

## Summary of Preliminary Assessment on Structural, Fire and Electrical Safety

---

Name of the Factory	: YK KNIT WEAR LTD.
Address of the Factory	: Plot S-7 & S-8, Estate Kanabari, Gazipur Sadar
Dhaka Present Status of the Factory	: <b>Under Operation</b>
Structural assessment conducted by	: Accord (Full report available at <a href="http://bangladeshaccord.org">bangladeshaccord.org</a> )
Date of Structural Inspection	: 5 May, 2014
Fire & Electrical assessment conducted by	: Accord (Full report available at <a href="http://bangladeshaccord.org">bangladeshaccord.org</a> )
Date of Fire & Electrical Inspection	: 4 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	: R.C Beam and column frame with a 2-way solid slab
iii.	Floor System	: Beam slab
iv.	Floor Area	: The building has floor area of 9000 square feet
v.	No. of Stories	: 7 storied
vi.	Construction Year	: 2009
vii.	Foundation Type	: Unavailable
viii.	Design Drawings	: Available
ix.	Soil investigation Report	: Unavailable
x.	Construction Materials	: Unavailable
xi.	Generator	: Ground floor generator room southwest side

**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):

1. Lower storage loads to 3 kPa on the upper floors.
2. Factory engineer to confirm allowable design floor loadings.
3. Verify in situ concrete stresses with 100mm concrete cores.

Mid Term (Within 6 Weeks):

1. Factory engineer to produce and actively manage a loading plan for all floor plates within the factory giving consideration to slab beam, column and foundation capacity.
2. Produce a Detailed Engineering Assessment including verification of the whole part of the 7 storey section in regard the structure on the site.
3. Produce As build drawings of the 7 storey section.
4. Include in the Detailed Engineering Assessment the verification of column not in the schedule as well as the cantilevered grade beam in the 6 storey building section.

Long Term (Within 6 Months):

1. Maintain Loading Plan.

## Summary of Preliminary Assessment on Structural, Fire and Electrical Safety

---

2. Complete implementation of any works deemed necessary by Detailed Engineering Assessment.
3. Complete implementation of any works deemed necessary by factory engineer verification.

### **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. Keep egress paths and stairs clear of storage.
3. Remove all storage from exit stairs and egress paths.
4. 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.
5. Remove manual on/off switches from emergency lighting units to prevent them from being switched off.

#### Short Term (Within 3 Months):

1. Separate the boiler, generator, EMR room by a minimum 2-hr fire-rated construction. Seal and/or protected all openings to maintain the required fire separations.
2. 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 23m<sup>2</sup>

-If sprinkler protected: maximum height of 3.66m and maximum area of 93m<sup>2</sup>.

Separate areas of unenclosed combustible storage by a minimum clear distance of 3m.

3. 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.
4. Provide minimum aisle widths of 36-in.
5. Reconfigure the egress arrangement to reduce the maximum common path of travel to not more than 30 m.
6. Reconfigure the egress arrangement to reduce the maximum dead-end distance to not more than 30 m.
7. Inspect, test and maintain the fire alarm system, and keep written records on-site, in accordance with NFPA 72.
8. Inspect, test and maintain the emergency lighting system in accordance with The ACCORD standard. Keep written records on-site.
9. 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.

## Summary of Preliminary Assessment on Structural, Fire and Electrical Safety

---

Mid Term (within 6 Months): NA

Long Term (More than 6 months): NA

### **The recommendations for Electrical Safety corrective actions are:**

Immediate (Within 1 month):

1. PVC conduits supporting main cables between floors must be installed with standard accessories like bends, elbow, junctions, etc. and securely fixed at regular intervals.
2. Cables inside panel must be securely fastened, through ducts or by ties, to avoid crossing live parts.
3. Install separators between different phases of MCCB. Standard separators provided by the MCCB manufacturer must be used.
4. Heat resistant conduits may be used to protect wirings.
5. The Neutral earth must be separated from the transformer body earth. The neutral earth may be connected directly to the main earth strip.
6. Generator Battery must be placed on the acid proof battery stand.
7. Generator must be connected to earth securely at least at two points.
8. Flexible conduits (standard and approved for industrial use) must be supported at regular intervals with saddle, clamps or fasteners to prevent sagging excessively between supports.

Short Term (Within 3 Months):

1. Existing panels located below stairs may be separated from exit stairs with fire rated walls.
2. Panel base plates must be installed, and cable(s) entering panel must be firmly fixed to it with cable gland.
3. Existing panel are damaged and may be repaired to a safe standards or else replace with standard and safe panel enclosure.
4. MCB, contactor and other devises used in panel must be firmly fixed and protected from touching unintentionally to other live parts.

Mid Term (Within 6 months): NA

Long Term (More than 6 months): NA