

**GOVERNMENT OF WEST BENGAL  
OFFICE OF THE DIRECTOR GENERAL  
WEST BENGAL FIRE & EMERGENCY SERVICES  
13-D Mirza Ghalib Street, Kolkata- 700 016**

Memo No : IND/WB/FES/20172018/1549

DATE: 29/11/2017

**From :**

**The Director**

**Fire Prevention Wing,**

**West Bengal Fire & Emergency Services.**

**To : MAUMITA RAY**

**Sub : Fire Safety Recommendation for Proposed Construction of: B + G + 10 Storied Building Under Group Mercantile at the Premises No.- HOLDING NO. - 10,11,14, MOBALLA KALNA ROAD, WARD NO - 17**

This is in reference to your Application No. IND/WB/FES/20172018/1549, dated 29/11/2017, regarding Fire Safety Measure for Proposed construction of B + G + 10 storied building under group Mercantile at the premises no.- HOLDING NO. - 10,11,14, MOBALLA KALNA ROAD, WARD NO - 17.

The plan submitted by you was scrutinized and marked as found necessary from Fire Safety point of view. In returning one set of plan with recommendation, this is issuing Fire Safety Recommendation in favour of the aforesaid building subject to the compliance of the following fire safety measure.

**Recommendation:**

**1. CONSTRUCTION:**

1. The whole construction of the proposed building shall be carried out as per approved plan drawings conforming the relevant building rules of local Municipal Body .

2. If the floor area remains exceed 750 m<sup>2</sup> shall be suitable compartmented by separation walls up to ceiling level having at least Two hours Fire resisting capacity.

3.The interior finish decoration of the building shall be made of low flame spread materials conforming to I.S. specifications.

4.Provision of ventilation at the crown of the central core-duct of the building shall be provided.

5.Roof is used as a refugee area in case of an emergency and it should be clear open to sky for all time. No permanent or temporary structure will be allowed on the roof.

6.Arrangements shall have to be made for sealing all the vertical & horizontal ducts by the materials of adequate Fire resisting capacity.

## 2. OPEN SPACE & APPROACH:

1.The approach road shall be sufficiently strong to withstand the load of Fire Engine weighting up to 45 M.T.

2.The width and height of the access gates into the premises shall not be less than 4.5 and 5 M respecting abutting the road.

## 3. REFUGE AREA:

1.Refuge area is not less than 15 sqm. and shall be provided on the external wall with cantilever projection or other suitable means at above .. mtr. and .. mtr. levels of the building as shown in the drawings.

2.The refuge areas shall be of Fire Resisting construction and protected with self-closing F.C.D. at the entrance from the corridors at staircase lobbies.

3.The position of refuge areas shall be such so that they are negotiable by the Fire Service Ladder from the ground level.

## 4. BASEMENT:

1.The basement shall be adequately ventilated.

2.Additional staircase from the open air as shown in the drawing shall be constructed beside the ramps conforming relevant I.S. specification.

3.The basement shall be protected with auto sprinklers system/hose reel system etc.

4.Mechanical extractors for smoke venting system from lower/upper basement levels shall also be provided. The system shall be of such design as to operate on actuation of heat/smoke sensitive detector or sprinkler. It shall also have an arrangement to start it manually.

5.Mechanical extractors shall have an alternative source of supply.

6. Basement shall have to be properly cemented to resist spread of fire as per NBC Part IV, 2016.

#### 5. STAIRCASE:

1. The staircase of the building shall be enclosed type. Entire construction shall be made of bricks / RCC type having Fire Resisting Capacity not less than 4 hours.

2. The staircase of the building shall have permanent vents at the top and openable sashes at each floor level in the external wall of the building.

3. The width of the Staircase shall be made as shown in the plan. Corridors and the exit doors shall conform the relevant building rules with up to date amendments.

4. All the staircases shall be extended up to terrace of the building and shall be negotiable to each floor without entering any occupied area.

5. Fire & Smoke doors at the entrance of all the staircase enclosures at each floor level shall be provided. The F.C.D. shall be of the least one hour Fire resisting Wire Glass Window fitted with self closing type openable in the direction of escape.

#### 6. LIFT:

1. The walls of the lift enclosure shall be at least two hours Fire Resisting type. Collapsible gate shall not be permitted.

2. One of the lifts shall be designed for Fire Lift. The word "Fire Lift" shall conspicuously be written at ground floor.

#### 7. FIRE FIGHTING WATER:

Underground water having capacity of 1,00,000 ltrs. and Overhead water reservoir of 20,000 ltrs. In each building capacity exclusively for Fire Fighting purpose with replenishing arrangements @1000 ltrs/min. preferably from two different sources of water shall be provided. The water reservoirs shall have overflow arrangement with the domestic water reservoir as well as to prevent stagnancy of water. The water reservoirs shall be kept full at all time.

Arrangement is to be taken so that fire appliances can reach nearest to the Existing pond to draw water in case of emergency with replenishing arrangement at the rate of 1000 Ltrs /min. Preferably from Two different sources of water supply shall be provided.

#### 8. HYDRANT SYSTEM :

1.The building shall be provided with wet Riser of 150m. Internal diameter pipe Line with provision of landing valves at the staircase landings/half landings at the rate of one such riser for 1000 sq .m. of floor area. The system shall be so designed that shall be kept charged with water all the time under pressure and capable to discharge 2850 Lts./min. at the ground floor level outlet and minimum 900 Lts./min. at the top most outlet. In both cases the running pressure shall not be less than 3.5 Kgs/cm<sup>2</sup>. All other requirements shall conform I.S. 3844 – 1989.

2.Provision of Hose Reel in conjunction with wet Riser shall be made at each floor level conforming the relevant I.S. specification.

3.Ring Main Hydrant with provision of adequate numbers Hydrant shall be installed surrounding the building in accordance with relevant I.S. specification.

#### 9. SPRINKLER INSTALLATION:

The automatic sprinkler installation shall be provided non residential area and basement also as per IS specification.

Provision for testing of sprinkler head should be provided at each floor as per convenient.

#### 10. OPEN SPACE & APPROACH:

1.The approach road shall be sufficiently strong to withstand the load of Fire Engine weighting up to 45 M.T.

2.The width and height of the access gates into the premises shall not be less than 4.5 and 5 M respecting abutting the road.

#### 11. FIRE PUMP:

Provision of Fire pump shall have to be made to supply Water at the rate designed pressure and discharge into the Water based system which shall be installed in the building. One such pump shall always be kept on stand-by preferably be of diesel driven type.

A separate Fire Pump shall have preferably be made for total sprinkler installation of the building. Provision of jockey pump shall also have to be made to keep the water based system under pressurized condition at all the time. All the pumps shall be incorporated with both manual and auto starting facilities. The suction of pump shall preferably of positive type.

#### 12. ELECTRICAL INSTALLATION & DISTRIBUTION:

1.The electrical installation including transformers, switch gears, main & meters etc and the distribution system of the premises shall be made satisfying the code of practice for Fire Safety in general building as laid down in I.S specifications 1946 - 1982.

2.The vertical ducts shall be sealed at alternative floor level.

3.The electrical installation shall be adequately protected with CO2 / D.C.P Fire Extinguishers.

4.All electrical Sub-station shall be on the Ground Floor level and structurally to be separated from the main enclosure with the provision of entry from outside open air.

#### Alternative Power Supply:

Arrangements shall have to made to supply power with the help of a generator to operate at least the Fire Pump, Pump for deep Tube-well, Fire Alarm system, etc. and also for illuminating the staircase, corridors etc. and other places of assembly of the building in case of normal power failure.

#### 13. Centrally AIR CONDITIONING SYSTEM: (Where applicable)

1.The A.H.U shall be separated for each floor with the system Air Ducts for individual floors.

2.Arrangement shall be made for isolation at the strategic locations by incorporating auto dampers in Air Conditioning system.

3.The system of auto shut down of A.H.U shall be incorporated with the auto detection and alarm systems.

4.Escape routes like staircases, common corridors, lift lobbies etc. shall not be used as return air passage.

5.Wherever the ducts pass through Fire Wall of the floors, the opening ground the ducts shall be sealed with Fire resisting materials as such as asbestos rope vermiculite concrete etc.

6.As far as possible metallic ducts shall be used even for the return air instead of space above the false ceiling.

7.The material used for insulating the ducts system (inside or outside) shall be of non combustible materials glass wool shall not be wrapped or secured by any materials of combustible nature.

8. Area more than 750m<sup>2</sup> on individual floor shall be segregated by a Fire wall and automatic Fire Dampers for isolation shall be provided.

9. Air ducts serving main floor area, corridors etc. shall not pass through the staircase enclosure.

10. The Air handling units shall be separated for each floor and air ducts for every floor shall be separate and in no way interconnected with the ducting of any other floor.

11. If the air handling units serve more than one floor, the recommendation given above shall be complied with in addition to the conditions given below:-

a) Proper arrangements by way of automatic Fire Dampers working on fusible links for insulating all ducting at every floor from the main riser shall be made.

b) When the automatic fire alarm operates the respective air handling units of the air conditioning system shall automatically be switched off.

12. The vertical shaft for treated fresh air shall be of masonry construction.

13. The Air filters for air handling units shall be of non combustible materials.

14. The air handling unit's room shall not be used for storage of any combustible materials.

15. Inspection panel shall be provided in the main trunking to facilitate the cleaning of ducts of accumulated dust and to obtain access for maintenance of Fire dampers.

16. No combustible materials shall be fixed nearer than 15cm to any duct unless such duct is properly enclosed and protected with non combustible materials (glass wool or spun wool with neoprene facing enclosed and wrapped with Aluminum sheeting) at least 3.2m thick and which would not readily conduct heat.

#### 14. DETECTION AND ALARM SYSTEM :

1. Auto Fire Alarm system with analogue addressable smoke / Heat detector shall have to be installed at non residential area of the buildings.

2. Addressable analogue manual call boxes incorporating with sounders should be installed in all floors area of the building in such a manner that maximum travel distance shall not be more than 22.05 M in order to reach any of the call point.

3. Micro processor based fire alarm panel shall be installed and all shall also be connected



with main panel at the fire central room of the premises having direct dialing facility to the local fire service unit.

4. Both way public address system shall be made available in all floors of the building. The system shall be connected to the main control room.

5. All the installations shall also be satisfy the I.S. specification 2189 (as amended) and the code of practice as laid down in the M.B.C. part-IV.

6. Manually operated Electrical Fire Alarm system with at least two numbers of break glass type call boxes fitted with Hooters along with public address system, at each floor connecting with visual panel board shall be made in Control Room. The Control Room shall be located at the entrance of Ground Floor of the building

other requirements of the system shall be made conforming to I.S 2189-1988.

7. Hooters will be sounded in such a manner so that an operation of a Detector or a Manual Call Point Hooter shall be sounded on the same floor and immediate alternate floor.

#### 15. FIRST AID FIRE FIGHTING SYSTEM:

First Aid firefighting arrangement in the style of placing suitable type of portable Fire Extinguishers, Fire buckets etc. in all floors and vulnerable locations of the premises shall be made in accordance with I.S. 2190-92.

#### 16. GENERAL RECOMMENDATIONS:

1. Fire license shall have to be obtained for proposed storing and processing with LPG and other combustible articles (if any).

2. Fire Notice for Fire Fighting and evacuation from the building shall be prepared and be displayed at all vulnerable places of the building.

3. Floor numbers and directional sign of escape route shall be displayed prominently.

4. The employees and the security staff shall be conversant with installed Fire Fighting equipment's of the building and to operate in the event of Fire and Testing.

5. Arrangement shall be made for regular checking, testing and proper maintenance of all the Fire safety installation and equipment's installed in the building to keep them in perfectly good working conditions at all times.

6.A crew of trained Firemen under an experience officer shall be maintained round the clock for fire safety of the building.

7.To eliminate risk of Fire Hazards, Good House Keeping both for insides and outside of the building shall be strictly maintained.

8.Mock Fire practice and evacuation drill shall be performed periodically with participation of all occupants of the building.

ON compliance of all the above Fire and Life Safety Recommendation, the Director General, West Bengal Fire and Emergency Services shall be approached for necessary inspection and testing of the installation, Fire Safety Certificate in favour of the occupancy shall be issued on being satisfied with the tests and performances of safety aspects of installations of the building.

N.B. :Any deviation and changes the nature of use of the building in respect to approved plan drawing , without obtaining prior permission from this office, this Fire Safety Recommendation will be treated as cancelled.

#### 17. CONSTRUCTION:

1.The whole construction of the proposed building shall be carried out as per approved plan drawings conforming the relevant building rules of local Municipal Body .

2.If the floor area remains exceed 750 m<sup>2</sup> shall be suitable compartmented by separation walls up to ceiling level having at least Two hours Fire resisting capacity.

3.The interior finish decoration of the building shall be made of low flame spread materials conforming to I.S. specifications.

4.Provision of ventilation at the crown of the central core-duct of the building shall be provided.

5.Roof is used as a refugee area in case of an emergency and it should be clear open to sky for all time. No permanent or temporary structure will be allowed on the roof.

6.Arrangements shall have to be made for sealing all the vertical & horizontal ducts by the materials of adequate Fire resisting capacity.



#### 18. REFUGE AREA:

1. Refuge area is not less than 15 sqm. and shall be provided on the external wall with cantilever projection or other suitable means at above .. mtr. and .. mtr. levels of the building as shown in the drawings.
2. The refuge areas shall be of Fire Resisting construction and protected with self-closing F.C.D. at the entrance from the corridors at staircase lobbies.
3. The position of refuge areas shall be such so that they are negotiable by the Fire Service Ladder from the ground level.

#### 19. BASEMENT:

1. The basement shall be adequately ventilated.
2. Additional staircase from the open air as shown in the drawing shall be constructed beside the ramps conforming relevant I.S. specification.
3. The basement shall be protected with auto sprinklers system/hose reel system etc.
4. Mechanical extractors for smoke venting system from lower/upper basement levels shall also be provided. The system shall be of such design as to operate on actuation of heat/smoke sensitive detector or sprinkler. It shall also have an arrangement to start it manually.
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4. All the staircases shall be extended up to terrace of the building and shall be negotiable to each floor without entering any occupied area.
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#### 21. LIFT:

1.The walls of the lift enclosure shall be at least two hours Fire Resisting type. Collapsible gate shall not be permitted.

2.One of the lifts shall be designed for Fire Lift. The word "Fire Lift" shall conspicuously be written at ground floor.

#### 22. FIRE FIGHTING WATER:

Underground water having capacity of 1,00,000 ltrs. and Overhead water reservoir of 20,000 ltrs. In each building capacity exclusively for Fire Fighting purpose with replenishing arrangements @1000 ltrs/min. preferably from two different sources of water shall be provided. The water reservoirs shall have overflow arrangement with the domestic water reservoir as well as to prevent stagnancy of water. The water reservoirs shall be kept full at all time.

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3.Ring Main Hydrant with provision of adequate numbers Hydrant shall be installed surrounding the building in accordance with relevant I.S. specification.

#### 24. SPRINKLER INSTALLATION:

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Provision for testing of sprinkler head should be provided at each floor as per convenient.

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#### 27. Centrally AIR CONDITIONING SYSTEM: (Where applicable)

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2.Arrangement shall be made for isolation at the strategic locations by incorporating auto dampers in Air Conditioning system.

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alarm systems.

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5.Arrangement shall be made for regular checking, testing and proper maintenance of all the Fire safety installation and equipment's installed in the building to keep them in perfectly good working conditions at all times.

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N.B. :Any deviation and changes the nature of use of the building in respect to approved plan drawing , without obtaining prior permission from this office, this Fire Safety Recommendation will be treated as cancelled.

Signature Not Verified  
Digitally signed by ABHIJIT  
PANDEY  
Date: 2017.11.29 14:36:10 IST

**Director**  
**West Bengal Fire & Emergency Services**