

INITIAL STRUCTURAL INTEGRITY ASSESSMENT REPORT (SIAR)

Factory Name: **MAM APPAREL & TEXTILES LTD**

Address: **MAM Tower, 3233/B, Loharpool, Saraypara, Pahartali,
Chittagong Chittagong Chittagong Bangladesh**

Assessor: **Shaheedullah**

Date: **05 Apr 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:	MAM APPAREL & TEXTILES LTD
Address:	MAM Tower, 3233/B, Loharpool, Saraypara, Pahartali, Chittagong Chittagong Chittagong Bangladesh
Country:	Bangladesh
Province:	Chittagong
City:	Chittagong
Zip Code:	4202
Audit Duration:	1 Days 8 Hours
Re-Audit:	Re-Audit After 0 Months
Draft Report Date :	15 April 2014
Final Report Date :	19 June 2014
Are all Action Items From Previous Assessment Completed?:	N/A
Buildings in Complex :	One Building.
Number of Building Levels (Stories) :	2 storied.
Approximate Building Area (SF) :	28,000 sft
Date of Building Construction :	2003-2005
Date of Last Building Renovation/Addition :	2006
Is the Building mixed use?:	No
Ancillary Structures in Complex :	1. Child care and Dining. 2. Generator Room.
Number of Ancillary Levels (Stories) :	Child care and Dining: One storied sloped metallic roof, Generator Room: One storied sloped metallic roof.
Approximate Ancillary	Child care and Dining = 675 Sft. Generator Room = 225 Sft.

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ALLIANCE
FOR BANGLADESH WORKER SAFETY

Structures Area (SF) :	
Number of Occupants :	Worker = 270 persons Officials = 30 Persons.
Exterior Facade Description :	5 inch thick plastered masonry brick wall with 15% window opening enclosed by R.C. Beams and Columns.
Structural System Description :	Frame work of the building is composed of R.C. Columns, R.C. Beam supported Slab and R.C isolated footing.



ASSESSMENT FINDINGS

Structural System Design

Question:	If the structure has been previously expanded, was the structural impact on the entire structure analytically evaluated and confirmed by a qualified structural engineer.	
Priority Level:	Medium	
Non-Compliance Level:	3	
Description:	Vertically expanded by CI shed on Roof for production purpose	
Source of Findings:	Document Review: Seen all documents., Visual Assessment: Visual Inspection.	
Suggested Plan of Action:	A qualified structural engineer shall be engaged for analytical evaluation of the additional CI shed and its structural impact on the Building.	
Suggested Deadline Date:	15 Jul 2014	
Standard:	Reference Alliance Standards Part 8 Section 8.1 Applicability of Building Code.	
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 is no evidence of provision for application of concentrated load or heavy equipment load. The load of water tank concentrated on roof. This concentrated load is producing stresses greater than those caused by a uniform load of 2 kN/m2	
Source of Findings:	Visual Assessment: Visual Inspection.	
Suggested Plan of Action:	Water tanks shall be re-oriented near columns by providing additional load bearing framing. A qualified structural engineer shall be engaged for re-orientation of water tank.	
Suggested Deadline Date:	10 Jul 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:	1
Description:	Available structural documents are incomplete and don't meet the alliance standard. Undocumented rooftop construction has been noticed.
Source of Findings:	Document Review: Seen documents.
Suggested Plan of Action:	A qualified structural engineer shall be engaged to prepare credible as-built documents based on the requirements of Part 8 Section 8.19 of the Alliance Standard.
Suggested Deadline Date:	10 Jul 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:	1
Description:	Provided structural documents are incomplete and don't meet BNBC 2006 standard or other comparable international code.
Source of Findings:	Document Review: Seen all documents.
Suggested Plan of Action:	A qualified structural engineer shall be engaged 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:	10 Jul 2014
Standard:	Reference Alliance Standards Part 8 Section 8.2 Structural Integrity of Existing Factory Buildings
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:	Design parameter not mentioned in drawings.
Source of Findings:	Document Review: Seen all documents
Suggested Plan of Action:	A qualified structural engineer shall be engaged to confirm satisfactory structural performance of the buildings under wind loading.



Suggested Deadline Date:	10 Jul 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:	1	
Description:	No credible certificates of occupancy were available.	
Source of Findings:	Document Review: Seen all documents., Visual Assessment: Visual inspection.	
Suggested Plan of Action:	Certificates of occupancy shall be obtained from appropriate authority.	
Suggested Deadline Date:	10 Jul 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:	No Geotechnical Report has been noticed.	
Source of Findings:	Document Review: Seen all documents.	
Suggested Plan of Action:	A qualified soil investigation firm shall be engaged to arrange geotechnical investigation at close vicinity of the structure and make the report available for review.	
Suggested Deadline Date:	10 Jul 2014	
Standard:	Alliance Standard Part 8 Section 8.2 Structural Integrity of Existing Factory Buildings	
Structural System Construction		



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:	No anchoring and bracing are used in water tank to resist earthquake forces.	
Source of Findings:	Visual Assessment: Visual inspection	
Suggested Plan of Action:	Water tank shall be adequately anchored and braced to resist earthquake force as per BNBC and Alliance Standard.	
Suggested Deadline Date:	10 Jul 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 on rooftop has been noticed.	
Source of Findings:	Visual Assessment: Visual Inspection	
Suggested Plan of Action:	A qualified structural engineer shall be engaged to address all areas of needed maintenance by correcting the identified issues.	
Suggested Deadline Date:	10 Jul 2014	
Standard:	Alliance Standard Part 8 Section 8.26 Durability and Maintenance	
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:	10 Jul 2014	



Standard:	Reference Alliance Standards Part 7 Building Materials Section 7.2 Masonry-chip aggregate concrete (MCAC)	
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:	Roof slab constructed with MCAC is exposed to rainfall or any other sources of water.	
Source of Findings:	Visual Assessment: Visual inspection.	
Suggested Plan of Action:	Roof shall be protected from rainfall or any other source of water by providing water proof coarse over the slab.	
Suggested Deadline Date:	10 Jul 2014	
Standard:	Alliance Standards Part 7 Building Materials Section 7.2 Masonry-chip aggregate concrete (MCAC).	
Structural Safety Programs		
Question:	Are floor loads in compliance with posted plans?	
Priority Level:	Medium	
Non-Compliance Level:	2	
Description:	There are no load plans.	
Source of Findings:	Document Review: Seen all documents.	
Suggested Plan of Action:	After prepared floor load plan redistribute floor loads to comply with the Floor Loading Plans.	
Suggested Deadline Date:	10 Jul 2014	
Standard:	Alliance Standard Part 8 Section 8.10 Floor Loading Plans (Load Plans).	
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 program in place is found.	
Source of Findings:	Document Review: Seen all documents	



Suggested Plan of Action:	A program shall be developed 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 that it is enforced.	
Suggested Deadline Date:	10 Jul 2014	
Standard:	Alliance Standard Part 13 Section 13.7 and Part 8 Section 8.9.	
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:	3	
Description:	No floor load Manager found at site.	
Source of Findings:	Document Review: Seen all documents.	
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:	10 Jul 2014	
Standard:	Alliance Standards Part 8 Section 8.9 Factory Load Manager	
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: Seen all documents, Visual Assessment: Visual inspection	
Suggested Plan of Action:	A qualified structural engineer shall be engaged to develop Floor Loading Plans per the requirements of Part 8 Section 8.20.5.3	
Suggested Deadline Date:	10 Jul 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 have not been developed.	
Source of Findings:	Document Review: Seen all documents	
Suggested Plan of Action:	A qualified structural engineer shall be engaged to prepare load plans including the information required in Section 8.20 of the Alliance Standard.	
Suggested Deadline Date:	10 Jul 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 have not been marked indicating the acceptable loading limits.	
Source of Findings:	Visual Assessment: Visual inspection	
Suggested Plan of Action:	Areas used for storage of work materials and work products shall be clearly marked indicating acceptable loading limits.	
Suggested Deadline Date:	10 Jul 2014	
Standard:	Alliance Standard Part 8 Section 8.11 Floor Load Markings	