

Summary of Preliminary Assessment on Structural, Fire and Electrical Safety

Name of the Factory	: Wash Line Ltd.
Address of the Factory	: 140, Nasirabad Industrial Area, P.S.Chittagong.
Present Status of the Factory	: Under Operation
Structural assessment conducted by	: Alliance
Date of Structural Inspection	: 19-May-14
Fire & Electrical assessment conducted by	: Alliance
Date of Fire & Electrical Inspection	: 11-May-14

BASIC INFORMATION:

There is one building in the factory premises. The following general information was noted:

i.	Building Usage Type	: Garments Factory.
ii.	Structural System	: Main Building PEB Steel Structure.
iii.	Floor System	: The roof is steel sheet.
iv.	Floor Area	: 6813 sft
v.	No. of Stories	: Single Story
vi.	Construction Year	: 2008
vii.	Foundation Type	: Shallow foundation.
viii.	Design Drawings	: Not Available.
ix.	Soil investigation Report	: Not Available
x.	Construction Materials	: RCC brick chips.
xi.	Generator	: Unknown

RECOMMENDATIONS FOR CORRECTIVE ACTION:

The recommendations of corrective action for Structural, Fire and Electrical Safety comprises of Short Term, Mid Term and Long Term basis are as follows:

The recommendations for Structural Safety corrective actions are:

Immediate : NA

Short Term: (3 Weeks) :

- i. Have a qualified structural engineer provide further testing and analysis of distress, settlement, shifting, or cracking in columns or walls and provide a remediation plan to correct noted issues.

Mid Term (6 Weeks) :

- i. Engage a qualified structural engineer to develop the required documents to confirm the structural integrity of the buildings. Documents must comply with the Alliance Standard Part 8 Sections 8.19 and 8.20
- ii. Adequately anchor and brace all non-structural elements to resist earthquake forces to comply with the BNBC and Alliance Standard.
- iii. Provide signage or the appropriate markings at all areas used for storage to indicate the acceptable loading limits detailed in the Load Plan.

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- iv. Have a qualified structural engineer provide further analysis of the identified cracks to determine the appropriate course of corrective action.

Long Term (6 Months) :

- i. Repair the exterior façade system to prevent water intrusion.

The recommendations for Electrical Safety corrective actions are:

Immediate (3 to 6 Days)	Ensure the generator room is dry and free of dirt, debris, and improperly stored materials.
Short Term (3 Weeks)	<p>Develop and implement an electrical safety program. Include key topics such as lock out tag out procedures, personal protective equipment requirements, etc.</p> <p>All boxes and enclosures (including transfer switches, generators, and power panels) for emergency circuits shall be permanently marked so they will be readily identified as a component of an emergency circuit or system. The required marking can be by color code, the words “emergency system,” or any other method that identifies the box or enclosure as a component of the emergency system.</p> <p>Ensure generator room is properly illuminated.</p> <p>Provide mechanical guards for electrical equipment where necessary.</p> <p>Light fixtures without protective covers (otherwise known as naked lights) shall not be allowed in storage areas or in any area where the Inspector of the Factories Rules disallows these fixtures. Install signs posted in Bengali and English, indicating this prohibition at all entrances to these areas.</p>
Mid Term (6 Weeks)	<p>Ensure distribution boards are metal enclosed with a dead front construction.</p> <p>Install distribution boards in compliant locations so that operation is not hampered due to limited access.</p> <p>Connect all metal in the building to the building earthing/grounding system such as metal rebar in concrete, metal frame of building, or metal water pipe.</p> <p>Ensure switchboards and/or distribution boards provided with physical means to prevent the installation of more over current devices than that number for which the panel board was designed, rated, and listed.</p> <p>Provide capacity information labels (Maximum current rating, no of circuit breakers etc.) for Switchboards and/or distribution boards with noncombustible material.</p> <p>Ensure electrical connections at equipment, fixtures etc. are properly secured.</p>

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Long Term (6 Months)	<p>Have a qualified electrical engineer design a lightning protection system according to the BNBC requirements. Have a licensed electrician install the designed system.</p> <p>Complete thermographic scans at least on a three year cycle. Thermographic scans should be completed in accordance with the Standard for Infrared Inspection of Electrical Systems & Rotating Equipment and NFPA70B or a comparable standard.</p>
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The recommendations for Fire Safety corrective actions are:

Immediate (3 to 6 Days)	N/A
Short Term (3 Weeks)	Remove all hasps, locks, slide bolts, or other locking devices at the noted locations.
Mid Term (6 Weeks)	<p>Post the occupant load for every assembly and production floor in a facility in a conspicuous space near the main exit or exit access doorway for the space.</p> <p>Develop a testing and maintenance program that ensures the operation of all exit signs are verified at least once per year. If battery operated signs are used, these signs shall be tested on a monthly basis. Functional testing of battery powered signs shall be provided for a minimum 90 min once per year.</p> <p>Develop an emergency evacuation plan which includes duties and responsibilities of various people/groups, interfacing between groups and fire brigade, headcount and identification of trapped victims, physically disabled people and their rescue, etc. and all components required by the Alliance Standards and communicate the plan to all employees. The evacuation plan shall include provisions to assist physically disabled persons. A list of all employees with physical disabilities shall be kept by the Fire Service Director.</p> <p>Arrange for direct connection of the fire alarm system to a central monitoring station or Fire Service and Civil Defense as per the Alliance Standard. Until that time that monitoring can be set up, a person shall be assigned to contact the fire department in the event of fire alarm activation. An annunciator shall be located in a constantly attended location (such as a fire control room) to alert this person.</p> <p>Develop a testing and maintenance program that ensures the emergency power for exit signs is tested at least once per year. If battery operated signs are used, these signs must be tested on a monthly basis. Functional testing of battery powered signs must be provided for a minimum 90 min</p>

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	<p>once per year.</p> <p>Impart training in accordance with Alliance Safety Training Curriculum and keep record with proper documentation.</p> <p>Complete fire department pre-planning activities with the local Fire Service and Civil Defense.</p> <p>Apply to BERC for generator waiver certificate. Apply to Biddyut Paridaptor for electrician license. Apply to CDA for approval of the unapproved generator room, hydrant shed, security station, and flax mixer.</p> <p>Install required identification signs at required locations. Signage must comply with NFPA 14 Chapter 6.</p> <p>Apply to FSCD for issuance of occupancy certificate and expedite the matter.</p>
<p>Long Term (6 Months)</p>	<p>Train and certify at least 14 nos of workers in fire fighting, first aid and rescue by the proper authority.</p> <p>Install fire rated doors and windows or fill in unprotected openings with fire resistive rated assemblies.</p> <p>Install or upgrade a pump dedicated for fire fighting or fire protection following the requirements of NFPA 20 as mentioned in Alliance Standard Section 5.5.1.</p> <p>Provide fire department (Siamese) inlet connections to allow fire department pumper equipment to supplement the fire protection systems. Fire department outlet connections shall be provided to allow fire department pumper vehicles to draw water from ground-level or underground water storage tanks. Connections shall match the Fire Service and Civil Defense hose thread standard.</p> <p>Provide fire-resistive rated construction barriers between hazard types following Table 4.4.1 of Alliance Standard. Consult a qualified fire protection engineer to design the required rated construction barrier.</p> <p>Inspect, test, and maintain fire extinguishers in accordance with NFPA requirements.</p> <p>Develop a NFPA 51B-compliant hot-work permit program. In general, this program should address the process of request and approval of authorities, necessary checks prior to approval, standby fire watch and fire fighting equipment, sounding of alarm procedure, duration and expiry of permit and re-approval procedure, etc.</p> <p>Create a Fire Safety Director position and fill the position with an individual that has had sufficient training to be able to carry the required duties.</p> <p>The duties of the Fire Safety Director shall include the following:</p> <p>(1) Establish internal and external rally points and</p>

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	<p>communicate to all employees in the building.</p> <p>(2) Fire department pre-planning.</p> <p>(3) Conduct safety inspections as outlined in Alliance Standard.</p> <p>(4) Ensure all testing of fire protection equipment is conducted in accordance with Alliance Standard.</p> <p>Establish written corporate and planned policies on housekeeping to ensure scheduled cleaning for floor, wall, ceiling, supply and return air ventilation systems. Promptly reschedule skipped cleanings. Provide a documented line of authority for authorizing a cleaning delay and rescheduling. As a general rule the maximum tolerable deposit thickness for loose fluffy lint is 13 mm (½ in.) over a maximum of 46.5 m² (500 ft²). Limit dense deposits to 6 mm (¼ in.) and oil saturated deposits to 3.2 mm (⅛ in.).</p> <p>Establish an inspection, maintenance, and testing program for the standpipe and hose system. Program must comply with the requirements of NFPA 25 Chapter 6 Table 6.1.1.2.</p> <p>Establish an inspection, maintenance, and testing program for the fire pump. Program must comply with NFPA 25.</p>
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