

Summary of Preliminary Assessment on Structural, Fire and Electrical Safety

Name of the Factory	: BELKUCHI KNITWEAR LTD.
Address of the Factory	: 3, Sujat Nagar, Sultan Mansion, Section-12, Mirpur, Dhaka, Bangladesh
Dhaka Present Status of the Factory	: Under Operation
Structural assessment conducted by	: Accord (Full report available at bangladeshaccord.org)
Date of Structural Inspection	: 10 March, 2014
Fire & Electrical assessment conducted by	: Accord (Full report available at bangladeshaccord.org)
Date of Fire & Electrical Inspection	: 13 July, 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 area of each floor in the building is 12,000 sq. ft.
v. No. of Stories	: 9 storied
vi. Construction Year	: 1993
vii. Foundation Type	: Unavailable
viii. Design Drawings	: Available (Approved by RAJUK)
ix. Soil investigation Report	: Available
x. Construction Materials	: Brick aggregated
xi. Generator	: Outbuilding

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 loads throughout the building.
2. Factory engineer to review design loads and column stresses.

Mid Term (Within 6 Weeks):

1. Determine a maximum storage height based upon design loadings.
2. Acquire column reinforcement details.
3. If column reinforcement details are not available, conduct a detailed engineering investigation to determine column reinforcing.
4. A detailed engineering assessment is to be performed regarding column capacity.
5. Basement, 1st & 2nd stories are required to be surveyed.

Long Term (Within 6 Months):

1. Establish and maintain a loading plan for all floor plates with consideration given to slab and column capacity.

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2. Carry out any actions deemed necessary as a result of this follow-up survey in line with findings and recommendations of this report.

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. 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. Provide exit signs above all exits to the exterior and all doors to the exit stairs.
5. Remove manual on/off switches from lighting units to prevent them from being switched off.

Short Term (Within 3 Months):

1. Separate the hazardous materials storage room 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. 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. Separate the boiler room by a minimum 2-hr fire-rated construction. Seal and/or protected all openings to maintain the required fire separations.
5. Provide handrails on at least one side of exit stair.
6. Provide minimum aisle widths of 36-in.
7. Inspect, test and maintain the fire alarm system, and keep written records on-site, in accordance with NFPA 72.
8. 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. Remove single-station smoke alarms. Provide automatic smoke detection throughout the building, tied into the fire alarm system, in accordance with NFPA 72.

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.
2. Provide automatic sprinkler protection throughout the building in accordance with NFPA 13.

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The recommendations for Electrical Safety corrective actions are:

Immediate (Within 1 month):

1. Replace the wooden material with noncombustible battery base and encase the battery.
2. Remove all the combustible material from generator room to avoid fire.
3. Use enclosure for MCCB and also remove the wooden base.
4. Use circuit breaker.
5. Use phase separator in between phases of the breaker.
6. Make a channel for the circuit breaker and fix them up.
7. Replace the wooden switch board with a switch-box made of noncombustible material.
8. Single line diagram and other diagram for electrical systems must be prepared and must be kept in the site.

Short Term (Within 3 Months):

1. The overhead service connection shall be led into buildings via roof poles or service masts made of GI pipe at least 38 mm in diameter having a goose neck bend at the top and installed on the outer wall.
2. Use 2 nos. of separate earthing bond and Cable terminating at Generator output terminal box must be supported on riser and protected.
3. Cable must be supported on cable-tray/duct (instead of using flexible pipe).
4. Remove lint and dust from the cable duct and cover it with noncombustible material; make a periodical cleaning program.
5. Seal the bottom and use proper gland for cable entry. Multiple cable termination in a single point must be prohibited. Remove lint and dust.
6. Cables must be connected to terminals only by soldered/welded lugs according to cable size.
7. Cut-down the damaged part and connect with proper cable lugs or replace the cable by a new one.
8. Set up the above program and keep the document in site.

Mid Term (Within 6 months): NA

Long Term (More than 6 months): NA