



INITIAL ELECTRICAL ASSESSMENT REPORT (EAR)

Factory Name: **DESH GARMENTS LIMITED**

Address: **53/A Kalurghat Heavy Industrial Area Kalurghat,
Chittagong Chittagong Chittagong Bangladesh**

Assessor: **Uttaron Technologies**

Date: **14 May 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:	DESH GARMENTS LIMITED
Address:	53/A Kalurghat Heavy Industrial Area Kalurghat, Chittagong Chittagong Chittagong Bangladesh
Country:	Bangladesh
Province:	Chittagong
City:	Chittagong
Zip Code:	4208
Audit Duration:	2 Days 0 Hours
Re-Audit:	Re-Audit After 0 Months
Draft Report Date :	15 May 2014
Final Report Date :	30 May 2014
Are all action items from previous assessment complete? :	N/A
Buildings in Complex :	One
Is the building(s) owned or rented by the Factory?:	Owned
Number of Building Levels (Stories) :	One
Approximate Building Area (SF) :	70000 SF
Date of Building Construction :	Yr.1979 To 1980
Date of Last Building Renovation/Addition :	N/A
Ancillary Structures in Complex :	One
Approximate Ancillary Structures Area (SF) :	780 SF
Number of Occupants :	820

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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:	No updated as-built drawing was found on the site. Proper working or “as built” electrical drawings of main distribution circuit and floor levels circuits connecting electrical loads (machines/lights/ cooling system etc.) should be available at site. With the help of proper electrical drawings, any addition/deduction/isolation of loads can be done easily and decisions can be made centrally taking consideration of safety, integrity and good productivity. Proper drawings are an engineering tool, and every system must have it.
Source of Findings:	Visual Assessment: No as-built electrical drawing found in this factory.
Suggested Plan of Action:	Have a qualified electrical engineer develop as-built electrical drawings providing detailing key components of the electrical system.
Suggested Deadline Date:	31 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:	3	
Description:	Workers that operate and maintain the electrical system received no electrical safety training and no documents were found at site in this connection.	
Source of Findings:	Worker Interviews: Workers that operate and maintain the electrical system did not receive any formal electrical safety training., Visual Assessment: No documentation for safety training was found on site.	
Suggested Plan of Action:	Develop and implement an electrical safety program. Include key topics such as lock out tag out procedures, personal protective equipment requirements, etc. Reference NFPA 70e for example program requirements.	
Suggested Deadline Date:	31 Jul 2014	
Standard:	Reference NFPA 70e for example	



Question:	Is a periodical Insulation Resistance Measurement Program established and recorded?
Priority Level:	Medium
Non-Compliance Level:	2
Description:	No insulation resistance tests (IR tests) are evidenced at the factory. IR shall have to be carried out for all electrical equipment's with Meggar 0.5 KV or 1 KV (according to the voltage rating of equipment).
Source of Findings:	Visual Assessment: No such program schedule is recorded on periodical insulation resistance test is evident in this factory.
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:	31 Jul 2014
Standard:	Alliance Standard Part 10 Section 10.13.4 Insulation Tests and 10.13.8 Electrical Inspections
Question:	Are thermographic scans of electrical equipment completed at least every three years?
Priority Level:	Medium
Non-Compliance Level:	2
Description:	Thermographic scans of electrical equipment need to be completed at least every three years to ensure the proper maintenance of the electrical equipment. No such program has been witnessed in this factory.
Source of Findings:	Visual Assessment: No thermographic scans reported in this factory.
Suggested Plan of Action:	Complete thermographic scans at minimum 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:	31 Jul 2014
Standard:	Alliance Standards Part 10 Section 10.13.8 Electrical Inspections
Question:	Are periodic safety inspections of the electrical system components completed and documented?
Priority Level:	Medium



Non-Compliance Level:	1
Description:	Periodic safety inspections of the electrical system components are not completed in the factory.
Source of Findings:	Visual Assessment: No records found on periodic safety inspections of the electrical system components
Suggested Plan of Action:	Establish a periodic inspection program to ensure electrical systems are free from damage, debris, dirt, lint, etc. Maintain records concerning inspections and follow up actions.
Suggested Deadline Date:	31 Jul 2014
Standard:	Alliance Standard Part 10 Section 10.13 Inspection and Testing and Part 13 Section 13.6 Housekeeping
Question:	A transformer oil analysis is routinely completed on main service transformers.
Priority Level:	Low
Non-Compliance Level:	2
Description:	A transformer oil analysis is needed to ensure uninterrupted services without any major shutdown. Location: Substation room
Source of Findings:	Visual Assessment: The transformer oil analysis report was not found on site.
Suggested Plan of Action:	Complete an oil analysis on applicable transformers at appropriate intervals based on voltage and power.
Suggested Deadline Date:	31 Jul 2014
Standard:	Alliance Standard Part 10 Section 10.13.8 Electrical Inspections

Electrical System Conditions

Question:	No multi looping of wiring/cables observed at circuit breakers within switchboards and/or distribution boards.
Priority Level:	High
Non-Compliance Level:	3
Description:	Multiple cables entering in one point prevent tightening of the bolt and causes electrical sparks due to loose connection at DB-01/GF in the factory. Multiple and looping cables are found at circuit breakers in the distribution boxes at every floor.
Source of Findings:	Photograph: Multiple cables enter in one point on Bus Bar at DB-01/GF in the factory.
Suggested Plan of Action:	Remove multiple and looping cables at each panel.





Suggested Deadline Date:	31 Jul 2014	
Standard:	Alliance Standard Part 10 Section 10.3 Electrical Wiring and Cabling	
Question:	All metal in the building is connected to the building earthing/grounding system such as metal rebar in concrete, metal frame of building, or metal water pipe.	
Priority Level:	High	
Non-Compliance Level:	3	
Description:	All metal in the building is not connected to the building earthing/grounding system.	
Source of Findings:	Visual Assessment: All metal in the building is not connected to the building earthing/grounding system.	
Suggested Plan of Action:	Provide earthing/grounding system for all metal in the building.	
Suggested Deadline Date:	31 Jul 2014	
Standard:	Alliance Standard Part 10 Section 10.10 Earthing	
Question:	Indications of overheating, overloading, or signs of burning were not observed.	
Priority Level:	High	
Non-Compliance Level:	2	
Description:	Indications of overheating, overloading, or signs of burning were observed inside the PFI panel. Location: PFI Panel in Substation room.	
Source of Findings:	Visual Assessment: Indications of overheating, overloading, or signs of burning.	
Suggested Plan of Action:	Wiring system components including cables and wiring accessories shall be installed or handled only at temperatures within the standard limits.	
Suggested Deadline Date:	07 Jun 2014	
Standard:	Alliance Standard Part 10 Section 10.3.5	
Question:	Do switchboards and/or distribution boards have clear identification markings?	
Priority Level:	Medium	
Non-Compliance Level:	3	
Description:	Clear identification/markings was available at all LT, MDB and DB/SDBs in the factory but not permanent. Location: All LT, MDB and DB/SDBs	





Source of Findings:	Photograph: Clear identification/markings was available at all LT, MDB and DB/SDBs in the factory but not permanent.	
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 a diagram of each circuit which it controls and the current rating for the circuit and size of fuse element. Clear identification marking must be available at LT, MDB and DB MCB/MCCB as per BNBC 2006 of section: 2.11.5.4.	
Suggested Deadline Date:	30 Jun 2014	
Standard:	Alliance Standard Part 10 Section 10.7 BNBC Part 8 Section 2.11.5.4	
Question:	Stranded conductors having a nominal cross-sectional area 6mm ² or greater are provided with cable sockets. Conductors below 6 mm ² without cable sockets, all strands at the exposed ends are soldered together or are crimped using suitable sleeve or ferrules.	
Priority Level:	Medium	
Non-Compliance Level:	3	
Description:	There are some MDB/DB/SDBs found where cable sockets are not used in the factory.	
Source of Findings:	Visual Assessment: There are some MDB/DB/SDBs found where cable sockets are not used in the factory.	
Suggested Plan of Action:	Need to reconnect with proper size of cable sockets with proper crimping as per standards.	
Suggested Deadline Date:	31 Jul 2014	
Standard:	Alliance Standards Part 10 Section 10.3.8.3 Cable Ends	
Question:	Are 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.	
Priority Level:	Medium	
Non-Compliance Level:	2	
Description:	Boxes do not have the proper design or means to understand how many devices can be installed.	
Source of Findings:	Photograph: No physical means of prevention of more over current devices.	
Suggested Plan of Action:	Physical means to prevent the installation of more over current devices than that for which the equipment was designed need to be installed based on the calculation of panel capacity.	
Suggested Deadline	31 Jul 2014	



Date:		
Standard:	Alliance Standards Part 10 Section 10.7 Main Switch, Switchboards and Metal Clad Switchgear	
Question:	Is all electrical wiring/cable properly terminated at its point of termination (No un-terminated wires, lugs are provided at terminals, etc)?	
Priority Level:	Medium	
Non-Compliance Level:	2	
Description:	Un-terminated wires and inappropriate lugs found in some places in the factory. Location: Ground floor	
Source of Findings:	Visual Assessment: Cables connected without lugs were found on site.	
Suggested Plan of Action:	Need to remove all un-terminated wires and lugs as per BNBC 2006 section 2.5.4.4 and 2.5.5.4 (C).	
Suggested Deadline Date:	31 Jul 2014	
Standard:	Alliance Standards Part 10 Section 10.3.9.2 Wiring of Sub-distribution Boards	
Question:	Mechanical guards are provided for electrical equipment and wiring where necessary.	
Priority Level:	Medium	
Non-Compliance Level:	2	
Description:	Mechanical Guards were not provided in the electrical room and few other places in the factory. The exhaust fans do not have mechanical guards. Location: Generator room	
Source of Findings:	Photograph: Mechanical guards not provided for cables.	
Suggested Plan of Action:	Mechanical guards need to be provided instead of flexible cables or cords as fixed wiring unless contained in an enclosure and cable tray affording mechanical support.	
Suggested Deadline Date:	30 Jun 2014	
Standard:	Alliance Standard Part 10 Section 10.3 Electrical Wiring and Cabling, 10.6.5 Cables, and 10.7 Main Switch, Switchboards And Metal Clad Switchgear	
Question:	Do switchboards and/or distribution boards have capacity information labels?	
Priority Level:	Medium	
Non-Compliance Level:	1	
Description:	Capacity labels are not provided on switchboards and distribution boards. Location: All LT/MDB/DB/SDBs	



Source of Findings:	Visual Assessment: Capacity information labels were not found on all switchboards and distribution boards.	
Suggested Plan of Action:	Provide capacity information labels (maximum current rating, number of circuit breakers, etc.) for switchboards and distribution boards.	
Suggested Deadline Date:	15 Jul 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:	Are electrical wiring/cables properly identified?	
Priority Level:	Medium	
Non-Compliance Level:	1	
Description:	Electrical wiring/cables are not properly identified in the factory. Location: All LT/MDB/DB/SDBs	
Source of Findings:	Photograph: Electrical wiring/cables are not properly identified.	
Suggested Plan of Action:	Electrical wiring/cables need to be provided with proper color code for all the phase conductors (red, yellow, blue), neutral (black) and earth (green or yellow/green stripes).	
Suggested Deadline Date:	31 Jul 2014	
Standard:	Bangladesh Electricity Rules 1937 Rule 51 and 56	
Question:	Electrical wiring and conduit is properly supported.	
Priority Level:	Medium	
Non-Compliance Level:	1	
Description:	No support of power cables found in generator room.	
Source of Findings:	Photograph: Did not find support of power cables in generator room.	
Suggested Plan of Action:	Electrical wiring should be properly supported to avoid suddenly falling down. Provide adequate support or mechanical guard for all electrical wiring and conduit.	
Suggested Deadline Date:	15 Jul 2014	
Standard:	Alliance Standard Part 10 Section 10.3.2, 10.3.4.3, and 10.3.5	



Question:	Electrical connections at equipment, fixtures, etc are properly secured.
Priority Level:	Medium
Non-Compliance Level:	1
Description:	Connection for sockets found hanging on combustibles at ground floor in the factory.
Source of Findings:	Photograph: Electrical connections at equipment, fixtures, etc. are not properly secured at ground floor in the factory.
Suggested Plan of Action:	Flexible metallic hose should be used for wiring to motors and other equipment. This wiring would be enclosed the entire length and the hoses must be secured by approved means.
Suggested Deadline Date:	15 Jul 2014
Standard:	Alliance Standards Part 10 Section 10.3.1 Electrical Connections
Question:	Phase separators are provided between terminals on circuit breakers.
Priority Level:	Low
Non-Compliance Level:	3
Description:	Some MCCBs in MDBs have no phase separators. Phase separators are needed to prevent arcing and short circuiting between phases. Location: LT/ GF at Substation room
Source of Findings:	Photograph: Phase separator is not fixed between circuit breakers at LT/ GF in the substation.
Suggested Plan of Action:	Phase separators shall be provided between terminal connections at the noted locations.
Suggested Deadline Date:	31 Jul 2014
Standard:	Alliance Standard Part 10 Section 10.3.1 Electrical Connections
Question:	Signage indicating the prohibition of light fixtures without protective covers is installed at required locations.
Priority Level:	Low
Non-Compliance Level:	2
Description:	Signage indicating the prohibition of light fixtures without protective covers are not provided in storage areas.
Source of Findings:	Visual Assessment: No signage found.
Suggested Plan of Action:	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 (1.6.3.7) Part 53 disallows these fixtures. Install signs posted in Bengali and English, indicating this prohibition at all entrances to these areas.	
Suggested Deadline Date:	30 Jun 2014	
Standard:	Alliance Standards Part 10 Section 10.15 Naked Lights	

Emergency Power System

Question:	Are cable trenches properly covered?	
Priority Level:	High	
Non-Compliance Level:	3	
Description:	Cable trenches are not properly covered and contain combustible materials. Location: Production area of ground floor.	
Source of Findings:	Photograph: Cable trenches are not properly covered at mid point of ground floor.	
Suggested Plan of Action:	Remove the combustible materials from cable trenches.	
Suggested Deadline Date:	30 Jun 2014	
Standard:	Alliance Standard Part 10 Section 10.13.7 Inspection of the Installation	
Question:	Is the generator frame earthing (grounding) provided at two separate points?	
Priority Level:	Medium	
Non-Compliance Level:	3	
Description:	The generator frame is not provided with two separate earthing points. Location: Generator room	
Source of Findings:	Photograph: Earthing not provided at two points for the generator.	
Suggested Plan of Action:	Provide earthing for the generator frame at two points.	
Suggested Deadline Date:	15 Jul 2014	
Standard:	Alliance Standard 10.8.2.2	