

INITIAL STRUCTURAL INTEGRITY ASSESSMENT REPORT (SIAR)

Factory Name: **SMART JACKET (BD) LIMITED**

Address: **PLOT NO - 11, 12 & 13, SECTOR - 1/A, ROAD - 05,
CEPZ, CHITTAGONG. Chittagong Chittagong
Bangladesh**

Assessor: **Shaheedullah**

Date: **04 Nov 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.





GENERAL INFORMATION

General Information	
Factory Name:	SMART JACKET (BD) LIMITED
Address:	PLOT NO - 11, 12 & 13, SECTOR - 1/A, ROAD - 05, CEPZ, CHITTAGONG. Chittagong Chittagong Bangladesh
Country:	Bangladesh
Province:	Chittagong
City:	Chittagong
Zip Code:	4223
Audit Duration:	2 Days
Re-Audit:	Re-Audit After 0 Months
Draft Report Date :	9 November, 2014
Final Report Date :	January 12, 2015
Are all Action Items From Previous Assessment Completed?:	N/A
Buildings in Complex :	6 storied Factory building and two other small and Low rise adjacent buildings
Number of Building Levels (Stories) :	Main building 6 storied.
Approximate Building Area (SF) :	Aggregate floor area of all buildings together 500,000 sft; (Main building posses 225,000 sft area including all floors)
Date of Building Construction :	2012
Date of Last Building Renovation/Addition :	N/A
Is the Building mixed use?:	No
Ancillary Structures in Complex :	2 (small and Low rise adjacent buildings)
Number of Ancillary Levels (Stories) :	3 stories
Approximate Ancillary	Aggregate floor area of all buildings together 500,000 sft

Factory Name: **SMART JACKET (BD) LIMITED**
Address: **PLOT NO - 11, 12 & 13, SECTOR - 1/A, ROAD - 05, CEPZ, CHITTAGONG.**
Chittagong Chittagong Bangladesh

Assessor: **Shaheedullah**

Date: **04 Nov 2013**



ALLIANCE
FOR BANGLADESH WORKER SAFETY

Structures Area (SF) :	
Number of Occupants :	4,850 persons in the whole factory
Exterior Facade Description :	Up to lintel: 5" thick plastered masonry wall supported by R.C columns and grade beams with door and window opening. Above lintel : Covered by paint.
Structural System Description :	Frame work of the building is composed of R.C. slab, R.C. column, beam and R.C. piling.



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:	Most of structural design documents are available for review and kept on-site but those documents don't fully comply with the requirements of the Alliance Standard Part 8 Section 8.19.	
Source of Findings:	Uploaded Document: Available structural documentation.	
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.	
Suggested Deadline Date:	28 Feb 2015	
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:	No documentation is available in favor of conformance of construction with 2006 BNBC or other comparable applicable international model building code	
Source of Findings:	Document Review: Seen all 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:	28 Feb 2015	
Standard:	Reference Alliance Standards Part 8 Section 8.2 Structural Integrity of Existing Factory Buildings	
Question:	Where density of operations, storage of materials, or equipment weights require live load capacity in excess of 2.0 kN/m ² (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:	Live load in all floors was found within 42 but load capacity has not been analytically confirmed and certified by an Alliance-qualified structural engineer.
Source of Findings:	Document Review: Seen all documents., Visual Assessment: Visual inspection.
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:	28 Feb 2015
Standard:	Alliance Standards Part 8 Section 8.15 Minimum Floor Design Loads
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:	No documented compliance with the seismic and wind requirements of the 2006 BNBC was found.
Source of Findings:	Document Review: Seen all documents.
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:	28 Feb 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:	No documentation can 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
Source of Findings:	Document Review: Loading calculation
Suggested Plan of Action:	Engage a qualified structural engineer to confirm satisfactory structural performance of the buildings under wind loading.
Suggested Deadline	28 Feb 2015



Date:		
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:	1	
Description:	Certificate of Occupancy was not available for review	
Source of Findings:	Document Review: Seen all documents.	
Suggested Plan of Action:	Provide Certificates of Occupancy for review.	
Suggested Deadline Date:	28 Feb 2015	
Standard:	Alliance Standard Part 8 Section 8.3 Preliminary Structural Assessment	
Structural System Construction		
Question:	Are the performance of key structural elements such as columns, slender columns, flat plates and transfer structures satisfactory?	
Priority Level:	High	
Non-Compliance Level:	2	
Description:	Out of 65 total footings, 9 seem to be lightly inadequate as per preliminary pile capacity calculations, as outlined below. Required maximum 160 kip per pile. Available capacity per pile (20"diameter, 55'length) is 135 kip as per soil test. Available factor of safety calculation: $(135/160) \times 2.5 = 2.1$	
Source of Findings:	Document Review: Seen all documents., Visual Assessment: Visual inspection.	
Suggested Plan of Action:	Engage a qualified structural engineer to confirm structural performance of the structure, paying particular attention to the structural capacity of the foundation system.	
Suggested Deadline Date:	28 Feb 2015	
Standard:	Alliance Standard Part 8 Section 8.3.3	



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:	Two rigid RC water tanks were found with enough bracings and anchorage to resist seismic load but the exhaust fan and storage racks were not properly braced.
Source of Findings:	Visual Assessment: Visual inspection.
Suggested Plan of Action:	Racks shall be adequately anchored and braced to resist earthquake force as per BNBC and Alliance Standard
Suggested Deadline Date:	28 Feb 2015
Standard:	Alliance Standards Part 8 Section 8.18 Seismic Bracing of Key Non-Structural Elements and 2006 BNBC Part 6
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:	1
Description:	No testing was done for assessment of the strength of the concrete.
Source of Findings:	Document Review: Seen all documents.
Suggested Plan of Action:	Strength of the MCAC concrete shall be ascertained by core sample testing.
Suggested Deadline Date:	28 Feb 2015
Standard:	Reference 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:	1
Description:	No program in place was found
Source of Findings:	Document Review: Seen all documents., Visual Assessment: Visual inspection.



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:	28 Feb 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:	2	
Description:	Floor load plans have not been prepared for each floor.	
Source of Findings:	Document Review: Visual inspection., Visual Assessment: Seen all documents.	
Suggested Plan of Action:	A qualified structural engineer shall be engaged to develop Floor Loading Plans as per the requirements of Part 8 Section 8.20.5.3	
Suggested Deadline Date:	28 Feb 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:	2	
Description:	Floor load plans not posted according to Alliance Standards Part 8 Structural Design Section 8.10 Floor Loading Plans (Load Plans)	
Source of Findings:	Document Review: Seen all documents.	
Suggested Plan of Action:	A qualified structural engineer shall be engaged to develop floor load plans and shall be posted following section 8.20 of the Alliance Standard. Floor load plans should be visibly posted on all levels of all buildings.	
Suggested Deadline Date:	28 Feb 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:	2	

Factory Name: **SMART JACKET (BD) LIMITED**

Address: **PLOT NO - 11, 12 & 13, SECTOR - 1/A, ROAD - 05, CEPZ, CHITTAGONG.
Chittagong Chittagong Bangladesh**

Assessor: **Shaheedullah**

Date: **04 Nov 2013**



ALLIANCE
FOR BANGLADESH WORKER SAFETY

Description:	Areas used for storage of work materials and work products have not been marked indicating the acceptable loading limits.
Source of Findings:	Visual Assessment: Physical inspection
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:	28 Feb 2015
Standard:	Alliance Standard Part 8 Section 8.11 Floor Load Markings