

Summary of Preliminary Assessment on Structural, Fire and Electrical Safety

Name of the Factory	: STYRAX FASHIONS LTD.
Address of the Factory	: Plot # 194 DEPZ (Ext.), Ganakbari, Savar, Dhaka
Dhaka Present Status of the Factory	: Under Operation
Structural assessment conducted by	: Accord (Full report available at bangladeshaccord.org)
Date of Structural Inspection	: 9 March, 2014
Fire & Electrical assessment conducted by	: Accord (Full report available at bangladeshaccord.org)
Date of Fire & Electrical Inspection	: 9 March, 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. columns with a 2-way solid slab
iii.	Floor System	: Beam slab
iv.	Floor Area	: Unavailable
v.	No. of Stories	: 6 storied
vi.	Construction Year	: 2001
vii.	Foundation Type	: Unavailable
viii.	Design Drawings	: Available (Approved by BEPZA)
ix.	Soil investigation Report	: Unavailable
x.	Construction Materials	: Stone aggregated
xi.	Generator	: Under renovation

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. Reduce storage and equipment loadings at the 1st and 2nd levels to no more than 3.0kN/m².

Mid Term (Within 6 Weeks):

1. A detailed engineering assessment is to be performed upon the steel roof structure.
2. A detailed engineering assessment is to be conducted on the building in order to determine the capacity of the structure in its existing condition.
3. Factory engineer to review design loads and column stresses.

Long Term (Within 6 Months):

1. Carry out any remedial measures or alteration works deemed necessary by the aforementioned structural assessment.
2. Update the structural drawings to reflect the as-built conditions, and carry out any remedial measures deemed necessary by the aforementioned engineering assessment.
3. Produce and actively manage a loading plan for all floors within the factory giving consideration to slab and column capacity.

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The recommendations for Fire Safety corrective actions are:

Immediate (Within 1 month):

1. 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.
2. Remove locking features from all egress doors / gates. If locks are required for security reasons, utilize special door locking features complying with NFPA 101.
3. Remove manual on/off switches from emergency lighting / exit signage units to prevent them from being switched off.
4. Remove all storage from exit stairs and egress paths.
5. Configure the fire alarm system to initiate automatic occupant notification on all floor levels to facilitate whole building evacuation upon any manual fire alarm station activation.
6. Regularly inspect all exit signage and replace/install lights as needed to illuminate signs.

Short Term (Within 3 Months):

1. Separate the boiler 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 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. Seal all penetrations and openings in exit stair enclosure walls to maintain the fire separation.
4. 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.

5. Provide 2-hr continuous stairwell enclosure to exterior ground level.
6. Inspect, test and maintain the fire alarm system, and keep written records on-site, in accordance with NFPA 72.
7. 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 with automatic smoke detectors tied into the fire alarm system. Configure the fire alarm system to initiate occupant notification upon activation of any two smoke detectors in addition to the manual fire alarm stations.

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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. Clean regularly and protect the panel from ingress of lint and dust by closing all sides and doors.
2. Panel door(s) must be connected with earth bond connecting frame and door.
3. Clean the transformer(s) periodically as part of routine maintenance.
4. Cables drawn in flexible PVC conduit not covering throughout cable length must be additionally protected and supported till the panel edge.
5. Transformer frame earth must be checked and reconnected firmly with properly sized washers.
6. Conservator tank (on transformer) must be checked and required oil level must be maintained.
7. Breather oil cup must be filled with transformer oil to required level as instructed by the manufacturer.
8. Replace silica gel and must include in routine maintenance to check and maintain.

Short Term (Within 3 Months):

1. Cables connecting to busbars inside panel must be connected firmly with cable lugs. Cable terminating to the busbars must be fixed with proper size nuts and bolt with washers.
2. Excess length of existing HT cables coiled near transformer must be protected and laid safely.
3. Cables on floor may be supported on trays installed at safe locations.

Mid Term (Within 6 months):

1. Cables terminating to panel must be protected and supported. Cables supported on trays, ladder and/or riser must be securely fixed to the support at regular intervals.
2. Transformer may be separated from panels by constructing barrier walls.
3. Cables entering base plates without glands leaving opening gaps around cables must be sealed with metal plates. Compression glands may be used to fix existing cables to the base plates.
4. Panel base plates must be installed, at all time, and cable(s) entering panel must be firmly fixed with cable gland.

Long Term (More than 6 months): NA