

Summary of Preliminary Assessment on Structural, Fire and Electrical Safety

Name of the Factory	: COATS BANGLADESH LTD.
Address of the Factory	: Sagorika Road, Fouzdarhat I/A, Chittagong, Bangladesh.
Present Status of the Factory	: Under Operation.
Structural Assessment Conducted by	: TUV
Date of Structural Inspection	: 26 th July, 2015
Fire Assessment Conducted by	: TUV
Date of Fire Inspection	: 26 th July, 2015
Electrical Assessment Conducted by	: TUV
Date of Electrical Inspection	: 26 th July, 2015
BKMEA Membership No.	: 940

BASIC INFORMATION:

The assessed factory consists of 3 nos. RCC buildings: 1 no. 3-Storey Office building (Building 1), 1 no. 2 storey H.R. Building (Building 2) & 1 no. 2 storey ETP & WTP building (Building 3); 4 nos. single storey production sheds: 1 no. winding and dyeing shed (Shed 1), 1 no. zipper wet process (Shed 2), 1 no. zipper production floor (Shed 3) and 1 no. warehouse shed (Shed 4); and 5 nos. ancillary sheds, housing the generator, canteen, doctors' room and wastage sheds. The factory operates in the compound on a rental basis. The following general information was noted:

i. Building Usage Type	: Yarn dyeing factory.
ii. Structural System	: Buildings 1-3: RCC beam-column structure. Sheds 1-4: Single Storey Prefabricated sheds. Ancillary Sheds 1-5: Single Storey sheds
iii. Floor System	: Buildings 1-3: 2-way beam slab. Sheds 1-4: Prefabricated roof. Ancillary Sheds 1-5: Angled truss roof
iv. Floor Area	: Operational floor area of the factory is approx. 77,900 sft.
v. No. of Stories	: Building 1: 3-Storey building, Buildings 2-3: 2-Storey building Sheds 1-4: Single Storey sheds. Ancillary Sheds 1-5: Single Storey sheds.
vi. Construction Year	: 1995 – 2013.
vii. Foundation Type	: Unknown.
viii. Design Drawings	: Unavailable.
ix. Soil Investigation Report	: Unavailable.
x. Construction Materials	: Brick aggregate. (Identified by removing plaster)
xi. Generator	: Situated on the central north side of the factory premises.

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 & engineering drawing to be prepared for all buildings and sheds and submitted for approval by appropriate authority. As part of this process building engineer

Summary of Preliminary Assessment on Structural, Fire and Electrical Safety

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:

<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 (1 ~ 2 weeks) and should be a regular activity</i></p>	<ul style="list-style-type: none"> • 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 additional firefighting equipment like sand & water buckets near exit or easily accessible area for first phase firefighting.
<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. • Exit door should have minimum clear width 0.9 meter. • Prepare proper plan and design for 4 hours fire rated barriers with 2 hours fire rated doors at shed 01 boiler & substation room, which located at the adjacent to final exit. • Obtain building approval from issuing authority • Cover all units / floors in a valid fire license.

Summary of Preliminary Assessment on Structural, Fire and Electrical Safety

<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 4 hours fire rated barriers with 2 hours fire rated doors at shed 01 boiler & substation room, which located at the adjacent to final exit.
---	---

(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"> • Do repair of oil leakages at transformer room. Ensure that there should not any oil leakage in the oil type transformer. • All strands cables at exposed ends should be properly soldered / crimped and insulated.
<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"> • Provide rubber mats of adequate size in front of all distribution panels. • Individual Fuse protection should be provided to every 15/20 A socket. • Provide proper clearance of 0.8 - 1.0 m in front of all distribution panels/switchboards. • Provide cable connections with properly soldered / welded lugs at (MDB/DB)'s. Ensure that all the electrical connections are properly secured with lugs and glands. • Select conductors and MCCB/MCB with adequate sizing without exceeding permissible current carrying capacity for insulation. • Avoid looping and 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 adequate earthing to body and doors to all MDBs / DBs/SDBs. Ensure that all electrical panels

Summary of Preliminary Assessment on Structural, Fire and Electrical Safety

	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. 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-charge. • Modify Area of generator room to meet requirements of Table 4.4, RMG Guideline; the area should be 36m² for 176kW and 40m² for 220kW, or relocate the generator room. • 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. • 1. Wooden panel boards should be replaced by non-flammable materials. • Each circuit should have a separate neutral (use of common neutral for more than one circuit shall not be permitted). • Seal the cable entry-exit points of (MDB/DB/SDB)'s with non-flammable materials. In addition: <ol style="list-style-type: none"> 1. Ensure that HT / LT panels / Switchgears to be vermin / damp proof. 2. Ensure all unused holes / openings in DBs to be blocked properly.

Summary of Preliminary Assessment on Structural, Fire and Electrical Safety

	<ul 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.
--	---