



SPRI Informational Paper  
Code Evaluations for Roofing Products  
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This SPRI informational paper addresses topics related to roofing products and the need for code evaluations, the options for providing code compliance information and the types of organizations that typically provide that information. This paper centers on requirements of the International Building Codes as they relate to membrane roof covering systems.

**1. What is product approval?**

In building construction in the United States, it is the responsibility of the Authority Having Jurisdiction (AHJ) to verify that products being used in construction comply with applicable regulations. The AHJ is typically a code official for a governmental jurisdiction, for example a city, a county or a state, although the AHJ could represent a public institution such as the Army. Each jurisdiction is responsible for enforcing the codes and regulations that have been adopted through legislation for that jurisdiction.

The party intending to use a product, material or system that is regulated by the code must demonstrate, to the satisfaction of the AHJ, that the product, material or system complies with the requirements of the particular code or regulation.

In its simplest form, a builder must demonstrate to the local code official that the roofing products they intend to install on a building comply with all of the requirements of the building, residential, plumbing, fire and energy codes that have been adopted in that jurisdiction.

**2. What information is needed for AHJs to approve membrane roof covering systems?**

The requirements for roof coverings are contained within Chapter 15 of the International Building Code (IBC) and Chapter 9 of the International Residential Code (IRC), and related sections of state and local codes. There are related requirements in the Energy, Plumbing and Fire codes but these codes are outside the scope of this discussion. To demonstrate code compliance of a roofing system, the party filing for a building permit must demonstrate that the products comply with all relevant requirements of the applicable code. These requirements include weather protection, wind uplift resistance, external fire resistance, impact resistance and physical properties. Most often, it is the manufacturer that makes the information available for the permit process.

There are three methods for providing the relevant information to the AHJ. Combinations of these methods can be used to show code compliance for a particular building.

- a. Manufacturer Self-Certification – This is where the manufacturer conducts tests either in their own facilities or those of an independent testing laboratory and provides information such as product literature showing compliance with applicable standards and copies of test reports. The information is reviewed and approved by the AHJ.
- b. Listing (aka Labeling or Certification) by an Independent Third Party – This is where the manufacturer conducts tests and maintains listings (including an on-going inspection program) with an accredited independent third-party agency. The listing does not include any statements regarding compliance with the codes. It is the responsibility of the AHJ to connect the listings with the applicable code requirements during the review and approval process. SPRI is currently working to establish a publically available listing website to assist with verification of compliance with Chapter 15 of the IBC and Chapter 9 of the IRC.
- c. Code Evaluation and Certification by an Independent Third Party – The term *Code Evaluation* is generally used synonymously with the terms *Evaluation Report or Research Report*. These reports are used by manufacturers to provide comprehensive information on products that may be recognized in the code or are alternatives to the code. The research report will address any or all of the applicable code requirements, identify the testing and analysis that has been conducted to address the requirements and offer a finding that the product complies with the code. Review and approval by the AHJ is much simpler with Research Reports.

### **3. How can new or innovative roofing products or assemblies show compliance with the building code?**

Alternative materials and methods of construction are regulated by Section 104.11 of the IBC and IRC. This section states that the code is not intended to prevent the use of any material or method of construction not specifically described in the code. However, the material or method of construction must comply with the intent of the code, and be shown to be equivalent to that described in the code as to quality, strength, effectiveness, fire resistance, durability and safety. An accepted method in the US to establish this equivalency is to work with ICC Evaluation Service to develop a normative standard, called an Acceptance Criteria. The Acceptance Criteria describes the means to evaluate the product or method of construction for code compliance. Once available, manufacturers may then seek the services of a code evaluation agency to evaluate their product or method of construction and to publish their findings in a Research Report. Alternatives must be approved by the AHJ.

### **4. Are Research Reports mandatory?**

No, the AHJ should not insist on a research report for a membrane roofing system if the manufacturer has data available for the AHJ to review. Submitting the appropriate data to show compliance with the various aspects of the building code is absolutely acceptable. The building codes require research reports from approved sources where data is necessary to assist in the approval of materials or assemblies that are not specifically provided for in the code.

### **Conclusion:**

The Authority Having Jurisdiction has the responsibility to approve the use of products and methods of construction in his or her jurisdiction, based on satisfactory evidence of compliance with the requirements of the building codes being enforced. Information provided to the AHJ to demonstrate compliance can take several

forms, as described in this paper. Manufacturers of code-specified products, such as membrane roofing, can provide evidence of code compliance directly to the AHJ through a combination of test reports and certification or through a research report that speaks directly to the multiple requirements of the code. For alternative materials and methods of construction, an accepted practice is to establish requirements in an Acceptance Criteria, which provides the guidance for code evaluation agencies to conduct a code evaluation and publish their findings in a research report.

AHJs and manufacturers rely on the services of laboratories, certification agencies and code evaluation agencies that are accredited under international standards. Accreditation provides assurance that the agencies operate at the minimum level of competence and independence required by the standards. Refer to the Appendix for supplemental information on requirements for testing, certification and code evaluation agencies.

# Appendix

## Supplemental Information

### I. Requirements for Testing, Certification and Code Evaluation Agencies

- a. *Testing agencies* must be acceptable to the AHJ. In the United States, most testing laboratories that provide testing services to building products manufacturers are accredited for compliance with ISO/IEC 17025, *General Requirements for Competence of Testing and Calibration Laboratories*. Some jurisdictions enforce their own requirements but generally, most jurisdictions in the US accept testing from ISO 17025 accredited laboratories.
- b. *Certification (listing) agencies* must be acceptable to the AHJ. In the US, most certification agencies that provide certification and inspection services to building products manufacturers are accredited for compliance with ISO/IEC 17065 (or Guide 65), *Requirements for bodies certifying products, processes and services*. Some jurisdictions enforce their own requirements but, by and large, most jurisdictions in the US accept certifications from ISO/IEC 17065 or Guide 65 accredited agencies.
- c. *Code evaluation agencies* are relatively new to the building products certification business and these agencies are typically accredited under ISO/IEC Standard 17065 or Guide 65. Code evaluation includes certification to normative standards, together with additional review and analysis as required by the building codes for the intended end use.
- d. *Listed* is defined in the building codes as “Equipment, materials, products or services included in a list published by an organization acceptable to the building official and concerned with evaluation of products or services that maintains periodic inspection of production of listed equipment or materials or periodic evaluation of services and whose listing states either that the equipment, material, product or service meets identified standards or has been tested and found suitable for a specific purpose.” The terms *Labeled* and *Certified* are used synonymously in the building codes.

### II. Accreditation Bodies

To verify that a testing, certification or code evaluation agency is accredited, one must go to the website of the accrediting body. In addition to verifying that the agency has a current accreditation, the scope of accreditation should also be verified for the test and/or product in question. There is an international network of accreditation schemes, however in the US, the following bodies are typically used for accreditation:

American Association of Laboratory Accreditation (A2LA): <https://www.a2la.org/>

ACLASS: <http://www.aiclasscorp.com/>

ANSI: <https://www.ansica.org/wwwversion2/outside/Portfolio.asp>

International Accreditation Service (IAS): <http://www.iasonline.org/>

National Voluntary Laboratory Accreditation Program (NVLAP): <http://www.nist.gov/nvlap/>