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Unvented Attics and Default Air Leakage Rates in CBECC-Res

Please see the attached letter from the American Chemistry Council regarding UVAs and CBECC-Res

Additional submitted attachment is included below.

February 28, 2019

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California Energy Commission
1516 9th Street
Sacramento, CA 95814

Re: 2019 Building Energy Efficiency Standards Residential and Nonresidential Alternative Calculation Method Reference Manuals and Compliance Software Tools [Docket No. 19-BSTD-01]

In order to assist the California Energy Commission (CEC) in meeting its mission to support reliable and responsible energy usage, the American Chemistry Council's Center for the Polyurethane Industry's Spray Foam Coalition[1] (SFC) would like to proactively engage with CEC during the development of the 2019 Building Energy Efficiency Standards Residential and Nonresidential Alternative Calculation Method Reference Manuals and Compliance Software Tools. Overall, SFC believes that CBECC-Res could be further optimized to model unvented attics (UVAs) sealed with spray polyurethane foam (SPF). We request the opportunity to meet with you to discuss how CBECC-Res can be further refined to appropriately characterize SPF UVAs.

Unvented Attics and Default Air Leakage Rates in CBECC-Res

SFC is concerned that California Title 24 modeling software (CBECC-Res) does not *fully* capture beneficial reduced peak demand and energy efficiency of effectively isolating ducts in passively conditioned space in an unvented attic sealed with SPF. This is likely due to default air leakage rates built into CBECC-Res.

CBECC-Res distributes air leaks according a prescriptive formula in which 50% of the leak area is assigned to walls and 50% to ceilings (10% is assigned to floors if the building has a raised floor) if the attic is vented. If the attic is unvented, the 50% of the leak area assigned to the ceiling is instead moved to the roof deck, and the ceiling is no longer modeled as an air barrier. CBECC-Res does not have a mechanism to change the 50/50 split in leak area between walls and ceilings/attics. This means that the reduced air leakage that results from using SPF in an unvented attic is not captured by the default assumptions, and in fact cannot be modeled at all. In order to correctly account for the air sealing properties of SPF, it would be necessary either to modify the inputs to CBECC-Res to allow the leakage rates for attics to be specified

[1] The SFC champions the use of spray polyurethane foam in North America by promoting its energy efficiency, performance, economic benefits, and contributions to sustainability. The SFC provides a forum to conduct research, to advocate for science-based public policy, excellence in safety, stewardship, training, and to advance technical knowledge. The SFC is composed of thirty companies that produce and sell polyurethane spray foam insulation systems and the chemicals and equipment necessary for their use.

independently of the rest of the building, or to modify the software to do so automatically when spray foam is used as the insulation material at the roof deck.

As SPF is a growing option in high performance structures, the SFC is interested in ongoing and meaningful engagement with CEC that will address the current gap in modeling software and improve the adoption of high performance building strategies in support of the CEC's Mission. The SFC looks forward to developing a proactive and productive relationship with CEC which could result in joint efforts to develop additional field and modeling data. SFC believes that early engagement will help ensure that the 2019 standard meets CEC's goals while treating all insulation materials fairly. We look forward to an opportunity to meet with CEC to discuss these concerns.

Please feel free to contact me with any additional questions at 202-249-6617 or stephen_wieroniey@americanchemistry.com.

Regards,

Stephen Wieroniey
Director

CC: Payam Bozorgchami