

Summary of Preliminary Assessment on Structural, Fire and Electrical Safety

Name of the Factory	: Winwear Ltd.
Address of the Factory	: Sharifpur, Gacha, Malekerbari, National University, Gazipur Sadar, Gazipur.
Present Status of the Factory	: Under Operation
Structural Assessment Conducted by	: BUET
Date of Structural Inspection	: 2014-12-06
Fire Assessment Conducted by	: VERITAS Engineering & Consultant
Date of Fire Inspection	: 2015-05-05
Electrical Assessment Conducted by	: VERITAS Engineering & Consultant
Date of Electrical Inspection	: 2015-05-05
BGMEA Membership No.	: 3711

BASIC INFORMATION:

i. Building Usage Type	: Garment Factory.
ii. Structural System	: Flat plate with peripheral beam
iii. Floor System	: Flat plate
iv. Floor Area	: Approximately 10700 sft per floor
v. No. of Stories	: 3 stories.
vi. Construction Year	: 2007-2009
vii. Foundation Type	: Individual footing.
viii. Design Drawings	: Not Available. As built structural drawing available. Eng. SM. Karnrul Hasan (MIEB-19472)
ix. Soil Investigation Report	: Available (Magma Soil Engineers, Shahera Topical Center. Elephant Road. Dhaka)
x. construction Materials	: Reinforced Concrete (No test report on construction materials is available), Coarse aggregate: Brick chips
xi. Generator	: Outside of the building.

RECOMMENDATIONS FOR CORRECTIVE ACTION:

Short Term (Immediate)	: N/A
Mid Term (6-weeks)	: 1. The factor owner has to prepare and submit the load plan for all floors within three weeks for approval.
Long Term (6-months)	: N/A

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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"> • Factory need to ensure adequate number of exit sign as it is visible from any position and comply with the following condition: <ul style="list-style-type: none"> (a) The color and design of lettering, arrows and other symbols on exit signs shall be in high contrast with their background. (b) The source of illumination, contrast, intensity and luminance needs to be at least 50 lux, 0.5, 5.0 foot-candles and 0.2 cd/ m2 respectively.
<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"> • Factory needs to have as built drawing with proper dimensions showing all the means of escape. • Provide handrail on both sides of stairways. • Provide intermediate hand rail of stair-1(south-east side).
<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"> • Factory needs to have a proper pre-plan for fire department. • Generator room need to be fire separated by 4 hour fire rated construction and 2 hour fire rated composite door. • Childcare needs to be separated from finishing section with 3 hours rated construction and 2 hours rated opening or door. • Storage area needs to be protected with 2 hour rated construction & 1.5 hour rated opening or doors. • Boiler room needs to be separated with 4 hours fire rated enclosure and 2 hours rated door/opening. • Factory needs to provide 2 hours rated construction between office and sewing section. • Factory needs to have sufficient water storage capacity to get adequate pressure to feed fire-fighting equipment and at least 1900 ltr x 75 min=142500 liters water storage tank.

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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>	<ul style="list-style-type: none"> Find out the cause of overheating (Temperature differences greater than 40°C) and take proper actions (Make sure cables are not overloaded ,properly terminated using proper lug, joints are made proper way, no rusted throughout the connection, proper cable bending, no insulation damage, single cable at single point etc.)
<p>Short Term (Actions that must be incorporated into a Fire Safety Management Plan immediately (a week) and should be a regular activity)</p>	<ul style="list-style-type: none"> Discharge the generator exhaust to the exterior of the building in a safe location.
<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 two separate and distinct connections of earthing for each generator. Provide dedicated & adequate size of earthing with proper identification for each circuit and ensure continuous earth path is back to main building intake. Ensure all electrical cables are sized according to capacity of circuit breaker. Connect all metal in the building to the building earthing system. Find out the cause (improper cable/over current selection, over loading, improper lug, improper cable joints, rusted connection, insulation damage, multiple cables at single point,) of overheating { ambient+(200C-400C)} and take proper action.
<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"> Update an electrical layout diagram and an as-built single line diagram detailing key components and capacity of the electrical system. Inspect electrical panel boards on an annual basis. Ensure the substation room has adequate fire separation from the production building.

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	<ul style="list-style-type: none">• Provide adequate means of ventilation for the substation room based on the installed equipment considering fire barriers.• Ensure all high tension cables are laid following standard cable laying techniques.• Ensure the generator room has adequate fire separation from the production building.• Provide adequate means of ventilation for the generator room based on the installed equipment considering fire barriers.• Provide dedicated & adequate size of neutral with proper identification for each circuit.• Ensure each distribution board is provided with a circuit list and means of identification is provided as per list.• Provide adequate mechanical guards for electrical equipment where necessary.• Provide proper cable terminator/connector for stranded conductors at its point of termination.• Provide individual fuse or miniature MCB for each 15/20A socket outlet.• Prepare proper drawing of the installed lightning protection system proving adequacy of the system and if found inadequate install lightning protection system confirming requirements and adequacy.
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