

Summary of Preliminary Assessment on Structural, Fire and Electrical Safety

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| Name of the Factory | : SURMA GARMENTS LTD. |
| Address of the Factory | : Aicha Noadda, Rajashon Road Savar, Dhaka |
| Dhaka Present Status of the Factory | : Under Operation |
| Structural assessment conducted by | : Accord (Full report available at bangladeshaccord.org) |
| Date of Structural Inspection | : 6 May, 2014 |
| Fire & Electrical assessment conducted by | : Accord (Full report available at bangladeshaccord.org) |
| Date of Fire & Electrical Inspection | : 12 May, 2014 |

Basic Information: The present garment factory is a commercial building with beam-column frame system. The following general information was noted:

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| i. | Building Usage Type | : Garment factory |
| ii. | Structural System | : R.C Beam and column frame with a 2-way solid slab |
| iii. | Floor System | : Beam slab |
| iv. | Floor Area | : The floor Area of the Buildings is: Building B: 840 Sqm Building C: 1024 Sqm, Building D: 2229 Sqm |
| v. | No. of Stories | : 4, 5 & 7 storied |
| vi. | Construction Year | : 1998, 2000 & 2005 |
| vii. | Foundation Type | : Unavailable |
| viii. | Design Drawings | : Available |
| ix. | Soil investigation Report | : Available |
| x. | Construction Materials | : Unavailable |
| xi. | Generator | : Ground floor - southeast of the building in separate shed |

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):

1. Structural Engineer to survey existing conditions and update drawings to match actual condition.
2. Survey the existing conditions and produce new drawings for permit.
3. Re-apply for permit with revised drawings.
4. We recommend a geotechnical investigation be completed to determine the exact footing depths of all buildings.
5. Due to the lack of loading plans, the high local loading (up to 6.0 kPa) and the position of the loading (on cantilevered portion of slabs), all loading exceeding 2.0 kPa must be removed.
6. Detail Engineering Assessments are required for the above mentioned items.

Mid Term (Within 6 Weeks):

1. A second geotechnical investigation be completed to ensure adequate bearing capacity for all buildings.
2. Loading plans to be designed by Structural Engineer based on maximum capacity for each floor.
3. Recommendations outlined in the DEAs to be implemented.

Summary of Preliminary Assessment on Structural, Fire and Electrical Safety

Long Term (Within 6 Months):

1. Post loading plans at each level of all buildings and manage accordingly.

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. Keep egress paths and stairs clear of storage.
3. Remove all storage from exit stairs and egress paths.
4. 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 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. Where separate storage rooms may not be feasible, provide defined storage areas and limit the storage arrangement as follows:

-Maximum height of 2.4m 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.

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. Seal all penetrations and openings in exit stair enclosure walls 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.

Mid Term (within 6 Months):

1. Replace the single-station smoke alarms with automatic smoke detectors tied into the fire alarm system.
2. To complete the on-going works on smoke alarm system to be tied to the fire alarm system.

Long Term (More than 6 months):

Summary of Preliminary Assessment on Structural, Fire and Electrical Safety

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. 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.
2. Remove combustible material near the IPS unit.
3. Provide additional lighting inside transformer room.
4. Provide steel pipe for supporting the service line. Ensure the insulation of the cable does not get damage during installation. Seal the remaining penetrations by fire rated material.

Short Term (Within 3 Months): NA

Mid Term (Within 6 months): NA

Long Term (More than 6 months):

1. Transformer must be installed on raised plinth. The plinth level must be raised higher than the minimum local flood level.