

Summary of Preliminary Assessment on Structural, Fire and Electrical Safety

Name of the Factory	: SNOWTEX APPARELS LTD.
Address of the Factory	: Plot No. 09, Road No. 03, Section No. 07, Mirpur, Dhaka-1216
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	: 6 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 frame with 2 way solid slab
iii.	Floor System	: Beam slab
iv.	Floor Area	: Unavailable
v.	No. of Stories	: 9 storied
vi.	Construction Year	: 1993
vii.	Foundation Type	: Unavailable
viii.	Design Drawings	: Available (By RAJUK)
ix.	Soil investigation Report	: Available (April, 1993)
x.	Construction Materials	: Brick and Stone aggregated
xi.	Generator	: 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):

1. Remove personnel and loading from areas noted on following page.
2. Building Engineer to review design, loads and column stresses in all columns.
3. Verify insitu concrete stresses either by 100mm diameter cores or existing cylinder strength data, take cores from a minimum 4 columns.
4. Reinforcement quantities also to be confirmed.
5. A Detailed Engineering Assessment of the Factory to be commenced, see attached Scope.

Mid Term (Within 6 Weeks):

1. Detailed Engineering Assessment to be completed.
2. Make structural alterations as advised by Engineer and remove props.
3. Produce and actively manage a loading plan for all floor plates within the factory giving consideration to floor capacity and column capacity.
4. Engage Building Engineer to check load bearing capacity of external escape stair and to ensure adequate stability and connections are provided.

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5. Formulate a safe method of work plan by which the chutes can be used without posing a risk to the workers, including installation of barrier around the openings.

Long Term (Within 6 Months):

1. Continue to implement load plan.
2. Additional structures to be design checked to ensure adequacy for code vertical and wind loads by the Building Engineer.
3. Undertake strengthening if required.
4. Building Engineer to produce appropriate documentation and as built drawings.

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. 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.
3. Regularly inspect all exit signage and replace/install lights as needed to illuminate signs.

Short Term (Within 3 Months):

1. Separate the boiler, generator and transformer rooms by a minimum 2-hr fire-rated construction. Seal and/or protected all openings to maintain the required fire separations.
2. 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
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. Seal all penetrations and openings in floor/ceiling assemblies to maintain the fire separation.
5. Modify the egress door to swing in the direction of egress travel.
6. Provide additional means of egress.
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):

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1. Provide 2-hr fire-rated exit passageway leading directly outside or provide sprinkler protection for discharge floor in accordance with NFPA 13.
2. 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.
2. Provide automatic sprinkler protection throughout the building in accordance with NFPA 13.

The recommendations for Electrical Safety corrective actions are:

Immediate (Within 1 month):

1. Periodic inspection is needed to identify all the loose connection and tighten up all the connections.
2. Use cable lugs or crocodile clip to terminate the control cables to changeover switch.
3. Use cable lugs to terminate cable on both terminals of MC.
4. Panels enclosure including its door should be earthed properly with better earth continuity.
5. Keep the Batteries inside a metal casing and insulate its terminal by insulating material to protect it from short circuit which may occur by foreign material falling on it.
6. Keep at least 25mm clearance between the MCCBs for better heat dissipation and perform maintenance work.
7. Cables must be protected and separated in rigid conduit or pipes or trays or channels when passing through the walls to remove the damage of cable insulation.
8. Provide covers on all cable channels to keep it free from dust, debris, lint and vermin. Establish a cleaning program to keep clean the overall electrical system.
9. Oil leakages from transformer through bushing may be occurred due to stress on bushing. The stress is occurred due to insufficient cable support. Support the HT cable by installing cable ladder.
10. HT cable terminating at transformer must be firmly supported by using ladder to avoid stress at the termination point (transformer bushing) and avoid acute bend of cables.

Short Term (Within 3 Months):

1. Separate the boiler room from working area by constructing fire rated construction.

Mid Term (Within 6 months): NA

Long Term (More than 6 months): NA