

## Product Approvals

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The appropriate time to submit for product\* approval varies among jurisdictions, but the most obvious time is when a new product—one that isn't specifically addressed in the building code—is proposed for use in a project. However, a jurisdiction has the authority to request supporting documentation for any product—even if the code provides specific criteria for compliance (e.g., a standard from ASTM, NFPA, or UL). The authority for this request lies in Section 1703, specifically Section 1703.2, of the 2006 *International Building Code* (IBC), which states:

*Any material, appliance, equipment, system or method of construction meeting the requirements of this code shall be approved in writing after satisfactory completion of the required tests and submission of required test reports.*

Although not apparent in the Section quoted above, the code does place the responsibility of product approval on the building official. In Section 104.11 it states that an “alternative material, design or method of construction shall be **approved where the building official finds** that the proposed design is satisfactory and complies with the intent of the provisions of this code” (emphasis added). Also, in Section 1703.4, it states that “information consisting of test reports...or other such information as necessary, shall be provided **for the building official to determine** that the material meets the applicable code requirements” (emphasis added).

The most common type of document available for substantiating compliance is the test report, typically prepared by a testing laboratory, and based on a standard that the building code has referenced. In some cases, a test report may not be sufficient, so additional supporting documentation in the form of a “research report” may be required as stipulated in Sections 104.11.1 and 1703.4.2. It is important to note that the building code does not explicitly state that research reports are required, but only “where necessary to assist in the approval” process. Therefore, if test reports from an approved testing agency are deemed sufficient by the building official, then a research report may not be necessary.

### APPROVAL PROCEDURES

Now, the next question would be: how does the building official approve products? Section 104, applies specifically to products that are not directly prescribed in the provisions of the building code. However, even products that on the surface appear to comply with the prescriptive provisions of the code may not be in compliance. Therefore, documentation in the form of reports, investigations, or other supporting data may be required by the building official to demonstrate compliance with the building code. A “research report” (sometimes called an “evaluation report”) is commonly preferred since it looks at a product’s performance from a holistic perspective.

Research reports may come in different forms since the building code does not provide requirements for content or format. However, in the two sections cited above, it states that research reports shall be “valid” and be “from approved sources.” The determination of what constitutes an approved source is left to the building official. Many building departments will have procedures or policies that outline product

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\* The use of the term “product” in this article also includes materials, systems, components, and methods

approvals for the jurisdiction. In some cases, an architect, engineer, or specialty consultant may be an acceptable source as long as the data in the research reports are valid.

As examples, the Division of the State Architect (DSA) in California has published Interpretation of Regulations Document IR A-5, *Acceptance of Products, Materials, and Evaluation Reports*, for approving structural products and alternate materials for public school projects under the California Building Code; and, Rule 9B-72, *State Product Approval*, of the Florida Administrative Code (FAC) provides methods of approving building envelope and structural products under the Florida Building Code.

In order to prevent repetitive evaluations of the same product, some jurisdictions maintain an approved product listing. For example, when a new product is submitted with proper documentation, such as a research report, the building official will review the product. If the building official approves the product, the product is then added to an approved product list. When a project is submitted for plan review using the same product, the design team is not required to submit for product approval. Therefore, using a product on such a list will minimize the need to prepare or obtain a research report, or submit any other test reports or data for approval.

## **EVALUATION SERVICES**

Jurisdictions that have developed policies or procedures for approving products may include a list of evaluation service agencies that are acceptable. For evaluation service agencies not specifically listed, some jurisdictions may establish special requirements for acceptance. A common requirement is that agencies be accredited in accordance with criteria provided in the International Organization for Standards and International Electrotechnical Commission's (ISO/IEC) Guide 65, *General Requirements for Bodies Operating Product Certification Systems*. Although ISO/IEC determines the criteria, they don't perform the actual accreditation; this is done through other organizations such as the American National Standards Institute (ANSI) and the International Accreditation Service, Inc. (IAS).

There are several accredited evaluation services agencies that provide research reports for use by building officials. The most popular of these is the International Code Council Evaluation Service (ICC-ES), a subsidiary of ICC, which directly supports evaluating products for the *International Codes* and the codes of the former model code organizations, called the "legacy codes." ICC-ES is the consolidation of the evaluation services of the three former model code organizations and the National Evaluation Service (NES).

The purpose of an evaluation service agency is not to test products (although some do), but to determine if the product is acceptable under the building code or codes. This acceptance (not approval) is based on multiple aspects of a building code, not just a single area of concern, such as flame-spread index. To illustrate this, if a product is used in an exterior wall assembly, then the evaluation may consider weathering, water-resistance, fire-resistance, and attachment method, among other characteristics.

To ensure consistent and objective evaluation, the evaluation service agency may establish criteria for evaluating products. For example, ICC-ES has developed acceptance criteria and evaluation guidelines for over 300 products and systems. These documents, which are available for free at the ICC-ES website ([www.icc-es.org/criteria](http://www.icc-es.org/criteria)), provide minimum performance, test, and quality control requirements, and are developed using a process similar to that followed by many standards development organizations.

Quality control requirements within acceptance criteria ensure that the product will continue to comply with the acceptance criteria after the research report is issued. This may require inspection by a listing agency, or another inspection agency, accredited as complying with ISO/IEC Standard 17020, *General Criteria for the Operation of Various Types of Bodies Performing Inspection*. ICC-ES also requires compliance with AC304, *Acceptance Criteria for Inspection Agencies*, which references the ISO/IEC standard. AC304 states that the purpose of inspections, at least initially, is to verify:

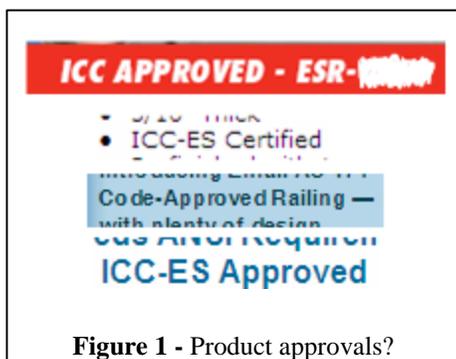
- (1) that the manufacturer has the means, methods and manpower to produce the product that is being recognized in the evaluation report;
- (2) that the manufacturer is producing a product that is consistent with the product being recognized in the evaluation report;
- (3) that the manufacturer has a documented quality system that meets the requirements of AC10 [Acceptance Criteria for Quality Documentation]; and
- (4) that the manufacturer is operating in accordance with the documented quality system.

Follow-up inspections may be required to ensure that the manufacturing process remains consistent with the quality system originally submitted. For the ICC-ES, AC304 requires that the inspection agency contracted by the report holder conduct a minimum of four unannounced inspections within each year.

Test reports submitted by manufacturers for product evaluation must be prepared by testing laboratories that comply with specific criteria. Tests conducted by laboratories that are accredited as complying with ISO/IEC Standard 17025, *General Requirements for the Competence of Testing and Calibration Laboratories* are generally accepted, but nonaccredited laboratories may be considered, provided a satisfactory on-site assessment is conducted. ICC-ES has developed acceptance criteria AC85 specifically for test reports, but in addition to the minimum content required for a report, it also references ISO/IEC Standard 17025 for lab accreditation.

### IS IT REALLY APPROVED OR CERTIFIED?

Take a look at Figure 1. See anything wrong? Those snippets of manufacturer advertisements, from actual product data sheets and websites, are very misleading. As a matter of fact, those that advertise products evaluated by the ICC-ES are in direct violation of Section 13 of the *Rules of Procedure for Evaluation Reports* by the ICC-ES.



So, what’s wrong with them other than the *Rules* offense? As you recall from earlier in the article, the building official is responsible for approving products—not ICC, ICC-ES, or even the “code.” Therefore, an evaluation service report prepared by ICC-ES only reviews the product for compliance with the building in accordance with approved evaluation criteria; there is no statement of approval or certification. Although the examples indicated relate to products evaluated by ICC-ES, manufacturers may use reports prepared by other evaluation service agencies in product literature and improperly promote their product as being “code approved,” or something similar.

When designing buildings, it is important for design professionals to be aware of product requirements in the code, and to select and specify only those products that comply. If one is unsure about a product's compliance with the code, request test reports and other data from the manufacturer. If a manufacturer states in their product literature that its product has passed the tests necessary for code compliance, they must have that information available.

Even if test reports are provided, verify that the test standard used was an edition referenced by the code. Some products may have been tested using methods that are several years old; or the tests were conducted several years ago when the standards were current, but have not been tested under more current standards—especially if the standard has seen significant revisions over time.

Product selection by the design professional is just as important as allowable building area, means of egress, fire protection systems, and other requirements of the building code; probably more so since many plan reviews do not address product selections in great depth. Therefore, it is of "material" concern that products are thoroughly researched prior to inclusion in a building design.

*To comment on this article, suggest other topics, or submit a question regarding codes, contact the author at [ron@specsandcodes.com](mailto:ron@specsandcodes.com).*

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