INITIAL STRUCTURAL INTEGRITY ASSESSMENT REPORT (SIAR)

Factory Name: **Zon Ron Sweaters Ltd**

Address: **Nishchintapur, Ashulia DEPZ road, Zirabo, Savar Savar Dhaka Bangladesh**

Assessor: **BD Technologies**

Date: **28 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.

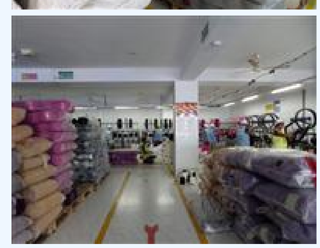
GENERAL INFORMATION

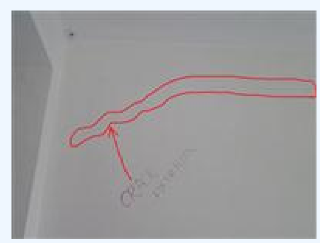
General Information	
Factory Name:	Zon Ron Sweaters Ltd
Address:	Nishchintapur, Ashulia DEPZ road, Zirabo, Savar Savar Dhaka Bangladesh
Country:	Bangladesh
Province:	Dhaka
City:	Savar
Zip Code:	
Audit Duration:	8 Hours
Re-Audit:	Re-Audit After 6 Months
Draft Report Date :	June 5, 2014
Final Report Date :	August 14, 2014
Are all Action Items From Previous Assessment Completed?:	N/A
Buildings in Complex :	1 Main Building
Number of Building Levels (Stories) :	6 (Ground + 5)
Approximate Building Area (SF) :	159,516 SF total
Date of Building Construction :	2002-2003
Date of Last Building Renovation/Addition :	2003-2014 (ongoing)
Is the Building mixed use?:	No
Ancillary Structures in Complex :	1 (boiler shed)
Number of Ancillary Levels (Stories) :	1 (Ground)
Approximate Ancillary	800 SF

Structures Area (SF) :	
Number of Occupants :	1,727 total
Exterior Facade Description :	Brick masonry infill between structural elements (beams, slabs and columns). Glass windows in aluminum frames.
Structural System Description :	Concrete slabs between beams, beams between columns, forming moment resisting frames. Foundation system consists of single spread footings and, in second extension portion of the building, partial combined footings.

ASSESSMENT FINDINGS

Structural System Design

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:	Several plastic water tanks (5000 liters each) were noted on the roof level. No evidence was available to indicate that the structural impact of these concentrated loads had been considered.	
Source of Findings:	Photograph: Rooftop water tanks.	
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:	30 Sep 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:	3	
Description:	The following areas were noted with a live load in excess of 2.0 kN/m2 (42 psf), but the design documents do not confirm that the required capacity exists: 1. Storage at Level 4 2. Finished goods at Level 1 3. Storage at Level 1	
Source of Findings:	Photograph: Storage loading.	
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:	30 Sep 2014	

Standard:	Alliance Standards Part 8 Section 8.15 Minimum Floor Design Loads	
Question:	Are Certificates of Occupancy available for review?	
Priority Level:	Low	
Non-Compliance Level:	3	
Description:	Certificates of Occupancy were 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:	30 Sep 2014	
Standard:	Alliance Standard Part 8 Section 8.3 Preliminary Structural Assessment	
Structural System Construction		
Question:	Is the structural system free of distress, settlement, shifting, or cracking in columns or walls?	 
Priority Level:	High	
Non-Compliance Level:	2	
Description:	Cracking of brick masonry walls was observed at Level 5. The extents of the cracks was contained within the brick masonry walls.	
Source of Findings:	Photograph: Brick wall cracking.	
Suggested Plan of Action:	Have a qualified structural engineer provide further testing and analysis of cracking in walls and provide a remediation plan to correct noted issues.	
Suggested Deadline Date:	30 Sep 2014	
Standard:	Alliance Standard Part 8 Section 8.3.3	

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:	3
Description:	The following construction safety issues were noted during the site visit: - No safety canopy was installed around the areas of ongoing construction. - Haphazard storage of construction materials. - Construction workers were not using proper personal protective equipment.
Source of Findings:	Photograph: Lack of safety canopy, construction materials storage.
Suggested Plan of Action:	The Construction Practices and Safety requirements of Section 9 of the Alliance Standard should be followed during all construction activities.
Suggested Deadline Date:	30 Sep 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:	2
Description:	The following areas requiring maintenance were observed: -Standing water at Levels 4 and 5 (roof) -Corrosion of exposed reinforcing bars at Level 5
Source of Findings:	Photograph: Standing water and corroded exposed reinforcing bars.
Suggested Plan of Action:	Under guidance from a qualified structural engineer, address all areas of needed maintenance by correcting the identified issues. For the exposed reinforcing bars, the exposed portions of the bars are not suitable for construction and should be removed.
Suggested Deadline Date:	30 Sep 2014
Standard:	Alliance Standard Part 8 Section 8.26 Durability and Maintenance



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 non-structural elements were noted to contain no seismic anchorage or bracing: -Storage racks at Level 1 -Rooftop water tanks
Source of Findings:	Photograph: Unanchored storage racks and rooftop water tanks.
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:	30 Sep 2014
Standard:	Alliance Standards Part 8 Section 8.18 Seismic Bracing of Key Non-Structural Elements and 2006 BNBC Part 6

Question:	Is the building free of active signs of water intrusion or ponding due to lack of performance of the façade system?
Priority Level:	Low
Non-Compliance Level:	1
Description:	At Level 5 in the region of the building that is currently under construction, signs of water intrusion were observed in the vicinity of windows as the exterior portion of the facade in these regions had not yet received a plaster finish and the windows were open to the atmosphere.
Source of Findings:	Photograph: Water intrusion at Level 5.
Suggested Plan of Action:	Repair the exterior façade system to prevent water intrusion.
Suggested Deadline Date:	30 Sep 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:	2
Description:	There is 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:	Visual Assessment: Visit on 28th May, 2014

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:	30 Sep 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:	Load Plans have not been prepared for each floor documenting the actual maximum operational loading that is intended and/or allowable on each floor.
Source of Findings:	Visual Assessment: Visit on 28th May, 2014
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:	30 Sep 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 posted as required.
Source of Findings:	Visual Assessment: Visit on 28th May, 2014
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:	30 Sep 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:	Areas used for storage of work materials and work products are not clearly marked to indicate the acceptable loading limits as described in the Load Plan for that floor.	
Source of Findings:	Visual Assessment: Visit on 28th May, 2014	
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:	30 Sep 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 no 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.	
Source of Findings:	Visual Assessment: Visit on 28th May, 2014	
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:	30 Sep 2014	
Standard:	Alliance Standards Part 8 Section 8.9 Factory Load Manager	