

Govt. of West Bengal,
Office of the Dy. Director, North Zone
Siliguri.

Memo No:-EBFS/32 /16

Date:- 24.02.2016



From: - The Divisional Fire Officer
Malda Division
Malda

To: - The Secretary
Kazigram College of Education (B.Ed)
Vill-Madapur, P.O-Chandipur
Dist-Malda

Sub: - Fresh Fire Safety Recommendation for the G+2 types Educational Building at above address having Mouz-Madapur, Plot No-5473, 5476, J. L No-77, P.S-Englishbazar.

Ref:- Your Letter No.- Nil, Dt.- 24.02.2016

With reference to the letter noted above regarding the Fire Safety Recommendations for the G+2 types Educational Building building, different papers were received inter alia the Building Plan. After scrutinizing all the papers and the building plan from fire & life safety point of view, **the fire safety recommendation** is here by issued as per the direction of the authority subject to the compliance of the same before occupancy.

Recommendations:-

A) Construction Part:-i) The whole construction of the proposed building shall be carried out as per approved plan & conforming all the relevant building rules of local authority.

ii) The floor area exceeds 500 sq.meter shall be suitably compartmented by separation walls up to ceiling level having at least two hrs. fire resisting capacity.

iii) The interior finish decoration of the building shall be made of low flame spread materials conforming I.S Specification.

iv) All construction materials should be of four hrs. Fire resisting type.

v) Door and windows should be of at least 2 hrs. fire resisting type.

vi) All opening of service ducts, void, gap, and joints should be sealed with fire check materials.

B) Open Space & approach:-i) The open space surrounding the building shall conform the relevant building rules as well as to permit the accessibility and maneuverability of fire appliance to turning facility. The minimum open space surrounded the building should be at least six meters and it should be free from any obstruction at all times.

ii) The approach roads shall be sufficiently strong to withstand the load of fire engine weighting up to 20 M.T.

iii) The width and height of the access gates into the premises shall not be less than 4.5 meters & 5 meters respectively abutting the roads.

C) Means of escape: -

i) The Staircases of the building shall be enclosed type & construction shall be made of bricked/RCC type having fire resistance capacity not less than 4 hrs

ii) 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.

iii) The width of the staircase shall be 2 meters. Corridors of the building and the exit doors shall conforming the relevant building rules.

iv) All the staircase shall be extended up to terrace of the building and shall be negotiable to each other entering into any room.

v) Fire & Smoke doors at the entrance of all the staircases enclosures at each floor level shall be provided. The F.C.D shall be at least two hour fire resisting type & fitted with self closing type open able in the direction of the escape.

- vi) There should be minimum two staircases from the terrace of the building and in no way the travel distance from any point of the building exceeds the limit of 30 meters.
- vii) Horizontal exits should be given priority.
- viii) Time of evacuation should be as per IS:-1644-1988 i.e. 2.5 minutes.
- ix) Minimum two exits shall be provided from every floor of the building.
- x) Separate entrance and exit shall be provided to every room in the building.

D) Electrical Installation: 1946:1982 & NBC part-iv:-

- i) All electrical installation should be done in accordance with National Electrical Code & Part-VIII "Building Services" Section-2 "Electrical Installation" good practice [4(10)]
- ii) All cable should be of FRLS type & all wiring should be done by the copper wire along with appropriate gauge such as 1.2 sq.mm for light, fan, bulb etc. 2.5 sq.mm for freeze, TV, & 4 sq.mm for Geyser, washing machine etc.
- iii) Electrical installation shall be tested periodically by the licensed electricians where as 85% of fire originated from electrical source of energy.

E) Alternate power supply :- Arrangement shall 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, Fire Lift, illuminating the passages, basement, escape routes etc. in case of normal power failure.

F) Air Condition:-IS: 659-1991:-

- i) Regular check up of all split type window A/C machine to prevent dust, foreign materials in the air inlet should be maintained to prevent spontaneous combustion.

ii) In case of central A/C system, the same shall be incorporated with automatic damper with fusible link with a view to shut down the system automatically.

iii) Regular checking, testing, cleanings the air inlets is must.

iv) Escape routes like corridors, lift lobbies etc. shall not be used as return air passage.

v) AHU shall not be used for storage of combustible articles.

G) Fire Fighting Water:- The building should be provided with 300000 liters capacity of underground stored water with replenishing arrangement @ 1000 liters of water per minutes preferably from two different sources. The height of the reservoir should not be exceed 30 cm from the ground level. Fire water reservoir shall have overflow and connected with domestic water reservoir as well as to avoid stagnancy of water. The water reservoir shall be kept full at all times. The location of the U/G water reservoir should be such so that Fire Service Vehicles may get access to the site of the reservoir with a view to draw the water from the said reservoir.

H) Small gears:-IS:903-1993:- Hose box, 15 meter length permoline delivery hose, gunmetal short branch of half inch dia @ one set each at or near all the pillar hydrants, landing valves on floors should be installed.

I) Terrace Tank:- One Terrace Tank of capacity Minimum 10000 liters should be installed in the building along with suitable terrace pump & Wet Riser cum Down comer system.

J) Hose Reel System:-IS 884-1985, the building should be equipped with Hose reel hose system at each floor as per the IS Code of practice. 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 36.5 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.

K) Internal Hydrant System: - IS-3844:1989. Minimum two pressurized risers of 150 mm dia each should be provided at each staircase with provision of landing and half landing valves @ one such riser for each 1000 sq. meter of floor area or as per the vulnerability of the area. This system shall be designed in such a manner that it should be kept charged with water at all times and capable of discharge 2850 liters of water per minute at the ground level & 900 liters per minutes at the top most outlets of the building.

In both the cases, the running pressure at the ground level shall be 3.5 kg/sq.cm & 2.5 kg/sq.cm at the top most landing valves should be ensured.

L) External Hydrant System:-IS-13039-1991:- The whole area of your building is to be protected by adequate no. of pillar type hydrants system i.e. @ one pillar hydrant per 1000 sq. meters of area or as per the vulnerability of the place.



M) Pumps for fire fighting Installation. IS-12469-1988.

- i) The pump should be installed and arranged in such a manner so that it will start automatically due to fall in pressure as prefixed in the installation by installing a jockey pump.
- ii) 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 building.
- iii) One such pump shall always be kept on stand-by preferably be of diesel driven type.
- iv) An independent identical pump for the purpose of **sprinkler installation** shall be made available. All such arrangement shall be made as per the code of practice.

N) Detection & Alarm System:- IS 2189-1988. i) Sufficient Nos. of manually operated electrical fire alarm system of break glass type call boxes and fitted with alarm like hooters with public address system, talk back system at different places of the building shall be installed and connecting with audio visual panel board shall be made in control room as per the IS Code of practice. The control Room shall be located in the entrance of the ground floor of the building.

ii) Automatic fire detection system with the help of Smoke & Heat detectors shall be installed at all places of below and preferably above false ceiling of the building This system shall also be made available in places of rooms where valuables have been kept other requirements shall be made in accordance with the IS code of practice.

iii) Suppression system shall be made with full flooding system with CO2, FM-200 etc. particularly in computer room, electrical processing and data room and in a room of irreplaceable articles.

O) First aid fire fighting system:- IS 2190-1992. Sufficient Nos. of Portable fire extinguishers of DCP type, Water type and Sand and water bucket should be provided at different places of the building area and it should be within the reach of all concern as per the I.S Code of practice.

P) Lighting protection of the building:- This protection for the building shall be provided as given Part:-VIII of building services, Section -2 of Electrical installation.

Q) General recommendations:- i) Fire notice for fire fighting and evacuation from the building should be provided and shall be displayed at all places of the building as per clause 5.5 of N.B Code.

ii) Floor No. and Directional Sign of escape route should be displayed prominently as per clause 5.5 of the N.B Code.(Auto glow type)

iii) All the staffs and others shall be conversant with the installed fire fighting equipments of the building so that they can operate the same in case of exigency.

iv) Arrangement shall be made for regular checking, testing and proper maintenance of all fire fighting equipments and keep them in good working condition at all times.

v) Mock fire drill and evacuation drill should be done periodically with participation of all employees and others and in this regard in each year a Certificate is to be obtained from this end as laid down in the norms.

vi) A register for the recording of Mock fire drill, Evacuation drill, Testing & Checking of whole Fire fighting installation, Electrical installation should be maintained and shall be liable to produce the same to the authorized Officer of this department on demand.

vii) Good house keeping should be maintained.

Note:-

- 1) **The Fire Service recommendations are issued subject to the free from any Court Case or legal encumbrances.**
- 2) After issuing the Work order of the said recommendation to any authorize agency from your side for the installation of the same, a primary clearance to the style of **provisional NOC** for such installation shall be issued from this end.
- 3) On compliance of the aforesaid recommendation up to the satisfaction of this department & as per the scale as advised from this end, **Final Fire Safety Certificate (NOC) shall be issued.**

Divisional Fire Officer
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WB. Fire & Emergency Services
Malda Division, Malda,

