



**Government Of West Bengal**  
**Office Of The Divisional Fire Officer**  
**West Bengal Fire & Emergency Services**  
**Station Feeder Road, P.O & P.S Siliguri,**  
**District: Darjeeling, Pin - 734005**

Memo no.:FSR/0125186237900390

Date: 02-11-2023

**From:**  
**Divisional Fire Officer**  
**Darjeeling Division (Member Convenor)**  
**West Bengal Fire & Emergency Services**

**To: MAHANANDA INDUSTRIES PVT.LTD REPRESENTED BY ITS DIRECTOR SRI JAGDISH PRASAD MITRUKA**  
**NOUKAGHAT SILIGURI**

**Sub: Fire Safety Recommendation of Proposed construction of LG+UG+6 storied shop Building under group of Mercantile in the name of MAHANANDA INDUSTRIES PVT.LTD REPRESENTED BY ITS DIRECTOR SRI JAGDISH PRASAD MITRUKA at the Premises no MOUZA- DABGRAM, PLOT NO- 1449,1450 R.S. 30 L.R., J.L. NO- 02, KHATIAN NO- 296/14,296/17,1299/6 (R.S. ), 29 (L.R.), SHEET NO- 15 (R.S.),172 (L.R.), Holding no- 1747,Ward no – 31 SMC,Pargana – Baikunthapur, P.S.- BHAKTINAGAR, DIST- JALPAIGURI, 734006.**

This is in reference to your application no. 0125186237900390 dated 03-10-2023 regarding the Fire Safety Recommendation of Proposed construction of LG+UG+6 storied shop Building under group of Mercantile in the name of MAHANANDA INDUSTRIES PVT.LTD REPRESENTED BY ITS DIRECTOR SRI JAGDISH PRASAD MITRUKA at the Premises no MOUZA- DABGRAM, PLOT NO- 1449,1450 R.S. 30 L.R., J.L. NO- 02, KHATIAN NO- 296/14,296/17,1299/6 (R.S. ), 29 (L.R.), SHEET NO- 15 (R.S.),172 (L.R.), Holding no- 1747,Ward no – 31 SMC,Pargana – Baikunthapur, P.S.- BHAKTINAGAR, DIST- JALPAIGURI, 734006.

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 drawing conforming relevant building rules of local administrative(Municipality/ panchayat) body.
- 2.The interior finish decoration of the building shall be made low flame spread materials conforming I.S. specification.
- 3.Provision of ventilation at the crown of the central core-duct of the building shall be provided.
- 4.Arrangement shall have to be made for sealing all the vertical ducts by the materials of adequate fire resisting capacity.

## OPEN SPACE & APPROACH

- 1.The open space surrounding the buildings shall conform the relevant building rules as well as permit the accessibility and manoeuvrability of fire appliances with turning facility having minimum 6.5 M width in each side.
- 2.The approach roads shall be sufficiently strong to withstand load of fire engine weighing up to 45 M.T.
- 3.The width and height of the access gates into the premises shall not be less than 5M and 5M respectively abutting the road.
- 4.Drive way should be free from any type of obstruction. No parking will be allowed on the drive way.
- 5.All the Passage way should be kept clear for free access.

## CENTRALLY AIR CONDITIONING SYSTEM: (Where applicable) (IS 659:1991):-

- 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 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 kept 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 3.2 mm thick and which would not readily conduct heat.
- FIRE DAMPERS:**
- I)There shall be located in conditioned are ducts and return ducts / passages at the following points:
    - a)At the Fire Separation wall.

b)Where ducts / passages enter the central vertical shaft.

c)Where the ducts pass through floors

d)At the inlet of supply air duct the return air duct of compartment on every floor.

II)The dampers shall operate automatically and shall simultaneously switch off the air handling fans. Manual operation facilities shall also be provided.

III)Automatic Fire Dampers shall be so arranged so as to close by gravity in the direction of air movement and to remain tightly closed on operation of a fusible link / smoke detector.

#### Means of escape:-

i) All the staircases should be from the terrace to the ground floor of the building and shall be negotiable to each other entering into any floor and in no way the travel distance from the dead end of a corridor of the building shall not exceeds the limit of 6.000 meters. Time of evacuation should be as per 18 1644:1988 (i.e. 1 minute).

ii) The staircases of the building will be enclosed type & construction to be made of bricked or RCC type and the head of stairs shall be ventilated to prevent mushrooming.

iii) The staircases of the building shall have permanent vent at the top and open able sashes at each floor level in the external wall of the building and the treads, flights and risers of the staircases shall be made as per W. B. Municipal (Building) Rules, 2007. Corridors of the building and the exit doors should be conforming the relevant building rules.

iv) There should be a separate entrance and escape routes from every floor of the building. Horizontal exits should be given priority. All the staircases shall be extended up to terrace of the building and shall be negotiable to each floor.

vi) The staircases, corridors & all the means of escape should be free from any obstruction.

vii) Fire and smoke doors at the entrances of all the staircase enclosure 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.

#### Ventilation:-

i) Sufficient ventilation will be provided at every place of the building. It should be designed as auto opening system in case of emergency.

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

iii) Mechanical extractor for smoke venting system shall also be provided. The design operating mechanism of the system shall be such that the system shall operate on actuation of heat / smoke sensitive detector and sprinklers. It shall also have an arrangement to start it automatically or manually. It shall have an interlocking arrangement, so that the extractors shall continue to operate and supply fans shall stop automatically with the actuation of fire detectors. This ventilation system designed 30 air changes per hour than that of the scheduled air changes for normal operation shall be ensured in the system in case of fire or distress call. Mechanical extractors shall have an alternative source of power supply.

iv) Smoke venting facilities for safe use of escape routes shall be automatic in action with manual control in addition in the windowless (sealed box type) buildings.

#### 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 open able sashes at each floor level in the external wall of the building.

3)The width of the staircase shall be made as marked in the plan. Corridors and the exit doors shall conforming the relevant building rules which upto date amendment.

4)All the staircases shall be extended upto 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 enclosure 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 open able in the direction of escape.

6)One stair & lift lobby shall be pressurised.

#### LIFT

1)Walls of all lift enclosures shall have a fire rating of two hours; lifts shafts have a vent area not less than 0.2 M2

2)Lift Motor Room shall be located preferably on top of the shaft and separated from the shaft by the floor of the room.

3)Landing doors in all lift enclosures shall have a fire resistant of not less than half hour.

4)All Lift Car door shall have a fire resistance rating of half an hour.

5)Exit from the lift lobby, if located in the core of the building, shall be through a self closing smoke stop door of half an hour fire resistance.

6)Grounding Switch(es), at ground floor level shall be provided on all the lifts to enable the fire service to ground the lifts..

7)Fire Lift marked in the plan with the following specification – to enable fire services personnel to reach the upper floors with the minimum delay, and shall be available for the exclusive use of the firemen in an emergency.

8)The lift shall have a floor area of not less than 1.4 m2. It shall have landing capacity of not less than 545 Kg (8 persons lift) with automatic closing doors of minimum 0.8 mm width.

9)In case of failure of normal electric supply, it shall automatically trip over to alternate supply. This changeover of supply could be done through manually operated changeover switch. Alternatively, the lift shall be so wired that in case of power failure, it comes down at the ground level and comes to stand still with door open.

#### 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 17.198 mtr. level 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.

#### FIRE FIGHTING WATER:

Underground water reservoir having water capacity of 100000ltrs. and overhead water reservoir having capacity of 10000..ltrs. exclusively for fire fighting purpose with replenishing arrangements @ 1000 ltrs/min. preferably from two different sources of water supply shall be provided. The water reservoirs shall have overflow arrangement with the domestic water reservoir as well as to avoid stagnancy of water. The water reservoir shall be kept full at all time.

#### WET RISER SYSTEM IS:3844

150 mm dia riser with single out let landing valve shall have to be provided.

#### AUTOMATIC SPRINKLER SYSTEM (IS:15105 2021)

The automatic sprinkler system shall have to be installed in the entire building . Alarm Gong to be incorporated along with the sprinkler system.

#### ELECTRICAL INSTALLATION AND DISTRIBUTION:

- 1.The electrical installation including Transformers, 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. specification.
- 2.The vertical and horizontal electrical ducts shall be sealed at each floor level by fire resisting materials.
- 3.The electrical installation shall be adequately protected with CO2/D.C.P. Fire Extinguishers conforming I.S. specification.
- 4.Transformer to be protected by High Velocity Water Spray Projection System as per relevant I.S. specification.
- 5.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.

#### Pumps for fire fighting Installation (IS 12469:1988):-

- i) The standard code of practice recommended that all water based fixed fire fighting installations should be fed by two separate automatic pumps, one of which should act as stand by. Each pump should be designed to deliver water at required pressure and discharge, taking into account the height and volume of the building.
- ii) The Fire pumps should be provided near the underground static water storage tank with minimum pressure of 3.5 kg. / sq. cm. at terrace level or farthest point.
- iii) One electric and one diesel pump of capacity 2280 LPM and One electric pump of capacity 180 LPM should be install.
- iv) The pumps should be installed and arranged in such manner so that it will start automatically due to fall in pressure as prefixed in the installation by installing a Jockey pump. Provision of Jockey pump shall also be made to keep the water-based system under pressurized condition at all times.
- v) All the pumps shall be so designed as to supply water at the designed pressure and discharge into the water-based system which shall be installed in the buildings.
- vi) An independent identical pump for the purpose of sprinkler installation shall be made available. All such arrangement shall be done as per above code of practice.
- vii) All the pumps shall be incorporated with both manual and auto starting facilities .

#### Detection & Alarm System, Suppression System & Public address system (IS- 2189:1988):-

- i)Automatic fire detection system the help of smoke & heat detectors shall be installed at all places of below and preferably above false ceiling of the of the building. This system shall also be made in accordance with the IS code of practice.
- ii) Public address system linked between all floors and control room shall have to be establish.

#### Lighting Protection of the Building:-

This protection for buildings shall be provided as given in Part-VIII Building Services, Section-2 Electrical installation.

## Yard Hydrants

Yard Hydrant / Landing Valve IS 13039:2014 shall have to be installed as per requirement.

### HOSE REEL SYSTEM (IS 884:1985):-

- i) Provision for Hose Reel in conjunction with wet riser shall be made at each floor of the building level from the underground reservoir through main pump conforming the relevant I.S. specification.
- ii) The Hose reel hose system should be provided at each floor of the buildings. The internal dia of the said hose reel shall be 19 mm to 32 mm and the discharge capacity not less than 22.5 LPM. While the length of the hose reel not more than 36.50 meters. The distance of such installation should be in such a way that no part of the floor is more than 6 meters distance from a hose nozzle when fully extended.

### AIR-CONDITIONING SYSTEM:- (SPLIT TYPE)

Peak summer is in full swing. During this period, chances of fire incidents become more imminent due to heavy current drawn by AC units. The following precautions must be scrupulously followed so as to avoid possibility of fire incident due to Window / Split type AC unit.

1. Joints must be avoided in AC wires. It is generally found that there are multiple joints in AC wires which is the single most common cause of Electric Fire due to heat generated in it which spreads quickly to inflammable materials like curtains, paper files etc.
2. It must be ensured that all AC units are comprehensively serviced before operation and filter is cleaned regularly through authorized service agency which increases cooling as well as results in less electric consumption.
3. Never use AC units on normal plug points or temporary extension boards except on covered MCB's.
4. Switch off air-conditioners, lights, fans, exhaust fans, heat convectors, fax machines, computer monitors, printers /scanners/UPS, inverters, photocopiers, TVs and other office equipments when they are not in use. Switch on only those lights fans, air-conditioners or other equipments which are required for functioning office. Do not leave air-conditioners, heat convectors, lights, fans and other electrical equipments and gadgets in 'ON' position when not required.
5. Keep the doors / Windows of air-conditioned rooms close to avoid loss of conditioned air. Provide automatic door closers.
6. Use air-conditioner fan/blowers and fans at low speed.
7. In summer reduce load on air-conditioners by putting curtains/blinds/shades on windows.
8. Window type air-conditioners/split type AC's being highly energy intensive equipments; they should be serviced at least thrice in a year as per the recommendations of manufacturers, The servicing included cleaning of air filters, cleaning of condensers/cooling coil, service and oiling of fan motors, checking of fasteners, checking of electrical spares, checking of current/voltage and checking of room temperature and grill temperature.
9. Replace old air-conditioners which have out-lived their useful life i.e. 7 years as per Competent authorised agency maintenance manual 2012 and have become unserviceable with star rated Energy Efficient air conditioners.

### ALTERNATE POWER SUPPLY

Arrangement shall have to be made to supply of power with the help of generator to operate at least fire pump, illumination of staircase, corridors etc. and other places of assembly area in case of normal power failure.

### 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.

**GENERAL RECOMMENDATIONS:**

- 1.Fire notice for firefighting and evacuation from the building shall be prepared and be displayed at all vulnerable place of the building as per clause 4.11 Annex D of N.B. Code.
- 2.Floor number and direction sign of escape shall be displayed prominently as per clause 4.11 Annex D of N.B. Code.
- 3.The employees and security staff shall be conversant with installed firefighting equipment of the building on to operate in the event of fire and testing as per clause 4.11 Annex D of N.B. Code.
- 4.Arrangement 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.
- 5.Mock fire practice and evacuation drill shall be performed periodically with participation of all occupants of building.
- 6.Considering the gravity of growing hazard in the township, a crew of trained firemen under one experienced officer shall be maintained round the clock along with water tender (type-B) conforming I.S. 948 : 1983.

On compliance of all the above Life and Fire 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 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.

Divisional Fire Officer, Darjeeling Division  
West Bengal Fire & Emergency Services