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California Energy Commission

**DOCKETED**

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California Energy Commission  
Attention: Docket No. 15-BSTD-01  
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March 12, 2015

**Subject: Comments from the Steel Framing Alliance on Docket Number 15-BSTD-01  
2016 Building Standards 45-day express language**

On behalf of the Steel Framing Alliance, I am submitting the following comments in response to the 45-day language presented during the March 2-3, 2015 hearings. Our industry submitted similar comments following the November 3, 2014 Staff Workshop. However, the issues we identified in November related to mandatory minimum insulation requirements have been carried over to the 45-day language. The following points provide additional information supporting our position and a proposed solution.

First, our overall concern is to have a level playing field. The steel framing industry supports standards that deliver high performing buildings but they must be cost-effective and evenly applied. From the presentations during the March 2-3 hearings where members of the Commission staff described a need to set performance requirements and let the market decide the best solutions, it seems that a level-playing field aligns with the Commission's objectives too. However, this is where we have a difficult time with the proposed change to the residential section on mandatory minimum wall insulation levels and the current corresponding language in the non-residential section. The current (2013) language in the residential part at Section 150 (c) sets a level playing field by allowing the cavity of a steel or wood frame wall to be filled with minimum of R-13 (or R-19) insulation while providing a U-factor alternative for assemblies that don't fall neatly into the same category. For example, an EIFS system on a frame wall may have all of the insulation on the outside and none in the cavity and would thus have to meet the U-factor requirement. We provided the existing language back in 2012 and the intent was for the U-factor and R-values to be two separate requirements for different situations. They were not intended to be equivalent requirements. The proposed 45-day language turns this around and requires all framed walls to meet the U-factor of a wood-framed wall without regard to the costs and benefits of such a requirement.

Second, the steel framing industry is not opposed to minimum requirements for walls as long as they are reasonable, let the market respond with solutions, and do not take away the flexibility of the performance compliance path. During the March 2-3 hearings, testimony was provided thanking the staff for "correcting" the difference between the U-factors and R-values in the residential Section 150. The commenter was reading the R-values and U-factors as equivalent measures. As I mentioned above, the original intent was to make sure all cavity walls had some insulation in the cavity as a minimum except for unusual situations such as in the EIFS example. The proposed 45-day language that effectively makes steel



framing comply with the wood framing U-factors is inconsistent with the Commission's approach to having cost-effective designs. Wood should not be the baseline that all other materials should have to meet. The proposed 45-day language at Section 150 thus picks a winner rather than letting the market do so. Further, no cost benefit assessment was conducted to establish the U-factors at this section. Otherwise, there would be a different U-factor for each structural system given their different heat loss characteristics and costs of construction.

We propose that the language in the standards can be modified to address our concerns over a level playing field while also providing some reasonable level of insulation if someone elects to use the performance compliance option. Our suggestion is to focus on the cavity since this is the least accessible part of the assembly after construction. In simplest terms, the language could be expressed separately for each assembly type so that the cavity is filled with insulation or the assembly meets an overall U-factor based on the type of framing. This would require adding language for a U-factor for steel equivalent to an R-13+0 or R-19+0 as the minimum required insulation level. Wood and steel would then have their own requirements (as do mass walls in the current standards). We suggest this same approach for Section 150 (c) and 120.7. The specific language could be as follows:

***Wood framing. All 2x4 Wood-framed walls shall have insulation with a minimum R-value of R-13 installed in the cavity or the entire assembly shall have an equivalent U-factor for the same wall. All 2x6 walls shall have insulation with a minimum R-value of R-19 installed in the cavity or the entire assembly shall have an equivalent U-factor for the same wall.***

***Steel framing. Walls with steel studs up to 3-5/8" in depth shall have insulation with a minimum R-value of R-13 installed in the cavity, or the entire assembly shall have an equivalent U-factor for the same wall. Walls with steel studs greater than 3-5/8" but not exceeding 6" in depth shall have insulation with a minimum R-value of R-19 or the entire assembly shall have an equivalent U-factor for the same wall.***

Third, we believe it would be helpful to explain why the minimum mandatory insulation requirements are important to the steel framing industry. The industry prefers standards that allow flexibility for designers to develop the most cost-effective solutions for their buildings. When using the performance options in energy codes and standards, if the minimum mandatory insulation levels require walls to always have continuous insulation as the proposed 45-day language would for steel framing, there is little incentive to use the performance option. For example, if a designer is concerned over fire propagation due to exterior insulation, the minimum mandatory requirements for insulation on a steel framed wall would prohibit the use of alternative designs.

Fourth, the proposed minimum wall insulation requirements are not cost effective. The minimum insulation requirements only come into play when using the performance option. By definition under the performance



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option, designers have to meet the same outcome no matter where they choose to invest for energy efficiency in the building. Thus, it's not possible to show energy savings due to the mandatory insulation requirements if a designer is aiming for minimum code compliance. The minimum mandatory requirements for wall insulation in the 45-day language only add costs but do not increase energy savings. They take away the ability of the designer to use alternatives to continuous insulation that offer higher energy savings for the same cost.

Given the above, we would close reaffirming our position that the mandatory insulation requirements should be specific to each framing system. This is much more consistent with the cost-benefit approach used to set the base opaque prescriptive envelope requirements. Further, separate requirements already exist for mass walls and wood framing. Steel framing should be treated in a consistent manner.

We appreciate consideration of our comments and stand ready to answer any questions or provide additional information at your request.

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