



**Government Of West Bengal
Office Of The Director General
West Bengal Fire & Emergency Services
13D, Mirza Ghalib Street, Kolkata - 16**

Memo no.:FSR/0225186238701074

Date: 22-12-2023

From:
Director
Fire Prevention Wing,
West Bengal Fire & Emergency Services

**To: LALIT KUMAR KHETAWAT SURENDRA KUMAR KHETAWAT JAYSHREE KHETAWAT HEM KHETAWAT
MANUJ KHETAWAT DIVYANK KHETAWAT HARSHIT KHETAWAT AARPEE HOUSING DEVELOPMEN
003,2A/1,BUTTO KRISTO PAUL LANE**

Sub: Fire Safety Recommendation of the Proposed construction for Block-1 consisting of B+G+21 Storied & Block-2 consisting of G+4 Storied under group Residential Building at 2A/1, Butto Krishto Paul Lane (Formerly premises No.- 2A/1 & 2B, Butto Krishto Paul Lane), P.O.- Ghughudanga, P.S.- Chitpore, Ward No.- 03, Borough-I, Kolkata- 700030 under Kolkata Municipal Corporation

Application Reference : KMC (CAF-2023010114) received on 28-09-2023 regarding the Fire Safety Recommendation of the Proposed construction for Block-1 consisting of B+G+21 Storied & Block-2 consisting of G+4 Storied under group Residential Building at 2A/1, Butto Krishto Paul Lane (Formerly premises No.- 2A/1 & 2B, Butto Krishto Paul Lane), P.O.- Ghughudanga, P.S.- Chitpore, Ward No.- 03, Borough-I, Kolkata- 700030 under Kolkata Municipal Corporation

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 favor of the aforesaid building subject to the compliance of the following fire safety measure.

Recommendation:

CONSTRUCTION:

- 1.Materials for rapid frame spread categories including untreated wood fiberboard etc. shall be not use. The doors and windows preferably shall be made of metal.
- 2.The floor area exceeds 750m² shall be suitably compartmented having at least four hours Fire resisting capacity and sprinkler system should be provided as per N.B.C. Part-IV.
- 3.The interior finish decoration shall be made with the materials of 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.Arrangements shall be made for availing all the vertical service 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 ROAD:

- 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 Fire appliance with turning facility.
- 2.The approach road and roads surrounding the building shall be sufficiently strong to withstand the load of Fire Engine weighting 30 M.T.
- 3.The width and height of the entry to the premises shall not be less than 5 – 6 M respectively.
- 4.Drive way should be free of any type obstruction. No parking will be allowed on the Drive Way.

C.STAIRCASE:

- 1.All principal staircases from Ground to Top Floor shall be pressurized as marked in the plan. A positive pressure of 25-30 lbs. Shall be maintained inside the Staircases. Pressurization shall be maintained round the clock.
- 2.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 respectively marked in the plan.
- 3.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 openable sashes at each floor level equals to 15% of the said cross sectional area shall have to be provided in the external wall of the building.
- 4.All the staircase of the building shall be negotiable to each other in each floor without entering into any room and shall be extended up to respective terrace. The roof of the Stair Wall shall be 1M above the surrounding roof area.
- 5.The width of the staircases and corridors and travel distance of different types of occupancies shall have to conform the relevant building rules.
- 6.Fire and smoke check doors at the entrances of all the Staircase enclosures 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.
- 7.Considering the staircases are only means of evacuation, emergency lighting arrangements directional, exit, sign etc. shall be made conforming the relevant I.S. Code in this regard.

D.LIFT:

- 1.All lift lobbies shall be pressurized.
2. The walls of the lift enclosure of the building shall be at least four hours Fire Resisting type respectively marked in the plan with the event at the top of area not less than 0.2m².
- 3.The lifts of the building shall be designed at high speed "FIRE LIFT" and conspicuously indicated marked in the plan.
- 4.One of the lift cars of the building shall be large enough to accommodate standard Ambulance Stretcher and Medical attendants.
- 5.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 operation from 24 volts, supply on emergency in case of failure of normal power supply lift shall automatically trip over alternate power supply.
- 6.Arrangements shall be provided for extraction of smoke in all the Lift Shafts by incorporating smoke venting system.
- 7.Exit doors of the lift lobby shall be through a self-closing smoke stop floor of one hour Fire resistance.
- 8.The speed of the Fire Lifts in the building shall be such that it can reach the top from the Ground Floor within one minute in visual indications of floor numbers shall be incorporated in the lift cars.

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

E.REFUGE FLOOR:

- 1.The Refuge area on calculating the area @ 0.3m² /person on the basis of apartments and floors not less than 22.5 m² area shall be provided on the external wall as cantilever projection or any other suitable means at above 24M, 39M levels of the building.
- 2.The Refuge areas shall be 4 hours Fire resisting construction and shall be protected with self-closing Fire and Smoke check door 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 Services Ladder from the Ground Floor.

F.BASEMENT AREA:

- 1.All the basement areas should be properly 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. specifications.

3.The Exits from the basement shall be from open Air and from any point the travel distance shall not exceed 18.5M to reach any Exit. Continuation of staircases from the basement to upper floor will not be allowed i.e. all staircases shall be aggregated on the ground floor level.

4.All the basement areas shall be protected with automatic sprinkler system conforming the I.S. 3844-1989.

5.The staircase of basement shall be of enclosed type having Fire resistance not less than 4 hours 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 saving the ground upper floor of the building.

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

7.Mechanical extractors shall have an internal locking arrangement so that extractors shall continue to operate and supply Fans shall stop automatically with the actuation of Fire Detector.

8.Mechanical extractors shall be designed to permit 30 Air Changes per hour in case of Fire or distress call.

G.FIRE FIGHTING WATER:

1Water exclusively for Fire Fighting operation shall be minimum 2,00,000 litres all the times.

2The Fire water reservoir shall be having overflow arrangement with the domestic reservoir as per specifications.

3Provisions of necessary manholes shall be made on the top of the reservoir as per specification.

4Provision of replenishment @ of at least 2,000-lts/min. from two separate sources of water supplies shall be made.

5The Deep Tube-wells for the replenishment of the reservoir shall be incorporated with the auto starting facility with the actuations of Auto detection and suppression arrangements of the premises and shall also be connected with dual power supply units.

6Provision of placing Fire appliances on the Underground Water Reservoir to be made to draw water in case of emergency.

H. WATER LAYOUT SYSTEM:

1.Ring Main Hydrant System:

I.150 mm. dia Ring main Water layout arrangements covering the entire premises of the project with provision of pillar type yard hydrants without door Hose Boxes. Containing two lengths of 63mm. Delivery hose and Short Branch Pipe shall be provided at all the strategic locations 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 lts./min. at a pressure 3.5 Kg/cm² at any point.

Wet Riser & Hose Reel Systems:

I. The building shall be provided with Wet Riser and Hose Reel unit with provision of outlets in each floor at the Staircase landings/half landings as per suitability @ one such unit of Wet Riser and Hose Reel per 1000 Sq.m. of floor area.

II. Hose Reel Unit:

Provision of Hose Reel units on swiveling drums in conjunction with Wet Risers near each landing valves shall be made at each floor level of the building.

III. All other requirements of the Water Base Fire Protection systems shall be made as per I.S. specification 3844-1989 (with up-to-date amendment).

3. Automatic Sprinkler Installation:

All floor of the building and Basement area shall be suitable protected by automatic Sprinkler installation conforming the grade as per I.S. specification.

I. FIRE PUMP:

12850 litres per min. giving a pressure not less than 3.0 bar at top most landing valve. The pump provided will be of multi-stage type with suction and delivery size not less than 15cm. dia. With low level riser up to seventh storied and high-level riser delivery for upper floors up to top floor. A set of ball valves to supply the tank with at least 2850 lts/min. from the first pump. Alternatively, a multistage, multi-outlet pump may be installed.

22850 ltr/min. Sprinkler Pump shall also be provided.

3A standby pump of equal capacity shall be provided on alternative source of supply.

4 Provision of Jockey Pump Shall also has to be made to keep the water-based system under pressurized condition all the time.

J. ELECTRICAL DISTRIBUTION SYSTEM:

1 Electrical Distribution systems of all the buildings 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 systems shall conform all the requirements as laid down in I.S. 1646-1982.

3 For every 230V wiring above false ceiling 660 Grade Insulated Cables shall be used Transformers 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 four hours fire resisting capacity adequate ventilation arrangements shall have to be made in all the rooms, dry and explosion proof type transformer shall be installed.

4 All electrical installations viz. Transformers Switch Gears, L.T., H.T., Rooms shall be protected with both auto detection and suppression systems as per suitability.

K.AUTO DETECTION AND ALARM SYSTEM:

- 1.Auto fire alarm system which analogue addressable smokes heat detectors as per suitability shall be installed in all floor area of the building except car parking area.
- 2.Addressable analogue manual call incorporating with sounder shall be installed in all the floor area of the building in such a manner that maximum travel distance shall not be more than 30M in order to reach any of the call points.
- 3.Both way public address system shall be made available on all floors of the building. The system shall be connected to the main control room.
- 4.All the installation shall also satisfy the I.S. Specification 2189 (as amended) on the code of practice as laid down in N.B.C Pt. IV.

L.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.
- 3.The system of auto shut down of A.H.U. shall be incorporated with the auto detection and alarm system.
- 4.Escape route like stairs, non-common corridors, lift, lobbies etc shall not be used as return Air passage.
- 5.Whenever the ducts pass through Fire walls of floors, the opening around the ducts shall be sealed with Fire resisting materials such as asbestos rope vermiculite concrete etc.
- 6.The metallic ducts shall be used even for the return Air instead of space above the false ceiling.
- 7.The materials 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 750m² on individual floor shall be segregated by a Fire Wall and Automatic Fire Dampers for isolation shall be provided.
- 9.Air duct service main floor area, corridors etc. shall not pass through the Staircases enclosures.
- 10.The Air handling shall be separated for each floor and Air ducts for every floor shall be separated 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 :-

proper arrangements by way of automatic Fire dampers working on fuseable links for isolating all ducting at every floor from the main riser shall be made.

b)When the automatic Fire Alarm operator 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 such construction.

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

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

15.Inspection panel shall be provided in the main trucking 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.

M.FIRE DAMPER:

a)Fire Damper shall be located in conditioned Air ducts and return, Air Duct / passages at the following points:

1.At the Fire operational wall.

2.Their Ducts/passages enter the central vertical shaft.

3.Where the ducts pass through floors.

4.At the inlet of supply Air duct and the return Air duct of each component on every floor.

b)The dampers shall operate automatically and shall simultaneously Switch Off the Air handling fans. Manual Operation facilities shall also be provided.

c)Automatic fire Dampers shall be so arranged so as to close by gravity in the direction of air movement and to remain rightly closed open operation of a fusible link.

N.OTHER PROTECTION MEASURES:

Close Circuit TV shall have to be provided atleast in the Ground to fifth floor of block-1 of the buildings.

O.FIRST AID FIRE FIGHTING SYSTEM

1.First Aid Firefighting arrangement in the style of placing suitable type of portable Fire Extinguishers, I.S.I. marked Fire Buckets etc. in all floors and all vulnerable locations of the premises shall be made in accordance with I.S. 2190 – 1992.

2.Special rescue equipment like smoke hood, Self-Contained B.A. Set, portable lights at least two pairs (four sets) shall be made available in the main Fire Control Room of the premises.

P.GENERAL RECOMMENDATIONS:

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

2Floor Number, Directional Exit Signs, showing the nearest exit Refuge area, Fire Point etc. shall have photo luminescent signal at each floor of all blocks of buildings including shall be made available conforming the relevant I.S. Specification.

3Provision of emergency illuminating of exits shall also be made at all floor levels of all blocks of building conforming the I.S. Specification.

4If diesel oil is stored beyond the satisfied quantity license shall be accorded from the appropriate authority

5Arrangement shall be made for regular checking, testing and proper maintenance of all the Fire Safety installation and equipment installed in the building to keep them in perfectly good working conditions at all times by authorized component agency in this regard.

6The occupants, employees and security staff shall know how to operate the First-Aid Fire Fighting equipment and systems installed in the building.

7Practice of fire and evacuation drills shall be arranged at regular interval of time involving all the occupants and security stuff shall be recorded.

8Trained and experienced Fire Fighting staff not less than six per shift under a qualified and experienced Fire Officer shall be maintained round the clock.

9Each 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 premises.

On compliance of all the above Fire and Life Safety Recommendation, the Director General, West Bengal Fire & Emergency Services shall be approved for necessary inspection and testing of all the installation, Fire Safety Certificate in favor 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.

Signature Not Verified
Digitally signed by ABHIJIT
PANDEY
Date: 2023.12.22 12:49:10 IST

DIRECTOR
West Bengal Fire & Emergency Services

Memo No.:FSR/0225186238701074