



Standard Specification for Agencies Engaged in Construction Inspection, Testing, or Special Inspection¹

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This standard has been approved for use by agencies of the U.S. Department of Defense.

1. Scope*

1.1 This specification defines the minimum requirements for agencies engaged in any of the following:

- (a) Inspection of specified methods and materials used in construction,
- (b) Special Inspection, and
- (c) Testing of materials used in construction.

1.2 Criteria are provided for assessing the competence of an agency to properly perform designated inspections, tests, or Special Inspection services. This specification establishes essential characteristics pertaining to the organization, management, personnel, facilities, quality systems, responsibilities, duties, inspection and testing methods, records, and reports of the agency. This specification may be supplemented by more specific criteria and requirements, if required.

1.2.1 This specification specifically addresses factors relevant to an agency's ability to produce precise, accurate test data or determine the conformity of construction activities and materials used in construction with regulations, codes, standards, and approved project plans and specifications containing the requirements against which the inspection or test, or both, will be performed. Specific or general requirements include:

- 1.2.1.1 Facilities and management of the agency,
- 1.2.1.2 Sufficiency and technical competency of personnel,
- 1.2.1.3 Suitability, calibration, and maintenance of equipment,
- 1.2.1.4 Quality system, audit, and review,
- 1.2.1.5 Responsibilities, duties, and authority of agencies,
- 1.2.1.6 Validity and appropriateness of sampling, testing, and inspection methods and procedures,
- 1.2.1.7 Management of records,

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1.2.1.8 Reporting, review, and transmission of test and inspection data or findings, and

1.2.1.9 Specific requirements for identified fields (concrete, soil, etc.).

1.3 This specification can be used as a basis to assess an agency and is intended for use in accrediting agencies, public or private, engaged in inspection, testing, and Special Inspection of construction activities and materials used in construction. These services include but are not limited to reinforced concrete, precast concrete, structural steel erection, welding, bolting, soil and rock, foundations, masonry, sprayed fire-resistive materials, fire stops, exterior insulation and finish system (EIFS), and Special Cases. Building officials can use Specification E329 to assess the competency of agencies in the fields covered by Specification E329.

1.4 A certificate of accreditation, including the scope of accreditation, is required to comply with this specification.

1.5 The users of an accredited agency must review the agency's scope of accreditation to ensure the agency has been accredited for its technical competence to perform the specific inspections or tests requested by the user.

1.6 This specification is not intended to:

- (a) circumvent or replace the agreement between the agency and the owner that should clearly define the responsibilities and authorities of the agency;
- (b) address design requirements that supersede applicable codes, laws, and regulations; or
- (c) address construction means, methods, techniques, or sequences.

2. Referenced Documents

2.1 *ASTM Standards*:²

² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

*A Summary of Changes section appears at the end of this standard

- A880** Practice for Criteria for Use in Evaluation of Testing Laboratories and Organizations for Examination and Inspection of Steel, Stainless Steel, and Related Alloys (Withdrawn 2004)³
- C1077** Practice for Agencies Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Testing Agency Evaluation
- C1093** Practice for Accreditation of Testing Agencies for Masonry
- D3666** Specification for Minimum Requirements for Agencies Testing and Inspecting Road and Paving Materials
- D3740** Practice for Minimum Requirements for Agencies Engaged in Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction
- E4** Practices for Force Verification of Testing Machines
- E543** Specification for Agencies Performing Nondestructive Testing
- E605** Test Methods for Thickness and Density of Sprayed Fire-Resistive Material (SFRM) Applied to Structural Members
- E736** Test Method for Cohesion/Adhesion of Sprayed Fire-Resistive Materials Applied to Structural Members
- E1513** Practice for Application of Sprayed Fire-Resistive Materials (SFRMs)
- E2174** Practice for On-Site Inspection of Installed Firestops
- E2393** Practice for On-Site Inspection of Installed Fire Resistive Joint Systems and Perimeter Fire Barriers
- 2.2 *AASHTO Standard:*
- R18** Standard Recommended Practice for Establishing and Implementing a Quality System for Construction Materials Testing Laboratories⁴
- 2.3 *ANSI/ISO/IEC Standard:*⁵
- 17011** General Requirements for Accreditation Bodies Accrediting Conformity Assessment Bodies
- 17020** General Criteria for the Operation of Various Types of Bodies Performing Inspection
- 17025** General Requirements for the Competence of Calibration and Testing Laboratories
- 2.4 *AWS Documents:*⁶
- B1.11** Guide for the Visual Inspection of Welds
- D1.1** Structural Welding Code, Steel
- D1.4** Structural Welding Code—Reinforcing
- D1.5** Bridge Welding Code
- 2.5 *SJI Documents:*⁷
- Recommended Code of Standard Practice for Steel Joists and Joist Girders

3. Terminology

3.1 Definitions of Terms Specific to This Standard:

3.1.1 *accreditation, n*—the third-party attestation of an agency’s competence to perform inspection, or testing services, or both.

3.1.1.1 *accreditation body, n*—the body that administers the accreditation program and issues the certificate of accreditation.

3.1.1.2 *accreditation scope, n*—the formal statement issued by the accreditation body to the agency that describes the specific inspections, tests, or both, for which the agency has demonstrated a competency in performing and is accredited.

3.1.1.3 *Discussion*—A certificate of accreditation shall identify the agency and its location along with the accreditation body, the accreditation standard, the general field(s) of inspection or testing, effective dates, conditions and authorized signatures, seals, or combinations thereof, of the accreditation body. The certificate must be accompanied by an accreditation scope to fully describe the technical competence of the agency.

3.1.2 *agency, n*—the organization, or part thereof, authorized by the client or client’s duly authorized representative to inspect, test, or both, construction activities and materials used in construction as required by the approved project plans and specifications.

3.1.2.1 *inspection agency, n*—an agency that uses technical procedures and individuals with special expertise to perform inspection activities.

3.1.2.2 *Discussion*—Agency personnel may collect and submit samples, identified with respective portions of the construction, for laboratory evaluation. The inspection agency and testing agency may be one organization or separate organizations.

3.1.2.3 *Special Inspection agency, n*—an accredited third-party inspection agency approved by the applicable building official to perform Special Inspections.

3.1.2.4 *Special Inspector, n*—a person employed by a Special Inspection agency and approved by the applicable building official, certified by a third party to perform certain types of inspection as required by the applicable building code.

3.1.2.5 *testing agency, n*—an agency that uses technical procedures, individuals with special expertise, and specified equipment to measure, sample, examine, test, or otherwise produce data unique to the construction activities or materials used in construction. The inspection agency and testing agency may be one or separate organizations.

3.1.3 *bituminous material and mixtures, n*—as used in construction, all types of asphalts and tars for pavements.

3.1.3.1 *Discussion*—Bituminous mixtures include bituminous stabilized soil, base course, binder, leveling, surface course, and mastic mixtures. Bituminous mixtures may contain asphalt binder material which, in some cases, may be further modified with other additive materials to produce special properties.

3.1.4 *client, n*—the party that contracts with the agency to perform its services.

³ The last approved version of this historical standard is referenced on www.astm.org.

⁴ Available from American Association of State Highway and Transportation Officials (AASHTO), 444 N. Capitol St., NW, Suite 249, Washington, DC 20001, <http://www.transportation.org>.

⁵ Available from International Organization for Standardization (ISO), 1, ch. de la Voie-Creuse, Case postale 56, CH-1211, Geneva 20, Switzerland, <http://www.iso.ch>.

⁶ Available from American Welding Society (AWS), 550 NW LeJeune Rd., Miami, FL 33126, <http://www.aws.org>.

⁷ Available from Steel Joist Institute (SJI), 3127 Mr. Joe White Ave., Myrtle Beach, SC 29577-6760, <http://www.steeljoist.org>.

3.1.5 *concrete, n*—as used in construction, a mixture of hydraulic cement, aggregates, and water, with or without admixtures, fibers, or other cementitious materials.

3.1.6 *contractual agreement*—the legally-binding service contract between the agency and the agency’s client.

3.1.6.1 *Discussion*—The *contractual agreement* referred to throughout this document may include *testing, inspection, or Special Inspection services contracts*.

3.1.7 *engineer, professional, n*—an individual who is registered or licensed to engage in the practice of engineering as defined by the statutory requirements of the professional registration or licensing laws of the state or jurisdiction in which the project is to be constructed.

3.1.8 *inspection, n*—a technical procedure based on visual observation or field measurement of construction activities or materials used in construction employed to evaluate activities or materials and determine general compliance with approved project plans and specifications.

3.1.8.1 *Special Inspection, n*—the unique term applied to the process of inspection or monitoring of specific materials, equipment, installation, fabrication, erection or placement of components and connections by individuals with special expertise as approved by the applicable building official to ensure compliance with the approved project plans and specifications.

3.1.9 *inspector/technician, n*—a person employed by the agency assigned to perform the inspection or testing of construction activities or materials used in construction or both.

3.1.10 *facility, main, n*—a structure with a permanent address, which provides testing or inspection services, or both, for multiple projects for a period expected to be greater than three years.

3.1.10.1 *facility, site, n*—a structure, or a mobile, fully-equipped, self-contained unit, capable of conducting specific tests or inspections or both, established in a dedicated area on-site for the duration of a specific project, but not for projects expected to exceed three years.

3.1.10.2 *facility, sub-, n*—a structure with a permanent address, that is physically separate from, but considered an extension of the main facility, which generally provides testing or inspection services or both for multiple projects.

3.1.10.3 *facility, permanent, adj*—as used to describe testing or inspection facilities, or both, expected to function for a period exceeding three years.

3.1.10.4 *facility, temporary, adj*—as used to describe testing or inspection facilities or both, expected to function for a period not to exceed three years.

3.1.11 *masonry, n*—as used in construction, masonry units, brick, mortar and grout.

3.1.11.1 *Discussion*—The masonry construction may be load bearing or non-load bearing.

3.1.12 *nondestructive testing, n*—procedures for testing construction activities or materials used in construction, or both, that does not impair the serviceability of the materials or assemblies under test.

3.1.12.1 *Discussion*—Nondestructive testing includes all test methods that do not impair the serviceability of the material, part, or assembly under test. Nondestructive tests are specific. They usually reveal only the specific kinds of defects and conditions for whose detection they were designed. Consequently, they must be selected in accordance with the specific materials, the specific conditions to be detected, and the specific job to be done.

3.1.13 *registered design professional, n*—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 state or jurisdiction in which the project is to be constructed.

3.1.14 *soil, n*—as used in construction, subgrade, subbase, base, select fill and other similar types of granular and non-granular soils regardless of whether it is considered as a structural element in the project or general fill not supporting structural elements.

3.1.15 *steel, n*—as used in construction, structural steel plates and shapes used wholly or in part for structures including reinforcing steel used in concrete.

3.1.15.1 *Discussion*—It is not intended to include steels used in conjunction with mechanical, electrical, heating or air-conditioning equipment except for the supporting structures.

3.1.16 *testing*—a technical procedure performed on construction activities or materials used in construction with specified equipment that produces data unique to the construction activities or materials; the data are used to evaluate or determine selected properties or characteristics of the activities or materials.

4. Significance and Use

4.1 The inspection and testing of construction activities and the materials used in construction are important elements in obtaining quality construction in general compliance with the contract documents. An agency providing construction inspection, testing, or Special Inspection, must be selected with care after a comprehensive evaluation of their competency to perform the services properly and in compliance with the approved project plans and specifications.

4.2 This specification provides minimum criteria for use in assessing the qualifications of construction inspection, testing, and Special Inspection agencies. The criteria may be supplemented by more specific criteria and requirements for particular classes of testing or types of inspection agencies. An individual user can also use it to judge the competency of an agency.

4.3 The intent of this specification is to provide a standardized basis for requirements for a technically oriented construction inspection, testing, or Special Inspection agency, with respect to the agency’s capability to objectively and competently provide the specific services without prejudice.

4.4 Typically, assessing an agency involves the following three essential sequential phases: