

# INITIAL STRUCTURAL INTEGRITY ASSESSMENT REPORT (SIAR)

Factory Name: **MITALI FASHIONS LTD**

Address: **Hatimara Road, Barendra, Kashimpur, Gazipur,  
Gazipur Dhaka Bangladesh**

Assessor: **Bureau Veritas**

Date: **11 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](http://www.bangladeshworkersafety.org).





## GENERAL INFORMATION

| General Information                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
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| Factory Name:                                             | MITALI FASHIONS LTD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Address:                                                  | Hatimara Road, Barendra, Kashimpur, Gazipur, Gazipur Dhaka Bangladesh                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Country:                                                  | Bangladesh                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Province:                                                 | Dhaka                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| City:                                                     | Gazipur                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Zip Code:                                                 | 1346                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Audit Duration:                                           | 1 Days                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Re-Audit:                                                 | Re-Audit After 0 Months                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Draft Report Date :                                       | 05-17-2014                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Final Report Date :                                       | 10-26-2014                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Are all Action Items From Previous Assessment Completed?: | N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Buildings in Complex :                                    | There are four production buildings and one ancillary building in the factory premises: 1) Six storey RCC building, 2) Four storey RCC building (proposed ten storey), 3) Six storey RCC utility building, 4) Four storey RCC ETP building, 5) Single storey prefab shade.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Number of Building Levels (Stories) :                     | 1) Six story RCC building: Stories above grade: 6, Stories below grade: 0, Occupied levels: 6, 2) Four storey RCC building: Stories above grade: 4, Stories below grade: 0, Occupied levels: 4, 3) Six storey RCC Utility building: Stories above grade: 6, Stories below grade: 0, Occupied levels: 6, 4) Four storey RCC ETP building: Stories above grade: 4, Stories below grade: 0, Occupied levels: 4, 5) Single storey Prefab shade building: Stories above grade: 1 (With one Mezzanine Floor), Stories below grade: 0, Occupied levels: 1.                                                                                                                                                                                                                                                                                                                                     |
| Approximate Building Area (SF) :                          | Total area of the buildings in the factory premises: 220705.00 sft. (Including roof square footage). Area of each floor is as follows: 1) Six storey RCC building: 122025.00 sft (Ground floor: 22405 sft, 1st floor: 20405 sft, 2nd floor: 20405 sft, 3rd floor: 20405 sft, 4th floor: 20405 sft, 5th floor: 9000 sft Roof: 9000 sft), 2) Four storey RCC building: 60521.00 sft (Ground floor: 11423 sft, 1st floor: 11793 sft, 2nd floor: 12145 sft, 3rd floor: 12580 sft, Roof: 12580 sft), 3) Six storey RCC Utility building: 24500.00 sft (Ground floor: 3500 sft, 1st floor: 3500 sft, 2nd floor: 3500 sft, 3rd floor: 3500 sft, 4th floor: 3500 sft, 5th floor: 3500 sft, Roof: 3500 sft), 4) Four storey RCC ETP building: Total area: 2280 sft (Ground floor: 570 sft, 1st floor: 570 sft, 2nd floor: 570 sft, 3rd floor: 570 sft), 5) Single storey Prefab shed: 11379 sft. |
| Date of Building Construction :                           | Factory personnel informed the date of construction as follows: 1) Six storey RCC building: started in 2003 and finished in 2010, 2) Four storey RCC building (proposed ten storey): started in 2012 and finished in 2013 (Up to 3 floors), 3) Six storey RCC utility building: started in 2005 and finished in 2007, 4) Single storey prefab shed: finished in 2007.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |



|                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Date of Last Building Renovation/Addition :  | No record of the date of the last building renovation/addition was provided by the factory personnel.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Is the Building mixed use?:                  | No                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Ancillary Structures in Complex :            | 1) Four storey RCC ETP building.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Number of Ancillary Levels (Stories) :       | 1) Four storey RCC ETP building: Floors above grade: 4, floors below grade: 0, Occupied levels: 4.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Approximate Ancillary Structures Area (SF) : | 1) Four storey RCC ETP building: Total area: 2280 sft (Ground floor: 570 sft, 1st floor: 570 sft, 2nd floor: 570 sft, 3rd floor: 570 sft).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Number of Occupants :                        | Total number of occupants: 1837. 1) Six storey RCC building: 1446 (Ground floor: 76, 1st floor: 320, 2nd floor: 280, 3rd floor: 355, 4th floor: 330, 5th floor: 85), 2) Four storey RCC building: 86 (Ground floor: 39, 1st floor: 0, 2nd floor: 47, 3rd floor: 0), 3) Six storey RCC Utility building: 145 (Ground floor: 2, 1st floor: 1, 2nd floor: 103, 3rd floor: 25, 4th floor: 12, 5th floor: 2), 4) Four storey RCC ETP building: 2, 5) Single storey prefab shed: 158.                                                                                                                                                                                                     |
| Exterior Facade Description :                | Building 1 is the RCC frame structure; however, two third of the ground floor is flat slab system. Building 2 and 3 are RCC frame structure building and their exterior facades are in good good condition. Building 4 consists of the RCC column supported steel roofing system shed, which occupies the mezzanine floor. From the visual inspection, no crack found on the building façade but there were some dampness present. All Doors are fire resistant and windows are sliders. Periphery walls made of bricks.                                                                                                                                                            |
| Structural System Description :              | * Building 1 is the RCC frame structure; however, two-third of the ground floor is flat slab system. The foundation type of this building is an isolated column footing. * Building 2 is the RCC frame structure building. The foundation of this building consists of the combination of pile, and isolated and combined footing foundations. * Building 3 is also RCC moment resisting frame structure its foundation consists of isolated column footings. * Building 4 is an RCC column supported steel roofing system (i.e. rafter, purlin, corrugated color roof sheet) shed, which occupies the mezzanine floor. The foundation type of this building is footing foundation. |



## ASSESSMENT FINDINGS

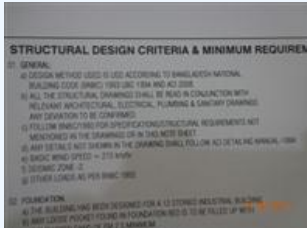
### Structural System Design

|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |
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| Question:                 | Are the available FoS for the columns adequate based on Preliminary calculation?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  |
| Priority Level:           | High                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Non-Compliance Level:     | 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |  |
| Description:              | The following values have been considered for performing the preliminary stress calculation: Concrete strength: 2045 psi Yield strength: 40000 psi for building 1 and 3. * Building 1: The Fos are 2.31,1.91 and 1.82 for central column, edge column and corner column respectively. * Building 3: The Fos are 2.12, 2.76 and 2.37 for central column, edge column and corner column respectively. Concrete strength: 2370 psi. and yield strength: 60000 psi for building 2. * Building 2: The Fos are 5.84,5.56 and 4.34 for central column, edge column and corner column respectively. FoS for the ETP building for existing live load: Corner column:2.64 Edge Column:2.35 |  |
| Source of Findings:       | Uploaded Document: Column Stress Calculation Sheet                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |
| Suggested Plan of Action: | Under guidance from a qualified structural engineer arrange Detail Engineering Assessment of the structure 1. This assessment should be conducted and should include destructive core testing to validate the in-situ concrete compressive strength of structural elements.                                                                                                                                                                                                                                                                                                                                                                                                      |  |
| Suggested Deadline Date:  | 16 Nov 2014                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |
| 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:                 | Is a clear and redundant load path to resist lateral loads provided?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Priority Level:           | Medium                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  |
| Non-Compliance Level:     | 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |  |
| Description:              | The presence of lateral load path and redundancy for Building 2 and 3 are clear as they are beam-column supported RCC frame structure with multiple moment-resisting frames. The lateral load path for Building 1 is not apparent as two-third of the building is flat slab system on the ground floor. Building 4 consists of RCC column supported steel roofing system shed with multiple moment-resisting frames, and therefore the lateral load path (i.e. wind load) is clear and redundancy is available.                                                                                                                                                                  |  |
| Source of Findings:       | Document Review: Confirmed by reviewing documents., Visual Assessment: Confirmed visually.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |  |



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| 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:  | 30 Jul 2014                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                         |
| Standard:                 | Alliance Standards Part 8 Section 8.17 Design for Lateral Loads and 8.3.3. 2006 BNBC Part 6 Section 1.5                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                         |
| 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:     | 3                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                         |
| Description:              | Ten plastic water tanks were found on the roof of the Building 1 and 2. A cooling equipment in the form of water tank was found on the roof of Building 3.                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                         |
| Source of Findings:       | Visual Assessment: Confirmed visually.                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                         |
| 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:  | 30 Jul 2014                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                         |
| Standard:                 | Alliance Standard Part 8 Section 8.13 and 8.14                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                         |
| Question:                 | Are credible structural design documents available for review and kept on site?                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                         |
| Priority Level:           | Medium                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                         |
| Non-Compliance Level:     | 2                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                         |
| Description:              | Structural design documents were available for review and kept onsite for all of the main buildings; however, the design report based on BNBC 1.9.1.1. was not available for all of the buildings. Detailed structural general notes including seismic criteria, wind speed, building code etc. are not mentioned in the structural working drawing of building 1, 3 and 4. Some columns are found mismatched with the structural drawing of the Building 1. |                                                                                                                                                                         |
| Source of Findings:       | Document Review: From documents review, structural documents are partially available., Visual Assessment: Confirmed visually.                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                         |
| Suggested Plan of Action: | Engage a qualified structural engineer to prepare credible as-built documents based on the requirements of Part 8 Section 8.19 of the Alliance Standard.                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                         |
| Suggested Deadline Date:  | 30 Jul 2014                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                         |
| Standard:                 | Alliance Standard Part 8 Section 8.19 Required Structural Documentation for                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                         |



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|                           | 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:              | Structural documents of Building 1, 3 and 4 do not indicate general conformance with 2006 BNBC or other comparable applicable international model building code. The structural documents of Building 2 indicate general conformance with BNBC 2006.                                                                                                                                                          |                                                                                       |
| Source of Findings:       | Document Review: Documents pertaining to the relevant information not found.                                                                                                                                                                                                                                                                                                                                  |                                                                                       |
| 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:  | 30 Jul 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:     | 2                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                       |
| Description:              | The construction of Building 2 and 4 started after 2006. The structural drawing of Building 2 comply with the seismic and wind requirements as per 1993 BNBC. Documentation pertaining to seismic and wind requirements were not found for Building 4. The preliminary assessment report for all buildings seismic and wind criteria were documented. Building 1 and building 3 were constructed before 2006. |                                                                                       |
| Source of Findings:       | Document Review: Confirmed by reviewing documents.                                                                                                                                                                                                                                                                                                                                                            |                                                                                       |
| 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:  | 30 Jul 2014                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                       |
| Standard:                 | Alliance Standards Part 8 Section 8.17 Design for Lateral Loads and 2006 BNBC Part 6 Section 1.5                                                                                                                                                                                                                                                                                                              |                                                                                       |

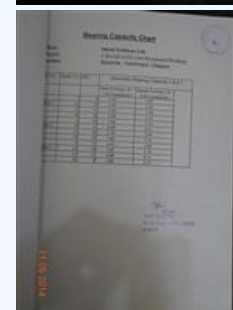


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| Question:                 | Can documentation be provided that the building is compliant with the requirements for wind loading and storm surge loadings as detailed in BNBC Part 6 Section 1.5.3?                                                                                                                                                                                                                                                                                                                              |
| Priority Level:           | Medium                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Non-Compliance Level:     | 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Description:              | Documentation can not be provided that Building 1, 3 and 4 are compliant with the requirements for wind loading for all buildings as detailed in BNBC Part 6 Section 1.5.3. However, the preliminary assessment report mentions that wind loading is considered as per BNBC for all buildings. For Building 2, in structural notes it has been mentioned that the building is compliant with the requirements for wind loading, but it can not be verified due to the absence of the design report. |
| Source of Findings:       | Document Review: Documents pertaining to the relevant information unavailable.                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Suggested Plan of Action: | Engage a qualified structural engineer to confirm satisfactory structural performance of the buildings under wind loading. This should be reflected in the design report.                                                                                                                                                                                                                                                                                                                           |
| Suggested Deadline Date:  | 30 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:                 | Where density of operations, storage of materials, or equipment weights require live load capacity in excess of 2.0 kN/m2 (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:     | 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Description:              | In 1st floor and 3rd floor Building 2, live load in the storage zone exceeds 42 psf. However, this live load complies with floor load plan, which is provided by qualified structural engineer. For the ETP building, the estimated live load observed during the audit was 80 psf, whereas the design live load is 130 psf.                                                                                                                                                                        |
| Source of Findings:       | Document Review: Confirmed by reviewing documents., Visual Assessment: Confirmed visually.                                                                                                                                                                                                                                                                                                                                                                                                          |
| Suggested Plan of Action: | As this is an under-construction building the overloaded materials should be removed.                                                                                                                                                                                                                                                                                                                                                                                                               |
| Suggested Deadline Date:  | 30 Jul 2014                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Standard:                 | Alliance Standards Part 8 Section 8.15 Minimum Floor Design Loads                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Question:                 | Are Certificates of Occupancy available for review?                                                                                                                                                                                                                                                                                                                                                                                                                                                 |





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| Priority Level:           | Low                                                                                                                                                                                                                            |
| Non-Compliance Level:     | 1                                                                                                                                                                                                                              |
| Description:              | Certificates of Occupancy are not available for review.                                                                                                                                                                        |
| Source of Findings:       | Document Review: Documents not available.                                                                                                                                                                                      |
| Suggested Plan of Action: | Apply for the issuance of the Certificates of Occupancy.                                                                                                                                                                       |
| Suggested Deadline Date:  | 30 Jul 2014                                                                                                                                                                                                                    |
| Standard:                 | Alliance Standard Part 8 Section 8.3 Preliminary Structural Assessment                                                                                                                                                         |
| Question:                 | Is a Geotechnical Report available for review and kept on site?                                                                                                                                                                |
| Priority Level:           | Low                                                                                                                                                                                                                            |
| Non-Compliance Level:     | 1                                                                                                                                                                                                                              |
| Description:              | Geotechnical report is available onsite for review with seals and signatures; however, IEB number is not available for Building 1, 3 and 4. On the other hand, IEB number is available for Building 2.                         |
| Source of Findings:       | Document Review: Confirmed by reviewing documents.                                                                                                                                                                             |
| Suggested Plan of Action: | IEB number must be mentioned in every geotechnical report. Under guidance from a qualified structural engineer arrange geotechnical investigation at close vicinity of the structure and make the report available for review. |
| Suggested Deadline Date:  | 30 Jul 2014                                                                                                                                                                                                                    |
| Standard:                 | Alliance Standard Part 8 Section 8.2 Structural Integrity of Existing Factory Buildings                                                                                                                                        |



## Structural System Construction



|                           |                                                                                                                                                                                                                                                                                                                                  |
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| 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:     | 2                                                                                                                                                                                                                                                                                                                                |
| Description:              | The performance of key structural elements such as columns, slender columns, beams and transfer structures are satisfactory only for gravity load. Slender columns have been found in Building 3 near the generator room. The flat slab system occupies two-third of Building 1, which is not suitable against lateral loadings. |
| Source of Findings:       | Document Review: Confirmed by reviewing documents., Visual Assessment: Confirmed visually.                                                                                                                                                                                                                                       |
| Suggested Plan of Action: | Have a qualified structural engineer carry out detailed structural assessment for Building 1 and 2 to understand the performance of the structure as well as for identifying appropriate remedial action.                                                                                                                        |
| Suggested Deadline Date:  | 30 Jul 2014                                                                                                                                                                                                                                                                                                                      |
| Standard:                 | Alliance Standard Part 8 Section 8.3.3                                                                                                                                                                                                                                                                                           |
| 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:              | Every floor in Building 1 were found damp as well as some portions in Building 2, 3 and 4. Water ponding has also been found at 4th-floor roof of Building 1 due to lack of proper maintenance.                                                                                                                                  |
| Source of Findings:       | Visual Assessment: Confirmed visually.                                                                                                                                                                                                                                                                                           |
| 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:  | 30 Jul 2014                                                                                                                                                                                                                                                                                                                      |
| Standard:                 | Alliance Standard Part 8 Section 8.26 Durability and Maintenance                                                                                                                                                                                                                                                                 |
| 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:     | 2                                                                                                                                                                                                                                                                                                                                |
| Description:              | The roof of the building is made of MCAC but no protective sealing is available.                                                                                                                                                                                                                                                 |





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| Source of Findings:       | Visual Assessment: Confirmed visually.                                                                                                                                                                                                                                                                 |
| Suggested Plan of Action: | Provide a protective coating at the structural elements constructed with MCAC exposed to rainfall or other sources of water. Have protective coating approved by the Alliance or a qualified structural engineer. Otherwise, provide 2% slope on the exposed surface to prevent accumulation of water. |
| Suggested Deadline Date:  | 30 Jul 2014                                                                                                                                                                                                                                                                                            |
| Standard:                 | Alliance Standards Part 7 Building Materials Section 7.2 Masonry-chip aggregate concrete (MCAC).                                                                                                                                                                                                       |
| 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:              | Some storage racks were present on the 2nd and 4th floor of Building 1 and 4, and there were not properly braced. Ten water tanks on the rooftop of Building 1 and 2, and the cooling equipment on the rooftop of Building 4 require adequate bracing to resist earthquake forces.                     |
| Source of Findings:       | Visual Assessment: Confirmed visually.                                                                                                                                                                                                                                                                 |
| 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:  | 10 Sep 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:     | 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 not available.                                                                                                                                                                |
| 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        | 16 Jul 2014                                                                                                                                                                                             |



|                           |                                                                                                                                                                                                                                     |  |
|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| Date:                     |                                                                                                                                                                                                                                     |  |
| Standard:                 | Alliance Standard Part 13 Section 13.7 and Part 8 Section 8.9.                                                                                                                                                                      |  |
| Question:                 | Are Floor Load Plans posted as required?                                                                                                                                                                                            |  |
| Priority Level:           | Low                                                                                                                                                                                                                                 |  |
| Non-Compliance Level:     | 2                                                                                                                                                                                                                                   |  |
| Description:              | Floor load plans are not posted.                                                                                                                                                                                                    |  |
| Source of Findings:       | Visual Assessment: Confirmed visually.                                                                                                                                                                                              |  |
| 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:  | 30 Jul 2014                                                                                                                                                                                                                         |  |
| Standard:                 | Alliance Standard Part 8 Section 8.20.5.3                                                                                                                                                                                           |  |
| Question:                 | Are areas used for storage of work materials and work products, clearly marked to indicate the acceptable loading limits as described in the Load Plan for that floor?                                                              |  |
| Priority Level:           | Low                                                                                                                                                                                                                                 |  |
| Non-Compliance Level:     | 2                                                                                                                                                                                                                                   |  |
| Description:              | Load plan is available for review, but there is no marking on the floor to designate spaces and height for storage of work materials.                                                                                               |  |
| Source of Findings:       | Visual Assessment: Confirmed visually.                                                                                                                                                                                              |  |
| 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:  | 30 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:     | 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 loadings. |  |

Factory Name: **MITALI FASHIONS LTD**  
 Address: **Hatimara Road, Barendra, Kashimpur, Gazipur, Gazipur Dhaka Bangladesh**

Assessor: **Bureau Veritas**  
 Date: **11 May 2014**



**ALLIANCE**  
 FOR BANGLADESH WORKER SAFETY

|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |
|---------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| Source of Findings:       | Document Review: Confirmed visually., Visual Assessment: Presence of factory load manager or designated representative is not evident.                                                                                                                                                                                                                                                                                                                                                                                           |  |
| 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:  | 16 Jul 2014                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |
| Standard:                 | Alliance Standards Part 8 Section 8.9 Factory Load Manager                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |  |