAL FIRE FIGHTING SHAFT

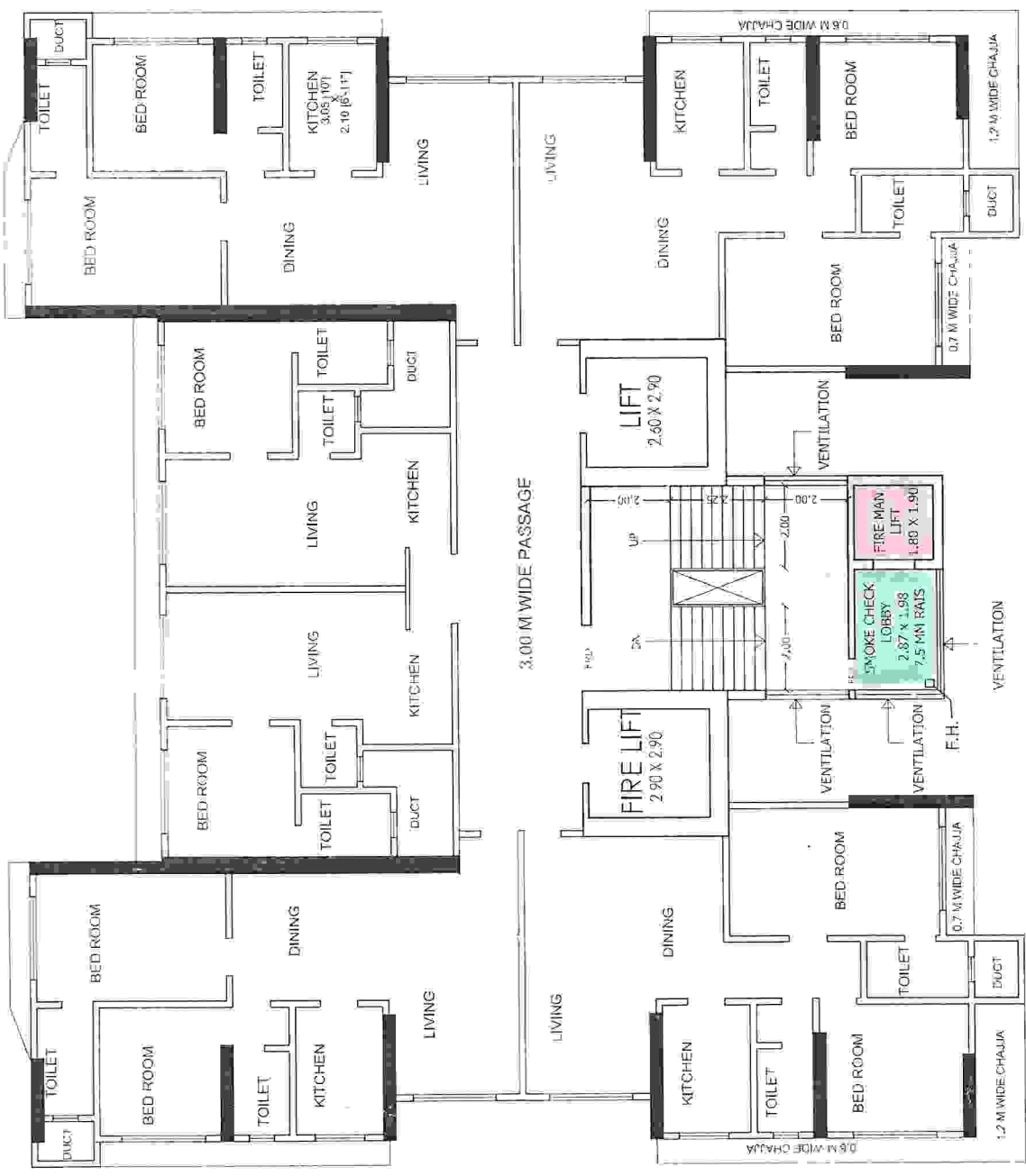


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# FIRE TOWER WITH FIREMAN LIFT AT MIDLANDING

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## AT MIDLANDING



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12/19

DRAFT FOR APPROVAL  
MUNICIPAL CORPORATION OF GREATER MUMBAI  
MUMBAI FIRE BRIGADE

No. :

Date :

Sub.: Open space requirement for the high-rise buildings as per DCPR 2034 regulations.

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DCPR 2034 regulations part IV section 47, (A) & (B) are in the reference with open space requirement and concession therein which is as follows:

(A) For proposal under regulations 33 (5), 33 (6), 33 (7), 33 (7)(A), 33(9), 33(9) (A), 33(9)(B), (10), 33 (10)(A), 33(11), 33(15), 33(20)(A)

a) In case of rehabilitation /composite buildings having height more than 32 m up to 70 m, at least one side other than road side, shall have clear open space of 6 m at ground level, accessible from road side.

Provided, if the building abuts on two roads having width of 6.0 m, the clear space of 9m shall be available including abutting road in front of the building and the 6m roads shall be connected to the road of having width of at least 9m.

However, if podium is proposed it shall not extend beyond 6m from building line so as to have clear open space of 6 m at ground level beyond podium accessible for fire appliances.

No ramps for the podium shall be provided in these side open spaces.

(B) For the proposals, other than (A) above

a) Buildings having height more than 32 m upto 70m, at least one side, accessible from road side, shall have clear open space of 9 m of ground level.

Provided, if the building abuts another road of 6 m or more and clear space of 9m at ground level is available including abutting road or building abuts another road of 9 m then condition shall not be insisted upon.

However, if the podium is proposed it shall not extend beyond 6m from building line and shall have clear open space of 9m at ground level OR if the podium is proposed it shall not extend beyond 6 m from building line and shall have clear open space of 6m beyond podium & 9m at ground level with clear height of 4.5 m from ground to podium (below soffit of the beam) for accessibility of fire appliances.

No ramps for the podium shall be provided in these side open spaces.

The open space requirement stipulated under 47 A (a) is 6 mtrs. for the building height more than 32 mtrs. up to 70 mtrs.

However, Regulation (B) proposal other than (A) above wherein building having height more than 32 mtrs. up to 70 mtrs. requirement of open space is 9 mtrs. at ground level.

- Taking in to consideration Time Vs Temp basic fire configuration graph in case of fire, for effective fire fighting and self rescue, mechanism the building itself shall provide with fire safety mechanism for self rescue by inmates in case of emergency.
- All structural fire fighting and rescue operations in case of high rise buildings are very effectively and mostly being carried out within the building using Fire escape staircase and fire safety installation of the building. The building which adheres to recommendations given by fire brigade and carried out regular maintenance of fire safety installations, in case of any fire emergencies, the fire fighting installations are used by inmates or auto activated installation or use by the fire brigade



personnel are useful to contain fire and there by resulting in efficient fire & rescue operations.

- The open space requirement for the building in comparison to the height in based on resource requirement and maneuverability of fire appliances in case of emergency.
- The rehab buildings and SRA buildings which constitute 70% to 80% in such kind of buildings deployment of specialized ladder if required (ALP, TTL) minimum 32 mtrs. to 90 mtrs. are required to be pitched in case of emergency for the fire fighting and rescue operations. The highest special appliances i.e. of 90 mtrs, available with Mumbai Fire Brigade can effectively operate upto 70 mtrs to 80 mtrs. height depending upon the open space, angel of elevation for the ladder and point load 10 kg/cm<sup>2</sup> capacity of the ground / slab where jacks are needed be stabilized. Because of non- compliance as stated above, to prepare for any emergency Mumbai Fire Brigade has procured special appliances.
- The open space requirement for the jacking and stabilizing special appliances (ALP, TTL) as stipulated above varies with the height of the building.
- The open space also is required for protection from radiation of heat from the adjoining premises in case of emergency.
- In case of serious fire emergency the building due to the non maintenance of fire fighting requirement (Fire Fighting Pump, Riser System, Sprinkler, Detector etc.) huge resources required to be deployed by the fire brigade (BA Sets, Intermediate pumps and specialized vehicles depends upon circumstances) which is very difficult and time consuming (Annexed herewith )
- For the building having height more than 70 mtrs, in DCR 48 (9) (B) Fire Tower concept is already being implemented, (Annexed as ). Also the specification for the fireman lift within fire fighting shaft was

approved of Hon. M.C. under No.MGC/A/5801 dated 31/01/2018, (Annexed as ). And also as per the NBC Part IV 2.24 to deploy the resources incase of emergency fire shaft requirements is being stipulated for fire fighting and rescue operations in buildings having height more than 15 mtrs.(Annexed as ).

Taking into the consideration of the heights of the buildings, the open space requirements, mobilizing of resources required in case of emergency, maneuverability of fire appliances following guidelines are proposed as regards to Regulation47, Fire Protection section B:

**(B) For the proposals, other than (A) above**

- (a) The building having height more than 32 mtrs up to 45 mtrs, above 45 mtrs upto 58 mtrs and above 58 mtrs up to 70 mtrs, atleast one side accessible road side shall have clear open space of 6.0 mtrs, 7.50 mtrs & 9.0 mtrs respectively at the ground level.

However, if the podium is proposed it shall not extend beyond 6 mtrs from building line and shall have clear open space for buildings more than 32 mtrs upto 45 mtrs, above 45 mtrs upto 58 mtrs and above 58 mtr upto 70 mtrs, at least one side accessible road side shall have clear open space of 6.0 mtrs,7.50 mtrs and 9.0 mtrs respectively at the ground level for accessibility of fire appliances with clear height of 4.50 mtrs from ground to podium ( below soffit to the beam) for accessibility of appliances.

Provided, if the building abuts another road of 6 mtrs or more and clear space of 9 mtrs at ground level is available including abutting road or building abuts another road of 9 mtrs then condition shall not be insisted upon.

No ramps for the podium shall be provided in these side open spaces.

**OR**

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c/33

The building height more than 32 mtrs up to 70 mtrs, if one of the lift is provided within the external staircase at landing/mid-landing level as per Regulation 48 (9) (b) of DCPR 2034 shall have clear open space of 6.0 mtrs at ground level. (Illustrated diagram Annexed as). In such case second lift will not be required as fire lift.

No ramps for the podium shall be provided in these side open spaces.

The above amendments are forwarded for taking in to consideration to-

- a) That building it-self should have the facility for fire suppression as well as safe evacuation, for the safe sustainable development of the city.
- b) For deployment of resources by the fire personnel in case of emergency if needed, for effective fire - fighting and rescue operations.

Submitted for consideration please.

(Ajoy Mehta)  
Hon M.C. sir,

*I see if this relaxation is appropriate for fire safety & CE.D.P. consistent with DCPR-34*

  
(P.S. Rahangdale)  
Chief Fire Officer

*Prakash*  
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**Municipal Commissioner**

*CE. (D.P.)*