

Summary of Preliminary Assessment on Structural, Fire and Electrical Safety

Name of the Factory	: BELLISSIMA APPARELS LIMITED.
Address of the Factory	: BSCIC, Inds Estate, Tungi, Gazipur, Bangladesh
Dhaka Present Status of the Factory	: Under Operation
Structural assessment conducted by	: Accord (Full report available at bangladeshaccord.org)
Date of Structural Inspection	: 30 April, 2014
Fire & Electrical assessment conducted by	: Accord (Full report available at bangladeshaccord.org)
Date of Fire & Electrical Inspection	: 8 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	: RC beam and column with 2-way spanning slab
iii.	Floor System	: Beam slab
iv.	Floor Area	: The total area of each floor is 10,267 sq.ft.
v.	No. of Stories	: 3 storied
vi.	Construction Year	: 1997
vii.	Foundation Type	: Shallow pad foundation
viii.	Design Drawings	: Available
ix.	Soil investigation Report	: Unavailable
x.	Construction Materials	: Unavailable
xi.	Generator	: Ground floor in a separate building

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):

Mid Term (Within 6 Weeks):

1. Limit all 2nd floor storage to 0.5m at max 50% floor area within single bay.
2. Produce calculations for the 2nd floor slab and beams for new loading in steel frame area including factory activities, additional screed and steel column point load on beam below.
3. Produce 2nd floor calculations for concentrate load such as water tank areas and toilet block (including plinth mounting).
4. Inspect and confirm adequacy of portal frame design including bracing in north south direction and base bolt connections.
5. Review rebate and determine adequacy of slab depth and reinforcement cover.
6. Re-survey, revise and re-issue As-built drawings and design statement after visiting site and completing any required re-calculations (brick aggregate, changes to column size etc).

Long Term (Within 6 Months):

1. Implement any strengthening specified by the building engineer.
2. Implement a load plan for 2nd floor.

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3. Implement any strengthening specified by the building engineer.

The recommendations for Fire Safety corrective actions are:

Immediate (Within 1 month):

1. Remove locking features from all egress doors and gates. If locks are required for security reasons, utilize special door locking features complying with NFPA 101.
2. Reduce occupant load to not more than available exit capacity immediately. In the future, if the 360 occupant load is desired on the 1st floor, provide greater exit capacity by either widening the stair landings, or providing an additional exit.
3. Replace all gates and 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 all storage from exit stairs and egress paths.

Short Term (Within 3 Months):

1. Separate the boiler room by a minimum 2-hr fire-rated construction. Seal and/or protected all openings to maintain the required fire separations.
2. Protect the exit passageway by one of these two methods:
 - Provide a fire-rated vestibule between the storage room and the exit passageway.
 - Seal the opening between the storage room and the exit passageway and provide a door in a different location.
3. 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.
4. 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 93m²Separate areas of unenclosed combustible storage by a minimum clear distance of 3m.
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. Provide 1-hr fire-rated exit passageway leading directly outside (use vestibules to separate any storage areas).
2. Remove single-station smoke alarms. Provide automatic smoke detection throughout the building in accordance with NFPA 72.

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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. Cable supports must be installed at safe distance from the transformer and live parts.
2. Cables connecting to transformer must be supported on cable tray/risers.
3. Service cables passing through walls must be protected in rigid steel conduits.
4. Arrangements must be made to increase the clearance between existing transformers and surroundings.
5. Panel may be relocated to a safe and readily accessible location.
6. MCCB (electrical devices) mounted on the wall must be installed within protective enclosures.
7. Cables/wiring in flexible PVC conduit entering panels, and installed at lower height, must be protected against possible damage due to works and workers moving near it.
8. Cables entering through panel top must be installed with cable glands fixed through the top cover plate.
9. All panel frames and doors in the factory must be connected to earth using the bonding wire, if not specifically designed for unearthed system.
10. 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.
11. Aluminum channels should be covered with protective covers in order to avoid any intrusion of dust and lint.
12. Provide additional lighting inside transformer room.
13. Cables enclosed in flexible PVC conduit must be additionally supported as the existing conduit does not have required strength and rigidity to protect and support cables in it.
14. Conduit wiring entering/leaving panel must be securely fixed to wall (near panel) or supported on trays/ladder.

Short Term (Within 3 Months): NA

Mid Term (Within 6 months): NA

Long Term (More than 6 months): NA