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To: Mr. Payam Bozorgchami
California Energy Commission
1516 Ninth Street, MS-29
Sacramento, CA 95814-5512

From: Reed B. Hitchcock
Asphalt Roofing Manufacturers Association

Dear Payam,

Upon review of the 45-day language posted to the CEC web site, the Asphalt Roofing Manufacturers Association believes that the shingle language is consistent with previous discussions and efforts, and we thank the CEC staff for the collaborative efforts on that. On the low-slope side, as you and I have discussed, I believe several issues remain:

First - we respectfully request for the California Energy Commission to provide ARMA a copy of the analysis showing the cost-effectiveness of the proposed change in Energy Code Section 149 to require adding insulation to many roofs as part of reroof projects.

Section 149(b)1Biv (revision 29, 10-24-07) states, "When roofs are exposed to the roof deck or recover boards are exposed in nonresidential and high-rise residential buildings and hotels and motels with low-sloped roofs shall be insulated to the levels specified in Table 149-A.[2]" Table 149-A requires minimum continuous insulation of R-8 or R-11 depending on climate zone and building type. Exceptions to this provision include existing roofs with at least R-11 insulation or a U-factor lower than 0.075.

There is no such requirement in the 2005 Energy Code.

Although adding insulation is a proven way to reduce cooling electricity consumption, the cost-effectiveness of this proposed change is not readily apparent to us since adding insulation as part of a reroof project can double its cost. This is true even without considering costs associated with any needed raising of site screens, raising of equipment curbs/platforms and removing portions of wall finishes to comply with building code stipulated minimum roof membrane base flashing heights likely compromised by adding insulation.

In summary, we a) request a copy of the cost justification analysis of the proposed change to require adding insulation, and b) reiterate our request and strong belief that a change in the minimum required insulation also requires a re-calculation of the cost-effectiveness of cool roofs.

Second - Issues between energy and building codes in regard to flashing height:

2001 California Building Code CBC – The 2001 CBC (based on the 1997 UBC) will be in force until January 1, 2008 when the 2007 California Building Code (based on the 2006 IBC) is implemented. Accordingly, when the revisions proposed for the 2005 California Energy Code are eventually implemented, the 2007 California Building Code will be in effect. Regardless, the following discusses base flashing heights as stipulated by the 2001 CBC and then by the 2007 CBC.

Chapter 15 of the 2001 CBC requires low-sloped membrane roofing and flashings be applied per the manufacturer's instructions (see Sections 1507.6, 1507.14, and 1509). Installation

instructions for all major manufacturer's of low-sloped membrane roofing materials state that base flashings are to extend to a minimum height of 8-inches above the roof surface.

We could find no reference to a minimum base flashing height of 4" in the 2001 CBC.

In municipalities where Appendix Chapter 15 Reroofing has been independently adopted, requirements for base flashing heights of 6-inches and 7-inches for low-sloped membrane roofing can be inferred.

Appendix Chapter 15 Reroofing requires reroofing to conform to the applicable provisions of Chapter 15 and that the reroofing follow the manufacturer's installation requirements (i.e., 8-inch base flashing heights). Nevertheless, regarding preparation of existing built up roofs for overlays, Section 1516.2 (Overlay on Existing Built Up Roofs), Item 3 (Intersecting Walls), requires that surface finishes on intersecting walls, other than concrete or masonry, be removed to "a minimum height of 6 inches (152mm) above the new roof deck surface to receive new roofing and flashings".

In addition, Section 1516.2 Item 3 (Parapets) states, as part of an exception, that "combustible roofing may extend 7-inches (178mm) above the roof surface, as a "maximum" height for base flashing along parapets of area separation walls. It should be noted that this "7-inches" is most often interpreted as the maximum height that combustible materials can be "exposed" on the surface. Accordingly, "combustible" base flashings could extend to 8-inches per roof material manufacturer's instructions if covered by non-combustible counterflashings.

Chapter 15 of the 2007 CBC (which includes reroofing provisions) states in several different places and ways that the roof coverings shall be designed, installed and maintained in accordance with this code and the approved manufacturer's instructions (i.e., minimum 8-inch heights). As part of "reroofing" requirements, the 2007 CBC states that "flashings shall be reconstructed in accordance with the approved manufacturer's installation instructions.

We could find no reference to a minimum base flashing height of 4" in the 2007 CBC.

In conclusion, it is our opinion that regardless if proposed Energy Code provisions imply that 4" curb and/or roof membrane base flashing heights are acceptable, to comply with the Building Code, roof top equipment and curbs (and bases of wall finishes) would need to be raised to 8" above the roof surface if roof insulation required to be added as part of a reroof project were to reduce the existing curb and/or roof membrane base flashing heights to less than 8-inches. Raising equipment and curbs, and removing wall finishes, of course, would add significant cost to a reroof project.

This is obviously a serious concern to the entire roofing industry, not just ARMA.

Third - Although we applaud the addition of the Solar reflectance Index to the proposed language for cool roofs, the value of SRI in the language is negated by the fact that the SRI values are calculated using a higher emmitance value (0.85) than the code requires (0.75). The value of SRI in the market place is that it calculates energy savings properties by trading-off between solar reflectance and thermal emmitance. SRI values in the code should be calculated on the basis of the CEC requirements for SR and TE, and would therefore achieve the same energy-savings property while allowing additional product choice and flexibility in design in the marketplace for the end-user. The idea of penalizing people for using SRI does not make sense, especially when the goal is energy savings.

Fourth - At many times during public workshops and stakeholder meetings, CEC staff have cited that "only 2% of roofs use the prescriptive compliance method" - we respectfully request the

source data from which this figure is derived. For the CEC to have made this claim on the public record and in serious stakeholder negotiations, it must be based in factual data.

As always, we appreciate your efforts and support the end goals. Please do not hesitate to call or email me if you have any questions on any of the information contained in this communication. I look forward to seeing you in Sacramento on December 17.

Many thanks for the opportunity to comment.

Sincerely,

/Reed/

Reed B. Hitchcock
Executive Director