

INITIAL STRUCTURAL INTEGRITY ASSESSMENT REPORT (SIAR)

Factory Name: **Tivoli Apparels Ltd**

Address: **Plot no. A102, BSCIC Industrial Estate, Tongi, Gazipur
Tongi, Gazipur Dhaka Bangladesh**

Assessor: **Emkay Enterprises LTD**

Date: **12 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:	Tivoli Apparels Ltd
Address:	Plot no. A102, BSCIC Industrial Estate, Tongi, Gazipur Tongi, Gazipur Dhaka Bangladesh
Country:	Bangladesh
Province:	Dhaka
City:	Tongi, Gazipur
Zip Code:	1710
Audit Duration:	1 Days
Re-Audit:	Re-Audit After 0 Months
Draft Report Date :	04/04/2014
Final Report Date :	5/13/2014
Are all Action Items From Previous Assessment Completed?:	N/A
Buildings in Complex :	1 building
Number of Building Levels (Stories) :	6 storied building and a partial basement
Approximate Building Area (SF) :	Total floor are 153,676sft
Date of Building Construction :	A portion of the building had been completed upto 6th floor (5500 sft per floor)in 2007-2009 and the remaining (2000-5500sft per floor)constructed later in 2009-2013.
Date of Last Building Renovation/Addition :	4th and 5th floor finishing works are on-going
Is the Building mixed use?:	No
Ancillary Structures in Complex :	N/A
Number of Ancillary Levels (Stories) :	N/A
Approximate Ancillary	N/A

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Structures Area (SF) :	
Number of Occupants :	Total 1,130
Exterior Facade Description :	Masonry wall. Portion of side wall and back wall has been plastered,rest of the area exposed brick wall
Structural System Description :	RC Beam-Column frame structure Spread Footing



ASSESSMENT FINDINGS

Structural System Design

Question:	Are Certificates of Occupancy available for review?	
Priority Level:	Low	
Non-Compliance Level:		
Description:	Factory is situated in Industrial Area (Tongi, BSCIC) and approval found as Industrial building.	
Source of Findings:	Document Review: Approval found from (BSCIC- Bangladesh Small and Cottage Industries Corporation) as Industrial Building	
Suggested Plan of Action:		
Suggested Deadline Date:		
Standard:	Alliance Standard Part 8 Section 8.3 Preliminary Structural Assessment	
Question:	Structural Engineer of Record	
Priority Level:		
Non-Compliance Level:		
Description:	Engr. Golam Sarwer, MIEB - 12057, Organization: ESI	
Source of Findings:	Document Review: From Structural Drawings the signature and details of Design Engineer was found.	
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:	Mamnoon Murshed Chowdhury, MIAB- C031 Organization: KNMR Ltd.	
Source of Findings:	Document Review: From Architectural and Approval Drawings the details of Architect has been found.	



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:		
Description:	Credible sets of structural documents found to satisfactory level	
Source of Findings:	Document Review: Working drawing of the structure was found in the factory.	
Suggested Plan of Action:		
Suggested Deadline Date:		
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:	Report available and kept on site. The recommendation provided by the report states to place foundation of the proposed structure of factory building at 6ft depth. The allowable bearing capacity in 5' depth found to be 0.96 Tsf with Factory of Safety 3.	
Source of Findings:	Document Review: Report found	
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:		
Description:	A certificate has been provided by Design Engineer declaring that BNBC has been followed and wind load and earthquake load has been considered during design.	
Source of Findings:	Document Review: A certificate has been provided by design engineer.	
Suggested Plan of Action:		
Suggested Deadline Date:		
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:		
Description:	The Design Engineer has declared wind load and earthquake load calculation to be according to BNBC.	
Source of Findings:	Document Review: Certificate by Design Engineer, Uploaded Document: Certificate by Design Engineer	
Suggested Plan of Action:		
Suggested Deadline Date:		
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:		
Description:	The design engineer certified that he has considered wind loading as per BNBC	
Source of Findings:	Document Review: Certificate of design engineer	
Suggested Plan of Action:		
Suggested Deadline		





Date:		
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 previous assessment has been done.	
Source of Findings:		
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:		
Source of Findings:		
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:		



Source of Findings:		
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:		
Source of Findings:		
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:	Clear and redundant load path to resist lateral loads provided in the design	
Source of Findings:		
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:	Factor of Safety of Central Column 1.93; Corner Column 2.74; Edge column 1.93 for 42 psf live load.	



Source of Findings:	Uploaded Document: Stress Calculation of Column	
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:	Exposed rebar on the roof was found and the rebar were found as per the design drawing.	
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:	Dead load - 112.5 psf Live load - 65 psf in fabric store and packaging material store area and below 42 psf in production area	
Source of Findings:		
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:	2
Description:	The structural capacity of the factory to safely support the equipment shall be confirmed and documented by a qualified structural engineer. In the eastern part of the building in the first floor the storey height found double and there are two mezzanine floor structure which is not shown in the design drawings. Also some heavy equipment were found in that area.
Source of Findings:	Photograph: Mezzanine structure in the first floor. Double height structure sketch.
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:	16 Jun 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:	1
Description:	Alliance Standard Part 8 Section 8.15 Minimum Floor Design Loads Note: Loading in Fabric Store has been found 70 psf. Load capacity of each level has not been mentioned in the design documents. It seems from design drawings that that floor live load capacity is adequate for industrial use and this type of loading condition.
Source of Findings:	Document Review: Design Drawings
Suggested Plan of Action:	Have a qualified structural engineer confirm that capacity to support the load is available. Load plants complying with Alliance Standard Part 8 Section 8.20.4.3 should also be developed
Suggested Deadline Date:	16 Jun 2014
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:	1
Description:	Alliance Standard Part 8 Section 8.26 Durability and Maintenance
Source of Findings:	Photograph: Standing water found in the roof surface. Corrosion in exposed rebar on the roof.
Suggested Plan of Action:	Under the guidance from a qualified structural engineer, address all areas of needed maintenance by correcting the identified issues.
Suggested Deadline Date:	16 Jun 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:	No significant crack was observed in the exterior facade.
Source of Findings:	
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:	No expansion joints provided.
Source of Findings:	
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:	Expansion joints not provided.	
Source of Findings:		
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:		
Description:	Water intrusion due to lack of performance of facade system not observed.	
Source of Findings:		
Suggested Plan of Action:		
Suggested Deadline 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:	Slender column found in Grid A-C where the columns are double height. No observable distress was found.	
Source of Findings:		
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:	Structural system found free of settlement or excessive perimeter separations	
Source of Findings:		
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:	No observable sagging, twisting or other noticeable movement found.	
Source of Findings:		
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:	No observable distress due to lateral load-carrying system found.	
Source of Findings:		
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:	1	
Description:	Some inter-facial cracks were found in wall beam connection at level 3 and 4	
Source of Findings:	Photograph: Picture of wall crack	
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 previous repairs to correct structural deficiencies found.	
Source of Findings:		
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:	Stone Chips used	
Source of Findings:	Photograph: Stone chips has been used	
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 structural steel members free of corrosion, physical damage or other types of deterioration?	
Priority Level:	Medium	
Non-Compliance Level:		
Description:	Not applicable. Building is RCC structure.	
Source of Findings:		
Suggested Plan of Action:		
Suggested Deadline Date:		
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:		
Source of Findings:		
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:	No major/progressive distress in the structure was observed	
Source of Findings:		
Suggested Plan of		



Action:		
Suggested Deadline Date:		
Standard:	Alliance Standards Part 8 Section 8.3.3	
Question:	For post-tensioned reinforced concrete systems or elements, is there any evidence of water penetration or corrosion at anchorages of post-tensioned strands.	
Priority Level:	Medium	
Non-Compliance Level:		
Description:	Not applicable.	
Source of Findings:		
Suggested Plan of Action:		
Suggested Deadline Date:		
Standard:		
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:	Alliance Standard Par 8 Section 8.18 Seismic Bracing of Key Non-structural Elements and 2006 BNBC Part 6 The suspended steam pipes were not adequately braced to resist earthquake forces. The storage racks in the accessory store area are not anchored with the floor and lateral bracing was not found.	
Source of Findings:	Photograph: Suspended steam pipes. Store racks in accessory store.	
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:	16 Jun 2014	
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:	Alliance Standard Part 9 Construction Practices and Safety Currently finishing works of 4th and 5th floor is going on. Safety practice is being followed	
Source of Findings:		
Suggested Plan of Action:		
Suggested Deadline Date:		
Standard:	Alliance Standard Part 9 Construction Practices and Safety.	
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:	Not applicable as construction has been done by Stone Chips.	
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)	
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:	2	
Description:	Reference Alliance Standard Part 8 Structural Design Section 8.10 Floor Loading Plans (Load Plans) Load plan for each floor has not been prepared.	
Source of Findings:	Document Review: No documents found regarding the live load capacity of each floor and no load plan has been prepared by the factory	
Suggested Plan of Action:	Have a qualified structural engineer develop Floor Loading Plans as per the requirements of Part 8 Section 8.20.5.3	
Suggested Deadline Date:	16 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:	Reference Alliance Standard Part 8 Section 8.20.5.3 Floor load plan was not prepared and posted	
Source of Findings:	Document Review: No floor load plans were found.	
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:	16 Jun 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:	2	
Description:	Reference Alliance Standard Part 8 Structural Design Section 8.10 Floor Loading Plans (Load Plans) No load plan available	
Source of Findings:	Document Review: Floor load plan not found	
Suggested Plan of Action:	Prepare Load plans and Redistribute floor loads to comply with the floor loading plans	
Suggested Deadline Date:	16 Jun 2014	
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:	2	
Description:	Reference Alliance Standard Part 8 Structural Design Section 8.11 Floor Load Markings Load plan has not been prepared and storage areas are not marked for acceptable live load capacity	
Source of Findings:	Document Review: No floor load markings were found in the factory	
Suggested Plan of	Prepare a floor load plan and provide signage or appropriate markings at all	



Action:	areas used for storage to indicate the acceptable loading limits detailed in the load plan	
Suggested Deadline Date:	16 Jun 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:	2	
Description:	Reference 2006 BNBC Part 6 Chapter 1 Section 1.4.6 and Alliance Standard Part 13 Section 13.7 and Part 8 Section 8.9 No program in place to ensure that the live loads in each floor will not be exceeded over the designed live load.	
Source of Findings:	Visual Assessment: During Visual Assessment	
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:	16 Jun 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:	2	
Description:	Alliance Standard Part 8 Section 8.9 Factory Load Manager No personnel found for monitoring the factory floor loadings	
Source of Findings:	Visual Assessment: During Visual Assessment	
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 on-site full time at the factory, is trained in calculating the operational load characteristics of the specific factory. The factory load manager shall serve as an on-going 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:	16 Jun 2014	
Standard:	Alliance Standards Part 8 Section 8.9 Factory Load Manager	

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Date: **12 Mar 2014**



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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:	Not applicable	
Source of Findings:		
Suggested Plan of Action:		
Suggested Deadline Date:		
Standard:	Alliance Standard Part 8 Section 8.26 Durability and Maintenance	