BBRS Official Interpretation No. 2014_03

Date: April 8, 2014 and revised January 13, 2015
Subject: 8th Edition 780 CMR Chapter 51 Floor Protection Section R503.1

Background/Discussion:
The requirement for floor fire protection of residential buildings was recently adopted by the BBRS and will be in full effect on July 1, 2014. Several questions pertaining to it have arisen. Found below is Background/Information and several Q&A that were provided by the American Wood Council. These questions and answers along with the specific change in *italic* made by DPS Staff are considered to be an official interpretation of the BBRS on MA amendment to 780 CMR 51 section R503.1.

Background/Information

The genesis for this requirement was five separate code change proposals introduced in 2009 to revise the IRC. The IRC Code Development Committee disapproved all the proposals and requested that the interested parties work together to develop a public comment. In October 2010, the ICC membership approved the current text *(of the floor fire protection requirements in the IRC 2012)*, jointly developed by the International Association of Fire Fighters, International Association of Fire Chiefs-Life Safety Section, the National Association of Home Builders, and the American Wood Council.

The language adopted for the current MA Building Code was adapted from the IRC language. This language raises questions about the application or intent of the code.

Question 1: Are trusses or I-joists that utilize dimension or structural composite lumber components of at least 2-inch nominal dimension exempt from the requirement for ½ inch gypsum wallboard membrane, 5/8 inch wood structural panel membrane, or equivalent on the underside of the floor framing?
Answer 1: No. The intent of this provision is to permit solid framing members (i.e. solid wood joists), of at least 2-inch nominal thickness, to be used in traditional floor systems (e.g. 2x10) with a subfloor membrane attached to its upper surface and no membrane required to be attached to its lower surface.

The International Code Council has issued an advisory opinion (IRC Section R501.3, Exception 4) to clarify that the exception does not apply to trusses. The supporting information submitted for revising 2012 IRC identified where basic membrane protection was to be required and specifically cited unprotected floor/ceiling assemblies using trusses, I-joists, cold formed steel members, and bar joists as structural members needing to meet the membrane requirements. Additionally, the ICC advisory opinion states that assemblies using wood trusses may be approved for exemption if the floor assembly demonstrates equivalent fire performance to floor assemblies using 2x10 lumber. Hence, these products (trusses, I-joists, cold formed steel members, and bar joists) are only considered to comply if they demonstrate equivalence to solid sawn wood members.

Question 2: Does equivalent fire performance of a product or joist system, when compared to solid sawn wood floor joists, constitute acceptable performance for the purposes of applying R501.3?
Answer 2: YES. Equivalent fire performance in the IRC requirements is a reference to the basic requirement for 2x10 nominal dimension lumber or Structural Composite Lumber (SCL). Any product or joist system which demonstrates fire performance equivalent to that of a solid sawn 2x10 nominal wood member should be considered acceptable for installation without the membrane protection. The BBRS has established the provisions contained in ICC-ES AC14 as the means of demonstrating equivalent fire performance for an I-joist system. Thus an I-joist system that has met the provisions in ICC-ES AC14 and has been evaluated and published by an evaluation service that is qualified and accredited under ISO-17065 and that solely follows ICC-ES AC14 as the acceptance criteria for fire performance shall be accepted as conforming to the 8th Edition 780 CMR Chapter 51 Fire Protection of Floors Section R501.3, Exception 1.

Question 3. A builder submits plans with I-Joists made by company 'X' with a floor fire protection product or joist system (i.e.: web protectant) conforming to one of the configurations that company 'Y' had tested and which is included in company 'Y''s accredited evaluation report. Can the building official accept the plans and issue the permit?

Answer 3. Yes, provided that the I-joists made by company 'X' comply with ASTM D 5055 and conform to the minimum sizes specified in company Y's accredited evaluation report for overall joist depth, flange size and web thickness. The fire protection must also be applied as specified in company Y's evaluation report.

Question 4. How shall the floor fire protection product or joist system be submitted to the building official?
Answer 4. The I-joist manufacturer, accredited evaluation service, report number, and system detail or figure number shall be submitted, from which the building official may locate the report on the evaluation service's website. In lieu of this, a paper or electronic file of the evaluation report may be submitted, with reference to the system detail or figure number.

Question 5: Can 2012 International Residential Code (IRC) Section P2904 be used in the manner of any referenced standard?
Answer 5: YES. IRC Section P2904 is part of a section which was deleted by the Board of Building Regulations and Standards in its adoption process. But, BBRS also included a reference to P2904 as well as to NFPA 13D in its Exception #2 to the membrane protection requirement in R501.3. Utilization of this Exception #2 is only possible if the items included within it are treated as reference documents. Therefore, both NFPA 13D and IRC P2904 are acknowledged as and intended to be utilized as reference standards within the context of this requirement. Since P2904 does not exist in the current code, 2012 IRC P2904 must be utilized as a referenced standard.