Assessment Protocols
For
Initial Fire Safety and Structural Integrity
For
Existing Factories

Issued by
Committee on Technical Standards and Inspections
Of
THE ALLIANCE FOR BANGLADESH
WORKER SAFETY

ISSUED FOR FINAL REVIEW AND COMMENT

V1.6. May 30, 2014
Harmonized Version (Structural, Fire, Electrical)
## TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Ref:</th>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part 1</td>
<td>GENERAL PROTOCOLS &amp; DEFINITIONS</td>
<td>2</td>
</tr>
<tr>
<td>a.</td>
<td>Purpose</td>
<td></td>
</tr>
<tr>
<td>b.</td>
<td>Scope</td>
<td></td>
</tr>
<tr>
<td>c.</td>
<td>Qualification for Assessment</td>
<td></td>
</tr>
<tr>
<td>d.</td>
<td>Qualified Assessment Firms (QAF)</td>
<td></td>
</tr>
<tr>
<td>e.</td>
<td>Prioritization of Factory Assessments</td>
<td></td>
</tr>
<tr>
<td>f.</td>
<td>Scope of Assessments</td>
<td></td>
</tr>
<tr>
<td>g.</td>
<td>Staff-Day Allocations by Factory Profile</td>
<td></td>
</tr>
<tr>
<td>Part 2</td>
<td>PART 2 - EXECUTIVE SUMMARY OF ASSESSMENT PROCESS</td>
<td>6</td>
</tr>
<tr>
<td>a.</td>
<td>Process Flow Chart</td>
<td></td>
</tr>
<tr>
<td>b.</td>
<td>Detailed Process Flow descriptions</td>
<td></td>
</tr>
<tr>
<td>Part 3</td>
<td>INITIAL STRUCTURAL INTEGRITY ASSESSMENT COMPONENTS &amp; PROTOCOLS</td>
<td>9</td>
</tr>
<tr>
<td>a.</td>
<td>Factory Visit for INITIAL Structural Integrity Assessment</td>
<td></td>
</tr>
<tr>
<td>i.</td>
<td>Requirements for Assessors</td>
<td></td>
</tr>
<tr>
<td>ii.</td>
<td>Interview with Factory Representatives</td>
<td></td>
</tr>
<tr>
<td>iii.</td>
<td>Document and Record Review</td>
<td></td>
</tr>
<tr>
<td>iv.</td>
<td>Factory INITIAL Visual Assessment</td>
<td></td>
</tr>
<tr>
<td>v.</td>
<td>Post-Assessment Meeting with Factory Representatives</td>
<td></td>
</tr>
<tr>
<td>b.</td>
<td>Detailed Description of INITIAL Structural Integrity Assessment Protocols</td>
<td></td>
</tr>
<tr>
<td>c.</td>
<td>Reporting</td>
<td></td>
</tr>
<tr>
<td>d.</td>
<td>Time frames for corrective action</td>
<td></td>
</tr>
<tr>
<td>e.</td>
<td>Assessment Ratings</td>
<td></td>
</tr>
<tr>
<td>f.</td>
<td>Report Comment Period</td>
<td></td>
</tr>
<tr>
<td>g.</td>
<td>FOLLOW-UP Assessment and/or Activities</td>
<td></td>
</tr>
<tr>
<td>Part 4</td>
<td>INITIAL FIRE SAFETY ASSESSMENT COMPONENTS &amp; PROTOCOLS</td>
<td>21</td>
</tr>
<tr>
<td>a.</td>
<td>Factory Visit for INITIAL FIRE Safety Assessment</td>
<td></td>
</tr>
<tr>
<td>i.</td>
<td>Requirements for Assessors</td>
<td></td>
</tr>
<tr>
<td>ii.</td>
<td>Interview with Factory Representatives</td>
<td></td>
</tr>
<tr>
<td>iii.</td>
<td>Document and Record Review</td>
<td></td>
</tr>
<tr>
<td>iv.</td>
<td>Factory INITIAL Visual Assessment</td>
<td></td>
</tr>
<tr>
<td>v.</td>
<td>Post-Assessment Meeting with Factory Representatives</td>
<td></td>
</tr>
<tr>
<td>b.</td>
<td>Detailed Description of INITIAL Fire Safety Assessment Protocols</td>
<td></td>
</tr>
<tr>
<td>c.</td>
<td>Reporting</td>
<td></td>
</tr>
<tr>
<td>d.</td>
<td>Time frames for corrective action</td>
<td></td>
</tr>
<tr>
<td>e.</td>
<td>Assessment Ratings</td>
<td></td>
</tr>
<tr>
<td>f.</td>
<td>Report Comment Period</td>
<td></td>
</tr>
<tr>
<td>g.</td>
<td>FOLLOW-UP Assessment and/or Activities</td>
<td></td>
</tr>
</tbody>
</table>
Part 5  INITIAL ELECTRICAL SAFETY ASSESSMENTS COMPONENTS AND PROTOCOLS

a. Factory Visit for INITIAL ELECTRICAL Safety Assessment
   i. Requirements for Assessors
   ii. Interview with Factory Representatives
   iii. Document and Record Review
   iv. Factory INITIAL Assessment
   v. Post-Assessment Meeting with Factory Representatives

b. Detailed Description of INITIAL Fire Safety Assessment Protocols

c. Reporting

d. Time frames for corrective action

e. Assessment Ratings

f. Report Comment Period

g. FOLLOW-UP Assessment and/or Activities

APPENDIX A: EMERGENCY ESCALATION PROCESS: SEVERE & IMMINENT DANGER

APPENDIX B: REFERENCE DOCUMENTS

APPENDIX C: DEFINITIONS
PART 1 – GENERAL INFORMATION

A. Purpose

1. The purpose of this document is to provide Factory Assessment Protocols (APs) that are used by the Alliance for Bangladesh Worker Safety to:
   A. Identify any Bangladesh factories utilized by Alliance members in the Ready Made Garment (RMG) industry that represent a severe and imminent threat to worker safety;
   B. Define assessment protocols used by Qualified Assessment Firms (QAFs) to identify those factories that are compliant with the Alliance Fire Safety and Structural Integrity Standards (“the Standards”).
   C. Define the severity of threat and non-compliant conditions and the timing for correction of those conditions.

2. This document has been developed in direct response to Article 6 of the Alliance Member Agreement. Where possible it has been generally aligned with the protocols adopted by the Government of Bangladesh (the BUET Standard) in relation to the National Tripartite Plan of Action (NTPA) that will be used to assess non-Alliance utilized factories.

B. Scope

These assessment protocols apply to existing and new factory and ancillary buildings in Bangladesh that are proposed for use by Alliance-affiliated members.

D. Definitions

Please see Appendix C for complete list of applicable definitions before reading this document.

E. Qualification for Assessment

Active Factories that have been identified by the Alliance Member (AM) that have agreed to cooperatively participate in the assessment and sharing process are eligible for assessment in accordance with this protocol. Agreement by a Factory Owner to cooperate with an assessment shall be documented in an executed Form ASP0.

F. Qualified Assessment Firms (QAF)

Qualified Assessment Firms (QAF) consist of those firms who have demonstrated to the Alliance their experience and qualifications to complete the scope of work detailed within the Alliance Standards and Assessment Protocols. QAF are recommended by the Alliance Committee of Experts (COE) and approved by the Alliance board of directors. The qualification of each firm will be evaluated ongoing by monitoring performance in the following categories:

   A. Administrative consistency
      a. Coordination
      b. Consistent use of the Fair Factories Clearinghouse (FFC) database
   B. Onsite Assessment quality
      a. Ability to evaluate factory conditions against the Alliance standards and set forth in the AP
      b. Professional Conduct
      c. Ethical Conduct
   C. Report Quality
      a. Adherence to reporting expectations
b. Use of the FFC  
c. Turnaround time

D. Technical support quality  
a. Ability to respond to report questions in a timely and technically consistent manner

E. Overall Relationship Management  
a. Willingness and participation in roundtable sessions  
b. Commitment to continuous improvement  
c. Flexibility

Ongoing distribution of assessment work will be calibrated and balanced using the following criteria: 1) QAF Performance and 2) Capacity 3) Cost.

G. Prioritization of Factory Assessments

Prioritization and timing of INITIAL and FOLLOW-UP factory assessments is primarily dictated by the Alliance MF, and may be influenced by a variety of variables including:

- Location  
- Size  
- Number of workers  
- Number and types of buildings in use  
- Assessment history  
- Number of associate Alliance members  
- QAF recommendations and assessor capacity

H. Scope of Assessments

1. For a multi-factory compound owned by a single Factory Owner or entity, all main factory buildings and ancillary buildings in the compound will be considered as the Factory. Assessment results must include all buildings in the compound, and the assessment process and compliance results will include all of those buildings.

2. For a multi-factory complex in which individual factories are owned by different owners, each owner’s factory, with its related ancillary buildings, will be considered as a separate Factory. The Assessment shall include all buildings owned by the Owner, and the assessment process and results will include only that Owners buildings.
PART 2 - EXECUTIVE SUMMARY OF ASSESSMENT PROCESS

A. Process Flow

ALLIANCE: ASSESSMENT WORKFLOW
STRUCTURAL, FIRE AND ELECTRICAL SAFETY

Alliance Member Identifies Active Factories and uploads to FFC (For New Factories)

AMF Prioritizes Assessments (new and follow-ups) and distributes to QAF via FFC

Document Package sent to Factory By QAF with proposed Assessment Date

Assessor reviews Factory Document Package (downloaded from FFC)

QAF confirms schedule with factory and updates FFC

Immediate Auto-Appeal Process

QAF conducts Factory Assessment(s)

Severe & Imminent Danger?

Yes

Escalation Process (EP) / Review Panel

No

Assessor prepares Draft reports ASAP within 10 Calendar Days and submits for “Alliance Review” (FFC Updated)

QAF confirms schedule with factory and updates FFC

Clarifications needed?

Yes

No

Factory Appeal?

Yes

No

APPEAL PROCESS

Reports submitted to Factory and FFC Updated

Yes

Issues Noted

No

QAF Conducts FOLLOW-UP Assessments

CAP Submitted by Factory to QAF for review

CAP Approved by QAF

Yes

No

CAP Approval Meeting held at Alliance office with Factory & available members

QAF confirms Scope w. MF and schedules with factory and updates FFC

Verified no Deficiencies and FFC Updated

Follow-up Assessment Needed?

Yes

No

Finalized Reports Submitted to Factory

No

Yes
B. Process Detailed Steps

1. AM identifies factories and inputs factory information into the Fair Factory Clearinghouse (FFC). All information is held confidential. Only the Alliance Management Firm (MF), and QAF knows which AM is associated with each factory. All AMs have access only to factory information with which they maintain a business relationship.

2. Alliance MF conducts initial prioritization of factories requiring assessment and distributes factory details to QAF via the FFC.

3. QAF contacts Factory Owners (CC: to AMs in separate emails) to obtain the Factory Owner Agreement (Form ASP0.0) and distribute applicable Self-Assessment Questionnaires including:
   - Self-Assessment Questionnaire for Structural Integrity
   - Self-Assessment Questionnaire for Fire Safety
   - Self-Assessment Electrical Questionnaire
   Forms ASP1.0, ASP2.0, and ASP2.1.

4. QAF confirms assessment schedule with factory in writing and updates FFC with the appropriate status: “Proposed”, “Confirmed”, “On-Hold”. If placed on hold, QAF provides appropriate notes for the reason.

5. Factory submits required documents ASAP within 10 Calendar days to the QAF. Documents shall be organized and submitted in electronic format along with the Factory Documents Inventory Form ASP3.0 via email. QAF uploads Documents Package to the FFC on behalf of the factory either before or after the assessment.

6. QAF Reviews Document package prior to conducting the assessment, if available. If document not available assessment schedule shall still proceed.

7. QAF conducts assessment using required protocols and tools and leaves draft onsite findings report with factory. If findings are considered serious in nature, the QAF will submit the draft onsite findings report detailing their concerns within 24 hours to the MF for priority review. Forms: ASP6.1, ASP6.2, ASP6.3

8. If the Severe and Imminent Life Danger is perceived by the Lead Assessor, the emergency Alliance Escalation Process is put into motion immediately. The first step will be to contact their immediate QAF supervisor and the AFBWS Dhaka office.

9. Factory begins working on their Corrective Action Plan (CAP) immediately after receiving their draft onsite report.

10. QAF submits draft Assessment Reports to the MF within 10 calendar days, after internal QAF review, using the FFC system and updates the status to “Alliance Review”.

11. MF or designated party conducts Alliance Review (QA) review of each report and clarifies any questions with the QAF within 7 calendar days. QAF will respond to questions ASAP no later than 72 hours upon receipt.

12. The QAF submits the Final Reports to the Factory and applicable Worker Representatives and uploads to the FFC. If no email contact information is available of Union or Worker Representatives, the factory shall print and make available a copy to the applicable representatives and explain the findings to them.

13. Upon receipt of the reports, the factory and applicable worker representatives will be provided 7 calendar days to seek clarification, appeal the results, or provide additional comments. Formal appeals will be resolved by the COE in collaboration with the QAF and MF.
14. After the review period and no more than 5 weeks from the last day of the assessment, the reports will considered Final and made available on the FFC to applicable Alliance member companies that maintain a business relationship with the factory.

15. The factory will then be given an additional 14 calendar days to provide a formal draft Corrective Action Plan (CAP) to for review and approval by the QAF using the FFC generated CAP Excel document. The QAF will update the FFC status to “CAP Approved by QAF”.

16. After QAF Approval of the CAP, the MF will hold a meeting with each factory to review the CAP and provide Final Approval. FFC Status will be updated to “CAP Approved by Alliance”.

17. Factory contacts additional third party consultants or service providers to support the implementation of the approved CAP at their own discretion. Where approved by the Alliance, INITIAL Assessors may provide some additional services to support corrective action. However, in general, the QAF may not provide consulting services to any factory they where they have already performed assessments. Furthermore, the QAF shall not the perform assessments at any factories where they have previously provided consulting or other services without prior authorization.

18. Where additional FOLLOW-UP assessments are required to evaluate if appropriate action steps have been taken or dig deeper into an area of concern revealed during the INITIAL assessment, repeat steps 4-15.

19. Any ongoing modifications to the CAP will be tracked using the FFC.
PART 3 –INITIAL STRUCTURAL INTEGRITY ASSESSMENT COMPONENTS & PROTOCOLS

Purpose: The Initial Structural Assessment will be conducted in accordance with the steps outlined in this document. This Assessment will be intended to (1) confirm the validity of any documentation provided by the Factory Owner (where received), and (2) confirm the structural integrity risk of each factory as feasible by seeking to answer the following seven questions:

1. Is the vertical load carrying system logical?
2. Is the lateral load-carrying system apparent and does it have redundancy and structural integrity?
3. Are key structural elements such as, slender columns, flat plates, floors, cantilevers, and transfer structures satisfactory?
4. Is building performance in respect to foundation settlement satisfactory?
5. Is the structure free from any visible structural distress (progressive cracking) in main load-carrying members?
6. Is the structural strength and performance of any visible vertical or horizontal building additions acceptable?
7. Are credible structural documents available?
   a. Either credible original structural document in accordance with BNBC Section 1.9 or as-built documents in accordance with Standard Section 8.20 will generally suffice.

If the Assessor determines that the answers to the seven questions are affirmative, the factory may be found to be acceptably structurally safe and compliant with this Standard without further structural investigations. If the Assessor determines that the answers to one or more of the seven questions are negative, then the factory may be found to be non-compliant with the Standard. The specific and required components of the INITIAL Structural Integrity Assessment are as follows:

A. Requirements for Structural Assessors

1. Structural Assessors shall be pre-qualified by the Alliance MF with technical input from the Alliance Committee of Experts. Absent other criteria for Assessors required by the Committee of Standards, the following minimum criteria shall apply:

   a. Assessment teams shall be comprised of two person teams of experienced structural engineers.
   b. Assessors shall each hold minimum 4-year degrees (BS-Civil Engineering or equivalent) from a recognized university.
   c. Assessors shall be licensed to practice in their jurisdiction of residence.
   d. Lead Structural Assessors shall have a minimum of eight (8) years of professional experience.
   e. Non-Lead Assessors shall have a minimum of three (3) years of professional experience.

   a. Assessors shall be independent of the influence of factory owners, the BGMEA, and other interested parties. Assessors shall be self-employed or employed by firms that design and/or assess comparable structures to international standards.
   b. Assessors shall be experienced in the design, assessment, and repair of reinforced concrete buildings of at least five stories.
B. Staff-Day Allocation Minimums for STRUCTURAL INTEGRITY Assessments

<table>
<thead>
<tr>
<th>Factory Square Footage</th>
<th>Minimum Required No. of Assessors</th>
<th>Required No. of Total Staff-days time onsite</th>
<th>Required No. of LEAD Assessors time onsite</th>
<th>Allowable No. of Non Lead Assessors time onsite</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 – 50,000</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>50,001 – 250,000</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>1</td>
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<tr>
<td>250,001 +</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
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</table>

Note: 2 Assessors for 1/2/day can = 1 full ‘staff day’

C. Factory Visit for INITIAL Structural Safety Assessment

If possible, factory visits shall be scheduled after completed Factory Information Form and other required documentation are received and processed. Where possible, structural safety assessments will be conducted prior to Fire and Electrical Safety assessments. Factory visits will be scheduled by the Alliance-qualified Assessor and coordinated with Factory Owners designated Factory Representative.

The factory visit will include six (6) elements, as outlined below.

1. Preparation
   ✓ Confirm the completeness of the Factory Information Form, questionnaires, and submitted documents. The Factory Owner may be contacted regarding unexplained or unacceptable gaps in the application.
   ✓ Insert relevant factory information into the Fair Factories Clearinghouse.
   ✓ Determine whether the Factory has previously been evaluated in the program, and the results of prior assessment(s).
   ✓ Review of available documents, either original structural documents or as-built documents prepared in accordance with Section 8.19 or Section 8.20 of the Standard.

2. Discussion with Factory Representatives
   Discussions will be conducted with designated representatives of the Factory Owner at the Factory prior to the in-factory Assessment. The purpose of these discussions will be for the Alliance-qualified Assessor to gain additional insight into the history, use, and anticipated future of the factory buildings. These discussions will be documented in the Assessors written field notes.

3. Visual Walk-through Assessment
   The Assessor will conduct an INITIAL in-factory visual walk-through assessment of each building in the factory complex. The primary purpose of the in-factory assessment will be to evaluate compliance with the Standard. The Assessor will confirm the physical characteristics, extent, and condition of the structure, with particular attention to identify any areas of structural distress or concern. The elements described below will be reviewed. The INITIAL assessment will also generally confirm that the available documents accurately portray the as-documented configuration and arrangement of the structure and the structural systems. The INITIAL visual assessment will visually confirm the operational loads on the structure, including people, equipment, work materials, and work products. The Assessor will take photographs to document the overall and specific conditions. The Assessor will use Form ASP5.0 as a checklist for the field assessment and to field-document his observations.

4. Document and Record Review
The primary purpose of the review of documentation will be to evaluate documentation compliance with the requirements of the Standard. For each building in the Factory, the Assessor(s) will evaluate the submitted information on the documents for compliance using the checklist, Form ASP4.0.

5. **Post-Assessment Meeting with Factory Representatives**

Following the completion of the INITIAL in-factory structural Assessment, the Assessor will meet with Factory Representatives to review initial findings of the Assessment and discuss questions. During this process, informal discussion about possible solutions to identified concerns may occur. An initial summary of findings and recommendations will be provided to the Factory Owner. These findings and recommendations will be documented in the Preliminary Onsite Structural Assessment (POSA), Form ASP6.0.

6. **Pre- & Post-Assessment Meeting with Union and Worker Representatives**

Assessors are required to facilitate and allow Trade Union, Worker Participation Committee (WPC) and/or Safety Committee representatives, where they exist at the factory, to participate in the following activities:

   a. Pre- and post-assessment meetings
   b. Shadowing the assessment (see definitions)
   c. Sign off on and provide a copy of the draft on-site report that is also provided to management.

**D. Detailed Description of Preliminary Structural Assessment Protocols**

The preliminary structural assessment shall include the following activities:

1. Visual assessment of all structural elements for evidence of distress, cracking, or lack of performance.

2. Visual and analytical confirmation of floor loading in compliance with floor load plans. This confirmation shall be conducted in accordance with the paragraph “Confirmation of Floor Loading” in this document.

3. Visual confirmation of performance of foundations, including absence of settlement cracking, excessive perimeter separations or settlement, or lack of floor levelness attributable to foundation settlements.
   
   a. In assessing the load capacity adequacy of a pile foundation system under an existing factory that has performed for at least five years without indications of excessive settling, the factory of safety shall be at least 1.5.

4. Visual confirmation of clear and redundant load path for lateral loads, including diaphragms and vertical elements. Visual observations must indicate no evidence of apparent cracking or other lack of performance of lateral systems under prior lateral loading.

5. During initial assessment, the Assessor shall assess the strength of concrete and determine the steel rebar in the typical columns of the lower tiers of the building using non-destructive methods (Schmidt Hammer, UPV, Ferro-scanning, or similar). Assessment of three to five typical columns at each of the two lower tiers shall usually be sufficient, unless the Assessor have reasons to investigate more columns. The type of aggregate used in columns shall be ascertained by chipping small areas of concrete and surface finishes. Care shall be exercised not to damage an otherwise overstressed column.

If the preliminary assessment and simple outline calculation show doubts about the safety/integrity of the structure (see item 19 below), the Assessor shall recommend that the factory owner engages QSEC to have better understanding of the strength of the concrete and quantity of the steel in the columns. Concrete strength shall be assessed by taking at least 4 nos. of 4 inch diameter cores from the area of concern. If cores are to be taken from column, it is advisable to take it from an upper level where the stresses are low.
(for practical reasons 3 inch cores may be taken from columns). In addition, UPV shall be used to have concrete strength in sufficient number of columns in the lower tiers so that a level of confidence is achieved. The calibrated results of core tests and UPV shall be used to determine a reliable value of concrete strength in columns. The size and diameter of steel rebar in most of the columns of two lowest tiers shall be authentically determined using a Ferro scanner or similar device. In order to confirm the diameter of embedded bars as obtained from Ferro scanner, the Assessor may have to remove the concrete cover in one or two locations.

6. Simple structural calculations to assess the basic capacity of structural members, including:
   a. Columns and wall elements at most critical tiers, including lowest tier. Vertical elements shall be reviewed for maximum load combinations of forces due to axial and bending. Slenderness effect shall be considered in all such calculations.
      i. Unless confirmed otherwise by scanning or other investigations, columns shall be assumed to be reinforced with a maximum of 1% steel times the gross plan area of the column.
   b. Vulnerable or critical structural elements identified by Assessor including transfer girders, hangers, cantilevers, columns with high slenderness ratio, flat plate floors, and footings with inadequate thickness.

7. In this case the Assessor shall take one or more of the following actions:
   a. If the area of concern represents a severe and imminent danger to workers, proceed to immediately notify parties including the Factory Owner in accordance with the special Escalation Protocol related to Severe and Imminent Danger.
      i. Note that any recommendations to evacuate or close a factory due to severe and imminent threat are subject to automatic peer review within 48 hours by a review panel.
   b. Conduct further and more detailed investigations of those items that were not found to be compliant, including field investigations and testing to determine in situ locations of reinforcing, material strengths, and condition, and more detailed structural analysis.
   c. Recommend that the factory owner take appropriate steps to remediate any items that are found to be non-compliant with the Standard.
      i. Each recommendation shall include a specific and reasonable timeframe for implementation of the corrective action.
      ii. Time frames for corrective action shall reflect the urgency and seriousness of each item, and shall be reasonable and consistent for similar items within a factory and from factory to factory.
      iii. Where practical, timeframes for corrective action shall follow guidelines established by the Alliance COE.
   d. Recommend that the factory owner engage a qualified structural consultant to conduct further and more detailed investigations and structural assessment of those items that were not found to be compliant, including field investigations and testing to determine in situ locations of reinforcing, material strengths, and condition, and more detailed structural analysis.

8. Detailed engineering assessment shall be required by the Assessor to be performed for any structural member identified as distressed. The cause and extent of structural distress shall be identified by assessment. To accomplish this, the Assessor may require the Factory Owner to engage a qualified
Structural Engineering Consultant (QSEC) to provide structural advisory services to prepare all required design confirmation and structural documentation.

a. If it is found that structural distress is due to inadequate structural capacity under applied loads, the Assessor shall require that the Factory Owner take appropriate steps to remediate the overload by implementing one of the following methods:

   i. The applied loads may be reduced to acceptable levels if possible by removal and limitation of structure, equipment, utilities, or floor loading, or

   ii. Overloaded structural elements may be strengthened using properly designed, documented, and installed strengthening and retrofit.

b. All retrofits are subject to technical review by Assessor prior to implementation.

c. All installation of retrofit shall be accomplished by specialty firms experienced in the materials and techniques of structural retrofit. See Section 8.30 of the Standard.

d. If the visual assessment or any preliminary structural assessment indicates areas of structural concern or lack of compliance with the requirements of this Standard, then more detailed structural investigation may be required.

9. In this event, the Assessor may require that the Factory Owner engage an independent qualified structural engineering consultant (QSEC) that meets the qualification criteria stated in this Standard.

10. If required, the Assessor may require the Factory Owner to engage the QSEC to prepare as-built structural documents as described in Section 8.20 of the Standard.

11. If required, the Assessor may require the Factory Owner to engage the QSEC to prepare Factory Loading Plans as described in Section 8.20.5.3 of the Standard.

12. If required, the Assessor may require the Factory Owner to engage the QSEC to conduct and document detailed structural condition assessment in accordance with the requirements of ACI 437, ASTM 2018, or similar accepted engineering practice. The strength of concrete and amounts of reinforcement in columns shall be assessed by Schmidt Hammer test, UPV, and/or core test and ferro-scanning.

13. If required, the Assessor may require the Factory Owner to engage the QSEC to conduct additional detailed structural condition assessments and investigations to determine the adequacy of specific structural elements or conditions identified by the Assessor.

14. In this case, the Assessor shall confirm the assumptions used by the QSEC regarding strength and properties of key construction materials. Unless confirmed otherwise by testing of in-situ conditions in accordance with applicable ASTM test procedures, the QSEC shall determine the material properties using Section 7.3 of the Standard.

15. Assessors shall confirm that every key structural element of factory buildings assessed comply with the requirements of the Standard Section 8.2.

16. Whatever the outcome of the initial structural assessment, the Assessor shall include a recommendation that no further vertical or horizontal extension of the structure shall be made unless a detail assessment of the capacity of the structure has been made by a QSEC in fulfillment of the Standard Clauses 9.4, 9.5, 11.11
17. If the columns of a structure are found to be highly stressed, but without sign of imminent danger, before it can be declared to be unsafe due to inadequate safety margin in columns (see item 19), further investigations need to be carried out. In this case the in situ concrete strength should be assessed by coring. Use of minimum 4 inch diameter core is recommended for reliable result. However, from practical limitations of obtaining 4 inch diameter core from column, 3 inch core may be taken from upper tier columns as described in item 5 above.

18. The Factor of Safety (FoS) for a typical central, edge and corner column shall be assessed by dividing 0.8*(0.85f'c*A_g +A_s f_y) by the unfactored Dead and Live load acting at the lower tier of a column. Due effect of presence of bending in the corner and edge columns shall be considered. Slenderness effect shall also be considered, if appropriate.

19. Depending on the values of FoS obtained, the following procedure may be used:

<table>
<thead>
<tr>
<th>For Concrete Columns:</th>
<th>Actions to be Taken</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calculated FoS Value</td>
<td></td>
</tr>
<tr>
<td>FoS &gt; 1.86</td>
<td>Adequate Safety margin exists so factory may continue as usual.</td>
</tr>
<tr>
<td>FoS 1.5 to 1.86</td>
<td>Some doubts about safety - so assessment of concrete strength by coring should be advised to reassess FoS (see item 5)</td>
</tr>
<tr>
<td>FoS 1.25 to 1.5</td>
<td>Inadequate safety margin. Advise detail assessment within 6 weeks (including core testing to assess concrete strength as described in item 5 above).</td>
</tr>
<tr>
<td>FoS &lt; 1.25</td>
<td>Consider evacuation if distresses are present in the structural member. If no distress is present, recalculate FoS using Live Load of 20 psf. If FoS is still &lt; 1.25 immediate evacuation should be done or otherwise if the recalculated FoS &gt; 1.25 the factory may remain operational with restriction on live load. No storage shall be allowed and an urgent detail assessment is to be carried out immediately. Necessary remediation should be completed urgently. In case of evacuation, the procedure for emergency escalation protocol (Appendix A) shall be followed.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>For Steel Columns:</th>
<th>Actions to be Taken</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calculated FoS Value</td>
<td></td>
</tr>
<tr>
<td>FoS &gt; 1.45</td>
<td>Adequate Safety margin exists so factory may continue as usual.</td>
</tr>
<tr>
<td>FoS 1.2 to 1.45</td>
<td>Inadequate safety margin. Advise detailed engineering assessment (DEA) within 6 weeks.</td>
</tr>
<tr>
<td>FoS &lt; 1.2</td>
<td>Using reduced floor Live Load of 1kN/m² and recalculate FoS. If the revised FoS &gt; 1.2, advise DEA within 6 weeks. If FoS is still &lt; 1.2, initiate the emergency escalation protocol (Appendix A).</td>
</tr>
</tbody>
</table>

E. Structural Visual Assessment Checklist Items

INITIAL in-factory walk-through Assessments shall be conducted systematically and with thorough attention to the elements described below. The INITIAL assessment shall include all buildings in the factory. It will rarely be possible to visually examine all concealed construction, nor shall such be generally necessary. However, a
sufficient number of typical structural members must be examined to permit reasonable conclusions to be drawn.

F. The following items shall be reviewed by the Assessor at each level of each factory building.

1. Note the number of levels and floor extents and other construction to compare with available structural documentation and design considerations;

2. Determine representative sizes of structural elements, including:
   a. Slab thickness(es),
   b. Locations and width/depth dimensions of beams,
   c. Locations and dimensions of columns,
   d. Locations, dimensions, and construction material of walls.

3. Confirm general physical condition of all structural elements.

4. Identify any key structural elements:
   a. slender columns
   b. flat plate floor systems
   c. transfer girders
   d. cantilever girders
   e. other

5. Identify unusual features or inadequacies observed;

6. Note apparent loadings from use of the building including factory operations, equipment, storage of materials and work products, and other uses.

7. A detailed checklist for the In-Factory Assessment is provided in Form ASP5.0. The items listed on this checklist constitute a suggested list of specific items to be assessed. This checklist shall not be considered by the Assessor to be all-inclusive, and the Assessor shall use good professional judgment regarding adding or deleting items as necessary to complete the In-Factory Assessment.

8. It is expected that one site visit to the subject property will suffice for the INITIAL Factory Assessment for Fire Safety, and one visit for the INITIAL Assessment for Structural Integrity. Additional factory visits may be required to review progress on corrective action or to conduct FOLLOW-UP evaluations.

9. The Assessor shall note structural deterioration where it is observed, including cracking or spalling of concrete or masonry, and oxidation of metals. Surface imperfections such as cracks, distortion, sagging, excessive deflections, significant misalignment, signs of leakage, and peeling of finishes shall be viewed critically as indications of possible lack of structural performance.

10. For cracks in concrete elements, Assessor shall note and photographically document locations, width, and extent in significant members.

11. Where corrosion of reinforcing steel is noted, Assessor shall note and photographically document the degree of corrosion.

12. Where visual evaluation alone is deemed insufficient, manual procedures such as chipping small areas of concrete and surface finishes for closer examinations are acceptable in preference to detailed or extensive sampling and/or testing.

13. Generally, unfinished areas of buildings such as utility spaces, maintenance areas, stairwells and elevator shafts shall be utilized for such purposes where practical. In some cases, ceilings or other construction
finishes may have to be opened for selective examination of critical structural elements. In that event, such locations shall be carefully located to be least disruptive and most easily repaired, and held to a minimum. In any event, a sufficient number of structural members must be examined to afford reasonable assurance that such are representative of the total structure.

G. **Confirmation of Floor Loading**
Assessor shall note loading and load management practices on each floor, including density of factory floor operations, location and estimated weights of stored materials and work products in conformance with properly prepared and posted loading plans on each floor, operational equipment, and any other operational conditions that create structural loadings.

H. **Non-structural elements**
1. The Assessor shall note the presence or absence and apparent adequacy of positive anchorages overall stability and seismic forces for the following non-structural elements, wherever and to the extent that they occur:
   a. Steam pipes
   b. Chemical or process pipes
   c. Storage racks
   d. Water tanks
   e. Other suspended equipment weighing more than 1.8 kN that in the opinion of the Assessor presents a danger to workers in an earthquake.

I. **Exclusions and limitations**
INITIAL in-factory walk-through structural assessments will generally NOT include the following activities:
1. Detailed or exhaustive testing, measuring, or preparing calculations for any system or component to determine adequacy, capacity, or compliance with any standard is outside the scope of the in-factory assessment.
2. Taking of field measurements, beyond general estimation where appropriate.
3. Analytical confirmation of conformance with Building Code requirements.
4. Evaluation of non-structural elements or elements not related to worker life safety.
5. Walking on pitched roofs, or any roof areas that appear to be unsafe, or roofs with no built-in access.
6. Observations of the building exterior elements will be generally limited to available vantage points that are on-grade or from readily accessible balconies or rooftops.
7. In general the Assessor shall not enter crawl spaces or other confined spaces, any space that is deemed to be dangerous to access, or any space that is locked or otherwise inaccessible. If material information may be gained by entering locked spaces, assessor shall take reasonable steps with Factory Representative to gain access, and shall note on field report success or lack of success in gaining such access.
8. In general Assessor shall not conduct any assessment activities that require factory production to be disrupted or discontinued.

J. **Confirmation of Actual Dead Loads**
1. As part of the preliminary structural assessment, the Assessor shall take steps to reasonably confirm that the dead loads imposed on the building are known.
a. This confirmation is specifically required if the modified load factors and load combinations stated in Table 8.1 of the Standard are used to confirm structural adequacy.

2. Slab thicknesses shall be measured at mid-span of representative slab spans on each floor.

3. Dimensions of representative sampling of beams shall be field measured.

4. Dimensions of representative sampling of columns shall be field measured.

5. Construction materials of walls shall be confirmed by representative exploration.

6. The weights of fixed service equipment and other permanent machinery, such as generators, water tanks, production equipment, electrical feeders and other machinery, heating, ventilating and air-conditioning systems, lifts and escalators, plumbing stacks and risers etc. shall be confirmed by actual measurement and weighing, or by review of credible manufacturers data sheet supplied by the Factory Owner for each piece of equipment.

7. When the actual weights of fixed service equipment and permanent machinery or systems is confirmed by data sheets, then the weight of those elements may be considered as dead load in preliminary and any detailed structural analysis.

8. In absence of confirmation of actual weight of fixed service equipment and permanent machinery, these elements shall be considered as live load with full multipliers used in preliminary and any detailed structural analysis.

K. Confirmation of Actual Operational Live Loads

1. As part of the preliminary structural assessment, the Assessor shall take steps to reasonably confirm that the live loads imposed on the building are known. This confirmation is specifically required if the modified load factors and load combinations stated in Table 8.1 of the Standard are used to confirm structural adequacy.

2. For stored work materials, each type of material shall be weighed and measured. The typical and maximum height of stored work materials shall be noted or estimated.

3. For stored work products, each size of boxed or packaged material shall be weighed and measured. The typical and maximum height and density (e.g. loose or dense) of stored work materials shall be noted or estimated.

4. For other types of live load, confirmation shall be accomplished in the most appropriate means in the judgment of the Assessor.

5. In assessing the live loads used for the preliminary structural assessment of floors, roof and their supporting members, the Assessor shall use the greatest applied loads arising from the apparent actual and intended use or occupancy of the building, or from the stacking of materials and the use of equipment and propping during construction.

6. Assessor may generally draw the conclusion that floors supporting normal factory floor sewing activities that are performing acceptably well without distress have a maximum floor design live load capacity of 2.0 kN/m² (42 psf).

7. Where the density of operations, storage of materials, or equipment weights imposes loads in excess of 2.0 kN/m² (42 psf) on the structural floor, Assessor shall perform more detailed structural capacity assessment.
8. If the approved design documents for the factory construction do not explicitly confirm that the required load capacity exists, then the floor load capacity in the affected areas shall be analytically confirmed and certified by a qualified structural engineer.

9. In this case the Assessor shall review the certification letter and accompanying plans and calculations for accuracy and consistency with observed field conditions.

10. For floors with calculated design live load capacity of less than 2.0 kN/m² (42 psf) (such as residential floors converted to factory use) the Assessor shall confirm that the floor live load capacity is clearly indicated on the Floor Load Plans required by Section 8.20.5.3f of the Standard and that aggregate dead and live loading on the floor is limited to the floor capacity.

11. In this case the Assessor shall review the certification letter and accompanying plans and calculations for accuracy and consistency with observed field conditions.

12. For areas of factory floors with actual operational live loads estimated or calculated by the Assessor to exceed 2.0 kN/SM, the Assessor shall confirm that a credible certification letter with accompanying plans and calculations prepared by a qualified structural engineer is available for review. The Assessor shall review same and perform confirmatory calculations if, in his sole judgment, it is required.

L. Confirmation of Actual Construction Material Properties

1. Where practical, all preliminary and detailed structural assessments will consider actual in-situ material strengths as measured by non-destructive and destructive testing in conformance with applicable ASTM testing protocols.

2. Where field conditions allow and are acceptable in the judgment of the Assessor, presumed minimum material strengths and characteristics may be used as stated in Section 7.3 of the Standard.

M. Photographs

1. The Assessor shall document representative conditions with photographs, using reasonable efforts to document typical and specific conditions present including material physical deficiencies, if they exist.

2. At the minimum, photographic documentation shall include:
   a. Front and typical elevations and exteriors
   b. Typical and special structural systems
   c. Typical and specialized factory floor operations
   d. Storage areas including racks
   e. Water tanks
   f. Generators
   g. Special factory equipment
   h. Seismic anchorages
   i. Other important structural details or conditions.

3. Photographs shall be keyed to the floor and area so that they can be properly referenced for follow-up action as needed.

N. Field Documentation of Structural Factory Assessments

1. The Assessor shall document the initial results of his/her factory Assessment with a field-produced document Preliminary Onsite Structural Assessment (POSA) Form ASP6.0. This form will document the key elements of the Assessment and any preliminary recommendations provided to the Factory Owner after the Assessment is complete. The completed POSA will be uploaded into the FFC.
2. The POSA form will include the following elements:
   a. General details about the factory.
   b. Confirmation of documents provided for the factory in the Factory Information Form. If any updated or additional documents are provided by the Factory Owner during the factory visit, these will be noted.
   c. Confirmation of the number of factory and ancillary buildings in the complex, and the number of each assessed.
   d. Summary of structural concerns noted with action recommended.
   e. Notes regarding specific exceptions taken by Factory Representatives to the assessment results, if expressed during the post-assessment meeting.
   f. Additional comments by Assessor as appropriate.
   g. Acknowledgement signatures by Factory Representative, Sponsoring Alliance Member representative (if present) and Assessor.

See enclosed Form ASP6.0 for format of the POSA form.

O. Reporting
The results of the Structural Integrity Assessment will be documented in the following FFC generated reports:

**INITIAL Structural Integrity Assessment Report (SIAR)**
The SIAR is the full summary report that corresponds to the required fields of the FFC database and that will be generated by the FFC system. Contents of the INITIAL Structural Safety Assessment Report will include:

- General Factory Information
- QAF firm and team information
- Description of Documents and records reviewed and results
- Description of the visual assessment and results
- Description of any meetings and/or interviews that took place
- Summary of compliance results and recommendations
- Photographs that document general and specific conditions
- Summary of the Closing meeting and who attended
- Copy of completed POSA
- Copy of completed Factory Owners Fire Safety Questionnaire

**INITIAL Structural Integrity Assessment - Corrective Action Plan (SIAR-CAP)**
For factories with items that do not comply with any element of the Standard, a Structural Integrity Corrective Action Plan (SIAR-FCAP) will be also be generated by the FFC. For each corrective item identified, the SIAR-CAP will include the following elements:

a. Date Opened (this will be the date the report is issued to the Factory Owner)
   b. Description of the deficiency including the extent, location, and other important data regarding the noted deficiency
   c. Reference to the Alliance standard and/or applicable legal requirement
   d. Supporting evidence (such as photographs)
   e. Recommended action to address the deficiency that contains enough detail to provide the Factory guidance on how to correct deficiency
   f. Recommended time frame for actions to be completed (measured in weeks from date of report).

REF: SIAR and SIAR-CAP templates and sample report for specific instructions.

P. Time frames for corrective action
1. Each corrective action item shall include a specific recommended timeframe for implementation provided by the assessor. However, the actual corrective action plan will be confirmed, and modified if needed, by the factory, then approved.

2. Time frames for corrective action shall reflect the urgency and seriousness of each item, and shall be reasonable and consistent for similar items within a factory and from factory to factory.

3. Default timeframes and priority levels for corrective action shall follow guidelines established by the Alliance.

Q. Issue Priority Ratings

1. In the FFC each non-conformity will be automatically assigned an associated priority of “High”, “Medium”, or “Low” developed by the Alliance in the formal written reports generated by the FFC. In addition, the assessor shall identify a specific severity level between 1-3 if each non conformity, with 3 being the highest severity and 1 being the lowest severity.

2. The Factory itself will not be provided an overall factory rating or score.

3. Factories believed to have Severe and Imminent Life Safety risk will advance immediately into the “Escalation Process”. Ref: Appendix A: EEP

R. Report Comment Period

Each factory and associated Alliance member will be provided the formal, typed Assessment Reports within 17 calendar days of each assessment via email and/or the FFC system. The Factory and other interested parties may comment and/or seek clarification on any aspects of the draft reports during a 10 calendar day review period. At the end of that period, the report will be issued as final. All formal questions shall be submitted to the Lead Assessor via e-mail with CC: to the Alliance at structural.questions@afbws.org

S. FOLLOW-UP Assessment and/or Activities

Depending on the results of the INITIAL Assessments, FOLLOW-UP assessments or other desktop activities may be required. Where approved by the MF, INITIAL Assessor may perform the FOLLOW-UP activities. FOLLOW-UP activities are intended to either investigate the fire safety and/or structural integrity of an assessed factory further, or to follow-up on agreed upon Corrective Action Plans (CAPs). More specific examples include:

A. Onsite, detailed assessments or investigations into specific items of concern identified in INITIAL assessment;

B. Desktop or Onsite technical confirmation of analysis, design, documentation, testing, or other similar activities performed by the factory another third party consultant.
PART 3 – INITIAL FIRE SAFETY ASSESSMENT COMPONENTS & PROTOCOLS

Purpose: The Initial Fire Safety Assessment will be conducted in accordance with the steps outlined in this document. This Assessment will be intended to (1) confirm the validity of any documentation provided by the Factory Owner, and (2) identify potential fire and life safety risks of each factory in its entirety by seeking to answer the following five questions:

1. Are the structural systems properly protected in order to preserve the integrity of the structure in the event of a fire?
2. Are a sufficient number of means of egress provided to allow for safe egress in the event of an emergency?
3. Are means of egress constructed in a manner that protects occupants during an emergency from the effects of fire, smoke, heat, and toxic gases created during a fire?
4. Are fire protection systems installed, operated, and maintained in accordance with the Standards?
5. Are building occupants properly trained and aware of emergency evacuation procedures?

If the Assessor determines that the answers to the five questions are affirmative, the factory may be found to be acceptably compliant with this Standard without further fire safety investigations. If the Assessor determines that the answers to one or more of the five questions are negative, then the factory may be found to be non-compliant with the Standard.

The specific and required components of the INITIAL Fire Safety Assessment are as follows:

A. Requirements for Fire Safety Assessors

1. Fire Safety Assessors shall be pre-qualified by the Alliance MF with technical input from the Alliance Committee of Experts. Absent other criteria for Assessors required by the Committee of Standards, the following minimum criteria shall apply:
   a. Assessors shall each hold minimum 4-year degrees (BS-Fire Protection Engineering or equivalent) from a recognized university.
   b. Lead Fire protection engineers shall be licensed to practice in their jurisdiction of residence.
   c. Lead Assessors shall have a minimum of eight (8) years of professional experience.
   d. Non-Lead Assessors shall have a minimum of three (3) years of professional experience.
   e. Assessors shall be independent of the influence of factory owners, the BGMEA, and other interested parties. Assessors shall be self-employed or employed by firms that design and/or assess comparable structures to international standards.
   f. Assessors shall be experienced in the design and assessment of fire protection and life safety for industrial buildings of similar scale and complexity to RMG factories.

B. Staff-Day Allocation Minimums for Fire Safety Assessments

<table>
<thead>
<tr>
<th>Factory Square Footage</th>
<th>Required No. of Total Staff-days time onsite</th>
<th>Required No. of LEAD Assessors time onsite</th>
<th>Allowable No. of Non Lead Assessors time onsite</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-10,000</td>
<td>.5</td>
<td>.5</td>
<td>0</td>
</tr>
<tr>
<td>10,001 – 50,000</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>50,001 – 150,000</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>150,001-250,000</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>250,001 +</td>
<td>4</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

Note 1: 2 Lead Assessors may be teamed for ½ staff-day to equal 1 full staff-day.
Note 2: deviations from the above must be approved by MF or COE.
C. Factory Visit for INITIAL Fire Safety Assessment

If possible, factory visits will not be scheduled until a completed Factory Information Form and other required documentation are received and processed. Where possible, fire safety assessments will be conducted separately and after structural integrity assessments. Factory visits will be scheduled by the Alliance-qualified Assessor and coordinated with Factory Owners designated Factory Representative.

The factory visit will include Seven (7) elements, as outlined below.

1. Preparation
   2. Confirm the completeness of the Factory Information Form, questionnaires, and submitted documents. The Factory Owner may be contacted regarding unexplained or unacceptable gaps in the application.
   3. Insert relevant factory information into the Fair Factories Clearinghouse.
   4. Determine whether the Factory has previously been evaluated in the program, and the results of prior assessment(s).
   5. Review of available documents, either original fire documents, inspection reports or as-built documents prepared in accordance with the Standard.

2. Interview with Factory Representatives

   Discussions will be conducted with representatives of the Factory Owner at the factory prior to the factory assessment. The purpose of these discussions will be for the Alliance-qualified Assessor to gain additional insight into the history, use, and anticipated future of the factory buildings. These discussions will be documented in written field notes. The Assessor will also meet with the Fire Safety Director to discuss the implementation of Human Element Programs.

3. Confidential Worker Interviews

   Talking to workers is an important tool utilized to validate the implementation of the human element of fire protection programs within the factory. A random check with employees across different segments of the factory could be used to either validate or refute assertions of compliance. However, if the person in charge of Fire Safety doesn’t assert that the drills are being completed then such a questioning of employee on this point would not be necessary. Thus, the degree of interviewing may depend on the general assertions of the factory and robustness their fire safety program. Furthermore, answers to questions presented by workers might prompt additional questions with the aim of the interview to gain insight into level of training and knowledge, and implementation of the human elements program for the factory. Human elements contained in the Alliance standard and recommended questions might include among others, the following:

   Fire Drills
   - Have you ever participated in a fire drill? How often are they conducted?
   Evacuation Plan
   - How can you make notification of discovery of a fire condition? How would you be notified of an emergency condition? Where is the nearest egress route?
   - What are your responsibilities? (Employees designated as a fire warden)
   Hot Work Permit
   - Tell me how your hot work permit program works? (Maintenance personnel)
   Smoking
   - Where is smoking allowed?
   Fire Protection Component Testing
· What inspection, test and maintenance is conducted for your (fire doors, suppression systems, fire alarm systems, fire extinguishers, emergency lighting, generators, etc.)? (Inspection, test and maintenance personnel)

Where talking with workers to determine their knowledge of any required element of the standard, special care shall be taken to do so away from management and in a confidential manner. The purpose of this is to avoid putting workers in an awkward situation where they do not feel comfortable to speak openly. Best practices for making workers feel comfortable include:

✓ Being conscious of your body language and theirs
✓ Introducing yourself politely as an equal
✓ Engaging in small talk to make them feel comfortable
✓ Using open ended questions (it is not a test)

4. Document and Record Review

The primary purpose of the review of documentation will be to evaluate documentation compliance with the requirements of the Standard. For each building in the Factory, the Assessor(s) will typically evaluate the following information.

✓ Review design and as-built drawings related to the installation of fire protection systems to identify rating types, means of egress, installation requirements, fire suppression design requirements and coverage, general location of fire detection and alarm devices, and other information related to the systems installed within the building
✓ Review testing and maintenance documents related to fire protection systems for the fire alarm and notification system, sprinkler system, emergency generator, standpipe and hose system, smoke evacuation system, fire extinguishers, etc.
✓ Review applicable worker training documentation and programs
✓ Review applicable permits and licenses
✓ Review evacuation plan
✓ Review of Human Element Programs and supporting documentation

5. Factory INITIAL Visual Assessment

The Alliance-qualified Assessor will conduct an INITIAL Visual Fire Safety Assessment of the entire factory complex. The primary purpose of the visual assessment will be to assess compliance with the Standard for fire safety. The Assessor shall confirm the physical conditions of the buildings, with particular attention to identify key fire safety characteristics as outlined below. The visual fire assessment will also generally confirm that the available architectural documents accurately portray the configuration and arrangement of the spaces, factory operations, exits, and paths of egress. The visual assessment will confirm details of the means of egress systems, exposures, presence of fire protection equipment, and general configuration of occupancies. The assessor will take photographs to document the overall and specific conditions. The Assessor will use Form ASP5.1 as a checklist for the field assessment and to document findings.

6. Post-Assessment Meeting with Factory Representatives

Following the completion of the INITIAL fire safety Assessment, the Assessor will meet with Factory Representatives to review initial results of the Assessment and discuss any remaining questions. During this process informal discussion about possible solutions to identified concerns may occur. An initial summary of findings and recommendations will be provided to the Factory Owner. These findings and recommendations will be documented in the Preliminary Onsite Fire Assessment (POFA), Form ASP6.1.
7. **Post Assessment Meeting with Union and Worker Representatives**

Assessors are required to facilitate and allow Trade Union, Worker Participation Committee (WPC) and/or Safety Committee representatives, where they exist at the factory to participate in the following activities:

   a. Pre and post Assessment meeting
   b. Shadowing the assessment (see definitions)
   c. Sign off on and provide a copy of the draft on-site report that is also provided to management.

D. **Detailed Description of INITIAL Fire Safety Assessment Protocols**

1. INITIAL Fire Safety Assessments will be conducted carefully with thorough attention to the elements described below.

2. The INITIAL Fire Safety Assessment will include all buildings in the factory. The checklists outlined in this protocol are not intended to supplant proper professional judgment. It will rarely be possible to visually examine all concealed construction, nor shall such be generally necessary. However, the Assessor shall visually examine a sufficient portion of all related systems in order to get a good understanding of the overall compliance, condition, and adequacy of the related systems.

3. Visual examination will, in most cases, be considered adequate when executed systematically. The structural systems will be visually assessed to determine if the means of structural fire protection and ratings are compliant with the Standard.

4. The construction type for the factory is to be identified for each building and verified as compliant with the Standard.

5. The occupancies included within the factory is to be identified and appropriate separations verified or the assessment is to be conducted as a non-separated occupancy facility.

6. All means of egress will be verified and walked as well as all floors of the factory to verify the occupancies. Items to verify will typically include the correct installation of directional and notification signage, correct rating of fire doors, paths of egress are kept free and clear of stored materials or other obstructions, doors along the path of egress are not blocked or locked, travel distances to exits are within acceptable limits, appropriate number of exits provided, the capacity of the available exits exceeds the occupant loading served, exit enclosures and corridors are appropriately fire rated, exit discharge is to an appropriate location and verification of additional requirements set forth in the Standard.

7. A verification is to be provided that the appropriate fire suppression systems are provided for Factory in accordance with the Standard. Fire suppression systems will be visually examined to determine if proper sprinkler coverage is provided, proper design criteria utilized and that the system components are in good operating order and are well maintained. This includes visual inspections of the standpipe and hose system, the sprinkler system, fire pump, storage tanks, hand held fire extinguishers, and other fire suppressions systems installed within the building.

8. A verification is to be provided that the appropriate fire detection and alarm system are provided for the Factory in accordance with the Standard. Fire detection and alarms systems will be visually examined to determine if proper device coverage is provided and that the system components are in good operating order and are well maintained. Any damaged devices or components shall be noted.

9. Evacuation systems will be visually examined to determine if the system is installed throughout the building and in good operating order. Any damaged devices or components shall be noted.
10. Emergency egress and exit lighting will be inspected to determine if exit lights and egress lighting are installed in the appropriate locations and operational.

11. Visual inspection of storage areas to ensure chemicals and other flammable liquids are properly stored in approved containers and/or cabinets.

12. In the event the Assessor observes a condition that poses an imminent threat to the health and safety of the building occupancy, the Assessor may take one or more of the following actions:

   a. If the area of concern represents a severe and imminent danger to workers, proceed to immediately notify parties including the Factory Owner in accordance with the special Escalation Protocol related to Severe and Imminent Danger.
      i. Note that any recommendations to evacuate or close a factory due to severe and imminent threat are subject to automatic peer review within 48 hours by a review panel.

   b. Conduct further and more detailed investigations of those items that were not found to be compliant, including field investigations and testing to determine the adequacy of the fire protection systems installed.

   c. Recommend that the factory owner take appropriate steps to remediate any items that are found to be non-compliant with the Standard.
      i. Each recommendation shall include a specific and reasonable timeframe for implementation of the corrective action.
      ii. Time frames for corrective action shall reflect the urgency and seriousness of each item, and shall be reasonable and consistent for similar items within a factory and from factory to factory.
      iii. Where practical, timeframes for corrective action shall follow guidelines established by the Alliance Committee of Experts.

   d. Recommend that the factory owner engage a qualified fire protection and/or life safety consultant to conduct further and more detailed investigations of those items that were not found to be compliant, including field investigations and testing to determine actual existing conditions related to the fire protection systems adequacy, ratings of construction materials, and functional performance testing of systems such as smoke evacuation systems, fire detection and alarm, standpipe and hose system, or any other system deemed necessary by the Assessor.

   e. Depending on the Assessors determination of the answers to the five questions, the Assessor may recommend and/or conduct a more detailed fire safety assessment, investigations or analysis.

13. Photographic documentation will be collected and included within the report.

14. The detailed description of protocols is not intended to be an all-encompassing list of protocols. The Assessor shall also review the Alliance Standard and standards incorporated by reference shall be reviewed before completing the assessment.

E. Field Documentation of Fire Safety Factory Assessments

1. The Assessor will document the initial results of his/her factory Assessment with a field-produced document Preliminary Onsite Fire Assessment (POFA) form. This form will document the key elements of the Assessment and any preliminary recommendations provided to the Factory Owner after the Assessment is complete. The completed POFA will be uploaded to the FFC.
2. The POFA form will include the following elements:

   a. General details about the factory.
   b. Confirmation of documents provided for the factory in the Factory Information Form. If any updated or additional documents are provided by the Factory Owner during the factory visit, these will be noted.
   c. Confirmation of the number of factory and ancillary buildings in the complex, and the number of each assessed.
   d. Information regarding conformance with the specific requirements set forth in the Standard.
   e. Summary of fire safety concerns noted with action recommended.
   f. Notes regarding specific exceptions taken by Factory Representatives to the assessment results, if expressed during the post-assessment meeting.
   g. Additional comments by Assessor as appropriate.
   h. Acknowledgement signatures by Factory Representative, Sponsoring Alliance Member representative (if present) and Assessor.

   See enclosed Form ASP6.1 for format of the POFA form.

F. Reporting

The results of the Fire Safety Assessment will be documented in the:

**INITIAL Fire Assessment Report (FAR)**

The FAR is the full summary report that corresponds to the required fields of the FFC database. Contents of the INITIAL Fire Safety Assessment Report

- General Factory Information
- QAF firm and team information
- Description of Documents and records reviewed and results
- Description of the visual assessment and results
- Description of any meetings and/or interviews that took place
- Summary of compliance results and recommendations
- Photographs that document general and specific conditions
- Summary of the Closing meeting and who attended
- Copy of completed POFA
- Copy of completed Factory Owners Fire Safety Questionnaire

**INITIAL Fire Assessment - Corrective Action Plan (FAR-CAP)**

For factories with items that do not comply with any element of the Standard, a Fire Corrective Action Plan (IFA-FCAP) will be generated. For each corrective item identified, the FCAP will include the following elements:

- Reference Number
- Date Opened (this will be the date the report is issued to the Factory Owner).
- Description of the deficiency
- Reference to the Alliance standard and applicable legal requirement
- Supporting evidence (such as photographs)
- Recommended action to address the deficiency that provides enough guidance to support factory improvement efforts
- Recommended time frame for actions to be completed (measured in weeks from date of report).
- Assigned risk rating for each deficiency

*REF: FAR and FAR-CAP templates and sample report for specific instructions.*
G. Time frames for corrective action

1. Each corrective action item shall include a specific recommended timeframe for implementation provided by the assessor. However, the actual corrective action plan will be confirmed, and modified if needed, by the factory, then approved.

2. Time frames for corrective action shall reflect the urgency and seriousness of each item, and shall be reasonable and consistent for similar items within a factory and from factory to factory.

3. Default timeframes and priority levels for corrective action shall follow guidelines established by the Alliance.

H. Issue Priority Ratings

1. In the FFC each non-conformity will be automatically assigned an associated priority of “High”, “Medium”, or “Low” developed by the Alliance in the formal written reports generated by the FFC. In addition, the assessor shall identify a specific severity level between 1-3 if each non conformity, with 3 being the highest severity and 1 being the lowest severity.

2. The Factory itself will not be provided an overall factory rating or score.

3. Factories believed to have Severe and Imminent Life Safety risk will advance immediately into the “Escalation Process”. Ref: Appendix A: EEP

I. Report Comment Period

Each factory and associated Alliance member will be provided the formal, typed Assessment Reports within 14 calendar days of each assessment via email and/or the FFC system. The Factory and other interested parties may comment and/or seek clarification on any aspects of the draft reports during a 14 calendar day review period. At the end of that period, the report will be issued as final.

All formal questions shall be submitted to the Lead Assessor via e-mail with CC: to the Alliance at fire.questions@afbws.org

J. FOLLOW-UP Assessment and/or Activities

Depending on the results of the INITIAL Assessments, FOLLOW-UP assessments or other desktop activities may be required. Where approved by the MF, INITIAL Assessor shall perform the FOLLOW-UP activities. Generally, FOLLOW-UP activities are intended to either investigate the fire safety and/or structural integrity of an assessed factory further, or to follow-up on agreed upon Corrective Action Plans (CAPs). More specific examples include:

1. Onsite, detailed assessments or investigations into specific items of concern identified in INITIAL assessment;

2. Desktop or Onsite technical confirmation of analysis, design, documentation, testing, or other similar activities performed by the factory another third party consultant.
PART 3 – INITIAL ELECTRICAL ASSESSMENTS COMPONENTS AND PROTOCOLS

Purpose: The INITIAL Electrical Assessment will be conducted in accordance with the steps outlined in this document. This Assessment will be intended to (1) confirm the validity of any documentation provided by the Factory Owner, and (2) identify potential electrical safety risks of each factory in its entirety by seeking to answer the following three questions:

1. Is the electrical system designed and installed in a way that protects the building occupant’s health and safety?
2. Is the electrical system being maintained in manner that is safe and ensures the system remains operational?
3. Are those responsible for operating and maintaining the system properly licensed and trained?

If the Assessor determines that the answers to the three questions are affirmative, the factory may be found to be acceptably compliant with this Standard without further electrical safety investigations. If the Assessor determines that the answers to one or more of the three questions are negative, then the factory may be found to be non-compliant with the Standard.

The specific and required components of the INITIAL Electrical Assessment are as follows:

A. Requirements for Electrical Assessors

Electrical Assessors shall be pre-qualified by the Alliance MF with technical input from the Alliance Committee of Experts. Absent other criteria for Assessors required by the Committee of Standards, the following minimum criteria shall apply:

A. All Assessors shall each hold minimum 4-year degrees (BS-Electrical Engineering or equivalent) from a recognized university.
B. Lead Electrical engineers shall be licensed to practice in their jurisdiction of residence.
C. Lead Assessors shall have a minimum of eight (8) years of professional experience.
D. Non-Lead Assessors shall have a minimum of three (3) years of professional experience.
E. Assessors shall be independent of the influence of factory owners, the BGMEA, and other interested parties. Assessors shall be self-employed or employed by firms that design and/or assess comparable buildings to international standards.
F. Assessors shall be experienced in the design and assessment of electrical systems in industrial and buildings of similar scale and complexity.

B. Staff-Day Allocation Minimums for ELECTRICAL Safety Assessments

<table>
<thead>
<tr>
<th>Factory Square Footage</th>
<th>Required No. of Total Staff-days time onsite</th>
<th>Required No. of LEAD Assessors time onsite</th>
<th>Allowable No. of Non Lead Assessors time onsite</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-10000</td>
<td>1</td>
<td>.5</td>
<td>.5</td>
</tr>
<tr>
<td>10,001 – 50,000</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>50,001 – 150,000</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>150,001-250,000</td>
<td>3</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>25,0001 +</td>
<td>4</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

Note 1: 2 Lead Assessors may be teamed for ½ staff-day to equal 1 full staff-day.
Note 2: deviations from the above must be approved by MF or COE.
C. Visit for INITIAL Electrical Safety Assessment

1. If possible, factory visits will not be scheduled until a completed Factory Information Form and other required documentation are received and processed. In general, electrical assessments will be conducted separately and after structural integrity assessments. Factory visits will be scheduled by the Assessor and coordinated with Factory Owners designated Factory Representative. Factory visits will generally be scheduled within ten weeks of submittal of complete documentation.

2. The factory visit will include six (6) elements, as outlined below.

1. Preparation
   a. Confirm the completeness of the Factory Information Form, questionnaires, and submitted documents. The Factory Owner may be contacted regarding unexplained or unacceptable gaps in the application.
   b. Insert relevant factory information into the Fair Factories Clearinghouse.
   c. Determine whether the Factory has previously been evaluated in the program, and the results of prior assessment(s).
   d. Review of available documents, either original electrical documents, inspection reports or as-built documents prepared in accordance with the Standard.

2. Interview with Factory Representatives
   a. Discussions will be conducted with representatives of the Factory Owner at the factory prior to the factory Assessment. The purpose of these discussions will be for the Alliance-qualified Assessor to gain additional insight into the history, use, and anticipated future of the factory buildings. These discussions will be documented in written field notes. The Assessor will also meet with the Fire Safety Director to discuss the implementation of Human Element Programs related to the electrical system.

3. Document and Record Review
   a. The primary purpose of the review of documentation will be to evaluate documentation compliance with the requirements of the Standard. For each building in the Factory, the Assessor(s) will typically evaluate the following information.
   b. Review available design and as-built drawings of the electrical system including single line diagrams (SLD), equipment layout and installation plans, and initial testing reports.
   c. Review testing and maintenance documents related to the electrical system, such as thermographic scans, insulation resistance testing, earth resistance testing, general electrical inspection reports, emergency generator testing and maintenance logs, and other available documents related to the electrical system.
   d. Review maintenance policy and procedures.
   e. Review applicable worker training documentation and programs.
   f. Review applicable permits and licenses.
   g. Review of Human Element Programs and supporting documentation.

4. Factory INITIAL Electrical Assessment
   The Alliance-qualified Assessor will conduct an INITIAL Electrical Assessment of the entire factory complex. The primary purpose of the assessment will be to assess compliance with the Standard for the overall and specific conditions of the electrical system within the factory. The Assessor will use Form ASP5.2 as a checklist for the field assessment and to document findings.
5. **Post-Assessment Meeting with Factory Representatives**

Following the completion of the INITIAL Electrical Assessment, the Assessor will meet with Factory Representatives to review initial results of the Assessment and discuss any remaining questions. During this process informal discussion about possible solutions to identified concerns may occur. An initial summary of findings and recommendations will be provided to the Factory Owner. These findings and recommendations will be documented in the Preliminary Onsite Electrical Assessment (POEA), Form ASP6.2.

6. **Post Assessment Meeting with Union and Worker Representatives**

Assessors are required to facilitate and allow Trade Union, Worker Participation Committee (WPC) and/or Safety Committee representatives, where they exist at the factory to participate in the following activities:

   a. Pre and post Assessment meeting
   b. Shadowing the assessment (see definitions)
   c. Sign off on and provide a copy of the draft on-site report that is also provided to management.

D. **Detailed Description of INITIAL Electrical Assessment Protocols**

1. INITIAL Electrical Assessments will be conducted carefully with thorough attention to the elements described below.

2. The INITIAL Electrical Assessment will include the main factory building(s) and all building(s) that support the factory. The checklists outlined in this protocol are not intended to supplant proper professional judgment. It will rarely be possible to visually examine all concealed construction, nor shall such be generally necessary. However, the Assessor shall visually examine a sufficient portion of all related systems in order to get a good understanding of the overall compliance, condition, and safety of the related systems.

3. Visual examination will, in most cases, be considered adequate when executed systematically. The visual assessment will confirm details of the service entrance, generators, switchboards, distribution, lighting, grounding, emergency/standby power systems, and lightning protection.

4. A thermographic inspection of the electrical systems for each building included within the Initial Electrical Assessment shall be completed according to Part 3 Section E. A listing of minimal electrical equipment to be included in the thermographic inspection is provided, as referenced in Appendix B.

5. Sub stations will be visually examined to confirm that a secure enclosure is provided, all cable trenches have covers, all equipment name plates are properly attached, equipment is efficiently earthed, etc.

6. Main electrical distribution will be visually examined to confirm that the equipment is easily accessible, a compliant enclosure is provided, circuits are protected with a means of disconnect and/or over current protection, equipment is protected from moisture and natural elements, metal enclosures are connected with earth, proper illumination is provided, etc.

7. Sub-distribution boards will be visually examined to confirm that enclosures are of steel fabrication and properly sealed from dust and vermin, electrical connections are properly terminated, metal enclosures are connected with earth, no improper joints or splices, circuits are protected with a means of over current protection, lighting and sockets are not combined on the same circuit, etc.

8. Electrical distribution wiring will be visually examined where possible to confirm that proper wiring sizes are used, wiring and other components do not pose a hazard to the health and safety of the building occupants, wiring and conduits are properly supported, connections to equipment are secure, lighting fixtures are properly secured and braced, no missing light switch or socket covers, the electrical service shaft has free and easy access, etc.
9. The earthing system will be visually examined where possible to confirm that the proper conductors are used, identify any possible areas of mechanical or corrosion damage, joints do not increase the resistance of the earthing, final connections to earth electrodes are aluminum of aluminum clad, etc.

10. The lightning protection system will be visually examined to confirm all terminals are properly secure and connected to the system, ground terminals are bonded to the building or structure grounding electrode system, down conductors are provided at the appropriate locations, etc.

11. The emergency power system will be visually examined to confirm that the system is properly sized to support essential loads during a power outage, the generator room is appropriately sized in order to sufficient access to all components of the generator, combustible materials are not stored within the generator room, generator exhaust is properly vented or ducted from the room, the change-over switch is sized appropriately, systems for life safety are tied into the emergency power system, etc.

12. Quantitative analysis will not generally be required.

13. In the event the Assessor observes a condition that poses an imminent threat to the health and safety of the building occupants, the Assessor shall follow the Emergency Escalation Protocol (Appendix A).

14. Photographic documentation will be collected and included within the report.

15. The detailed description of protocols is not intended to be an all-encompassing list of protocols. The Assessor shall also review the Alliance Standard and standards incorporated by reference shall be reviewed before completing the assessment.

E. Thermographic Inspection Protocols
The QAF shall use industry approved methods for completing the thermographic inspection of the electrical systems. The inspection process shall conform to ASTM E1934 – 99A Standard Guide for Examining Electrical and Mechanical Equipment with Infrared Thermography.

1. Inspection Parameters
   a. Inspect distribution systems with imaging equipment capable of detecting a minimum temperature difference of one degree Celsius at 30 degrees Celsius.
   b. Equipment shall detect emitted radiation and convert detected radiation to visual signal.
   c. Thermographic surveys should be performed during periods of maximum possible loading but not less than forty percent (40%) of rated load of the electrical equipment being inspected.
   d. Reference Appendix B for listing of minimal equipment to be included within the thermographic inspection.
   e. The QAF should notify the factory immediately of all Category 3 findings.

F. Field Documentation of Electrical Factory Assessments
The Alliance-qualified Assessor will document the initial results of his/her factory Assessment with a field-produced document Preliminary Onsite Electrical Assessment (POEA) form. This form will document the key elements of the Assessment and any preliminary recommendations provided to the Factory Owner after the Assessment is complete. The completed POEA will be included in the Assessment Report.

See enclosed Form ASP6.2 for format of the POEA form.

G. Reporting
The results of the INITIAL Electrical Assessment will be documented in the following FFC and QAF generated reports:

**Thermographic Inspection Report**
The QAF shall provide documentation for all infrared examinations. The report shall be generated in electronic format and uploaded to FFC. The following information shall be included within the Report of Thermographic Inspection:

1. QAF Firm name along with name of thermographer(s) including any certifications
2. Factory name and location
3. Listing of names and titles representing the factory assisting the QAF thermographer
4. Manufacturer, model, and serial number of equipment used to complete the thermographic scan
5. Equipment inventory list with notations indicating type of equipment examined and explanations for equipment not examined. Equipment inventory can be included within the report Appendix.
6. Date(s) of the inspection
7. Summary of load conditions at the time of the inspection
8. A table summary of findings broken down into the following categories:
   a. Category 1. Temperature differences of 1 degree Celsius to 3 degrees Celsius indicate possible deficiency and warrant investigation only. Repair within 6 months.
   b. Category 2. Temperature differences of 4 degrees Celsius to 15 degrees Celsius indicate deficiency; Repair within 3 months.
   c. Category 3. Temperature differences of 16 degrees Celsius and above indicate major deficiency; Immediate repair required.
9. Details for each finding shall include:
   a. A description, such as significant name plate data, location, equipment id (ie SDB1), phase, circuit number, voltage, current rating, etc.
   b. Ambient air temperature
   c. Field of view or magnification multiplier of the infrared imager lens, and any settings that could affect the accuracy, reliability, or repeatability of the inspection data
   d. Time the exception was documented
   e. Provide thermogram and corresponding visible-light image
   f. Category of finding along with recommended correction timeframe.
   g. Probable cause and recommendations for issues detected in the survey

**INITIAL Electrical Assessment Report (EAR)**
The EAR is the full summary report that corresponds to the required fields of the FFC database. Contents of the INITIAL Electrical Assessment Report

- General Factory Information
- QAF firm and team information
- Description of Documents and records reviewed and results
- Description of the visual assessment and results
- Description of any meetings and/or interviews that took place
- Summary of compliance results and recommendations
- Photographs that document general and specific conditions
- Summary of the Closing meeting and who attended
- Copy of completed POFA

**INITIAL Electrical Assessment Report- Corrective Action Plan (EAR-CAP)**
For factories with items that do not comply with any element of the Standard, an Electrical Corrective Action Plan (EAR-CAP) will be included generated. For each corrective item identified, the Corrective Action Plan will include the following elements:
• Date Opened (this will be the date the report is issued to the Factory Owner).
• Description of the deficiency
• Reference to the Alliance standard and applicable legal requirement
• Supporting evidence (such as photographs)
• Recommended action to address the deficiency with enough detail to support factory improvements efforts
• Recommended time frame for actions to be completed (measured in weeks from date of report).

REF: EAR and EAR-CAP template and sample reports for specific instructions.

1. **Time frames for corrective action**
   a. Each corrective action item shall include a specific recommended timeframe for implementation provided by the assessor. However, the actual corrective action plan will be confirmed, and modified if needed, by the factory, then approved.

   b. Time frames for corrective action shall reflect the urgency and seriousness of each item, and shall be reasonable and consistent for similar items within a factory and from factory to factory.

   c. Default timeframes and priority levels for corrective action shall follow guidelines established by the Alliance.

2. **Issue Priority Ratings**
   a. In the FFC each non-conformity will be automatically assigned an associated priority of “High”, “Medium”, or “Low” developed by the Alliance in the formal written reports generated by the FFC. In addition, the assessor shall identify a specific severity level between 1-3 if each non-conformity, with 3 being the highest severity and 1 being the lowest severity.

   b. The Factory itself will not be provided an overall factory rating or score.

   c. Factories believed to have Severe and Imminent Life Safety risk will advance immediately into the “Escalation Process”. Ref: Appendix A: EEP

3. **Report Comment Period**
   Each factory and associated Alliance member will be provided the formal, typed Assessment Reports within 10 calendar days of each assessment via email and/or the FFC system. The Factory and other interested parties may comment and/or seek clarification on any aspects of the draft reports during a review period. At the end of that period, the report will be issued as final.

   All formal questions shall be submitted to the Lead Assessor via e-mail with CC: to the Alliance at electrical.questions@afbws.org

G. **FOLLOW-UP Assessment and/or Activities**
   Depending on the results of the INITIAL Assessments, FOLLOW-UP assessments or other desktop activities may be required. Where approved by the MF, INITIAL Assessor shall perform the FOLLOW-UP activities. Generally, FOLLOW-UP activities are intended to either investigate the electrical safety of an assessed factory further, or to follow-up on agreed upon Corrective Action Plans (CAPs). More specific examples include:

1. Onsite, detailed assessments or investigations into specific items of concern identified in INITIAL assessment;
2. Desktop or Onsite technical confirmation of analysis, design, documentation, testing, or other similar activities performed by the factory another third party consultant.
APPENDIX A: SEVERE AND IMMEDIATE DANGER EMERGENCY ESCALATION PROTOCOL (EEP)

This immediate action process will be followed when QAF has identified one or more significant indicators of compromised structural integrity which may pose a Severe and Imminent Life Danger to worker safety and/or the building structure. While these circumstances are likely to be rare, a prompt and organized response in such an emergency is essential for the welfare of occupants.

Objective
The objective of this Escalation Protocol is to clearly define the required action by all parties to minimize life safety risks to building occupants when an emergency response is required due to Severe and Imminent Life Danger posed to the occupant of a factory being assessed.

Application
This protocol will be followed when an Alliance-qualified Assessor has identified that a factory has a severe and imminent threat to worker or occupant safety. Any other concerns (from which no imminent threat is posed) will not trigger this section’s emergency protocols.

A. Initial Determination and Communication Steps:

1. **Initial Determination:** The QAF Lead Assessor will make the initial determination whether issues discovered in the assessment may pose a severe and imminent danger to building occupants or workers. The QAF Lead Assessor will document the related findings in the POSA form accompanied with photos where appropriate.

2. **Initial Communication:** Upon initial determination, the QAF Lead Assessor will immediately communicate the situation via telephone to those in the following order:
   a. Alliance Dhaka office Managing Director (via phone)
   b. QAF supervisor (via phone)
   c. Factory Management (emergency meeting) (Designated Alliance staff can also communicate to Factory Manage by phone or in-person)
   d. Any and all worker representatives (provided that the Factory Management allows this; this can also be done by/with designated Alliance staff)

3. The QAF Lead Assessor shall also provide Factory management description of the Emergency Escalation Process (EEP). If appropriate, the QAF Lead Assessor shall make recommendations to the Factory Owner regarding appropriate response action, including temporary evacuation (either partial or full, as warranted) until additional assessment can be undertaken by the Emergency Response Team. While briefing Factory Management regarding the EEP, the QAF Lead Assessor should read / reference the “Government Notification of Review Panel and their TOR” (which will be provided to the QAF in Bangla) to ensure that they understand that the final decision will be made by the Government after the NTC Review Panel’s evaluation of the structure. (It is recommended that the QAF introduce the “Government Notification of Review Panel and their TOR” to Factory Management during the opening meeting.)

4. **Documentation:** As part of completing the assessment (onsite) and prior to informing and discussing the structural distress with the Factory Management, the QAFs must complete “EEP Form 1” (Factory Information) and the “Stress Calculation” Excel Worksheet, and send both documents to the Alliance within 24 hours of completing the assessment. The Alliance will review this for accuracy to ensure that the findings warrant EEP, and will use this to inform the Inspector General (IG), Department of Inspection for Factories and Establishment (DIFE), MOL via phone.
The QAF Lead Assessor will complete “EEP Form 2” (Initial Assessment Report) and send this to the Alliance within 24 hours of the completion of the assessment. This report is required by the Review Panel members (i.e. engineers) for their preparation.

5. The Alliance shall notify active Alliance Members (identified / verified through the FFC) about the situation within 24 hours of receiving notification and “EEP Form 1” and “Stress Calculation” worksheet from the QAF. The Alliance shall notify the primary contacts at each active Alliance Member via email and propose a phone call to brief them on the factory findings.

B. Review Panel Coordination:
Alliance is a member of the Review Panel that has been formed by the National Tripartite Committee (NTC) to establish a review mechanism to decide on shutdown of any garment factory, if found risky or non-compliant during inspection by any of the three parties -- BUET, Accord and Alliance. The said platform has been established to help avert any controversy about the inspection process.

1. Alliance Dhaka Managing Director and appropriate staff immediately contact all members of the Review Committee with the goal of organizing a joint visit to the factory within 24 hours.
2. Alliance Dhaka Managing Director will coordinate if possible a meeting and/or joint conference call with the Review Committee members ASAP to discuss the situation with the group and to determine roles and responsibilities during the joint factory visit.

C. Review Committee Members

A. Inspector General, Department of Inspection for Factories & Establishments
B. Two (2) structural engineers from the BUET (not associated with the assessment of the building in question)
C. One (1) structural engineer the Alliance
D. One (1) structural engineer the Accord
E. One (1) representative from both The Bangladesh Garment Manufacturers and Exporters Association (BGMEA) and the Bangladesh Knitwear Manufacturers and Exporters Association (BKMEA). Not below the Vice President level.
F. One (1) representative of NCCWE, not below the Member Secretary
G. One (1) of IndustriAll Bangladesh Council, not below the Secretary General

D. Review Committee Assessment & Recommendations

Upon completion of the joint Review Committee assessment, a summary report will be drafted along with applicable recommendations. The report will cover the following:

A. Determination as to whether severe and imminent danger to building occupants or workers exists.
B. Detailed results of the assessment activities
C. Review Committee member endorsed Recommendations for resolving severe and imminent danger issues (including temporary or long term closure)

----------------------------------------
APPENDIX B: REFERENCE DOCUMENTS

1. Alliance Fire Safety and Structural Integrity Standard (the Standard)
2. Factory Owner Agreement, Form ASP0.0
3. Alliance Factory Pre-Assessment Information Form, Form ASP1.0
4. Factory Owner Pre-Assessment Questionnaire for Structural Integrity, Form ASP2.0
5. Factory Owner Pre-Assessment Questionnaire for Fire Safety, Form ASP2.1
6. Factory Owner Pre-Assessment Electrical Questionnaire, Form ASP2.2
7. Factory Documents Inventory Form, Form ASP3.0
8. Alliance Factory Code of Ethics Letter
9. Factory Document Compliance Checklist, Form ASP4.0
10. Factory Visual Assessment Checklist for Structural Integrity, Form ASP5.0
11. Factory Visual Assessment Checklist for Fire Safety, Form ASP5.1 (reserved)
12. Factory Visual Assessment Electrical Checklist, Form ASP5.2
13. Preliminary Onsite Structural Assessment (POSA), Form ASP6.0
14. Preliminary Onsite Fire Assessment (POFA), Form ASP6.1
15. Preliminary Onsite Electrical Assessment (POEA), Form ASP6.2
16. Emergency Escalation Process (EEP)
17. Structural Integrity Assessment Report (SIAR)
18. Fire Assessment - Corrective Action Plan (SIAR-CAP)
19. Fire Assessment Report (FAR)
20. Fire Assessment - Corrective Action Plan (FAR-CAP)
21. Electrical Assessment Report (EAR)
23. FFC Reporting Tutorial
24. FFC Scheduling Tutorial
25. Minimal Electrical Equipment for Thermographic Inspection
APPENDIX C: DEFINITIONS

The following terms are used in this document and shall have the meaning described.

**Standard**: The common and comprehensive Alliance Fire and Electrical Safety and Structural Integrity Standards adopted by the Alliance for assessing fire and building safety in new and existing factories.

**Fire Protection**: physical (mechanical and/or electrical) devices or systems, construction elements that provide detection, suppression, control and/or management of fire and products of combustion (e.g., smoke, heat). These could be individual devices or a combination of systems (alarm and detection, automatic sprinkler, etc.). Such systems provide fire safety, property conservation and continuity of operations.

**Fire Safety**: a state of absence of unsafe conditions due to a variety of fire protection factors that could include construction elements, fire suppression systems, fire detection and alarm systems, egress components, emergency lighting and personnel training that are intended to increase the level of life safety from fire for occupants. A factory that is designed and constructed in compliance with the Standard, properly maintained and used within its intended function will perform with an acceptable degree of fire safety.

**Structural Integrity**: the ability of a factory to withstand the design service loads, without failure. A factory with structural integrity is properly designed and properly built and properly maintained, and can be expected to function adequately under design loads for its intended service life.

**Structural Safety**: a state of absence of unsafe conditions due to a variety of factors that could include lack of structural integrity, overloading through improper use or deterioration through improper maintenance. A factory that is designed and constructed in compliance with the Standard, properly maintained and used within its intended function will perform with a high degree of structural safety.

**Alliance Member Company**: a brand or retailer that is signatory to the Alliance Member agreement that buys RMG from Bangladesh directly or indirectly.

**Alliance Member Representative**: an individual(s) that are employed by an Alliance member company to represent their interests on matters associated with Alliance activities and/or factory improvement matters.

**Alliance-affiliated vendor**: a company that an Alliance member sources product from made in the Bangladesh RMG industry. The company may or may not be located in Bangladesh and may or may not own the factory where product is being produced.

**Alliance-affiliated Factory**: a factory located in Bangladesh that produces directly or indirectly on behalf of an Alliance member company.

**Factory Owner**: an individual or company that has legal authority and responsibility for the operations and safety of a factory building or factory complex.

**Main Factory Building**: a factory structure that houses primary factory functions, including the majority of workers and RMG activities.

**Mixed Use Factory Building**: a factory building that in addition to RMG factory operations also houses other occupancies such as retail, residential, or office.

**Ancillary Factory Building**: a secondary factory structure that is used for non-primary factory functions such as storage, utilities, and the like.
Alliance Committee of Experts (COE): a committee of experts engaged by and working on behalf of the Alliance to provide technical oversight to the Alliance.

Alliance Management Firm (MF): an entity and its representatives that has been engaged by the Alliance to provide overall management and coordination of all Alliance-affiliated factories.

Alliance-qualified Assessor (Assessor): a professional expert or team of experts in fire safety or structural integrity who has been pre-qualified by the Alliance Committee of Experts to conduct assessments of Bangladesh factories in accordance with the Standard and these Assessment Protocols. Assessors will be qualified in accordance with criteria established by the Alliance Committee of Experts.

Alliance-qualified Lead Assessor (Lead): The individual who leads the Alliance-qualified Assessor team.

Factory Prioritization Factors: Factors used to prioritize which factories are assessed first. For example: mixed usage, number of floors of tallest main factory building, total factory worker population, history, location, number of member companies associated, etc.

Severe and Imminent Danger: a structural condition or fire safety situation that represents the potential to immediately create loss of life due to structural condition, imminent fire and electrical danger, or other catastrophe.

Escalation Process: a rapid action response process that is put into motion in situations where the structural integrity or fire safety conditions found at a factory are believed to pose severe and imminent danger to its occupants.

Fair Factory Clearinghouse (FFC): a database of factories in Bangladesh that are utilized by Alliance-affiliated vendors. The FFC is maintained by the Alliance Executive Director and includes a range of information about each factory including basic and detailed factory information, as available, as well as factory assessment reports, corrective action plans, and status of corrective action if any and as known. Access to certain information in the FFC is managed by the Alliance Executive Director.

INITIAL Fire Safety Assessment: a preliminary assessment of a factory by an Alliance-qualified Assessor(s) to determine the degree of compliance with the Standard for fire safety. Based on the findings of the INITIAL assessment, further and/or more comprehensive fire FOLLOW-UP assessment may be necessary.

FOLLOW-UP Fire Safety Assessments: more in-depth evaluation of fire safety issues in a particular factory that may include, but is not limited to, materials used in building construction, materials/chemicals stored on site or used in production, volume of water and/or fire suppression material available, capacity for timely and safe evacuation, access time for local fire departments, and other issues or concerns that may have been raised during a INITIAL assessment for additional investigation.

INITIAL Structural Integrity Assessment: A Preliminary Structural Assessment of a factory by an Alliance-qualified Assessor(s) to determine the degree of compliance with the Standard for structural integrity. Based on the findings of the INITIAL assessment, further and/or more comprehensive structural evaluation may be advised in a FOLLOW-UP assessment.

FOLLOW-UP Structural Integrity Assessment: more in-depth assessments into particular areas of structural concern (generally identified during INITIAL assessments), by an Alliance-qualified Assessor engaged by the Alliance or Alliance-qualified structural engineering consultant engaged by the Factory Owner. The scope of FOLLOW-UP assessments will be determined on a case-by-case basis, but may include one or more of the following areas of evaluation: confirmatory structural analysis of elements in question, field sampling and testing, load testing, and the like.

INITIAL Electrical Assessment: a preliminary assessment of a factory by an Alliance-qualified Assessor(s) to determine the degree of compliance with the Standard for electrical safety with respect to electrical hazard. Based
on the findings of the INITIAL assessment, further and/or more comprehensive electrical evaluation may be advised in a FOLLOW-UP assessment.

**FOLLOW-UP Electrical Assessment:** more in-depth evaluation of electrical safety issues in a particular factory that may include, but is not limited to, detailed evaluation of panel boards and switchboards; verification of wiring connections, proper grounding, and bonding; and using instruments to take measurements about lighting levels, grounding resistance, current draw and phase imbalance, and the like, as well as other issues or concerns that may have been raised during a INITIAL assessment for additional investigation.

**Shadowing Assessment:** A shadow assessment is a normal Alliance Structural, Electrical and/or Fire Assessment that is being observed by an Alliance Member, Alliance Staff, Union or worker Representative, or other approved party. Those shadowing assessments are intended to observe or facilitate access, but not actively partake in the technical assessment or act as an official assessor themselves. Those shadowing they are bound and expected to keep any information exchanged confidential until such information is available publicly. Assessor will be pre-notified if any assessment will be shadowed and by whom at least 24 hours prior to the assessment in writing.