

by SBCA Staff

The process of obtaining building code approval for a new product is clarified.

New proprietary construction materials become available to the marketplace every day. These products could include anything from a new connector, a new framing method, a new composite truss chord member or truss plate. Manufacturers whose products are not already approved within the building code process in some manner must provide evidence that the new product being marketed "is at least the equivalent of that prescribed in this code in quality, strength, effectiveness, fire resistance, durability and safety."¹ Exactly how the process works, the building code requirements for compliance, and who can provide an approval package for building official review and acceptance is the subject of many questions within our industry.

Question

What is the process for getting approval of a new product that is not currently addressed by the building code?

Answer

Design guidance for new products cannot be found directly within the code. Therefore, products that have a span table or design values not listed inside the IRC and/or IBC (basically anything other than a nail or lumber) need to have specific design values for use with the intended application. Design information that provides foundation for the product to be considered equivalent to that required by the code has to come from testing. This testing is generally performed by an independent testing facility where the product is evaluated to ASTM or ANSI testing procedures or some combination thereof. The facility will produce design values based on this testing.

There is confusion in the marketplace with building officials, builders, architects and engineers at times about what criteria must be met to approve the use of a new product in the intended application as meeting the requirements of the code. The good news is that the process is actually less complicated than it seems.

First, the product must be evaluated or tested to meet application and building code requirements using the standards and specifications referenced in the building code. This work is generally performed by a third party (i.e., independent professional engineer, test lab, etc.) to develop design values that allow for design to be performed in the context of the code requirements. Many independent testing agencies are available to test new products. After a product is tested, the testing facility will issue an evaluation report of the test data and create design values and other information pertaining to the product's performance. The next step is getting building official acceptance to use the product in a particular building application.

The checklist on page 11 outlines the process a building official follows to determine if the product complies with the code. If all the criteria in the checklist are met, the product or material should be accepted as an alternative material per IBC Section 104.11 and/or IRC Section R104.11. In this instance our checklist references Testing and Engineering Reports (TER) that are authored by SBCRI. To get a good

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¹ International Building Code (IBC) 104.11 and International Residential Code (IRC) R104.11

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TER Testing & Engineering Report

BUILDING OFFICIAL'S
ALTERNATIVE PRODUCT CODE-COMPLIANCE CHECKLIST
Key Code Requirements Summarized

<input type="checkbox"/>	Submitted construction documents propose use of an alternative product. ¹
<input type="checkbox"/>	An attached SBCRI/Qualtim Product Submittal Package documents that the proposed design is satisfactory and complies with the intent of, and is at least equivalent to the purpose intended by, the provisions of the code. ²
<input type="checkbox"/>	The SBCRI/Qualtim Product Submittal Package includes a Testing & Engineering Report (TER). TER No. _____ provides a code-compliance evaluation for this product and application. This TER has been authored by SBCRI/Qualtim, Inc. (an approved independent agency ³) and shall be reviewed and approved by the building official. "If it is determined that the evidence submitted is satisfactory proof of performance for the use intended ... the building official shall approve the use of the material or assembly subject to the requirements of this code," per IBC Section 1703.4.1. The Product Submittal Package also includes the following code-compliance documentation: <ul style="list-style-type: none"> TER No.1009-04: Building Official Approval of the Use of Alternative Materials, Design & Methods of Construction TER No.1011-02: TER Code Compliance Evaluations TER No.1011-03: SBCRI is an Approved Agency TER No. 1011-05: Acceptance Criteria (e.g. AC-308, etc.) Are Not Consensus Standards and Therefore Are Not Required for Code Compliance
<input type="checkbox"/>	The Building Official reviews the construction documents, and the alternative product application conforms to the provisions of the building code, relevant laws, ordinances, rules, and regulations. ⁴
<input type="checkbox"/>	The alternative product is approved and the permit is issued. ⁵ If disapproved, please provide the specific section(s) of the building code or local ordinance(s) that are violated, so that changes can be expeditiously made to provide a product application that conforms:

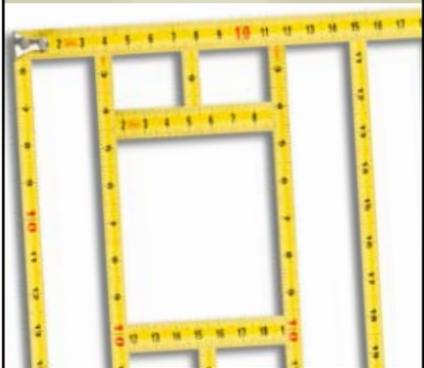
A Brief Summary of the Typical Alternative Product (or Design) Approval Process:

- The registered design professional (RDP) for the building designs a project that uses an alternative product that has been evaluated for code compliance via a specific Testing and Engineering Report (TER) issued by SBCRI (an approved agency).
- The RDP for the building justifies the use of the alternative product to resist the code-prescribed loading conditions.
- The building department then reviews and approves the construction documents, which include the alternative product, and issues a building permit.

¹ Proposed for use in accordance with IBC Section 104.2 / IRC Section R104.2 submitted & prepared in accordance with IBC Section 107.1 / IRC Section R106.1
² IBC 104.11, IBC 1701.2 & IRC R104.11
³ IBC 104.11.2, 1702.1, 1703.1 and IRC R104.11.1
⁴ IBC 104.2 & IRC 107.2.1
⁵ IBC 104.2, IBC 104.11 & IRC R104.11

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Technical Q&A

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feel for the process and how compliance with the building code or adopted law works, it is best to review the TERs in this order:

1. TER No.1009-04: *Building Official Approval of the Use of Alternative Materials, Designs & Methods of Construction*
2. TER No.1011-02: *TER Code Compliance Evaluations*
3. TER No.1011-03: *SBCRI is an Approved Agency*

These TERs can be found at www.sbcricri.info/codecompliance.php.

The summary of product approval process using a TER compliance approach follows:

1. The registered design professional (RDP) for the building designs a project that uses an alternate product that has been evaluated for code compliance via a specific Testing and Engineering Report (TER) that contains test data, engineering evaluations of that test data and resulting design values and an evaluation of how the product complies with the building code requirements.
2. The RDP for the building has evaluated and performed calculations to define the applied loads and required resistance to those loads and has justified the use of the alternate product to resist these code prescribed loading conditions.

3. The product design is sealed by a product engineer and incorporated into the building design through the construction documents which are then sealed by the RDP.

The building department then reviews the product use for compliance with the intent of the building code and approves the construction documents that include the alternate product and issues a building permit. **SBC**

To pose a question for this column, call the SBCA technical department at 608/274-4849 or email technicalqa@sbcmag.info.

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6300 Enterprise Lane • Suite 200 • Madison, WI 53719
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www.sbcmag.info • admgr@sbcmag.info