

INITIAL STRUCTURAL INTEGRITY ASSESSMENT REPORT (SIAR)

Factory Name: **SUPREME STITCH LTD**

Address: **West Shaildube, Kashimpur, Gazipur, Gazipur Dhaka
Bangladesh**

Assessor: **Bureau Veritas**

Date: **08 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.



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GENERAL INFORMATION

General Information

Factory Name:	SUPREME STITCH LTD
Address:	West Shaildube, Kashimpur, Gazipur, Gazipur Dhaka Bangladesh
Country:	Bangladesh
Province:	Dhaka
City:	Gazipur
Zip Code:	1700
Audit Duration:	12 Hours
Re-Audit:	Re-Audit After 0 Months
Draft Report Date :	May 11, 2014
Final Report Date :	August 28, 2014
Are all Action Items From Previous Assessment Completed?:	N/A
Buildings in Complex :	1 Main Production Building (divided into 2 sections by an expansion joint)
Number of Building Levels (Stories) :	3 (Ground+2)
Approximate Building Area (SF) :	145,658 SF
Date of Building Construction :	2008 (All Buildings)
Date of Last Building Renovation/Addition :	Ongoing (additional 3 levels in one section of building)
Is the Building mixed use?:	No
Ancillary Structures in Complex :	1. Waste store shed 2. Security station 3. Boiler shed
Number of Ancillary Levels (Stories) :	1 (Ground)
Approximate Ancillary	1. Waste store shed: 1250 SF 2. Security station: 284 SF 3. Boiler shed: 200 SF

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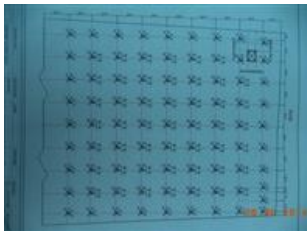
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Structures Area (SF) :	
Number of Occupants :	865 Total
Exterior Facade Description :	Brick masonry infill between concrete frame elements. Exterior wall faces plastered and painted. Sliding glass windows, steel main door.
Structural System Description :	Monolithic concrete frame structure (slabs, beams and columns) with isolated column spread footings.



ASSESSMENT FINDINGS

Structural System Design

Question:	Are credible structural design documents available for review and kept on site?	
Priority Level:	Medium	
Non-Compliance Level:	2	
Description:	Structural design documents are available for review and kept on site. However, these documents do not include a design report indicating the parameters used in the original design of the buildings.	
Source of Findings:	Document Review: Documents reviewed on-site.	
Suggested Plan of Action:	Have the original structural engineer of record prepare a design report according to the requirements of the Alliance Standard and BNBC. Alternatively, a qualified structural engineer must be engaged to conduct a detailed structural analysis to confirm the load-bearing capacity of structural elements within each of the buildings. Have a qualified structural engineer prepare design report.	
Suggested Deadline Date:	15 Oct 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:	The available structural documents do not indicate conformance with the BNBC or other building code.	
Source of Findings:	Document Review: Documents reviewed on-site.	
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 Oct 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:	2
Description:	The available structural documents do not indicate compliance with the seismic and wind requirements of the 2006 BNBC.
Source of Findings:	Document Review: Documents reviewed on-site.
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 Oct 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:	2
Description:	The available documents do not indicate compliance with the wind loading requirements detailed in the BNBC.
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:	15 Oct 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:	There are three plastic water tanks (each with a 5000 liter capacity) located on the roof. There was no evidence available to indicate that the structural impact of these concentrated loads was considered. which is not shown in structural design. These tanks act as concentrated load on the roof slab.





Source of Findings:	Photograph: Rooftop water tank.
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:	15 Oct 2014
Standard:	Alliance Standard Part 8 Section 8.13 and 8.14
Question:	Are Certificates of Occupancy available for review?
Priority Level:	Low
Non-Compliance Level:	2
Description:	Certificates of Occupancy are not available for review.
Source of Findings:	Document Review: Documents reviewed on-site.
Suggested Plan of Action:	Provide Certificates of Occupancy for review.
Suggested Deadline Date:	15 Oct 2014
Standard:	Alliance Standard Part 8 Section 8.3 Preliminary Structural Assessment
Structural System Construction	
Question:	Is the structural system free of distress, separations, or cracking that indicates lack of performance or overstress of the lateral load-carrying system?
Priority Level:	High
Non-Compliance Level:	1
Description:	Hairline cracking was observed within concrete beams in the main building at several locations. Although this cracking did not appear to impact the structural capacity of the beams, it warrants additional investigation.
Source of Findings:	Photograph: Hairline beam cracking.
Suggested Plan of Action:	Engage a qualified structural engineer to provide additional investigation into the areas of beam cracking and provide a remediation plan if required.
Suggested Deadline Date:	15 Oct 2014
Standard:	Alliance Standard Part 8 Section 8.3.3





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:	Nondestructive UPV testing was conducted as part of this assessment and indicated in-situ concrete compressive strength of 3000 psi and 2570 psi for the 6 and 3-story portions of the building, respectively. Destructive core testing was not performed.
Source of Findings:	Visual Assessment: UPV testing during visual assessment.
Suggested Plan of Action:	As part of the detailed assessment outlined elsewhere, conduct destructive core testing to validate the in-situ concrete compressive strength of structural elements.
Suggested Deadline Date:	15 Oct 2014
Standard:	Reference 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:	2
Description:	The following elements were noted to not contain adequate anchorage or bracing to resist seismic forces: -Rooftop water tanks -Storage racks in the store room area
Source of Findings:	Photograph: Unbraced water tanks and storage racks.
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:	15 Oct 2014
Standard:	Alliance Standards Part 8 Section 8.18 Seismic Bracing of Key Non-Structural Elements and 2006 BNBC Part 6





Question:	If the building is currently being renovated or expanded, are the Construction Practices and Safety requirements of Section 9 being followed?
Priority Level:	Medium
Non-Compliance Level:	2
Description:	The portion of the main building which is intended for 6 stories is currently under construction. Unsafe construction practices were observed during the site visit. In particular, no overhead protection had been installed at the perimeter of the building on the Ground Level to mitigate hazards from potential falling construction debris.
Source of Findings:	Photograph: Lack of overhead protection beneath ongoing construction.
Suggested Plan of Action:	Install overhead protection provisions at the perimeter of the building on the Ground Level to mitigate hazards from potential falling construction debris.
Suggested Deadline Date:	15 Oct 2014
Standard:	Alliance Standard Part 9 Construction Practices and Safety.
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:	Wall dampness was observed at the stair room of the 3 story building. Also, water ponding was observed at the rooftop of the portion of the 3 story building under construction (intended for 6 stories).
Source of Findings:	Photograph: Dampness and rooftop water ponding
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:	15 Oct 2014
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:	The roof of the building is of constructed with MCAC but no protective sealing has been provided.
Source of Findings:	Photograph: Unsealed 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. Alternatively, provide 2% slope on the exposed surface and drains with downspouts at low points to prevent accumulation of water.
Suggested Deadline Date:	15 Oct 2014
Standard:	Alliance Standards Part 7 Building Materials Section 7.2 Masonry-chip aggregate concrete (MCAC).

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:	2
Description:	No load management program is currently in place.
Source of Findings:	Document Review: NO documentation of load management plan.
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 Oct 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:	A load plan was been prepared but it does not align with the requirement of the Alliance Standard.
Source of Findings:	Photograph: Available load plan.
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 Oct 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:	2
Description:	Floor load plans are not currently posted.
Source of Findings:	Visual Assessment: No posted load plans observed during site 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. Floor load plans should be visibly posted on all levels of all buildings.
Suggested Deadline Date:	15 Oct 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:	2
Description:	Storage areas have not been marked to indicate acceptable loading limits.
Source of Findings:	Visual Assessment: No load limit markings observed.
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:	15 Oct 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:	2
Description:	There is currently no Factory Load Manager in place.
Source of Findings:	Document Review: The HR file of factory load manager or designated representative is not documented.
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

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	limits as described on the Floor Loading Plans.
Suggested Deadline Date:	15 Oct 2014
Standard:	Alliance Standards Part 8 Section 8.9 Factory Load Manager