

Summary of Preliminary Assessment on Structural, Fire and Electrical Safety

Name of the Factory	: Apparels Bangla Sourcing Ltd.
Address of the Factory	: Chamudda, Mirer Bazar, Pubail, Gazipur, Bangladesh.
Present Status of the Factory	: Under Operation.
Structural Assessment Conducted by	: TUV
Date of Structural Inspection	: 29 th July, 2015
Fire Assessment Conducted by	: TUV
Date of Fire Inspection	: 29 th July, 2015
Electrical Assessment Conducted by	: TUV
Date of Electrical Inspection	: 29 th July, 2015
BGMEA Membership No.	: 4930.

BASIC INFORMATION:

The assessed factory building was a Single Storey pre-fabricated steel structure which is occupied by Apparels Bangla Sourcing Ltd. as rental basis. The structural system of the buildings is pre-fabricated steel structure I- section beam column system. The following information was noted:

i. Building Usage Type	: Sweater Factory.
ii. Structural System	: Pre-fabricated shed on I- section steel beam column frame.
iii. Floor System	: Roof shed on steel beam.
iv. Floor Area	: Total area of the Building: 6,500 sft.
v. No. of Stories	: Single Storey.
vi. Construction Year	: 2014.
vii. Foundation Type	: Shallow foundation.
viii. Design Drawings	: Available (approval for double storey pre-fabricated steel structure from Pubail Union Council on 5th November, 2012 but approved building type is not mentioned on approval drawing)
ix. Soil Investigation Report	: Available.
x. Construction Materials	: Steel column, beam and prefabricated shed.
xi. Generator	: Located in separate shed outside of the building.

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)	:

- Detailing of steel structural members drawing to be prepared. As part of this process building engineer will be required to make a number of checks on the structural design and existing building.
- Cross bracing system in between corner columns and sag rod in between purlins are required to ensure the stability of the structure and needs to be executed following the guidance of building engineer.

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- Exposed rebar from slab needs to be cut off or covered by lean graded concrete not to allow moisture to the steel because the steel has been already started rusting.

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

(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>None.</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"> The minimum clear width of the pathway should be 0.9 meter. Remove all temporary items from all escape routes, aisles and passageway. Provide aisle marking with arrow guiding and exit signage on all Evacuation pathways or provided with overhead signage fixed at ceiling level. <ul style="list-style-type: none"> Illuminated exit sign should be posted above the exit door, It should be clearly visible at all time, Provide directional signs wherever necessary. All exit doors should be clearly marked for easy identification. Signage should be uniform Provide fire extinguisher at ground floor operational area and to keep the record for re filling & properly tagged. Provide additional firefighting equipment like sand & water buckets near exit or easily accessible area for first phase firefighting. Fire drill should be conducted quarterly (4 times a year) in existing buildings as detailed under the Fire Safety Plan & should kept record properly.
<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"> Open the locking device at south east side floor exit and ensure the smooth evacuation avoiding long travel distance. Replace all existing exit doors on evacuation routes, exit doors with side hinged type door, which swing

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	<p>outward and in the direction of travel. Swinging of the door should not constrict the width of the corridor / passage below 0.9 meter.</p> <ul style="list-style-type: none"> 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. The egress paths should be illuminated with emergency lighting with power back-up supply & illumination should be a minimum of 10 lux for all corridors & exit doors. Aisles should be provided with a minimum 2 lux. Produce design and plan for automatic detection system with automatic fire alarm. Prepare plan and design for dedicated water storage tank for firefighting operation as per RMG guideline. Obtain fire license / permit from issuing authority.
<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"> Install automatic detection system with automatic fire alarm. Provide sufficient number of hose pipe with respect to area and travel distance as per RMG guideline. Provide dedicated storage tank for firefighting operation.

(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"> None.
<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"> All strands cables at exposed ends should be properly soldered / crimped and insulated. Provide proper separate earthing/grounding to generator. Ensure that generator body frame to have two separate and distinct connections to the earth / ground.
<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"> 1. Provide updated SLD matching the existing installation at the factory. 2. SLD to indicate exact positions of all points of switch boxes and other outlets.

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	<p>3. SLD to be approved by the engineer-in-charge.</p> <ul style="list-style-type: none"> • 1. Provide updated Electrical layout drawing prepared after proper locations of all outlets for lamps, fans, fixed and transportable appliances, motors etc. 2. Drawings to indicate exact positions of all points of switch boxes and other outlets to match existing installation. 3. As-built drawing to be approved by the engineer-in-charge. <ul style="list-style-type: none"> • Provide adequate illumination for Generator room. • All unwanted materials should be removed from Generator room. • Install smoke detection and provide firefighting equipment in the generator room. • 1. Exit signs should be illuminated either by lamps external to the sign or by lamps contained within the sign. 2. The source of illumination should be providing not less than 50 lux. • Individual Fuse protection should be provided to every 20 A socket. • Provide cable joints of porcelain / PVC connectors with PIB tape wound around before placing the cable in the box. • Provide separate earthing connection to electrical equipment. Ensure that earth potential provided for all parts of equipment / installation (other than live parts) and that continuous earth connection is provided back to the main intake supply earth.
<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"> • Provide adequate ventilation arrangements for indoor generator room. • Provide 4 hour fire rated walls all around the generator room on ground level. • Power cables/ telecommunication cables / antenna cables should be laid separately.