

Summary of Preliminary Assessment on Structural, Fire and Electrical Safety

Name of the Factory	: Angela Fashion Limited
Address of the Factory	: 768, D.T. Road, Askarabad, Double Mooring, Chittagong.
Present status of the factory	: Under Operation
Structural Assessment Conducted by	: ACCORD
Date of Structural Inspection	: Not known
Fire Assessment Conducted by	: TÜV SÜD Bangladesh (Pvt.) Ltd.
Date of Fire Inspection	: 2015-07-01
Electrical Assessment Conducted by	: TÜV SÜD Bangladesh (Pvt.) Ltd.
Date of Electrical Inspection	: 2015-07-01
BGMEA Membership No.	: 2234

BASIC INFORMATION: The following general information was noted:

- i. Building Usage Type : Garment Factory.
- ii. Structural System : RCC Beam Slab Frame
- iii. Floor System : RCC Beam Slab.
- iv. Floor Area : Ground floor = 3200 sft , Entire building = 15360 sft (Approx.).
- v. No. of Stories : 5 Storey(GF+4th floor)
- vi. Construction Year : The factory building constructed in 04 different phases, Ground floor in 1994, 1st floor in 1995, 2nd floor in 1997 & 3rd to 4th floor in 2012.
- vii. Foundation Type : Not known due to unavailability of ACCORD Report.
- viii. Design Drawings : Not known due to unavailability of ACCORD Report.
- ix. Soil Investigation Report : Not known due to unavailability of ACCORD Report.
- x. construction Materials : Not known due to unavailability of ACCORD Report.
- xi. Generator : Not available.

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:

Not known due to unavailability of ACCORD Report.

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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>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"> • 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. • Provide sufficient fire extinguisher at 1st floor and to keep the record for re filling & properly tagged. • The first aid hose and standpipe performance should be checked periodically and properly tagged. • Provide additional firefighting equipment like sand & water buckets near exit or easily accessible area for first phase fire fighting. • 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"> • 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. • 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.

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	<ul style="list-style-type: none"> • Doors in stair should be outward opening, side-swing, self closing, non-lockable 1.5 hours fire rated doors and 2 hours wall in all stairs way encloses. (Also require fire rated door at the floor occupied by other tenants). • Prepare proper plan and design for 4 hours fire rated barriers with 2 hours fire rated doors at 1st floor boiler room, which located at the adjacent to finishing section. • 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. • The stairway should be illuminated with emergency lighting with power back-up supply & illumination should be a minimum of 10 lux for stairway. • Produce design and plan for automatic detection system with automatic fire alarm. (Also needs to cover the floors occupied by other tenants). • Prepare proper design and plan for dedicated fire pump with alternate backup power supply. • Prepare plan and design for dedicated water storage tank for firefighting operation as per RMG guideline. • Obtain fire license / permit with full coverage from issuing authority. • Implement to a single fire safety management system with approvals from all tenants in the factory building. • Obtain the boiler license from the proper issuing authority. • Obtain the boiler operator license from the proper issuing authority.
<p>Long Term (The remedial works indicated must be carried out within a period of 6 months)</p>	<ul style="list-style-type: none"> • Provide 4 hour's fire rated barriers with 2 hours fire rated doors at 1st floor boiler room, which located at the adjacent to finishing section. • Install automatic detection system with automatic fire alarm. (Also needs to cover the floors occupied by other tenants). • Install dedicated fire pump with alternate backup power supply. • 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>	
<p>Short Term <i>(Actions that must be incorporated into a Fire Safety Management Plan immediately (a week) and should be a regular activity)</i></p>	
<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. <ul style="list-style-type: none"> • 1. Provide upd 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. ated Electrical layout drawing prepared after proper locations of all outlets. <ul style="list-style-type: none"> • Provide adequate illumination for generator room. <ul style="list-style-type: none"> • Provide rubber mats of adequate size in front of all distribution panels. <ul style="list-style-type: none"> • Install smoke detection and provide firefighting equipment in the substation and generator room. <ul style="list-style-type: none"> • 1. Exit contained within the sign. 2. The source of illumination should be providing not less than 50 lux. <ul style="list-style-type: none"> • 1. Remove all 2. Ensure that all electric circuitry clean of inflammable materials. 3. Conduct periodic maintenance and maintain the records. <ul style="list-style-type: none"> • The electrical panels and identified with proper phase marking and danger signage.

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	<ul style="list-style-type: none"> • Provide cable connections with properly soldered / the electrical connections are properly secured with lugs and glands. • Select conductors current carrying capacity for insulation. • Avoid bunch of 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 cable joints of placing the cable in the box. • Provide proper separate earthing/grounding to generator. frame to have two separate and distinct connections to the earth / ground. • Provide separate earthing connection to electrical equipment's. 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 provided with proper and separate earth potential.
<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"> • 1. Design to have proper segregation of different end used loads. 2. Wiring design to have separate and distinct sub-circuits for power and heating system. 3. All DBs to be placed conveniently. 4. Wiring to be neat, tidy and located near ceiling. • Review capacity Equipment / Services. Replace generator with larger capacity or install second generator if review indicates existing unit is too small. • Each circuit shall not be permitted. • Seal the cable entry-exit points of DB's with non-flammable materials. In addition: <ol style="list-style-type: none"> 1. Ensure that panel bards to be vermin / damp proof. 2. Ensure all unused holes / openings in DBs to be blocked properly. • 1. Provide the ECC to meet minimum cross-sectional area as per table 4.5. 2. Ensure that connections between conductors / equipment are provided to durable electrical continuity and adequate mechanical

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	<p>strength and protection.</p> <p>3. The continuous earth connection is provided back to the main intake supply earth.</p> <ul style="list-style-type: none">• Provide adequate protection against lightning depending on the and acceptable risk levels at roof top of building.
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