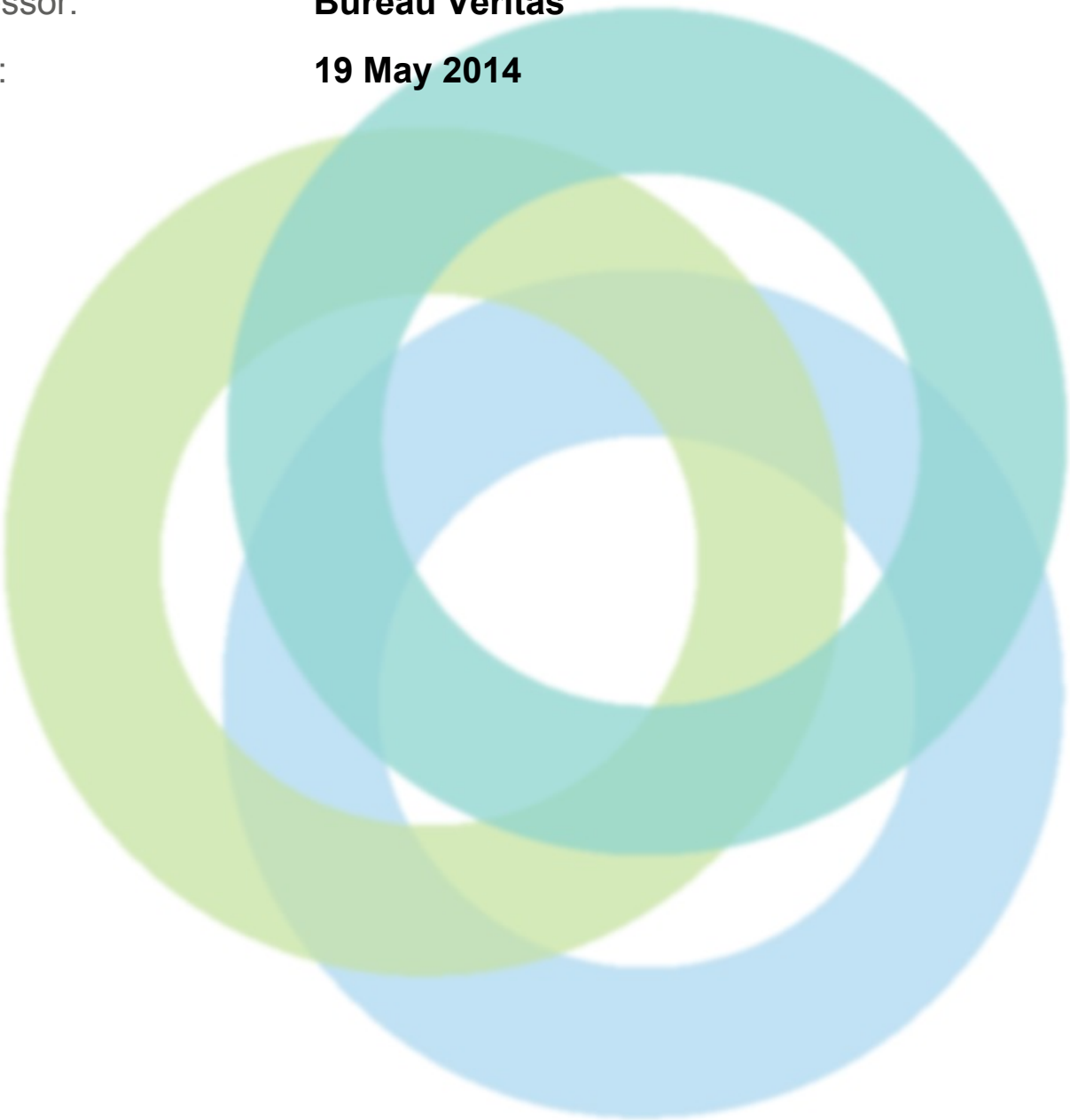


INITIAL FIRE ASSESSMENT REPORT (FAR)

Factory Name: **MATRIX SWEATERS LTD.**
Address: **NATIONAL UNIVERSITY, CHOYDANA Gazipur
Gazipur Dhaka Bangladesh**
Assessor: **Bureau Veritas**
Date: **19 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:	MATRIX SWEATERS LTD.
Address:	NATIONAL UNIVERSITY, CHOYDANA Gazipur Gazipur Dhaka Bangladesh
Country:	Bangladesh
Province:	Dhaka
City:	Gazipur
Zip Code:	1704
Audit Duration:	1 Days
Re-Audit:	Re-Audit After 0 Months
Draft Report Date:	05-20-2014
Final Report Date:	06-17-2014
Are all Action Items From Previous Assessment Completed?:	N/A
Buildings in Complex:	There are 9 buildings in the factory premises out of which one is main production buildings and eight are ancillary buildings. The buildings are named as: 1) Eight story main building with occupied roof, 2) Single story washing plant, 3) Single story fire pump & generator room, 4) Single story security room, 5) Single story shed-1, 6) Single story diesel generator shed-2, 7) Single story gas generator shed-3, 8) Single story boiler shed-4, 9) Single story gas sub-station room.
Is the building(s) owned or rented by the Factory:	Owned
Number of Building Levels (Stories):	Information provided below as per following format: Highest occupied floor level [Height up to roof], Stories above grade, Stories below grade, Occupied level. 1) Eight story main building with occupied roof: 25.60 m or 84 ft [30.18 m or 99 ft], 8, 0, 9 (8 occupied floors plus 1 occupied roof), 2) Single story washing plant: 30 cm or 1 ft above grade [4.57 m or 15 ft], 1, 0, 1, 3) Single story fire pump & generator room: 30 cm or 1 ft above grade [3 m or 10 ft], 1, 0, 1, 4) Single story security room: 30 cm or 1 ft above grade [3 m or 10 ft], 1, 0, 1, 5) Single story shed-1: 30 cm or 1 ft above grade [3 m or 10 ft], 1, 0, 1, 6) Single story diesel generator shed-2: 30 cm or 1 ft above grade [4.57 m or 15 ft], 1, 0, 1, 7) Single story gas generator shed-3: 30 cm or 1 ft above grade [4.57 m or 15 ft], 1, 0, 1, 8) Single story boiler shed-4: 30 cm or 1 ft above grade [4.57 m or 15 ft], 1, 0, 1, 9) Single story gas sub-station room: 30 cm or 1 ft above grade [3 m or 10 ft], 1, 0, 1.
Approximate Building Area (SF):	Total area of all buildings in the factory premises: 532040 sft. Building wise breakdown as follows: 1) Eight story main building with occupied roof: 518800 sft (Ground floor: 63000 sft, 1st floor: 60000 sft, 2nd floor: 63000 sft, 3rd floor: 63000 sft, 4th floor: 63000 sft, 5th floor: 63000 sft, 6th floor: 63000 sft, 7th floor: 63000 sft, Occupied roof: 17800 sft). 2) Single story washing plant: 4692 sft. 3) Single story fire pump & generator room: 112 sft. 4) Single story security room: 1440 sft. 5) Single story shed-1: 1590 sft. 6) Single story diesel



	generator shed-2: 2970 sft. 7) Single story gas generator shed-3: 1764 sft. 8) Single story boiler shed-4: 480 sft. 9) Single story gas sub-station room: 192 sft.
Date of Building Construction:	Factory personnel informed that construction of all buildings was completed in 2008.
Date of Last Building Renovation/Addition:	Eight story main building with occupied roof: Renovation work is ongoing on ground floor, 1st floor & 6th floor.
Ancillary Structures in Complex:	1) Single story washing plant, 2) Single story fire pump & generator room, 3) Single story security room, 4) Single story shed-1, 5) Single story diesel generator shed-2, 6) Single story gas generator shed-3, 7) Single story boiler shed-4, 8) Single story gas sub-station room.
Approximate Ancillary Structures Area (SF):	1) Single story washing plant: 4692 sft. 2) Single story fire pump & generator room: 112 sft. 3) Single story security room: 1440 sft. 4) Single story shed-1: 1590 sft. 5) Single story diesel generator shed-2: 2970 sft. 6) Single story gas generator shed-3: 1764 sft. 7) Single story boiler shed-4: 480 sft. 8) Single story gas sub-station room: 192 sft.
Number of Occupants:	Total number of occupants: 5180. 1) Eight story main building with occupied roof: 5050 (Ground floor: 100, 1st floor: 100, 2nd floor: 1000, 3rd floor: 1000, 4th floor: 400, 5th floor: 1000, 6th floor: 1000, 7th floor: 0, Occupied roof: 450), 2) Single story washing plant: 15, 3) Single story fire pump & generator room: 02, 4) Single story security room: 03, 5) Single story shed-1: 100, 6) Single story diesel generator shed-2: 03, 7) Single story gas generator shed-3: 03, 8) Single story boiler shed-4: 03, 9) Single story gas sub-station room: 01.
Number of Ancillary Levels (Stories):	Information provided below as per following format: Highest occupied floor level [Height up to roof], Stories above grade, Stories below grade, Occupied level. 1) Single story washing plant: 30 cm or 1 ft above grade [4.57 m or 15 ft], 1, 0, 1, 2) Single story fire pump & generator room: 30 cm or 1 ft above grade [3 m or 10 ft], 1, 0, 1, 3) Single story security room: 30 cm or 1 ft above grade [3 m or 10 ft], 1, 0, 1, 4) Single story shed-1: 30 cm or 1 ft above grade [3 m or 10 ft], 1, 0, 1, 5) Single story diesel generator shed-2: 30 cm or 1 ft above grade [4.57 m or 15 ft], 1, 0, 1, 6) Single story gas generator shed-3: 30 cm or 1 ft above grade [4.57 m or 15 ft], 1, 0, 1, 7) Single story boiler shed-4: 30 cm or 1 ft above grade [4.57 m or 15 ft], 1, 0, 1, 8) Single story gas sub-station room: 30 cm or 1 ft above grade [3 m or 10 ft], 1, 0, 1.
Occupancy Type:	1. Main building: Ground floor: H2 (Storage), G2 (Knitting), K (Boiler); 1st floor: H2 (Finished goods Storage); 2nd floor: G2 (Linking, Inspection, Trimming, Mending, Iron, Packing, Spot removal room); 3rd floor: G2 (Linking, Inspection, Trimming, Mending, Iron, Packing); 4th floor: G2 (Linking, Mending, Trimming, PQC, Sewing, Packing, Iron), F1 (Office); 5th Floor: G2 (Knitting, Inspection), F1 (Office); 6th Floor: G2 (Trimming, Finishing, Sewing, Knitting, Linking, Sample), H2 (Storage); 7th Floor: under renovation; Roof: E3 (Dining), H2 (Storage). 2. Washing Plant: G2 (Washing); 3. Fire pump generator room: K (Generator); 4. Security room: F1 (Office); 5. Shed-1: E4 (Dining), H2 (Storage); 6. Diesel generator shed-2: K (Generator); 7. Gas generator shed-3: K (Generator); 8. Boiler shed-4: K (Boiler); 9. Gas sub-station room: K (Gas Meter).
Construction Type:	1) Eight story main building with occupied roof: [(Ground floor to 7th floor: Type 1, Occupied roof: Non-rated (Only ceiling))], 2) Single story washing plant: Non-rated, 3) Single story fire pump & generator room: Non-rated, 4) Single story security room: Type 1, 5) Single story shed-1: Non-rated, 6) Single story diesel generator shed-2: Non-rated, 7) Single story gas generator shed-3: Non-rated, 8) Single story boiler shed-4: Non-rated, 9) Single story gas sub-station room: Type 1.
Height of Highest Occupied Floor Level Above Grade:	1) Eight story main building with occupied roof: 25.60 m or 84 ft, 2) Single story washing plant: 30 cm or 1 ft above grade, 3) Single story fire pump & generator room: 30 cm or 1 ft above grade, 4) Single story security room: 30 cm or 1 ft above grade, 5) Single story shed-1: 30 cm or 1 ft above grade, 6) Single story diesel generator shed-2: 30 cm or 1 ft above grade, 7) Single story gas generator shed-3: 30 cm or 1 ft above grade, 8) Single story boiler shed-4: 30 cm or 1 ft above grade, 9) Single story gas sub-station room: 30 cm or 1 ft above grade.

Factory Name: **MATRIX SWEATERS LTD.**
Address: **NATIONAL UNIVERSITY, CHOYDANA Gazipur Gazipur Dhaka Bangladesh**

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ALLIANCE
FOR BANGLADESH WORKER SAFETY



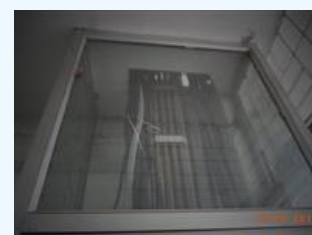
ASSESSMENT FINDINGS

Fire Protection Construction

Question:	Certificates of Occupancy for each building have been issued and are on file.	
Priority Level:	Low	
Non-Compliance Level:		
Description:	Occupancy certificate is available for all the buildings of factory premises.	
Source of Findings:	Document Review: Occupancy certificate was found for all buildings.	
Suggested Plan of Action:		
Suggested Deadline Date:		
Standard:	Are certificates of occupancy provided for each building or ancillary structure?	
Question:	Is the fire resistance materials of structural members in good condition and free of damage?	
Priority Level:	Medium	
Non-Compliance Level:	2	
Description:	There was no damage found in the fire resistance materials of the structural members in the RCC buildings. But the utility sheds along with washing plant (G2) are steel structure without insulation, therefore non-rated. However, structural members of prefab shed seem to be in good condition. Non-rated construction is present in the high rise building.	
Source of Findings:	Visual Assessment: On visual inspection, no damage or distress was noticed in the structural members of the buildings.	
Suggested Plan of Action:	Nonrated construction is not permitted in high rise buildings per Alliance Standard 3.6.2.4. Remove the nonrated construction on top of the 8 story building.	
Suggested Deadline Date:	15 Mar 2015	
Standard:	BNBC Part 3 Chapter 3	



Question:	Are openings and penetrations through rated walls and/or assemblies protected?
Priority Level:	High
Non-Compliance Level:	2
Description:	At some places, the wall between the stair enclosure and production area have unprotected openings. Such unprotected openings are not allowed. These openings need to be 1.5 hour rated as per the Alliance Standard.
Source of Findings:	Visual Assessment: Unprotected openings at exit enclosure were found during site visit.
Suggested Plan of Action:	Provide opening protectives at all windows and other openings on all fire rated walls across the entire premises. Close these openings if they are not required.
Suggested Deadline Date:	16 Sep 2014
Standard:	Includes doors, windows, ducts, piping, etc. Reference Alliance Standards Part 4 Section 4.6 Opening Protectives and Section 4.7 Penetrations
Question:	Is each floor separated with a fire-resistive rated construction barrier?
Priority Level:	High
Non-Compliance Level:	2
Description:	Slabs are penetrated for transferring electrical cables of the electrical DBR connection room to each floor. The penetrations are not sealed or protected following the requirements of the Alliance Standard. From physical measurement, the slab thickness was found to be 7.0 inches with finishing, which is capable of providing approximately 3.0 hours of fire resistance. The slab for a Type 1 building needs to have 3 hour fire rating. The fire rating of 6 inch and 8 inch RC slabs are 2.5 hours and 3.75 hours, respectively. Therefore, the slab may be considered to have required fire rating to separate the floors but due to the unprotected openings through the slab, floors are not separated with a fire-resistive rated construction barrier.
Source of Findings:	Visual Assessment: The slabs were found to be penetrated for transferring electrical cables.
Suggested Plan of Action:	Protect the penetrations of fire resistive rated assemblies with a listed through penetration firestop system tested in accordance with ASTM E814.
Suggested Deadline Date:	16 Sep 2014
Standard:	Reference Alliance Standards Part 4 Section 4.5 Separation
Question:	Are separations between hazards provided with fire-resistive rated construction barriers.
Priority Level:	Medium





Non-Compliance Level:	2
Description:	There is a spot removing room on the 2nd floor of the main building with glass and aluminum partitions. Acetone is being used in that room. This room needs to be fire separated with fire doors according to Alliance Standard. In-process goods are kept haphazardly on various floors, and are not within the required dimensions for miscellaneous store (area 250 sft, height 8 ft, separation from adjacent area 10 ft) as per Alliance Standard. The store (H2) on the 6th floor is separated from the production area (G2) by a steel net. These different occupancies need to be fire separated according to Alliance Standard.
Source of Findings:	Visual Assessment: The store and production area not fire separated.
Suggested Plan of Action:	Provide fire-resistive rated construction barriers between hazard types following Table 4.4.1 of the Alliance Standard. Consult a qualified fire protection engineer to design the required rated construction barriers.
Suggested Deadline Date:	10 Dec 2014
Standard:	Reference Alliance Standards Part 4 Section 4.5 Separation
Question:	Are exit enclosures provided with fire-resistive rated construction barriers?
Priority Level:	High
Non-Compliance Level:	3
Description:	There are 5 stairways in the main building. No fire doors with credible certifications are fitted at any of the exits on all floors. Out of the 5 stairways, one stairway opens directly to the production floor. Moreover, there are unprotected windows on the enclosure as well. The doors and the openings on those exit enclosures need to be 1.5 hour rated as per the Alliance Standard.
Source of Findings:	Visual Assessment: No fire door was found on any of the exit enclosures.
Suggested Plan of Action:	Provide 2 hour fire-resistive rated construction barriers with 1.5 hour opening assemblies at exit enclosures. Fit outward-opening, side-swinging, self-closing, non-lockable fire doors of a 1.5 hour rating in all stairwell enclosures. Consult a qualified fire protection engineer to design the required rated construction barriers.
Suggested Deadline Date:	16 Sep 2014
Standard:	Reference Alliance Standards Part 4 Section 4.5 Separation
Question:	Are shafts provided with the minimum fire-resistance rating?
Priority Level:	High
Non-Compliance Level:	2
Description:	There are two elevators in the main building. The elevators open to an exit enclosure but the doors at the exits are not fire resistive.





Source of Findings:	Visual Assessment: No fire door was found at exits.	
Suggested Plan of Action:	Provide 1.5 hour fire protective opening assemblies in 2 hour rated exit enclosures.	
Suggested Deadline Date:	16 Sep 2014	
Standard:	Reference Alliance Standards Part 4 Section 4.5.7.1 through 4.5.7.3	
Question:	Fire dampers installed on air-conditioning and ventilation ducts appear to be in good condition and operational.	
Priority Level:	Medium	
Non-Compliance Level:		
Description:	No air-conditioning or ventilation duct available for which fire damper is required.	
Source of Findings:	Visual Assessment: No air-conditioning or ventilation duct available.	
Suggested Plan of Action:		
Suggested Deadline Date:		
Standard:	Reference Alliance Standards Part 4 Section 4.6 Opening Protectives and Section 4.7 Penetrations	
Question:	If the building contains a vertical opening known as an atrium, have provisions been made to comply with Alliance Standard 3.7?	
Priority Level:	Medium	
Non-Compliance Level:		
Description:	No atrium is available in the buildings.	
Source of Findings:	Visual Assessment: During site tour, no atrium was found.	
Suggested Plan of Action:		
Suggested Deadline Date:		
Standard:	Reference Alliance Standards Section 3.7 Atrium	
Fire Protection Systems		
Question:	Is the building protected by an automatic sprinkler system?	
Priority Level:	High	



Non-Compliance Level:	3	
Description:	The height of the highest occupied level of the main building is 25.61 m (84.00 ft), therefore the whole building needs to be protected by an automatic sprinkler system in accordance with the Alliance Standards. The other buildings and sheds are not high enough to require automatic sprinkler systems.	
Source of Findings:	Visual Assessment: The height of the main building was measured and it was found that a sprinkler system is required.	
Suggested Plan of Action:	Install an automatic sprinkler system throughout the building designed by a qualified fire protection engineer. The hydraulic design of the sprinkler system must be pre-approved by CoE of the Alliance. All installation and design requirements outlined in BNBC Part 4 Chapter 4 shall be replaced by the requirements of NFPA 13. Pipe schedules shall not be used to size pipes. All systems shall be hydraulically calculated to meet NFPA design requirements. Installation of new automatic sprinkler systems shall be required to provide shop drawings and hydraulic calculations. The test and performance report of the installed system has to be submitted to the Alliance for review. Final inspection and testing shall be witnessed by the Alliance.	
Suggested Deadline Date:	03 Mar 2015	
Standard:	Reference Alliance Standards Part 3 Section 3.5.3 Existing Buildings, Part 5 Section 5.3 Automatic Sprinkler Systems and Section 6.13 Travel Distance	
Question:	Design criteria of sprinkler system?	
Priority Level:		
Non-Compliance Level:	2	
Description:	Automatic sprinkler system is not designed and installed in the main building.	
Source of Findings:	Visual Assessment: During site tour no sprinkler system was found installed.	
Suggested Plan of Action:	Get the automatic sprinkler system designed from a qualified fire protection engineer. Design criteria is to be mentioned in the design drawing.	
Suggested Deadline Date:	03 Mar 2015	
Standard:	Provide the criteria used in the design of the sprinkler system.	
Question:	Commodity Class used for the design of the sprinkler system?	
Priority Level:		
Non-Compliance Level:	2	
Description:	Automatic sprinkler system is not designed and installed in the main building.	
Source of Findings:	Visual Assessment: During site tour no sprinkler system was found installed.	



Suggested Plan of Action:	Get the automatic sprinkler system designed from a qualified fire protection engineer. Commodity class is to be mentioned in the design drawing.	
Suggested Deadline Date:	03 Mar 2015	
Standard:	Reference NFPA 13 Chapter 5	
Question:	Occupancy Classification used for the design of the sprinkler system?	
Priority Level:		
Non-Compliance Level:	2	
Description:	Automatic sprinkler system is not designed and installed in the main building.	
Source of Findings:	Visual Assessment: During site tour no sprinkler system was found installed.	
Suggested Plan of Action:	Get the automatic sprinkler system designed from a qualified fire protection engineer. Occupancy classification is to be mentioned in the design drawing.	
Suggested Deadline Date:	03 Mar 2015	
Standard:	Reference NFPA 13 Chapter 5	
Question:	Are inspection, maintenance, and testing procedures of the sprinkler system documented and up to date?	
Priority Level:	Low	
Non-Compliance Level:	2	
Description:	An automatic sprinkler system is not installed in the main building.	
Source of Findings:	Visual Assessment: During site tour no sprinkler system was found installed.	
Suggested Plan of Action:	Install an automatic sprinkler system designed by a qualified fire protection engineer. Establish a maintenance program that includes the requirements in NFPA 25.	
Suggested Deadline Date:	03 Mar 2015	
Standard:	Reference NFPA 25 Chapter 5 Sprinkler Systems Table 5.1.1.2	
Question:	Are identification signs for the sprinkler system installed at the required locations?	
Priority Level:	Low	
Non-Compliance Level:	2	
Description:	An automatic sprinkler system is not designed and installed in the main building.	



Source of Findings:	Visual Assessment: During site tour no sprinkler system was found installed.	
Suggested Plan of Action:	Install an automatic sprinkler system designed by a qualified fire protection engineer. Install identification signage at the required locations.	
Suggested Deadline Date:	03 Mar 2015	
Standard:	Reference NFPA 13	
Question:	Sprinkler system piping is free of mechanical damage, leakage, and corrosion.	
Priority Level:	Medium	
Non-Compliance Level:	2	
Description:	An automatic sprinkler system is not designed and installed in the main building.	
Source of Findings:	Visual Assessment: During site tour no sprinkler system was found installed.	
Suggested Plan of Action:	Install an automatic sprinkler system designed by a qualified fire protection engineer.	
Suggested Deadline Date:	03 Mar 2015	
Standard:	NFPA 25 Chapter 5 Section 5.2.2 Pipe and Fittings	
Question:	Sprinkler system piping is not subjected to external loads by materials either resting on the pipe or hung from the pipe?	
Priority Level:	Low	
Non-Compliance Level:	2	
Description:	An automatic sprinkler system is not installed in the main building.	
Source of Findings:	Visual Assessment: During site tour no sprinkler system was found installed.	
Suggested Plan of Action:	Install an automatic sprinkler system designed by a qualified fire protection engineer.	
Suggested Deadline Date:	03 Mar 2015	
Standard:	Reference NFPA 25 Chapter 5 Section 5.2.2.2	
Question:	Are hangers, bracing, and restraints properly installed and supporting the system piping?	
Priority Level:	Medium	
Non-Compliance Level:	2	
Description:	An automatic sprinkler system is not designed and installed in the main	



	building.	
Source of Findings:	Visual Assessment: During site tour no sprinkler system was found installed.	
Suggested Plan of Action:	Install an automatic sprinkler system designed by a qualified fire protection engineer.	
Suggested Deadline Date:	03 Mar 2015	
Standard:	Reference NFPA 13 Chapter 9 Hanging, Bracing, and Restraint of System Piping.	
Question:	Sprinklers do not show signs of leakage, are free of corrosion, have not been painted, and are not physically damaged.	
Priority Level:	Medium	
Non-Compliance Level:	2	
Description:	An automatic sprinkler system is not designed and installed in the main building.	
Source of Findings:	Visual Assessment: During site tour no sprinkler system was found installed	
Suggested Plan of Action:	Install an automatic sprinkler system designed by a qualified fire protection engineer.	
Suggested Deadline Date:	03 Mar 2015	
Standard:	Reference NFPA 25 Chapter 5	
Question:	All valves controlling the automatic sprinkler systems are electrically supervised by a listed fire alarm system control unit.	
Priority Level:	Medium	
Non-Compliance Level:	2	
Description:	An automatic sprinkler system is not designed and installed in the main building.	
Source of Findings:	Visual Assessment: During site tour no sprinkler system was found installed	
Suggested Plan of Action:	Install an automatic sprinkler system designed by a qualified fire protection engineer.	
Suggested Deadline Date:	03 Mar 2015	
Standard:	Reference Alliance Standard Part 5 Section 5.3.5 Supervision and Alarms.	
Question:	Does the automatic sprinkler system have an approved audible device activated by waterflow equal to the flow of one sprinkler?	



Priority Level:	Low
Non-Compliance Level:	2
Description:	An automatic sprinkler system is not designed and installed in the main building.
Source of Findings:	Visual Assessment: During site tour no sprinkler system was found installed
Suggested Plan of Action:	Install an automatic sprinkler system designed by a qualified fire protection engineer.
Suggested Deadline Date:	03 Mar 2015
Standard:	Reference Alliance Standards Part 5 Section 5.3.5.2 Alarms.
Question:	Are sprinklers spaced and installed at the required heights in order to provided required coverage and protection?
Priority Level:	High
Non-Compliance Level:	2
Description:	An automatic sprinkler system is not designed and installed in the main building.
Source of Findings:	Visual Assessment: No sprinkler system was found installed.
Suggested Plan of Action:	Install an automatic sprinkler system designed by a qualified fire protection engineer.
Suggested Deadline Date:	03 Mar 2015
Standard:	Reference NFPA 13
Question:	Are storage racks and shelves compliant based on class of commodity storage?
Priority Level:	High
Non-Compliance Level:	2
Description:	An automatic sprinkler system is not designed and installed in the main building.
Source of Findings:	Visual Assessment: No sprinkler system was found installed.
Suggested Plan of Action:	Install an automatic sprinkler system designed by a qualified fire protection engineer.
Suggested Deadline Date:	03 Mar 2015
Standard:	Reference NFPA 13 Chapter 13, 14, 15, 16, or 17



Question:	Aisles in storage areas are free of storage based on design criteria used for the sprinkler system.	
Priority Level:	Medium	
Non-Compliance Level:	2	
Description:	An automatic sprinkler system is not designed and installed in the main building.	
Source of Findings:	Visual Assessment: During site tour no sprinkler system was found installed.	
Suggested Plan of Action:	Install an automatic sprinkler system designed by a qualified fire protection engineer.	
Suggested Deadline Date:	03 Mar 2015	
Standard:	Alliance Standard Part 5 Section 5.3.6.3	
Question:	All storage is maintained with a 460 mm (18 in.) minimum clearance from the top of storage to the sprinkler deflector.	
Priority Level:	Medium	
Non-Compliance Level:	2	
Description:	An automatic sprinkler system is not designed and installed in the main building.	
Source of Findings:	Visual Assessment: During site tour no sprinkler system was found installed.	
Suggested Plan of Action:	Install an automatic sprinkler system designed by a qualified fire protection engineer.	
Suggested Deadline Date:	03 Mar 2015	
Standard:	Reference Alliance Standards Part 5 Section 5.3.6.1 Storage Clearance	
Question:	Does the building have a Standpipe System?	
Priority Level:	High	
Non-Compliance Level:	3	
Description:	The height of the highest occupiable floor of the main building is 25.60 m (84.00 ft) above grade. Standpipe systems shall be installed throughout all new and existing buildings and structures where the highest occupied floor is more than 10 m (33 ft) above grade or more than 10 m (33 ft) below grade. Therefore, a class I standpipe system needs to be installed throughout the main building at the required stairwells as per Alliance Standard. There is no standpipe system in the main building meeting NFPA requirements. Only a 25 mm diameter connection with plastic hose reel is found on the floors of the main building, and two 65 mm diameter connections with fabric hose reels are installed in other buildings. There is no hydraulic design for the installed	



	system. There is no class I standpipe hose connection (65 mm) available in the stairwells including on the occupiable roof of the main building.	
Source of Findings:	Visual Assessment: 25 mm diameter connection with plastic hose reel are found in the floors of the main building and two 65 mm diameter connections with fabric hose reels at outside of main building was found.	
Suggested Plan of Action:	Install a NFPA-compliant standpipe system at required locations designed by a qualified fire protection engineer. The hydraulic calculations should be reviewed by the Alliance and the review should be completed prior to the start of work. All standpipe system installations shall be reviewed by the Alliance prior to the commencement of installation. Testing of the installation shall be conducted in accordance with NFPA 14 acceptance testing requirements. Documentation of all testing shall be submitted for review by the Alliance. Final inspection and testing of the installation shall be witnessed by the Alliance.	
Suggested Deadline Date:	16 Sep 2014	
Standard:	Does the building have a standpipe system installed where required. Alliance Standard Part 5 Section 5.4.2	
Question:	Are inspection, maintenance, and testing procedures of the standpipe and hose system documented and up to date? Including inspection and testing of hoses if provided.	
Priority Level:	Low	
Non-Compliance Level:	2	
Description:	Inspection, maintenance, and testing procedures of the standpipe and hose are not documented and up to date as per NFPA 25.	
Source of Findings:	Document Review: No document regarding inspection, maintenance and testing procedure of standpipe and hose system was found among the documents shown by the factory personnel.	
Suggested Plan of Action:	Install NFPA-compliant class I standpipe system at required locations designed by a qualified fire protection engineer. Establish an inspection, maintenance, and testing program for the standpipe and hose system.	
Suggested Deadline Date:	09 Dec 2014	
Standard:	Reference NFPA 25 Chapter 6 Standpipe and Hose Systems Table 6.1.1.2	
Question:	Is signage for the standpipe system installed at required locations and on required components?	
Priority Level:	Low	
Non-Compliance Level:	2	
Description:	Signage for the standpipe system is not installed.	
Source of Findings:	Visual Assessment: No signage for standpipe system was found.	



Suggested Plan of Action:	Install a NFPA-compliant standpipe system at required locations designed by a qualified fire protection engineer. Install required identification signs at the noted locations.	
Suggested Deadline Date:	15 Oct 2014	
Standard:	Reference NFPA 14 Chapter 6	
Question:	Standpipe system piping is free of mechanical damage, leakage, and corrosion?	
Priority Level:	Medium	 
Non-Compliance Level:	1	
Description:	A class I standpipe system is not installed in the building. Damage, leakage or corrosion was not found in the installed standpipe system piping.	
Source of Findings:	Visual Assessment: Existing standpipe system was found free of mechanical damage, leakage, and corrosion.	
Suggested Plan of Action:	Install a standpipe system at required locations designed by a qualified fire protection engineer. The system should be compliant with the requirements of NFPA 14.	
Suggested Deadline Date:	09 Dec 2014	
Standard:	NFPA 25 Chapter 6 Standpipe and Hose Systems	
Question:	Are fire department connections provided and clearly identified for the Fire Protection Systems?	
Priority Level:	Medium	
Non-Compliance Level:	1	
Description:	Fire department connections are provided as per clause 5.5.4. Connections are clearly identifiable for the fire protection system. However, access to one set of connections was obstructed.	
Source of Findings:	Photograph: During site tour, fire department connection was noticed.	
Suggested Plan of Action:	Arrange the fire department connections for clear access by the fire department.	
Suggested Deadline Date:	15 Mar 2015	
Standard:	Alliance Standard Part 5 Section 5.5.4 Fire Department Connections	

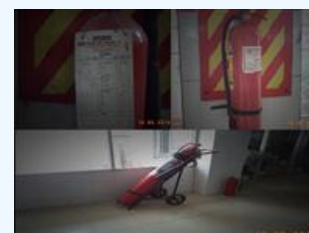


Question:	Does the building have a fire pump?
Priority Level:	High
Non-Compliance Level:	2
Description:	A pump dedicated for fire fighting with a jockey pump was found on the factory premises. The pump is connected to an alternative power source, but no approved hydraulic calculation as per NFPA 20 requirements was found.
Source of Findings:	Visual Assessment: A pump dedicated for fire fighting with jockey pump and alternative power source was found in the factory premises.
Suggested Plan of Action:	Install a pump dedicated for fire fighting or fire protection following NFPA requirements. Fire pump installation is to be tested for final acceptance in the presence of the Alliance and a final inspection of the installation shall be conducted by the Alliance prior to final acceptance. Acceptance testing of the installation shall be in accordance with NFPA testing requirements. Documentation of all testing shall be submitted to the Alliance for review prior to final acceptance by the Alliance.
Suggested Deadline Date:	29 Aug 2014
Standard:	Alliance Standard Part 5 Fire Protection Systems
Question:	Are inspection, maintenance, and testing procedures of the fire pump documented and up to date?
Priority Level:	Low
Non-Compliance Level:	2
Description:	Inspection, maintenance, and testing procedures of the fire pump are not documented and up to date.
Source of Findings:	Document Review: No document regarding inspection, maintenance and testing procedure of fire pump was found in the documents shown by the factory personnel.
Suggested Plan of Action:	Install a pump dedicated for fire fighting following NFPA requirements. Establish an inspection, maintenance, and testing program for the fire pump.
Suggested Deadline Date:	09 Dec 2014
Standard:	Reference NFPA 25 Chapter 8 Fire Pumps
Question:	Are portable fire extinguishers installed throughout the building at required locations and mounted at the correct height?
Priority Level:	Medium
Non-Compliance Level:	2
Description:	Portable fire extinguishers are installed throughout the main building and other





	structures, but at some locations, extinguishers are placed on the floor rather than mounted on the wall, which does not meet BNBC and NFPA requirements.
Source of Findings:	Visual Assessment: Some extinguishers were found placed on floor.
Suggested Plan of Action:	Fire extinguishers with a gross weight not exceeding 18.14 kg (40 lb) shall be installed so that the top of the fire extinguisher is not more than 1.53 m (5 ft) above the floor. Fire extinguishers with a gross weight greater than 18.14 kg (40 lb) (except wheeled types) shall be installed so that the top of the fire extinguisher is not more than 1.07 m (3½ ft) above the floor.
Suggested Deadline Date:	16 Sep 2014
Standard:	BNBC Part 4 Section 4.10 and NFPA 10
Question:	Portable fire extinguishers have been selected based on potential fire class and hazards?
Priority Level:	Medium
Non-Compliance Level:	
Description:	Foam, Carbon dioxide and Dry chemical extinguishers are installed throughout the buildings based on fire class and hazard.
Source of Findings:	Visual Assessment: Extinguishers were found placed based on fire class.
Suggested Plan of Action:	
Suggested Deadline Date:	
Standard:	NFPA 10 Chapter 5
Question:	Fire extinguishers are inspected, tested, and maintained as required.
Priority Level:	Medium
Non-Compliance Level:	2
Description:	Extinguishers are inspected monthly by the factory's concerned people, but no document was found in support of the annual maintenance of extinguishers by a servicing agent and the annual testing of the nozzle of CO2 extinguishers. These are required as per NFPA 10.
Source of Findings:	Document Review: Relevant documents are not compliant with NFPA requirements.
Suggested Plan of Action:	Fire extinguishers are to be inspected, tested, and maintained in accordance with NFPA requirements.
Suggested Deadline Date:	09 Dec 2014





Standard:	NFPA 10 Chapter 7	
Question:	Are there any other fire suppression systems installed within the building?	
Priority Level:		
Non-Compliance Level:		
Description:	No other fire suppression system is available within the buildings.	
Source of Findings:	Visual Assessment: No other fire suppression system was found.	
Suggested Plan of Action:		
Suggested Deadline Date:		
Standard:		
Question:	Is the fire alarm and detection system monitored by a central station monitoring service or directly connected to the Fire Service and Civil Defense?	
Priority Level:	Medium	
Non-Compliance Level:	2	
Description:	An automatic fire alarm and detection system is available in the factory, but currently there is no monitoring company in Bangladesh. The Fire Service and Civil Defense are not capable of monitoring the fire alarm and detection systems of the factories.	
Source of Findings:	Visual Assessment: Fire alarm and detection system not monitored centrally.	
Suggested Plan of Action:	Arrange for direct connection of the fire alarm system to a central monitoring station or Fire Service and Civil Defense. Until such time as monitoring can be set up, arrange a monitoring system using own central detection system and personnel. 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.	
Suggested Deadline Date:	22 Jul 2014	
Standard:	Alliance Standard Part 5 Section 5.7.5 Monitoring	
Question:	Trouble or alarm notifications were not indicated on the fire alarm control panel.	
Priority Level:	High	
Non-Compliance Level:		
Description:	Panel power, zone light (to address zone wise), fault light (if anything is disconnected) etc. on fire alarm control panel are functional.	



Source of Findings:	Visual Assessment: Centralized alarm and detection system was found in the factory premise.	
Suggested Plan of Action:		
Suggested Deadline Date:		
Standard:	Alliance Standard Part 13 Section 13.10 Maintenance of Fire Protection Equipment	
Question:	Are notification and initiation devices for the fire alarm system installed at required locations based on occupancy type?	
Priority Level:	High	
Non-Compliance Level:	3	
Description:	The pull stations and smoke and heat detectors at egress points are insufficient in number on all floors of the building.	
Source of Findings:	Visual Assessment: Pull stations, smoke detectors and heat detectors were not found as required.	
Suggested Plan of Action:	Initiating devices shall include either smoke or fire detection devices spaced as per NFPA requirements. When complete sprinkler protection is provided throughout a floor with water flow devices designed to initiate the alarm notification, smoke and fire detection devices can be eliminated throughout that floor as per Alliance Standard. Automatic alarm evacuation shall be provided upon initiation of any of the following: manual alarm box, water flow alarm, or two or more automatic smoke or fire detection devices. Notification shall be provided throughout the building for total evacuation. Existing partial evacuation systems shall be replaced. Manual fire alarm shall be provided throughout all new and existing occupancies B (2 or more story building), F (3 or more story building), G1, H, and K unless located in buildings with other occupancies requiring an automatic fire alarm system as per Clause 5.7.3. Automatic fire alarms shall be provided throughout all new and existing occupancies E, G2, and J.	
Suggested Deadline Date:	16 Sep 2014	
Standard:	Pull stations at egress points, smoke detectors in air handling equipment, visual and audible devices spaced appropriately based on occupancy type. Reference NFPA 72	
Means of Egress		
Question:	Occupant loads on each level (floor) do not exceed the capacity of the available means of egress.	
Priority Level:	High	
Non-Compliance Level:		
Description:	At 2nd, 3rd, 5th & 6th floor of 8-story factory building, occupant load is 1000	



	which was maximum among all floors and the floor area is 5855 m2, so space per occupant is 5.85 m2, which is greater than required 2.3 m2 (25 sft) according to Alliance Standard Part 6 Section 6.4.2.1.	
Source of Findings:	Visual Assessment: No. of occupants was obtained from register.	
Suggested Plan of Action:		
Suggested Deadline Date:		
Standard:	Alliance Standard Part 6 Section 6.4 Occupant Load	
Question:	Occupied roofs are provided with the minimum number of exits required as a story.	
Priority Level:	High	
Non-Compliance Level:		
Description:	There is a prefab shed at roof of the main building which is used for dining & storage. There are five nos of exit at the occupied roof which satisfies the requirements of Alliance Standards Part 6 Section 6.6.1.	
Source of Findings:	Visual Assessment: Number of exits were checked during site visit.	
Suggested Plan of Action:		
Suggested Deadline Date:		
Standard:	Alliance Standards Part 6 Section 6.6 Number of Means of Egress	
Question:	All occupied roofs are provided with parapets or guards with a minimum height of 1067 mm (42 in.).	
Priority Level:	Medium	
Non-Compliance Level:		
Description:	Parapet height was found 49" at the occupied roof of the main building which satisfies the requirements of Alliance Standard Part 6 Section 6.12.2.4. At other type-I buildings parapet height was found sufficient.	
Source of Findings:	Photograph: Parapet height was found 49".	
Suggested Plan of Action:		
Suggested Deadline Date:		
Standard:	Alliance Standard Part 6 Section 12 Handrails and Guards	



Question:	Occupant loads are posted for every assembly and production floor in a conspicuous space near the main point of egress.
Priority Level:	Medium
Non-Compliance Level:	2
Description:	Occupant loads are not posted on any assembly or production floor as required.
Source of Findings:	Visual Assessment: Occupant loads were not found posted at any floors.
Suggested Plan of Action:	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.
Suggested Deadline Date:	22 Jul 2014
Standard:	Alliance Standards Part 6 Section 6.4.4 Posting of Occupant Load
Question:	Aisles are provided with the minimum unobstructed clear width of 0.9 m (36 in) based on occupant loads.
Priority Level:	High
Non-Compliance Level:	1
Description:	One aisle on 2nd floor was found 0.61m due to presence of column. This violates Alliance Standard Part 6 Section 6.5.1. Though aisle width was found satisfactory at other floors.
Source of Findings:	Visual Assessment: Aisle width was measured during site visit.
Suggested Plan of Action:	Remove existing aisle marking and draw new marking fulfilling the minimum aisle width requirement.
Suggested Deadline Date:	16 Sep 2014
Standard:	Higher occupancy loads will require a greater width to accommodate the increased load. Alliance Standard Part 6 Section 6.5 Egress Width
Question:	The path of egress along the means of egress is not reduced at any point along the path of travel and is sufficient for the occupant load.
Priority Level:	High
Non-Compliance Level:	2
Description:	The aisle on the 2nd floor was found to be 0.61 m due to the presence of columns. The total unobstructed width of 4 aisles on the 2nd floor was 4.77 m and the occupant load is 1000. The total required width of the aisles is 5 m (1000*.005). The available aisle width does not satisfy the requirements of Alliance Standard. The total width of the 5 stairways in the main building is 11.94 m. The maximum number of occupants is 1000. The total width requirement for 1000 occupants is 8 m (1000X0.008). The available stair width





	satisfies this requirement. The total width of 5 exit doors in the main building is 13.44 m. The maximum number of occupants is 1000. The total width requirement for 1000 occupants is 4.0 m (1000X0.004). The available exit door width satisfies this requirement.
Source of Findings:	Visual Assessment: Widths of aisles, exit doors and stairs are measured on sample basis.
Suggested Plan of Action:	Remove aisle markings and mark the aisles again so that they are not blocked by any permanent element such as columns. Satisfy the total width requirement for aisles as per BNBC and Alliance Standard requirements.
Suggested Deadline Date:	16 Sep 2014
Standard:	Alliance Standard Part 6 Section 6.5 Egress Width and BNBC Table 4.3.2
Question:	Means of egress have a minimum ceiling height of 2.3 m (7 ft 6 in.) with projections from the ceiling not less than 2.03 m (6 ft 8 in.).
Priority Level:	Medium
Non-Compliance Level:	
Description:	Means of egress of all the buildings high enough to meet minimum ceiling height requirement of 2.3 m.
Source of Findings:	Visual Assessment: Ceiling height was measured on sample basis.
Suggested Plan of Action:	
Suggested Deadline Date:	
Standard:	Alliance Standard Part 6 Section 6.3.3 Headroom
Question:	Exit discharge is directly to the exterior of the building, unless the requirements of 6.17.2 are met, at grade or provides direct access to grade. Exit discharge shall not reenter a building.
Priority Level:	High
Non-Compliance Level:	2
Description:	There are 5 stairways in the main building. Out of the 5 stairways, 4 stairways open directly to the exterior of the building, and the other stairway opens into a passageway. There are unprotected openings on the walls of both sides of that passageway.
Source of Findings:	Visual Assessment: Unprotected openings were found in the passageway.
Suggested Plan of Action:	Provide a rated exit passageway (i.e., a protected path of egress) from the exit enclosure to the public way. The rating of the exit passageway is to be equal to fire rating requirement of the exit that is being served and shall not be less than 1 hour fire-resistance rated.





Suggested Deadline Date:	16 Sep 2014	
Standard:	Alliance Standard Part 6 Section 6.17 Exit Discharge. See Section 16.7.2 and 16.7.3 for exceptions.	
Question:	Travel distance to reach an exit does not exceed the maximum distance allowed by Occupancy Type.	
Priority Level:	High	
Non-Compliance Level:	2	
Description:	Since no standpipe system is provided in accordance with the Alliance Standard and no sprinkler system is installed in the main building, the maximum allowable travel distance is 45 m as per BNBC requirements. The maximum travel distance in the main building for one exit was found to be 48 m (i.e., above 45 m). This is not in compliance with the Alliance Standard.	
Source of Findings:	Visual Assessment: Travel distances are measured on sample basis.	
Suggested Plan of Action:	Install an automatic fire detection system, portable fire extinguishers, and a standpipe system in accordance with the Alliance Standard. Otherwise, provide another exit to satisfy the maximum travel distance requirement (i.e. keep it within 45 m).	
Suggested Deadline Date:	16 Sep 2014	
Standard:	Alliance Standard Part 6 Section 13 Travel Distance and BNBC Part 4 Section 3.15.1	
Question:	Exit access corridors serving an occupant load exceeding 30 are separated by walls having a fire-resistance rating of 1 hr.	
Priority Level:	High	
Non-Compliance Level:		
Description:	No such corridor was available in the buildings.	
Source of Findings:	Visual Assessment: No such corridor was found.	
Suggested Plan of Action:		
Suggested Deadline Date:		
Standard:	Alliance Standard Part 6 Section 6.3 and Part 4 Section 4.5. Does not apply if an automatic sprinkler system is installed throughout the building.	
Question:	Interior finishes for means of egress meet the rating requirements for Class A, B and C materials.	
Priority Level:	Medium	



Non-Compliance Level:		
Description:	The interior finishes of the means of egress are of homogeneous tiles, plaster and non-combustible paint.	
Source of Findings:	Visual Assessment: During site tour, interior finishes for means of egress are observed.	
Suggested Plan of Action:		
Suggested Deadline Date:		
Standard:	Alliance Standard Part 6 Section 6.3.2 Interior Finish	
Question:	Exits are limited to Class A and Class B interior materials.	
Priority Level:	Medium	
Non-Compliance Level:		
Description:	Exits are made of brick walls.	
Source of Findings:	Visual Assessment: During site tour, interior materials of exits are observed.	
Suggested Plan of Action:		
Suggested Deadline Date:		
Standard:	Alliance Standard Part 6 Section 6.3.2 Interior Finish	
Question:	The number of means of egress from any floor or story is not less than 2 except where a single exit is permitted or where a greater number is required.	
Priority Level:	High	
Non-Compliance Level:		
Description:	In the main building the number of means of egress from any floor is 5. Based on occupant load, required maximum no. of stairs is 4. In other buildings also, number of means of egress is not less than that required.	
Source of Findings:	Visual Assessment: During site tour, number of emergency exit doors were counted	
Suggested Plan of Action:		
Suggested Deadline Date:		
Standard:	Alliance Standard Part 6 Section 6.6 Number of Means of Egress	



Question:	The number of means of egress from any floor or story is not less than 3 when the occupant load exceeds 500 per story and not less than 4 when the occupant load exceeds 1000 per story.
Priority Level:	High
Non-Compliance Level:	
Description:	Highest occupant load at one floor is 1000 (2nd,3rd,5th,6th floor) and there are 5 emergency exits in each floor of the main building, which is sufficient.
Source of Findings:	Visual Assessment: During site tour, number of emergency exit doors were counted and occupant load was checked
Suggested Plan of Action:	
Suggested Deadline Date:	
Standard:	Alliance Standard Part 6 Section 6.6 Number of Means of Egress
Question:	All paths of egress are provided with compliant means of illumination.
Priority Level:	Medium
Non-Compliance Level:	2
Description:	Aisles, corridors, exit doors, and stairways are not provided with sufficient means of illumination. Emergency power is not provided for a sufficient number of bulbs. Therefore, in the case of power failure or load shedding, all the paths of egress will not be illuminated as required in accordance with Alliance Standard.
Source of Findings:	Visual Assessment: Aisles, exit access corridors and stairways were found insufficiently illuminated.
Suggested Plan of Action:	Install appropriate means of illumination at the noted locations. The means of egress paths shall be illuminated at all times as the building is occupied. Illumination shall be a minimum of 10 lux for all corridors, exit doors, and stairways. Aisles shall be provided with a minimum 2.5 lux.
Suggested Deadline Date:	10 Dec 2014
Standard:	Alliance Standards Part 6 Section 6.7 Egress Illumination and Part 10 Section 10.12 Illumination of Exit Signs and Means Of Escape
Question:	Means of egress are free from impediments, obstructions, and stored materials.
Priority Level:	High
Non-Compliance Level:	2
Description:	On the ground floor of the main building, some cartons are piled up in the





	aisles and on the 2nd floor, some fabrics are stored beside the aisles, which violates the Alliance Standard.
Source of Findings:	Visual Assessment: Aisles are partially blocked by some temporary obstacles.
Suggested Plan of Action:	Keep means of egress continuously free and clear of all obstructions or impediments to full instant use in the case of fire or other emergency.
Suggested Deadline Date:	24 Jul 2014
Standard:	Alliance Standard Part 6 Section 6.3.8 Impediments to means of egress and Section 6.3.9 Reliability
Question:	Emergency power for means of egress illumination is verified at least once per year. If battery operated lights are used, these lights are tested on a monthly basis. Functional testing of battery powered lights is provided for a minimum 90 min once per year.
Priority Level:	Medium
Non-Compliance Level:	1
Description:	Records of verifying emergency power for the means of egress illumination were not found which as required per Alliance Standards.
Source of Findings:	Document Review: No document regarding verification of emergency power for means of egress was found among the documents shown by the factory personnel.
Suggested Plan of Action:	Develop a testing and maintenance program that ensures the operation of all exist signs is verified at least once per year.
Suggested Deadline Date:	22 Jul 2014
Standard:	Alliance Standards Part 10 Section 10.12 Illumination of Exit Signs and Means Of Escape Lighting
Question:	Doors are not locked in the direction of egress under any conditions. All hasps, locks, slide bolts, and other locking devices have been removed where required.
Priority Level:	High
Non-Compliance Level:	3
Description:	There are collapsible doors with locking arrangements at each egress location. This violates the Alliance Standard.
Source of Findings:	Visual Assessment: Locking devices were noticed at exit doors.
Suggested Plan of Action:	Remove all hasps, locks, slide bolts, or other locking devices at the noted locations. Doors may be provided with locking hardware from the ingress side provided that a panic bar is installed on any door with an occupant load exceeding 49 persons. Re-entry provisions must be met.





Suggested Deadline Date:	25 Jul 2014	
Standard:	Alliance Standards Part 6 Section 6.8 Doors and Gates	
Question:	Doors along the path of egress have a minimum width of 0.8 m (32 in) and have required ratings.	
Priority Level:	High	
Non-Compliance Level:	3	
Description:	Door widths are more than 0.8 m, but all doors along the path of egress (doors leading to a staircase) on each floor are collapsible-type and do not have 1.5 hour ratings as required.	
Source of Findings:	Visual Assessment: No fire door was found at egress points.	
Suggested Plan of Action:	Provide 1.5 hour fire protective opening assemblies in 2 hour rated exit enclosures.	
Suggested Deadline Date:	16 Sep 2014	
Standard:	Alliance Standard Part 6 Section 6.5.6 Minimum Widths. Increased occupant loads will require a door width greater than 0.8 m.	
Question:	All doors in a means of egress are of the side-hinged swinging type.	
Priority Level:	High	
Non-Compliance Level:	3	
Description:	There are collapsible doors, steel leaf doors, and glass doors with locking arrangements at each egress location. This violates the Alliance Standard.	
Source of Findings:	Visual Assessment: No side-hinged swinging type exit door was found.	
Suggested Plan of Action:	Replace all collapsible doors and shutters in means of egress with side-hinged, swinging-type doors of proper width and rating.	
Suggested Deadline Date:	16 Sep 2014	
Standard:	Alliance Standards Part 6 Section 6.8 Doors and Gates	
Question:	Illuminated exit signs are placed at entrances to exits and along the path of egress anywhere the continuation of egress is not obvious or there is a change in the direction of the path of travel.	
Priority Level:	Medium	
Non-Compliance Level:	2	
Description:	Illuminated exit signs are placed at entrances to exits along the path of egress but additional exit signs or directional signs are not provided where there is a	



	change in direction and where the continuation of egress is not obvious. This condition fails to satisfy requirements stated in Alliance Standard.	
Source of Findings:	Visual Assessment: Illuminated exit signs were found at entrances to exits but additional exit signs or directional signs were not provided where there is a change in direction and where the continuation of egress is not obvious.	
Suggested Plan of Action:	Install illuminated exit signs at entrances to exits and along the path of egress anywhere the continuation of egress is not obvious or there is a change in the direction of the path of travel.	
Suggested Deadline Date:	09 Dec 2014	
Standard:	Alliance Standard Part 6 Section 6.11 Exit Signs	
Question:	Changes in elevation of walking surfaces do not exceed 6.35 mm (1/4 in) unless provided with a beveled slope of 1 in 2 that does not exceed 12.7 mm (1/2 in).	
Priority Level:	Medium	
Non-Compliance Level:		
Description:	There is no such elevation difference detected.	
Source of Findings:	Visual Assessment: No such elevation difference was found during site visit.	
Suggested Plan of Action:		
Suggested Deadline Date:		
Standard:	Alliance Standard Part 6 Section 6.3.4 Walking Surfaces	
Question:	Illuminated exit signs are provided with battery backup or emergency power and are continuously illuminated.	
Priority Level:	Medium	
Non-Compliance Level:		
Description:	Illuminated exit signs are provided with IPS backup for continuous illumination.	
Source of Findings:	Visual Assessment: IPS backup was found for exit signs.	
Suggested Plan of Action:		
Suggested Deadline Date:		
Standard:	Alliance Standards Part 6 Section 6.11 Exit Signs and Part 10 Section 10.12 Illumination of Exit Signs and Means of Escape	

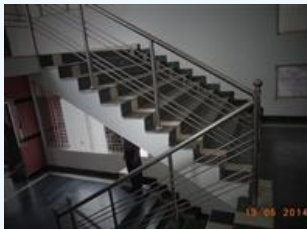
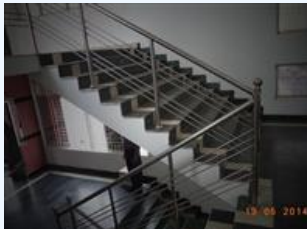




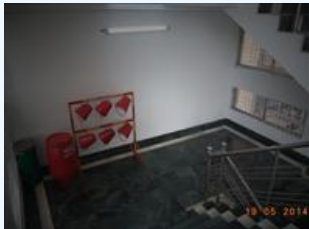
Question:	Emergency power for exit signs is tested at least once per year. If battery operated, these lights are tested on a monthly basis. Functional testing of battery powered signs is provided for a minimum 90 min once per year.
Priority Level:	Medium
Non-Compliance Level:	1
Description:	No record of testing emergency power for exit signs was found as required per the Alliance Standard.
Source of Findings:	Document Review: No document regarding testing of emergency power for exit signs was found among the documents shown by the factory personnel.
Suggested Plan of Action:	Develop a testing and maintenance program that ensures that the emergency power for exit signs is tested at least once per year.
Suggested Deadline Date:	24 Jul 2014
Standard:	Alliance Standard Part 10 Section 10.12 Illumination of Exit Signs and Means Of Escape.
Question:	Exit signs have appropriate illumination levels and contrasting graphics.
Priority Level:	Low
Non-Compliance Level:	3
Description:	Some exit signs do not have an appropriate illumination levels and contrasting graphics as required.
Source of Findings:	Visual Assessment: Exit signs were found without appropriate illumination levels.
Suggested Plan of Action:	Make sure all required exit signs are illuminated continuously at all times. Exit signs may be illuminated either by lamps external to the sign or by lamps contained within the sign. The source of illumination shall provide not less than 50 lux at the illuminated surface with a contrast of not less than 0.5. Approved self-luminous signs which provide evenly illuminated letters having a minimum luminance of 0.2 cd/m2 may also be used.
Suggested Deadline Date:	10 Dec 2014
Standard:	Alliance Standard Part 10 Section 10.12.1 Exit Signs
Question:	Walking surfaces along the path of egress are uniformly slip resistant.
Priority Level:	Medium
Non-Compliance Level:	
Description:	Walking surfaces along the path of egress are of homogeneous tiles, mosaic and rough surface marble, these are not slippery and will not cause slip during quick evacuation under emergency.





Source of Findings:	Visual Assessment: Walking surfaces were found uniformly slip resistant.	
Suggested Plan of Action:		
Suggested Deadline Date:		
Standard:	Alliance Standard Part 6 Section 6.3.6 Slip Resistance	
Question:	Stairs are constructed of noncombustible materials.	
Priority Level:	Low	
Non-Compliance Level:		
Description:	All the Stairs of main building are made of concrete.	
Source of Findings:	Visual Assessment: Construction materials of stairs were observed.	
Suggested Plan of Action:		
Suggested Deadline Date:		
Standard:	Alliance Standard Part 6 Section 6.9 Stairs	
Question:	Stairs have a minimum width of 0.9 m (35 in.).	
Priority Level:	High	
Non-Compliance Level:		
Description:	All the stairs are wider than 0.9m.	
Source of Findings:	Visual Assessment: Stair width was measured during site visit.	
Suggested Plan of Action:		
Suggested Deadline Date:		
Standard:	Alliance Standard Part 6 Section 6.5 Egress Width. Applies to existing construction.	
Question:	Stair treads are of nominal uniformity.	
Priority Level:	Medium	
Non-Compliance Level:		
Description:	Stair treads and risers are of nominal uniformity.	



Source of Findings:	Visual Assessment: Stair treads and risers were measured.	
Suggested Plan of Action:		
Suggested Deadline Date:		
Standard:	Alliance Standards Part 6 Section 6.9 Stairs. Any tread height exceeding more than 50% of the adjacent tread heights or 75 mm (3 in.), whichever is less, shall be modified to be within this tolerance	
Question:	Landings are provided on both sides of doors used along the path of egress. Doors do not swing out over stairs.	
Priority Level:	High	
Non-Compliance Level:		
Description:	Landings are provided on both sides of doors. As all the doors are of collapsible type, so doors do not swing out over stair.	
Source of Findings:	Visual Assessment: Landings were found on both sides of doors.	
Suggested Plan of Action:		
Suggested Deadline Date:		
Standard:	Alliance Standards Part 6 Section 6.8 Doors and Gates	
Question:	Landings are provided with the same width in the direction of egress travel as the stair clear width provided at each level and at intermediate landings. Existing landings that are less than the stair width, shall reduce the overall available capacity of the stair.	
Priority Level:	High	
Non-Compliance Level:		
Description:	Landings are of same or more width in the direction of egress as the stair width.	
Source of Findings:	Visual Assessment: Landing width was measured.	
Suggested Plan of Action:		
Suggested Deadline Date:		
Standard:	Alliance Standard Part 6 Section 6.9 Stairs and Section 6.5	



Question:	Handrails are provided on both sides of each stairway. Intermediate handrails are provided when the stair width exceeds 2.2 m (87 in.). Handrails are not mounted lower than 760 mm (30 in.) or higher than 1100 mm (44 in.).
Priority Level:	Medium
Non-Compliance Level:	1
Description:	Handrails are provided on one side of all stairways. The handrails are mounted at 38 inches (i.e., greater than 30 inches). The stair width was measured at 92", but an intermediate handrail is not provided. This is not allowed as per Alliance Standard.
Source of Findings:	Visual Assessment: Handrails are not provided on both sides of stairways.
Suggested Plan of Action:	Provide handrails on both sides of each stairway. Provide an intermediate handrail when the stair width exceeds 2.2 m (87 inches).
Suggested Deadline Date:	04 Dec 2014
Standard:	Alliance Standard Part 6 Section 6.9 Stairs and 6.12 Handrails and Guards
Question:	Every door in a stair enclosure serving more than 5 stories is provided with re-entry unless it meets the requirements of Alliance Standards Part 6 Section 6.8.3.1.
Priority Level:	Medium
Non-Compliance Level:	2
Description:	The building has 8 stories with a pre-fabricated shed on the roof, but doors are not provided with re-entry. Stairway doors with re-entry are required on at least 2 floors according to Alliance Standard. The other buildings are a single story.
Source of Findings:	Visual Assessment: Re-entry provision was not found at exit doors.
Suggested Plan of Action:	Every door in a stairway enclosure serving more than 5 stories shall be provided with re-entry unless it meets the following requirements: stairway doors may be permitted to be locked from the stair (ingress) side that prevents re-entry to the floor provided at least two floors allowing re-entry to access another exit are provided, there are not more than 4 stories intervening between re-entry floors, re-entry is allowed on the top or next to top level, re-entry doors are identified as such on the stair side, and locked doors shall identify the nearest re-entry floors. When the discharge floor is determined to be a required re-entry floor using the above requirements, re-entry does not have to be provided back into the building on this level.
Suggested Deadline Date:	16 Sep 2014
Standard:	Alliance Standards Part 6 Section 6.8 Doors and Gates
Question:	Exterior exit stairs are separated from the building with the required rating. The rating of the exterior wall shall extend 3.05 m (10 ft) beyond the ends of the stair structure.





Priority Level:	High
Non-Compliance Level:	
Description:	No exterior exit stair available.
Source of Findings:	Visual Assessment: No exterior stair was found in the main building.
Suggested Plan of Action:	
Suggested Deadline Date:	
Standard:	Alliance Standard Part 6 Section 6.3.1.2. Three stories or less 1-hr rating. Four stories or more 2-hr rating
Question:	Interior exit stairways and ramps terminate at an exit discharge except where terminating at a rated exit passageway.
Priority Level:	High
Non-Compliance Level:	3
Description:	There are 5 stairways in the main building. Out of the 5 stairways, 4 stairs open directly to the exterior of the building, and the other stairway opens into a passageway. There are unprotected openings on the walls of both sides of that passageway.
Source of Findings:	Visual Assessment: Unprotected openings were found in the passageway.
Suggested Plan of Action:	Provide a rated exit passageway (i.e., a protected path of egress) from the exit enclosure to the public way. The rating of the exit passageway is to be equal to fire rating requirement of the exit that is being served and shall not be less than 1 hour fire-resistance rated.
Suggested Deadline Date:	16 Sep 2014
Standard:	Alliance Standard Part 6 Section 6.14 Exit Enclosures
Question:	Stair designation signs are provided at each floor entrance from the stair to the floor in English and Bengali. Signs indicate the name of the stair and the floor level. Signs are posted adjacent to the door.
Priority Level:	Low
Non-Compliance Level:	2
Description:	The floor level is posted in Bengali and English on all floors, but the stairway name or designation is not mentioned on each floor.
Source of Findings:	Visual Assessment: Floor level is posted but stair name or designation is not mentioned at each floor.
Suggested Plan of	Install signage adjacent to each stair door indicating the stair name and the





Action:	floor level at the noted locations at each floor.	
Suggested Deadline Date:	17 Jul 2014	
Standard:	Alliance Standard Part 6 Section 6.9 Stairs	
Question:	Stairwells are not utilized as storage spaces.	
Priority Level:	High	
Non-Compliance Level:		
Description:	Stairwells are free from storage.	
Source of Findings:	Visual Assessment: No storage was found at stairwells.	
Suggested Plan of Action:		
Suggested Deadline Date:		
Standard:	Alliance Standard Part 13 Section 13.9 Safety Inspections	
Question:	Ramps used in a means of egress do not reduce the overall means of egress width. The minimum width shall be 1.1 m (44 in.).	
Priority Level:	High	
Non-Compliance Level:		
Description:	A ramp at ground floor of the main building does not reduce the overall means of egress width and the width of the ramp is found 87" which is greater than 1.1m (44") as per clause 6.10.1 of Alliance Standard.	
Source of Findings:	Visual Assessment: The ramp width was measured during site visit.	
Suggested Plan of Action:		
Suggested Deadline Date:		
Standard:	Alliance Standards Part 6 Section 10 Ramps	
Question:	Ramps do not have a running slope greater than 1 in 8 (12.5 percent) and have handrails on both sides of the ramp.	
Priority Level:	Medium	
Non-Compliance Level:	1	
Description:	The slope of the ramp is not greater than 1 in 8, but no handrails are provided, which violates the Alliance Standard.	



Source of Findings:	Visual Assessment: No handrail was provided in the ramp.
Suggested Plan of Action:	Provide handrails on both sides of the ramp.
Suggested Deadline Date:	10 Dec 2014
Standard:	Alliance Standard Part 6 Section 10 Ramps

Fire Safety Programs

Question:	A Fire Safety Director position has been filled.
Priority Level:	Low
Non-Compliance Level:	2
Description:	No viable documentation or physical presence of a Fire Safety Director was noted. However, the factory claims they have a designated person for this.
Source of Findings:	Document Review: No viable documentation for the appointment of Fire Safety Director was found.
Suggested Plan of Action:	Create a Fire Safety Director position and fill the position with an individual that has had sufficient training to be able to carry out the required duties. The duties of the Fire Safety Director shall include the following: (1) Establish internal and external rally points and communicate them to all employees in the building. (2) Fire department pre-planning. (3) Conduct safety inspections as outlined in Alliance Standard. (4) Ensure all testing of fire protection equipment is conducted in accordance with Alliance Standard.
Suggested Deadline Date:	10 Dec 2014
Standard:	Alliance Standards Part 13 Section 13.1 Fire Safety Director
Question:	An emergency evacuation plan has been developed and communicated to all employees.
Priority Level:	Medium
Non-Compliance Level:	1
Description:	Workers are aware of the evacuation procedure upon the commencement of the alarm. The duties and responsibilities of various groups was found, but no detailed procedure defining the evacuation process was available as per the Standard.
Source of Findings:	Document Review: Documents regarding duties and responsibilities of various fighting groups were found.
Suggested Plan of Action:	Develop an emergency evacuation plan which includes the duties and responsibilities of various people/groups, interfacing between groups and the fire brigade, headcount and identification of trapped victims, physically disabled people and their rescue, etc., including 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.	
Suggested Deadline Date:	28 Jul 2014	
Standard:	Alliance Standards Part 13 Section 13.1 Fire Safety Director	
Question:	Emergency egress maps are posted at the entrance to each exit stair or main point of egress.	
Priority Level:	Medium	
Non-Compliance Level:		
Description:	Emergency egress maps are posted at entrance to exit stairs as demanded in Alliance Standard Part 13 Section 13.3.	
Source of Findings:	Visual Assessment: Emergency egress maps were found at required locations.	
Suggested Plan of Action:		
Suggested Deadline Date:		
Standard:	Alliance Standards Part 13 Section 13.4 Evacuation Plan	
Question:	Fire Department pre-planning has been completed.	
Priority Level:	Low	
Non-Compliance Level:	2	
Description:	Fire department pre-planning was not completed.	
Source of Findings:	Document Review: No document regarding fire department pre-planning has been found among the documents shown by factory personnel.	
Suggested Plan of Action:	Complete fire department pre-planning activities with the local Fire Service and Civil Defense.	
Suggested Deadline Date:	22 Jul 2014	
Standard:	Alliance Standards Part 13 Section 13.1 Fire Safety Director	



Question:	Fire Drills are conducted at required intervals based on building use type.
Priority Level:	Medium
Non-Compliance Level:	2
Description:	Fire drills are conducted in all buildings, but not under the direction of a Fire Safety Director. This does not meet the requirements of Alliance Standard Part 13 Section 13.2 and BNBC Part 4 Appendix A Page 10457.
Source of Findings:	Document Review: Fire drills are conducted in all buildings but not under the direction of a Fire Safety Director.
Suggested Plan of Action:	Fire drills shall be conducted on a quarterly basis as outlined in BNBC Part 4 Appendix A for all garment facilities. Fire drills shall be conducted under the direction of a Fire Safety Director.
Suggested Deadline Date:	24 Jul 2014
Standard:	Alliance Standards Part 13 Section 13.3 Fire Drills
Question:	Are the required number of people trained and certified in fire fighting, first aid, and rescue training by the appropriate authority.
Priority Level:	High
Non-Compliance Level:	
Description:	Document or certificate by appropriate authority for training on fire fighting, first aid and rescue is available.
Source of Findings:	Document Review: Document regarding fire training has been found among the documents shown by factory personnel.
Suggested Plan of Action:	
Suggested Deadline Date:	
Standard:	Alliance Standard Part 13 Human Element Programs
Question:	A written housekeeping policy is established and enforced.
Priority Level:	Low
Non-Compliance Level:	2
Description:	A written housekeeping policy was not found as per Alliance Standards.
Source of Findings:	Document Review: No document regarding housekeeping policy has been found among the documents shown by factory personnel.
Suggested Plan of Action:	Establish written corporate and plant 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.).	
Suggested Deadline Date:	05 Mar 2015	
Standard:	Alliance Standards Part 13 Section 13.6 Housekeeping	
Question:	A hot-work permit program has been established.	
Priority Level:	Low	
Non-Compliance Level:	2	
Description:	A hot-work permit program is not established. It is required as per Alliance Standards.	
Source of Findings:	Document Review: No hot-work permit program was found.	
Suggested Plan of Action:	Develop a NFPA-compliant hot-work permit program. In general, this program should address the process of request and approval by authorities, necessary checks prior to approval, standby fire watch and fire fighting equipment, sounding of alarm procedures, duration and expiry of permit and re-approval procedures, etc.	
Suggested Deadline Date:	15 Dec 2014	
Standard:	Alliance Standards Part 13 Section 13.4 Hot Work Permit and NFPA 51B	
Question:	Storage areas underneath the cutting tables are clear of combustibles.	
Priority Level:	Medium	
Non-Compliance Level:		
Description:	Spaces underneath cutting table were clear of combustibles.	
Source of Findings:	Visual Assessment: No combustible was found underneath the cutting tables.	
Suggested Plan of Action:		
Suggested Deadline Date:		
Standard:	Alliance Standard Part 17 Section 13.7.2 Cutting tables.	
Question:	Training programs are implemented and documented in accordance with the Alliance Safety Training Curriculum.	
Priority Level:	Medium	



Non-Compliance Level:	2	
Description:	No document of any training program in accordance with the Alliance Safety Training Curriculum was found.	
Source of Findings:	Document Review: Alliance safety training curriculum was not found among the documents shown by factory personnel.	
Suggested Plan of Action:	Impart training in accordance with Alliance Safety Training Curriculum and keep records with proper documentation.	
Suggested Deadline Date:	22 Jul 2014	
Standard:	Alliance Standards Part 13	
Question:	Smoking is only allowed at designated areas.	
Priority Level:	Low	
Non-Compliance Level:		
Description:	Smoking is prohibited as per verbal information of factory personnel and signs posted in Bengali and English at all building entrances. Therefore, no designated smoking area is created outside the buildings.	
Source of Findings:	Visual Assessment: Smoking is prohibited in the factory premises.	
Suggested Plan of Action:		
Suggested Deadline Date:		
Standard:	Alliance Standards Part 13 Section 13.5 Smoking	
Question:	Are all applicable permits up to date including Fire License & Boiler License.	
Priority Level:	Low	
Non-Compliance Level:	1	
Description:	The fire license, boiler license, and other licenses are up to date, except for the BERC license. The factory authority has applied to BERC for renewal.	
Source of Findings:	Document Review: All licenses except BERC license were found up to date.	
Suggested Plan of Action:	Expedite the renewal process of the BERC license.	
Suggested Deadline Date:	20 Aug 2014	
Standard:	Alliance Standard Part 13 Human Element Programs	

Factory Name: **MATRIX SWEATERS LTD.**
 Address: **NATIONAL UNIVERSITY, CHOYDANA Gazipur Gazipur Dhaka Bangladesh**

Assessor: **Bureau Veritas**
 Date: **19 May 2014**



ALLIANCE
 FOR BANGLADESH WORKER SAFETY

		
Question:	Are there additional areas of non-compliance to report?	
Priority Level:	Medium	
Non-Compliance Level:		
Description:	No remarkable non-compliance issues other than those presented before was found.	
Source of Findings:		
Suggested Plan of Action:		
Suggested Deadline Date:		
Standard:	Not Applicable	