

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

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Name of the Factory	: DELICATE GARMENTS LTD
Address of the Factory	: Rajaghat, Rajfulbaria, Savar, Dhaka, 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	: 10 May, 2014
Fire & Electrical assessment conducted by	: Accord (Full report available at bangladeshaccord.org)
Date of Fire & Electrical Inspection	: 27 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 beam and column frame with 2 way spanning slab
iii.	Floor System	: Beam slab
iv.	Floor Area	: Unavailable
v.	No. of Stories	: 4 storied
vi.	Construction Year	: 2011
vii.	Foundation Type	: Piled foundation
viii.	Design Drawings	: Available (Approved by the Local Authority in 2011)
ix.	Soil investigation Report	: Available (Dated 2011)
x.	Construction Materials	: Stone 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): NA

Long Term (Within 6 Months):

1. Factory Engineer to revise allowable loading document to include maximum allowable load of 5kPa and check capacity of slabs and beams under this loading.
2. Factory Engineer to monitor settlement of the ground floor slab and note if any settlement occurs in foundations to the main structural elements.

**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.

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

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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.

### Short Term (Within 3 Months):

1. Separate the boiler, generator and transformer rooms 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 a minimum 2-hr fire-rated shaft to separate the utility riser from each floor level.
4. Provide a minimum 2-hr fire-rated shaft to separate the utility risers from each floor level. Seal all penetrations and openings in floor/ceiling assemblies 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.

### Mid Term (within 6 Months):

1. Replace the single-station smoke alarms. Provide automatic smoke detection throughout the building in accordance with NFPA72.

### 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. Install separators between different phases of MCCB. Standard separators provided by the MCCB manufacturer must be used.
2. Make circular hole at the base plate/top plate of panels and provide cable gland according to the respective cable size for cable entry and exit so that the cables are not stressed on the sharp edges of the hole of panels. Provide covers (of noncombustible material) if any additional gap remains after installing cable glands.
3. 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.

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

1. Install cable or ladder to support the main service cables from pole mounted distribution transformer to main switch (MCCB).

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

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2. Install cable tray with metallic cover to provide mechanical support to cables laid haphazardly on the floor.
3. Cables passing underground or through permanent walls must be protected in steel/PVC pipes and remaining holes around the pipe must be sealed.
4. Cables terminating at distribution boards must be supported in trays and protected throughout its length till the panel base or top plate.
5. Install the cables tray or duct with cover (metallic) for the protection of the cable. Ensure the cables are tightly latched inside the ladder/tray and provide covers made of non-combustible material preferably metallic sheet to protect the cables' insulation from any physical damage as well as prevent the ingress of debris, dust and lint.

### Mid Term (Within 6 months):

1. Install cable tray with metallic cover to provide mechanical support to cables laid haphazardly on the floor.

### Long Term (More than 6 months): NA