

Summary of Preliminary Assessment on Structural, Fire and Electrical Safety

Name of the Factory	: BANGLA POSHAK LIMITED
Address of the Factory	: Sikder Complex, Choidana, National University, Gazipur.
Dhaka Present Status of the Factory	: Under Operation
Structural assessment conducted by	: Accord (Full report available at bangladeshaccord.org)
Date of Structural Inspection	: 29 March, 2014
Fire & Electrical assessment conducted by	: Accord (Full report available at bangladeshaccord.org)
Date of Fire & Electrical Inspection	: 29 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	: Beam and slab structural system
iii.	Floor System	: Beam slab
iv.	Floor Area	: 427.51 sq. meter
v.	No. of Stories	: 6 storied building
vi.	Construction Year	: Constructed in two phases between 2007 and 2009.
vii.	Foundation Type	: Pad foundations
viii.	Design Drawings	: Available
ix.	Soil investigation Report	: Available
x.	Construction Materials	: Brick aggregate
xi.	Generator	: On the 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. Building Engineer to review design, loads and columns stresses including any additional loading as documented in the observations chapter.
2. Verify in situ concrete strength either by 75mm/100mm diameter cores from a minimum 4 columns or existing cylinder strength data. Building Engineer to identify columns where cores can be taken without overstressing the columns.
3. Building Engineer to check the punching shear capacity at columns for additional applied loads generated by as built geometry.
4. Building engineer to submit calculations showing adequacy of floor structure taking into account the factory design imposed loading and the as built structure.
5. Building engineer to check, collect information and produce accurate and complete as-built documentation.
6. Building engineer to submit calculations and structural perform an engineering assessment on the as built structure and confirm that the structural elements can withstand the applied loading.
7. Extent of build-up loading in toilet and wash areas to be surveyed and weight of water tanks on roof to be assessed. Building Engineer to assess the capacity of floor & roof slabs to provide evidence that the structure is designed to carry these loads.

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8. Building engineer to assess stability and condition of the roof parapets.

Long Term (Within 6 Months):

1. Produce and actively manage a loading plan for all floor plates within the factory giving consideration to floor capacity and column capacity.
2. Prepare controlled loading plans for all floors designating where storage can be placed and cannot be placed.
3. Produce and actively manage a loading plan for all floor plates within the factory giving consideration to floor and column capacity.
4. Produce and actively manage a loading plan for all floor plates within the factory giving consideration to floor capacity and column capacity. Loading plans to be put on each factory floor.
5. Repairs and strengthening to be carried out as required by 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.

Short Term (Within 3 Months):

1. Separate the hazardous materials / flammable liquid storage area by a minimum 2-hr fire-rated construction. Seal and/or protect all openings to maintain the required fire separations.
2. Separate the boiler and generator rooms by a minimum 2-hr fire-rated construction. Seal and/or protect 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 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.

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. Seal all penetrations and openings in exit stair enclosure walls to maintain the fire separation.
6. Enclose the exit stairs with a minimum 2-hr fire-rated construction.

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7. Provide minimum 1-hr fire rated factory exterior wall up to 10ft above grade. Seal and/or protect all openings to maintain the required fire separations.
8. Inspect, test and maintain the fire alarm system, and keep written records on-site, in accordance with NFPA 72.
9. 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. 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.

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. Service cables must be supported on trays or risers in full length.
2. Wires terminating to devices inside the panel must be connected firmly and wires approaching devices must be securely fastened to avoid unintentional contact with live parts.
3. All the combustible materials near the panel shall be relocated immediately.

Short Term (Within 3 Months):

1. Overhead cables must be firmly fastened at both ends.
2. Cables inside the panel must be securely fastened, through ducts or by ties, to avoid crossing live parts.
3. Service line shall be firmly secured and protected on cable trays.
4. For safety reason, the clearance in front of the panels should be provided.
5. Flexible PVC conduits cut (slit) open at one side must be removed. Cables must be supported on cable ducts, trays or ladders and must be securely clamped at regular intervals.
6. Cables must be protected and supported on tray, duct or conduits to protect against weather and possible physical damages.

Mid Term (Within 6 months):

1. Cables terminating at the generator panel must be firmly fixed at the panel with cable glands and supported on riser from the cable trench.
2. Cables shall be properly protected in the trench.

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3. Expand the existing generator room to provide safe working space.

Long Term (More than 6 months): NA