

Summary of Preliminary Assessment on Structural, Fire and Electrical Safety

Name of the Factory	: DISARI INDUSTRIES
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. Modify the egress doors to swing in the direction of egress travel.
5. 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. 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).
 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.
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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. Bearing grease applied on Change-Over-Switch contacts for mobility must be cleaned. For lubricating, thin layer of contact grease may be used.
3. Avoid multiple connections. Terminate individual cables at individual point. Provide copper cable-socket, copper nut-bolt, and copper washer for termination.
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. Install separators between different phases of MCCB. Standard separators provided by the MCCB manufacturer must be used.
6. Cables must be connected to terminals by soldered/welded lugs according to the size of the respective cables. Proper crimping tools must be used to punch the socket.

Short Term (Within 3 Months):

1. Cables passing through permanent walls must be protected in steel pipes. Seal all the penetrations using non appropriate fire rated material and ensure the cable insulation does not get damaged during sealing work.
2. Install ladders for supporting the overhead service cables. Ensure the cables are tightly attached with the ladder and provide covers made of non combustible material preferably metallic sheet to protect the cables' insulation from physical damage as well as prevent entering debris, dust and lint.
3. Assign an electrical engineer to determine the capacity of the installation and redesign the wirings of the panel. If the wirings and loads exceed the capacity of the panel, install additional panel. Establish a load management program for avoiding any installation exceeding its capacity in future. Install PVC wiring duct inside the panel to latch the haphazard cables inside the duct.
4. Install the cable tray/ladder/ duct upto the cable entry of the panel in order to support the cables. Ensure the cables are tightly latched with the ladder and provide covers made of non-combustible material preferably metallic sheet to protect the cables' insulation from any physical damage as well as prevent ingress of debris, dust and lint. Provide cable gland for every cable entry and exit hole.

Mid Term: NA

Long Term: NA
