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ACCREDITATION CRITERIA FOR INSPECTION PRACTICES OF METAL BUILDING ASSEMBLERS

AC478

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PREFACE

The attached accreditation criteria have been issued to provide all interested parties with guidelines on implementing performance features of the applicable standards referenced herein. The criteria were developed and adopted following public hearings conducted by the International Accreditation Service, Inc. (IAS), Accreditation Committee and are effective on the date shown above. All accreditations issued or reissued on or after the effective date must comply with these criteria. If the criteria are an updated version from a previous edition, solid vertical lines (|) in the outer margin within the criteria indicate a technical change or addition from the previous edition. Deletion indicators (→) are provided in the outer margins where a paragraph or item has been deleted if the deletion resulted from a technical change. These criteria may be further revised as the need dictates.

IAS may consider alternate criteria provided the proponent submits substantiating data demonstrating that the alternate criteria are at least equivalent to the attached criteria and otherwise meet applicable accreditation requirements.

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ACCREDITATION CRITERIA FOR INSPECTION PRACTICES OF METAL BUILDING ASSEMBLERS

1. INTRODUCTION

- 1.1. **Scope:** These criteria set forth the requirements for obtaining and maintaining International Accreditation Service, Inc. (IAS), Inspection Practices for Metal Building Assemblers accreditation. These criteria supplement the IAS Rules of Procedure for Accreditation of Inspection Practices of Metal Building Assemblers.
- 1.2. **Overview:** Accredited entities complying with these criteria will have demonstrated that they have the personnel, organization, experience, knowledge, management procedures and commitment to assemble metal building systems in accordance with specified requirements. IAS-accredited inspection practices for metal building assembly operate under a documented safety and training program. An IAS-accredited inspection or special inspection agency conducts jobsite inspections to verify continued compliance with these criteria.
- 1.3. **Normative and Reference Documents:** Publications listed below refer to current editions (unless otherwise stated).
- 1.3.1. AWS D1.1 and AWS D1.3, Structural Welding Code, published by the American Welding Society.
 - 1.3.2. International Building Code[®], published by the International Code Council.
 - 1.3.3. Ironworker Quality Construction Practices, Metal Building Systems Reference Manual.
 - 1.3.4. ISO/IEC Standard 17020, Conformity assessment – Requirements for the operation of various types of bodies performing inspection.
 - 1.3.5. Metal Buildings Institute and Global Digital Solutions, Quality and Craftsmanship Training Series, available through <http://www.mbcea.org/store/dvd-craftsmen-series>.
 - 1.3.6. OSHA Regulations (Standard 29 CFR), Part 1926 Safety and Health Regulations for Construction.

2. DEFINITIONS

For the purposes of these accreditation criteria, the definitions given in ISO/IEC Standard 17020, and the definitions that follow, apply:

- 2.1. **Approved Fabricator:** An established and qualified person, firm or corporation approved by the building official pursuant to the approved fabricator designation in Section 1702 of the International Building Code.
- 2.2. **Assembler of Metal Building Systems:** Erectors and contractors who are substantially engaged in the assembly of metal buildings under DOT Code: 801.381-010 AIMS Code: 0877.

Further described as companies that erect metal building systems according to blueprint specifications and engineering drawings, using hand tools, power tools, and hoisting equipment; erect frames of buildings using a hoist; bolt steel frame members together; attach bracing and insulating materials to framework; screw sheet metal roof and siding panels to framework; read blueprints to determine location of items such as doors, windows, ventilators, and skylights and install items using, wrenches and power drill; trim excess sheet metal using power saws, power shears and tin snips; install corner, gable, rake, door and window trims; install gutters and downs; and are responsible for related clean-up and waste management.

- 2.3. **Bid Documents:** Documents produced for the assembler's use to support the implementation of the project. These documents include architectural drawings, site plan, manufacturer's engineered drawings and manufacturer's erection drawings and blueprints.
- 2.4. **Competent Person [29 CFR 1926.32(f)]:** One who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.
- 2.5. **Contract Documents:** Documents that describe the metal building system to be supplied in its entirety for a given project. These documents include work orders, drawings, specifications, and buyer sketches.
- 2.6. **Corrective Action:** Implemented action necessary to eliminate or reduce the root cause of an identified problem.
- 2.7. **Erection Tolerances:** As set forth in "AISC Code of Standard Practice." Variations are to be expected in the finished overall dimensions of structural steel frames. Such variations are deemed to be within the limits of good practice when they do not exceed the cumulative effect of rolling, fabricating and erection tolerances.
- 2.8. **General Manager:** The person occupying the highest position of authority within a facility's organization.
- 2.9. **Job Safety Analysis (JSA):** One of the risk assessment tools used to identify and control workplace hazards. A JSA is a second tier risk assessment with the aim of preventing personal injury to a person, or their colleagues, and any other person passing or working adjacent, above or below. JSAs are also known as Activity Hazard Analysis (AHA), Job Hazard Analysis (JHA) and Task Hazard Analysis (THA).
- 2.10. **Journeyworker - Assembler of Metal Building Systems:** A worker who has completed a registered apprenticeship program for Assembler, Metal Building Systems or who can give demonstrable proof of a minimum of four years' experience in metal building assembly, satisfactory completion of the MBI Quality and Craftsmanship Training Series and training/certification in the following:
 - 2.10.1. OSHA 10

- 2.10.2. Rigging 1
- 2.10.3. Hot Work Training
- 2.10.4. Rough Terrain Forklift Safety
- 2.10.5. Qualified Operator
- 2.10.6. Aerial Work Platform Safety
- 2.11. **Management System:** A set of interrelated or interacting elements that metal building assemblers use to direct, control and coordinate how policies are implemented and objectives are achieved.
- 2.12. **MBCEA:** Metal Building Contractors and Erectors Association.
- 2.13. **MBI:** Metal Buildings Institute.
- 2.14. **MBMA:** Metal Building Manufacturers Association.
- 2.15. **Metal Building Systems Manufacturer:** An entity that may be a company, division, subsidiary or similar organization that designs and manufactures a metal building system which consists of an integrated set of components and assemblies, including, but not limited to, frames that are primary structural steel members, secondary members that are cold-formed steel and steel joists, and roof and wall cladding components, specifically designed to support and transfer loads and provide a complete or partial building shell.
- 2.16. **OSHA:** Occupational Safety and Health Administration, a federal agency of the United States that regulates workplace safety and health to assure safe and healthful working conditions for working men and women by setting and enforcing standards and by providing training, outreach, education and assistance.
- 2.17. **Procedure:** An implemented and written document that describes who does what, when, where, why and how.
- 2.18. **Product:** Result of activities or processes.
- 2.19. **Project:** A process consisting of a set of coordinated and controlled activities undertaken to achieve customer requirements.
- 2.20. **Qualified Person [29 CFR 1926.32(m)]:** One who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience, has successfully demonstrated his ability to solve or resolve problems relating to the subject matter, the work, or the project.
- 2.21. **Quality Assurance:** Measurable systematic actions to assure confidence that the implementation of planned activities results in meeting objectives, goals and contract documents.
- 2.22. **Quality Control:** The act of examination, testing or measurement which verifies processes and services or verifies documents conform to specified criteria.
- 2.23. **Repair:** Action taken to render a member or component acceptable for the intended use.

- 2.24. **Safety Manager:** A safety professional, designated by management, who has demonstrated competence in establishing, maintaining and implementing a safety program with consistent results. The safety manager shall have direct access to the highest executive level and shall report on the performance of the safety program to the metal building assembler's management for use as a basis for improvement of the safety program.
- 2.25. **Safety Plan:** A written document that describes the procedures and policies implemented to ensure the safety of all persons and things.
- 2.26. **Senior Contractor Supervisor:** The individual designated by the contractor who has overall authority and responsibility for work performed by that contractor, including the Contractor Safety and Health Program.
- 2.27. **Senior Project Supervisor:** The individual designated by the project constructor with final authority and overall responsibility for all construction and related activities, including the Project Safety and Health Program.
- 2.28. **Site-Specific Plan:** As a minimum, such a plan should consider the following elements:
- 2.28.1. The sequence of erection activity, developed in coordination with the controlling contractor that includes the following: material deliveries, material staging and storage; and coordination with other trades and construction activities.
 - 2.28.2. A description of the crane and derrick selection and placement procedures, if required, including the following: site preparation; path for overhead loads; and critical lifts, including rigging supplies and equipment.
 - 2.28.3. A description of steel erection activities and procedures, including the following: stability considerations requiring temporary bracing and guying; erection bridging terminus point; anchor rod (anchor bolt) notifications regarding repair, replacement and modifications; columns and beams (including joists and purlins); connections; decking; and ornamental and miscellaneous iron.
 - 2.28.4. A description of the fall protection procedures that will be used to comply with OSHA 29 CFR § 1926.760.
 - 2.28.5. A description of the procedures that will be used to comply with OSHA 29 CFR § 1926.758, Systems-engineered metal buildings.
 - 2.28.6. A description of the special procedures required for hazardous nonroutine tasks.
 - 2.28.7. A certification for each employee who has received training for performing steel erection operations as required by OSHA 29 CFR § 1926.761.
 - 2.28.8. A list of the qualified and competent persons that includes their credentials.
 - 2.28.9. A description of the procedures that will be utilized in the event of rescue or emergency response.
 - 2.28.10. The identification of the site and project; and signed and dated by the qualified person(s) responsible for its preparation and modification.

2.28.11. A site-specific plan may also be called a jobsite specific plan, a site specific safety plan and a site specific project plan.

2.29. **Subcontractor:** An individual or in many cases a business that signs a contract to perform part or all of the obligations of another's contract; a subcontractor is a person who is hired by a general contractor (or prime contractor, or main contractor) to perform a specific task as part of the overall project and is normally paid for services provided to the project by the originating general contractor.

2.30. **WPS:** Welding Procedure Specification in accordance with AWS D1.1 or AWS D1.3 is required, as applicable.

3. ELIGIBILITY

Accreditation services are available to metal building assemblers, erectors and contractors who are substantially engaged in the assembly of metal buildings under DOT Code:801.381-010; AIMS Code: 0877.

4. REQUIRED BASIC INFORMATION

4.1. Metal Building Assemblers must demonstrate compliance with the following requirements:

- 4.1.1. The requirements of these accreditation criteria;
- 4.1.2. IAS Rules of Procedure for Accreditation of Inspection Practices of Metal Building Assemblers.

4.2. General Requirements

- 4.2.1. Metal building assemblers accredited under these criteria must obtain the services of an IAS-accredited inspection or special inspection agency, which is accredited for the specified discipline, to conduct, at a minimum, an annual inspection at a selected jobsite
- 4.2.2. The assembler of metal building systems shall establish and implement a management system that is fully documented. This documented management system must describe the assembly procedures and quality assurance activities for ensuring that the assembly meets the specified requirements.
- 4.2.3. The assembler of metal building systems, shall submit to IAS a documented management system, including a cross reference matrix ensuring that the requirements in Section 4.5 of these accreditation criteria, have been included in the management system. The cross reference matrix must be signed by the Quality Manager.
- 4.2.4. The submitted management system document must be signed and dated by the highest level of authority within the metal building assembler.
- 4.2.5. Metal building assemblers applying for accreditation are subject to an initial on-site joint assessment by IAS and the IAS-accredited inspection or special inspection agency.

The purpose of this assessment is to determine efficacy of safety plans, training programs, and compliance with eligibility for requirements and evaluation of the inspection or special inspection agency's method of determining compliance prior to accreditation.

- 4.2.6. Metal building assemblers accredited under these criteria will adhere to metal building systems manufacturer's drawings, specifications and installation manuals.
- 4.2.7. Metal building assemblers accredited under these criteria, that rely on subcontracted or temporary labor must have documented procedures to show how they ensure compliance of subcontracted and temporary labor with the relevant requirements of these criteria.
- 4.2.8. Metal building assemblers accredited under these criteria that subcontract all or a significant portion of an assembly shall advise the contracting entity whether or not work will be performed by an accredited entity.
- 4.2.9. The accredited Metal building assembler must maintain the following insurance coverage:
 - 4.2.9.1. Workmen's Compensation,
 - 4.2.9.2. Comprehensive General Liability,
 - 4.2.9.3. Comprehensive Automobile Liability,
 - 4.2.9.4. Umbrella Excess Comprehensive General and Comprehensive Automobile.

4.3. **Management System Requirements**

A documented management system must be provided which includes the following details:

4.3.1. **Basic Information**

- 4.3.1.1. The name of the metal building assembler and its legal identity (company registration details),
- 4.3.1.2. The physical address of the metal building assembler,
- 4.3.1.3. The mailing address (if different),
- 4.3.1.4. Name and title of the person serving as the IAS contact, including the telephone number and e-mail address.

4.3.2. **Control of Documents:** Procedures for control of documents and data relating to safety and training programs must be provided. This control shall include the following:

- 4.3.2.1. A document approval procedure,
- 4.3.2.2. A procedure to ensure that only current, approved documents are used,
- 4.3.2.3. A procedure to ensure that documents are available at all locations where necessary for the proper functioning of the management system.

4.3.3. **Training Documentation**

- 4.3.3.1. Metal building assemblers accredited under these criteria shall establish, document and implement a training program that ensures a qualified labor force competent in techniques necessary to ensure the quality and integrity of assembled metal buildings. There must be a procedure ensuring the training of personnel who have an effect on the quality of the finished assembly.
- 4.3.3.2. The metal building assembler shall have procedures for storing, maintaining and accessing training records and maintaining current personnel qualifications.
- 4.3.3.3. As a minimum, there must be training requirements established for foremen, journeymen and apprentices regardless of whether or not there is a formal apprenticeship program in place.
- 4.3.3.4. Training records must include the following:
 - 4.3.3.4.1. Completed training attendance records.
 - 4.3.3.4.2. Documentation proving comprehension of training (e.g., test results).
 - 4.3.3.4.3. Evaluations of employees and subcontractors.
 - 4.3.3.4.4. Site-specific plans training, as appropriate for the corresponding project.
- 4.3.4. **Safety Program Documentation**
 - 4.3.4.1. Metal building assemblers accredited under these criteria shall establish and implement a safety program that is fully documented. This program must describe the procedures and activities for ensuring that all employees, subcontractors and processes comply with minimum OSHA standards and/or applicable regulatory requirements.
 - 4.3.4.2. Metal building assemblers accredited under these criteria must have documented procedures for the development of jobsite-specific plans prior to commencement of work.
 - 4.3.4.3. The safety program document must be signed and dated by the highest level of authority within the metal building assembler.
 - 4.3.4.4. The safety program document must be reviewed at least annually.
- 4.3.5. **Training Program Documentation**
 - 4.3.5.1. Metal building assemblers accredited under these criteria shall establish, document and implement a training program that ensures a qualified labor force competent in techniques necessary to ensure the quality and integrity of assembled metal buildings.
 - 4.3.5.2. There must be a procedure ensuring the training of personnel who have an effect on the quality of the finished assembly. The procedure must include provisions for maintaining current personnel qualifications.
 - 4.3.5.3. Metal building assemblers accredited under these criteria must have a procedure in place for new hires to ensure they are trained adequately for assigned tasks.

- 4.3.5.4. The training program shall be documented to ensure that at least 50% of personnel on a jobsite are qualified for the task at hand.
- 4.3.5.5. The training program shall be documented to ensure that at least 25% of the work force at the jobsite have achieved the journeyworker status or equivalent.
- 4.3.5.6. The training program documentation shall meet all OSHA requirements for the assigned tasks.
- 4.3.5.7. The training program shall consist of instructions with required passing grades that include:
 - 4.3.5.7.1. OSHA 10, for all employees with more than one year of service;
 - 4.3.5.7.2. Metal Buildings Institute Quality and Craftsmanship Training Series or Ironworker Quality Construction Practices Metal Building Systems Training;
 - 4.3.5.7.3. Any other required certifications and formal training necessary to perform the required tasks, including but not limited to:
 - 4.3.5.7.3.1. Welding
 - 4.3.5.7.3.2. Aerial Lift Operator
 - 4.3.5.7.3.3. Fork Lift Telehandler
 - 4.3.5.7.3.4. Crane Operator
 - 4.3.5.7.3.5. Specialty items, such as scaffolding, tools, products and/or equipment that require documented training prior to use.
- 4.3.5.8. The training program must have procedures in place to ensure the following training elements:
 - 4.3.5.8.1. Jobsite safety and fall protection,
 - 4.3.5.8.2. Safety and emergency services,
 - 4.3.5.8.3. Reading job plans and specifications,
 - 4.3.5.8.4. Understanding manufacturer's standards and details,
 - 4.3.5.8.5. Materials identification,
 - 4.3.5.8.6. Commonly-used tools and their proper use,
 - 4.3.5.8.7. Proper care of equipment,
 - 4.3.5.8.8. Construction cranes,
 - 4.3.5.8.9. Forklifts, man-lifts and scissor-lifts,
 - 4.3.5.8.10. Pre-assembled concrete and anchor bolts,
 - 4.3.5.8.11. Conditions at work site prior to assembly,
 - 4.3.5.8.12. Hoisting,
 - 4.3.5.8.13. Rigging,
 - 4.3.5.8.14. Signal person,
 - 4.3.5.8.15. Materials staging:
 - 4.3.5.8.15.1. Materials planning and scheduling,

- 4.3.5.8.15.2. Materials handling and inventory,
- 4.3.5.8.15.3. Materials storage and protection,
- 4.3.5.8.15.4. Materials unloading and shake-out
- 4.3.5.8.16. Structural:
 - 4.3.5.8.16.1. Primary framing,
 - 4.3.5.8.16.2. Secondary framing,
 - 4.3.5.8.16.3. Bracing,
 - 4.3.5.8.16.4. Plumbing and squaring,
 - 4.3.5.8.16.5. Detailing
- 4.3.5.8.17. Wall Covering:
 - 4.3.5.8.17.1. Wall panels,
 - 4.3.5.8.17.2. Insulated metal panels,
 - 4.3.5.8.17.3. Layout,
 - 4.3.5.8.17.4. Insulation,
 - 4.3.5.8.17.5. Standard ribbing panels,
 - 4.3.5.8.17.6. Composite panels
- 4.3.5.8.18. Roof panels:
 - 4.3.5.8.18.1. Layout,
 - 4.3.5.8.18.2. Insulated metal panels,
 - 4.3.5.8.18.3. Insulation,
 - 4.3.5.8.18.4. Standard ribbing panels,
 - 4.3.5.8.18.5. Standing seam panels,
 - 4.3.5.8.18.6. Composite panels
- 4.3.5.8.19. Trim and Flashing:
 - 4.3.5.8.19.1. Wall trims,
 - 4.3.5.8.19.2. Wall accessories,
 - 4.3.5.8.19.3. Roof trims,
 - 4.3.5.8.19.4. Roof accessories
- 4.3.5.8.20. Job Completion,
- 4.3.5.8.21. Final Clean.
- 4.3.6. **Internal Audits:** Metal building assemblers shall identify the frequency, method of documentation and the content of internal audits to determine the effectiveness of the management system, safety and training programs. Internal audits must be conducted, at a minimum, annually. Audits shall include a summary that compares the most recent audit to the previous audit, and shall include the elements of these criteria.
- 4.3.7. **Management Reviews:** Annual management reviews must be conducted and recorded to ensure the adequacy and effectiveness of the quality, safety and training

programs. Annual management reviews must produce a summary and a documented plan of action for improvement. Documents to be considered during the annual management review must include, but are not limited to, customer complaints, back charges, OSHA violations, internal audit results and corrective actions.

4.3.8. **Required Statements:** The following statements must be provided:

- 4.3.8.1. All activities of the metal building assembler shall be directed in such a manner as to ensure that the safety and training requirements of these criteria will be met.
- 4.3.8.2. The elements of the safety and training program will be disseminated to all personnel assigned activities that are involved with the assembly of metal buildings.
- 4.3.8.3. IAS will be notified, in writing, prior to any cancellation of the inspection agreement with the accredited inspection agency or special inspection agency.
- 4.3.8.4. IAS will be notified, in writing, by the accredited metal building assembler and the inspection agency if follow-up inspections have not been conducted by the inspection agency or special inspection agency.
- 4.3.8.5. IAS and the accredited inspection agency or special inspection agency must be notified within 30 days of any changes in management personnel. As a minimum, this would include the president, general manager, quality manager, safety manager and training manager.

4.4. **Personnel**

The following key personnel must be identified in the organization and their responsibilities must be documented. The designated personnel must have clear understanding of their assignments.

- 4.4.1. **Safety Manager:** Metal building assemblers accredited under these criteria shall designate a safety manager who has the necessary training and experience to complete the tasks listed below. The safety manager shall report directly to the highest level of authority within the organization. The safety manager shall have the following responsibilities:
 - 4.4.1.1. Maintaining the safety program in accordance with these criteria.
 - 4.4.1.2. Monitoring the effective implementation of the safety program.
 - 4.4.1.3. Developing jobsite-specific safety plans, and having knowledge of and access to the appropriate documents to meet this requirement.
- 4.4.2. **Training Manager:** Metal building assemblers accredited under these criteria shall designate a training manager who has the necessary training and experience to complete the tasks listed below. The training manager shall report directly to the highest level of authority within the organization. The training manager shall have the following responsibilities:
 - 4.4.2.1. Maintaining the training program in accordance with these criteria.
 - 4.4.2.2. Monitoring the effective implementation of the training program.

- 4.4.2.3. Developing training plans that meet OSHA requirements, building manufacturer requirements and equipment use requirements and have knowledge of and access to the appropriate resources to meet this requirement.
 - 4.4.3. **Quality Manager:** Metal building assemblers accredited under these criteria shall designate a quality manager who has the necessary training and experience to complete the tasks listed below:
 - 4.4.3.1. Develop and implement the management system, including generation of appropriate documentation in accordance with this criteria;
 - 4.4.3.2. Ensure that periodic internal audits are conducted and documented, and that corrective actions are implemented;
 - 4.4.3.3. Ensure that annual management reviews are conducted and documented to assure the adequacy and effectiveness of the management system. Annual management reviews must produce a summary and a documented plan of action for improvement.
- Note:** In some cases, the quality manager, training manager and safety manager may be the same individual.

4.5. **Inspection and Special Inspection Agency – Requirements and Responsibilities**

The following sections note the minimum requirements and responsibilities of the IAS-accredited inspection agency or special inspection agency:

- 4.5.1. Inspection agency personnel will conduct an annual jobsite inspection scheduled at a mutually convenient time/location to ensure inspection of a building that is not more than 75% complete; therefore, inspections must be announced.
- 4.5.2. IAS will be notified, in writing, prior to any cancellation of the inspection agreement with the accredited metal building assembler.
- 4.5.3. IAS will be notified, in writing, by the accredited entity and the inspection or special inspection agency if follow-up inspections have not been conducted by the inspection or special inspection agency.
- 4.5.4. **Inspection Reports:** The inspection report, at a minimum, must include the following information and reference to:
 - 4.5.4.1. **On-site inspection records shall include:**
 - 4.5.4.1.1. A site-specific project plan.
 - 4.5.4.1.2. Daily jobsite checklist.
 - 4.5.4.1.3. JSA's job safety analysis.
 - 4.5.4.1.4. Site layout plan.
 - 4.5.4.1.5. Quality control plan.
 - 4.5.4.1.6. Narrative regarding the erection plan.

4.5.4.1.7. Records that demonstrate assembly proceeds only after concrete has sufficiently cured and that anchor rods, if modified, have the approval of the engineer of record.

4.5.4.2. **Receiving/Storage:** Process for unloading and inventorying.

4.5.4.3. **Training**

4.5.4.3.1. Inspector to validate at least 30% of jobsite personnel. Inspector to list personnel verified and total number of personnel on jobsite.

4.5.4.3.2. OSHA 10 training for personnel on jobsite with at least one year experience.

4.5.4.3.3. Records of craft workers' certifications and training appropriate for their assigned task.

4.5.4.4. **Welding and Bolting Requirements:** Inspector must review the welding and bolting procedures required for the project.

5. ADDITIONAL INFORMATION (AS APPLICABLE)

- 5.1. Minimum Design Loads for Buildings and Other Structures (ASCE/SEI 7), published by the American Society of Civil Engineers/Structural Engineering Institute.
- 5.2. Specification for Structural Steel Buildings (AISC 360), published by the American Institute of Steel Construction.
- 5.3. AISI S100 – North American Specification for the Design of Cold-Formed Steel Structural Members, published by the American Iron and Steel Institute.
- 5.4. IAS Accreditation Criteria for Inspection Agencies AC98.
- 5.5. MBMA Metal Building Systems Manual.
- 5.6. National Guidelines for Apprenticeship Standards developed by Metal Buildings Institute for the occupation of Assembler, Pre-Engineered Metal Buildings, O*NET/SOC CODE 47-2221.00, RAPIDS CODE: 0877, available at:
http://www.doleta.gov/oa/bul10/Bulletin_2010_09_Attachments.pdf.
- 5.7. Specification for Structural Joints Using High-Strength Bolts, available from the Research Council on Structural Connections (RCSC).
- 5.8. Structural Bolting Handbook, published by the Steel Structures Technology Center, Inc.

6. LINKS TO ADDITIONAL REFERENCES:

- 6.1. IAS – www.iasonline.org
- 6.2. MBCEA – www.mbcea.org
- 6.3. IMPACT – www.impact.org
- 6.4. ICC – www.iccsafe.org
- 6.5. MBMA – www.mbma.com

These criteria were previously issued February 2015 and June 2015