

Summary of Preliminary Assessment on Structural, Fire and Electrical Safety

| | |
|---|--|
| Name of the Factory | : A.M.C.S. TEXTILES LIMITED |
| Address of the Factory | : Plot # 41 & 52, AEPZ, Adamjee Nagar, Siddhirganj, Narayanganj-1400 |
| Dhaka Present Status of the Factory | : Under Operation |
| Structural assessment conducted by | : Accord (Full report available at bangladeshaccord.org) |
| Date of Structural Inspection | : 18 May, 2014 |
| Fire & Electrical assessment conducted by | : Accord (Full report available at bangladeshaccord.org) |
| Date of Fire & Electrical Inspection | : 22 May, 2014 |

Basic Information: The present garment factory is a commercial building with beam-column frame system. The following general information was noted:

| | | |
|-------|---------------------------|---|
| i. | Building Usage Type | : Garment factory |
| ii. | Structural System | : Mainly steel structure (without apparent fire protection) with concrete floor slab on steel decking. RC structure (in part) at each end of building. Stability is provided by moment frames and diagonal bracing. |
| iii. | Floor System | : Beam slab |
| iv. | Floor Area | : The factory building measures about 12,000 square feet per floor |
| v. | No. of Stories | : 4 storied |
| vi. | Construction Year | : 2010 |
| vii. | Foundation Type | : Unavailable |
| viii. | Design Drawings | : Available (Permit drawing signed in 2010 by AEPZ) |
| ix. | Soil investigation Report | : Available (Dated August, 2008) |
| x. | Construction Materials | : Stone chip aggregated |
| xi. | Generator | : Ground floor |

Recommendations for Corrective Action: The recommendations of corrective action for both Structural and Fire & Electrical Safety are as follows:

The recommendations for Structural Safety corrective actions are:

Immediate (Now): NA

Mid Term (Within 6 Weeks):

1. Structural Engineer to check the connections capacities of all steel connections.
2. Repairs and alterations to be made to the steel connections as required and as advised by the Structural Engineer.
3. Structural Engineer to assess the slack roof bracing and the missing diagonal bracing in the 3rd floor.
4. Repairs to be carried out as required.
5. Structural Engineer to provide detailed calculations for the mezzanine floor. These should confirm structure's ability to support storage loading and its extends.
6. Structural engineer to confirm loadbearing system at Ground Floor slab level
7. Produce and actively manage a loading plan for all floor plates including ground floor and mezzanine floors within the factory giving consideration to floor capacity and column capacity.

Summary of Preliminary Assessment on Structural, Fire and Electrical Safety

8. The Building Engineer to check that the as-built structure (no central column row in 3rd floor and steel structure for office blocks in 2nd and 3rd floor) is in alignment with the structural design.
9. Carry out any structural alterations as advised by the Structural engineer.

Long Term (Within 6 Months):

1. Continue to implement load plan.

The recommendations for Fire Safety corrective actions are:

Immediate (Within 1 month):

1. Remove locking features from all egress gates. If locks are required for security reasons, utilize special door locking features complying with NFPA 101.
2. Remove all storage from exit stairs and egress paths.
3. Replace all gates along the means of egress with side-hinged, swinging egress doors. If locks are required for security reasons, utilize special door locking features complying with NFPA 101.

Short Term (Within 3 Months):

1. Provide a minimum 2.0-hr fire rated stair enclosure with 1.5-hr fire rated doors and seal all unprotected openings to separate the exit stairs from work areas and other building spaces on all floor levels. Ensure that the fire doors are self-closing and positive latching and that they are provided with fire exit (panic) hardware where serving production floors. If fire doors are required to be held open for functional reasons, provide automatic closing devices tied to the fire alarm system.
2. Provide dedicated storage rooms separated by minimum 1-hr fire-rated construction.
3. Separate the boiler room by a minimum 1-hr fire-rated construction. Seal and/or protect all openings to maintain the required fire separations.
4. Seal all penetrations and openings in exit stair enclosure walls to maintain the fire separation.
5. Inspect, test and maintain the fire alarm system, and keep written records on-site, in accordance with NFPA 72.
6. Inspect, test and maintain the emergency lighting system in accordance with The ACCORD standard. Keep written records on-site.

Mid Term (within 6 Months):

1. Seal all penetrations and openings to the interior of the building along the discharge path, up to a height of 10 ft., to provide a minimum 1-hr fire separation.
2. Provide 2-hr fire-rated exit passageway leading directly outside.

Long Term (More than 6 months): NA

The recommendations for Electrical Safety corrective actions are:

Immediate (Within 1 month):

Summary of Preliminary Assessment on Structural, Fire and Electrical Safety

1. Breather oil cup must be filled with transformer oil to required level as instructed by the manufacturer.
2. HT cable dropping from HT pole must be protected in steel pipe of required size at least 2m from the ground level to protect the cable from any physical damage. The cable should be supported on covered tray or ladder throughout its length up to the HT panel base-plate (except the part of the cable laid underground at a depth of at least 1 meter).
3. Arrange periodic inspection & thermal scan to identify the overloading, loose connection, unbalanced load which may cause the excessive heat-rise and take action accordingly.
4. Phase barriers made of non-combustible insulating material preferably rubber between different phases (above 230V) must be installed to prevent flashover.
5. Remove multiple cables terminating at a terminal in bus bars and terminate single cable at a single point of bus bar. Use pin type bus bar for connecting multiple circuit breaker if the main bus bar does not have enough space. Confirm the capacity of the bus bar does not get overloaded.
6. Provide earth connection for body and doors of metallic distribution boards using green cables preferably braid so that the metallic door remains at zero potential all the time.
7. Cable duct should cover with non-combustible material. Maintain cleaning periodically.
8. Lead acid batteries used for IPS must be placed on acid resistant stands.
9. Motor in boiler must be firmly grouted on the concrete floor or fixed on the foundation structures.
10. HT cables must be laid in cable trench and supported on cable trays. Existing cable may be protected and supported in cable trays through safe route raised at safe height.

Short Term (Within 3 Months):

1. Panel base plates must be installed, at all time, and cable(s) entering panel must be firmly fixed with cable gland.

Mid Term (Within 6 months): NA

Long Term (More than 6 months): NA