

INITIAL STRUCTURAL INTEGRITY ASSESSMENT REPORT (SIAR)

Factory Name: **R.S.B. INDUSTRIAL LIMITED**
Address: **Plot # 35, Sector # 4, CEPZ, Chittagong Chittagong
Chittagong Bangladesh**
Assessor: **EIMS**
Date: **29 Mar 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:	R.S.B. INDUSTRIAL LIMITED
Address:	Plot # 35, Sector # 4, 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 :	15 April 2014
Final Report Date :	12 May 2014
Are all Action Items From Previous Assessment Completed?:	N/A
Buildings in Complex :	One
Number of Building Levels (Stories) :	Four
Approximate Building Area (SF) :	17,285 sft per floor, Total building area 69,140 sft
Date of Building Construction :	First phase(two floor): 1997, Second phase(two floor): 2009
Date of Last Building Renovation/Addition :	No addition of floor beyond approval
Is the Building mixed use?:	No
Ancillary Structures in Complex :	No
Number of Ancillary Levels (Stories) :	Not applicable
Approximate Ancillary	Not applicable

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Structures Area (SF) :	
Number of Occupants :	1132
Exterior Facade Description :	10 inch brick masonry wall both side plastered without reinforcement in facade wall, 6 no. of window
Structural System Description :	RC beam-column structure (From ground to level 2) and level 3 is steel structures





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:	In third floor, four water tank (volume-9500 litre) was found on roof of prayer space. One water tank weighs around seven kips.
Source of Findings:	Visual Assessment: Photograph of water tank at prayer space slab
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:	19 Jun 2014
Standard:	Alliance Standard Part 8 Section 8.13 and 8.14
Question:	Are credible structural design documents available for review and kept on site?
Priority Level:	Medium
Non-Compliance Level:	2
Description:	For RCC portion the documents are credible. But, there is no drawing for steel structure.
Source of Findings:	Visual Assessment: Site visit on March 29, 2014
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:	19 Jun 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:	Supplied drawing of RCC portion did not indicate which code they followed. Besides, drawing of steel structure is unavailable.	
Source of Findings:	Document Review: Structural design & drawing of RCC portion	
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:	19 Jun 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:	1	
Description:	Portion of the building (3rd & 4th floor) built after 2006. But, nothing mentioned on structural drawing whether BNBC 2006 has been followed or not.	
Source of Findings:	Document Review: Structural drawing	
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:	19 Jun 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:	1	
Description:	Structural engineer did not mention whether BNBC has been followed or not regarding wind load and storm surge loading.	
Source of Findings:	Document Review: Structural drawing	
Suggested Plan of Action:	Engage a qualified structural engineer to confirm satisfactory structural performance of the buildings under wind loading.	
Suggested Deadline Date:	19 Jun 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:	Are Certificates of Occupancy available for review?	
Priority Level:	Low	
Non-Compliance Level:	2	
Description:	Certificates of occupancy is not in "Alliance pre-assessment communication" provided by Alliance to us.	
Source of Findings:	Document Review: Alliance pre-assessment communication	
Suggested Plan of Action:	Provide Certificates of Occupancy for review	
Suggested Deadline Date:	19 Jun 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:	2	
Description:	No sub soil investigation report has been received during inspection.	
Source of Findings:	Visual Assessment: Site visit on March 29, 2014	
Suggested Plan of Action:	Under guidance from a qualified structural engineer arrange geotechnical investigation at close vicinity of the structure and make the report available for review.	
Suggested Deadline Date:	19 Jun 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:	2
Description:	Cracks were found under prayer space slab and corresponding beam.
Source of Findings:	Visual Assessment: Photograph of cracks in beam and slab under prayer room
Suggested Plan of Action:	Engage a qualified structural engineer to provide additional investigation into the areas of distress, separations, or cracking and provide a remediation plan if required.
Suggested Deadline Date:	19 Jun 2014
Standard:	Alliance Standard Part 8 Section 8.3.3
Question:	Is the structural system free of distress, settlement, shifting, or cracking in columns or walls?
Priority Level:	High
Non-Compliance Level:	2
Description:	Crack was found in one column in ground floor and second floor.
Source of Findings:	Visual Assessment: Photograph of crack in column in second floor
Suggested Plan of Action:	Have a qualified structural engineer provide further testing and analysis of distress, settlement, shifting, or cracking in columns or walls and provide a remediation plan to correct noted issues.
Suggested Deadline Date:	19 Jun 2014
Standard:	Alliance Standard Part 8 Section 8.3.3
Question:	Are structural steel members free of corrosion, physical damage or other types of deterioration?
Priority Level:	Medium
Non-Compliance Level:	1
Description:	The structural steel members are free of corrosion, physical damage. However, some seismic bracing are missing at elevation and some cable bracing missing at roof
Source of Findings:	Visual Assessment: Site visit on March 29, 2014
Suggested Plan of Action:	Assign qualified structural engineer and incorporate missing cable/seismic bracing where required.





Suggested Deadline Date:	19 Jun 2014	
Standard:	Alliance Standard Part 8 Section 8.26	
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:	1	
Description:	Unbraced rack was found on ground floor	
Source of Findings:	Visual Assessment: Photograph of unbraced rack on ground floor	
Suggested Plan of Action:	Develop engineered plans to brace all non-structural elements to resist earthquake forces to comply with the BNBC and Alliance Standard. Install anchor and braces as shown on approved plans.	
Suggested Deadline Date:	19 Jun 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:	2	
Description:	There is no program to ensure maximum live load which will be safe for structure. However, during inspection it has been found that no floor is over loaded.	
Source of Findings:	Visual Assessment: Site visit on March 29, 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:	19 Jun 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 prepared for all floors of the building.
Source of Findings:	Visual Assessment: Site visit on March 29, 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:	19 Jun 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:	No floor load plan was posted on the floors of the building.
Source of Findings:	Visual Assessment: Site visit on March 29, 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.
Suggested Deadline Date:	19 Jun 2014
Standard:	Alliance Standard Part 8 Section 8.20.5.3
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:	No factory load manager was onsite full time. So, a factory load manager is required to check whether the loads exceed or not as per floor load plan.
Source of Findings:	Visual Assessment: Site visit on March 29, 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:	19 Jun 2014
Standard:	Alliance Standards Part 8 Section 8.9 Factory Load Manager

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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:	1	
Description:	Storage areas are required to be marked to indicate acceptable loading limits per the load plans.	
Source of Findings:	Visual Assessment: Site visit on March 29, 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:	19 Jun 2014	
Standard:	Alliance Standard Part 8 Section 8.11 Floor Load Markings	