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Mr. Charles Anderson
ICF Consulting

Subject: Draft 1 Version 2.0 Energy Star

Dear Mr. Anderson,

In my review of the Draft 1 Version 2.0 Energy Star Eligibility Criteria we support the inclusion of the Thermal Emittance requirement of 0.75. The purpose for this letter however is the apparent exclusion of criteria related to system performance beyond the measure of product emittance and surface reflectivity.

For the past three years, I have been member of the Project Advisory Committee working with Lawrence Berkeley and Oak Ridge National Laboratories on a project sponsored by the California Energy Commission to develop Cool Colored Roofing Materials. While the prime objective of that project was to identify methods and materials for improving the reflectivity of roofing materials, an offshoot of the research became the analysis of the value of the assembly that quantified the effect of the airspace created between the roof deck and the underside of installed tile roofs. This study was conducted by Dr. Bill Miller of Oak Ridge National Laboratory and the results of that study have just recently been released.

Since the Energy Star specification is being updated, I would like to suggest that some consideration be given to the inclusion of this information into the Energy Star program. California has already seen fit to recognize the value of tile roof systems in their Title 24 2005 Compliance Regulations, so it would seem a natural fit for this to likewise be included as part of the Energy Star program. In Section 118 (i) of the Title 24 Standards, tile roofs are required to have a minimum thermal emittance of 0.75 and a minimal solar reflectance of 0.40 when tested in accordance with CRRC-1. This 0.40 solar reflectance is cited as



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an exception to the normal requirement of 0.70 that applies to other roofing materials. While this 0.30 point reduction for tile roofs seemed an arbitrary figure at first, the results of the study done by ORNL seems to bear this out with scientific evidence since their study indicated that the ventilated airspace beneath the tile yields heat flow reductions roughly equal to 0.30 points of solar reflectance.

There are other key issues that were identified during this study, not the least of which was the fact that this vented airspace also tends to neutralize the penalty that is typically assigned to cool roofing in colder climates where heat loading suffers from the diminished heat gain during the winter months. This makes the tile roof systems viable for energy savings in all climate regions.

Since our common goal is to identify ways to reduce energy usage through product and system improvements, we would very much like to see this criteria be added to the Energy Star program. I am including a brief synopsis that I have prepared of the ORNL study and have Dr. Miller's permission to share the complete report if you would like to have it. Unfortunately, the electronic file is too large for e-mail so if you could send your mailing address, I would happy to send a copy on a CD. If you have any questions regarding this matter, please do not hesitate to contact me directly. I thank you for your kind consideration.

Sincerely yours,

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