

Summary of Preliminary Assessment on Structural, Fire and Electrical Safety

Name of the Factory	: APS APPARELS LTD.
Address of the Factory	: Holding # 106, Ward # 05, Baitur Rahmat Jame Mosque Road, East Faidabad, Dakshinkhan, Uttara, Dhaka
Dhaka Present Status of the Factory	: Under Operation
Structural assessment conducted by	: Accord (Full report available at bangladeshaccord.org)
Date of Structural Inspection	: 19 March, 2014
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	: Garment factory
ii.	Structural System	: RC beam and slab supported by RC columns
iii.	Floor System	: Beam slab
iv.	Floor Area	: Unavailable
v.	No. of Stories	: 9 storied
vi.	Construction Year	: 2007
vii.	Foundation Type	: Unavailable
viii.	Design Drawings	: Available (Dated December, 2004)
ix.	Soil investigation Report	: Available (Dated June, 2013)
x.	Construction Materials	: 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): NA

Mid Term (Within 6 Weeks): NA

Long Term (Within 6 Months):

1. Building engineer to check the capacity of the slab to carry the concentrated loading and remove/reduce the number of tanks as required.
2. Building engineer to check the structures and provide structural drawings and loading plan for the Mezzanine Floor.
3. Building engineer to check the structures for stability under horizontal loading.

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. Remove all storage from exit stairs and egress paths.

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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, generator and transformer room by a minimum 2-hr fire-rated construction. Seal and/or protected all openings to maintain the required fire separations.
2. 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.
3. Separate the "Fabric chute" 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 office spaces on mezzanine floor levels.
5. Seal all penetrations and openings in exit stair enclosure walls to maintain the fire separation.
6. Separate the diesel drum area by a minimum 2-hr fire-rated construction. Seal and/or protected all openings to maintain the required fire separations.
7. Replace the fire alarm system with a new, listed addressable fire alarm system in accordance with NFPA 72.
8. Inspect, test and maintain the fire alarm system, and keep written records on-site, in accordance with NFPA 72.
9. Inspect, test and maintain the emergency lighting system in accordance with The ACCORD standard. Keep written records on-site.

Mid Term (within 6 Months): NA

Long Term (More than 6 months):

1. 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. Install cable duct with cover to protect the HT cables as well as prevent the ingress of debris, dust and lint.
2. All earthing lead must be covered with PVC conduit to protect it from physical damage.
3. Install the Gap Horn (may consult with supplier of the transformer).
4. Silica gel in breather must be changed and oil cup must be filled with transformer oil as per the instruction of the manufacturer.
5. Arrange periodic inspection & thermal scan to identify the overloading, loose connection, unbalanced load which may cause the excessive heat-rise and take action accordingly.
6. Two separate and distinct earth connection (2 SWG) must be provided for 256kVA generator.

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7. Provide insulating cover to the battery terminal to prevent short circuit due to falling foreign metal on it.
8. Removed all unused materials from the Metering panel room.
9. Connect the Leakage current-collector of the HT cable to the earthing, otherwise, the insulation of the cable may get damaged due to induced voltage in it.
10. Provide earth connection for body and door of HT Panel using green cables preferably braid so that the metallic door remains at zero potential all the time.
11. Provide cable gland same as the cable size at the cable entry and exit so that the cables are not stressed on the sharp edges of the entry and exit hole of the switch boards & panels. Provide covers (of non-combustible material) if any additional gap remains after installing cable glands.
12. Every item of installation shall be arranged so as to facilitate its operation, inspection, maintenance & access. Access of the DB must be kept obstacle free for easy operation & maintenance.
13. Color code should be maintained as per standard. Earthing cable color should be green (Apply to all panels).
14. Provide phase separators between poles of MCCB made of noncombustible materials preferably use rubber having enough dielectric strength to insulate phases from each other.
15. Wooden board must be removed from the panel to reduce the risk of spreading fire due to short circuit.
16. Multiple connections are not allowed. Use individual cable for each load.
17. Install door earthing for all panels
18. Use proper lug / bolt/washer for termination of cables.
19. Working table must be removed from in front of the switch. Exhaust fan switch must be accessible.
20. Provide cover made of insulating material on every open ends of the wiring duct.
21. Wiring duct must be fixed properly with proper structural support. Flammable materials (fabrics) must be stored away from the electrical wiring duct.
22. Cable raceways must be installed over the walk-way, supported from the ceiling to provide mechanical support to these cables.

Short Term (Within 3 Months):

1. Make circular hole at the base plate/top plate of panels and 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. Provide covers (of noncombustible material) if any additional gap remains after installing cable glands.
2. All Cable must be properly arranged, installing covered cable tray to provide the support to prevent any physical damage. Make circular hole at the base plate/top plate of panels and 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.

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3. Install the cables tray or duct with cover (metallic) for the protection of the cable laid on floor. Ensure the cables are tightly latched inside the ladder/tray and provide covers made of non-combustible material preferably metallic sheet to protect the cables' insulation from any physical damage as well as prevent the ingress of debris, dust and lint.
4. Install cable duct to protect the generator output cables and provide covers made of noncombustible material preferably metal to protect the cables' insulation from any physical damage as well as prevent the ingress of debris, dust and lint.

Mid Term (Within 6 months): NA

Long Term (More than 6 months): NA