



December 20, 2007

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Comments respectfully submitted on Joint Appendix JA7 – 2008

I am writing on behalf of Icynene regarding the representation of spray foam insulation in the 2008 energy code. We appreciate the Energy Commission's addition of a quality insulation credit for spray foam products (JA7), which includes language for low-density, open-cell foams. The purpose of the following comments is to provide feedback on necessary revisions to this appendix. Some of the revisions are for clarification, while others correct apparent technical errors.

**JA7.2 Terminology – Air Barrier**

Revision: "air barrier is not required in areas where SPF insulation is applied if referenced in a manufacturer's ICC-ES report."

Reason: Not all foams are air barriers, an ICC Evaluation Report provides verification.

**JA7.2 Terminology – Draft Stops**

Revision: "Fire blocks constructed of ~~porous~~ fibrous insulation materials"

Reason: Clearly defines what a porous insulation is.

**JA7.2 Terminology – Nominal Thickness**

Revision: Remove "Low-Density must fill the entire cavity"

Reason: Proper thermal value and air barrier can be attained using less than full thickness of the cavity. This requirement would create a penalty to open low density foams.

**JA7.3 General Requirements – Sixth point describing labeling of drums with a green colored tag which is to be left with the HERS rater**

Revision: Replace – Spray applicator shall leave a manufacturers identification card.

Reason: SPF installers already have this required information on their existing cards currently left behind, detachable green cards are a duplication.

**JA7.3 General Requirements – Seventh point describing average thickness of Medium-Density foam.**

Revision: "~~Medium-Density~~ SPF insulation shall be".

Reason: All foams should be required to have the same average thickness.



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**JA7.3 General Requirements** – Eighth point describing Low-Density foams required to be installed full depth.

Revision: Remove "Low Density SPF shall be installed the full depth of the framed cavity."

Reason: A Low Density foam can achieve specified thermal performance and function as an air barrier at less than full depth. Thickness of SPF should be dependent on specified R-value, not depth of framing member.

**JA7.3 General Requirements** – Ninth point describing U-values assigned

Revision: Remove entire sentence.

Reason: Same as previous.

**JA7.3 General Requirements** – Tenth point describing low density foam absorbs water.

Revision: "Open-Cell Low-Density SPF insulation is ~~open cell, which allows it to absorb water vapor permeable and is not considered a vapor barrier.~~ Therefore, when a vapor barrier is required, a separate vapor barrier shall be applied when installing Low-Density SPF"

Reason: Open-cell foam does not absorb water but if placed in an environment with water it will allow the water to pass through without loss of integrity to the insulation. Also, needed to clarify that there is no change to when a vapor barrier is required, only that an open-cell foam cannot replace a vapor barrier.

**JA7.4.2 Two story homes with conditioned space over garage**

Comment: Figure 3 not possible to spray, floor of room over garage would need to be removed to spray down onto the ceiling of the garage floor.

**JA75.1 – SPF Application** – Second point

Revision: Remove "Low-Density SPF insulation must fill the frame wall cavity."

Reason: Same as above.

**JA7.5.2 – Narrow-Framed Cavities**

Revision: Remove "Low-Density foam shall fill the cavity."

Reason: Same as above.

**JA7.5.6 – Rim Joists** – Second point

Revision: "The insulation shall be installed ~~without gaps to form a~~ continuous air seal."

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Reason: Clearer language and intent, more consistent with code language.

**JA7.5.7 Kneewalls and Skylight Shafts – Second point**

Revision: "The insulation shall be installed ~~without gaps~~ to form a continuous air seal."

Reason: Same as above.

**JA7.6.2 – Rafter Ceilings – Second item**

Revision: Delete entire Note.

Reason: Acceptance requirements are clear for unvented attics; this note creates confusion.

**JA7.6.5 – Unvented-Conditioned Attics and cathedral Ceilings – Second item referencing IRC 314.5.3**

Revision: "in accordance with 2006 IRC Section R314.5.3 or ICC Evaluation report."

Reason: Some manufacturers have tested and have had approved attic assemblies recognizing added and enhanced attic assemblies.

**JA7 SPF Insulation Certificate**

Revision: Delete column for "Low-Density SPF"

Reason: Same as above.

In addition to these revisions, there are a few general comments related to this appendix:

1) Not all open cell low density foams are the same. Some are tested and approved as Air Barriers to the ICC-ES criteria of ASTM E283 with the pass criteria being the foam must have a permeance of  $<0.02/l/m^2$ , this is the accepted test method the industry has approved to be considered an air barrier.

2) ICC Evaluation reports are the best way to verify a foams (low or medium density) compliance with the code. It is a rigorous test standard which allows building code officials to assess a foam's capabilities. These reports should be recognized within the California Code system as viable evidence a product meets or exceeds the code.

3) Medium-Density foam may only be applied at a maximum thickness in a single pass, this is standard practice with higher density foams.

4) An unvented attic can provide significant energy savings for a home. These savings have been well documented [reference]. Icynene requests that the ACM

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manuals for the compliance software have clear methods to specify and receive credit for utilizing this energy-efficiency measure. Icynene would be happy to participate in the development and evaluation of such language.

Respectfully,

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