

Summary of Preliminary Assessment on Structural, Fire and Electrical Safety

Name of the Factory	: SHINE FASHION CO (Pvt) LTD.
Address of the Factory	: Plot# 269-276, DEPZ (Extension area), Ganakbari, Savar
Dhaka Present Status of the Factory	: Under Operation
Structural assessment conducted by	: Accord (Full report available at bangladeshaccord.org)
Date of Structural Inspection	: 3 June, 2014
Fire & Electrical assessment conducted by	: Accord (Full report available at bangladeshaccord.org)
Date of Fire & Electrical Inspection	: 25 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	: Total floor area: 38,014.24 sq.ft.
v.	No. of Stories	: 3 storied
vi.	Construction Year	: 2005
vii.	Foundation Type	: Unavailable
viii.	Design Drawings	: Available (Permit drawings)
ix.	Soil investigation Report	: Unavailable
x.	Construction Materials	: Unavailable
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):

1. The Factory Engineer is to carry out an assessment of all of the sheds. Their roofs, walls and columns.
2. Carry out an Engineering Assessment to verify all the structural system of this shed.
3. We recommend that the Factory Engineer surveys the actual conditions and revise the drawings of the main factory building.
4. The Factory Engineer is to carry out an assessment of the connections of the skylight to the RC columns and beams.
5. Carry out a Detailed Engineering Assessment on the building, including in-situ testing of concrete and column reinforcing, to verify that it is stable under lateral loading.

Long Term (Within 6 Months):

1. If deemed necessary by the Factory Engineer, carry out any remedial works recommended.
2. Produce as-built drawings reflecting the site conditions.
3. Carry out Engineering Assessment recommendations.

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4. If deemed necessary by the Factory Engineer, carry out any remedial works recommended.
5. An assessment of the building columns must be included in the Detailed Engineering Assessment for lateral loads (see Item 5, below).
6. If deemed necessary by the Factory Engineer, carry out any remedial works recommended.
7. Produce as-built drawings reflecting the site conditions.
8. Carry out recommendations of engineering assessment.

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. Remove all storage from exit stairs and egress paths.
3. 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.
4. Remove the timer for fire alarm notification.
5. Based on ceiling configuration, provide additional detectors where needed, and space them in accordance with NFPA 72.
6. Provide exit signs above all exits to the exterior and all doors to the exit stairs.
7. Provide emergency light above all egress path.

Short Term (Within 3 Months):

1. Separate the hazardous materials / flammable liquid storage room by a minimum 2- hr fire-rated construction. Seal and/or protected all openings to maintain the required fire separations.
2. Separate the boiler, generator and transformer room by a minimum 2-hr fire-rated construction. Seal and/or protected all openings to maintain the required fire separations.
3. 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.

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. If fire doors are required to be held open for functional reasons, provide automatic closing devices tied to the fire alarm system.
5. Provide a minimum 2-hr fire-rated shaft to separate the utility risers from each floor level.

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6. Seal all penetrations and openings in exit stair enclosure walls to maintain the fire separation.
7. Modify the egress door to swing in the direction of egress travel.
8. Provide intermediate handrails on exit stair.
9. Inspect, test and maintain the fire alarm system, and keep written records on-site, in accordance with NFPA 72.
10. 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. Modify stair to discharge directly outside or Provide 2-hr fire-rated exit passageway leading directly outside (vestibules to separate any storage areas).
2. 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):

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. Panel door must be connected with earth bond connecting frame and door.
2. Existing aluminum wiring ducts with ends open must be closed with end cover. Ends may be sealed to prevent ingress of lint and duct.
3. Replace silica gel and must include in routine maintenance to check and maintain.

Short Term (Within 3 Months):

1. Use industrial graded (heat resistant) pipe for control and power wiring of boiler.
2. Cables must be firmly supported using base plate and cable gland to minimize stress at terminals.
3. Arrange the wiring inside the panel or redesign the electrical distribution systems to avoid haphazard wiring inside panel.
4. Panel base must be securely fixed to the foundation, with appropriate fastening devices. Panel base frame may be used on foundation to mount the panel.
5. Ducts should be properly covered and cables arranged inside the ducts.
6. Damaged fittings must be replaced with a new one and safe fittings as required. Electrical fixtures should be fixed with a permanent structure.

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7. Install separators between different phases of MCCB. Standard separators provided by the MCCB manufacturer must be used.
8. All the panels and switch board must have proper handle and locking system to ensure proper safety to panel operators.
9. Power cable passing through permanent walls must be protected and remaining gaps must be sealed with fire rated materials.
10. Replace the existing trench cover either with concrete slab covers or checkered plates. Existing cover must be additionally supported until it is replaced for safety.
11. Metallic cover (checkered plate) should be provided on cable trench to prevent the damage of cable insulation as well as prevent the ingress of debris, dust and lint.

Mid Term (Within 6 months): NA

Long Term (More than 6 months): NA