



# **International Code Council**

## **ICC 1100-20XX Committee Actions Report**

**For Committee Actions taken on the  
Public Input Agenda #2, dated July 2017,  
at the meeting held via WebEx  
on October 16, 2017**

# ICC 1100-20XX Committee Action on Proposals

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## IS-FPI 46-17 ICC 1100-20XX Section 301

Proponent: Michael D. Fischer

Fischer 05 301

Revise as follows:

Section 301 Physical Properties / Table 1 – Physical Properties - Low Density insulation

PROPERTY	TESTS	VALUE		NUMBER OF SAMPLES	SAMPLE PREPARATION
Tensile Strength	ASTM D1623	Minimum closed cell content of 90%	<del>5.0</del> <b>3.0</b> lbf/in <sup>2</sup> (21 kPa) min	5	In accordance with test standard
		Closed cell content of less than 90%	<del>3.0</del> <b>1.0</b> lbf/in <sup>2</sup> (21 kPa) min		

**Reason:** Generally, tensile strength is not a relevant requirement to ensure the proper installation of low density SPF. Low density SPF does not need to provide structural support and only needs to adhere to the wall to provide insulating value. In these circumstances, the tensile strength is not a relevant requirement of the SPF. Therefore, SFC believes that the tensile strength requirements could be eliminated for low density SPF.

However, SFC understands that ICC is attempting to draw a distinction between types of lower density SPF based upon closed cell content. Therefore, SFC suggests lowering the prescribed tensile strengths to allow for future innovation.

Because tensile strength is set as a minimum, manufacturers will be allowed to exceed this requirement. It is worth noting that these higher tensile strengths are only needed if the SPF is used to impart structural support to a building.

The proposed tensile strength is not justifiable when SPF in applications where tensile strength is not relevant, because the SPF does not provide structural support.

For example, at a tensile strength of 1 lbf/in<sup>2</sup>, SPF with closed cell content of less than 90% will still exceed any conceived application requirement for a low density spray foam insulation:

The calculation for the reduction is: 1 lbf/in<sup>2</sup> = 144 lbf/ft<sup>2</sup>.

At the maximum density of 1.4 pounds, the foam applied 36 inches (3ft) thick theoretically weighs 4.2 pounds. In actual application, the weight of the foam will be somewhat higher. Allowing a large margin of error, double this weight to 8.4 pounds. The Tensile Strength of 1 lbf/in<sup>2</sup> is still over 17 times the calculated strength required to hold the foam together.

Lowering the minimum tensile strength will allow room for innovation, without impacting the ability for the foam to adhere to the wall. If ICC plans to retain the proposed tensile strength, ICC should outline their rationale in more detail.

**Committee Action: Approved as Modified**

**Replace proposal as follows:**

Section 301 Physical Properties / Table 1 – Physical Properties - Low Density insulation

PROPERTY	TESTS	VALUE		NUMBER OF SAMPLES	SAMPLE PREPARATION
<u>Closed cell content</u>	<u>ASTM D6226</u>	<u>Report value</u>		<u>5</u>	<u>In accordance with test standard</u>
Tensile Strength	ASTM D1623	Minimum closed-cell content of 90%	5.0 lbf/in <sup>2</sup> (21 kPa) min	5	In accordance with test standard
		Closed-cell content of less than 90%	3.0 <del>1.0</del> lbf/in <sup>2</sup> ( <del>21.7</del> kPa) min		

**Committee Reason:** The committee agreed with the reason statement. The approved modification to the table provides further clarity regarding the testing requirements.

# IS-FPI 47-17

## ICC 1100-20XX Section 302.2.2

**Proponent:** Brad Glazier

Glazier 01 302.2.2

**Revise as follows:**

**302.2.2 Use with a ~~15-minute~~ Thermal Barrier.** When the *spray-applied foam plastic* insulation is intended to be installed with a 15-minute *thermal barrier* separating the insulation from the interior of a building, there is no limitation on the thickness when the *spray-applied foam plastic* has a flame-spread index no greater than 25 and smoke-developed index no greater than 450 when tested in accordance with ASTM E84 or UL 723 at a thickness of 4 inches (102 mm) and the maximum density intended for use.

**Reason:** Keep consistent with modifications to 302.2.3. which eliminates the '15 minute' reference to a thermal barrier.

**Committee Action:** Approved as modified.

**Replace proposal as follows:**

**302.2.2 Use with a ~~15-minute~~ Thermal Barrier.** When the *spray-applied foam plastic* insulation is intended to be installed with a ~~15-minute~~ *thermal barrier* separating the insulation from the interior of a building, ~~the~~ there is no limitation on the thickness when the *spray-applied foam plastic* has a flame-spread index no greater than 25 and smoke-developed index no greater than 450 when tested in accordance with ASTM E84 or UL 723 at a thickness of 4 inches (102 mm) and the maximum density intended for use. The *thermal barrier* shall comply with the requirements of IBC Section 2603.4 or IRC Section R316.4, as applicable.

**Committee Reason:** The committee agreed with the reason statement. The reference to "15-minute" in the body of the section was deleted for consistency with revision to the section title. The addition of the new last sentence provides reference back to the codes for the requirements of a thermal barrier.

# IS-FPI 48-17

## ICC 1100-20XX Section 302.2.3.1.3

**Proponent:** Brad Glazier

Glazier 02 302.2.3.1.3

**Revise as follows:**

**302.2.3.1.3 ~~Special Approval~~ (Alternative Thermal Barrier Assembly).** When the *spray-applied foam plastic* insulation is intended to be installed as a component of an *alternative thermal barrier assembly*, the assembly shall be qualified by one or more of the following methods:

1. Room corner fire tests in Section 302.2.3.1.1 or 302.2.3.1.2.
2. ~~Other fire tests related to actual end-use configurations~~ as permitted in Section 2603.9 of the International Building Code or Section R316.6 of the International Residential Code, as applicable.

Assemblies testing in accordance with Section 302.2.3.1.1 or 302.2.3.1.2 shall be limited to the construction plane for which it was tested i.e. if product was only tested in walls it is limited to installation in walls only, excepting that assemblies testing simultaneously in walls and ceilings shall be acceptable for installation on all construction planes at the same time.

Where the spray-applied foam plastic assembly tested in accordance with NFPA 286 or UL 1715 the assembly is suitable for use in all ceiling heights. Excepting crawlspaces need comply with Section 302.2.4.2.

When a *covering* or coating is used to cover the *spray-applied foam plastic* insulation, the thickness of the *covering* shall be identified in units appropriate for the specific *covering* or coating. In the case of liquid-applied coatings, the installed thickness (in mils), in both wet film thickness and dry film thickness, and the corresponding application rate (in square feet per gallon) shall be identified and included in the test report.

**Reason:**

1. The term “special approval” is not required as the purpose of this document is to define the requirements for testing. We do not include “Special Approval” prior to Alternative Ignition Barrier so removing it from here is keeping consistent with the remainder of the document. Code section 2603.9 already stated “special approval” so it is redundant and unnecessary to repeat it here.
2. IBC code section 2603.9/IRC section R316.6 already state testing shall be as per the end use configuration, it is redundant to repeat this statement here.
3. Language that assemblies tested in accordance with Section 302.2.4.1.2 or 302.2.4.1.3 for use in Alternative Ignition Barriers assemblies that are approved in “all construction planes” is being added to

Alternative Ignition Barriers, it seems logical to clarify that this would also apply to assemblies tested for use in Alternative Thermal Barriers.

4. The NFPA 286 test uses a horizontal ceiling with a soffit at the doorway to trap and accumulate hot gases at the ceiling. This is considered a worst-case flash over scenario for all ceiling configurations. Much discussion took place when SPFA developed the Appendix X test based on NFPA 286 and it was determined based on experience of all fire experts consulted that the specific room configuration of NFPA 286 was representative of all ceiling slopes. Additional data to be submitted.
5. The additional of “all construction planes” language rationalizes and clarifies where the spray foam may be used based on qualification testing, and is applicable to both Alternative Ignition Barrier testing and Alternative Thermal Barrier testing.
6. Clarifies that the end use is applicable only to what has been tested and an assembly that was tested with walls only, or ceilings only separately cannot be installed in both walls and ceilings at the same time.
7. Clarifies to end users, AHJ’s that testing need not be conducted in all ceiling slopes based on the horizontal orientation of the NFPA 286 being the worst-case scenario. This is a comment scenario faced by coating companies today and the addition of this language will alleviate a lot of this issue.
8. Section 302.2.3.1.4 clarifies the minimum required clear ceiling height based on allowance and room dimensions of the FM4880 and UL 1040 test method used. Suggest adding the same clarification to the use of the NFPA 286 and UL 1715 test methods testing being at a reduced ceiling height that is code minimum required clear ceiling height to not be considered in a crawlspace.

### **Committee Action: Approved as modified.**

#### **Replace proposal as follows:**

**302.2.3.1.3 ~~Special Approval (Alternative Thermal Barrier Assembly)~~.** When the *spray-applied foam plastic* insulation is intended to be installed as a component of an *alternative thermal barrier assembly*, the assembly shall be qualified by one or more of the following methods:

3. Room corner fire tests in Section 302.2.3.1.1 or 302.2.3.1.2.
4. ~~Other fire tests related to actual end-use configurations~~ **as As** permitted in Section 2603.9 of the International Building Code or Section R316.6 of the International Residential Code, as applicable.

Assemblies testing in accordance with Section 302.2.3.1.1 or 302.2.3.1.2 shall be limited to the construction plane for which it was tested; i.e., if the assembly was only tested in walls it is limited to installation in walls only. **Assemblies tested simultaneously with insulation** in walls and ceilings shall be acceptable for installation on all construction planes at the same time.

Where the spray-applied foam plastic assembly **is** tested in accordance with NFPA 286 or UL 1715 the assembly is suitable for use in all ceiling heights.

When a *covering* or coating is used to cover the *spray-applied foam plastic* insulation, the thickness of the *covering* shall be identified in units appropriate for the specific *covering* or coating. In the case of liquid-applied coatings, the installed thickness (in mils), in both wet film thickness and dry film thickness, and the corresponding application rate (in square feet per gallon) shall be identified and included in the test report.

**Committee Reason:** The committee agreed with the reason statement and approved additional modifications to clean up the language and remove potentially vague and/or ambiguous text. The proposed addition of reference to crawl spaces was deleted in the last paragraph of the original proposal because this section of the standard addresses thermal barrier requirements and not ignition barriers.

# IS-FPI 49-17

## ICC 1100-20XX Section 302.2.4.1.2.1

**Proponent:** Roger Morrison

Morrison 26 302.2.4.1.2.1

### **General Comment:**

**302.2.4.1.2.1 Ignition Source.** The standard gas burner shall be used. The burner shall be positioned such that it is in ~~contact~~ proximity with both sidewalls in the test corner of the fire test room as indicated in Figure 1.

**Reason:** Figure 1 does not require that the burner be in “contact” with either wall, only that it be within the proximity as specified. Replacing “contact” with “proximity” reduces potential confusion and misunderstanding.

**Committee Action:** Approved as modified.

### **Replace proposal as follows:**

**302.2.4.1.2.1 Ignition Source.** The standard gas burner shall be used. The burner shall be positioned ~~such that it is in contact with both sidewalls in the test corner of~~ in the fire test room as indicated in Figure 1.

**Committee Reason:** The committee agreed with the reasons statement and approved a modification that simplified the language and simply directed the user to the figure for placement of the burner.



# IS-FPI 50-17

## ICC 1100-20XX Section 302

**Proponent:** Jodi Thomas

Thomas 06 302.2.4.1.2.7

**Revise as follows:**

**302.2.4.1.2.7 Conditions of Acceptance.** A test shall be determined to be successful when the average time for attainment of the four measured test parameters specified in Section 302.2.4.1.2.6, Item 4, is 4 minutes 18 seconds or greater.

**Note:** This condition of acceptance is based on comparison of results for the tested assembly versus results for a code-prescribed ignition barrier applied over foam plastic insulation and is also intended to allow adequate time for egress from the attic space.

**Reason:** The additional language reflects the purpose of an ignition barrier.

**Committee Action: Disapproved.**

**Committee Reason:** The committee disagreed with the reason statement and disapproved the proposed revision because it was noted that the purpose of an ignition barrier is not related to facilitating egress from a space.

# IS-FPI 51-17

## ICC 1100-20XX Section 302.2.4.2.2.1

**Proponent:** Jodi Thomas

Thomas 07 302.2.4.2.2.1

**Revise as follows:**

**302.2.4.2.2.1 Crawl Space Installation Limitation:** When testing is in accordance with Section 302.2.4.2.2, the Conditions 1 through 7 regarding installation under the International Building Code or the International Residential Code shall apply.

1. Entry to the crawl space shall only be to service *utilities*, and no storage is permitted.
2. There shall be no interconnected crawl space areas.
3. Air in the crawl spaces shall not be circulated to other parts of the building.
4. ~~Under-floor (crawl space) ventilation is provided when required by Section 1203.3 of the International Building Code or Section R408.1 of the International Residential Code, as applicable.~~ Under-floor (crawl space) ventilation is provided when required by Unvented attic and unvented enclosed rafter assemblies\* of the International Building Code or Under-Floor space Ventilation\*\* of the International Residential Building Code, as applicable.
5. The foam plastic insulation shall be limited to the maximum thickness and density tested.
6. Combustion air is provided in accordance with IMC Section 701, where applicable.
7. The installed coverage rate or thickness of coatings, if part of the insulation system, shall be equal to or greater than that which was tested.

\*Note section 1203.3 of the 2015 IBC

\*\*Note section R408.1 of the 2015 IRC

**Reason:** There is no reference to the year of the I-Code yet there are specific sections called out, the sections may change as the I-Code changes.

Perhaps an appendix calling out the code year/section cross reference would cause less confusion.

**Committee Action: Disapproved.**

**Committee Reason:** The committee disapproved the proposed revision on the basis that the section references to the codes will be reviewed, coordinated and updated as part of the routine maintenance of the standard.

## **IS-FPI 52-17**

### **ICC 1100-20XX Section 302**

**Proponent:** Jodi Thomas

Thomas 05 302

**Revise as follows:**

Section 302 as a whole:

The numbering system needs organizing.

**Reason:** Section 302 can get lengthy, i.e. 302.2.4.2.2.2.3. Perhaps separating fire performance by application, for example: Attics 302, Crawl Space 303, Exterior Walls 304, etc.

**Committee Action: Approved as submitted.**

**Committee Reason:** The committee agreed that the current section and sub-section numbering in the draft standard is difficult to follow. The committee directed staff to work to editorially revise the section numbering hierarchy for simplification with the understanding that the committee would have the opportunity to review and comment on the proposed renumbering developed by staff.

# IS-FPI 53-17

## ICC 1100-20XX Section 302.1.2.1

**Proponent:** Michael D. Fischer

Fischer 06 303.1.2.1

**Revise as follows:**

**303.1.2.1 Roofing Application Thermal Barrier Requirements.** Installation of *spray-applied foam plastic* insulation in *roofing applications* shall be separated from the interior of the building as set forth in Section 2603.4.1.5 of the International Building Code or Section R316.4 of the International Residential Code, as applicable. ~~For application to the exterior of metal roof decks, acceptable separation from the building interior is not prohibited when the roof assembly is tested in accordance with UL 1256 or NFPA 276.~~

**Reason:** This sentence can be removed because the requirements are already included in Section 2603.4.1.5 of the International Building Code. Additionally, the current text is confusing because it states that a specific application is “not prohibited”.

**Committee Action:** Approved as submitted.

**Committee Reason:** The committee agreed with the reason statement.

# IS-FPI 54-17

## ICC 1100-20XX Section 303.3.2

**Proponent:** Jodi Thomas

Thomas 08 303.3.2

**Revise as follows:**

### **303.3.2 Unvented Crawlspace** under the International Residential Code:

Installation of *spray-applied foam plastic* insulation in unvented crawl spaces shall be qualified in accordance with the conditions prescribed in Section R408.3 of the International Residential Code and Sections 301.3 and 302.2.4 ~~302.4.2~~, and where it meets the requirements in Sections 301.3 and 302.5.2.

**Reason:** There is a reference to 302.4.2 which does not exist, it should read 302.2.4

**Committee Action:** Approved as modified.

**Replace proposal as follows:**

### **303.3.2 Unvented Crawl Spaces** under the International Residential Code:

Installation of *spray-applied foam plastic* insulation in unvented crawl spaces shall be qualified in accordance with the conditions prescribed in Section R408.3 of the International Residential Code and Sections 301.3 ~~and 302.4.2, and where it meets the requirements in Sections 301.3 and 302.5.2.~~ The foam plastic insulation shall be protected from fire in accordance with IRC Section R316.4, as applicable to the air exchange and/or conditioning method used for the crawl space.

**Committee Reason:** The committee agreed with the reason statement and also further modified the proposal to remove an incorrect section reference number and provide direction to the user of the standard regarding the IRC section which contains fire protection requirements based on the air exchange and/or conditioning method being provided for the crawl space.

# IS-FPI 55-17

## ICC 1100-20XX Chapter 4 (Referenced Standards)

**Proponent:** Michael D. Fischer

Fischer 07 303.1.2.1

**Revise as follows:**

Chapter 4

~~ASTM D2856 Standard Test Method for Open-Cell Content of Rigid Cellular Plastics by the Air Pycnometer~~

**Reason:** ASTM D2856 has been eliminated and is no longer published. This protocol was deleted from Table 1 for the second draft, but was not deleted from the Reference Standards list.

**Committee Action:** Approved as submitted.

**Committee Reason:** The committee agreed with the reason statement. The referenced standard is not used.

## **IS-FPI 56-17**

### **ICC 1100-20XX Figures 1, 2 and 3**

**Proponent:** Jodi Thomas

Thomas 09 Figures

#### **Revise as follows:**

Remove all drawings and reference the relevant standards from which they were obtained with the locations of the drawings therein (whether AC377 Appendix X, NFPA 286, etc.)

**Reason:** By referencing the standards instead of showing pictures, if the pictures in the referenced standards change, then we will not have to change them in ICC 1100.

#### **Committee Action: Disapproved.**

**Committee Reason:** The committee disapproved the proposed revision on the basis that the section references to the figures and related standards since they will be reviewed, coordinated and updated as part of the routine maintenance of the standard. This action is similar to and consistent with the action taken on IS-FPI 51-17.

## **IS-FPI 57-17**

### **ICC 1100-20XX New Section**

**Proponent:** Jodi Thomas

Thomas 10 New section

**Revise as follows:**

Add a quality control section.

“The Spray-applied Polyurethane Foam Plastic Insulation shall be manufactured under a quality control program documented in accordance with the ICC-ES Acceptance Criteria for Quality Documentation (AC10).”

**Reason:** The committee reason to not include a QC section was “these type of requirements aren’t applicable for inclusion in a referenced standard that addresses material property and installation requirements.” It is possible to specify which properties are to be controlled while leaving compliance details to the certification/listing agency. Canadian standards mention QC. QC is used to confirm that the product is being made to specifications in the standard, it verifies the base properties and ensures manufacturers maintain them.

**Committee Action: Disapproved.**

**Committee Reason:** The committee disapproved the proposed revision for the same reason that was given for IS-FPI 43-17 at the April 2017 committee meeting.



## **IS-FPI 58-17**

### **ICC 1100-20XX New Section**

**Proponent:** Jodi Thomas

Thomas 11 New section

**Revise as follows:**

Add a commentary/history section on SPF.

**Reason:** Adding commentary would provide background on the development of test methods and an overview to the user.

**Committee Action:** Approved as modified.

**Modify as follows:**

There was no specific language provided; however there was general consensus that the addition of a non-mandatory appendix would be beneficial to users of the standard. A working group will work on drafting the appendix. Because the appendix will be non-mandatory it doesn't need to be included as part of the final standard that will be balloted.

**Committee Reason:** Refer to the modification above.