INITIAL STRUCTURAL INTEGRITY ASSESSMENT REPORT (SIAR)

Factory Name:	**Mars Sportswear Ltd.**
Address:	**Plot No. 15-16, Sector 1, North Patenga Karnaphuli Export Processing Zone (KEPZ) Chittagong Chittagong Bangladesh**
Assessor:	**EIMS**
Date:	**26 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:	Mars Sportswear Ltd.
Address:	Plot No. 15-16, Sector 1, North Patenga Karnaphuli Export Processing Zone (KEPZ) Chittagong Chittagong Bangladesh
Country:	Bangladesh
Province:	Chittagong
City:	Chittagong
Zip Code:	4204
Audit Duration:	2 Days
Re-Audit:	Re-Audit After 0 Months
Draft Report Date :	May 15, 2014
Final Report Date :	June 02, 2014
Are all Action Items From Previous Assessment Completed?:	N/A
Buildings in Complex :	01(One)
Number of Building Levels (Stories) :	02(Two)
Approximate Building Area (SF) :	73,180 sft (For current two stories)
Date of Building Construction :	March 2009 - December 2011
Date of Last Building Renovation/Addition :	No Renovation/ addition
Is the Building mixed use?:	No
Ancillary Structures in Complex :	None
Number of Ancillary Levels (Stories) :	N/A

Approximate Ancillary Structures Area (SF) :	N/A
Number of Occupants :	Total number of Employees 900 in Mars Sportswear Ltd.
Exterior Facade Description :	Wall sheeting with glass window was used at exterior facade. There is an extra roof at the entrance which will ensure safety during earthquake against the falling of glass window.
Structural System Description :	Reinforced concrete beam-column frame system with rib/strip concrete foundation system

ASSESSMENT FINDINGS

Structural System Design		
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:	There is no information about seismic or wind load design criteria in the available structural drawings.	
Source of Findings:	Document Review: Structural drawings	
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:	15 Jul 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:	Wind loading and storm surge loading as detailed in BNBC Part 6 Section 1.5.3 criteria are not shown on the design drawings.	
Source of Findings:	Document Review: Structural drawings	
Suggested Plan of Action:	Engage a qualified structural engineer to confirm satisfactory structural performance of the building under wind loading.	
Suggested Deadline Date:	15 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:	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:	1	
Description:	Several plastic water tanks were noted on the roof level at the slab mid-span during our inspection. We recommended relocating the water tanks adjacent to nearby columns within six weeks. Factory ownership has already implemented this corrective action for 2 of the rooftop water tanks. No other large concentrated loads were found during our inspection. A structural engineer should review the corrected water tank layout to ensure adequacy of the roof slab to support the concentrated loads.	
Source of Findings:	Uploaded Document: Photograph of relocated water tank at roof, Visual Assessment: Site visit on April 26, 2014	
Suggested Plan of Action:	Have an engineer review the corrected water tank layout and determine whether the roof slab has adequate capacity to support these water tank loads.	
Suggested Deadline Date:	15 Jul 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:	2	
Description:	No certificates of occupancy were available.	
Source of Findings:	Document Review: Alliance Pre Assessment Communication	
Suggested Plan of Action:	Provide Certificates of Occupancy for review.	
Suggested Deadline Date:	15 Jul 2014	
Standard:	Alliance Standard Part 8 Section 8.3 Preliminary Structural Assessment	
Structural System Construction		
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:	Standing water was noted at several locations on the roof level.
Source of Findings:	Visual Assessment: Photograph of standing water on rooftop.
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:	15 Jul 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:	Rooftop water tanks were not braced against seismic loads. Storage racks were found at the ground floor and were noted to be anchored to floor. However, these anchorages seemed like they might be inadequate. A structural engineer should check the adequacy of these storage rack anchorages.
Source of Findings:	Visual Assessment: Photograph of anchored rack at ground floor. Photograph of unbraced water tank.
Suggested Plan of Action:	Develop engineered plans to brace all non-structural elements (water tanks and storage racks) to resist earthquake forces to comply with the BNBC and Alliance Standard. Install anchorages and braces as shown on approved plans. Currently installed storage rack anchorages can remain if a structural engineer reviews them and confirms their adequacy to resist seismic loads.
Suggested Deadline Date:	15 Jul 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:	3
Description:	There was no program in place to ensure the live loads for which a floor or roof has been designed.
Source of Findings:	Visual Assessment: Visual Assessment: Site visit on April 26, 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:	15 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:	Load plans are not available.	
Source of Findings:	Visual Assessment: Site visit on April 26, 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:	15 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:	3	
Description:	No floor load plan was posted on the floors of the building.	
Source of Findings:	Visual Assessment: Site visit on April 26, 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 the building.	
Suggested Deadline Date:	15 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:	3	
Description:	Storage areas are required to be marked to indicate acceptable loading limits per the load plans. No such markings are currently in place.	

Source of Findings:	Visual Assessment: Site visit on April 26, 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:	15 Jul 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:	3	
Description:	No factory load manager was onsite full time.	
Source of Findings:	Worker Interviews: They told us verbally that they have no factory load manager, Visual Assessment: Site visit on April 26, 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:	15 Jul 2014	
Standard:	Alliance Standards Part 8 Section 8.9 Factory Load Manager	