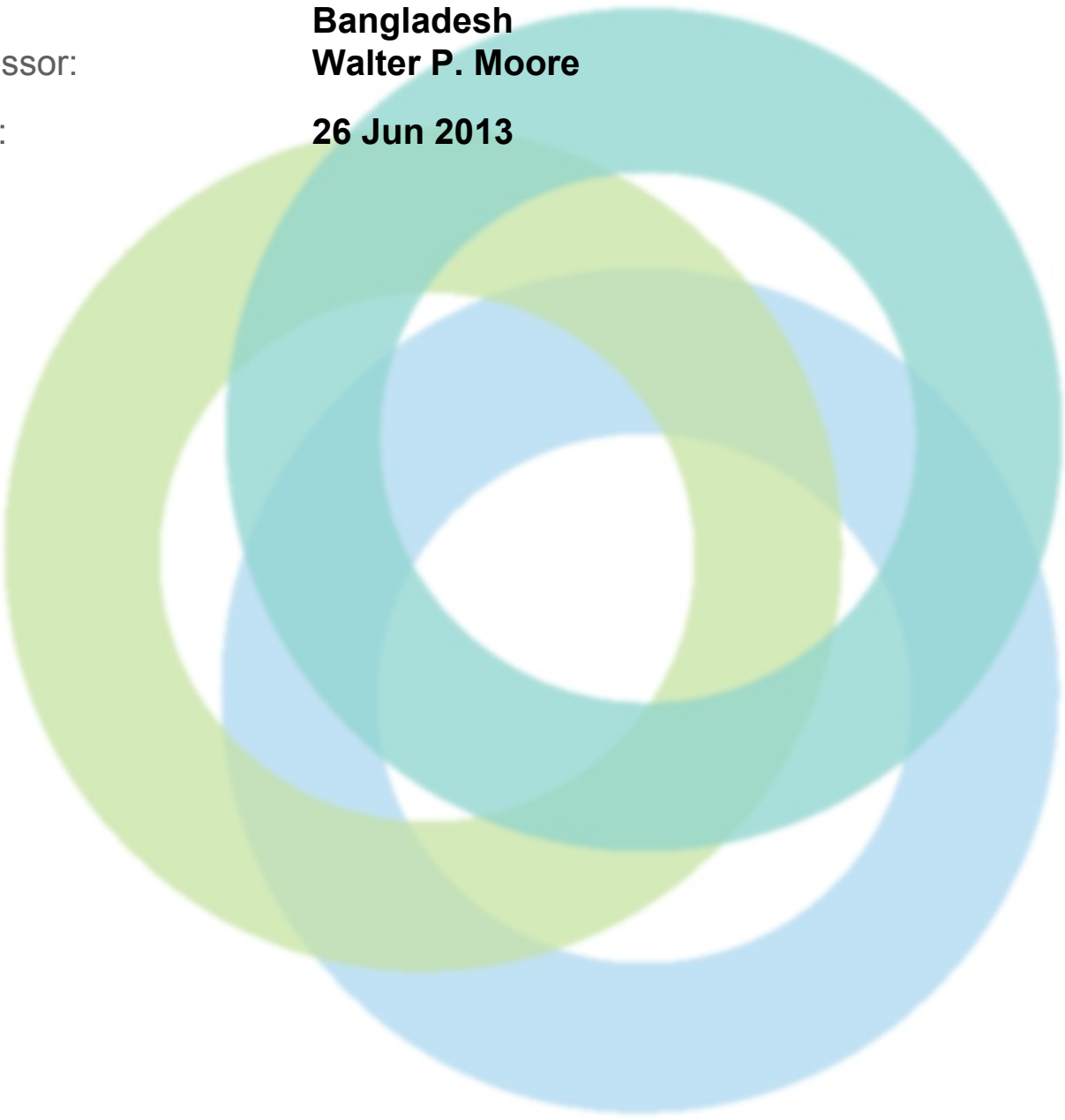


INITIAL STRUCTURAL INTEGRITY ASSESSMENT REPORT (SIAR)

Factory Name: **Brandix Casual Wear Ltd**
Address: **Plot No 61-71+85 Comilla EPZ Comilla Chittagong
Bangladesh**
Assessor: **Walter P. Moore**
Date: **26 Jun 2013**





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.



Factory Name: **Brandix Casual Wear Ltd**

Address: **Plot No 61-71+85 Comilla EPZ Comilla Chittagong Bangladesh**

Assessor: **Walter P. Moore**

Date: **26 Jun 2013**



ALLIANCE
FOR BANGLADESH WORKER SAFETY

GENERAL INFORMATION

General Information

Factory Name:	Brandix Casual Wear Ltd
Address:	Plot No 61-71+85 Comilla EPZ Comilla Chittagong Bangladesh
Country:	Bangladesh
Province:	Chittagong
City:	Comilla
Zip Code:	1216
Audit Duration:	1 Days
Re-Audit:	Re-Audit After 0 Months
Draft Report Date :	3 June 2014
Final Report Date :	3 October 2014
Are all Action Items From Previous Assessment Completed?:	N/A
Buildings in Complex :	There are 3 main factory buildings in the complex. Production Building Washing Plant Canteen
Number of Building Levels (Stories) :	Production Building - 1 story; Washing Plant - 2 stories; Canteen - 1 story
Approximate Building Area (SF) :	Unknown.
Date of Building Construction :	2005-2011
Date of Last Building Renovation/Addition :	2011
Is the Building mixed use?:	No
Ancillary Structures in Complex :	There are 9 ancillary structures in the complex: Effluent Treatment Plant; Generator and Boiler Building; Toilet Building; Library and Prayer Building; ETP chemical Building; Medical Center Building; Electrical Substation Building; Waste shed; Loading/Unloading shed.
Number of Ancillary Levels (Stories) :	Canteen Buildings and ETP: G+1+R; Other: G+Roof

Factory Name: **Brandix Casual Wear Ltd**

Address: **Plot No 61-71+85 Comilla EPZ Comilla Chittagong Bangladesh**

Assessor: **Walter P. Moore**

Date: **26 Jun 2013**



ALLIANCE
FOR BANGLADESH WORKER SAFETY

Approximate Ancillary Structures Area (SF) :	Unknown.
Number of Occupants :	3000 workers
Exterior Facade Description :	Perimeter facades of all buildings typically consist of masonry infill between the structural slabs, beam and columns.
Structural System Description :	Production Building and Washing Plant: They are steel framed structures on a reinforced concrete slab on grade. Lateral force resisting system is a beam-column moment frame system in one direction and a diagonal steel rod bracing in the orthogonal direction. ; Canteen and Library: For both, the first story is cast-in-place concrete frame with mild reinforcement. The second story is a steel frame. The floor system is two way slab and beams. The lateral force resisting system is a beam-column moment frame system for the first story and unknown for the second story.; The Generator, ETP, Electrical Substation, Toilet and Medical Center: They are all cast-in-place concrete frame structures. The lateral force resisting system is a beam-column moment frame system. ; The Waste shed, Loading/Unloading shed and ETP Chemical store: They are all light steel frame structures with a reinforced concrete slab on grade. The lateral force resisting system is unclear.



ASSESSMENT FINDINGS

Structural System Design

Question:	Is a clear and redundant load path to resist lateral loads provided?	
Priority Level:	Medium	
Non-Compliance Level:	3	
Description:	Production building and Washing Plant as well as Generator, Effluent Treatment Plant, Electrical Substation, Toilet and Medical center buildings have clear and redundant load paths. Neither the canteen nor the Library building have clear load paths to resist lateral loads on their second stories. The Waste shed, loading/Unloading shed, and ETP Chemical store buildings generally do not have clear load paths to resist lateral loads.	
Source of Findings:	Visual Assessment: Visual assessment of all buildings.	
Suggested Plan of Action:	Have a qualified structural engineer complete further analysis of the Canteen, Library, Waste shed, Loading/Unloading shed and ETP Chemical store buildings and develop a remediation plan if required.	
Suggested Deadline Date:	30 Nov 2014	
Standard:	Alliance Standards Part 8 Section 8.17 Design for Lateral Loads and 8.3.3. 2006 BNBC Part 6 Section 1.5	
Question:	Are credible structural design documents available for review and kept on site?	
Priority Level:	Medium	
Non-Compliance Level:	2	
Description:	Only partial architectural and structural drawings of the factory and ancillary building were available for review.	
Source of Findings:	Document Review: Partial Structural and Architectural Drawings.	
Suggested Plan of Action:	Have a qualified structural engineer prepare credible as-built documents based on the requirements of Part 8 Section 8.19 of the Alliance Standard. Full structural drawings are required for the following structures: Generator and Boiler Building; Toilet Building; Library and Prayer Building; ETP chemical Building; Medical Center Building; Electrical Substation Building; Waste Shed; Loading/Unloading shed Existing structural drawings should be supplemented or completed as necessary for the following buildings: Production Building; Washing Plant; Canteen; Effluent Treatment Plant	
Suggested Deadline Date:	30 Nov 2014	
Standard:	Alliance Standard Part 8 Section 8.19 Required Structural Documentation for	



	New and Existing Factories	
Question:	Can credible structural documentation indicating general conformance with 2006 BNBC or other comparable applicable international model building code be produced?	
Priority Level:	Medium	
Non-Compliance Level:	2	
Description:	Only partial architectural and structural drawings of the factory and ancillary buildings are available for review. Architectural drawings (as-built only) are available for all buildings. Partial structural drawings are available for the following: Steel superstructure drawings for the main Production building and Washing Plant by Zamil Steel; Reinforced concrete drawings for the Canteen and Effluent Treat Plant buildings. These drawings are in conformance with BNBC 1993.	
Source of Findings:	Document Review: Review of structural and architectural drawings.	
Suggested Plan of Action:	Engage a qualified structural engineer to develop the required documents to confirm the structural integrity of the buildings. Documents must comply with Alliance Standard Part 8 Section 8.19 and 8.20	
Suggested Deadline Date:	30 Nov 2014	
Standard:	Reference Alliance Standards Part 8 Section 8.2 Structural Integrity of Existing Factory Buildings	
Question:	Can documentation be provided that the building is compliant with the requirements for wind loading and storm surge loadings as detailed in BNBC Part 6 Section 1.5.3?	
Priority Level:	Medium	
Non-Compliance Level:	2	
Description:	There is no available documentation to confirm the buildings are compliant with BNBC Part 6 Section 1.5.3	
Source of Findings:	Document Review: Documents reviewed on-site.	
Suggested Plan of Action:	Engage a qualified structural engineer to confirm satisfactory structural performance of the buildings under wind loading.	
Suggested Deadline Date:	30 Nov 2014	
Standard:	2006 BNBC Part 6 Section 1.5. Compliance may be waived if the Factory Owner provides satisfactory evidence of a cyclone operations plan that includes full evacuation of the factory in advance of any approaching cyclone"	



Question:	Have provisions been made in floors or decks for a concentrated load (such as heavy equipment, water tanks, stored materials, etc) applied at a location wherever this load acting upon an otherwise unloaded floor would produce stresses greater than those caused by a uniform load?
Priority Level:	Medium
Non-Compliance Level:	2
Description:	Undocumented cooling towers and water tanks on roof of generator building produce stresses greater than those caused by a uniform load.
Source of Findings:	Visual Assessment: Visual assessment of water tanks and cooling towers.
Suggested Plan of Action:	Engage a qualified structural engineer to confirm and document that provisions have been made to accommodate concentrated loads. If provisions have not been made, have a qualified structural engineer develop a remediation plan.
Suggested Deadline Date:	30 Nov 2014
Standard:	Alliance Standard Part 8 Section 8.13 and 8.14
Question:	Is a Geotechnical Report available for review and kept on site?
Priority Level:	Low
Non-Compliance Level:	2
Description:	No geotechnical report was available for review.
Source of Findings:	Document Review: Reviewed all documents.
Suggested Plan of Action:	Under guidance from a qualified structural engineer arrange geotechnical investigation at close vicinity of the structure and make the report available for review.
Suggested Deadline Date:	30 Nov 2014
Standard:	Alliance Standard Part 8 Section 8.2 Structural Integrity of Existing Factory Buildings
Question:	Are Certificates of Occupancy available for review?
Priority Level:	Low
Non-Compliance Level:	1
Description:	No certificates of occupancy are available for review.
Source of Findings:	Document Review: Reviewed all documents.
Suggested Plan of Action:	Provide Certificates of Occupancy for review.





Suggested Deadline Date:	30 Nov 2014	
Standard:	Alliance Standard Part 8 Section 8.3 Preliminary Structural Assessment	
Structural System Construction		
Question:	Have all areas of needed maintenance, including areas with efflorescence, dampness, standing water on rooftops, and corrosion been addressed.	
Priority Level:	Medium	
Non-Compliance Level:	2	
Description:	There is water ponding on the roof the of the Electrical substation building. This water risks overloading the roof and causing seepage that will create structural corrosion and deterioration.	
Source of Findings:	Visual Assessment: Visual assessment of water ponding.	
Suggested Plan of Action:	Under guidance from a qualified structural engineer, address all areas of needed maintenance by correcting the identified issues. Specifically, unblock roof drains and maintain proper drainage at the roof level to eliminate or minimize water ponding.	
Suggested Deadline Date:	30 Nov 2014	
Standard:	Alliance Standard Part 8 Section 8.26 Durability and Maintenance	
Question:	Are structural steel members free of corrosion, physical damage or other types of deterioration?	
Priority Level:	Medium	
Non-Compliance Level:	2	
Description:	In some locations, signs of corrosion was observed at the base plates of structural steel columns at the ground floor.	
Source of Findings:	Photograph: Corrosion at steel column base plate.	
Suggested Plan of Action:	Complete further testing on areas of deterioration in order to understand the level of corrosion and weakening of the member and have a qualified structural engineer to develop a remediation plan.	
Suggested Deadline Date:	30 Nov 2014	
Standard:	Alliance Standard Part 8 Section 8.26	



Question:	Are all non-structural elements suspended from, attached to, or resting atop the structure adequately anchored and braced to resist earthquake forces?	
Priority Level:	Medium	
Non-Compliance Level:	2	
Description:	Pipes, storage racks, water tanks and other equipment throughout the buildings are not adequately anchored and braced to resist earthquake forces.	
Source of Findings:	Visual Assessment: Visual assessment of non-structural elements.	
Suggested Plan of Action:	Adequately anchor and brace all non-structural elements to resist earthquake forces to comply with the BNBC and Alliance Standard.	
Suggested Deadline Date:	30 Nov 2014	
Standard:	Alliance Standards Part 8 Section 8.18 Seismic Bracing of Key Non-Structural Elements and 2006 BNBC Part 6	
Question:	Is the building free of active signs of water intrusion or ponding due to lack of performance of the façade system?	
Priority Level:	Low	
Non-Compliance Level:	2	
Description:	There is water seepage through exterior masonry walls near electrical panels due to poor water management and poor structural maintenance.	
Source of Findings:	Visual Assessment: Visual assessment of seepage.	
Suggested Plan of Action:	Repair the exterior façade system to prevent water intrusion. Eliminate the source of water and implement on ongoing structural maintenance program.	
Suggested Deadline Date:	30 Nov 2014	
Standard:	Alliance Standard Part 8 Section 8.26 Durability and Maintenance	
Structural Safety Programs		
Question:	Are floor loads in compliance with posted plans?	
Priority Level:	Medium	
Non-Compliance Level:	1	
Description:	There are no posted plans.	



Source of Findings:	Visual Assessment: Visual assessment.	
Suggested Plan of Action:	Once plans are posted, redistribute floor loads to comply with the Floor Loading Plans. As mentioned elsewhere, floor load plans need only be posted on elevated levels (ground levels are not required).	
Suggested Deadline Date:	30 Nov 2014	
Standard:	Alliance Standard Part 8 Section 8.10 Floor Loading Plans (Load Plans).	
Question:	Is a program in place to ensure that the live loads for which a floor or roof is or has been designed will not be exceeded?	
Priority Level:	Medium	
Non-Compliance Level:	1	
Description:	There is not a program in place to ensure that the live loads for which a floor or roof is or has been designed will not be exceeded.	
Source of Findings:	Document Review: Review of all available documents.	
Suggested Plan of Action:	Develop a program to ensure that all live loads for which a floor or roof has been designed for will not be exceeded. The designated Load Manager shall oversee this program and ensure it is enforced.	
Suggested Deadline Date:	30 Nov 2014	
Standard:	Alliance Standard Part 13 Section 13.7 and Part 8 Section 8.9.	
Question:	Have Load Plans been prepared for each floor documenting the actual maximum operational loading that is intended and/or allowable on each floor.	
Priority Level:	Low	
Non-Compliance Level:	2	
Description:	Load Plans have not been prepared for each floor documenting the actual maximum operational loading that is intended and/or allowable on each floor.	
Source of Findings:	Document Review: Review of available documents.	
Suggested Plan of Action:	Have a qualified structural engineer develop Floor Loading Plans per the requirements of Part 8 Section 8.20.5.3. Floor load plans are required for all elevated levels (ground levels are not required) of all buildings.	
Suggested Deadline Date:	30 Nov 2014	
Standard:	Alliance Standard Part 8 Section 8.10 Floor Loading Plans (Load Plans)	
Question:	Are Floor Load Plans posted as required?	
Priority Level:	Low	



Non-Compliance Level:	1
Description:	Floor Load Plans are not posted as required.
Source of Findings:	Visual Assessment: Visual assessment.
Suggested Plan of Action:	Have a qualified structural engineer prepare load plans including the information required in Section 8.20 of the Alliance Standard. Floor load plans should be visibly posted on all elevated levels (ground levels are not required) of all buildings.
Suggested Deadline Date:	30 Nov 2014
Standard:	Alliance Standard Part 8 Section 8.20.5.3
Question:	Are areas used for storage of work materials and work products, clearly marked to indicate the acceptable loading limits as described in the Load Plan for that floor?
Priority Level:	Low
Non-Compliance Level:	1
Description:	Areas used for storage of work materials and work products are not clearly marked to indicate the acceptable loading limits as described in the Load Plan for that floor.
Source of Findings:	Visual Assessment: Visual assessment of areas used for storage.
Suggested Plan of Action:	Provide signage or the appropriate markings at all areas used for storage to indicate the acceptable loading limits detailed in the Load Plan. As mentioned elsewhere, floor load plans need only be posted on elevated levels (ground levels are not required), and acceptable loading limit markings need only be provided on elevated levels as well.
Suggested Deadline Date:	30 Nov 2014
Standard:	Alliance Standard Part 8 Section 8.11 Floor Load Markings
Question:	Is a designated representative (Factory Load Manager), who is onsite full time, trained regarding the structural floor capacity, and serves as an ongoing vendor resource and monitor of operational factory floor loadings?
Priority Level:	Low
Non-Compliance Level:	1
Description:	There is not a designated representative (Factory Load Manager), who is onsite full time, trained regarding the structural floor capacity, and serves as an ongoing vendor resource and monitor of operational factory floor loadings.
Source of Findings:	Document Review: Review of all available documents.

Factory Name: **Brandix Casual Wear Ltd**

Address: **Plot No 61-71+85 Comilla EPZ Comilla Chittagong Bangladesh**

Assessor: **Walter P. Moore**

Date: **26 Jun 2013**



ALLIANCE
FOR BANGLADESH WORKER SAFETY

Suggested Plan of Action:	Designate a representative as the Factory Load Manager. The Factory Owner shall ensure that at least one individual, the Factory Load Manager who is located onsite full time at the factory, is trained in calculating operational load characteristics of the specific factory. The Factory Load Manager shall serve as an ongoing resource to RMG vendors and be responsible to ensure that the factory operational loads do not at any time exceed the factory floor loading limits as described on the Floor Loading Plans.
Suggested Deadline Date:	30 Nov 2014
Standard:	Alliance Standards Part 8 Section 8.9 Factory Load Manager