

Summary of Preliminary Assessment on Structural, Fire and Electrical Safety

Name of the Factory	: Delmas Garments (Pvt) Ltd.
Address of the Factory	: 1142, Askarabad, Mistri Para Sk. Mujib Road, Chittagong.
Present Status of the Factory	: Under operation.
Structural Assessment Conducted by	:
Date of Structural Inspection	:
Fire Assessment Conducted by	: TUV
Date of Fire Inspection	: 29 July, 2015
Electrical Assessment Conducted by	: TUV
Date of Electrical Inspection	: 27 July, 2015
BGMEA Membership No.	: 352

BASIC INFORMATION:

The assessed factory building was a 3-Storey RCC building. The following information was noted:

- i. Building Usage Type : Garment Factory.
- ii. Structural System :
- iii. Floor System :
- iv. Floor Area :
- v. No. of Stories : 3-Storey RCC building
- vi. Construction Year : 1984
- vii. Foundation Type :
- viii. Design Drawings : Approval for four storied from Chittagong Development Authority (C.D.A) on 24th January, 1984 for commercial use
- ix. Soil Investigation Report :
- x. Construction Materials :
- xi. Generator :

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) | : |
| Mid Term (6-weeks) | : |
| Long Term (6-months) | : |

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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>None</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>	<p><input type="checkbox"/> Factory management should be checked alarm call points, alarm & detection system periodically and maintained the record properly.</p> <p><input type="checkbox"/> The first aid hose and standpipe performance should be checked periodically and properly tagged</p>
<p>Mid Term</p> <p><i>(The remedial works indicated must be carried out within a period of 6 weeks)</i></p>	<p><input type="checkbox"/> Prepare proper plan and design for one more exit in ground floor east side to ensure the easy way to outside of building.</p> <p>Or,</p> <p>The factory have to design 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.</p> <p><input type="checkbox"/> 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.</p> <p><input type="checkbox"/> 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.</p> <p><input type="checkbox"/> Prepare proper plan and design for 4 hours fire rated barriers with 2 hours fire rated doors at ground floor generator room, which located at the adjacent to final exit.</p> <p><input type="checkbox"/> 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</p> <p><input type="checkbox"/> Produce design and plan for automatic detection system with automatic fire alarm and control panel. (Also needs to cover the floors occupied by other tenants)</p> <p><input type="checkbox"/> Install Manual activation call point at all exit routes</p> <p><input type="checkbox"/> Provide adequate nos. of smoke detectors to cover the whole factory building.</p> <p><input type="checkbox"/> Prepare proper design and plan for dedicated fire pump with alternate backup power supply.</p> <p><input type="checkbox"/> Prepare plan and design for dedicated water storage tank for</p>

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	<p>firefighting operation as per RMG guideline.</p> <ul style="list-style-type: none"> <input type="checkbox"/> Power backup supply should be provided for fire alarm system. <input type="checkbox"/> Visual alarm should be placed at the generator room. <input type="checkbox"/> Implement to a single fire safety management system with approvals from all tenants in the factory building.
<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"> <input type="checkbox"/> 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. <input type="checkbox"/> Provide 4 hours fire rated barriers with 2 hours fire rated doors at ground floor generator room, which located at the adjacent to final exit. <input type="checkbox"/> Install automatic detection system with automatic fire alarm and control panel. (Also needs to cover the floors occupied by other tenants) <input type="checkbox"/> Install dedicated fire pump with alternate backup power supply. <input type="checkbox"/> Stand pipe supplying first aid hose should have minimum pressure of 200 KPa. <input type="checkbox"/> 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>	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>	None
<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"> <input type="checkbox"/> All unwanted materials should be removed from Generator room. <input type="checkbox"/> Install heat detection and provide firefighting equipment in the generator room. <input type="checkbox"/> 1. Overhead service connections should be covered and meet the requirements mentioned in RMG Guidelines. 2. Provide supports for main service line complete with adequate

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	<p>insulation.</p> <ul style="list-style-type: none"> <input type="checkbox"/> Provide cable connections with properly soldered / welded glands at battery terminal. Ensure that all the electrical connections are properly secured with glands. <input type="checkbox"/> 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. <input type="checkbox"/> Provide circuit diagram /circuit list with proper current ratings and fuse size, marking for DBs identifying end use load, voltage, number of phases. <input type="checkbox"/> Provide cable joints of porcelain / PVC connectors with PIB tape wound around before placing the cable in the box. <input type="checkbox"/> Provide proper separate earthing/grounding to generator. Ensure that generator body frame to have two separate and distinct connections to the earth / ground. <input type="checkbox"/> Provide adequate earthing to body and doors to all DBs. Ensure that DB at ground floors 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"> <input type="checkbox"/> 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. <input type="checkbox"/> 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. <input type="checkbox"/> Provide 4 hour fire rated walls all around the generator room on ground level. <input type="checkbox"/> Modify Area of generator room to meet requirements of Table 4.4, RMG Guideline; the area should be 30m², or relocate the generator room. <input type="checkbox"/> Provide adequate protection against lightning depending on the probability of a strike and acceptable risk levels at roof top of building.