

**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/20192020/51031

DATE: 14/08/2019

From :

The Director

Fire Prevention Wing,

West Bengal Fire & Emergency Services.

To :

BANDANA SALES PRIVATE LIMITED

47/2B, LEELA ROY SARANI

Gariahat F.S., Gariahat,

Kolkata - 700020 .

Sub :Fire Safety Recommendation for the proposed occupancy of B+G+V storied under group Mercantile Building, at the premises no. 47/2B, Leela Roy Sarani, Ward No. – 86, Borough No. – VIII under KMC, PS – Gariahat, Kolkata – 700 019.

This is in reference to your Application No. IND/WB/FES/20192020/51031, dated 14/08/2019, regarding the Fire Safety Measure for the proposed occupancy of B+G+V storied under group Mercantile Building, at the premises no. 47/2B, Leela Roy Sarani, Ward No. – 86, Borough No. – VIII under KMC, PS – Gariahat, Kolkata – 700 019..

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. L.INTELLIGENCE ANALOGUE SYSTEM :

1.Auto Fire Alarm System with analogue addressable smoke / heat detectors as per suitability shall be installed in all floor area of the building except Car Parking area.

2. Addressable analogue manual call boxes incorporating with sounders shall be installed in all floors area of the building in such a manner that maximum travel distance shall not be more than 22.5 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 Control Room of the premises having direct dialing facility to the local fire service unit.

4. Both way public address systems linked between all floors and Control Room. Shall have to be established.

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

2. A. Construction:

1. The whole construction of the Existing building shall be carried out as per approved plan drawings conforming the relevant building rules of local Municipal Body (Bidhannagar / Calcutta Municipal Corporation).

2. The floor area exceeds 750m² shall be suitably 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 low flame spread materials conforming I.S. specifications.

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

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

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

3. B.Open Space & Approach:

- 1.The open space surrounding the building shall conform the relevant building rules as well as permit the accessibility and maneuverability of Fire appliance with turning facility.
- 2.The approach roads shall be sufficiently strong to withstand the load of Fire Engine weighting up to 45 M.T.
- 3.The width and height of the access gates into the premises shall not be less than 4.5 – 5 M respecting abutting the road.

4. C.Staircase :

- 1.The staircase of the building shall be enclosed type. Entire construction shall be made of bricks / R.C.C. 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 staircases shall be made as marked in the plan. Corridors and the exit doors shall conforming the relevant building rules with up-to-date amendments.
- 4.All the staircase shall be extended up to terrace of the building and shall be negotiable to each other without entering into any room.
- 5.Fire and smoke doors at the entrances of all the Staircase enclosures as marked in the plan at each floor level shall be provided. The F.C.D. shall be of at least one hour Fire resisting wire glass window fitted with self-closing type openable in the direction of escape.

5. D.EXIT:

- 1.No exit door from any room of any floor in a distance is not more than 22.5 mtr., If so another staircase must be provided.
- 2.Exits shall be so arranged that at least two separate exits are available in every floor area. Exits shall be as remote from each other as practicable and so arranged that there are no pockets or dead end occurred in which occupants may be trapped.

3. Every exit door way shall open into an enclosed stairway or a horizontal exit of a corridor.

4. Every room with a capacity of over 45 persons in area shall have at least two ways.

6. E.LIFT:

1. The walls of the lift enclosure of the building shall be at least two hours FIRE resisting type respectively marked in the plan with the event at top of area not less than 0.2m².

2. The lift of the building shall be designed at high speed "Fire Lift" and conspicuously indicated marked in the plan.

3. One of the lift cars of the building shall be large enough to accommodate standard Ambulance Stretcher and Medical Attendants.

4. The Electric power shall be from separate supply mains in the building and cables run with in the lift shafts, light and fans in the lift cars shall be operated from 24 volts, supply on emergency in case of failure of normal power supply lift shall automatically trip over alternate power supply.

5. Arrangement shall be provided for extraction of smoke in all the lift shaft by incorporation smoke venting system designed to permit 30 Air changes per hour in case of Fire and shall be of such design as to operate on actuation of Sprinkler or Fire Alarm. In case of failure of normal electric supply, it shall automatically trip to alternate supply.

6. Exit doors of the lift lobby shall be through a self- closing smoke stop door of 01 (One) hour fire resistance.

7. The speed of the fire lifts in the building shall be such that it can reach the top from the ground floor within 1 minute in visual indications of floor numbers shall incorporated in the lift cars.

8. All other requirements shall conform the I.S. specification including the communication facility in the lift cars connecting to the Fire Control Room of the building.

9. The Lift Lobby of the basement shall be enclosed type and pressurized as per existing norms and relevant I.S. specification.

10.The Lifts runs towards basement shall be pressurized. A positive pressure of 25 to 30 Pa. shall be maintained inside the lift wall and lobby. The pressurization shall be maintained round the clock.

7. F.BASEMENT:

1.The Basement shall be adequately ventilated with aggregate cross sectional area of not less than 2.5% of the area spread evenly round the perimeter of the basement shall be provided in the form of grills.

2.Mechanical smoke venting arrangements shall be provided to all the basements conforming the I.S. Specification.

3.The exit from the basement shall be form open Air and form any points the travel distance shall not exceeds 15.5 M to reach any exit.

4.Basement shall be protected with Automatic Sprinkler System conforming to I.S. 3844-1989.

5.The staircase of basement shall be of enclosed type having Fire resistance of not less than 4 hrs. and shall be situated at the periphery of the basement to be entered at ground level only from the open air and in such positions that smoke from any Fire in the basement shall not obstruct any exit having the ground upper floor of the building.

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

7.Mechanical extractor shall have an internal locking arrangement so that extracting shall continue to operate and supply fans shall stop automatically with the actuation of Fire Detectors.

8.The Lifts runs towards basement shall be pressurized. A positive pressure of 25 to 30 Pa. shall be maintained inside the lift well and lobby. The pressurization shall be maintained round the clock.

8. G.FIRE FIGHTING WATER :

1. Underground water reservoir having water capacity at 100,000 ltrs (1 Lack) and overhead reservoir of 10000 ltrs. capacity exclusively for Firefighting purpose shall be kept full at all time.
2. The water reservoir shall have overflow arrangement with the domestic water reservoir as well as to avoid stagnancy of water.
3. Provision of necessary manhole shall be made on the top of this reservoir as per specification.
4. Provision of replenishment at the rate of at least 1000 lts./min. from two separate source of water supplies shall be made.
5. The deep tube wells for the replenishment of the reservoir shall be incorporated with auto starting facility with actuation of auto detection and suppression arrangement of the premises and shall also be connected with dual power supply units.
6. Provision of placing Fire Appliances on the underground water reservoir to be made to draw water in case of emergency.

9. H.WATER LAYOUT SYSTEM :

1 The building shall be provided with separate Wet Riser system at 100 mm. 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 2280 lts/min. at the ground floor level outlet and minimum 900 lts/min. at the top most and furthest outlet. In both cases the running pressure shall not be less than 3.5 Kg/Sq.cm. All other requirements shall conforming I.S. 3844 – 1989.

2 Provision for Hose Reel units on swiveling drum in conjunction with Wet Riser shall be made near each landing valves.

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

10. I.FIRE PUMP :

Provision of the 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 be of diesel driven type.

Provision of separate pump for sprinkler system to be made to keep the Water based system under pressurized condition at all the time and shall be installed.

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 pumps shall preferably of positive type or in case of negative suction the system shall be wet riser-cum-down comer with suitable terrace pump with overhead tank.

11. J.SPRINKLER INSTALLATION:

The automatic Sprinkler installation shall be provided in Basement and in all floor areas of the building as per I.S. 9972 and alarm gang to be incorporated along with the sprinkler system. Testing Sprinkler line shall be provided.

12. K.ELECTRICAL INSTALLATION & DISTRIBUTION :

1The 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. specification 1946 – 1982.

2The vertical & horizontal ducts shall be sealed at all floor level by fire resisting materials.

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

4All electrical installation viz. Transformer Switch Gear L. T., H. T. rooms shall be protected with both auto detection and suppression systems as per suitability.

5Alternative Power Supply :

Arrangements shall have to be 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 incase of normal power failure.

13. M. AIR CONDITIONING SYSTEM:

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 the Air Conditioning system.

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

4.The air handling units room shall not be used for storage of any combustible materials.

5.Escape route like staircase, common corridors, lift lobby etc. shall not be used as return air passage.

6.Wherever the ducts pass through Fire wall of floors, the opening a rounding the ducts shall be sealed with Fire resisting materials such as asbestos rope vermiculite concrete etc.

7.The metallic ducts shall be used even for the return air instead of space above the false ceiling.

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

9.Area more than 750 sq. m. on individual floor shall be segregated by a Fire wall and automatic fire damper for isolation shall be provided.

10.Air duct services main floor area, corridors etc. shall not pass through the staircase enclosures.

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

12.If the air handling units serve more than 1 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 fuse able link for

isolating 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 switched off.

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

14. The air filters for air handling units shall be of non-combustible materials.

15. Inspection panel shall be provided in the main trucking to facility 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 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. N. FIRST AID FIRE FIGHTING SYSTEM :

First Aid Fire fighting 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 – 1992.

15. O. GENERAL RECOMMENDATIONS:

1 Fire License shall have to be obtained for proposed storing and processing with L.P.G. and other highly combustible articles.

2 Naked flame shall not be permissible in the Pantry or any places of the show room and Basement area.

3 Disposable type B. A. Musk to be kept adequate numbers always for emergency fire situation in every floor.

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

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

6 The occupancy and security staff shall be conversant with installed Fire Fighting equipments of the building and to operate in the event of Fire and Testing.

7 Arrangement shall be made for regular checking, testing and proper maintenance of all the Fire Safety installation and equipments installed in the building to keep them in perfectly good working conditions at all times.

8 A crew of trained Fireman under experienced Fire Officer shall have to be maintained round the clock for safety of the building.

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

10 Each year a certificate is to be obtained from the Director General, West Bengal Fire & Emergency Services certifying about the satisfactory services, performance of all the Life and Fire Safety arrangements and installation of the building.

On compliance of all the above Fire and Life safety recommendations, the Director General, West Bengal Fire & 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 installation of the building.

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

Director
West Bengal Fire & Emergency Services