

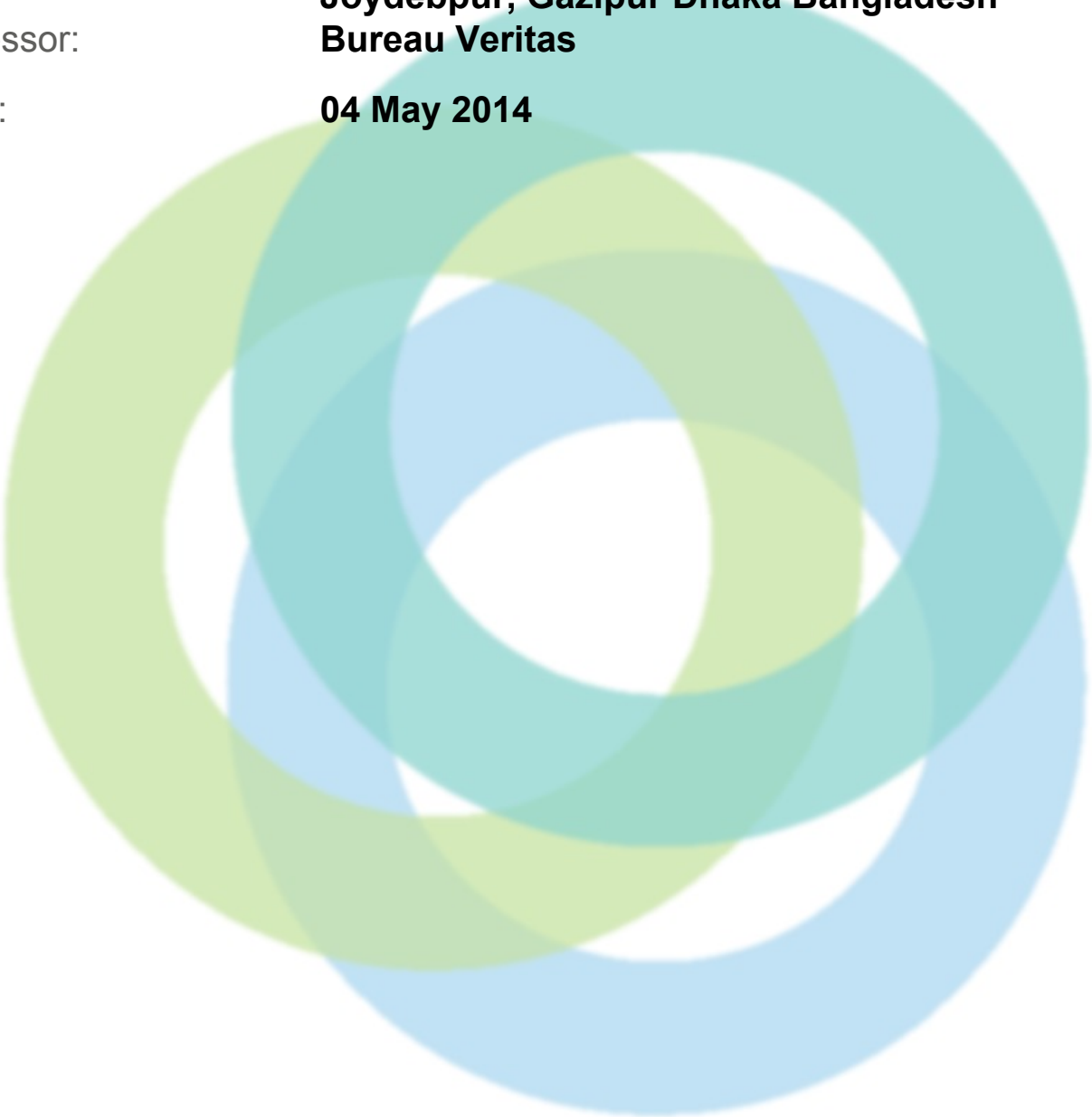
INITIAL STRUCTURAL INTEGRITY ASSESSMENT REPORT (SIAR)

Factory Name: **Rose Sweaters Ltd (Unit 2)**

Address: **Vogra, By-pass Bishaw Road, Joydebpur, Gazipur
Joydebpur, Gazipur Dhaka Bangladesh**

Assessor: **Bureau Veritas**

Date: **04 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:	Rose Sweaters Ltd (Unit 2)
Address:	Vogra, By-pass Bishaw Road, Joydebpur, Gazipur Joydebpur, Gazipur Dhaka Bangladesh
Country:	Bangladesh
Province:	Dhaka
City:	Joydebpur, Gazipur
Zip Code:	1704
Audit Duration:	10 Hours
Re-Audit:	Re-Audit After 0 Months
Draft Report Date :	05-05-2014
Final Report Date :	10-22-2014
Are all Action Items From Previous Assessment Completed?:	Yes
Buildings in Complex :	There are 5 buildings in the factory premises out of which one is main production building and four are ancillary buildings. The buildings are named as: 1) Eight story RCC building-1 with basement (Main building), 2) Two story RCC building-2, 3) Single story store room (Tin shed), 4) Single story security rest house (Tin shed), 5) Single story generator room (Tin shed).
Number of Building Levels (Stories) :	1) Eight story RCC building-1 with basement (Main building): Stories above grade: 8, Stories below grade: 1, Occupied levels: 9, 2) Two story RCC building-2: Stories above grade: 2, Stories below grade: 0, Occupied levels: 2, 3) Single story store room (Tin shed): Stories above grade: 1, Stories below grade: 0, Occupied levels: 1, 4) Single story security rest house (Tin shed): Stories above grade: 1, Stories below grade: 0, Occupied levels: 1, 5) Single story generator room (Tin shed): Stories above grade: 1, Stories below grade: 0, Occupied levels: 1.
Approximate Building Area (SF) :	Total area of all buildings in the factory premises: 166602.29 sft. Building wise breakdown as follows: 1) Eight story RCC building-1 with basement (Main building): 153486.29 sft (Basement: 14645.76 sft, Ground Floor: 18377.93 sft, 1st floor: 19262.10 sft, 2nd floor: 19262.10 sft, 3rd floor: 19262.10 sft, 4th floor: 19262.10 sft, 5th floor: 19262.10 sft, 6th floor: 10000.00 sft, 6th floor roof: 9262 sft. 7th Floor: 4890.10 sft), 2) Two story RCC building-2: 8121.00 sft (Ground floor: 2707 sft, 1st floor: 2707 sft Roof: 2707 sft), 3) Single story store room (Tin shed): 1665 sft, 4) Single story security rest house (Tin shed): 1665 sft, 5) Single story generator room (Tin shed): 1665 sft.
Date of Building Construction :	Factory personnel informed the date of construction as follows: 1) Eight story RCC building-1 with basement (Main building): Finished in May-2008, 2) Two story RCC building-2: Finished in May-2008, 3) Single story store room (Tin shed): Finished in 2011, 4) Single story security rest house (Tin shed): Finished in 2011, 5) Single story generator room (Tin shed): Finished in 2008.



Date of Last Building Renovation/Addition :	No record for date of renovation or addition was found from factory personnel.
Is the Building mixed use?:	No
Ancillary Structures in Complex :	1) Two story RCC building-2, 2) Single story store room (Tin shed), 3) Single story security rest house (Tin shed), 4) Single story generator room (Tin shed).
Number of Ancillary Levels (Stories) :	1) Two story RCC building-2: Stories above grade: 2, Stories below grade: 0, Occupied levels: 2, 2) Single story store room (Tin shed): Stories above grade: 1, Stories below grade: 0, Occupied levels: 1, 3) Single story security rest house (Tin shed): Stories above grade: 1, Stories below grade: 0, Occupied levels: 1, 4) Single story generator room (Tin shed): Stories above grade: 1, Stories below grade: 0, Occupied levels: 1.
Approximate Ancillary Structures Area (SF) :	1) Two story RCC building-2: 8121 sft (Ground floor: 2707 sft, 1st floor: 2707 sft Roof: 2707 sft), 2) Single story store room (Tin shed): 1665 sft, 3) Single story security rest house (Tin shed): 1665 sft, 4) Single story generator room (Tin shed): 1665 sft.
Number of Occupants :	Total number of occupants: 1921. 1) Eight story RCC building-1 with basement (Main building): 1722 (Basement: 65, Ground Floor: 210, 1st floor: 250, 2nd floor: 270, 3rd floor: 280, 4th floor: 280, 5th floor: 280, 6th floor: 85, 7th Floor: 02), 2) Two story RCC building-2: 185 (Ground floor: 110, 1st floor: 75), 3) Single story store room (Tin shed): 2, 4) Single story security rest house (Tin shed): 5, 5) Single story generator room (Tin shed): 7.
Exterior Facade Description :	The building is RCC frame structure with in filled masonry. The windows are glassed sliding type with aluminium frame. The main door is metallic sliding type.
Structural System Description :	The building is regular RCC frame structure. The nature of foundation is isolated column footing.



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:	A set of structural design documents is available on site for review. However, the design report is not available which is required as per BNBC 2006 clause 1.9.1.1.	
Source of Findings:	Document Review: Document review shows that a set of structural design documents is available on site for review. However, the design report is not available which is required as per BNBC 2006 clause 1.9.1.1.	
Suggested Plan of Action:	The structural design engineer should prepare the design report and submit to the factory for further review by BV.	
Suggested Deadline Date:	12 Aug 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 building was designed and constructed after 2006, but there is no indication that the design accommodates the requirement of BNBC 2006.	
Source of Findings:	Document Review: Document review shows that the building was designed and constructed after 2006, but there is no indication that the design accommodates the requirement of BNBC 2006.	
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:	12 Aug 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 building was constructed after 2006. However, there is no indication that the building was designed taking into consideration the seismic and wind load.
Source of Findings:	Document Review: Document review shows that the building was constructed after 2006. However, there is no indication that the building was designed taking into consideration the seismic and wind load.
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:	12 Aug 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:	There is no clear information available on the design document to understand the consideration of wind loading in the design of the building.
Source of Findings:	Document Review: Document review shows that there is no clear information available on the design document to understand the consideration of wind loading in the design of the building.
Suggested Plan of Action:	Engage a qualified structural engineer to confirm satisfactory structural performance of the buildings under wind load and submit a report on same.
Suggested Deadline Date:	12 Aug 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:	Eight plastic water tanks (each with a capacity of 2,000 liters) were found on the roof, but are not mentioned in drawings.
Source of Findings:	Document Review: No provision for the concentric loads of these water tanks has been found in the documents., Visual Assessment: A visual assessment shows that 8 plastic tanks (each with a capacity of 2,000 liters) were found on the roof, but are not mentioned in drawings.
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:	12 Aug 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:	1
Description:	Occupancy certificates are not available in the submitted documents, but the factory management has applied for the occupancy certificate.
Source of Findings:	Document Review: Document review shows that the occupancy certificates are not available in the submitted documents, but the factory management has applied for the occupancy certificate.
Suggested Plan of Action:	After issuing the certificate of occupancy provide it for further review.
Suggested Deadline Date:	12 Aug 2014
Standard:	Alliance Standard Part 8 Section 8.3 Preliminary Structural Assessment
Question:	Is a Geotechnical Report available for review and kept on site?
Priority Level:	Low
Non-Compliance Level:	1
Description:	A Geotechnical report is available onsite with seal and signature of Geotechnical engineer. However, his MIEB number is not mentioned.
Source of Findings:	Document Review: Document review shows that the Geotechnical report is available on site with seal and signature of Geotechnical engineer. However, his MIEB number is not mentioned.
Suggested Plan of Action:	MIEB number must be mentioned in the Geotechnical report.
Suggested Deadline Date:	12 Aug 2014





Standard: Alliance Standard Part 8 Section 8.2 Structural Integrity of Existing Factory Buildings

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: The structural system is free of distress, separations, and cracking that indicates lack of performance or overstress of the lateral load-carrying system. However some hairline cracks have been found in beams of 5th floor at grid 3C, 3D & 3E and in 7th floor at grid 6G & 8G which appears to be minor issue.

Source of Findings: Visual Assessment: Visual assessment shows that the structural system is free of distress, separations, and cracking that indicates lack of performance or overstress of the lateral load-carrying system. However some hairline cracks have been found in beams of 5th floor at grid 3C, 3D & 3E and in 7th floor at grid 6G & 8G which appears to be minor issue.

Suggested Plan of Action: Engage a qualified structural engineer to provide additional investigation into the areas cracking and provide a remediation plan if required.

Suggested Deadline Date: 01 Dec 2014

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: Eight plastic water tanks were found on the roof top which are not adequately anchored or braced. Besides, there are storage racks at basement which also need anchorage or bracing.

Source of Findings: Visual Assessment: Visual assessment shows that 8 nos plastic water tanks at roof top as well as storage racks at basement were found which are not adequately anchored or braced.

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: 12 Aug 2014

Standard: Alliance Standards Part 8 Section 8.18 Seismic Bracing of Key Non-Structural Elements and 2006 BNBC Part 6





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:	Standing water was found on the rooftop.
Source of Findings:	Visual Assessment: From the visual assessment of the structure, standing water was found on rooftops.
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:	12 Aug 2014
Standard:	Alliance Standard Part 8 Section 8.26 Durability and Maintenance



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:	There is no program that will ensure that the designated load in each floor will not be exceeded.
Source of Findings:	Document Review: Document review shows that there is no program that will ensure that the designated load in each floor will not be exceeded
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:	29 Jul 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:	There is no load plan available showing the actual maximum operational load that is allowable.
Source of Findings:	Document Review: Document review shows that there is no load plan available showing the actual maximum operational load that is allowable.



Suggested Plan of Action:	Have a qualified structural engineer to develop Floor Loading Plans as per the requirements of Part 8 Section 8.20.5.3.	
Suggested Deadline Date:	12 Aug 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:	There is no load plan available showing the actual maximum operational load that is allowable.	
Source of Findings:	Document Review: Document review shows that there is no load plan available showing the actual maximum operational load that is allowable., Visual Assessment: Visual assessment shows that there is no load plan available showing the actual maximum operational loading that is allowable.	
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:	12 Aug 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:	There is no load plan. Also, there is no marking on the floor to designate spaces and height for storage of work materials.	
Source of Findings:	Visual Assessment: Visual assessment shows that there is no load plan and no marking on the floor to designate spaces and height for storage of work materials.	
Suggested Plan of Action:	Provide appropriate markings at all areas used for storage to indicate the acceptable loading limits detailed in the Load Plan.	
Suggested Deadline Date:	12 Aug 2014	
Standard:	Alliance Standard Part 8 Section 8.11 Floor Load Markings	

Factory Name: **Rose Sweaters Ltd (Unit 2)**
Address: **Vogra, By-pass Bishaw Road, Joydebpur, Gazipur Joydebpur, Gazipur Dhaka Bangladesh**

Assessor: **Bureau Veritas**

Date: **04 May 2014**



ALLIANCE
FOR BANGLADESH WORKER SAFETY