

## **Summary of Preliminary Assessment on Structural, Fire and Electrical Safety**

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Name of the Factory	: AHSAN APPARELS LTD.
Address of the Factory	: M.S. Tower-2, Siddirganj bus stand, Narayanganj, Bangladesh.
Present Status of the Factory	: Under Operation.
Structural Assessment Conducted by	: TUV
Date of Structural Inspection	: 11 <sup>th</sup> March, 2015.
Fire Assessment Conducted by	: TUV
Date of Fire Inspection	: 11 <sup>th</sup> March, 2015.
Electrical Assessment Conducted by	: TUV
Date of Electrical Inspection	: 11 <sup>th</sup> March, 2015.
BKMEA Membership No.	: 1920.

### **BASIC INFORMATION:**

The assessed factory building was a 5 -Storey RCC building. The structural system of the building is RCC beam column frame and beam slab floor system. All floors of building were occupied by the assessed factory as rental basis. The following information was noted:

i. Building Usage Type	: Garment Factory
ii. Structural System	: RCC beam column frame system.
iii. Floor System	: RCC beam slab floor system.
iv. Floor Area	: Typical Plinth area of 12005 sft & total area of 60025 sft.
v. No. of Stories	: 5-Storey.
vi. Construction Year	: 2013.
vii. Foundation Type	: Shallow Foundation.
viii. Design Drawings	: Available (approval from Siddirgonj Pourashova on 13th June, 2011).
ix. Soil Investigation Report	: Available.
x. Construction Materials	: Brick aggregate. (Identified by removing plaster)
xi. Generator	: Situated at the North south of the factory building in a separate shed area consisting 489.5 sft

### **RECOMMENDATIONS FOR CORRECTIVE ACTION:**

The recommendations of corrective action for both Structural and Fire & Electrical Safety comprises in Short Term, Mid Term and Long Term basis.

The recommendations for **Structural Safety** corrective action are:

Short Term (Immediate)	: None.
Mid Term (6-weeks)	: None.
Long Term (6-months)	: <ul style="list-style-type: none"><li>• Sections of plaster finish of wall to be removed to investigate if cracks penetrate the building wall.</li><li>• Sections of plaster finish to brick wall &amp; column need to be removed to investigate if dampness penetrates into the building wall. Investigation needed to determine the source of the damp and way to prevent it re-occurring.</li></ul>

The recommendations for **Fire & Electrical Safety** corrective action are:

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### (A): Recommendations for Fire Safety corrective actions:

<p>Immediate</p> <p><i>(the factory should not continue to be occupied until these non-conformities have been rectified):</i></p>	<p>N/A</p>
<p>Short Term</p> <p><i>(Actions that must be incorporated into a Fire Safety Management Plan immediately (1 ~ 2 weeks) and should be a regular activity</i></p>	<ul style="list-style-type: none"> <li>• Factory management should be checked alarm call points, alarm &amp; detection system periodically and maintained the record properly.</li> <li>• Provide additional number of fire extinguishers at every floor and to keep the record for re filling &amp; properly tagged.</li> <li>• The first aid hose and standpipe performance should be checked periodically and properly tagged.</li> <li>• Combustible materials should keep away from electrical appliances and all the lighting in storage area must have protecting covers and wiring must be in conduits.</li> </ul>
<p>Mid Term</p> <p><i>(The remedial works indicated must be carried out within a period of 6 weeks)</i></p>	<ul style="list-style-type: none"> <li>• Prepare proper plan and design for one more exit in ground floor at east side to ensure the easy way to outside of building and travelling distance should not exceed 45 meter.</li> <li>• Replace all existing exit doors on evacuation routes, exit doors with side hinged type door, which swing outward and in the direction of travel. Swinging of the door should not constrict the width of the corridor / passage below 0.9 meter.</li> <li>• Remove all locking device from all egress door. All exit doors should be open-able from the side they serve without the use of a key.</li> <li>• Provide handrails on both side of each stairway with height of 0.9m measured from the nose of stair to the top of the handrail.</li> <li>• Doors in stair should be outward opening, side-swing, self-closing, non-lockable 1.5 hours fire rated doors in all stair way encloses.</li> <li>• Produce proper design and plan for 2 hours fire separation for lift wells.</li> <li>• Prepare proper plan and design for 2 hrs fire rated</li> </ul>

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	<p>barrier with 1.5 hrs fire rated door for storage area.</p> <ul style="list-style-type: none"> <li>• The egress paths should be illuminated with emergency lighting with power back-up supply &amp; illumination should be a minimum of 10 lux for all corridors &amp; exit doors. Aisles should be provided with a minimum 2 lux.</li> <li>• Produce design and plan for automatic detection system with automatic fire alarm.</li> <li>• Provide adequate nos. of smoke detectors to cover the whole factory building.</li> <li>• Prepare proper design and plan for dedicated fire pump with alternate backup power supply.</li> <li>• Replace existing 1 inch hose pipe with 1.5 inch hose pipe to meet the requirement of RMG guideline.</li> <li>• Prepare plan and design for dedicated water storage tank for firefighting operation as per RMG guideline.</li> <li>• Cover all units / floors in a valid fire license</li> </ul>
<p>Long Term</p> <p><i>(The remedial works indicated must be carried out within a period of 6 months)</i></p>	<ul style="list-style-type: none"> <li>• Implement the plan and design for one more exit</li> <li>• Implement the design for 2 hours fire rated walls for lift wells</li> <li>• Provide 2 hrs fire rated barrier with 1.5 hrs fire rated door for storage area.</li> <li>• Install automatic detection system with automatic fire alarm.</li> <li>• Install dedicated fire pump with alternate backup power supply.</li> <li>• Provide sufficient number of hose pipe with respect to area and travel distance as per RMG guideline.</li> <li>• Stand pipe supplying first aid hose should have minimum pressure of 200 KPa.</li> <li>• Provide dedicated storage tank for firefighting operation.</li> </ul>

### ***(B): Recommendations for Electrical Safety corrective actions:***

<p>Immediate</p> <p><i>(the factory should not continue to be occupied until these non-conformities have been rectified):</i></p>	<ul style="list-style-type: none"> <li>• None.</li> </ul>
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<p>Short Term</p> <p><i>(Actions that must be incorporated into a Fire Safety Management Plan immediately (a week) and should be a regular activity)</i></p>	<ul style="list-style-type: none"> <li>• None.</li> </ul>
<p>Mid Term</p> <p><i>(The remedial works indicated must be carried out within a period of 6 weeks)</i></p>	<ul style="list-style-type: none"> <li>• 1. Provide updated Electrical layout drawing prepared after proper locations of all outlets for lamps, fans, fixed and transportable appliances, motors etc.</li> <li>• 2. Drawings to indicate exact positions of all points of switch boxes and other outlets to match existing installation.</li> <li>• 3. As built drawing to be approved by the engineer-in-charge.</li> <li>• Provide rubber mats of adequate size in front of distribution panel.</li> <li>• Provide and maintain clear and legible identifications numbers &amp; names on all incoming and outgoing circuits of LT panel.</li> <li>• Avoid bunch of cable at MCB terminal, use individual circuit and over current device for every incoming and outgoing circuit at the distribution board.</li> <li>• 1. Provide sufficient and separate earthing for LT panels in generator room at Ground Floor.</li> <li>• 2. Provide adequate number of earth electrodes.</li> </ul>
<p>Long Term</p> <p><i>(The remedial works indicated must be carried out within a period of 6 months)</i></p>	<ul style="list-style-type: none"> <li>• Provide calibrated Ammeter &amp; Voltmeter at distribution boards (MDBs).</li> <li>• Provide adequate protection against lightning depending on the probability of a strike and acceptable risk levels at roof top of building.</li> </ul>