INITIAL STRUCTURAL INTEGRITY ASSESSMENT REPORT (SIAR)

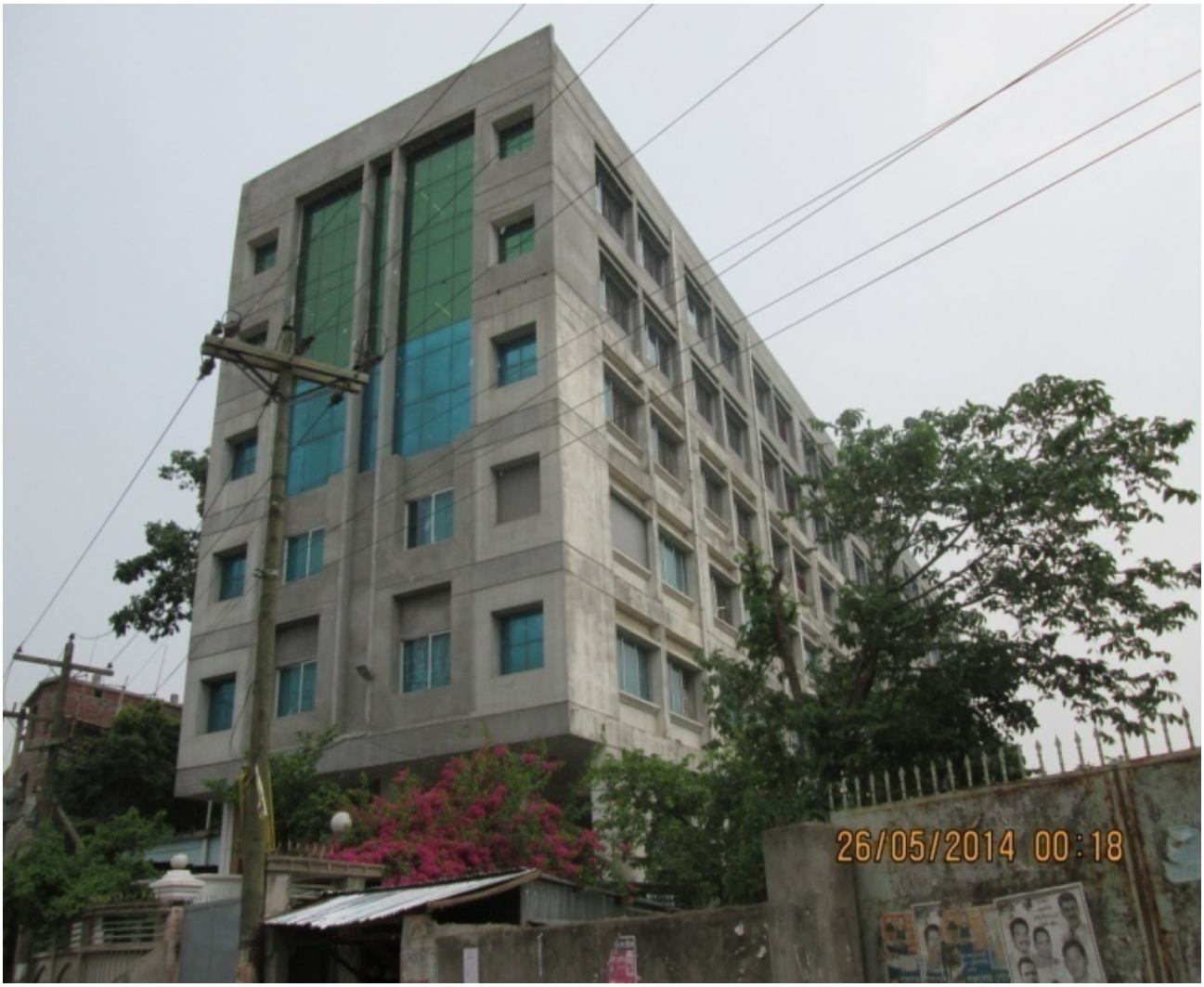
Factory Name:	**Standard Stitches Ltd. (Unit 2)**
Address:	**Plot #10/4 Karnapara Genda Savar Dhaka Bangladesh**
Assessor:	**Sumerra**
Date:	**26 May 2014**

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:	Standard Stitches Ltd. (Unit 2)
Address:	Plot #10/4 Karnapara Genda Savar Dhaka Bangladesh
Country:	Bangladesh
Province:	Dhaka
City:	
Zip Code:	1340
Audit Duration:	2 Days
Re-Audit:	Re-Audit After 0 Months
Draft Report Date :	July 14, 2014
Final Report Date :	September 24, 2014
Are all Action Items From Previous Assessment Completed?:	N/A
Buildings in Complex :	1
Number of Building Levels (Stories) :	6
Approximate Building Area (SF) :	51284 sq ft
Date of Building Construction :	2006 (first 4 stories), 2013 (top 2 stories)
Date of Last Building Renovation/Addition :	2013 (top 2 stories)
Is the Building mixed use?:	No
Ancillary Structures in Complex :	2
Number of Ancillary Levels (Stories) :	1 (Ground)
Approximate Ancillary	1003 sq ft

Structures Area (SF) :	
Number of Occupants :	995
Exterior Facade Description :	Brick masonry infill between RCC structural frame elements.
Structural System Description :	Concrete beam & slab system with beams spanning both directions between columns. Foundation & lateral load resisting system are moment resisting concrete frame.
Issues were not found during the structural integrity assessment that required the Emergency Escalation Protocol (and referral to NTC Review Panel)?:	Yes

ASSESSMENT FINDINGS

Structural System Design		
Question:	Are credible structural design documents available for review and kept on site?	
Priority Level:	Medium	
Non-Compliance Level:	3	
Description:	The architectural drawing provided by Ar. Md. Munawar Habib (H-079, Rajuk A-2047) did not mention a signing date or name of organization. Structural documents of this factory did not mention signing date & name of organization either. In the available documents, the engineer mentioned design criteria but did not mention all load types (Live load, Dead load, Wind load, Seismic load).	
Source of Findings:	Document Review: Documents Lacking details	
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. All elements must be evaluated and included in drawings.	
Suggested Deadline Date:	15 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:	3	
Description:	As per submitted structural documents, there is no declaration about building code.	
Source of Findings:	Document Review: No building codes in documentation	
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:	15 Nov 2014	
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:	3	
Description:	No documneted compliance to 2006 BNBC could be provided.	
Source of Findings:	Document Review: No ducmentation provided	
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:	15 Nov 2014	
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:	3	
Description:	No documnation could be provided regarding wind loading and storm surge loadings as detailed in BNBC Part 6 Section 1.5.3.	
Source of Findings:	Document Review: No Documentation Provided.	
Suggested Plan of Action:	Engage a qualified structural engineer to confirm satisfactory structural performance of the buildings under wind loading. 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.	
Suggested Deadline Date:	15 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:	3	
Description:	There are 2000 Liter plastic water tanks on the roof top. No provisions or considerations were found for these tanks.	
Source of Findings:	Photograph: Water tanks	

Suggested Plan of Action:	Engage a qualified structural engineer to confirm and document that provisions have been made to accommodate concentrated loads of the water tanks. If provisions have not been made, have a qualified structural engineer develop a remediation plan for the areas of concern.
Suggested Deadline Date:	15 Nov 2014
Standard:	Alliance Standard Part 8 Section 8.13 and 8.14
Question:	Where density of operations, storage of materials, or equipment weights require live load capacity in excess of 2.0 kN/m2 (42 psf), do the design documents confirm that the required load capacity exists? Or has the load capacity been analytically confirmed and certified by an Alliance-qualified structural engineer?
Priority Level:	Medium
Non-Compliance Level:	2
Description:	Several areas of high loads were observed including: 1st Floor Cutting section, 1st Floor Finished Good Store, and 5th Floor Sewing Thread Store (calculated load is greater than 50 psf). No design document or load plans are available to confirm the required load capacities.
Source of Findings:	Photograph: Storage Loads - Fabric storage, and finished goods.
Suggested Plan of Action:	Have a qualified structural engineer confirm that capacity to support the load is available. Load Plans complying with Alliance Standard Part 8 Section 8.20.4.3 should also be developed.
Suggested Deadline Date:	15 Nov 2014
Standard:	Alliance Standards Part 8 Section 8.15 Minimum Floor Design Loads

Structural System Construction	
Question:	If yes, have the structural members constructed with MCAC been investigated by an appropriate program of in-situ testing and representative destructive testing or core samples?
Priority Level:	Medium
Non-Compliance Level:	3
Description:	No documentation of in-situ testing and representative destructive testing or core samples of MCAC was available.
Source of Findings:	Document Review: No testing results available
Suggested Plan of Action:	The compressive strength of structural elements constructed using MCAC shall be investigated by an appropriate program of in-situ testing and representative destructive testing of core samples.
Suggested Deadline	15 Nov 2014

Date:		
Standard:	Reference Alliance Standards Part 7 Building Materials Section 7.2 Masonry-chip aggregate concrete (MCAC)	
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:	3	
Description:	Exposed roof is not sealed with a protective coating to prevent water intrusion.	
Source of Findings:	Photograph: View of roof	
Suggested Plan of Action:	The top surface of the structural framing elements exposed to weather must be completely sealed from water intrusion by a well maintained protective coating. Alternatively, create a positive drainage slope of at least 2% and provide drains with downspouts at low points to prevent water ponding, then the requirement for complete sealing of the top surface may be waived. All columns (for extensions) should be provided with proper protective coating if they remain exposed.	
Suggested Deadline Date:	15 Nov 2014	
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:	3	
Description:	The racks found in the following locations are not braced to resist earthquake forces: Ground Floor/Mezzanine Accessory Store, 1st Floor cuttting section, fabric storage. Additionally, the four (4) plastic water tanks on roof did not have proper anchorage.	
Source of Findings:	Photograph: Non-anchored storage racks and water tanks.	
Suggested Plan of Action:	Adequately anchor and brace all non-structural elements such as the rack systems to resist earthquake forces to comply with the BNBC and Alliance Standard.	
Suggested Deadline Date:	15 Nov 2014	
Standard:	Alliance Standards Part 8 Section 8.18 Seismic Bracing of Key Non-Structural Elements and 2006 BNBC Part 6	

Structural Safety Programs		
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:	3	
Description:	No 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: No Program Available	
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:	15 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:	3	
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 - specific areas of concern include: 1st floor cutting section on south side & finished products in finished store on north side; 5th floor thread store pn south side.	
Source of Findings:	Document Review: Lack of Load Plans	
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:	15 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:	3	
Description:	No floor load plans posted as required by Alliance Standard Part 8 Section 8.20.5.3.	

Source of Findings:	Visual Assessment: No load plans posted	
Suggested Plan of Action:	Have a qualified structural engineer prepare load plans including the information required in Section 8.20 of the Alliance Standard. Post those plans.	
Suggested Deadline Date:	15 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:	3	
Description:	Areas used for storage of work materials and work products are not clearly marked to indicate the acceptable loading limits.	
Source of Findings:	Visual Assessment: No Posted Load Limits	
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 (noted elsewhere).	
Suggested Deadline Date:	15 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:	3	
Description:	No factory load manager has been designated.	
Source of Findings:	Worker Interviews: No Load Manager	
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:	15 Nov 2014	

Standard:	Alliance Standards Part 8 Section 8.9 Factory Load Manager	