



# Standard Specification for Agencies Involved in Testing, Quality Assurance, and Evaluating of Manufactured Building Components<sup>1</sup>

This standard is issued under the fixed designation E699; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

## 1. Scope

1.1 This specification defines the minimum requirements for agencies engaged in inspections and testing performance in accordance with ASTM standards for factory built building components and assemblies.

1.2 The criteria in this specification are provided for assessing the competence of an agency to properly perform designation testing, quality assurance, and inspection.

1.3 This specification does not cover Special Inspections or construction materials testing or inspection, or both. See Specification E329 for these items.

1.4 The criteria presented herein are divided into three categories of endeavor, namely,

Part A—Standards and Criteria for Testing Agencies

Part B—Standards and Criteria for Quality Assurance Agencies

Part C—Standards and Criteria for Evaluating Agencies

1.5 The fundamental purpose of this specification is to provide criteria for evaluating an agency as denoted in 1.4 either by a user of that service or by an accrediting authority.

1.6 It is not the purpose of this specification to provide a basis for determining the quality of a product or service being evaluated.

1.7 This specification is not intended for the evaluation of those activities normally associated with the production and sale of products and the like, such as a manufacturer's internal quality program. However, any organization may request or perform an evaluation of its own in-house facilities under this specification if it so desires.

1.8 It is not the intent of this specification to be the basis for the determination of the type of agency to be selected by the user.

<sup>1</sup> This specification is under the jurisdiction of ASTM Committee E36 on Accreditation & Certification and is the direct responsibility of Subcommittee E36.70 on Agencies Performing Construction Inspection, Testing and Special Inspection.

Current edition approved Aug. 1, 2016. Published August 2016. Originally approved in 1979. Last previous edition approved in 2009 as E699 – 09. DOI: 10.1520/E0699-16.

1.9 This specification is used in conjunction with Specification E541 and Practice E651/E651M.

1.10 The use of SI or inch – pound units, or combination of, will be the responsibility of the technical committees referred to in this standard.

## 2. Referenced Documents

2.1 *ASTM Standards*:<sup>2</sup>

E329 Specification for Agencies Engaged in Construction Inspection, Testing, or Special Inspection

E541 Specification for Agencies Engaged in System Analysis and Compliance Assurance for Manufactured Building

E651/E651M Practice for Evaluating Capabilities of Agencies Involved in System Analysis and Compliance Assurance for Manufactured Building

## 3. Terminology

3.1 *Definitions*:

3.1.1 *accrediting authority*—a formal body (or an individual user) that evaluates the capability of an agency in certain specific fields of activity.

3.1.2 *affiliate*—as used in this specification, a corporate or organizational entity that has a management or an ownership relationship, or both, with the agency being evaluated. It does not refer to a contractual relationship between organizations, nor does it include the membership of a trade or similar association, or to the companies represented by such membership.

3.1.3 *agency*—an organization or part of an organization, engaged in the activities of testing, quality assurance, or evaluating test results.

3.1.4 *certification*—the process by which recognition is obtained from an appropriate party that a product meets certain specified requirements. Prototype or production models, or both, of the product(s) will have been tested and inspected to check that they do meet the requirements. Quality assurance programs are used to ensure that the product(s) continue to

<sup>2</sup> 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.

comply with the specified requirements. Satisfactory tests, inspections, and quality assurance are for the basis for certification. Certification may be evidenced by labeling of the product.

3.1.5 *criteria*—common characteristics pertaining to organization, human resources, material resources, and quality systems which provide a basis for evaluating agencies as to their capability to objectively and competently provide the specific service(s) needed by the user.

3.1.6 *evaluating*—the function of obtaining data developed by a testing agency, and utilizing such data to perform calculations, determine suitability, project results, or otherwise draw conclusions resulting from an analysis of these data.

3.1.7 *human resources*—those elements of support and capability that are provided by humans using their mental and physical capabilities.

3.1.8 *inspection*—the process of measuring, examining, testing, gaging, or making other determinations with respect to materials, products, services, or environments.

3.1.9 *material resources*—the instrumentalities, documentation, environments, structures, etc., needed to augment the elements of support and capability provided by humans. (See *human resources*.)

3.1.10 *organization component*—a portion of an organization with specific tasks and activities that constitute a part of the total effort and accomplishments of the organization.

3.1.11 *quality*—the totality of features and characteristics of a material, product, service, system, or environment that bear on its capability to satisfy a specified need(s).

3.1.12 *quality assurance*—a planned system of activities whose purpose is to provide assurance that the overall quality control program (see quality control) is in fact being effectively implemented. This system involves a continuing evaluation of the adequacy and effectiveness of the overall quality control program with a view to having corrective action initiated where necessary. For a specific material, product, service, etc., this involves verification, audits, and evaluations of the quality factors that affect the specification, production, inspection, and use of the material product, service, system, or environment.

3.1.13 *quality control*—a planned system of activities whose purpose is to provide a level of quality that meets the needs of users; also, the use of such a system. The objective of quality control is to provide an overall system integrating the quality factors of several related steps including: the proper specification for what is wanted; production to meet the full intent of the specification; inspection to determine whether the resulting material, product, service, etc., is in accord with the specification; and review of usage to determine necessary revisions of the specification.

3.1.14 *testing*—the determination, by technical means, of the properties, performance, or elements of materials, products, services, systems, or environments, which may involve application of established scientific principles and procedures.

#### 4. Significance and Use

4.1 This specification provides basic criteria for evaluating the qualifications of agencies utilizing the ASTM test methods

to test and evaluate manufactured building components. The existence of a formal accrediting authority such as a federal, state, municipal, or nongovernmental body is not necessary for the use of this specification. These criteria may be supplemented by more specific criteria for particular classes of testing, quality assurance, and evaluative agencies.

4.2 The intent of this specification is to provide a “consensus-system” standardized basis for evaluating a testing, quality assurance, or evaluating agency with respect to its capability to provide the specific service(s) needed by the user without prejudice to the agency offering other services or being affiliated with other agencies or organizations. In those situations where a strict literal interpretation of the phrase “shall be made available,” as used in this specification, would be inordinately burdensome to an agency, it will generally be sufficient that the agency concerned has the information available for “on-site” review. This specification is not intended to be used by accredited agencies or personnel in the performance of Special Inspection services listed in the IBC Code or any other Code.

4.3 The criteria of this specification are described in terms of the basic information necessary for an accrediting authority to evaluate the capability, with respect to objectivity, and competency of a testing, quality assurance, and evaluating agency regarding common characteristics pertaining to the organization, human resources, material resources, and quality systems employed by the agency in performing the services offered. Typically, accreditation of an agency involves the following three essential phases:

4.3.1 Submittal, to an involved accrediting authority, of basic information in accordance with the criteria of this specification by an interested agency.

4.3.2 Evaluation of the agency-submitted information by the involved accrediting authority.

4.3.3 Verification, “on-site,” of the agency-submitted information by the representative(s) of the involved accrediting authority.

4.4 Although three categories are presented, an agency may provide one or any combination of these categories for which it can qualify. An agency requesting qualification under more than one category must satisfy the criteria for each category for which acceptability is desired.

4.5 The criteria set forth herein represent areas upon which agreement can be reached. There may be other areas to be given consideration which may be of importance to the user. The user should include such other areas as a part of its own criteria.

4.6 This specification represents minimum criteria necessary to perform, monitor, or evaluate the test results of those standards promulgated by ASTM Committee E06.

4.7 It is anticipated that the ultimate user of this specification will have the expertise necessary to exercise good judgment in the areas of human resources, physical resources, and quality systems of the agency being evaluated.

NOTE 1—For example, when judging the qualifications of the various individuals in a particular agency, related factors or alternative resources

(such as mechanical, electrical, or electronic equipment used to aid, control, or monitor the work of the personnel) should be considered when assessing the overall qualifications of such individuals. The job experience and the reliability of the individual should also be considered in the judgment, where applicable.

4.8 When assessing the organization and the resources of a particular agency, the judgment should take into account only those factors or resources specifically related to the technological area being served by the agency in terms of the specific evaluation, and only as necessary to form an adequate judgment in relation to the evaluation. Conversely, those technological areas served by a particular agency that are not required to be evaluated in a specific instance should not be impugned through the lack of such evaluation. The absence of evaluation or the denial of accreditation by any one party should not prejudice future evaluations by other parties because small differences in needs can influence the judgement of users. The use of this specification does not abrogate the right to “due process” necessary to all assessments under this specification. The right of rebuttal to any conclusions drawn during an accreditation procedure shall be extended to the agency.

4.9 Each act of evaluation should be viewed as a “one-to-one” judgment and should not be construed as being a universal judgment by others interested in the agency’s services. In order to ensure proper interpretation of each act of evaluation, the purpose of the evaluation and the evaluation area shall be clearly specified in any report of an evaluation made pursuant to this specification.

## 5. Organization of the Agency

5.1 The following information shall be made available by the agency:

5.1.1 A description of the organization including:

5.1.1.1 The complete legal name and address of the main office.

5.1.1.2 The names and positions of the principal officers and directors.

5.1.1.3 The agency’s principal ownership, its managerial structure, and its principal members.

5.1.1.4 All relevant internal organizational components including their locations and their primary functions.

5.1.1.5 All relevant organizational affiliates of the agency, and the principal officers of the affiliates and directors of the affiliates, where applicable.

5.1.1.6 External organizations and organizational components and their functions that are utilized for significant supporting technical services.

5.1.1.7 A brief history of the agency, including its relationship with its organizational components, affiliations, and other supporting information, to ensure that any and all possible conflicts of interest may be judged from the standpoint of the user.

5.1.2 A general description of the geographical area served.

5.1.3 A general description of the types of users of the services.

5.1.4 A listing of the relevant technical services offered.

5.1.5 A functional description of the agency’s organizational structure for the services listed in 5.1.4 including operational departments, support departments, and services.

This may be demonstrated in the form of charts that depict the relevant groups and their relationship.

5.1.5.1 This description shall be inclusive of all the locations that are to be used for performing the services listed in 5.1.4 including the functions being performed at each location. The accreditation of an agency includes the accreditation of all locations of the agency performing services or support functions for which accreditation is being sought. All information required by this specification shall be supplied for each location.

5.1.6 A brief resume of all full-time managerial and supervisory employees used to perform the services for which accreditation is being sought. Where part-time employees, contractors, consultants, etc., are utilized in any capacity for these services, their relationship to the agency shall be stated.

5.1.7 A statement determining the managerial or financial relationship, or both, between the agency, its owners, its management, its directors, and the users of the services to be performed.

## PART A—STANDARDS AND CRITERIA FOR TESTING AGENCIES

### 6. General

6.1 The testing agency is responsible for the performance of the applicable tests with the objective of ascertaining that the manufacturer’s product complies with the testing requirements of the applicable standard or specifications. An understanding of the requirements of each individual test method to be used is a necessity. It is essential that the test agency has a copy of each applicable test method available, in its entirety, before undertaking the test program.

6.2 The test agency shall prepare and submit a report in compliance with the requirements of the test method. This test report shall stipulate that the tests were performed in accordance with all requirements of the test method when such is the case. In those cases where a deviation is made from the test method requirements, each such deviation shall be enumerated in the test report separately so that proper evaluation of the test results can take the deviations into account.

6.3 The function of a test agency encompasses only the performance of the tests required, the reporting of the results, and a statement of compliance to the particular function under consideration. Evaluation of the test results is the function of the evaluating agency, the criteria for accreditation for which are set forth in Part C of this specification.

6.4 Where the test agency performs several testing procedures encompassing changes in the manufacturer’s product, leading to improved or acceptable results, each such change and its effect shall be reported in a supplement to the test report, in order to allow the evaluating agency and quality assurance agency to properly appreciate and incorporate this knowledge into their functions.

6.5 The test agency shall be capable of providing the following elements:

6.5.1 An organization identifying the person(s) responsible for the overall operation of the test agency and for the supervision of the test program.



- 6.5.2 A record of calibrations performed.
- 6.5.3 A suitable method for storing records and test results.

6.6 The test agency shall demonstrate the following capabilities:

- 6.6.1 The agency shall have a definite program for training new testing personnel and supervision of all testing personnel.
- 6.6.2 The agency shall conduct training programs for all testing personnel to ensure uniform application of the test methods and improving existing techniques.
- 6.6.3 If feasible, the agency shall participate in round-robin evaluations, when required by the accreditor.
- 6.6.4 The agency shall maintain records to allow verification of test reports.

6.7 *Criteria*—The test agency shall provide documentation to establish that its procedures meet the standard in 6.1, 6.2, 6.3, 6.4, 6.5, and 6.6.

## 7. Test Agency Representative in Responsible Charge

7.1 *Task*—To provide those services required of the person in responsible charge of the test functions, including the following:

7.1.1 *Project Liaison*—Represent the test agency in all relationships with the manufacturer, the quality assurance agency, the evaluating agency, or such other agencies having an interest in the test results.

7.1.2 *Scheduling of Testing Activities*—Prepare and monitor the complete management plan for testing activities, keeping them on schedule and performing effectively.

7.1.3 *Training*—Establish and evaluate training programs appropriate to the performance of the specific job tasks of the testing staff and to maintain the technical competence of the staff.

7.1.4 *Administrative Support*—Provide for effective clerical and administrative support for testing agency activities.

7.1.5 *Work Review*—Establish that all testing agency personnel have access to the test methods. Observe that test procedures are followed explicitly. Determine that the results are accurately reported. Validate the test reports.

### 7.2 *General Requirements:*

7.2.1 *General Expertise*—General knowledge and experience of the test methods and requirements.

7.2.2 *Knowledge of the Testing Function*—Understanding of the testing agency function and the relationship to other evaluative and quality assurance agencies.

7.2.3 *Logical Approach to Problem Resolution and Decision Making*—Ability to define the testing problem, to determine the appropriate test method, and to organize the test agency resources to obtain the required data.

### 7.3 *Criteria:*

7.3.1 *Education*—Bachelor's degree in the physical sciences or engineering disciplines, or a high school education plus a minimum experience factor of four years in the particular field for which accreditation is desired.

7.3.2 *Professional Competence*—Registration as a professional engineer or architect.

### 7.3.3 *Experience:*

7.3.3.1 One year cumulative responsibility for technical project planning and management and

7.3.3.2 Four years of actual or supervisory exposure in testing or use of test methods for the product or similar products involved.

7.3.3.3 Active participation in developing test methods or standards for the product or similar products is desirable.

## 8. Test Agency Representative in Direct Charge of Testing Program

### 8.1 *Task:*

8.1.1 *Supervision*—Provide first-hand review of the performance of test agency technicians in their work.

8.1.2 *Resolve Problems*—Resolve nonroutine testing problems presented by technicians or others.

8.1.3 *Procedure Implementation*—Implement administrative and operational procedures, such as training procedures, test procedures, etc., as delegated by the test agency representative in responsible charge.

### 8.2 *General Requirements:*

8.2.1 *General Knowledge*—Detailed knowledge of applicable standards.

8.2.2 *Supervisor Ability*—Ability to select and motivate technicians to perform as required, and to provide a proper balance between efficient utilization of personnel and assurance of quality.

8.2.3 *Personnel and Physical Plant Evaluation*—Ability to review activities and performance of testing operations for the purpose of ensuring the quality of the tests performed.

### 8.3 *Criteria:*

8.3.1 *Education*—Bachelor's degree in engineering, quality control, or closely related physical science; or high school education and four years of experience in testing similar items.

8.3.2 *Certification*—Certifications applicable to the task being performed are required.

## 9. Technicians

9.1 *Task*—To perform under the supervision of the representative in direct charge of the work.

### 9.2 *General Requirements:*

9.2.1 *Technical Characteristics*—The ability to follow detailed instructions and checklists that provide the criteria for testing.

9.2.2 *Orientation and Training*—The technician shall undergo a period of orientation and training for the testing functions that he will perform. This training shall be under the direction of a supervisor designated by the representative in direct charge and fully qualified in accordance with these criteria.

9.2.3 *Testing Ability*—Ability to evaluate the results of well-defined or routine measurements or tests by reason of experience or familiarity with such measurements or tests.

### 9.3 *Criteria:*

9.3.1 *Education*—The technician shall possess the mathematical and communicative skills equivalent to those acquired by a high school education.