

Summary of Preliminary Assessment on Structural, Fire and Electrical Safety

Name of the Factory	: SPACE SWEATER LTD.
Address of the Factory	: Parizat, Konabari, Gazipur
Dhaka Present Status of the Factory	: Under Operation
Structural assessment conducted by	: Accord (Full report available at bangladeshaccord.org)
Date of Structural Inspection	: 13 April, 2014
Fire & Electrical assessment conducted by	: Accord (Full report available at bangladeshaccord.org)
Date of Fire & Electrical Inspection	: 21 April, 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	: RC Flat Slab
iii.	Floor System	: Beam slab
iv.	Floor Area	: Total floor area of the building is 25,800 sq ft.
v.	No. of Stories	: 7 storied
vi.	Construction Year	: 2007
vii.	Foundation Type	: Pad foundation
viii.	Design Drawings	: Available (Approved by the Local Government Engineering Department)
ix.	Soil investigation Report	: Available
x.	Construction Materials	: Brick aggregated
xi.	Generator	: Ground floor of the Britex Sportswear LTD building

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. Engage a Building Engineer to investigate the floor loading, and advise on any necessary alterations taking account of floor capacity and column capacity.
2. Engage a Building Engineer to survey the structure and prepare a full set of "as-constructed" drawings.

Long Term (Within 6 Months):

1. Make any structural alterations as advised by Factory Engineer.
2. Monitor cracks to slab soffit. Engage a Building Engineer to investigate if cracks are only in the plastering.
3. Engage an Building Engineer to advise on load reduction and repair and strengthening of the slab if required.
4. Engage a Building Engineer to check the capacity of the lightweight roof and connection details and make any necessary alterations.

Summary of Preliminary Assessment on Structural, Fire and Electrical Safety

The recommendations for Fire Safety corrective actions are:

Immediate (Within 1 month):

1. Remove locking features from all egress doors / 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 / sliding doors 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.
4. Remove manual on/off switches from emergency lighting units to prevent them from being switched off.

Short Term (Within 3 Months):

1. Provide minimum 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. Replace egress doors with side hinged type doors capable of having a swing. Modify the egress door to swing in the direction of egress travel.
3. Inspect, test and maintain the fire alarm system, and keep written records on-site, in accordance with NFPA 72.
4. Test the emergency lighting system on each floor and provide additional emergency fixtures to provide adequate illumination along the means of egress. Provide a minimum illumination of 10 lux at the floor level within exit stairs and exit discharge paths and minimum 2.5 lux along exit access aisles.

Mid Term (within 6 Months):

1. Replace the single-station smoke alarms. Provide automatic smoke detection throughout the building in accordance with NFPA 72.

Long Term (More than 6 months):

1. Replace the fire alarm system with a new, listed addressable fire alarm system in accordance with NFPA 72.

The recommendations for Electrical Safety corrective actions are:

Immediate (Within 1 month):

1. Heat resistant flexible pipes should not be used for carrying cables through its whole length except at the bending point. Use PVC or steel pipes (preferably on floor) or battens for carrying cables attached to wall or ceiling. Support the conduits by using saddle clamp. Install PVC channel for cable routing inside the panels.

Summary of Preliminary Assessment on Structural, Fire and Electrical Safety

2. Provide phase separators between poles of MCCB made of noncombustible materials preferably use rubber having enough dielectric strength to insulate phases from each other.
3. Cable channels must be covered to protect it from dust, lint and vermin. Establish a cleaning program to keep neat and clean.
4. Color code should be maintained as per standard i.e. Red, Yellow and Blue colors for phases; Black for neutral and Green for earthing. Panels including its door should be earthed with better earth continuity.
5. Make circular hole at the base plate of panels and provide cable gland same as the cable size at the cable entry and exit so that the cables are not stressed on the sharp edges of the entry and exit hole of panels. Provide covers if any additional gap remains after installing cable glands.
6. The main incoming power cables to the panel must be passed through protective devices to bus bar. Provide protective devices for each circuit.
7. Heat resistant flexible pipes should not be used for exposed wiring through its whole length except at the bending point. Use PVC pipe for surface wiring and support it by using saddle clamp.

Short Term (Within 3 Months):

1. Main service cables from REB should be passed through PVC or steel pipe and it should be supported by suitable means.
2. Provide metallic covers on cable trench to avoid physical damage to the cables from falling objects.
3. Terminate single cable (lugs/sockets) to a single point (single nut, bolt and washer) of busbar to get better electrical continuity and avoiding loose connection.
4. Select the power cables connected to protective devices and related neutral (1- Φ) and earth cable as per standard. Terminate single cable into a single lug. Loop connection should be removed from the MCBs. Use single cable or plug-in busbar for MCB input to avoid loose connection.
5. Use single (individual) cables from the bus bar to MCB input or use plug-in bus bar for MCB input to avoid loose connection and ease of maintenance work.

Mid Term (Within 6 months):

1. Construct a cable trench to terminate the generator output cables and provide covers made of noncombustible material preferably concrete slab to protect the cables' insulation from physical damage as well as to prevent entering dust, debris, and lint.

Long Term (More than 6 months): NA