

INITIAL STRUCTURAL INTEGRITY ASSESSMENT REPORT (SIAR)

Factory Name: **Ducati Apparels**
Address: **Kathgora, Ashulia, Savar. Ashulia, Savar Dhaka
Bangladesh**
Assessor: **Bureau Veritas**
Date: **26 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.



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ALLIANCE
FOR BANGLADESH WORKER SAFETY

GENERAL INFORMATION

General Information

Factory Name:	Ducati Apparels
Address:	Kathgora, Ashulia, Savar. Ashulia, Savar Dhaka Bangladesh
Country:	Bangladesh
Province:	Dhaka
City:	Ashulia, Savar
Zip Code:	1341
Audit Duration:	1 Days
Re-Audit:	Re-Audit After 0 Months
Draft Report Date :	05-26-2014
Final Report Date :	10-14-2014
Are all Action Items From Previous Assessment Completed?:	N/A
Buildings in Complex :	There are 10 buildings in the factory premises out of which four are main production buildings and six are ancillary buildings. The buildings are named as: 1) Four story RCC production building, 2) Two Story Prefabricated Main Production Building, 3) Single Story Prefabricated Linking Shed, 4) Single Story Prefabricated Winding Shed, 5) Single Story Prefabricated Dinning Shed, 6) Single story RCC Generator Building, 7) Single Story Prefabricated Security Rest house and wastage shed, 8) Single story RCC Security Post, 9) Under construction Building-01, 10) Under construction Building-02.
Number of Building Levels (Stories) :	1) Two Story Prefabricated Main Production Building (Above grade: 2; below grade: 0), 2) Single Story Prefabricated Linking Shed (Above grade: 1; below grade: 0), 3) Single Story Prefabricated Winding Shed (Above grade: 1; below grade: 0), 4) Single Story Prefabricated Dinning Shed (Above grade: 1; below grade: 0), 5) Single story RCC Generator Building (Above grade: 1; below grade: 0), 6) Single Story Prefabricated Security Rest house and wastage shed (Above grade: 1; below grade: 0), 7) Single Story Prefabricated Security Rest house and wastage shed (Above grade: 1; below grade: 0), 8) Four story RCC production building (Above grade: 4; below grade: 0), 9) Under construction Building-01, 10) Under construction Building-02.
Approximate Building Area (SF) :	Total area of all buildings in the factory premises: 63200 sft. Building wise breakdown as follows: 1) Four story RCC production building: 20000 sft (Ground floor: 4000 sft, 1st floor: 4000 sft, 2nd floor: 4000 sft, 3rd floor: 4000 sft, Roof: 4000 sft), 2) Two Story Prefabricated Main Production Building: 25000 sft (Ground floor: 12500 sft, 1st floor: 12500 sft), and see the description.
Date of Building Construction :	1) Four story RCC production building: Construction work started in December-2011 and no record for finishing date. 2) Two Story Prefabricated Main Production Building: Construction work started in 2000 and finished in December-2013. No information of date of construction for rest of the buildings was found.



Date of Last Building Renovation/Addition :	No record for date of renovation or addition was found from factory personnel.
Is the Building mixed use?:	No
Ancillary Structures in Complex :	1) Single Story Prefabricated Dinning Shed, 2) Single story RCC Generator Building, 3) Single Story Prefabricated Security Rest house and wastage shed, 4) Single story RCC Security Post. 5) Under construction Building-01, 6) Under construction Building-02.
Number of Ancillary Levels (Stories) :	1) Single Story Prefabricated Dinning Shed: Stories above grade: 1, Stories below grade: 0, Occupied levels: 1, 2) Single story RCC Generator Building: Stories above grade: 1, Stories below grade: 0, Occupied levels: 1, 3) Single Story Prefabricated Security Rest house and wastage shed: Stories above grade: 1, Stories below grade: 0, Occupied levels: 1, 4) Single Story Prefabricated Security Rest house and wastage shed: Stories above grade: 1, Stories below grade: 0, Occupied levels: 1.
Approximate Ancillary Structures Area (SF) :	1) Single Story Prefabricated Dinning Shed: 3000 sft, 2) Single story RCC Generator Building: 1140 sft, 3) Single Story Prefabricated Security Rest house and wastage shed: 3800 sft, 4) Single story RCC Security Post: 160 sft.
Number of Occupants :	Total number of occupants: 839. 1) Two Story Prefabricated Main Production Building: 500 (Ground floor: 250, 1st floor: 250), 2) Single Story Prefabricated Linking Shed: 240, 3) Single Story Prefabricated Winding Shed: 55, 4) Single Story Prefabricated Dinning Shed: 15, 5) Single story RCC Generator Building: 3, 6) Single Story Prefabricated Security Rest house and wastage shed: 22, 7) Single story RCC Security Post: 4, 8) Four story RCC production building: Can not access during audit.
Exterior Facade Description :	For building-1: The building is steel frame structure with infilled masonry walls. Exterior face of the masonry wall is of plaster works. The windows are of sliding glass type. For building-2: The building is steel frame structure with infilled masonry walls. Exterior face of the masonry wall is of plaster and paint works. The windows are of sliding glass type.
Structural System Description :	For Building-1, four storied, spread footing foundation with moment resisting steel frames, concrete slab on metal deck atop of structural steel beams. For Building-2, two storied, spread footing foundation with moment resisting steel frame with truss roof.



ASSESSMENT FINDINGS

Structural System Design

Question:	Are Certificates of Occupancy available for review?	
Priority Level:	Low	
Non-Compliance Level:	1	
Description:	The factory has not obtained the Certificate of Occupancy from the authority.	
Source of Findings:	Document Review: Documentation reviewed.	
Suggested Plan of Action:	Apply for the issuance of a Certificate of Occupancy and expedite the matter.	
Suggested Deadline Date:	12 Aug 2014	
Standard:	Alliance Standard Part 8 Section 8.3 Preliminary Structural Assessment	
Question:	Structural Engineer of Record	
Priority Level:		
Non-Compliance Level:		
Description:	Mr.Md. Bashir Hussain is the Structural Engineer of Record whose IEB membership no F-8700. and signature is available on site.	
Source of Findings:	Document Review: Document Review reveals that the Structural Engineer on Record is Mr. Md. Bashir Hussain. Whose IEB no. is F-8700. and the signature is available on the record.	
Suggested Plan of Action:		
Suggested Deadline Date:		
Standard:	Provide the name and firm of the structural engineer of record.	
Question:	Architect of Record	
Priority Level:		
Non-Compliance Level:		
Description:	Mr. Md. Mahamudur Rahman is the Architect of Record whose IAB membership no A-00102. and signature is available on site.	
Source of Findings:	Document Review: Md. Mahamudur Rahman, B.Arch, IAB-009, Rajul Reg. No.	



	A-00102 for Building 1 and Building 2	
Suggested Plan of Action:		
Suggested Deadline Date:		
Standard:	Provide the name and firm of the architect of record.	
Question:	Are credible structural design documents available for review and kept on site?	
Priority Level:	Medium	
Non-Compliance Level:	1	
Description:	A set of structural documents is available on site for review. However, the design report is not available and is required as per BNBC 2006 clause 1.9.1.1.	
Source of Findings:	Document Review: Documentation reviewed.	
Suggested Plan of Action:	Have a qualified structural engineer prepare a design report based on the requirements of BNBC 2006 clause 1.9.1.1.	
Suggested Deadline Date:	12 Aug 2014	
Standard:	Alliance Standard Part 8 Section 8.19 Required Structural Documentation for New and Existing Factories	
Question:	Is a Geotechnical Report available for review and kept on site?	
Priority Level:	Low	
Non-Compliance Level:		
Description:	Geotechnical Report is available for review and kept on site.	
Source of Findings:	Document Review: Document review shows that Geotechnical Report is available for review and kept on site.	
Suggested Plan of Action:		
Suggested Deadline Date:		
Standard:	Alliance Standard Part 8 Section 8.2 Structural Integrity of Existing Factory Buildings	



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:	Building-1 was designed and constructed after 2006, but there is no indication that the design accommodates the requirement of BNBC 2006. Building-2 was designed and constructed before 2006. The design does not indicate considerations for seismic and wind loads.	
Source of Findings:	Document Review: Documentation reviewed.	
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:	12 Aug 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:	Building-1 was constructed after 2006. However, there is no indication that the building has been designed taking into consideration the seismic and wind loads. Building-2 was constructed before 2006.	
Source of Findings:	Document Review: Documentation reviewed.	
Suggested Plan of Action:	Have a qualified structural engineer document compliance with the seismic and wind requirements stated in the 2006 BNBC for building-1.	
Suggested Deadline Date:	12 Aug 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:	There is no clear information available on the design document to understand	



	the consideration of storm surge and wind loading in the design of the building.	
Source of Findings:	Document Review: Documentation reviewed.	
Suggested Plan of Action:	Engage a qualified structural engineer to confirm satisfactory structural performance of the buildings under wind loading.	
Suggested Deadline Date:	12 Aug 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:	Has evidence of structural integrity been provided using a Preliminary Structural Assessment?	
Priority Level:	High	
Non-Compliance Level:		
Description:	No preliminary structural assessment has been carried out in the factory to provide evidence of integrity of the building.	
Source of Findings:	Document Review: Document review shows that no preliminary structural assessment has been carried out in the factory to provide evidence of integrity of the building.	
Suggested Plan of Action:		
Suggested Deadline Date:		
Standard:	Reference Alliance Standards Part 8 Section 8.2 Structural Integrity of Existing Factory Buildings	
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:		
Description:	There is no evidence of previous expansion of the structure.	
Source of Findings:	Document Review: There is no evidence of previous expansion of the building beyond the original construction.	
Suggested Plan of Action:		
Suggested Deadline Date:		



Standard:	Reference Alliance Standards Part 8 Section 8.1 Applicability of Building Code.	
Question:	Structural System Type as defined by 2006 BNBC Part 6 Chapter 1 Table 6.1.2.	
Priority Level:		
Non-Compliance Level:		
Description:	There are 2 (two) main building in the complex, both are Moment resisting steel structure.	
Source of Findings:	Document Review: Document review indicates that There are 2 (two) main building in the complex, both are Moment resisting steel structure.	
Suggested Plan of Action:		
Suggested Deadline Date:		
Standard:	2006 BNBC Part 6 Chapter 1 Table 6.1.2	
Question:	What is the Structural Configuration?	
Priority Level:		
Non-Compliance Level:		
Description:	Both buildings are regular structure.	
Source of Findings:	Document Review: Both buildings are design as regular structure.	
Suggested Plan of Action:		
Suggested Deadline Date:		
Standard:	2006 BNBC Part 6 Chapter 1 Section 1.3.4	
Question:	Is a clear and redundant load path to resist lateral loads provided?	
Priority Level:	Medium	
Non-Compliance Level:		
Description:	The structural configuration is moment resisting regular structure and hence the lateral load path is apparent and there is redundancy due to presence of multiple frames in both directions.	
Source of Findings:	Document Review: Document review and visual inspection shows that the structural configuration is moment resisting regular structure and hence the lateral load path is apparent and there is redundancy due to presence of multiple frames in both directions. , Visual Assessment: Document review and	



	visual inspection shows that the structural configuration is moment resisting regular structure and hence the lateral load path is apparent and there is redundancy due to presence of multiple frames in both directions.	
Suggested Plan of Action:		
Suggested Deadline Date:		
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 the available FoS for the columns adequate based on Preliminary calculation?	
Priority Level:	High	
Non-Compliance Level:		
Description:	For building-01 FoS of columns noted as below: Central Column: 3.57 Corner Column: 3.27 Edge Column: 2.64 The FoS in all columns are within acceptable limit. For building-02 FoS of columns noted as below: Central Column: 4.36 Corner Column: 4.23 Edge Column: 3.34 The FoS in all columns are within acceptable limit.	
Source of Findings:	Uploaded Document: The uploaded FoS calculation shows that all the columns are satisfactory.	
Suggested Plan of Action:		
Suggested Deadline Date:		
Standard:	Provide results of preliminary calculations in space provided. a) column capacity; FoS > 1.86 - Safe b) column capacity; FoS 1.5 -1.86 - Needs Evaluation c) Column capacity; FoS 1.25-1.5 - Needs Evaluation d) Column capacity; FoS <1.25 - Unsafe In case of a critically low FoS (<1.25), consider Immediate Escalation Protocol	
Question:	Results of ferro-scanning for confirmation of steel rebar in the columns of the lowest tier were satisfactory.	
Priority Level:	Medium	
Non-Compliance Level:		
Description:	Both buildings are steel frame structure. Ferro scanning is not required.	
Source of Findings:		
Suggested Plan of Action:		
Suggested Deadline		



Date:		
Standard:	Alliance Standard Part 8 Section 8.3 Preliminary Structural Assessment	
Question:	What are the full dead and live loads of the floor slabs and decks?	
Priority Level:		
Non-Compliance Level:		
Description:	The measure slab thickness is 4". Therefore, dead load is $50+20(FF)=70$ psf. Estimated live load from visual inspection is 42 psf.	
Source of Findings:	Visual Assessment: Visual inspection supported document review shows that dead load is 70 psf and estimated live load is 42 psf.	
Suggested Plan of Action:		
Suggested Deadline Date:		
Standard:	Provide information regarding the dead and live loads of the floor slabs and decks.	
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:	In building-1, there are 4 water tanks, each having a capacity of 2 tons of water storage. There is no analytical information on the provision for these tanks in the design.	
Source of Findings:	Visual Assessment: Visually confirmed.	
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:	12 Aug 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/m ² (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:		
Description:	The estimated floor load does not exceed 42 psf.	
Source of Findings:	Visual Assessment: Visual inspection shows that approximate estimation of the floor load does not exceed 42 psf.	
Suggested Plan of Action:		
Suggested Deadline Date:		
Standard:	Alliance Standards Part 8 Section 8.15 Minimum Floor Design Loads	
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 has been observed on the rooftop of building-1.	
Source of Findings:	Visual Assessment: Visually confirmed.	
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:	12 Aug 2014	
Standard:	Alliance Standard Part 8 Section 8.26 Durability and Maintenance	
Question:	The exterior façade is free of cracking.	
Priority Level:	Low	
Non-Compliance Level:		
Description:	The exterior façade is free of cracking.	
Source of Findings:	Visual Assessment: Visual inspection shows that the exterior façade is free of cracking.	
Suggested Plan of Action:		
Suggested Deadline Date:		
Standard:	Alliance Standard Part 8 Section 8.2	



Question:	Are expansion joints provided at appropriate intervals on the exterior façade?
Priority Level:	Low
Non-Compliance Level:	
Description:	There is no expansion joint in the building.
Source of Findings:	Document Review: Document review reveals that there is no expansion joint in the building., Visual Assessment: Visual inspection shows that there is no expansion joint in the building.
Suggested Plan of Action:	
Suggested Deadline Date:	
Standard:	Alliance Standard Part 8 Section 8.2 Structural Integrity of Existing Factory Buildings
Question:	Is expansion joint material free from cracking and other forms of deterioration?
Priority Level:	Low
Non-Compliance Level:	
Description:	There is no expansion joint in the building.
Source of Findings:	Visual Assessment: Visual inspection supported by document review shows that there is no expansion joint in the building.
Suggested Plan of Action:	
Suggested Deadline Date:	
Standard:	Alliance Standard Part 8 Section 8.26 Durability and Maintenance
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:	2
Description:	Dampness has been found on the 1st floor of building-02 due to the lack of performance of the façade system.
Source of Findings:	Visual Assessment: Visually confirmed.
Suggested Plan of Action:	Repair the exterior façade system to prevent water intrusion.
Suggested Deadline	12 Aug 2014





Date:		
Standard:	Alliance Standard Part 8 Section 8.26 Durability and Maintenance	
Question:	Are the performance of key structural elements such as columns, slender columns, flat plates and transfer structures satisfactory?	
Priority Level:	High	
Non-Compliance Level:		
Description:	The performance of the key structural elements are satisfactory.	
Source of Findings:	Visual Assessment: Visual inspections shows that the performance of the key structural elements are satisfactory.	
Suggested Plan of Action:		
Suggested Deadline Date:		
Standard:	Alliance Standard Part 8 Section 8.3.3	
Question:	Is the structural system free of settlement cracking, excessive perimeter separations, and unlevel floors attributable to foundation settlements?	
Priority Level:	High	
Non-Compliance Level:		
Description:	The structural system is free of settlement, cracking, excessive perimeter separation etc. which shows no noticeable settlement has occurred.	
Source of Findings:	Visual Assessment: Visual observation shows that The structural system is free of settlement, cracking, excessive perimeter separation etc. which shows no noticeable settlement has occurred.	
Suggested Plan of Action:		
Suggested Deadline Date:		
Standard:	Reference Alliance Standards Part 8 Structural Design Section 8.2 Structural Integrity of Existing Factory Buildings	
Question:	Is the structural system free of deflections (sagging), rotations (twisting), perceivable vibrations, or other noticeable movements of the structure?	
Priority Level:	High	
Non-Compliance Level:		
Description:	The structural system is free of deflections (sagging), rotations (twisting), perceivable vibrations, or other noticeable movements of the structure.	



Source of Findings:	Visual Assessment: Visual observation shows that the structural system is free of deflections (sagging), rotations (twisting), perceivable vibrations, or other noticeable movements of the structure.	
Suggested Plan of Action:		
Suggested Deadline Date:		
Standard:	Reference Alliance Standards Part 8 Structural Design Section 8.2 Structural Integrity of Existing Factory Buildings	
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:		
Description:	There is no visible sign of distress or crack that may indicate lack of performance or over-stress of the lateral load-carrying system.	
Source of Findings:	Visual Assessment: Visual inspection shows that There is no visible sign of distress or crack that may indicate lack of performance or over-stress of the lateral load-carrying system.	
Suggested Plan of Action:		
Suggested Deadline Date:		
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:		
Description:	The structural system is free of distress, settlement, shifting, or cracking in columns or walls.	
Source of Findings:	Visual Assessment: Visual Inspection Shows that the structural system is free of distress, settlement, shifting, or cracking in columns or walls.	
Suggested Plan of Action:		
Suggested Deadline Date:		
Standard:	Alliance Standard Part 8 Section 8.3.3	



Question:	Have any previous repairs to correct structural deficiencies or to reinforce the existing structure been completed?
Priority Level:	
Non-Compliance Level:	
Description:	No strengthening or retrofitting has been done on the structural members of the building.
Source of Findings:	Visual Assessment: Visual inspection supported by document review shows that no strengthening or retrofitting has been done on the structural members of the building.
Suggested Plan of Action:	
Suggested Deadline Date:	
Standard:	
Question:	Was masonry-chip aggregate concrete (MCAC) used in the construction of the building?
Priority Level:	
Non-Compliance Level:	
Description:	Masonry-chip aggregate concrete (MCAC) was used in the construction of the floors.
Source of Findings:	Visual Assessment: Visual inspection shows that masonry-chip aggregate concrete (MCAC) was used in the construction of the floors.
Suggested Plan of Action:	
Suggested Deadline Date:	
Standard:	Reference Alliance Standards Part 7 Building Materials Section 7.2 Masonry-chip aggregate concrete (MCAC)
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:	
Description:	The buildings are of structural steel members, therefore, in-situ testing, destructive testing is not required.
Source of Findings:	



Suggested Plan of Action:		
Suggested Deadline Date:		
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:	For building-1, the roof (but none of the building) is made of MCAC aggregate; protective sealing is available.	
Source of Findings:	Visual Assessment: Visual inspection shows that the roof but no of the building is of MCAC aggregate protective sealing is available.	
Suggested Plan of Action:	Provide a protective coating on the structural elements constructed with MCAC exposed to rainfall or other sources of water. Have the protective coating approved by the Alliance or a qualified structural engineer, or provide a 2% slope on the exposed surface to prevent the accumulation of water.	
Suggested Deadline Date:	12 Aug 2014	
Standard:	Alliance Standards Part 7 Building Materials Section 7.2 Masonry-chip aggregate concrete (MCAC).	
Question:	Are structural steel members free of corrosion, physical damage or other types of deterioration?	
Priority Level:	Medium	
Non-Compliance Level:	1	
Description:	Corrosion has been observed in a steel column of 1st floor of building-02.	
Source of Findings:	Visual Assessment: Visually confirmed.	
Suggested Plan of Action:	Complete further testing on areas of deterioration in order to understand the level of corrosion and weakening of the member, and have a qualified structural engineer develop a remediation plan.	
Suggested Deadline Date:	12 Aug 2014	
Standard:	Alliance Standard Part 8 Section 8.26	
Question:	For post-tensioned reinforced concrete systems or elements, cored holes have not compromised the post-tensioned strands.	



Priority Level:	High	
Non-Compliance Level:		
Description:	There is no post-tensioned reinforced concrete systems or elements, cored holes in the structure.	
Source of Findings:	Document Review: Document review shows that there is no post-tensioned reinforced concrete systems or elements, cored holes in the structure., Visual Assessment: Visual inspection shows that there is no post-tensioned reinforced concrete systems or elements, cored holes in the structure.	
Suggested Plan of Action:		
Suggested Deadline Date:		
Standard:	Not Applicable	
Question:	Is the structure free from any major/progressive distress?	
Priority Level:	High	
Non-Compliance Level:		
Description:	There is no sign of progressive distress visible in the both structures.	
Source of Findings:	Visual Assessment: Visual inspection shows that the both structures are free from major distress.	
Suggested Plan of Action:		
Suggested Deadline Date:		
Standard:	Alliance Standards Part 8 Section 8.3.3	
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:	For building-02, there are 4 plastic water tanks of considerable height, which are not braced or anchored properly.	
Source of Findings:	Visual Assessment: Visually confirmed.	
Suggested Plan of Action:	Adequately anchor and brace all non-structural elements to resist earthquake forces to comply with the BNBC and the Alliance Standard.	
Suggested Deadline	12 Aug 2014	



Date:		
Standard:	Alliance Standards Part 8 Section 8.18 Seismic Bracing of Key Non-Structural Elements and 2006 BNBC Part 6	
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:		
Description:	The building is not currently being renovated or expanded.	
Source of Findings:	Visual Assessment: The building is not currently being renovated or expanded.	
Suggested Plan of Action:		
Suggested Deadline Date:		
Standard:	Alliance Standard Part 9 Construction Practices and Safety.	
Structural Safety Programs		
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:	There is no load plan available showing the actual maximum operational loading that is allowable.	
Source of Findings:	Document Review: Documentation reviewed.	
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:	12 Aug 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:	Floor Load Plans are not posted as required.	
Source of Findings:	Visual Assessment: Visually confirmed.	



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:	12 Aug 2014	
Standard:	Alliance Standard Part 8 Section 8.20.5.3	
Question:	Are floor loads in compliance with posted plans?	
Priority Level:	Medium	
Non-Compliance Level:		
Description:	The load plan is not available on the floor to ensure compliance with the existing floor loading.	
Source of Findings:	Visual Assessment: Visually confirmed.	
Suggested Plan of Action:		
Suggested Deadline Date:		
Standard:	Alliance Standard Part 8 Section 8.10 Floor Loading Plans (Load Plans).	
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:	There is no load plan. Also, there are no markings on the floor to designate spaces and height for the storage of work materials.	
Source of Findings:	Visual Assessment: Visually confirmed.	
Suggested Plan of Action:	Have a qualified structural engineer prepare a load plan for each floor and have the floors marked for designating storage areas as per the developed load plan.	
Suggested Deadline Date:	12 Aug 2014	
Standard:	Alliance Standard Part 8 Section 8.11 Floor Load Markings	
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 is no program that will ensure that the designated load on each floor will not be exceeded.	
Source of Findings:	Document Review: Documentation reviewed.	
Suggested Plan of Action:	Develop a program to ensure that all live loads for which a floor or roof has been designed will not be exceeded. The designated Load Manager shall oversee this program and ensure it is enforced.	
Suggested Deadline Date:	12 Aug 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:	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:	Document Review: Documentation reviewed.	
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, is located onsite full time at the factory and 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 for ensuring 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:	12 Aug 2014	
Standard:	Alliance Standards Part 8 Section 8.9 Factory Load Manager	
Question:	For post-tensioned reinforced concrete systems or elements, is a program in place to ensure post-tensioned strands are located before core drilling begins?	
Priority Level:	Medium	
Non-Compliance Level:		
Description:	No post-tensioned reinforced concrete systems or elements has been used in the structures.	
Source of Findings:	Document Review: Document review shows that there is no post-tensioned reinforced concrete systems or elements has been used in the structures., Visual Assessment: Visual inspection shows that there is no post-tensioned reinforced concrete systems or elements has been used in the structures.	

Factory Name: **Ducati Apparels**

Address: **Kathgora, Ashulia, Savar. Ashulia, Savar Dhaka Bangladesh**

Assessor: **Bureau Veritas**

Date: **26 May 2014**



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FOR BANGLADESH WORKER SAFETY

Suggested Plan of Action:		
Suggested Deadline Date:		
Standard:	Alliance Standard Part 8 Section 8.26 Durability and Maintenance	