

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

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Name of the Factory	: <b>SHOVON KNITWEAR LTD.</b>
Address of the Factory	: West Masdair, Fatullah, Narayanganj-1400, Bangladesh
Dhaka Present Status of the Factory	: <b>Under Operation</b>
Structural assessment conducted by	: Accord (Full report available at bangladeshaccord.org)
Date of Structural Inspection	: 27 April, 2014
Fire & Electrical assessment conducted by	: Accord (Full report available at bangladeshaccord.org)
Date of Fire & Electrical Inspection	: 14 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	: RC beam and column frame with a 2-way solid slab
iii.	Floor System	: Beam slab
iv.	Floor Area	: The total floor area of the building is 153600 sqft
v.	No. of Stories	: 9 storied
vi.	Construction Year	: 2012
vii.	Foundation Type	: Unavailable
viii.	Design Drawings	: Available (Stamped in 2007 by RAJUK)
ix.	Soil investigation Report	: Unavailable
x.	Construction Materials	: Unavailable
xi.	Generator	: Ground floor - shed 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. The Factory Engineer to investigate the cause of cracks by appropriate methods.
2. The distress found is to be suitably rectified and then repaired.
3. Request that the Detailed Engineering Assessment of overall building to be carried out again with the actual built conditions.

Long Term (Within 6 Months):

1. Create loading plans for each floor level.
2. Maintain standards of quality control to ensure that loading plan is correctly followed so that problems do not arise in the future.
3. Maintain and enforce the loading plans.

**The recommendations for Fire Safety corrective actions are:**

Immediate (Within 1 month):

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1. Remove locking features from all egress doors and 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.

### 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 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.
2. Separate the diesel drum storage area by a minimum 2- hr fire-rated construction.
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 a minimum 2-hr fire rated shaft to separate the electric shafts from each floor level.
5. Provide 2-hr continuous exit stairwell enclosure to exterior ground floor.
6. Provide dedicated storage rooms separated by minimum 1-hr fire-rated construction.
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.

### Mid Term (within 6 Months):

1. Provide 2-hr fire-rated exit passageway leading directly outside (vestibules to separate any storage areas) or Provide sprinkler protection for discharge floor in accordance with NFPA 13.

### 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.
2. Provide automatic sprinkler protection throughout the building in accordance with NFPA 13.

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

#### Immediate (Within 1 month):

1. Missing pairs of arcing horn must be installed.
2. Breather oil cup must be filled with transformer oil to required level as instructed by the manufacturer.
3. Leakage current collector must not be extended. It may be connected to the cable support.

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4. Cable trench must protect cables in it throughout its length.
5. Clean the cable trench and cover it to prevent from falling debris.
6. Cable(s) laid in existing raised cable trench, filled with sand and concreted (thin cover) must be protected with covers (slab/checkered plate).
7. Cables on floor may be supported on trays installed at safe locations.
8. Cables passing through permanent walls must be protected in steel pipes and remaining holes around the pipe must be sealed.
9. Panels not in operation may be removed.
10. Unused gland holes in base plates or top cover must be sealed with blanking plates or plugs.
11. Check and conduct load management. Unbalanced loading or overloading may be the cause.
12. Install separators between different phases of MCCB. Standard separators provided by the MCCB manufacturer must be used.
13. Every wire terminating must be installed using independent lug/terminal.
14. Heat resistant conduits may be used to protect wirings.
15. The transformer guard must be connected to the earth.
16. Clean the transformer(s) periodically as part of routine maintenance.

### Short Term (Within 3 Months):

1. Arrangements must be made to increase spacing between existing transformers.
2. Service cables passing through walls must be protected in steel pipes.
3. Cable must be supported at the panel base plate and terminated without stressing at the termination point.
4. Existing panels which may pose risk during normal or emergency in the egress may be separated with fire rated walls.
5. 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