

Summary of Preliminary Assessment on Structural, Fire and Electrical Safety

Name of the Factory	: Bayezid Dresses (Pvt.) Ltd.
Address of the Factory	: Deluxe House # 3 (2nd floor), 209/227, Kulgaon, Baluchara, Chittagong, Bangladesh.
Present Status of the Factory	: Under Operation.
Structural Assessment Conducted by	: TUV
Date of Structural Inspection	: 6 th July, 2015
Fire Assessment Conducted by	: TUV
Date of Fire Inspection	: 6 th July, 2015
Electrical Assessment Conducted by	: TUV
Date of Electrical Inspection	: 6 th July, 2015
BGMEA Membership No.	: 4708.

BASIC INFORMATION:

The assessed factory building was a 4 Storey RCC building where the 3rd floor covers the 60% area of the total floor located at eastern portion of the building. The structural system of the building is beam column frame and beam slab floor system. The factory operates in the total building on a rental basis. The following general information were 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	: Total floor area is 11,200 sft. approx.
v. No. of Stories	: 4 Storey.
vi. Construction Year	: 2002-2003.
vii. Foundation Type	: Unknown.
viii. Design Drawings	: Unavailable.
ix. Soil Investigation Report	: Unavailable.
x. Construction Materials	: Brick Aggregated
xi. Generator	: At ground floor.

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) :

- As built architectural and engineering drawing to be prepared and submitted for approval by appropriate authority. As part of this process building engineer will be required to make a number of checks on the as-built construction

Long Term (6-months) : None.

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

(A): Recommendations for Fire Safety corrective actions:

Immediate	• None.
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<p><i>(the factory should not continue to be occupied until these non-conformities have been rectified):</i></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 • Rearrange the evacuation pathway to ensure the minimum width. • Remove all temporary items from all escape routes, aisles and passageway. • Provide aisle marking with arrow guiding and exit signage on all Evacuation pathways <ul style="list-style-type: none"> - Exit sign should be posted above the exit door, - Provide directional signs wherever necessary. - All exit doors should be clearly marked for easy identification. • Factory management should be checked alarm call points, alarm & detection system periodically and maintained the record properly. • The first aid hose and standpipe performance should be checked periodically and properly tagged.
<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"> • 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. • 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. • Prepare proper plan & design for another staircase. - Minimum clear width should be 0.9 meter. • 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. • Doors in stair should be outward opening, side-swing, self-closing, non-lockable 1.5 hours fire rated doors for all floor with other tenants in all stair way to encloses. • Prepare proper plan and design for 4 hours fire rated

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	<p>barriers with 2 hours fire rated doors at ground floor generator room, which located at the back side of building-1</p> <ul style="list-style-type: none"> • Prepare proper plan and design for fire rated barrier for 2 hour fire rating separated corridor with 1.5 hrs fire rated door at ground floor. • Provide 1.5 hrs fire rated door for storage area. • Prepare proper plan and design for 4 hours fire rated barriers with 2 hours fire rated doors at 2nd floor building-2 boiler room, which is located at the adjacent to operational areas. • 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 at all floor with other tenants • Provide adequate nos. of smoke detectors to cover the whole factory building. • Prepare proper design and plan for dedicated fire pump with alternate backup power supply. • Replace existing 1 inch hose pipe replace with 1.5 inch hose pipe to meet the requirement of RMG guideline. • Prepare plan and design for dedicated water storage tank for firefighting operation as per RMG guideline. • Visual alarm should be placed at the generator room. • Cover all floors in a valid fire license.
<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 another staircase as per plan and design. - Minimum clear width should be 0.9 meter. • All stairway to have direct access to outside of the factory building, which requires 2 hour fire rated construction with 1.5 hrs fire rated door at ground floor for fire separated corridor. • Provide 4 hours fire rated barriers with 2 hours fire rated doors at ground floor generator room, which located at the back side of building-1 • Provide 4 hours fire rated barriers with 2 hours fire

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	<p>rated doors at 2nd floor building-2 boiler room, which is located at the adjacent to operational areas.</p> <ul style="list-style-type: none"> • Install automatic detection system with automatic fire alarm with other tenants • Install dedicated fire pump with alternate backup power supply. • Provide sufficient number of hose pipe with respect to area and travel distance as per RMG guideline. • Stand pipe supplying first aid hose should have minimum pressure of 200 KPa. • Provide dedicated storage tank for firefighting operation.
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(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. 3. SLD to be approved by the engineer-in-charge. • 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-

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	<p>charge.</p> <ul style="list-style-type: none"> • Provide adequate illumination for Generator room. • All unwanted materials should be removed from Generator room. • Provide rubber mats of adequate size in front of all distribution panels. • Install heat detection and provide firefighting equipment in the generator room. • Provide and maintain clear and legible identifications numbers & names on all incoming and outgoing circuits of DB panels. • 1. All stranded conductors > 6mm² to be provided with cable sockets. • 2. All stranded conductors < 6 mm², at exposed end should be soldered / crimped. • Provide supports for main service line complete with adequate insulation. • Provide cable connections with properly soldered / welded lugs at DB's. Ensure that all the electrical connections are properly secured with lugs. • Avoid bunch of cable at MCCB/MCB or bus bar terminal, use individual circuit and over current device for every incoming and outgoing circuit at the distribution boards. • Provide circuit diagram /circuit list with proper current ratings and fuse size, marking for DBs identifying end use load, voltage, number of phases. • 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. • Provide adequate earthing to body and doors to all DBs. Ensure that all electrical panels provided with proper and separate earth potential.
<p>Long Term <i>(The remedial works indicated must be</i></p>	<ul style="list-style-type: none"> • Modify Area of generator room to meet requirements of Table 4.4, RMG Guideline; the area should be 30m², or

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<p><i>carried out within a period of 6 months)</i></p>	<p>relocate the generator room.</p> <ul style="list-style-type: none">• Provide and maintain proper clearance in all sides of generator for ease of maintenance.• Seal the cable entry-exit points of SDB's with non-flammable materials. In addition:<ol style="list-style-type: none">1. Ensure that SDB panels / Switchgears to be vermin / damp proof.2. Ensure all unused holes / openings in SDBs to be blocked properly.• <ol style="list-style-type: none">1. Provide the ECC to meet minimum cross-sectional area as per table 4.5.2. Ensure that connections between conductors / equipment provided to durable electrical continuity and adequate mechanical strength and protection.3. The continuous earth connection is provided back to the main intake supply earth.• Provide adequate protection against lightning depending on the probability of a strike and acceptable risk levels at roof top of building.
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