

Summary of Preliminary Assessment on Structural, Fire and Electrical Safety

Name of the Factory	: Z.N. Composite Ltd.
Address of the Factory	: Z N Tower, Nowpara, Madhobdi, Narsingdi.
Present Status of the Factory	: Under Operation
Structural Assessment Conducted by	: TÜV SÜD Bangladesh (Pvt.) Ltd.
Date of Structural Inspection	: 2015-10-30
Fire Assessment Conducted by	: TÜV SÜD Bangladesh (Pvt.) Ltd.
Date of Fire Inspection	: 2015-10-30
Electrical Assessment Conducted by	: TÜV SÜD Bangladesh (Pvt.) Ltd.
Date of Electrical Inspection	: 2015-10-30
BGMEA Membership No.	: 6017

BASIC INFORMATION:

i. Building Usage Type	: Garments Factory.
ii. Structural System	: Pre-fabricated steel structure.
iii. Floor System	: I section beam with RCC slab.
iv. Floor Area	: Occupied area of the factory is 70,000 sft (approx.)
v. No. of Stories	: Ground Floor + 4 Floors (5 Storey), No Basement.
vi. Construction Year	: 2014
vii. Foundation Type	: Isolated Spread Footing
viii. Design Drawings	: Approval available (approval from Madhobdi Municipality for 5 storey factory building on 3rd March, 2014)
ix. Soil Investigation Report	: Available
x. construction Materials	: Steel.
xi. Generator	: Generator is located in separate generator building.

RECOMMENDATIONS FOR CORRECTIVE ACTION: No critical or high risk observation was found which can make hamper to the operation and the worker as well. Some non- conformities were found during structural assessment for which long term corrective actions have been recommended. There is no need to suspend operation in the factory.

Short Term (Immediate) : N/A

Mid Term (6-weeks) : N/A

Long Term (6-months) : 1. As built engineering drawing and detailing of steel members to be prepared. As part of this process building engineer will be required to make a number of checks on the as-built condition of structure.

2. Building engineer to verify the design of stability system. Cross bracing and sag rod is required to ensure the stability of steel structure.

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3. Building engineer to verify the design of stability system.
Lateral stability system is required to ensure the stability of the structure.

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"> • Place the extinguisher near the path of exit travel & easily accessible • 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"> • Prepare proper plan and design for one more exit in a way not to exceed the maximum travel distance or if the factory design to equip with an automated fire alarm, portable fire-fighting system and appropriate standpipe and hose system through the entire building the length of travel should not be exceed 60 meter. • 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. • Doors in stair should be outward opening, side-swing, self-closing,

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	<p>non-lockable 1.5 hours fire rated doors in all stair way encloses.</p> <ul style="list-style-type: none"> • 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. • 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 the boiler license from the proper issuing authority. • Obtain the boiler operator license from the proper issuing authority.
<p>Long Term</p> <p>(The remedial works indicated must be carried out within a period of 6 months)</p>	<ul style="list-style-type: none"> • Implement the plan and design for one more exit or implement with an automated fire alarm, portable fire-fighting system and appropriate standpipe and hose system through the entire building. • Install automatic detection system with automatic fire alarm. • 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. • 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>	<p>N/A</p>
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<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>	<ul style="list-style-type: none"> • All strands cables at exposed ends should be properly soldered / crimped and insulated.
<p>Mid Term (<i>The remedial works indicated must be carried out within a period of 6 weeks</i>)</p>	<ul style="list-style-type: none"> • Provide soak pits for transformers having oil content more than 2000 liters. • Provide cable connections with properly soldered / welded lugs at MDB and DBs. Ensure that all the electrical connections are properly secured with lugs. • Provide adequate earthing to body and doors to DBs. Ensure that all electrical panels provided with proper and separate earth potential. • Provide separate earthing system for lightening protector. Ensure that this earthing should be separate from other earthing system.
<p>Long Term (<i>The remedial works indicated must be carried out within a period of 6 months</i>)</p>	<ul style="list-style-type: none"> • Provide 4 hour fire rated walls all around the transformer / generator room on ground level. • Provide adequate cable trenches with non-flammable covers at substation areas. • Provide adequate protection against lightning depending on the probability of a strike and acceptable risk levels at roof top of building.