

May 29, 2012

California Energy Commission

Dockets Office, MS-4

Re: Docket No. 12-BSTD-1

Adoption of 15-Day Language for the 2013 Energy Efficiency Building Standards

1516 Ninth Street

Sacramento, CA 95814-5512

**DOCKET**

**12-BSTD-1**

DATE MAY 29 2012

RECD. MAY 30 2012


Re: Spray Polyurethane Foam Alliance Title 24 Task Group - Comments on Adoption of 15-Day Language for the 2013 Energy Efficiency Building Standards

Dear Commissioners:

On behalf of the undersigned members of the Spray Polyurethane Foam Alliance (SPFA) trade association and the spray polyurethane foam industry stakeholders in the State of California, we are writing to comment on the 15-Day Language for the 2013 California Building Energy Efficiency Standards. We appreciate CEC's consideration of our collective concerns.

The SPFA Title 24 Task Group has identified a few remaining issues that need to be addressed before finalizing this document. The comments contained in this letter below address three specific issues with Section 150 of the 2013 Energy Efficiency Building Standards, and five concerns with Section RA3.5 of the Reference Appendices. These items were identified by SPFA's Title 24 Task Force on a consensus basis.

Should you have any questions about this letter or the comments provided, please contact me so we can meet with your staff to discuss these comments.



Richard S. Duncan, Ph.D., P.E.

Technical Director

On behalf of the Title 24 Task Group:

| <b>NAME</b>              | <b>COMPANY</b>                   | <b>NAME</b>                | <b>COMPANY</b>          |
|--------------------------|----------------------------------|----------------------------|-------------------------|
| <b>Dan Varvais</b>       | Bayer Materials Science          | <b>Jason Eubank</b>        | Huntsman                |
| <b>Tom Ponder</b>        | Certainteed CertaSpray           | <b>John Evans</b>          | Icynene                 |
| <b>Lance Altizer</b>     | Johns Manville                   | <b>Steve Williams</b>      | LaPolla                 |
| <b>Roger Morrison***</b> | Deer Ridge Consulting            | <b>Jason Hoerter</b>       | NCFI                    |
| <b>Mac Sheldon</b>       | Demilec USA, LLC                 | <b>Skip Leonard</b>        | Resin Tech / Henry Co.  |
| <b>Aaron Kralovic</b>    | Gaco Western                     | <b>James Morshead*</b>     | SDI Insulation          |
| <b>Gary Talbott*</b>     | Five Star Performance Insulation | <b>Jim Perkins</b>         | SWD                     |
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## Proposed 2013 Building Energy Efficiency Standards

15-day Language

### Comment 1:

#### Section 150.0 Mandatory Features and Devices

Subsection (c) Wall Insulation, Item 2 (Page 282):

“Walls shall be insulated between framing members with insulation having an installed thermal resistance of not less than R-19 in framing of 2x6 inch or greater, or the U-factor shall not exceed the U-0.074 that results from installing R-19 in a 2x6 inch or greater wood framed assembly; and”

There are numerous reasons to build with 2x6-framed construction other than to install thicker insulation. In many Climate Zones, requiring R-19 in 2x6 framing is unnecessary and will increase building costs without corresponding benefits. Furthermore, the R-19 requirement conflicts with the prescriptive R-values listed in Table 150.1 (R-13+5 assembly allowed)

In addition, CEC invested many hours and significant discussion with the SPFA to develop the 2008, “**Alternative Quality Insulation Installation Procedures for Spray Polyurethane Foam (SPF) Insulation: Medium-Density Closed Cell and Low-Density Open Cell SPF,**” and its recent inclusion of Low-Density spray foam in December 2011.

As part of this work, the requirement to full fill 2X6 cavity walls versus not full filling 2X6 cavity walls was thoroughly discussed. This discussion resulted in a current 2008 Compliance Option that includes specific language regarding the air barrier requirements for both Medium-Density and Low-Density foams. Moreover, the Compliance Option states; “Cavities greater than 2x4 inch framing dimensions may be filled to the thickness that meets the required R-value used for compliance provided that the bottom and top plates of vertical framing and both ends of horizontal framing, including band and rim joists, are sprayed to completely fill the cavity adjacent to and in contact with the framing to a distance of 5.5 inches away from the framing for ocSPF insulation, or filled to the thickness meeting ASTM testing as an air barrier.”

SPFA believes that this proposed language in Section 150.0 Mandatory Features and Devices, Subsection c, Item 2 should be changed to allow partial fill of wall cavities when air-



impermeable insulations are used, making it consistent with the current compliance option for SPF insulation.

## Comment 2:

### Section 150.0 Mandatory Features and Devices

Subsection (g) Vapor Retarder, Item 1 (Page 284):

“In Climate Zones 14 and 16 a Class II vapor retarder shall be installed on the conditioned space side of all insulation in exterior walls, vented attics, and unvented attics with air-impermeable insulation; and”

The language for unvented attics above conflicts with the CRC Section R806.4, Item 4 which allows for the control of condensation in Climate Zones 14 and 16 through the use of air-impermeable, vapor retardant insulation OR vapor retardant coating or covering.

[http://publiccodes.citation.com/st/ca/st/b400v10/st\\_ca\\_st\\_b400v10\\_8\\_sec006\\_par003.htm](http://publiccodes.citation.com/st/ca/st/b400v10/st_ca_st_b400v10_8_sec006_par003.htm)

It should be noted that this cited section of the CRC are based on model building codes that have been developed by building science experts from across the country. They have been thoroughly vetted via field studies and simulation, and have passed through the consensus development process by the International Codes Council.

At a minimum, SPFA recommend the following change to the proposed language:

“In Climate Zones 14 and 16 a Class II vapor retarder shall be installed on the conditioned space side of all insulation in exterior walls, vented attics, and unvented attics with air-impermeable insulation except where such insulation constitutes a vapor retarder; and...”

The SPFA recommends that any discussion of the need for vapor retarders in the 2013 Energy Efficiency Building Standards directly reference the existing language in the CRC. This harmonization between the CEC and CRC would avoid significant confusion between building inspectors and energy raters when evaluating the construction quality of a new building.



**Comment 3:**

Table 150.1-A Component Package A Standard Building Design

Section on Whole House Fan (Page 320)

The above Table indicates that Whole House Fans are REQUIRED in Climate Zones 8-14. This “requirement” would apparently preclude the use of unvented attics in those climate zones. The use of whole-house attic fans only applies when the floor of the attic is insulated and the attic is vented. Unvented attics, where insulation is installed to the prescribed R-value for ceilings, are conditioned space and a whole-house fan installed in the attic floor makes no sense.

We recommend the addition of a footnote to this requirement providing an exception for unvented attics complying with CRC R806.4.

## Proposed Reference Appendices for the 2013 Building Energy Efficiency Standards

15-Day Language

### Comment 1:

#### RA3.5.2 Definitions

Continuous Air Barrier (Page RA3-49)

“—Closed cell spray polyurethane foam with a minimum density of 2.0 pcf and a minimum thickness of 1½ inches”

All other references (there are multiple) to ccSPF as an air barrier in the Reference Appendices require a minimum thickness of 2 inches. We believe that the 1½- inch reference above is in error. Therefore, we recommend revising the above definition as follows:

“—Closed cell spray polyurethane foam with a minimum density of 2.0 pcf and a minimum thickness of ~~1½~~ 2 inches”

### Comment 2:

#### RA3.5.6 Spray Polyurethane Foam Insulation

Section titles appear to have inadvertently struck out for the following Section Numbers (Pages RA3-71 through RA3-78):

RA3.5.6.1.1

RA3.5.6.2.1

RA3.5.6.2.3

RA3.5.6.2.4

RA3.5.6.2.7

RA3.5.6.2.8

RA3.5.6.3.1

RA3.5.6.3.2

RA3.5.6.3.3

RA3.5.6.3.4

**Comment 3:**

RA3.5.6.1.3 Requirements for Walls, Ceilings and Floors, Item 11 (Page RA3-73) and Item 16 (Page RA3-74)

Items 11 and 16 are duplications. We recommend deleting either Item 11 or Item 16.

**Comment 4:**

RA3.5.6.1.3 Requirements for Walls, Ceilings and Floors, Item 15 (Page RA3-74)

“Eave vent baffles shall be installed to prevent air movement under or into the ceiling insulation.”

This Item is inappropriate for unvented attics. Therefore, we recommend the following change:

“Eave vent baffles shall be installed to prevent air movement under or into the ceiling insulation except for unvented attics complying with CRC R806.4.”

**Comment 5:**

RA3.5.6.1.3 Requirements for Walls, Ceilings and Floors, Item 17 (Page RA3-74)

Item 17 confuses two requirements: (1) The need to separate spray foam insulation from recessed lighting fixtures and (2) the need to protect the surface of spray foam insulation in attics from ignition. These two requirements are completely unrelated. Therefore, we recommend splitting Item 17 into two different Items as follows:

(Item No.) SPF insulation shall not be applied directly to any recessed lighting fixtures not specifically rated for direct contact with SPF insulation. Recessed light fixtures must be either insulated with CBC approved materials (i.e., mineral fiber) or enclosed in a box fabricated from ½-inch plywood, 18 gauge sheet metal, 1/4-inch hard board, drywall or other approved materials. The exterior of the box/insulation may then be insulated with SPF.

(Item No.) SPF insulation in attics shall comply with the thermal barrier and/or ignition barrier requirements in accordance with CRC R316 or as recognized in an ICC-ES ESR or code compliance research report approved by the local building department.