

INITIAL ELECTRICAL ASSESSMENT REPORT (EAR)

Factory Name: **LALMAI FOOTWEAR LTD**

Address: **DHANPUR, CHAPAPUR, KOTWALI, COMILLA
3500,Area 2,46500 COMILLA Chittagong Bangladesh**

Assessor: **Sumerra**

Date: **16 Apr 2014**



Introduction to the Report

The following report contains a site profile and summary of non-conformities identified during an onsite assessment commissioned by the Alliance for Bangladesh Worker Safety (Alliance) and conducted by a third-party Qualified Assessment Firm (QAF). The assessment was conducted against the Alliance for Bangladesh Worker Safety Assessment Protocols (APs) and Fire Safety and Structural Integrity Standard, which is harmonized with the factory assessment guidelines developed by Bangladesh University of Engineering and Technology (BUET) for the Bangladesh National Tripartite Plan of Action (NTPA). The goal of the Alliance process is to provide clear and practical technical requirements by which Bangladeshi Ready Made Garment (RMG) Factories producing for Alliance members may be consistently and fairly evaluated for fire, structural, and electrical safety in a non-duplicative manner. Each assessment will prompt action plans that will be used by RMG factories to systematically and sustainably improve safety conditions for garment workers. Beyond tracking and reporting on action steps taken in a transparent manner, the Alliance organization and its members will seek to further support factory improvements through technical assistance, training, implementation support for functional Worker Committees, and in some cases financial assistance and wage support for workers if factories are closed for remediation.

The contents of the report do not constitute a guarantee of compliance with the applicable laws, the Alliance Standard or the absolute or continued safety against fire, electrical and/or structural integrity issues that may lead to injury or loss of life. The report is designed to provide a non-exhaustive summary of risk issues, based on a limited sampling and duration of time onsite by the named QAF. Neither the QAF nor the Alliance can certify or guarantee the quality, outcome, or effectiveness of actions taken in response to the report.

For more information and report feedback please go to: www.bangladeshworkersafety.org.



GENERAL INFORMATION

| General Information | |
|---|--|
| Factory Name: | LALMAI FOOTWEAR LTD |
| Address: | DHANPUR, CHAPAPUR, KOTWALI, COMILLA 3500,Area 2,46500 COMILLA Chittagong Bangladesh |
| Country: | Bangladesh |
| Province: | Chittagong |
| City: | COMILLA |
| Zip Code: | 3500 |
| Audit Duration: | 2 Days |
| Re-Audit: | Re-Audit After 0 Months |
| Draft Report Date : | May 28, 2014 |
| Final Report Date : | May 28, 2014 |
| Are all action items from previous assessment complete? : | N/A |
| Buildings in Complex : | 17 Total Buildings Building #1 - 4 Story Building #2 - 3 Story Building #3 - 5 story Sheds #1 - 14 - 1 story |
| Is the building(s) owned or rented by the Factory?: | Owned |
| Number of Building Levels (Stories) : | Building #1 - 4 Story Building #2 - 3 Story Building #3 - 5 story Sheds #1 - 14 - 1 story |
| Approximate Building Area (SF) : | Building #1 - 24000 sqf Building #2 - 26400 sqf Building #3 - 100864 sqf Sheds #1 - 14 - Various |
| Date of Building Construction : | Building #1 - 1989 Building #2 - 2005 Building #3 - 2007 to 2010 Sheds - 1989 |
| Date of Last Building Renovation/Addition : | Building #1 - 3rd Floor added 2013 |
| Ancillary Structures in Complex : | All structures listed above. |
| Approximate Ancillary Structures Area (SF) : | Not Applicable |
| Number of Occupants : | Approximately 1600 |

Factory Name: **LALMAI FOOTWEAR LTD**
Address: **DHANPUR, CHAPAPUR, KOTWALI, COMILLA 3500,Area 2,46500**
COMILLA Chittagong Bangladesh

Assessor: **Sumerra**
Date: **16 Apr 2014**



ALLIANCE
FOR BANGLADESH WORKER SAFETY



ASSESSMENT FINDINGS

Electrical System Information

| | |
|---------------------------|---|
| Question: | Are as-built electrical drawings indicating information such as panel and circuit locations throughout the building(s) available for review? |
| Priority Level: | High |
| Non-Compliance Level: | 1 |
| Description: | As built electrical drawings indicating information such as panel and circuit locations throughout the building(s) of bldg#1 & #2 are available; however such drawings were not provided for Bldg#3. Additionally, no grounding (earthing) drawings or power distribution schedules were available. |
| Source of Findings: | Document Review: Review of electrical drawings indicate no as-built diagrams for Bldg. 3 and not grounding or power distribution schedules. |
| Suggested Plan of Action: | Have a qualified electrical engineer develop an as-built single line diagram for Building #3 detailing key components and capacity of the electrical system. Grounding drawings should also be included for all buildings as well as power distribution schedules for all buildings. |
| Suggested Deadline Date: | 23 Jul 2014 |
| Standard: | Alliance Standard Part 10 Section 10.3.7 |

Electrical System Maintenance

| | |
|---------------------------|---|
| Question: | Have workers that operate and maintain the electrical system received electrical safety training? Is training documentation on site? |
| Priority Level: | High |
| Non-Compliance Level: | 1 |
| Description: | A sign-in sheet was available for electrical safety training, however, the contents of training are not known as no training materials were available for review. |
| Source of Findings: | Document Review: No training materials were available for review |
| Suggested Plan of Action: | Develop electrical safety program materials (include key topics such as lock out tag out procedures, personal protective equipment requirements, etc.). Training materials should be available for review and attendees should be able to demonstrate all safety procedures. Reference NFPA 70e for example program requirements. |
| Suggested Deadline Date: | 20 Aug 2014 |



| | | |
|---------------------------|--|--|
| Standard: | Reference NFPA 70e for example | |
| Question: | Is a periodical Insulation Resistance Measurement Program established and recorded? | |
| Priority Level: | Medium | |
| Non-Compliance Level: | 3 | |
| Description: | Factory management reports that Current, Voltage, Load Calculation and Insulation Resistance has been properly assessed by electrical layout design, no testing records were available. No periodical Insulation Resistance Measurement Program has been established. | |
| Source of Findings: | Document Review: No records of testing or a periodical insulation resistance program | |
| Suggested Plan of Action: | Develop an Insulation Resistance Measurement Program that ensures deterioration of insulation resistance will be identified quickly. Testing should be in compliance with InterNational Electrical Testing Association (NETA). All transformers, switchgears etc. shall be subject to an insulation resistance measurement test to ground after installation but before any wiring is connected. Insulation tests shall be made between open contacts of circuit breakers, switches etc. and between each phase and earth. | |
| Suggested Deadline Date: | 23 Jul 2014 | |
| Standard: | Alliance Standard Part 10 Section 10.13.4 Insulation Tests and 10.13.8 Electrical Inspections | |
| Question: | Are periodic safety inspections of the electrical system components completed and documented? | |
| Priority Level: | Medium | |
| Non-Compliance Level: | 3 | |
| Description: | Reportedly, the in-house Engineer inspected the system periodically; however, no documentation could be provided. | |
| Source of Findings: | Document Review: No records of periodic safety inspections of the electrical system components available. | |
| Suggested Plan of Action: | Establish a periodic inspection program to ensure the electrical systems are free from damage, debris, dirt, lint, etc. Maintain records concerning inspections and follow up actions. | |
| Suggested Deadline Date: | 23 Jul 2014 | |
| Standard: | Alliance Standard Part 10 Section 10.13 Inspection and Testing and Part 13 Section 13.6 Housekeeping | |
| Question: | Are thermographic scans of electrical equipment completed at least every three years? | |



| | |
|---------------------------|---|
| Priority Level: | Medium |
| Non-Compliance Level: | 2 |
| Description: | Factory reports that they perform thermographic scan of electrical equipment at every three years but could not provide any documentation or report. |
| Source of Findings: | Document Review: No thermographic documentation or reports were provided. |
| Suggested Plan of Action: | 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. |
| Suggested Deadline Date: | 23 Jul 2014 |
| Standard: | Alliance Standards Part 10 Section 10.13.8 Electrical Inspections |

Electrical System Conditions

| | |
|---------------------------|--|
| Question: | The substation room has the required fire rating/protection and is physically separated from the remainder of the building. |
| Priority Level: | High |
| Non-Compliance Level: | 1 |
| Description: | Transformer is not separated from remainder of substation by appropriate fire rated construction as per Alliance Standard Part 3 Section 3.4.2.1.4 |
| Source of Findings: | Photograph: Photo of transformer |
| Suggested Plan of Action: | Separate oil filled transformers from other areas of substation by a minimum 2 hour fire restrictive rated construction. |
| Suggested Deadline Date: | 23 Jul 2014 |
| Standard: | Alliance Standard Part 3 Section 3.4.2.1.4 |





| | |
|---------------------------|--|
| Question: | Do switchboards and/or distribution boards have clear identification markings? |
| Priority Level: | Medium |
| Non-Compliance Level: | 3 |
| Description: | Clear and full identification was not observed on panels. |
| Source of Findings: | Photograph: Photographs of typical panels. |
| Suggested Plan of Action: | All distribution boards shall be marked "Lighting" or "Power", as the case may be, and also be marked with the voltage and number of phases of the supply. Each shall be provided with a circuit list giving diagram of each circuit which it controls and the current rating for the circuit and size of fuse element. A panel schedule should be affixed at each panel. Each circuit must be clearly marked to indicate its specific purpose or use and must include enough detail to differentiate it from other circuits. Properly label the boards as noted and confirm proper labeling on all switchboards and/or distribution boards. |
| Suggested Deadline Date: | 25 Jun 2014 |
| Standard: | Alliance Standard Part 10 Section 10.7 BNBC Part 8 Section 2.11.5.4 |
| Question: | Do switchboards and/or distribution boards have capacity information labels? |
| Priority Level: | Medium |
| Non-Compliance Level: | 3 |
| Description: | No capacity information labels were observed on panels. |
| Source of Findings: | Visual Assessment: No capacity information labels were observed on panels. |
| Suggested Plan of Action: | Label all switchboards and/or distribution boards in the factory with capacity information. The permanent label should identify the maximum voltage present in an item of equipment or within the enclosure. |
| Suggested Deadline Date: | 25 Jun 2014 |
| Standard: | Alliance Standard Part 10 Section 10.7 Main Switch, Switchboards And Metal Clad Switchgear and 10.13.7 Inspection of the Installation |
| Question: | Electrical connections at equipment, fixtures, etc are properly secured. |
| Priority Level: | Medium |
| Non-Compliance Level: | 1 |
| Description: | Majority of connections were secured, however, a few connections of lights on 3rd floor (from middle to east side) of bldg#1 are not fully secured. |
| Source of Findings: | Photograph: Photo of loose wire at fan |
| Suggested Plan of | Secure wiring at lighting to protect from ceiling fans. |





| | |
|---------------------------|--|
| Action: | |
| Suggested Deadline Date: | 25 Jun 2014 |
| Standard: | Alliance Standards Part 10 Section 10.3.1 Electrical Connections |
| Question: | Required equipment and safety signage is posted within the room. |
| Priority Level: | Low |
| Non-Compliance Level: | 3 |
| Description: | Proper "electric danger/caution" signage is not provided on panel boards in substation room and no identification/markings/proper signage in front of the substation room. |
| Source of Findings: | Photograph: Photo of substation room |
| Suggested Plan of Action: | Signs must be posted at entry points warning unqualified people to keep out of substations. Panels should be marked with appropriate "electronic danger/caution" signs. WARNING should be used on the outside of the transformer or substation and DANGER signs and labels for the inside of a transformer, for equipment on the inside of a substation. Sumerra recommends review and conformance to ANSI Z535 or equivalent standard. As per NFPA 110.21 signage should be permanently affixed, not hand-written, and durable enough to withstand the environment. |
| Suggested Deadline Date: | 25 Jun 2014 |
| Standard: | Alliance Standard Part 10 Section 10.3.7, Section 10.7.3, and 10.13.7, NFPA 70 Chapter 1 Article 110.21, and Bangladesh Electricity Rules of 1937 Rule 46 |
| Question: | Signage indicating the prohibition of light fixtures without protective covers is installed at required locations. |
| Priority Level: | Low |
| Non-Compliance Level: | 3 |
| Description: | No signage indicating the prohibition of light fixtures without protective covers installed in storage areas as per Alliance Standards Part 10 Section 10.15 Naked Lights. |
| Source of Findings: | Visual Assessment: No signage indicating the prohibition of light fixtures without protective covers observed. |
| Suggested Plan of Action: | Install signage in all storage areas or other areas of combustibles indicating no use of light fixtures without protective covers as per Alliance Standard 10.15.2. Signs should conform to ANSI Z535 or equivalent international standard regarding safety signs. |
| Suggested Deadline Date: | 25 Jun 2014 |





Standard: Alliance Standards Part 10 Section 10.15 Naked Lights

Emergency Power System

Question: Are emergency power switchboards, distribution boards, and circuits properly identified?

Priority Level: High

Non-Compliance Level: 3

Description: Emergency power switchboards, distribution boards, and circuits are not identified as part of the emergency power system.

Source of Findings: Visual Assessment: Emergency power switchboards, distribution boards, and circuits are not identified as part of the emergency power system.

Suggested Plan of Action: All boxes and enclosures (including transfer switches, generators, and power panels) for emergency circuits should be permanently marked with signs that readily identify them as a component of the emergency power system.

Suggested Deadline Date: 25 Jun 2014

Standard: NFPA 70 Chapter 7 Article 700.10 Wiring, Emergency System

Question: Is an uninterruptable power supply (UPS) provided?

Priority Level: High

Non-Compliance Level: 3

Description: Factory has emergency power system (generator) but no uninterruptable power supply (UPS) system for instantaneous protection from input power interruptions.

Source of Findings: Visual Assessment: No uninterruptable power supply (UPS) system observed.

Suggested Plan of Action: Install uninterruptable power supply (UPS) system for instantaneous protection from input power interruptions. Emergency lights and exit signage should be supported by uninterruptable power supply so emergency lights and signage will stay powered during an emergency.

Suggested Deadline Date: 23 Jul 2014

Standard: Not Applicable

Question: Are life safety loads (fire alarm, fire pump, elevators, emergency lighting, exit signage, etc) connecting to the emergency power system?

Priority Level: High

Non-Compliance Level: 3

Description: The fire alarm, emergency lighting, & exit signage are not connected to a UPS

Factory Name: **LALMAI FOOTWEAR LTD**
Address: **DHANPUR, CHAPAPUR, KOTWALI, COMILLA 3500,Area 2,46500**
COMILLA Chittagong Bangladesh

Assessor: **Sumerra**
Date: **16 Apr 2014**



ALLIANCE
FOR BANGLADESH WORKER SAFETY

| | | |
|---------------------------|--|--|
| | system that will provide power until the emergency power system (generators) can develop power. | |
| Source of Findings: | Visual Assessment: No UPS system observed. | |
| Suggested Plan of Action: | Install a UPS system for powering critical life safety systems (e.g fire alarm, emergency lighting, & exit signage). | |
| Suggested Deadline Date: | 23 Jul 2014 | |
| Standard: | Alliance Standard Part 10 Section 10.8 Standby Power | |