INITIAL STRUCTURAL INTEGRITY ASSESSMENT REPORT (SIAR)

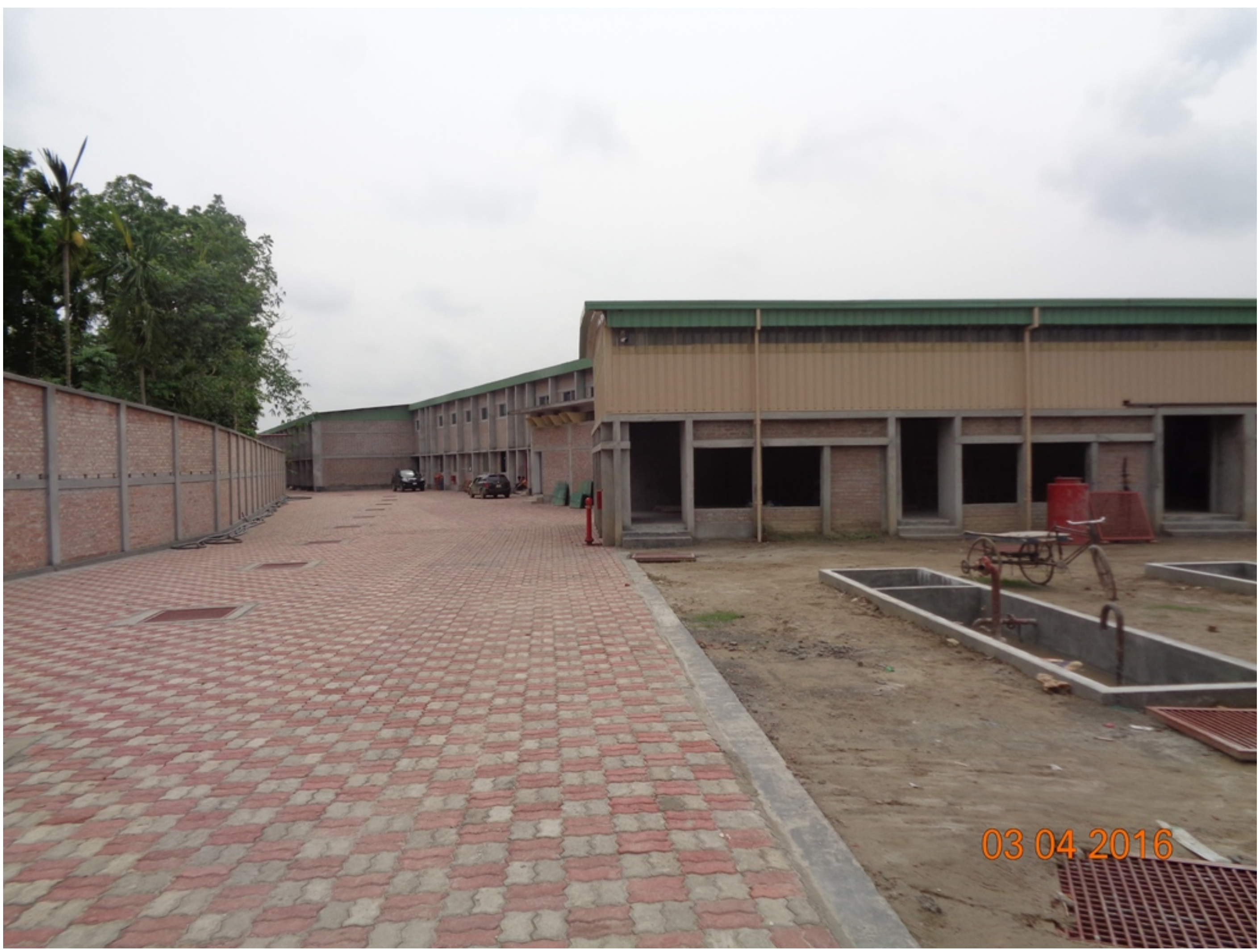
Factory Name:	**SAN Apparel Limited**
Address:	**Village Amtoil, PS- Sreepur, Dist. Magura, Jessore Magura, Jessore Khulna Bangladesh**
Assessor:	**Emkay Enterprises LTD**
Date:	**03 Apr 2016**

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

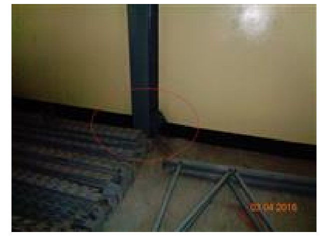
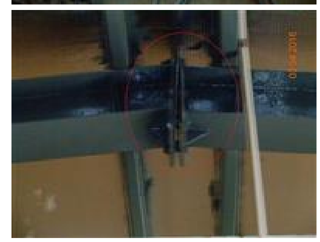
General Information	
Factory Name:	SAN Apparel Limited
Address:	Village Amtoil, PS- Sreepur, Dist. Magura, Jessore Magura, Jessore Khulna Bangladesh
Country:	Bangladesh
Province:	Khulna
City:	Magura, Jessore
Zip Code:	743263
Audit Duration:	1 Days 0 Hours
Re-Audit:	Re-Audit After 0 Months
Draft Report Date :	05th April 2016
Final Report Date :	11 April 2016
Are all Action Items From Previous Assessment Completed?:	N/A
Buildings in Complex :	08 (01 Main building and 07 Ancillary structures)
Number of Building Levels (Stories) :	Main Building: Single story pre-fabricated steel shed.
Approximate Building Area (SF) :	Total: 86,600 SF; Main building: 86,600 SF
Date of Building Construction :	Construction year of all buildings: 2015-16
Date of Last Building Renovation/Addition :	None
Is the Building mixed use?:	No
Ancillary Structures in Complex :	There are 07 ancillary structures.
Number of Ancillary Levels (Stories) :	Ancillary-1 (Compliance building): Single Story; Ancillary-2 (Fabric store): Two Story; Ancillary-3 (Finished goods & Canteen building): Two Story; Ancillary-4 (Generator building): Single Story; Ancillary-5 (Boiler building): Single Story; Ancillary-6 (Spare Machine Store): Single Story; Ancillary-7 (Fire Pump Room): Single Story.

Approximate Ancillary Structures Area (SF) :	Total: 120,208.00 SF; [Ancillary-1 (Compliance building): 42,230 SF; Ancillary-2 (Fabric store): G.F: 22,018 SF, 1st: 22,018 SF; Ancillary-3 (Finished goods & Canteen building): G.F: 11,696 SF, 1st: 11,696 SF; Ancillary-4 (Generator building): 4,480 SF; Ancillary-5 (Boiler building): 4,470 SF; Ancillary-6 (Spare Machine Store): 1,000 SF; Ancillary-7 (Fire Pump Room): 600 SF].
Number of Occupants :	Total Occupants: 398; [Main building: 384, Ancillary-1 (Compliance building): 02; Ancillary-2 (Fabric store): G.F: 02, 1st: Nil; Ancillary-3 (Finished goods & Canteen building): 02, 1st: Nil; Ancillary-4 (Generator building): 03; Ancillary-5 (Boiler building): 05; Ancillary-6 (Spare Machine Store): Nil; Ancillary-7 (Fire Pump Room): Nil] Number of Ancillary Levels (Stories): Ancillary-1 (Compliance building): Single Story; Ancillary-2 (Fabric store): Two Story; Ancillary-3 (Finished g
Exterior Facade Description :	All steel shed and buildings have brick masonry infill facade.
Structural System Description :	Main building: Single storey steel shed. Ancillary-1 (Compliance building): Single Storey steel shed; Ancillary-2 (Fabric store): Two Storey steel moment resisting frame with steel shed at roof; Ancillary-3 (Finished goods & Canteen building): Two Storey steel moment resisting frame with steel shed at roof; Ancillary-4 (Generator building): Single Storey steel shed; Ancillary-5 (Boiler building): Single Storey steel shade; Ancillary-6 (Spare Machine Store): Single Storey shed; Ancillary-7 (Fire Pump Room): Single Storey.
Issues were not found during the structural integrity assessment that required the Emergency Escalation Protocol (and referral to NTC Review Panel)?:	Yes

ASSESSMENT FINDINGS

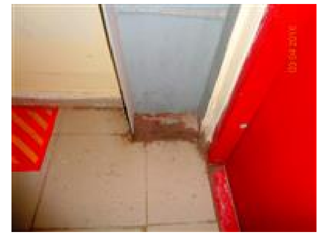
Structural System Design	
Question:	Are credible structural design documents available for review and kept on site?
Priority Level:	Medium
Non-Compliance Level:	2
Description:	Structural design document was available for review and kept on site but found to be partially incomplete for many sheds and buildings.
Source of Findings:	Document Review: Structural design document was available for review and kept on site but found to be partially incomplete for many sheds and buildings.
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:	31 May 2016
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:	No such kind of information found during document review.
Source of Findings:	Document Review: No such kind of information found during document review.
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:	31 May 2016
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:	No such kind of information found during document review.	
Source of Findings:	Document Review: No such kind of information found during document review.	
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:	31 May 2016	
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:	No such kind of information found during document review.	
Source of Findings:	Document Review: No such kind of information found during document review.	
Suggested Plan of Action:	Engage a qualified structural engineer to confirm satisfactory structural performance of the buildings under wind loading.	
Suggested Deadline Date:	31 May 2016	
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:	Is a clear and redundant load path to resist lateral loads provided?	  
Priority Level:	Medium	
Non-Compliance Level:	2	
Description:	No design calculation report was found during document review. Moreover steel bracing was found missing in finished goods building, fabric store building and main building. Connection gap was found at the crown point of compliance building. So, load path is not clear.	
Source of Findings:	Document Review: No design calculation report was found during document review., Photograph: Missing brace point pic-1 Missing brace point pic-2 Connection gap	
Suggested Plan of Action:	Have a qualified structural engineer complete further analysis of the structure and develop a remediation plan if required.	
Suggested Deadline Date:	31 May 2016	
Standard:	Alliance Standards Part 8 Section 8.17 Design for Lateral Loads and 8.3.3. 2006 BNBC Part 6 Section 1.5	
Question:	Are Certificates of Occupancy available for review?	
Priority Level:	Low	
Non-Compliance Level:	2	
Description:	Occupancy certificate for buildings was not available during this inspection.	
Source of Findings:	Document Review: Occupancy certificate for buildings was not available during this inspection.	
Suggested Plan of Action:	Provide Certificates of Occupancy for review.	
Suggested Deadline Date:	31 May 2016	
Standard:	Alliance Standard Part 8 Section 8.3 Preliminary Structural Assessment	

Structural System Construction

Question:	Are structural steel members free of corrosion, physical damage or other types of deterioration?
Priority Level:	Medium
Non-Compliance Level:	2
Description:	Corrosion found to be formed in some shades column bottom face during visual assessment.
Source of Findings:	Photograph: corrosion picture-1 corrosion picture-2, Visual Assessment: Corrosion found to be formed in some shades column bottom face during visual assessment.
Suggested Plan of Action:	Complete further testing on areas of deterioration and have a qualified structural engineer develop a remediation plan.
Suggested Deadline Date:	31 May 2016
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:	2
Description:	Steel racks was not found anchored during visual assessment.
Source of Findings:	Photograph: steel racks, Visual Assessment: Steel racks was not found anchored during visual assessment.
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:	31 May 2016
Standard:	Alliance Standards Part 8 Section 8.18 Seismic Bracing of Key Non-Structural Elements and 2006 BNBC Part 6

Question:	The exterior façade is free of cracking.
Priority Level:	Low
Non-Compliance Level:	2
Description:	Wall crack was found during visual inspection of fabric store building.
Source of Findings:	Photograph: wall crack
Suggested Plan of Action:	Have a qualified structural engineer provide further analysis of the identified cracks to determine the appropriate course of corrective action.

Suggested Deadline Date:	31 May 2016
Standard:	Alliance Standard Part 8 Section 8.2

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 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:	31 May 2016
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:	There is no load plan available showing the actual maximum operational loading that is allowable.
Source of Findings:	Document Review: There is no load plan available showing the actual maximum operational loading that is allowable.
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:	31 May 2016
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 plans were present.
Source of Findings:	Document Review: No floor load plans were present.
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:	31 May 2016
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:	Floor load plans were not present for review and there was no marking to indicate acceptable loading limits.
Source of Findings:	Document Review: Floor load plans were not present for review and there was no marking to indicate acceptable loading limits.
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:	31 May 2016
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 loading.
Source of Findings:	Document Review: No documentation of load manager.
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:	31 May 2016	
Standard:	Alliance Standards Part 8 Section 8.9 Factory Load Manager	