

Summary of Preliminary Assessment on Structural, Fire and Electrical Safety

Name of the Factory	: Dana Bottoms Ltd.
Address of the Factory	: 77/20, Dagormora, Crp Road, Savar, Dhaka.
Present Status of the Factory	: Under Operation
Structural Assessment Conducted by	: TÜV SÜD Bangladesh (Pvt.) Ltd.
Date of Structural Inspection	: 2015-10-28
Fire Assessment Conducted by	: TÜV SÜD Bangladesh (Pvt.) Ltd.
Date of Fire Inspection	: 2015-10-28
Electrical Assessment Conducted by	: TÜV SÜD Bangladesh (Pvt.) Ltd.
Date of Electrical Inspection	: 2015-10-28
BKMEA Membership No.	: 5629

BASIC INFORMATION:

i. Building Usage Type	: Knitting Factory
ii. Structural System	: R.C.C beam column frame structure.
iii. Floor System	: Beam slab floor system.
iv. Floor Area	: The typical plinth area of 6 storied RCC building is 8900 sft. Total operational area is 53500sft.
v. No. of Stories	: GF (Single Storey), No Basement
vi. Construction Year	: 6-Storey building, No basement.
vii. Foundation Type	: Isolated footing.
viii. Design Drawings	: Available for 6- storied industrial building from Savar Pourashova, Savar on 19th June, 2008.
ix. Soil Investigation Report	: Available.
x. construction Materials	: Stone Aggregated.
xi. Generator	: The generator room is located at the ground floor of the factory building.

RECOMMENDATIONS FOR CORRECTIVE ACTION: No critical or high risk observation was found at the factory which may pose harm to production and workers as well during assessment. A non- conformity was found at the factory on the day of assessment, for which long term corrective action has 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. Vertical extension needs to be checked by building engineer and 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 check on the structural design.

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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"> • 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. • 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. • 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. • Doors in stair should be outward opening, side-swing, self-closing, non-lockable 2 hours fire rated doors in all stair way encloses. • Prepare design for installation of fire rating smoke proof enclosure. 2 hours fire rating
<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. • Doors in stair should be outward opening, side-swing, self-closing, non-lockable 2 hours fire rated doors in all stair way encloses. • Prepare design for installation of fire rating smoke proof enclosure. 2 hours fire rating doors for exit should not be less than that of 4 hours fire resistance rating of the walls of the smoke proof fire rated entry

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	<p>lobby.</p> <ul style="list-style-type: none"> • Prepare proper plan and design for fire rated barrier for 4 hour fire rating separated corridor with 2 hrs fire rated door at ground floor. • Prepare proper plan and design for 4 hours fire rated barriers with 2 hours fire rated doors at ground floor generator and boiler room, which located at the adjacent to final evacuation routes. • 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. • Provide adequate nos. of smoke detectors to cover the whole factory building in every bay. • Prepare proper design and plan for dedicated fire pump with alternate backup power supply. • Prepare proper design and plan for fire lifts equipped with approved intercommunication (including two way voice communications) with the fire command station or control room on the ground floor lobby of the building. • Complete full design and plan for providing fire command station equipped with detailed floor plans along with clearly demarcated locations of fire detection and fighting devices and through the panel board able to detect fire alarm from any floor. • A suitable public address system should be provided for communicating to all floors as well as facilities to receive messages from all floors. • Visual alarm should be placed at the generator room. • Obtain the boiler 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"> • Install smoke proof fire rated entry lobby at emergency stairways to separate from the area of incidence. • All stairway to have direct access to outside of the factory building, which requires 4 hour fire rated construction with 2 hours 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 and boiler room, which located at the adjacent to final evacuation routes. • Install dedicated fire pump with alternate backup power supply. • Stand pipe supplying first aid hose should have minimum pressure of 200 KPa. • Install fire lifts equipped with approved intercommunication (including two way voice communications) with the fire command station or

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	<p>control room on the ground floor lobby of the building.</p> <ul style="list-style-type: none"> • Provide fire command station equipped with detailed floor plans along with clearly demarcated locations of fire detection and fighting devices and through the panel board able to detect fire alarm from any floor.
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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>N/A</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>	<ul style="list-style-type: none"> • 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 graded rubber mats of adequate size in front of all distribution panels. • Provide cable connections with properly soldered / welded lugs at MDB and DBs. 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 adequate earthing to body and doors to DBs. Ensure that all electrical panels provided with proper and separate earth potential.

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<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 protection against lightning depending on the probability of a strike and acceptable risk levels at roof top of building.
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