

Summary of Preliminary Assessment on Structural, Fire and Electrical Safety

Name of the Factory	: DIRD COMPOSITE TEXTILES LTD.
Address of the Factory	: Dholadia, SatiaBari, Sreepur, Rajendrapur, Gazipur
Dhaka Present Status of the Factory	: Under Operation
Structural assessment conducted by	: Accord (Full report available at bangladeshaccord.org)
Date of Structural Inspection	: 24 September, 2013
Fire & Electrical assessment conducted by	: Accord (Full report available at bangladeshaccord.org)
Date of Fire & Electrical Inspection	: 8 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	: R.C. Beam and column frame with a 2-way solid slab
iii. Floor System	: Beam slab
iv. Floor Area	: The main building has 24,600 Sq ft in each floors.
v. No. of Stories	: 7 storied
vi. Construction Year	: 2004
vii. Foundation Type	: Unavailable
viii. Design Drawings	: Available
ix. Soil investigation Report	: Available
x. Construction Materials	: Stone aggregated
xi. Generator	: In a separate 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):

1. Levels 4 -6 to limit storage to uniform average of 1m height.
2. Factory Engineer to review design, loads and columns stresses for internal columns.
3. Verify in situ concrete stresses for at least 4 columns either by sufficient cores or existing cylinder strength data for typical internal columns.
4. A Detail Engineering Assessment of Factory to be commenced, see attached Scope.
5. Have structural engineer confirm load limits and heights and provide information on the storage levels and extents.

Mid Term (Within 6 Weeks):

1. Produce and actively manage a loading plan for all floor plates within the building giving consideration to floor capacity and column capacity.
2. Detail Engineering Assessment to be completed.
3. Building Engineer to create controlled loading plans for all floors designating where storage can be placed and cannot be placed.

Long Term (Within 6 Months):

1. Continue to implement load plan.

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2. Rectify leaks to improve concrete structure durability.

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. Replace all gates and 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. Reduce occupant load to not more than available exit capacity immediately. In the future, if greater occupant load is desired, provide additional exits.

Short Term (Within 3 Months):

1. Provide dedicated storage rooms separated by minimum 1-hr fire-rated construction. 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 93m²

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

2. 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.
3. Provide minimum aisle widths of 36-in.
4. Inspect, test and maintain the fire alarm system, and keep written records on-site, in accordance with NFPA 72.
5. 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.
6. Regularly inspect all exit signage and replace/install lights as needed to illuminate signs.
7. 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. Remove single-station smoke alarms. Provide automatic smoke detection throughout the building in accordance with NFPA 72.
2. Provide automatic smoke detection throughout the building in accordance with NFPA 72.

Long Term (More than 6 months):

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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. Remove all the unused and flammable materials from the generator room.
2. Remove the flexible conduit and provide metallic cover on raceway to protect the cables insulation from physical damage due to moving objects during operation and maintenance.
3. Provide earth connection for body and door of metallic electrical panel using green cables preferably earth braid so that the metallic door remains at zero potential all the time.
4. Install panel base plate and make circular hole into it and fit cable glands into the holes; select the glands 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 as well as reduce strain on termination point. Provide covers (of noncombustible material) if any additional gap remains after installing cable glands to make the panel dust and vermin proof.

Short Term (Within 3 Months):

1. Install cables tray/riser with protective cover to support the entering and leaving as well as to reduce strain on the termination point.
2. Install cable tray or raceway and arrange cables on it; fix the cables on raceway/tray by cable tie. Provide protective cover on the cable raceway to protect the cables from physical damage due to falling objects and stepping of occupants during maintenance.

Mid Term (Within 6 months): NA

Long Term (More than 6 months): NA