2010 and 2013 Correspondence by Steve Orlowski of NAHB on the 2012 Code Cycle – Floor Joist Protection

Iowa Correspondence by NAHB 2010

From: Joan Tiemeyer
Sent: Thursday, June 03, 2010 2:32 PM
To: Orlowski, Steve
Subject: Fire Sprinklers

Would you please forward NAHB's position on lightweight construction that was submitted at the code hearings? Iowa City postponed enforcement of this amendment until January 2011:

a. New requirement in Section R313: Eliminate the requirement to install a fire sprinkling system in all dwelling units and adds a new regulation requiring fire protection on the underside of floor/ceiling areas where the dwelling incorporates light weight materials.

Comment:

Dwellings incorporating designed lightweight materials such as trusses or engineered lightweight material (including but not limited to wooden I-Beams, cold-form steel or light gauge bar joist trusses) in the structural floor or ceiling areas, shall protect the floors/ceilings areas with not less than ½ - inch gypsum board with joints taped and fastener heads treated on the underside of the floor/ceiling system.

Exception:

If the underside of a floor system is a crawl space where no combustible materials are stored or if the dwelling unit is has an automatic residential fire sprinkler system installed the dwelling unit is exempt from this new requirement.

Truss Manufacturers are claiming product discrimination and also have stats that show burn time is no different with dimensional lumber. Please provide me with any information you can as soon as possible, I have another meeting early next week on this issue.

Joan Tiemeyer
Executive Officer
Greater Iowa City Area Home Builders Association
PO Box 3396
Iowa City IA 52240
319-351-5333
Fax: 319-358-2443

From: Orlowski, Steve
Sent: Thursday, June 03, 2010 2:44 PM
To:
Subject: RE: Fire Sprinklers

Joan-

In an attempt to work with the fire service, NAHB was a proponent of the following public comment that combines the basic elements of current construction practice and proven performance of materials already in use in many of today's homes. Based on the vast amount research and study that the fire service has produced in relationship to wood trusses and engineered floor joist, the major concern is that there are some engineered wood products on the market that do not perform as well under fire conditions that conventional wood framing with nominal lumber provided. The major two concerns that the fire service points out is that these engineered products that do not have the same mass as nominal lumber, burns at a faster rate resulting in earlier structural failure, which significantly impacts the ability for first responders to perform search and rescue when they arrive on the scene. It also shortens the amount of time given to the occupant to escape in the event of a fire emergency. This proposal outlines when protection is required on the underside of the joist and provides for exceptions that either offset the risks to areas where the chance of fires originating are extremely low or will reduce the risk of injury to the fire service should structural collapse occur.

Below is a explanation (in red) behind the reasoning for each exception…

R501.3 Fire protection of floors. Floor assemblies, not required elsewhere in this code to be fire resistance rated, shall be provided with a ½ inch gypsum wallboard membrane, 5/8 inch wood structural panel membrane, or equivalent on the underside of the floor framing member.

Exceptions:

1. Floor assemblies located directly over a space protected by an automatic sprinkler system in accordance with Section P2904,

NFPA13D, or other approved equivalent sprinkler system. This is fairly self explanatory, but the fire service was attempting to prod builders into using sprinkler systems rather than installing drywall on the underside of the floor systems.

2. Floor assemblies located directly over a crawl space not intended for storage or fuel-fired appliances. After several discussions with the fire service over what their real concerns were with structural failures, it was agreed that crawlspaces do not pose a serious threat to occupant or fire fighter safety.

3. Portions of floor assemblies can be unprotected when complying with the following:

3.1 The aggregate area of the unprotected portions shall not exceed 80 square feet per story

3.2 Fire blocking in accordance with Section R302.11.1 shall be installed along the perimeter of the unprotected portion to separate the unprotected portion from the remainder of the floor assembly. We were also able to convince the fire service that there should be a small percentage of unprotected floor assembly space to allow the passage of ductwork and plumbing in and out of the assembly.

4. Wood floor assemblies using dimension lumber or structural composite lumber equal to or greater than 2-inch by 10-inch nominal

dimension, or other approved floor assemblies demonstrating equivalent fire performance. This was by far the most difficult items to reach an agreement on with the fire service, but in the end the

CC&S members and staff were able to convince the fire service that if their real concern is the introduction of light-weight engineered framing products then there should be an exception for nominal lumber. The reason behind this push by CC&S came from the fire services own account that their concern was over the introduction of light-weight engineered products did not give them the same time afforded by conventional framing when fighting interior fires.

Ultimately, the fire service was able to get provisions in the code that addressed the concern of their membership, while at the same time providing our membership with additional argument to make against mandatory sprinklers. The very first exception to this requirement is if the structure is sprinklered there is no need to provide this protection which will provide occupants more time to vacate the structure and offers the fire service additional time to put out the fire. By the fire services own testimony this gives everyone more time. Using that same logic, if the underside of the floor is protected by this layer of drywall there is no need to install sprinklers, because you now have increased the fire resistance of the structure by providing a layer of protection to the exposed structural framing.

From a builders perspective, if it cost $400 to drywall the floor system or $8000 to install a sprinkler, the builder will more than likely choose the drywall. And for those states that have already successfully passed legislation or amended the 2009 code to not mandate sprinklers, they have the option to opt out of this requirement or keep the provision in the code to take away the argument for mandatory fire sprinklers as a means of providing additional occupant and fire service safety. If Iowa chooses to amend this requirement out of the 2012 code, NAHB has some information and talking points that argue why this provision is not needed.

Let me know if you have any other questions. Thanks.

STEVEN ORLOWSKI
Program Manager
Construction, Codes & Standards

National Association of Home Builders
1201 15th Street, NW
Washington, DC 20005

D 202 266 8303 F 202 266 8369
T 800 368 5242 x8303

www.nahb.org

From: Joan Tiemeyer
Sent: Friday, June 04, 2010 11:23 AM
To: Orlowski, Steve
Cc:
Subject: RE: Fire Sprinklers

If Iowa chooses to amend this requirement out of the 2012 code, NAHB has some information and talking points that argue why this provision is not needed- Steve would you please supply this information to us.

Thank you for your quick response. What do you think of the argument from the Truss Manufacturers about product discrimination?

Joan Tiemeyer
Executive Officer
Greater Iowa City Area Home Builders Association
PO Box 3396
Iowa City IA 52240
319-351-5333
Fax: 319-358-2443

From: Orlowski, Steve
Sent: Friday, June 04, 2010 10:46 AM
To:
Subject: RE: Fire Sprinklers

Joan-

Here is a copy of the information that we have. As for the manufacturers comment on product discrimination, there are a number of code provisions that limit the type of products that can be used based on their inherent qualities that affect the health, safety and welfare of the occupant.

STEVEN ORLOWSKI
Program Manager
Construction, Codes & Standards

National Association of Home Builders
1201 15th Street, NW
Washington, DC 20005

D 202 266 8303 F 202 266 8369
T 800 368 5242 x8303

www.nahb.org

From: "Joan Tiemeyer"
Date: Fri, 4 Jun 2010 10:49:38 -0500
To:

Subject: FW: Fire Sprinklers

More information from NAHB!

Joan Tiemeyer
Executive Officer
Greater Iowa City Area Home Builders Association
PO Box 3396
Iowa City IA 52240
319-351-5333
Fax: 319-358-2443

Iowa Correspondence by NAHB 2013

From: Creighton Cox
Sent: Tuesday, April 02, 2013 10:04 AM
To:
Cc:
Subject: 2012 code cycle - Floor Joist Protection
Importance: High

Lee & Steve - Our largest city is proposing the following in the 2012 Code. Have you dealt with this yet? I need to respond by April 10th with written opposition, and am looking for strong discussion points.

Thank you for any help you can provide!

Floor Joist Protection- Proposed adoption to require protection of lightweight floor joists. See IRC section R501.3:

IRC-R501.3 Fire protection of floors. Floor assemblies, not required elsewhere in this code to be fire-resistance rated, shall be provided with a 1/2-inch (12.7 mm) gypsum wallboard membrane, 5/8-inch (16 mm) wood structural panel membrane, or equivalent on the underside of the floor framing member. **Exceptions:**

1. Floor assemblies located directly over a space protected by an automatic sprinkler system in accordance with Section P2904, NFPA13D, or other approved equivalent sprinkler system.

2. Floor assemblies located directly over a crawl space not intended for storage or fuel-fired appliances.

3. Portions of floor assemblies can be unprotected when complying with the following:

3.1. The aggregate area of the unprotected portions shall not exceed 80 square feet per story

3.2. Fire blocking in accordance with Section R302.11.1 shall be installed along the perimeter of the unprotected portion to separate the unprotected portion from the remainder of the floor assembly.

4. Wood floor assemblies using dimension lumber or structural composite lumber equal to or greater than 2-inch by 10-inch (50.8 mm by 254 mm) nominal dimension, or other approved floor assemblies demonstrating equivalent fire performance.

CREIGHTON COX
Executive Officer
Home Builders Association of Greater Des Moines
6751 Corporate Drive
Johnston, IA 50131
Phone: 515-270-8500
Fax: 515-334-0165
Cell: 515-778-5516

www.desmoineshomebuilders.com

From: Orlowski, Steve
Sent: Wednesday, April 03, 2013 5:47 AM
To: Creighton Cox
Cc:
Subject: RE: 2012 code cycle - Floor Joist Protection

Creighton-

Regarding the lightweight construction underfloor protection techniques, here is a bit of background on the issue. During the 2012 code development cycle, the construction codes and standards committee was put into an awkward position. The American Wood Council (AWC) was put into a corner by the International Assoc. of Fire Chiefs and the National Assoc. of State Fire Marshall. For a number of years both of these organizations have lobbied hard against the use of lightweight floor joist and trusses, claiming that these products burn faster than conventional lumber and have a failure rate much higher that puts fire fighters in jeopardy. Underwriters Laboratories, Inc. conducted a series of tests that showed the lightweight engineered trusses failed at a significantly faster rate that nominal lumber. At the Public hearing, there were five code change proposals that were submitted wanting to add requirements that would require drywall on all floor assemblies ranging from 1/2 inch drywall to 5/8 inch type x or require all floor assemblies to be constructed as a one hour fire resistant rated floor assembly.

NAHB meet with the International Assoc of Firefighters, AWC and the representative of the State Fire Marshals and was able to convince them that the proposals put forward were completely over reaching and that they needed to be scaled back. NAHB and the AWC talked to the fire service and explained that if their concern were the lightweight engineered wood products than those products need to be addressed specifically and not the conventional wood products which have proven to be safe building practices for both the occupants and the fire service. NAHB, the American Wood Council and the Fire Service reached an agreement and submitted the following code change that was approved at the final action hearing…

> **R501.3 Fire protection of floors.** Floor assemblies, not required elsewhere in this code to be fire-resistance rated, shall be provided with a 1/2-inch (12.7 mm) gypsum wallboard membrane, 5/8-inch (16 mm) wood structural panel membrane, or equivalent on the underside of the floor framing member.
>
> **Exceptions:**

1. Floor assemblies located directly over a space protected by an automatic sprinkler system in accordance with Section P2904, NFPA13D, or other approved equivalent sprinkler system.
2. Floor assemblies located directly over a crawl space not intended for storage or fuel-fired appliances.
3. Portions of floor assemblies can be unprotected when complying with the following:
3.1. The aggregate area of the unprotected portions shall not exceed 80 square feet per story
3.2. Fire blocking in accordance with Section R302.11.1 shall be installed along the perimeter of the unprotected portion to separate the unprotected portion from the remainder of the floor assembly.
4. Wood floor assemblies using dimension lumber or structural composite lumber equal to or greater than 2-inch by 10-inch (50.8 mm by 254 mm) nominal dimension, or other approved floor assemblies demonstrating equivalent fire performance.

The decision to cosponsor this code change was not an easy decision for CC&S members, as we knew it would increase the cost of construction. However by co sponsoring the proposed change, NAHB was able to accomplish three important items, 1) we were able to limit the application of under floor protection to only the specific products that were a concern of the fire service, 2) we were able to place several exceptions in the provisions to limit the application of the provisions and 3) we were able to take the argument away from the fire service that sprinklers needed to be mandated to protect the fire service.

STEVEN ORLOWSKI
Director
Construction, Codes & Standards
National Association of Home Builders
1201 15th Street, NW
Washington, DC 20005

D 202 266 8303
F 202 266 8369 T 800 368 5242 x8303

From: Creighton Cox
Sent: Wednesday, April 03, 2013 4:59 PM
To:
Cc:
Subject: RE: 2012 code cycle - Floor Joist Protection

Thank you Steve. I understand the situation NAHB has been put in.

CREIGHTON COX
Executive Officer
Home Builders Association of Greater Des Moines
6751 Corporate Drive
Johnston, IA 50131
Phone: 515-270-8500
Fax: 515-334-0165
Cell: 515-778-5516

www.desmoineshomebuilders.com