

Summary of Preliminary Assessment on Structural, Fire and Electrical Safety

Name of the Factory	: DISARI APPAREL
Address of the Factory	: B-193, BSCIC Industrial Estate, Tongi, Gazipur, Dhaka
Dhaka Present Status of the Factory	: Under Operation
Structural assessment conducted by	: Accord (Full report available at bangladeshaccord.org)
Date of Structural Inspection	: 11 March, 2014
Fire & Electrical assessment conducted by:	Accord (Full report available at bangladeshaccord.org)
Date of Fire & Electrical Inspection	: 1 st 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	: 7 Storey
vi.	Construction Year	: 1997-2000
vii.	Foundation Type	: Not applicable
viii.	Design Drawings	: Available (Rajuk)
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):

- Building Engineer to survey column locations and compare with structural drawings. Updated drawings to be prepared showing the correct as constructed layout.

Long Term (Within 6 Months):

- Prepare/update calculations showing the structural adequacy of the floor system taking into account the factory design imposed loading and the as built structure.
 - Prepare controlled loading plans for all floors designating where storage can be placed and can not be placed.
 - The steel roof over the Dining Area should be designed by the Building Engineer and, if required, upgraded to support code vertical and wind loads or the area should be vacated and removed.
 - Provide calculations showing the structural adequacy of the floor slab and beams at 1st floor slab level above the load/unloading area.
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The recommendations for Fire Safety corrective actions are:

Immediate:

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. 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.

Short Term (Within 3 Months):

1. Separate the generator, boiler, and transformer 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 on all production floors where transient storage is required for operations. Where separate storage rooms are not feasible, provide defined storage areas and limit the storage arrangement as follows:
 - Maximum height of 2.4 m 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.
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. Inspect, test and maintain the fire alarm system, and keep written records on-site, in accordance with NFPA 72.

Mid Term (within 6 Months):

1. Correct this condition by one of the following means:
 - Modify exit arrangement.
 - Provide additional exit(s).
 - Provide sprinkler protection in accordance with NFPA 13.
 2. Provide separate discharge for each exit stair by one of the following methods:
 - Modify stair to discharge directly outside.
 - Provide 2-hr fire-rated exit passageway leading directly outside (vestibules to separate any storage areas).
 3. Remove single-station smoke alarms. Provide automatic smoke detection throughout the building in accordance with NFPA 72.
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Long Term:

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:

1. Cables shall be connected to terminals only by soldered/welded lugs according to the size of the respective cables. Proper crimping tools must be used to punch the socket.
2. Instead of bearing grease, thin layer of contact grease must be used for lubrication of Change-Over-Switch contacts.
3. Remove the multiple connections (except the main outgoing cable) made at a single point of change-over terminal and take connection for these cables (removed) from the downstream-panel of change-over switch providing individual circuit breaker.
4. Provide earth connection for body and doors of metallic distribution boards using green cables preferably braid so that the metallic door remains at zero potential all the time.
5. Provide phase separators between poles of MCCB made of noncombustible materials preferably use rubber having enough dielectric strength to insulate phases from each other.
6. Cables connecting to bus bars inside panel must be connected firmly with cable lugs. Cable terminating to the bus bars must be fixed with proper size nuts and bolt with washers.

Short Term (Within 3 Months):

1. Cables/wirings passing through permanent wall must be protected installing pipes and remaining gaps must be sealed with fire resistant materials. Covered cable tray/ladder shall be installed for the support of the cable throughout its length.
2. Service cables kept hung on walls of the building must be supported on covered ladder/trays firmly fixed on wall at regular intervals.
3. Cable must be arranged and latched properly inside the panels. Install slotted wiring-duct inside the panel to arrange and latch the haphazard cables.
4. Cables must be supported near panel into covered cable tray/ladder protect the cables' insulation from physical damage. Provide cable gland according to the respective cable size for cable entry and exit so that the cables are not stressed on the sharp edges of the hole of panels,

Mid Term: NA

Long Term: NA
