

INTERNATIONAL ACCREDITATION SERVICE, INC.

5360 Workman Mill Road · Whittier, CA 90601 USA
562-364-8201 *local* · 866-427-4422 *toll free* · 562-699-8031 *fax*
www.iasonline.org *web site* · info@iasonline.org *e-mail*



ACCREDITATION CRITERIA FOR SPECIAL INSPECTION AGENCIES

AC291

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April 2008, September 2008, October 2009 and May 2010)**

PREFACE

The attached accreditation criteria has been issued to provide all interested parties with guidelines on implementing performance features of the applicable standards referenced herein. The criteria was developed and adopted following public hearings conducted by the International Accreditation Service, Inc. (IAS), Accreditation Committee and is effective on the date shown above. All accreditations issued or reissued on or after the effective date must comply with this criteria. If the criteria is 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. This 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 SPECIAL INSPECTION AGENCIES

1.0 INTRODUCTION

1.1 Scope: This document sets forth the requirements for obtaining and maintaining International Accreditation Service, Inc. (IAS), special inspection agency ("SIA") accreditation and for the qualifying data that must be submitted relating to the scope of inspection for which accreditation is sought. This document supplements the IAS Rules of Procedure for Special Inspection Agency Accreditation. Section 1704 of the *International Building Code*[®] (IBC) provides for special inspection agencies. Under the IBC, final authority for recognition of special inspection agencies rests with the building official having jurisdiction, and nothing contained herein affects or diminishes that authority in any way.

1.2 Reference Documents

1.2.1 *International Building Code*[®] (IBC)¹ currently adopted by the jurisdiction in which the project is to be constructed.

1.2.2 ISO/IEC (International Organization for Standardization/International Electrotechnical Commission) Standard 17020:1998, General Criteria for the Operation of Various Types of Bodies Performing Inspection².

1.2.3 ISO/IEC (International Organization for Standardization/International Electrotechnical Commission) Standard 17024:2003, Conformity Assessment - General Requirements for Bodies operating Certification of persons.

1.2.4 IAS Rules of Procedure for Special Inspection Agency Accreditation³.

1.2.5 IAS AC371 Accreditation Criteria for Training Agencies for Work Force Qualification Programs.

1.2.6 ICC/IAS Model Program for Special Inspection.

1.2.7 ANSI/NOCA 1100 Standard for Assessment-Based Certificate Programs (2009).

1.2.8 ASTM C 33 / C 33M-11 Standard Specification for Concrete Aggregates.

1.2.9 ASTM C 330-09 / C 330M-09 Standard Specification for Lightweight Aggregates for Structural Concrete.

1.2.10 ASTM E 814-11a Standard Test Method for Fire Tests of Penetration Firestop Systems.

1.2.11 ASTM E 1966-07 Standard Test Method for Fire Resistive Joint Systems.

1.2.12 ASTM E 2174-09 Standard Practice for On-Site Inspection of Installed Fire Stops.

1.2.13 ASTM E 2307-10 Standard Test Method for Determining Fire Resistance of Perimeter Fire Barrier Systems Using Intermediate Scale Multi story Test Apparatus.

1.2.14 ASTM E 2393-09 Standard Practice for On-Site Inspection of Installed Fire Resistive Joint Systems and Perimeter Fire Barriers.

1.2.15 ASTM E 2659-09 Standard Practice for Certificate Programs.

1.2.16 Firestop Contractors International Association "FCIA Firestop Manual of Practice," Appendix H – 03/25/2007, Revision No. 6, Section 07 84 00, Firestopping Penetrations, Joints and Perimeter Fire Containment.

1.2.17 FM 4991 Approval Standard for Approval of Firestop Contractors.

1.2.18 UL 1479 Standard for Fire Tests of Through-Penetration Firestops.

1.2.19 UL 2079 Standard for Tests for Fire Resistance of Building Joint Systems.

2.0 DEFINITIONS

2.1 Accredited Calibration Provider: A calibration laboratory that is accredited by IAS [or an Accreditation Body with which IAS has a Mutual Recognition Arrangement (MRA) relationship] as operating under ISO/IEC Standard 17025.

2.2 Approved: Acceptable to the building official.

2.3 Approved Agency: An established and recognized SIA regularly engaged in conducting tests or furnishing inspection services, when such agency has been approved.

2.4 Certificate of Compliance: A certificate stating that materials and products meet specified standards or that work was done in compliance with approved construction documents.

2.5 Fabricated Item: Structural load-bearing or lateral load-resisting assemblies consisting of materials assembled prior to installation in a building or structure, or subjected to operations such as heat treatment, thermal cutting, cold working or reforming after manufacture and prior to installation in a building or structure. Materials produced in accordance with standard specifications referenced by the IBC, such as rolled structural steel shapes, steel-reinforcing bars, masonry units, and wood structural panels or in accordance with a standard listed in the IBC that provides requirements for quality control done under the supervision of a third-party quality control agency shall not be considered "fabricated items."

2.6 Fire Protection Engineer (F.P.E.): An individual with specialized training in fire protection systems for building construction, as evidenced by a bachelor's or higher degree in fire protection engineering from an accredited college, university or engineering school.

2.7 Fire-resistant Materials: Cementitious or fibrous materials, intumescent or thin films that are applied to provide fire-resistant protection of the substrates.

2.8 Firestop System: An assemblage of materials including fire-resistance-rated assembly, penetrating item(s), gap size, the fill, void or cavity materials installed as a system to restore the fire, smoke or other resistance rating of fire-resistive assemblies that have been breached due to penetration by electrical, plumbing or mechanical

items tested to ASTM E 814 / UL 1479, by expansion and construction joints tested to UL 2079 / ASTM E 1966, and by perimeter joints tested to ASTM E 2307 in buildings.

2.9 Intumescent Fire-resistant Coatings: Thin film liquid mixture applied to substrates by brush, roller, spray or trowel which expands into a protective foamed layer to provide fire-protection of substrates when exposed to flame or intense heat.

2.10 Label: An identification applied on a product by the manufacturer that contains the name of the manufacturer, the function and performance characteristics of the product or material, and the name and identification of an approved agency; and that indicates that a representative sample of the product or material has been tested and evaluated by an approved agency.

2.11 Manufacturer's Designation/Mark: An identification applied on a product by the manufacturer indicating that a product or material complies with a specified standard or set of rules.

2.12 Mastic Fire-resistant Coatings: Liquid mixture applied to a substrate by brush, roller, spray or trowel that provides fire-resistant protection of a substrate when exposed to flame or intense heat.

2.13 Professional Engineer (P.E.): An engineer licensed to practice the applicable discipline in the jurisdiction where the SIA is operating.

2.14 Qualified: Meeting the minimum requirements of Section 6.

2.15 Registered Architect (R.A.): An architect licensed to practice the applicable discipline in the jurisdiction where the SIA is operating.

2.16 Registered Design Professional: An individual who is registered or licensed to practice their respective design profession as defined by the statutory requirements of the professional registration laws of the jurisdiction in which the project is to be constructed.

2.17 Special Inspection: Inspection as herein required of the materials, installation, fabrication, erection or placement of components and connections requiring special expertise to ensure compliance with approved construction documents and referenced standards. Reference the 2009 *International Building Code* Chapter 17, Section 1702, or the most currently adopted code.

2.18 Special Inspection Agency (SIA): A third-party entity approved by the building official to perform special inspections.

2.19 Special Inspection, Continuous: The full-time observation of work requiring special inspection by an approved special inspector who is present in the area where the work is being performed.

2.20 Special Inspection, Periodic: The part-time or intermittent observation of work requiring special inspection by an approved special inspector who is present in the area where the work has been or is being performed and at the completion of the work.

2.21 Special Inspector: A qualified person employed by an SIA, who shall demonstrate competence, to the

satisfaction of the building official, for the inspection of the particular type of construction or operation requiring special inspection.

2.22 Structural Observation: The visual observation of the structural system by a registered design professional for general conformance to the approved construction documents at significant construction stages and at completion of the structural system. Structural observation does not waive inspections required by Section 110 or Section 1704 of the IBC.

3.0 BASIC INFORMATION

The following basic information must be submitted by agencies applying for Special Inspection Agency accreditation:

Note: An electronic format is acceptable.

3.1 Data showing compliance with Section 3.0 of the IAS Rules of Procedure for Special Inspection Agency Accreditation.

3.2 A manual showing compliance with the relevant requirements of ISO/IEC Standard 17020:1998, General Criteria for the Operation of Various Types of Bodies Performing Inspection. The relevant requirements are as follows:

3.2.1 The SIA inspection body or organization of which it forms a part, shall be legally identifiable.

3.2.2 SIA's field and type of inspection, including detailed procedures for each field of inspection. IAS offers accreditation in inspection methods as identified in Chapter 17 of the 2009 *International Building Code*, or the most currently adopted code. Reference AC291 Section 6 for minimum qualifications for special inspectors.

3.2.3 Evidence of liability insurance per contract documents.

3.2.4 Detailed information on impartiality, independence and integrity, including documented procedures on how the SIA ensures freedom of employees from external pressures that could impact inspection activities. (Compensation of inspectors must not directly depend on the number of inspections they perform and in no case on the results of such inspections.)

3.2.5 An affidavit signed by an officer of the SIA attesting to compliance with the third-party requirements described in the following note.

Note: The applicant SIA and its inspection staff shall not be part of or have a financial or other interest in the construction, manufacture, representation, supply, installation or maintenance of the structures or components (including any fixtures or appliances) which they inspect, or in entities that supply similar competitive items or services. The SIA and its staff shall not engage in any activities that may conflict with their independence of judgment and integrity. The SIA must operate in a nondiscriminatory, transparent manner so as to allow full access to its services by interested parties.

3.2.6 Policies and procedures on how the SIA ensures confidentiality of client information.

Note: Implementation of Sections 3.2.4 and 3.2.6 must provide objective evidence that the inspector has read and

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understood these requirements. Appropriate objective evidence may be in a form, referencing the requirement, or any other method appropriate to ensure personnel understand and attest they are in compliance with the requirements.

3.2.7 An organizational chart and documents defining positions and responsibilities of key personnel, including the following:

3.2.7.1 A technical manager (however named) with the necessary qualifications and experience, who has overall responsibility for the technical operations.

3.2.7.2 A quality manager (however named) with the necessary qualifications and experience who has the responsibility for the quality system and its implementation. This person should have direct access to the highest level of authority within the organization.

Note: Necessary qualifications and experience must be sufficient to effectively perform their responsibilities.

3.2.7.3 Field supervisor(s) who is (are) responsible for the quality of inspections, and the training and monitoring inspectors for each field of inspection. If the field inspection supervisor covers more than one field of inspection, he/she shall be suitably qualified in each field.

3.2.7.4 Deputies in the absence of technical manager, quality manager and/or field supervisor(s).

3.2.7.5 A matrix matching inspector certifications against the fields and types of special inspections shall be maintained and current. [Minimum educational, experience and/or certification requirements for special inspectors are noted in Section 6.0. This matrix also must include the date of employment and date of certification.]

Note: Refer to Section 5.2.3.

3.2.8 Documented safety procedures addressing the field inspections.

3.2.9 Documented policies and procedures on equipment maintenance, including the following:

3.2.9.1 Equipment used for performing special inspection in the field.

3.2.9.2 Equipment used for performing testing under special inspection in the field.

3.2.9.3 Calibration of equipment used for measurement and tests with traceability to an accredited calibration provider, including identifying the calibration status of the equipment by a label or other suitable means.

3.2.9.4 Handling defective equipment.

3.2.10 Policies and procedures on security and backup of stored data (hard and electronic).

3.2.11 All documents issued to personnel in the SIA as part of the quality system shall be reviewed and approved for use by authorized personnel prior to issue. A master list or an equivalent document control procedure identifying the current revision status and distribution of documents in the quality system shall be established and be readily available to preclude the use of invalid and/or obsolete documents.

3.2.11.1 Management system documents generated by the SIA shall be uniquely identified. Such identification shall include the date of issue and/or revision identification, page numbering, the total number of pages or a mark to signify the end of the document, and the issuing authority.

3.2.11.2 Procedures shall be established to describe how changes in documents maintained in computerized systems are made and controlled.

Note 1: Controlled documents include but are not limited to the quality manual, standard operating procedures, special inspection procedures, and copies of forms, checklists, etc., relevant to the inspection activities.

Note 2: Invalid or obsolete documents must be promptly removed from all points of issue or use. Obsolete documents retained for either legal or knowledge-preservation purposes must be suitably marked.

3.2.12 Policies and procedures for contract review to show that the SIA only conducts work within its area of expertise and that the SIA has adequate resources to fully discharge its responsibilities in a competent manner.

3.2.13 Documented procedure for preparation, acquisition, handling and storage of material samples or field-prepared specimens in accordance with the requirements stipulated in applicable standards or codes.

Note: In the absence of such information, the SIA must have procedures for documenting sampling, handling, storage and transportation techniques.

3.2.14 Documented policies and procedures on how the SIA shall retain records of all activities. SIA shall maintain all records pertaining to the contract review.

Note: Such records, including inspection and test reports, shall be held in a secure environment for such period as stipulated in the contract documents or prevailing local laws, whichever is longer.

3.2.15 Policies and procedures for subcontracting to other IAS-accredited agencies.

Subcontracting is permitted only to IAS-accredited SIAs or to qualified special inspectors. The subcontracted SIA must have documentation substantiating that it agrees to operate under the SIA's quality management system. A list of current subcontractors must be maintained.

3.2.16 Documented procedures for processing complaints and appeals from clients and regulatory agencies.

Note: Records of all complaints and resolutions shall be maintained.

3.2.17 Documented procedures for client feedback.

Note: Examples of type of feedback include client satisfaction surveys and review of inspection reports with clients.

3.2.18 Policies and procedures for internal audits.

Note: For agencies with fewer than five employees, internal audits may be performed by an independent individual qualified in conformity assessment.

3.2.19 Policies and procedures for management review. The management review shall take account of:

3.2.19.1 Internal audit reports.

3.2.19.2 External assessment reports.

3.2.19.3 Complaints from clients.

3.2.19.4 Adequacy of human and equipment resources.

3.2.19.5 Results of client feedback.

3.2.19.6 Training needs.

3.2.19.7 Results of supervision and monitoring activities of inspectors.

3.2.19.8 Changes needed in the quality system.

3.2.20 Procedure to notify building official and registered design professional if corrective actions arising from inspection activities remain unresolved. This must be consistent with requirements noted in Section 1704.1.2 of the 2009 IBC, or the most currently adopted code.

3.2.21 Procedure for dispatching and distribution of daily, intermediate and final reports.

4.0 INSPECTION REPORTS

Inspection reports issued by the SIA shall accurately and clearly outline the results of special inspections. Inspection reports shall comply with the reporting requirements of IBC Chapter 17 and contain the following minimum information, as applicable:

4.1 Inspection date, and arrival and departure times (or total duration on-site) of the inspector.

4.2 Information pertaining to review of material records. (Material certification requirements are included, but not limited, to those noted in Appendix A.)

4.3 Structure/item inspected, including applicable codes, standards, approved construction documents, etc.

4.4 Results of inspection/tests witnessed or performed.

4.5 Resolution of any discrepancies noted during previous inspections.

Note: Separate documentation is acceptable.

4.6 Description of samples obtained, if any, including quantity, dimensions and relevant physical characteristics.

4.7 Identification of test/inspection equipment used in the inspection.

4.8 Names and signatures of the inspector and client's representative (as applicable).

5.0 TRAINING AND SUPERVISION/MONITORING OF INSPECTORS

Special inspection agencies shall have procedures for the training and supervision/monitoring of inspectors. Detailed records of training and supervision/monitoring activities shall be maintained and be made available for review by IAS during on-site assessments, reassessments and surveillance visits.

5.1 Inspector Training: All inspectors of the SIA shall undergo training in specific competencies by a supervisor or senior inspector or shall obtain training/education through other formal arrangements that are applicable to the inspector's duties. Plans for continued training to keep pace with developing technology and code changes shall be in place.

All such training shall be documented by the SIA.

5.2 Supervision/Monitoring of Inspectors

5.2.1 To ensure consistency in inspections and compliance with accreditation requirements, special inspection agencies shall have an effective supervision/monitoring system for their inspectors. This also will include regular review of inspection reports by supervisory personnel.

5.2.2 The SIA management shall conduct a review of each inspector at a minimum frequency of once every six months. The six-month review shall include:

- Review of the inspection reports for adequacy and completeness
- Competence of the inspector with the SIA's internal standard operating procedures
- Compliance with requirements imposed by the jurisdiction in which inspections are conducted.
- Review of feedback from the clients and building department staff.

5.2.3 SIA shall have records of monitoring their inspectors at least once during the first month of employment. SIA shall have records of periodic monitoring of their inspectors in the field not less than once every three years for each field of inspection by the SIA.

6.0 MINIMUM QUALIFICATIONS FOR SPECIAL INSPECTORS

6.1 Concrete Construction (Pre-stressed/Precast/Cast-in-Place/Poured-in-Place and Reinforced)

6.1.1 Pre-stressed/Pre-cast/Cast-in-Place/Poured-in-Place Concrete

6.1.1.1 Current ICC certification in prestressed concrete inspection and one year of experience; or

6.1.1.2 P.E. and a minimum one year of direct experience in prestressed concrete construction. Inspector must be qualified under Section 6.1.1.1 within 12 months of accreditation; or

6.1.1.3 Bachelor's degree in Civil or Structural Engineering from an accredited institution and a minimum one year of experience. Inspector must be qualified under Section 6.1.1.1 within 12 months of accreditation; or

6.1.1.4 ACI Concrete Construction Special Inspector and a minimum two years of experience. Inspector must be qualified under Section 6.1.1.1 within 12 months of accreditation.

6.1.2 Reinforced Concrete

6.1.2.1 Current certification in reinforced concrete special inspection by ICC (see note below) and one year of experience; or

6.1.2.2 P.E. and a minimum one year of direct experience. in reinforced concrete construction. Inspector must be qualified under Section 6.1.2.1 within 12 months of accreditation; or

6.1.2.3 Bachelor's degree in Civil or Structural Engineering from an accredited institution and a minimum two years of experience. Inspector must be qualified under Section 6.1.2.1 within 12 months of accreditation; or

6.1.2.4 ACI Concrete Construction Special Inspector and a minimum one year of experience. Inspector must be qualified under Section 6.1.2.1 within 12 months of accreditation.

Note: Passing the ICC exam on reinforced concrete special inspection or having the reinforced concrete associate certification will not be considered without meeting the education/work experience requirements by ACI and ICC.

6.2 Nondestructive Testing (NDT)

6.2.1 Personnel qualified in accordance with nationally-recognized NDT personnel qualifications practice or standard, such as ANSI/ASNT-CP-189 or SNT-TC-1A.

6.2.2 American Society for Nondestructive Testing (ASNT) Level II and a minimum of 120 hours of direct testing experience or training as determined and approved by an ASNT Level III.

6.3 Pier and Pile Foundations

6.3.1 Current ICC certification in Concrete Special Inspection in addition to one of the following:

6.3.2 P.E. and a minimum of one year of experience.

6.3.3 NICET III or IV (geotechnical/construction or construction material testing/soils) and a minimum of five years of experience.

6.3.4 NICET CT Certified Engineering Technologist and a minimum of five years of experience.

6.4 Post-installed Structural Anchors in Concrete

6.4.1 Current ICC Certification in Reinforced Concrete Special Inspection.

6.4.2 Current ICC certification as a Residential or Commercial Building Inspector, as applicable, and a minimum two years of experience related to the activity being inspected; or

6.4.3 P.E. and a minimum one year of experience related to the activity being inspected. Inspector must be qualified under Section 6.4.1 within 12 months of accreditation; or

6.4.4 Bachelor's degree in Civil or Structural Engineering from an accredited institution and a minimum two years of experience related to the activity being inspected. Inspector must be qualified under Section 6.4.1 within 12 months of accreditation.

6.5 Soils

6.5.1 NICET Level II Geotechnical Engineering Technology Certification, or ICC Soils Special Inspector Certification, and a minimum two years of experience; or

6.5.2 Technician with a minimum three years of documented experience directly related to soils testing and inspection under a licensed P.E. Inspector must be qualified under Section 6.5.1 within 12 months of accreditation; or

6.5.3 Bachelor's degree in Civil or Structural Engineering/Geotech/Geologist from an accredited institution and a minimum one year of experience. Inspector must be qualified under Section 6.5.1 within 12 months of accreditation; or

6.5.4 P.E. in civil engineering or equivalent P.E. and a minimum one year of experience. Inspector must be qualified under Section 6.5.1 within 12 months of accreditation; or

6.5.5 P.E. in Geotechnical engineering.

6.6 Spray-applied Fire-resistant Materials

6.6.1 Current ICC certification as a Spray-applied Fireproofing Special Inspector and a minimum of one year experience; or

6.6.2 P.E. and a minimum one year of experience in fireproofing applications. Inspector must be qualified under Section 6.6.1 within 12 months of accreditation; or

6.6.3 Bachelor's degree in Civil or Structural Engineering from an accredited institution and a minimum two years of experience in fireproofing applications. Inspector must be qualified under Section 6.6.1 within 12 months of accreditation.

6.7 Steel (High-strength Bolting and Welding)

6.7.1 Bolting: Current ICC certification as a Structural Steel and Bolting Special Inspector and a minimum one year of experience.

Note: Current certifications for Structural Steel and Welding Special Inspector are valid until the date of expiration.

6.7.2 Welding

6.7.2.1 AWS Certified Welding Inspector (CWI); or

6.7.2.2 Current ICC certification as a Structural Steel and Welding Special Inspector and a minimum one year of experience.

6.8 Masonry Construction

6.8.1 Current ICC certification in masonry and a minimum one year of experience; or

6.8.2 P.E. and a minimum one year of relevant experience. Inspector must be qualified under Section 6.8.1 within 12 months of accreditation; or

6.8.3 Bachelor's degree in Civil or Structural Engineering from an accredited institution and a minimum two years experience. Inspector must be qualified under Section 6.8.1 within 12 months of accreditation.

6.9 Wood Construction

Current ICC certification as a commercial or residential building inspector, as applicable, and

6.9.1 A minimum two years of direct experience in engineered wood products; or

6.9.2 A minimum five years of direct experience as a journeyman carpenter.

6.10 Exterior Insulation and Finish Systems (EIFS)

6.10.1 Current ICC certification as a reinforced concrete special inspector; or

6.10.2 Current ICC certification as a residential or commercial building inspector, and a minimum of two years of experience related to the activity being inspected; or

6.10.3 Bachelor's degree in Civil or Structural Engineering from an accredited institution and a minimum two years of experience related to the activity being inspected. Inspector must be qualified under Section 6.10.1 within 12 months of accreditation; or

6.10.4 NICET CT Certified Engineering Technologist and a minimum five years of experience. Inspector must be qualified under Section 6.10.1 within 12 months of accreditation.

6.11 Firestop Systems

6.11.1 Successful completion of the UL Firestop Examination and a minimum of two years of experience in the on-site quality control of installed firestops, fire-resistive joint systems, and perimeter fire barriers, and maintain 30 hours of continuing education over each three-year period or successful completion of the UL Renewal Examination; or

6.11.2 Successful completion of the FM Approvals Firestop Examination and a minimum of two years of experience in the on-site quality control of installed firestops, fire-resistive joint systems, and perimeter fire barriers, and maintain 30 hours of continuing education over each three-year period or successful completion of the FM Renewal Examination; or

6.11.3 Qualification as a Firestop Systems Inspector through training or certification by an agency which is accredited under ISO/IEC 17024, AC371, ASTM E 2659-09, or ANSI/NOCA 1100, and maintain 30 hours of continuing education over each three-year period or successful completion of the UL or FM Renewal Examination; and a minimum of two years of relevant experience; or

6.11.4 P.E., R.A., or F.P.E. and a minimum of two years of experience in the on-site quality control of installed firestops, fire-resistive joint systems, and perimeter fire barriers, and maintain 30 hours of continuing education over each three-year period or successful completion of the UL or FM Renewal Examination. Registered Design Professional and a minimum of two years of relevant experience. Inspector must be qualified under Section 6.11.1, 6.11.2, or 6.11.3 within 12 months of accreditation.

6.12 Wall Panels, Curtain Walls, and Veneers

6.12.1 Professional Engineer (PE) – Civil and 1 year experience; or

6.12.2 Structural Engineering, Engineer-In-Training (EIT), or bachelor's degree in Architecture or Civil Engineering or Structural Engineering and 2 years relevant experience.

6.13 Smoke Control Systems

6.13.1 PE, Air Balancer Certification, and 1 year relevant experience; or

6.13.2 Bachelor's degree in Engineering, Air Balancer Certification and 3 years relevant experience; or

6.13.3 NEBB Certification, National Air Balancer Certification and 3 years relevant experience, including installation and operation skills for smoke control systems.

6.14 Mechanical Systems

6.14.1 PE and 1 year relevant experience. Within 12 months of accreditation, must be certified by ICC as a Residential and Commercial Mechanical Inspector; or

6.14.2 Bachelor's Degree in Engineering and 3 years relevant experience. Within 12 months of accreditation, must be certified by ICC as a Residential and Commercial Mechanical Inspector; or

6.14.3 ICC Certification as a Residential and Commercial Mechanical Inspector and 5 years relevant experience, including installation and operation of mechanical systems.

6.15 Fuel-oil Storage and Piping Systems

6.15.1 PE and 1 year relevant experience. Within 12 months of accreditation must be certified by ICC as a Residential and Commercial Mechanical Inspector; or

6.15.2 Bachelor's Degree in Civil or Mechanical Engineering and 3 years relevant experience. Within 12 months of accreditation, must be certified by ICC as a Residential and Commercial Mechanical Inspector; or

6.15.3 ICC Certification as a Residential and Commercial Mechanical Inspector and 5 years relevant experience. Knowledge of ASME B31-Code for pressure piping is preferable; welding and brazing symbols knowledge is preferable. Current ICC certification as a Structural Steel and Welding Special Inspector and a minimum one year of experience.

6.16 Structural Cold-formed Steel

6.16.1 PE and 1 year relevant experience; or

6.16.2 Bachelor's degree in Engineering or Architecture and 2 years relevant experience; or

6.16.3 Technician with ICC Certification as a Structural Steel and Bolting Special Inspector and 3 years experience.

6.17 Excavation – Sheeting, Shoring, and Bracing

6.17.1 PE – Geotechnical, Civil, or Structural and 1 year experience; or

6.17.2 Bachelor's degree in Geotechnical, Civil, Structural, or Architectural Engineering and 4 years relevant experience.

6.18 High-pressure Steam Piping (Welding)

6.18.1 PE, AWS Welding Inspection Certification, and 1 year relevant experience; or

6.18.2 Bachelor's Degree in Civil or Mechanical Engineering, AWS Welding Inspection Certification and 2 years relevant experience; or

6.18.3 Current AWS Welding Inspection Certification and 3 years of relevant experience.

6.19 Structural Safety – Stability, and Mechanical Demolition

6.19.1 PE and 2 years relevant experience or Valid Site Safety Manager Certification; or

6.19.2 Bachelor's Degree in Civil or Mechanical Engineering, current ICC Certification for Construction Inspection and 3 years relevant experience.

6.20 Site Storm Drainage Disposal and Detention

6.20.1 PE and 1 year relevant experience; or

6.20.2 Bachelor's Degree in Civil or Mechanical Engineering and 3 years relevant experience; or

6.20.3 Licensed Master Plumber and 5 years relevant experience, including basic concepts of hydraulics.

6.21 Sprinkler Systems

6.21.1 PE – Mechanical Engineering and 1 year relevant experience; or

6.21.2 Bachelor's degree in Mechanical Engineering and 3 years relevant experience.

6.22 Standpipe Systems

6.22.1 PE – Mechanical Engineering and 1 year experience; or

6.22.2 Bachelor's Degree in Mechanical Engineering and 3 years relevant experience.

6.23 Heating Systems

6.23.1 PE – Mechanical Engineering and 1 year relevant experience. Within 12 months of accreditation, must be certified by ICC as a Residential and Commercial Mechanical Inspector; or

6.23.2 Bachelor's Degree in Mechanical Engineering and 3 years relevant experience. Within 12 months of accreditation, must be certified by ICC as a Residential and Commercial Mechanical Inspector; or

6.23.3 ICC Certification as a Residential and Commercial Mechanical Inspector and 5 years relevant experience, including relevant experience in installation and operation of relevant mechanical systems, sizing of heating systems including heat pumps, and heat loss/heat gain concepts.

6.24 Chimneys

6.24.1 PE and 1 year relevant experience. Within 12 months of accreditation, must be certified by ICC as a Residential and Commercial Mechanical Inspector; or

6.24.2 Bachelor's degree in Engineering and 2 years relevant experience. Within 12 months of accreditation, must be certified by ICC as a Residential and Commercial Mechanical Inspector; or

6.24.3 ICC Certification as a Residential and Commercial Mechanical Inspector and 5 years relevant experience, including knowledge of code compliance of factory-built chimneys.

6.25 Seismic Isolation Systems

6.25.1 PE and 2 years relevant experience; or

6.25.2 Bachelor's degree in Geotechnical, Civil, or Structural engineering and 1 year relevant experience.

6.26 Special Cases

6.26.1 Current ICC certification as a Special Inspector and a minimum two years of experience related to the activity being inspected.

6.26.2 Bachelor's degree in Civil or Structural Engineering from an accredited institution and a minimum two years of experience related to the activity being inspected. Inspector must be qualified under Section 6.26.1 within 12 months of accreditation; or

6.26.3 P.E. and a minimum one year of experience related to the activity being inspected. Inspector must be qualified under Section 6.26.1 within 12 months of accreditation.

Exception: Individuals who have proven expertise in a specialty field, either through education or field experiences of not less than five years, may be considered as meeting criteria to conduct one or more classes of specialty inspections. ■

APPENDIX A — Material Certifications

| ELEMENT | MATERIAL | PRESENT PRACTICE | ADDITIONAL REQUIREMENTS |
|-------------------|------------------------------------|--|--|
| Concrete | Mix | Structural engineer approves mix design based upon submittals, verifies approved mix design supplied based upon batch ticket, sample and test cylinders | Batch plant inspection |
| | Cement | | Manufacturer certification |
| | Coarse Aggregate | | ASTM Standards C 33 and C 330 yearly compliance submittal, sample and test |
| | Fine Aggregate | | ASTM Standards C 33 and C 330 yearly compliance submittal, sample and test |
| | Admixtures | | Manufacturer certification |
| | Water | | Supplier test result submittal, sample and test |
| | Reinforcing and Prestressing Steel | Verify grade, size and type by mill stamps on bar | Match bundle tags to mill certification submittal, sample and test |
| | Misc. Chairs, Anchors, etc. | | Manufacturer certification |
| Bolts in Concrete | Bolts | Verify grade and size by bills of lading | Match bills of lading to mill certification submittal, sample and test |
| | Epoxy | Observe material packaging and labels, verify compliance with project specs or approvals, observe batching per manufacturer instructions, occasionally sample and test | Manufacturer certification, sample and test |
| Masonry | Block or Brick | Occasionally sample and test | Manufacturer certification, sample and test |
| | Grout Mix | Structural engineer approves mix design based upon submittals, verifies approved mix design supplied based upon batch ticket, occasional sampling and testing | Batch plant inspection |
| | Cement | | Manufacturer certification, sample and test |
| | Grout, Coarse Aggregate | | Yearly compliance testing, sample and test |
| | Grout, Fine Aggregate | | Yearly compliance testing, sample and test |
| | Admixtures | | Manufacturer certification |
| | Water | | Supplier test result submittal, sample and test |

| ELEMENT | MATERIAL | PRESENT PRACTICE | ADDITIONAL REQUIREMENTS |
|------------------|--|---|---|
| | Mortar Mix | Structural engineer approves mix design based upon submittals, verifies approved mix design supplied based upon batch ticket, occasional sampling and testing | Observe field batching, verify mix design compliance, sample and test |
| | Mortar, Fine Aggregate | | Yearly compliance testing, sample and test |
| | Composite | Test prisms | |
| | Misc. Centering Devices, Screens, etc. | | Manufacturer certifications |
| | Reinforcing Steel | Verify grade, size and type by mill stamps on bar | Match bundle tags to mill certification submittal, sample and test |
| Structural Steel | Structural Steel | | Match delivery information with mill certifications |
| | Bolts | | Match delivery information with certificate of compliance |
| | Non-shrink Grout | Observe material packaging and labels, verify compliance with project specs or approvals, observe batching per manufacturer instructions, occasionally sample and test | Manufacturer certification, sample and test |
| | Anchor Bolts | | Match delivery information with certificate of compliance |
| | Weld-filler Materials | Observe material packaging and labels, verify on-site storage | Match delivery information with certificate of compliance |
| Firestop Systems | Penetration Firestop Systems | Visual or destructive inspection to ASTM E 2174-05, verifying installation conformance to classified ASTM E 814 or UL 1479 design parameters as published in directories. | ASTM Standard E 2174-09 Verify certification agency labels and classified systems designs. When appropriate, verify that installing contractors are certified to FM 4991, or to UL Qualified Firestop Contractor Program. |
| | Expansion and Construction Joint Firestop Systems | Inspected visually or destructively, verifying installation conformance to the classified UL 2079 or ASTM E 1966 System Design parameters as published in directories. | ASTM Standard E 2393-09 Verify certification agency labels and classified systems designs. When appropriate, verify that installing contractors are certified to FM 4991, or to UL Qualified Firestop Contractor Program: |
| | Building Perimeter Fire Barrier Joint Firestop Systems | Inspected visually or destructively, verifying installation conformance to the classified ASTM E 2307 design parameters as published in directories. | ASTM Standard E 2393-09 Verify certification agency labels and classified systems designs. When appropriate, verify that installing contractors are certified to FM 4991, or to UL Qualified Firestop Contractor Program. |

I Standards listed in Appendix A are included under Section 1.2 Reference Documents.

¹ Published by International Code Council, Washington, D.C.: www.iccsafe.org

² Published by International Organization for Standardization, Geneva, Switzerland: www.iso.org

³ Published by International Accreditation Service, Whittier, California: www.iasonline.org