



Asphalt Roofing Manufacturers Association

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July 10, 2006

Elaine Hebert, Contract Manager
Efficiency, Renewables, and Demand Analysis Division
California Energy Commission
1516 Ninth Street, MS-25
Sacramento, CA 95814

RE: 2008 California Energy Efficiency Standards
Cost Effectiveness of Proposed Changes

Dear Ms. Hebert:

The Asphalt Roofing Manufacturers Association (ARMA) requests that the California Energy Commission (CEC) review and confirm the cost effectiveness of proposed prescriptive requirements for solar reflectance and thermal emittance for membrane roofing. After thoroughly reviewing the installed cost information on which the cost effectiveness analysis was based, we believe it is inaccurate.

As part of the 2008 update process, two proposed code change documents were submitted regarding prescriptive requirements for residential and non-residential roofs:

- *Inclusion of Solar Reflectance and Thermal Emittance Prescriptive Requirements for Residential Roofs in Title 24 (Revised May 17, 2006)*
- *Inclusion of Solar Reflectance and Thermal Emittance Prescriptive Requirements for Steep-Sloped Nonresidential Roofs in Title 24 (Revised May 18, 2006)*

Both of these proposed code change documents indicate the maximum expected incremental cost premium associated with meeting the prescriptive requirements is \$0.20/ft² or less, including all membrane roofing systems. (e.g., built up, single ply, and modified bitumen). (Note: The cost information regarding membrane roofing contained in the two 2006 documents is the same as that which appeared in 2002 in a document submitted as part of the 2005 update process (*Inclusion of Cool Roofs in Nonresidential Title 24 Prescriptive Requirements*, Revised August 2002))

As we explained during the May 18 and 19, 2006 workshops, ARMA solicited detailed cost estimates from 5 California contractors for installing a range of cool (cooler) and non-cool (warmer) membrane roof systems. The contractor cost information we obtained indicates that the expected "cool roof" cost premiums for most types of membrane roof systems far exceeds \$0.20 per sq. ft. The expected average cost premiums vary by roof system and configuration. See the Pacific Building Consultants report dated 5-19-2006 that we provided to the workshop committee for more information.

- Built Up Roofs - \$0.37 to \$1.10
- Single Ply Roofs - \$0.00 to \$0.85

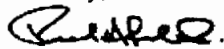
- Modified Bitumen Roofs - \$0.53 to \$1.24

The "cool roof" cost premium for some single ply roof systems (e.g., white single ply roofs) was expected to be essentially zero. However, the contractor cost data indicates that on average single ply roof systems have higher installed costs than a comparable built-up roof (BUR) system surfaced with a granule cap sheet – the single most commonly installed membrane roof systems in California. Accordingly, if white single ply roofs are installed to comply with the proposed prescriptive requirements, in lieu of conventional, non-cool, BUR or modified bitumen systems, a "cost premium" associated with switching from a lower cost roof system to a higher cost roof system would be incurred. This cost premium should be factored into the cost effectiveness considerations.

Accordingly, ARMA respectfully requests that the CEC use the updated cost information provided in the PBC report to reassess the cost effectiveness of the proposed prescriptive requirements for solar reflectance and thermal emittance requirements in all climate regions.

Please do not hesitate to contact me if you have any comments or questions. I look forward to seeing you in Sacramento on July 13.

Sincerely,



Reed B. Hitchcock
General Manager

CC: ARMA RSG
Bill Pennington, CEC