

Summary of Preliminary Assessment on Structural, Fire and Electrical Safety

Name of the Factory	: UNITED COSTUME (PVT) LTD.
Address of the Factory	: Enayetnagar, Godnail, Siddirganj, Narayanganj
Dhaka Present Status of the Factory	: Under Operation
Structural assessment conducted by	: Accord (Full report available at bangladeshaccord.org)
Date of Structural Inspection	: 15 May, 2014
Fire & Electrical assessment conducted by	: Accord (Full report available at bangladeshaccord.org)
Date of Fire & Electrical Inspection	: 31 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	: R.C Beam and column frame with a 2-way solid slab
iii.	Floor System	: Beam slab
iv.	Floor Area	: The total floor area of the building is 57,000 sq. ft.
v.	No. of Stories	: 6 storied
vi.	Construction Year	: 2001
vii.	Foundation Type	: Unavailable
viii.	Design Drawings	: Available
ix.	Soil investigation Report	: Unavailable
x.	Construction Materials	: Unavailable
xi.	Generator	: East side of building on the southeast corner of the building on the ground

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 all floor loads to 3 kPa maximum.
2. Verify in-situ stress and material properties by testing 100mm dia. concrete cores of at least 4 columns.
3. Commence Detailed Engineering Assessment.
4. Limit access to sheds.

Mid Term (Within 6 Weeks):

1. Create and actively manage loading plans for all floors.
2. Complete DEA.
3. Have factory engineer assess the structural elements of the flimsy roofs as per BNBC wind and seismic load provisions.

Long Term (Within 6 Months):

1. Maintain loading plans for all floors.

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2. Implement recommendations from DEA.
3. Reinforce, strengthen or remove the flimsy roofing to prevent them from being a danger.

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. 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.

Short Term (Within 3 Months):

1. Separate the boiler and generator 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.
3. 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.
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. 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.
7. 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.

Mid Term (within 6 Months):

1. Remove single-station smoke alarms. Provide automatic smoke detection throughout the 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.

The recommendations for Electrical Safety corrective actions are:

Immediate (Within 1 month):

1. Generator frame/body must be directly connected to main earth strips.
2. Remove diesel, other oil barrels and combustible materials from generator room.
3. Compressor machine mounted on wheel must be anchored or the wheels must be locked to prevent from trolling.
4. IPS unit must be installed at safe height and the may be IP rated to avoid damages due to moisture ingress.
5. Large exhaust fans must be connected through control device such that it will not restart automatically when power is restored.
6. Control devises used in panel must be firmly fixed and protected from touching unintentionally to other live parts.
7. All electrical installations, including wiring and cable works must be protected against heat from the boiler by supporting and separating at safe distance.
8. Wirings drawn in flexible PVC conduit must be installed on supports to prevent conductors touching hot areas/ components.
9. Panel base plates must be installed, at all time, and cable(s) entering panel must be firmly fixed with cable glands.
10. Panel top and bottom cover must be installed to prevent ingress of lint/dust into the panel.
11. 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.
12. 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.
13. Wiring in PVC flexible conduit entering panels must be firmly fixed at the panel (base / Top) using socket and check nuts.
14. Install separators between different phases of MCCB. Standard separators provided by the MCCB manufacturer must be used.
15. All panel frames in the factory must be connected to earth and the panel doors must be bonded with frame.
16. Joints in wires and cables must be avoided. Multiple wires joint must be strictly prohibited and all extensions must be realized at terminals or busbars designed for such purpose.

Short Term (Within 3 Months):

1. Service cables laid on external walls of the building must be supported on ladders and cable trays in complete length and must be protected.

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2. Service line between pole mounted transformer and building must be supported and flexible PVC conduit is not adequate for protection.

Mid Term (Within 6 months):

1. Wooden ducts may be replaced with ducts made from non-combustible materials and must be closed from all sides to prevent ingress of lint.

Long Term (More than 6 months): NA