



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

Memo no.:FSR/0225186238701050

Date: 07-11-2023

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

To: TUSHAR GOENKA AUTHORISED SIGNATORY OF V V A FINANCE LTD
087,132,RASH BEHARI AVENUE

Sub: Fire Safety Recommendation for proposed Construction of a (G+VII) storied under group Business Building at premises no- 132, Rash Behari Avenue, Ward no. 87, Borough no. VIII, P.S- Tollygunge, Kolkata-700029.

Application Reference : KMC (CAF-2023080114) received on 25-09-2023 regarding the Fire Safety Recommendation for proposed Construction of a (G+VII) storied under group Business Building at premises no- 132, Rash Behari Avenue, Ward no. 87, Borough no. VIII, P.S- Tollygunge, Kolkata-700029.

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.The whole construction of the proposed building shall be carried out as per approved plan drawings conforming the relevant building rules of local Municipality Body and shall remain same as per approved plan of this department.
- 2.Any deviation with regard to the construction shall be verified by the concerned building sanctioning authority.
- 3.Material for rapid flame spread categories including untreated wood fibred board etc. shall not be used. The doors and windows preferably shall be made of metal.
- 4.The interior finish decoration of the building shall be made low flame spread and low smoke and low toxic gas generating categories materials conforming I.S. specifications.
- 5.Provision of ventilation at the crown of the central core-duct of the building shall be provided.
- 6.Arrangement shall have to be made for sealing all the vertical and horizontal ducts by the materials of adequate fire resisting capacity.
- 7.Fire rating test certificate of all interior finished decoration should be submitted to this office before taking occupancy.
- 8.The floor area exceeds 750m² shall be suitably compartmented by separation walls up to ceiling level having at least two/four hours Fire resisting capacity, Sprinkler system should be provided as per N.B.C Part IV.
- 9.All the new construction that to be done for the fulfilment of the fire safety recommendation should be tested for fire rating

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test and the test certificate should be submitted to the office.

OPEN SPACE AND APPROACH:

- 1.The open spaces 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 manoeuvrability of the Fire Appliance with turning facility.
2. The approach roads surrounding the building shall be sufficiently strong to withstand the load of Fire Engine weighting 45M.T.
- 3.Drive way should be free from any type of obstruction. No parking will be allowed on the drive way.
- 4.All the Passage way should be kept clear for free access. The abutting road shall permit the accessibility and manoeuvrability of Fire Appliances.
- 5.The width and height of the access gates into the premises shall be not less than 4.5---5 M respecting abutting the road.
- 6.All the internal road should be made as per Plan approved by the department. All the internal road should be so strong so that it can withstand the load of the fire vehicle.

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 position of the staircase shall be made as shown in the plan. Width of the staircases, Corridors and the exit doors shall conform the relevant Building Rules with up-to-date amendments.
- 3.Fire and smoke doors at the entrances of all the staircase enclosures as shown 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 open able in the direction of escape or at the entrance to stair well.
- 4.The entire staircase shall be extended up to terrace of the building and shall be negotiable to each floor and also to other staircase.
- 5.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.

EXIT:

- 1.Exits shall be so arranged that at least two separate exits are available in every floor area. Exit 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.
- 2.Every Exit door way shall open into an horizontal exit of a corridor.
- 3.All the factory area (at each shed of the factory) should have at least two exit way properly marked.
- 4.Travel distance should not be more than 15 M from any dead end of the factory.
- 5.All the passage way and gangway within the factory should be done as per marked.

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 22.35 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.

MULTI LAYER AUTOMATED MECHANIZED CAR PARKING SYSTEM:

- 1Structural design:- The MLCP shall be constructed of structural steel construction.
- 2Vertical Deck Separation:- For MLCP having Multi Car Parking level, vertical Fire separation between the upper and lower decks by using a non-perforated and non-combustible materials (Structural Steel Plate) shall be provided. This is to minimize direct impingement of flame to the car in the upper deck and also to prevent dripping of any possible leaking fuel to the lower deck. Proper drainage system shall have to be provided for accidental leaking of oil from the car and sand bed

shall be provided at the ground level.

3Fire Engine Access Way:- Access way shall be provided for the Fire Engine to gain access to the car park entrance and exit.

4Fire Hydrant:- Fire Hydrants are to be provided in accordance with CI 4.4 .

5Natural Ventilation:- Each Car Parking deck shall be provided with at least 50% external ventilation opening of the perimeter wall areas and uniformly distributed.

6Sprinkler & Detection System: - Open Modular Type Sprinkler along with Detectors shall be provided in all MLCP areas as per relevant I.S. Specification. Cross zone wise Sprinkler system shall have to be implemented.

7Fire Pump:- Separate Jockey and Sprinkler pump of suitable capacity shall have to be installed for the MLCP areas.

8Operating System:- Both Mechanical and Manual type operating system shall have to be provided.

ELECTRICAL INSTALLATION AND DISTRIBUTION:

1.The electrical installation including Transformers (if any), Switch Gear, 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.

2.For every 230V 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.

3.The vertical and horizontal electrical supply ducts shall be sealed at each floor level by fire resisting materials.

4.The electrical installation shall be adequately protected with CO2/D.C.P. or Medium Velocity / Projection System Fire Extinguishers conforming I.S. specification.

5.All electrical installation viz. Transformers (if any), Switch Gear, H.T rooms shall be protected with both auto detection and suppression system as per suitability.

6.Electrical distribution system of the building shall be made in the form of concealed wiring or in heavy gauge M.S. conduit continuously bonded to the earth. Cables shall be I.S. marked and preferable be of F.R.L.S. categories. M.C.B. shall be installed in electrical circuit to avoid electrical fire hazards.

7.All electrical cable should run through cable tray only and fire resisting coating should be done to avoid spread of fire.

8.Lightening arrester should be made to avoid natural Hazard.

9.Flame proof lighting arrangement should be made in side area where Ethanol is handling or storing.

10.Switch, wire should be of I.S. Approved.

11.Alternative Power Supply :Arrangement for alternative power supply shall have to be made to supply power with the help of a generator to operate at least the Fire Pump, Deep Tube-Well Pump, Fire Alarm System, etc. and also for illuminating the Staircase, Corridors, Lobbies etc. and other places of assembly of the building in case of normal power failure.

FIRE FIGHTING WATER: 1.The Underground water reservoir having water capacity of 150,000 Ltrs. And Overhead water reservoir having capacity of 20,000 Ltrs. Both (Shown in the plan) exclusively for fire fighting purpose shall be provided.

2.Provision of replenishing arrangements at least @2000 Ltrs./Mins. preferably from two different sources of water supply shall be provided.

3. The water reservoirs shall have overflow arrangement with the domestic water reservoir as well as to avert stagnancy of water. The water reservoir shall be kept full at all time.

4. Provision of placing Fire Appliances on the underground water reservoir to be made to draw water in case of emergency.

5. Provision of necessary manhole shall be made on the top of the reservoir as per specification.

6. 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 shall also be connected with dual power supply units.

7. Provision of Fire Service inlet shall be installed on the entrance of the building

WATER LAYOUT SYSTEM / RINGMAIN HYDRANT SYSTEM:

1. 150 mm dia Ring main water layout arrangement covering the entire premises of the project with provision of pillar type yard hydrants with door hose boxes, containing 2 lengths of 63 mm delivery hose and short branch pipe shall be provided at the strategic location and surrounding the buildings conforming I.S. 3844-1989. (Up to date amendment).
2. The system shall be so designed that shall be kept charged with water all the time under pressure and capable to discharge 2850 Ltrs./min at the pressure 3.5 Kgs/cm² at any point.

WET RISER & HOSE REELS SYSTEM:-

1. The building shall be provided with Wet Riser and Hose Reel unit of 150 mm internal diameter pipe line with provision of landing valves/outlets in each floor at the staircase landing/half landing as per suitable at the rate of one such unit of Wet Riser and Standard Hose Reel Hose for per 1000 SQ. M. of floor area shall have to be made in all the areas of the building satisfy the code of IS.-3844-1989.
2. The system shall be so designed that shall be kept charged with water all the time under pressure and capable to discharge 2280 Ltrs./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/cm². At any point. All other requirements shall conform I.S. 3844-1989.
3. Provision of Hose Reel unit on swivelling drum in conjunction with wet Riser near each landing valves of each floor level of the building shall be made conforming the relevant I.S. Specifications 3844-1989.
4. Provision of standard Hose Reel Hose supplied from the overhead reservoir through Booster Pump shall have to be made in all the floor of the building satisfy the code of I.S. 3844-1989.
5. Provision of Pillar type hydrants with containing 2 lengths of 63 mm delivery hose with short branch kept inside the hose boxes be provided at all the strategic location and surrounding the factory / or besides the landing each valve shall be made conforming the relevant I.S. Specifications 3844-1989 (up to date amendment) and TAC.
6. All other requirements of the water based fire protection system shall made as per I.S. specification 3844-1989.
7. Sufficient no's of ring main hydrant with monitor should be installed in the factory area.

AUTOMATIC SPRINKLER INSTALLATION:

- i. All floors of the building area shall be suitable protected by automatic Sprinkler installation conforming the grade as per I.S. Specification 9972. Alarm gang to be incorporated along with the sprinkler system.
- ii. Sprinkler System shall have to be installed in all the floors of Parking areas Ground floor Building Sprinkler system also shall have to be incorporated in the stair case including living.
- iii. All the storage area should be protected by sprinkler system with auto detection.

WATER PROJECTION PROTECTION :

The Electrical installations viz. transformer, HT, LT switch gear etc. shall be protected by high or medium velocity Water Projector System as per suitability.

FIRE PUMP :

1. The provision of Fire Pump shall have to be made to supply water should not be less than 2280 LTRS./MIN. and pressure at the top and furthestmost hydrant not less than 3.5 KGS./SQ.CM². discharge into water based system, which shall be installed in the building.
3. A Separate Sprinkler Pump of equal capacity shall be provided for the total Sprinkler Installation of the building.
4. A Standby Pump of equal capacity shall be provided on alternative source of supply preferable be of diesel driven type.
5. Provision of jockey pump shall also have to be made to keep up the water based system under pressurized condition at all the time. The running pressure shall not be less than 3.5 Kgs/Sq.cm². All other requirements shall conform I.S. Specification 3844-1989.
6. All the pumps shall be incorporated with both manual and auto starting facility with alternate power supply.
7. Fire Pump room shall be provided in the place as shown in the plan drawing without obstructing driveways.
8. The suction of pump shall be 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

MANUAL/AUTO DETECTION & ALARM /SUPPRESSION / INTELLIGENCE ANALOGUE SYSTEM:

1. Manually operated Electrical Fire Alarm System with at least one/two/three numbers of break glass type call boxes fitted with Hooters along with public address system, talk back system at each floor connecting with audio-visual panel board shall be made in Control Room.

2. The Control Room shall be located at the entrance of Ground Floor of the building, other requirements of the system shall be made conforming I.S 2189--1988.

3. Auto fire detection system with the help of heat and smoke detector shall be installed in all places of below and preferable above ceiling of the building. The system shall also be made in places of rooms where valuable articles have been kept. The other requirements of the system shall be made in accordance with I.S. 2189-1988.

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

5. Auto Fire Alarm System with analogue addressable smoke/heat detectors as per suitability shall be installed in all floor area of the building, storage area, Blending area, packing area, and other storage area for early detection and suppression of Fire expect Car parking Area.

6. Addressable analogue manual call boxes incorporating with sounders shall be installed in all-floors area of the building in such manner that maximum travel distance shall not be more than 22.5 M. in order to reach any of the call point.

7. 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.

8. Both Way Public address system (with Talk back facilities) shall be made available in and linked between all floors of the building and the system shall be connected to the main control room.

9. 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.

10. Detection system Alarm system and suppression system should be connected with IBMS.

11. All the machinery should be provided with auto stopping system by detector.

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. 2. Special rescue equipment like smoke Hood, SCBA set, Portable lights at least two pairs (4 sets) shall be made available in the main Fire Control Room of the premises.

TRANSFORMER PROTECTION:

1. Transformer to be protected by H.V Water projector system / modular (DCP) System.

2. Base should be filled up by stone to restrict the flow of the oil.

3. Entry of unauthorized person to be restricted.

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. If Diesel oil is stored beyond the specified quantity license shall be accorded from the appropriate authority.

3. Natural ventilation of each room of each department shall have to be provided by projecting window.

4. Natural ventilation for entire car parking area except basement shall have to be provided.

5. Disposable type B.A. Masks to be kept always for emergency fire situation.

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

7. Directional sign of escape route shall display prominently.

8. Floor numbers and directional sign, showing the nearest exit Area, Fire Points etc. shall have photo luminescent signals at each floor of all blocks of building including shall be made available conforming the relevant I.S. Specification.

9. "EXIT/ENTRANCE" sign must be clearly visible even in dark in English, Hindi and also in local Language i.e. Bengali.).

10. The occupants, employees and security staffs shall be conversant with installed Fire Fighting Equipments of the building and to operate in the event of Fire and Testing.
 11. Arrangement shall be made for regular checking, testing and proper maintenance of all the Fire Safety installation and equipments and means of escapes installed in the building to keep them in perfectly good working conditions at all times.
 12. A crew of trained Fireman under a qualified/experience officer shall be maintained round the clock for the safety of the building.
 13. Mock Fire practice and Evacuation Drill shall be performed periodically with participation of all occupants of the building.
 14. Haphazard indoor or outdoor storage shall be avoided.
 15. Contract Number of all the Emergency Services and Departments shall be hanged or display at conspicuous places of all the floors and also inside office room/Reception Counter.
 16. Drill must be acquainted with evacuation passage of escape route by practicing as a drill with all occupants (technical and non technical staff along with administrator by the guidance of head of institution) as a drill every month as a special duty and records of which must be kept in their custody.
 17. A system should be provided for address the spectator during the emergency.
 18. "NO SMOKING" notices should be displayed in all conspicuous places in fluorescent colour.
 19. All technical and non-technical person should have adequate knowledge of handling fire protection equipment, evacuation process of staff in time of emergency and prevention measures.
 20. Proper house keeping should be maintained so that combustible materials are not accumulate here and there inside the factory to avoid any unwanted situation.
 21. Zonal alarming signal to be provided in the whole factory area.
 22. Generator room will be protected with two numbers of 22.5 Ltrs. Trolley mounted A.F.F.F. extinguisher.
 23. There should be a centralized control room in the entrance of the factory with audio visual fire alarm control panel linked with all fire detection and alarm system, public address and communication system.
 24. Flammable or combustible material shall be store/process in any part of the building with almost care.
 25. Provision of emergency illuminating exit shall be made at all floor levels of all blocks of building conforming the I.S. Specification.
 26. Protection should be taken for chemical used by the factory as per the norms.
 27. For water reactive chemical other extinguishing media should be used.
 28. The Department of Fire and Emergency Services, Government of West Bengal shall not take any responsibility in respect of any legal dispute if pending or arises about the title of land/property.
- On compliance of all the above Life and Fire Safety Recommendation, the Director General, West Bengal Fire & Emergency Services shall be approached for necessary inspection and testing of all 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

Signature Not Verified
Digitally signed by ABHIJIT
PANDEY
Date: 2023.11.07 14:31:53 IST

DIRECTOR
West Bengal Fire & Emergency Services