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Comments to staff supplement on high performance attics

Additional submitted attachment is included below.

American Chemistry Council | Foam Sheathing Committee

February 28, 2018

California Energy Commission
1516 Ninth Street
Sacramento, CA 95814

Via Online Submission to Docket 17-BSTD-02

Re: Docket Number: 17-BSTD-02 (1/19/2018)
2019 Title 24, Part 6, Building Energy Efficiency Standards Rulemaking
Staff Supplement High Performance Attics

The Foam Sheathing Committee (FSC) of the American Chemistry Council (ACC) thanks the California Energy Commission for its leadership in promoting building energy efficiency. The FSC operates as part of the Plastics Division of the American Chemistry Council ("ACC") with member companies: Atlas Roofing, Dow, GAF, Hunter Panels, Johns Manville, Kingspan Insulation, Owens Corning, and RMAX.

Background

The FSC's concern with the staff supplement on high performance attics (TN# 222275) relates to the staff recommendation to remove the above-deck roof insulation prescriptive provisions from Title 24. In particular, the following reasoning as provided in the docket:

> "Staff are proposing this alternative because the CASE report's analysis was based on a below deck insulation system, which also sets the standard design in the performance software. It was also determined that the higher R-value proposed would require thicker insulation and at the thickness proposed **it was deemed no longer feasible as it could lead to structural problems**. For these reasons, above deck insulation as a prescriptive option will be removed from the 2019 Standards and instead users wanting to install insulation above the roof deck will be directed to use the performance approach." [bolded text added for emphasis]

The July 2017 CASE Report "High Performance Attics – Final Report" is the basis for this recommendation. The CASE Report states the following (page 13):

> ***"3.3.2 Impact on Building Designers and Energy Consultants***
> …
> Architects would be responsible for developing building construction details which indicate how the HPA or DCS will be implemented. **Above-deck strategies may have structural implications and would increase the roof**

surface height, which may impact second-floor window placement in dormers, while below-deck strategies would include specifying the details for securing insulation batts and maintaining proper ventilation through the use of eave baffles. While designers may not currently be familiar with these strategies, there are many resources available to them, both through insulation manufacturers and the WISE website." [bolded text added for emphasis]

FSC Comments

The FSC suggests revising the staff recommendation regarding the above-deck roof insulation prescriptive option.

The CASE report in Section 7.1 recommends modestly increasing the current above-deck insulation option R-values by about R-2 rather than deleting them. This appears to be in conflict with the recommendation in the staff supplement.

Above-deck roof insulation has been used successfully for many decades on many thousands of low-slope and steep-slope roof systems in commercial and residential construction. Just as with below-deck insulation strategies, above-deck roof insulation is applied to avoid interference with the performance or attachment of roof framing, structural sheathing, or structural diaphragm action. In general, above-deck roof insulation provides a high degree of protection to the building roof structure for moisture durability. For new roof construction, the FSC also is not aware of any constructability issues such as mentioned above in relation to roof system height and impacts to window placement in dormers. These design considerations are routinely addressed in planning and design of new construction with above-deck roof insulation.

The FSC recognizes that the Title 24 addresses these types of roof systems as "Option A – Continuous Insulation Above Roof Rafters" in Table 150.1-A. This description applies to conventional above deck roof insulation which includes many code-approved products such as above deck ventilated nail-base panels as well as traditional foam sheathing products (over which furring for roof tiles or wood shakes can be fastened through the foam sheathing to the roof deck and framing). The description in Table 150.1-A also applies to a more unique application of continuous insulation located above the roof rafters and below the roof deck or sheathing. This latter application may require additional structural considerations which would not be necessary with above-deck options described above. But, such matters are appropriately and routinely addressed in the building code and code evaluation process, not the energy code. Thus, it would be inappropriate to remove all forms of above deck insulation on the basis that one type of application may require additional approvals through the building code which reputable manufacturers are accustomed to doing.

Based on long-standing industry experience, accepted practices, and current building code provisions, the FSC can find no basis for either eliminating the above deck roof insulation option or for failing to modestly increase the R-values as actually recommended in the CASE report. We also recommend improving its utility by including simple prescriptive applications for above deck roof insulation for unvented, conditioned attics which would maximize goals for energy efficient, high-performance roofs with ducts entirely within conditioned space. Such provisions are already addressed in the International Residential Code (Section 806.5 "Unvented attic and unvented enclosed rafter assemblies"). Removing the above-deck continuous insulation option would be a step away from more options for cost-effective, high-performance attics. Therefore, the FSC requests that the staff recommendation in Docket No. 17-BSTD-02 be reconsidered and revised accordingly.

We hope these comments are helpful as California considers revisions to the state Title 24 energy code. Please contact me should there be any questions or additional information needed to properly consider this request.

Sincerely,

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