

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

Memo. No. : WBFES/ 5031/15 / Kol/RBC/681/15(681/15) Date : 02/07/2015

From : **The Director**
Fire Prevention Wing
West Bengal Fire & Emergency Services

To : The Constituted Attorney,
Banke Bihari Enclave Pvt. Ltd. & Others.
164/1, Manicktala Main Road, 9th Floor,
Kolkata - 700 054.



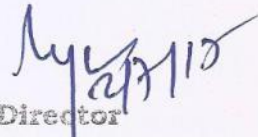
Sub:- Fire Safety Recommendation for Proposed B+G+32 storied Residential Building at premises no. 1806, Laskarhat, Ward No. 107, Borough - XII, P.S. Kasba, Kolkata - 700 039.

This is in reference to your letter No. nil, received on 17.06.2015 regarding Fire Safety measure for Proposed B+G+32 storied Residential Building at premises no. 1806, Laskarhat, Ward No. 107, Borough - XII, P.S. Kasba, Kolkata - 700 039.

The plan drawing 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 office is issuing Fire Safety Recommendation in favour of the aforesaid building subject to the compliance of the following fire safety measure. However necessary sanction and approval must be obtained from competent authorities.

Enclo:

1. One set of plan
2. Recommendation.


Director
Fire Prevention Wing
West Bengal Fire & Emergency Services

RECOMMENDATION

A. CONSTRUCTION:

1. Materials for rapid flame spread categories including untreated wood fibre board etc. shall be not use.
2. The floor area exceeds 750m² shall be suitably compartmented having four hours fire resisting capacity, sprinkler system should be provided as per N.B.C. Part IV.
3. The interior finish decoration of the building shall be made with the materials with low flame spread and low smoke and toxic gas generating categories conforming I.S. Specification.
4. All principal staircases shall not be permitted from the Basement.
5. Arrangement shall have to be made for sealing all the vertical ducts by the materials of adequate Fire resisting capacity.
6. Fire rating test certificate of all interior finish decoration should be submitted to this office before taking occupancy.
7. Service Ducts and shafts should be enclosed by a wall of 2 hours and doors of one hour fire rating. All such ducts shall be properly sealed and Fire stopped at all floor levels.

B. OPEN SPACE & APPROACH:

1. The open space surrounding the building shall be kept clear open to sky and shall conform the relevant building rules as well as permit the easy accessibility and maneuverability of the Fire appliances with turning facility.
2. The approach road and roads surrounding the building i.e. Driveway shall be sufficiently strong to withstand the load of Fire Engine weight up to 45 M.T.
3. The width and height of the entry gates to the premises shall not be less than 6 m and 6 m respectively.
4. Drive way shall be free of any type obstruction. No Parking will be allowed on the Drive Way.

C. STAIRCASE:

1. Both the staircase of the Residential building shall be enclosed type, entire construction shall be made of brick / R.C.C. type having Fire resisting capacity not less than 4 hours respectively.
2. The staircase of the building shall have permanent vents at the top equal to 5% of the cross sectional area of the staircase enclosures and open able sashes at each floor level equal to 15% of the said cross section are shall have to be provided in the external wall of the building.
3. All the staircase of the building shall be negotiable to each other in each floor without entering into any room and shall be extended upto respective terrace.

4. The width of the staircases and corridor and travel distance of different categories of occupancies shall have to conform the relevant building rules.
5. Fire and Smoke doors at the entrances of all the Staircase enclosures marked in the plan at each floor level shall be provided. The F.C.D. shall be of at least one hour Fire resisting type, wire glass window fitted and self closing type, openable in the direction of escape.
6. Considering the staircases are only means of evacuation, emergency lighting arrangement directional, exit, sign etc. shall be made conforming the relevant I.S. Code in this regards.

D. 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 0.2 m².
2. At least one lift of the building shall be designed at high speed "Fire Lift" and conspicuously indicated as 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 within 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 of smoke venting system designed to permit 30 Air changes per hour in case of Fire and shall be of such designed 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 F.C.D of 2 hours fire resistance.
7. All other requirements shall conform the I.S. specification including the communication facility in the lift cars connecting with the Fire Control Room of the building.

E. BASEMENT :

1. The basement shall be adequately ventilated as per relevant I.S. Specification.
2. The basement shall be protected with Auto Sprinklers system, landing valves and hose reel system etc.
3. Mechanical extractor for Smoke Venting system from basement level shall also be provided. The system shall be of such design as to operate on actuation of heat/smoke sensitive detector or sprinkling. It shall also have an arrangement to start manually.
4. Mechanical extractors shall have an alternative source of power supply.

REFUGE AREA:

1. Refuge area is not less than 15 sq. m. each shall be provided on the external wall with cantilever projection or other suitable means at the following floor levels : 6th , 10th, 14th, 18th , 22nd, 26th and 30th floor 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. as shown.
3. The position of refuge areas shall be such so that they are negotiable by the Fire Service Ladder from the Ground floor and shall be projecting.

G. FIRE FIGHTING WATER:

1. Water exclusively for Fire Fighting operation shall be ensure minimum 1,50,000 lts. all the time.
2. The Fire water reservoir shall be have overflow arrangement with the domestic reservoir to avert stagnancy of water.
3. Provision of necessary manhole shall be made on the top of the reservoir as per specification.
4. Provision of replenishment at the rate of at least 2000 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 the auto starting facility with the actuation of auto detection and suppression arrangement of the premises and shall also be connected with dual power supply units.
6. Overhead water tank capacity 20,000 ltrs. shall be provided for fire fighting purpose.
7. Provision of placing Fire Appliances on the underground water reservoir to be made to draw water in case of emergency.

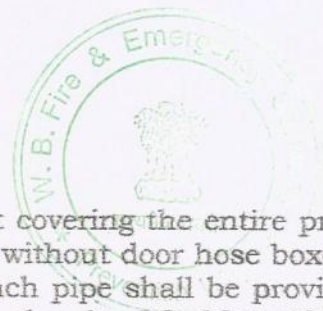
H. WATER LAYOUT SYSTEM :

a. Ring Main Hydrant System:

- i. 150 mm dia Ring Main water layout arrangement covering the entire premises of the project with provision of pillar type yard hydrants without door hose boxes, containing 2 lengths of 63 mm delivery hose and short branch pipe shall be provided at all the strategic location and surrounding the building conforming I.S. 3844-1989 (up to date amendment).
- ii. The system shall be so designed that shall always be kept charged with water under pressure and capable to discharge min. 2850 ltrs./min. at the pressure of minimum 3.5 kg/sq. cm. at the farthest and highest point of the building.

b. Wet Riser & Hose Reels System:-

- i. The building shall be provided with Wet Riser and Hose Reel unit with provision of outlets in each floor at the staircases landings/half landings as per suitable at the rate of one such unit of Wet Riser and Hose Reel per 1000 sq. m. of floor area.



The Wet Riser installation shall be made in reference to the height of the building in stage wise distributions.

1st Stage Ground floor to 20th floor 200 mm dia. Twin Hydrant outlet.

2nd Stage 21st Floor to Top Floor 150 mm. dia. Twin Hydrant outlet.

- iii. **Hose Reel Unit:-** Provision of hose reel units on swiveling drum in conjunction with wet riser near each landing valves shall be made at each floor level of the building.
- iv. All other requirements of the water base Fire Protection System shall be made as per I.S. Specification 3844-1989 (with up-to-date amendment).

c. **Automatic Sprinkler Installation :**

- i. All the floor areas of the building shall be suitable protected by automatic Sprinkler installation conforming the grade as per I.S. Specification 9972.
- ii. The Sprinkler arrangement shall be laid out in Zone wise distribution preferably:
Zone 1 - 1st Stage Ground floor to 20th floor 200 mm dia riser.
Zone 2 - 2nd Stage 21st Floor to Top Floor 150 mm. dia riser.

d. **Water Projector Protection.**

The Electrical installations viz. transformer, HT, LT switch gear etc. shall be protected by high velocity Water Spray Projector System and as per relevant I.S. as per suitability.

I. **FIRE PUMP :**

- 1. Fire pump room shall be constructed at the level of minus (-) 3 meter below at the basement.
- 2. 2850 Lts. per min. giving a pressure not less than 3.5 kg./ sq. cm. 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.
- 3. A standby Pump of equal capacity shall be provided on alternative source of supply preferably be of diesel driven type. Provision of jockey Pump have to be made to keep up the water based system under pressurized condition at all the time.

J. **ELECTRICAL INSTALLATION & DISTRIBUTION SYSTEM:**

- 1. Electrical distribution system of the building shall be made in the form of concealed wiring or in heavy gauge M.S. conducted continuously bonded to earth cables shall be I.S. marked and preferably be of F.R.L.S. categories.
- 2. Electrical distribution System shall conform all the requirements as laid in I.S. 1646-1982.
- 3. For every 230 V wiring above false ceiling 660 grade insulated cable shall be used Transformer Switch Gear H.T., L.T. and other electrical rooms shall be at the ground floor level the other electric rooms shall be at least 4 hrs. fire resisting capacity. Adequate ventilation arrangement shall have to be made in all the rooms, Dry and explosion proof type transformer shall be installed.

4. All electrical installation viz. Transformer Switch Gear L.T., HT rooms shall be protected with both auto detection and suppression systems as per suitability.
5. Transformer and Generator shall be installed separately and well away from building super structure.

K. AUTO DETECTION AND ALARM SYSTEM :

1. Auto Fire Alarm System which 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 the floor area of the building in such a manner that maximum travel distance shall not be more than 22.5m in order to reach any of the call point.
3. Both way Public address system linked between all floors and Control Room shall have to be established.
4. All the installation shall also satisfy the I.S. Specification 2189 as amended and the code of practice as laid down in N.B.C. pt. IV.

L. AIR CONDITIONING SYSTEM (If Any) :

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.
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.

M. FIRST AID FIRE FIGHTING SYSTEM :

1. 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.

N. OTHER PROTECTION MEASURES :

1. Special rescue equipment like Smoke Hood, self contained B.A. set portable lights at least two pairs (4 sets) shall be made available in the main fire Control Room of the premises.
2. CCTV surveillance system shall be in corporate throughout the hole building.
3. Light protection Red light warning system etc. shall be provided at the top of the building as recommended in NBC Part VIII building service section - 2 electrical installations.
4. Lightning arrester arrangement to be provided at highest point of the Building.

O. GENERAL RECOMMENDATIONS :

1. Fire license shall have to be obtained for proposed strong and processing with L.P.G. and other combustible articles.

2. Floor numbers and directional sign, showing the nearest exit Refuge Area. Fire points etc. shall have photo luminescent signals at each floor of the building conforming the relevant I.S. specification.
3. Provision of emergency illuminating shall be made at each floor of the building conforming the relevant I.S. specification.
4. If diesel oil is stored beyond the specified quantity license shall be accorded from the appropriate authority.
5. The Occupants, employees and security staff shall be conversant with installed First Aid and Fire Fighting equipments of the building and to operate in the event of Fire and testing.
6. Arrangement shall be made for regular checking, testing and maintenance of all the Fire Safety installation and equipments installed in the building to keep them in perfectly good working conditions at all times.
7. A crew of trained Fireman under an experienced Officer shall be maintained round the clock for safety of the building.
8. Mock Fire practice and evacuation drill shall be performed periodically with participation of all occupants of building.
9. Each year a certificate is to be obtained from **the Director General, West Bengal Fire & Emergency Services** certifying about the satisfactory service, performance of all the Fire Safety arrangements and installation of the building.

This shall be treated as Fire Safety Recommendation. On compliance of all above Firesafety 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 shall be treated as cancelled.



Director
Fire Prevention Wing
West Bengal Fire & Emergency Services