

Summary of Preliminary Assessment on Structural, Fire and Electrical Safety

Name of the Factory	: COSMOS SWEATER LTD
Address of the Factory	: Dhaka Road, Chandana, Chowrasta, Gazipur-1702, Dhaka
Dhaka Present Status of the Factory	: Under Operation
Structural assessment conducted by	: Accord (Full report available at bangladeshaccord.org)
Date of Structural Inspection	: 7 May, 2014
Fire & Electrical assessment conducted by	: Accord (Full report available at bangladeshaccord.org)
Date of Fire & Electrical Inspection	: 10 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	: Steel trusses supported on concrete or steel columns
iii.	Floor System	: Beam slab
iv.	Floor Area	: The total floor area of the factory is 112400 square feet
v.	No. of Stories	: Single storied
vi.	Construction Year	: 2002
vii.	Foundation Type	: Unavailable
viii.	Design Drawings	: Available (Approved by LGED in 2002)
ix.	Soil investigation Report	: Unavailable
x.	Construction Materials	: Unavailable
xi.	Generator	: Separate structure at the northwest side of the factory

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. Engage an Engineer to: -investigate the stability system of the roof
-to check the capacity of the roof trusses
2. Engage an Engineer to investigate the stability systems and capacity of the lightweight steel structures in the ancillary buildings.
3. Make any necessary alterations.

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.

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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.

Short Term (Within 3 Months):

1. Separate the boiler, generator room by a minimum 2-hr fire-rated construction. Seal and/or protected all openings to maintain the required fire separations. For the transformer, provide protection in accordance with BNBC standard for outdoor electrical substation.
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 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.

3. Reconfigure the egress arrangement to reduce the maximum common path of travel to not more than 30 m.
4. Reconfigure the egress arrangement to reduce the maximum dead-end distance to not more than 30 m.
5. Inspect, test and maintain the fire alarm system, and keep written records on-site, in accordance with NFPA 72.
6. 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 exit arrangement and provide additional exits.
2. Replace the single-station smoke alarms with automatic smoke detectors tied into the fire alarm system.

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. Conservator tank (on transformer) must be checked and required oil level must be maintained.
2. Replace silica gel and must include in routine maintenance to check and maintain. Breather oil cup must be filled with transformer oil to required level as instructed by the manufacturer.
3. HT cable dropping from 11kV pole must be protected in steel pipe of required size at least 2m from the ground level to protect from physical injury by moving objects.
4. Inflammable items stored near panel(s) must be removed and shall maintain the state at all time.

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5. Panel top cover must be installed to prevent ingress of lint/dust into the panel.
6. Panel base plates must be installed, at all time, and cable(s) entering panel must be firmly fixed with cable gland.
7. Check connections for tightness to prevent heating due to loose connection.
8. Install separators between different phases of MCCB. Existing phase separators fabricated from insulating materials may not provide the required insulating properties for the type of MCCB.
9. Multiple cable terminating at a terminal in bus bars must be separated.
10. Every wire terminating must be installed using independent lug/terminal.
11. Existing panel door earth connection from earth strip may be disconnected from the strip and connected to the panel frame, such that it will not disturb the opening and closing of the panel door.
12. Wooden planks or boards used form ousting electrical panels or apparatus must be removed and the MCCB shall be installed into an enclosure made of metallic sheet of minimum 20 SWG thicknesses.
13. Cable terminating at Generator output terminal box must be supported on riser and protected. Existing cables laid on floor may be installed in cable trench or on trays.
14. Generator Battery must be placed on the acid proof battery stand.
15. Cables terminating at distribution boards must be supported in trays and protected throughout its length till the panel base or top plate.
16. Cables in trays/raceways of transformer installed in open atmosphere must be protected from rain, UV and falling objects on the cable. Cable tray cover used must be strong (rigid) and capable to withstand the harsh weather.
17. Clean the duct & provide cover made of noncombustible material on the duct for preventing ingress of dust and debris in future.
18. Cables terminating at distribution boards must be supported in cable tray and protected throughout its length till the panel base or top plate.
19. Batteries must not be kept on concrete floor.
20. Wirings drawn in flexible PVC conduit must be installed on supports to prevent conductors touching hot areas/components.
21. Clean the transformer(s) periodically as part of routine maintenance.

Short Term (Within 3 Months):

1. Cables on trays / raceways / risers must be supported throughout its length. Cable accessories including junctions, Tee, drops and risers must be installed to support cables.

Mid Term (Within 6 months): NA

Long Term (More than 6 months): NA