

Summary of Preliminary Assessment on Structural, Fire and Electrical Safety

Name of the Factory	: ARUNIMA APPARELS LTD.
Address of the Factory	: Plot 1/10, Block-K, Rpnagar, 1/A, Mirpur, Dhaka
Dhaka Present Status of the Factory	: Under Operation
Structural assessment conducted by	: Accord (Full report available at bangladeshaccord.org)
Date of Structural Inspection	: 24 September, 2013
Fire & Electrical assessment conducted by:	Accord (Full report available at bangladeshaccord.org)
Date of Fire & Electrical Inspection	: 25 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	: Garments Factory
ii.	Structural System	: RCC beam slab
iii.	Floor System	: Beam slab
iv.	Floor Area	: Unavailable
v.	No. of Stories	: 8 Storey
vi.	Construction Year	: Unavailable
vii.	Foundation Type	: Not applicable
viii.	Design Drawings	: Available (1996)
ix.	Soil investigation Report	: Unavailable
x.	Construction Materials	: Unavailable
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: NA

Mid Term (Within 6 Weeks):

- Factory Engineer to review design, loads and columns stresses in area identified above.
- Verify insitu concrete stresses either by cores or existing cylinder strength data for cores from 4 columns.

Long Term (Within 6 Months):

- Produce and actively manage a loading plan for all floor plates within the factory giving consideration to floor capacity and column capacity.
 - Conduct regular inspection of beam cracks. If cracks grow larger, unload the beam by removing all items on the floor directly above the beam, 5m either side of the beam and engage an engineer to investigate, repair and strengthen the beam.
 - Engage an engineer to verify that beam/slab has sufficient capacity to support fully filled water tanks plus concrete plinth.
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The recommendations for Fire Safety corrective actions are:

Immediate:

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 boiler and electrical 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. Separate factory operations from the dedicated storage areas with 1-hr fire-rated construction or alternately, relocate factory operations from the basement.
3. Separate the elevator machine 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. Provide a minimum 2-hr fire rated shaft to separate the utility risers from each floor level. Seal all penetrations and openings in floor/ceiling assemblies to maintain the fire separation.
6. Seal all penetrations and openings in the ceiling assembly to maintain the fire separation.
7. Provide minimum aisle widths of 36-in.
8. Provide handrails on at least one side of exit stair.
9. Remove and relocate the non serving electric appliances to the exterior of the stairwells.
10. Supply signage next to the elevators on all floors.
11. Inspect, test and maintain the fire alarm system, and keep written records on-site, in accordance with NFPA 72.
12. 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): NA

Summary of Preliminary Assessment on Structural, Fire and Electrical Safety

Long Term:

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:

1. Safely remove the materials from the panel and close/seal all the unused holes in the panel.

Short Term (Within 3 Months):

1. HT cable terminating at transformer must be firmly supported on riser to avoid stress at the termination (transformer bushing).
2. Excess cable length may be supported or laid outside building, at safe location.
3. Cables passing through permanent walls must be protected in steel pipes and remaining holes around the pipe must be sealed.
4. Cables in trench must be supported in cable trays installed above the minimum flood level.
5. Install separators between different phases of MCCB in order to avoid arc flashing. Standard separators provided by the MCCB manufacturer must be used.
6. Generator frame must be connected to earth with earth conductor of proper size. Solid copper conductor connecting to earth must be connected securely with loops.
7. Cables shall be arranged, fixed and protected properly using cable trays.
8. Exposed wires must be properly protected. Junction box may be used for protecting broken bend parts of PVC conduits.
9. Motor in boiler room must be firmly grouted on the concrete floor or fixed on the foundation structure.
10. All the metal panel doors shall have firm earth connection.

Mid Term: NA

Long Term: NA
