

Summary of Preliminary Assessment on Structural, Fire and Electrical Safety

Name of the Factory	: AVANT GARDE FASHION LTD.
Address of the Factory	: Plots 170-176 & 224-260, Extension Area, DEPZ, Ganakbari, Savar, Dhaka, Bangladesh
Dhaka Present Status of the Factory	: Under Operation
Structural assessment conducted by	: Accord (Full report available at bangladeshaccord.org)
Date of Structural Inspection	: 7 May, 2014
Fire & Electrical assessment conducted by:	Accord (Full report available at bangladeshaccord.org)
Date of Fire & Electrical Inspection	: 18 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	: Garments Factory
ii. Structural System	: RC beam slab, Column frame with solid slab
iii. Floor System	: Beam slab
iv. Floor Area	: Unavailable
v. No. of Stories	: 2 Storey
vi. Construction Year	: 2005/2006
vii. Foundation Type	: Not applicable
viii. Design Drawings	: Available (BEPZA, 2003)
ix. Soil investigation Report	: Available (2005)
x. Construction Materials	: Unavailable
xi. Generator	: Separate building south side of building

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): NA

Long Term (Within 6 Months):

- Building Engineer to review the structural design of the undocumented steel shed structure at roof level. Particular attention to be paid to i) member strength and stiffness ii) connection details and iii) lateral stability.
- 'As built' structural drawings to be completed/updated to include steel shed at roof level.
- 'As built' structural drawings to be updated, as required, following any future modifications to the building or strengthening works to structural elements.
- Building Engineer to review the adequacy of non-engineered structures throughout complex. Particular attention should be paid to the stability of these structures and connection details.

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- Building Engineer to develop load plans for the main production building accounting for usage, floor build ups, solid partition walls, material weight and areas of concentrated loading.
- Factory management to implement load plans.

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.
3. Remove single-station smoke alarms. Provide automatic smoke detection throughout the accordance with NFPA 72.
4. Remove manual on-off switches from emergency lighting exit signage units to prevent them from being switched off.

Short Term (Within 3 Months):

1. Separate the hazardous materials / flammable liquid storage room by a minimum 2- hr fire-rated construction. Seal and/or protected all openings to maintain the required fire separations.
2. Separate the boiler, generator, transformer, room by a minimum 2-hr fire-rated construction. Seal and/or protected all openings to maintain the required fire separations.
3. Provide dedicated storage rooms separated by minimum 1-hr fire-rated construction.
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. Inspect, test and maintain the fire alarm system, and keep written records on-site, in accordance with NFPA 72.
7. Inspect, test and maintain the emergency lighting system in accordance with The ACCORD standard. Keep written records on-site.
8. 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.

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Mid Term (within 6 Months): NA

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.

The recommendations for Electrical Safety corrective actions are:

Immediate (within 1 month):

1. Breather oil cup must be filled with transformer oil to required level as instructed by the manufacturer.
2. Replace silica gel and must include in routine maintenance to check and maintain.
3. Clean the cable trench and cover it to prevent from falling debris.
4. Install separators between different phases of MCCB. Standard separators provided by the MCCB manufacturer must be used.
5. All panels used for distribution of circuits must be provided with earth strip inside panel for downstream earth branches.
6. Panel must be connected with dedicated earth and connection of earth strip to the panel frame does not substitute the requirement of earth connection.
7. Combustible materials covering power cables must be removed.

Short Term (Within 3 Months):

1. Cable trenches inside building may be covered with protective covers (concrete slabs or checkered plates).
2. Cables passing through permanent walls must be protected in steel pipes and remaining holes around the pipe must be sealed.
3. Install the panel with proper accessibility.
4. HT cables must be fixed with clamps at the entry point and leakage current collector conductor must be connected to earth firmly.
5. Panel base plates must be installed, at all time, and cable(s) entering panel must be firmly fixed with cable gland.
6. Cables terminating at MCCBs must be installed with cable lugs/terminals of required size and rating.
7. Multiple cable connecting at a MCCB terminal must be disconnected. Existing multiple circuits may be distributed through bus bars.
8. Panel door(s) must be connected with earth bond connecting frame and door.
9. Conduit wiring entering/leaving panel must be securely fixed to wall (near panel) or supported on trays/ladder.

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10. Flexible PVC conduits on walls and column must be additionally protected and supported on trays or risers.
11. All electrical installations, including wiring and cable works must be protected against heat from the boiler by supporting and separating at safe distance.
12. Cables must be supported on cable trays and riser. Cables may be laid in cable trench with covers.
13. The cable trench must be tightly covered to avoid physical damage to the cables from falling objects. The cover must prevent the trench from falling debris, dust and lint.
14. Cable ducts must be cleaned regularly and covered to prevent ingress of dust and lint.

Mid Term: NA

Long Term: NA