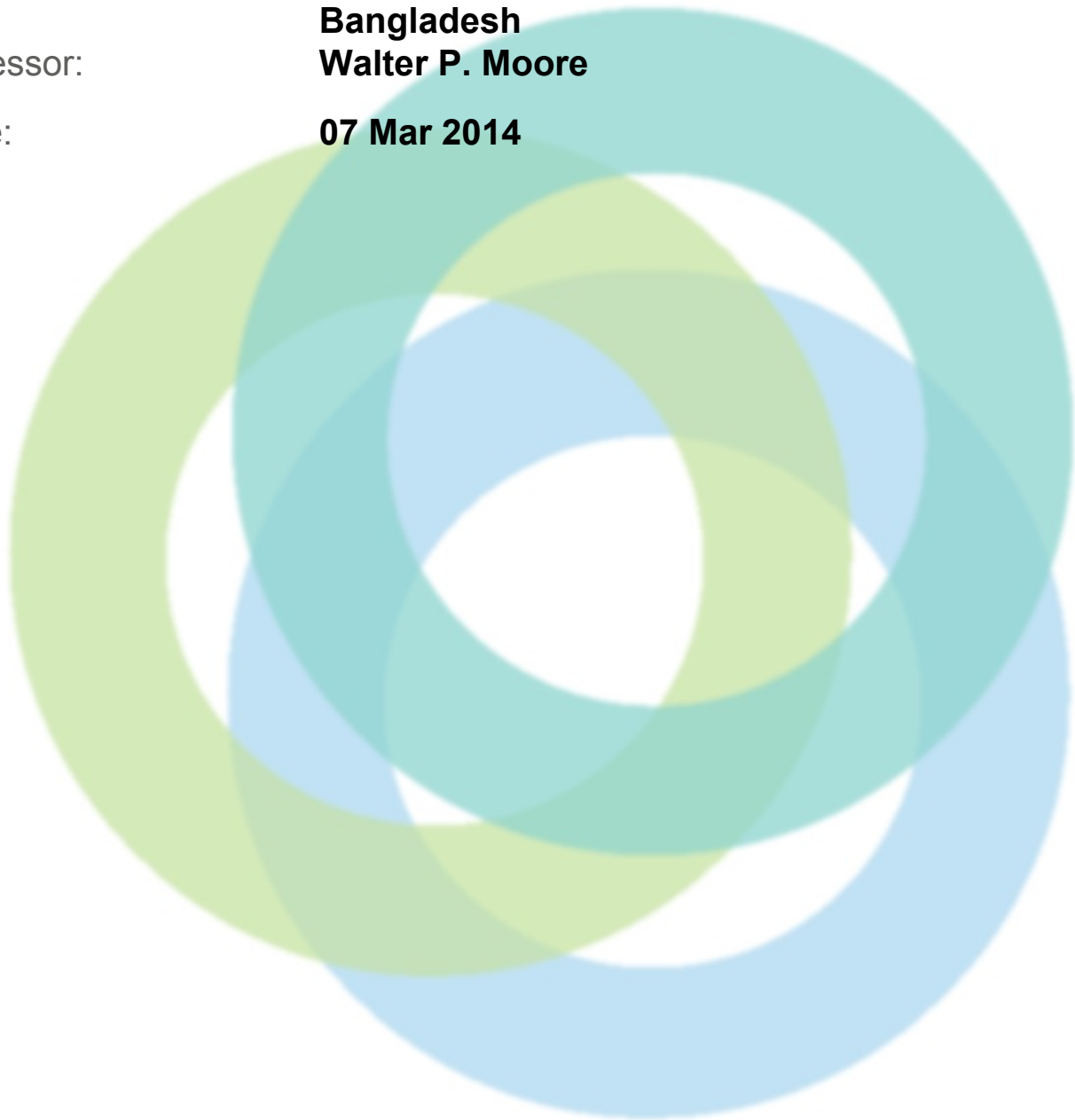




# EQUIVALENT INITIAL STRUCTURAL SAFETY ASSESSMENT

Factory Name: **Sawftex Ltd**  
Address: **Bhagnahati, Sreepur, Gazipur Sreepur, Gazipur Dhaka  
Bangladesh**  
Assessor: **Walter P. Moore**  
Date: **07 Mar 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](http://www.bangladeshworkersafety.org).



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**ALLIANCE**  
FOR BANGLADESH WORKER SAFETY

## GENERAL INFORMATION

General Information	
Factory Name:	Sawftex Ltd
Address:	Bhagnahati, Sreepur, Gazipur Sreepur, Gazipur Dhaka Bangladesh
Country:	Bangladesh
Province:	Dhaka
City:	Sreepur, Gazipur
Zip Code:	
Audit Duration:	1 Days
Re-Audit:	Re-Audit After 0 Months
Draft Report Date :	05/07/2014
Final Report Date :	12/15/2014
Are all Action Items From Previous Assessment Completed?:	N/A
Buildings in Complex :	1 Main Factory Building
Number of Building Levels (Stories) :	G+3+R
Approximate Building Area (SF) :	Approx. 50,000 SF
Date of Building Construction :	Unknown.
Date of Last Building Renovation/Addition :	Unknown.
Is the Building mixed use?:	No
Ancillary Structures in Complex :	4 Ancillary Buildings
Number of Ancillary Levels (Stories) :	See Comments
Approximate Ancillary	Unknown.

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Structures Area (SF) :	
Number of Occupants :	Unknown.
Exterior Facade Description :	Plaster veneer over masonry infill walls
Structural System Description :	Monolithic RC slab with beams



## ASSESSMENT FINDINGS

### Structural System Design

Question:	If the structure has been previously expanded, was the structural impact on the entire structure analytically evaluated and confirmed by a qualified structural engineer.
Priority Level:	Medium
Non-Compliance Level:	2
Description:	An expansion at the NW corner of the building for worker latrines was observed during our walk through, and a new fire egress stair was observed at the SW corner of the building. Documentation for these structures were not available for review at the time of our visit.
Source of Findings:	Document Review: Per available documents at the time of our visit.
Suggested Plan of Action:	Have a qualified structural engineer complete an analytical evaluation of the structural impact of the addition. Provide record drawings for these expansions by the engineer of record. A detailed assessment of cantilevered slabs at the NW expansion
Suggested Deadline Date:	31 Jan 2015
Standard:	Reference Alliance Standards Part 8 Section 8.1 Applicability of Building Code.
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:	We did not observe special provisions for concentrated loads in the structure. We observed 2000L and 3000L water tanks at the roof top level.
Source of Findings:	Visual Assessment: Observed at the time of our visit.
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:	31 Jan 2015
Standard:	Alliance Standard Part 8 Section 8.13 and 8.14





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:	1
Description:	General notes are missing from the structural documents. The design code for the building is not indicated on structural documents. Material strengths used for the design are not indicated on the structural documents.
Source of Findings:	Document Review: Per documents reviewed at the time of our visit.
Suggested Plan of Action:	Provide general notes with design criteria and material strengths from the Engineer of Record. Engage a qualified structural engineer to develop the required documents to confirm the structural integrity of the buildings. Documents must comply with
Suggested Deadline Date:	31 Jan 2015
Standard:	Reference Alliance Standards Part 8 Section 8.2 Structural Integrity of Existing Factory Buildings
Question:	If built after 2006, can documented compliance with the seismic and wind requirements of the 2006 BNBC be provided?
Priority Level:	Medium
Non-Compliance Level:	1
Description:	Wind and seismic design information not provided on available record documents.
Source of Findings:	Document Review: Per documents reviewed at the time of our visit.
Suggested Plan of Action:	Have a qualified structural engineer document compliance with the seismic and wind requirements stated in the 2006 BNBC.
Suggested Deadline Date:	31 Jan 2015
Standard:	Alliance Standards Part 8 Section 8.17 Design for Lateral Loads and 2006 BNBC Part 6 Section 1.5
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:	1
Description:	Design criteria was not included on available record documents.








Source of Findings:	Document Review: Per available documents at time of visit.
Suggested Plan of Action:	Engage a qualified structural engineer to confirm satisfactory structural performance of the buildings under wind loading.
Suggested Deadline Date:	31 Jan 2015
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:	Are Certificates of Occupancy available for review?
Priority Level:	Low
Non-Compliance Level:	2
Description:	Certificates of Occupancy were not available at the time of our visit.
Source of Findings:	Document Review: Certificate of occupancy not included in available documents.
Suggested Plan of Action:	Provide Certificates of Occupancy for review.
Suggested Deadline Date:	31 Jan 2015
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:	1
Description:	Exposed reinforcing bars at the NW expansion and roof should be removed and protected from future corrosion. Visible water was noted to be present on the roof that is leaking from rooftop plumbing.
Source of Findings:	Visual Assessment: Observed at the time of our assessment.
Suggested Plan of Action:	Under guidance from a qualified structural engineer, address all areas of needed maintenance by correcting the identified issues.
Suggested Deadline Date:	31 Jan 2015
Standard:	Alliance Standard Part 8 Section 8.26 Durability and Maintenance





Question:	Are any structural elements constructed with MCAC exposed to rainfall or other sources of water sealed with a protective coating to prevent water intrusion?	
Priority Level:	Medium	
Non-Compliance Level:	1	
Description:	As part of the follow up work by EIMS (detailed elsewhere via the column FoS question) conducted following the site visit by Walter P Moore, it was determined that MCAC was used in the construction of the building, including the roof slab. No protective coating was provided at the roof level of the building.	
Source of Findings:	Visual Assessment: Visual observation of roof slab.	
Suggested Plan of Action:	Provide a protective coating at the structural elements constructed with MCAC exposed to rainfall or other sources of water. Have protective coating approved by the Alliance or a qualified structural engineer.	
Suggested Deadline Date:	31 Jan 2015	
Standard:	Alliance Standards Part 7 Building Materials Section 7.2 Masonry-chip aggregate concrete (MCAC).	
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:	1	
Description:	Rooftop cable-stayed antenna and water tanks are not braced for seismic forces. Cable anchors for the antenna were noted to be of poor construction.	
Source of Findings:	Visual Assessment: Per our observations at the time of our assessment	
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:	31 Jan 2015	
Standard:	Alliance Standards Part 8 Section 8.18 Seismic Bracing of Key Non-Structural Elements and 2006 BNBC Part 6	
Question:	Is expansion joint material free from cracking and other forms of deterioration?	
Priority Level:	Low	
Non-Compliance Level:	1	
Description:	Joint between NW expansion and main building is cracking. No expansion joint was provided and the slab at each of these levels has cracked.	





Source of Findings:	Visual Assessment: Observed at the time of our assessment.
Suggested Plan of Action:	Install joint between original building and NW expansion. Remove deteriorated expansion joint material and provide new approved material at the expansion joint.
Suggested Deadline Date:	31 Jan 2015
Standard:	Alliance Standard Part 8 Section 8.26 Durability and Maintenance
<b>Structural Safety Programs</b>	
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:	No program was in place at the time of our visit.
Source of Findings:	Visual Assessment: Per our observations and discussions at the time of our visit.
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:	31 Jan 2015
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:	1
Description:	Load Plans were not available at the time of our visit.
Source of Findings:	Document Review: Per our review of documents at the time of our visit.
Suggested Plan of Action:	Have a qualified structural engineer develop Floor Loading Plans per the requirements of Part 8 Section 8.20.5.3
Suggested Deadline Date:	31 Jan 2015
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:	Posted load plans were not observed at the time of our visit.
Source of Findings:	Visual Assessment: Per our observations at the time of our visit.
Suggested Plan of Action:	Have a qualified structural engineer prepare load plans including the information required in Section 8.20 of the Alliance Standard.
Suggested Deadline Date:	31 Jan 2015
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:	Load limits in storage areas were not clearly marked.
Source of Findings:	Visual Assessment: Per our observations at the time of our visit.
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.
Suggested Deadline Date:	31 Jan 2015
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:	A designated load manager was not present or on staff at the time of our visit.
Source of Findings:	Visual Assessment: Per our observations and discussions at the time of our visit.
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
Suggested Deadline Date:	31 Jan 2015

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Standard:

Alliance Standards Part 8 Section 8.9 Factory Load Manager