



**International Beams**  
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## Technical Bulletin (TB-IJ-11)

**Subject: Fire Protection Requirements for Floors under IRC (U.S. Residential Building Code)**

November 2015 (Updated June 2017)

This technical bulletin is intended for use with International Beams Inc. products and offers general guidelines for topics that may not be covered in our literature. Appropriateness of details for a specific project should be evaluated by a qualified designer. This technical bulletin may be periodically updated. Check [internationalbeams.com](http://internationalbeams.com) to ensure that you have the most recent version.

There has been a lot of discussion about the fire protection requirements for residential construction in the U.S. For many of you this is old news since this topic was discussed at code hearings as early as 2009. Others may be hearing about it for the first time, since some local jurisdictions are only just now adopting the IRC 2012 edition. Here are the paraphrased highlights of section R501.3 of IRC-2012 (moved to section R302.13 in IRC-2015):

½" gypsum board ceiling membrane (or 5/8" wood structural panel) is required at all floors for one-and-two-family dwellings with the following exceptions:

1. Approved partial sprinkler system is installed (can be at basement level only)
2. Crawl spaces (without furnaces or fuel storage)
3. ≤80 square foot area with fire blocking at perimeter
4. Minimum 2x10 (nominal size) lumber or structural composite lumber is used for the floor, or other approved floor assemblies demonstrating equivalent fire performance

The last clause: "...or other approved floor assemblies demonstrating equivalent fire performance" leaves the door open for alternate fire protection assemblies, such as wood I-joists with an approved fire-resistant coating.

### Existing solutions in the building code

Existing solutions in the building code: ½" gypsum board ceiling, or partial sprinkler system, are still the best solutions in many communities. The builder should use the solution that works best in their area.

### Factory-applied coatings

AC14 (ICC-ES "Acceptance Criteria for Prefabricated Wood I-joists") outlines test procedures for alternate fire protection for I-joists during the manufacturing process. AC14 was approved by ICC-ES in February of 2013, with additional revisions in October 2013.



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### Field-applied coatings

Field-applied fire-resistant coatings have been approved by local building code officials for use in some communities.

IB understands the urgency of this situation and the potential effects on housing. We are deeply committed and involved in industry task groups to find solutions. We will continue monitoring activity on this subject and will communicate updates to our clients when new information is available. If you have further questions on this subject as it relates to IB products, please contact IB directly.

### Additional resources:

Only a few states have adopted 2012 IRC. To check on the status of state adoptions, [click here](#).

For the February 14, 2013 Ohio Board of Building Standards official memo, [click here](#).

For background and history of the development of the IRC fire protection requirements, [click here](#).

For the WIJMA (Wood I-Joist Manufacturers Association) policy statement on membrane protection of floor assemblies, [click here](#).

For a statistical overview of firefighter safety in residential wood construction, [click here](#).

For an overview and instructions on how to implement a partial sprinkler system, [click here](#).

For additional residential fire protection assemblies applicable to IB I-joists, [click here](#).