

Summary of Preliminary Assessment on Structural, Fire and Electrical Safety

Name of the Factory	: ZAHEEN KNITWEARS LTD.
Address of the Factory	: Keodala, Madanpur, Bondar, Narayanganj, Dhaka, Bangladesh
Dhaka Present Status of the Factory	: Under Operation
Structural assessment conducted by	: Accord (Full report available at bangladeshaccord.org)
Date of Structural Inspection	: 12 May, 2014
Fire & Electrical assessment conducted by	: Accord (Full report available at bangladeshaccord.org)
Date of Fire & Electrical Inspection	: 2 June, 2014 & 6 June, 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	: R.C Beam and column frame with a 2-way solid slab
iii.	Floor System	: Beam slab
iv.	Floor Area	: The factory building has a floor area of 59,312 sq.ft.
v.	No. of Stories	: 2 storied
vi.	Construction Year	: 2006
vii.	Foundation Type	: Unavailable
viii.	Design Drawings	: Available (Permit drawing)
ix.	Soil investigation Report	: Unavailable
x.	Construction Materials	: Unavailable
xi.	Generator	: Ground floor generator shed 4

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. Factory to retain a structural engineer to design a lateral load resisting system in compliance with BNBC 2006.

Long Term (Within 6 Months):

1. Carry out the strengthening work to provide lateral buckling restraint system.
2. Carry out full survey of all structural elements to check for cracking and remove surface finishes to expose concrete.
3. Ensure that there are no design deficiencies associated with the observed defects, and carry out suitable repairs to the structural elements.
4. Regularly inspect repaired structural elements for re-occurring damage.
5. Carry out the necessary measures for fire protection system of steel beams to ensure minimum fire protection of at least 1 hour.
6. Carry out the strengthening work to provide the bracing system.

Summary of Preliminary Assessment on Structural, Fire and Electrical Safety

7. Based on the results of the detailed structural survey, the building engineer and architect are to prepare accurate structural and architectural records for the building, reflecting accurately the as-built condition.

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. 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.
3. Reduce occupant load to not more than available exit capacity of 436.
4. Keep egress paths and stairs clear of storage.

Short Term (Within 3 Months):

1. Provide dedicated storage rooms separated by minimum 1-hr fire-rated construction. Where separate storage rooms may not be feasible, provide defined storage areas and limit the storage arrangement as follows:
 - Maximum height of 2.4m and maximum area of 23m²
 - If sprinkler protected: maximum height of 3.66m and maximum area of 93m².Separate areas of unenclosed combustible storage by a minimum clear distance of 3m.
2. Inspect, test and maintain the fire alarm system, and keep written records on-site, in accordance with NFPA 72.
3. Inspect, test and maintain the emergency lighting system in accordance with The ACCORD standard. Keep written records on-site.
4. 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.
5. Provide dedicated storage rooms separated by minimum 1-hr fire-rated construction on the ground floor. Where separate storage rooms are not feasible, provide defined storage areas and limit the storage arrangement as follows:
 - Maximum height of 2.4m and maximum area of 23m²
 - If sprinkler protected: maximum height of 3.66m and maximum area of 93m²Separate areas of unenclosed combustible storage by a minimum clear distance of 3m.
6. Modify the egress door to swing only in the direction of egress travel.

Mid Term (within 6 Months):

1. Remove single-station smoke alarms. Provide automatic smoke detection throughout the building, tied into the fire alarm system, in accordance with NFPA 72.

Long Term (More than 6 months):

Summary of Preliminary Assessment on Structural, Fire and Electrical Safety

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. Overhead service cables must be protected in rigid conduit or laid in covered trays.
2. Generator room should be free of water bodies. Dry up the area and avoid accumulation of water in the room.
3. Cable must be terminated without stressing at the termination point. Depth and size of cable trench must be increased to allow proper entry of cable to the panel.
4. Electrical facilities in dyeing & washing sections (where use of water cannot be avoided), it must be installed at safe height and the must be IP rated to avoid damages due to moisture ingress.
5. Panel doors must be connected with earth bond.
6. Panel must be replaced with new and standard panel.
7. Change cable route and replace corroded cable trays with new and standard cable trays.

Short Term (Within 3 Months): NA

Mid Term (Within 6 months): NA

Long Term (More than 6 months): NA