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Ann Bailey  
ENERGY STAR Program  
U.S. Environmental Protection Agency  
Subject: Partner Commitments

October 1, 2010

Dear Ms. Bailey,

The Cool Roof Rating Council (CRRC) appreciates the opportunity to comment on the ENERGY STAR® Program Requirements for Roof Products – Partner Commitments. The CRRC’s comprehensive and independent Product Rating has operated for over 10 years, developing processes to manage complex testing and procedural issues and ensure accurate ratings for roofing products. The EPA has already chosen to adopt aspects of the CRRC program into the ENERGY STAR Qualified Roof Program (some ENERGY STAR sections quote verbatim from the CRRC-1 program manual), and the CRRC encourages the EPA to employ this adoption consistently throughout their Roof Program. By adopting the complete CRRC Product Rating Program protocol the EPA will strengthen the credibility of the ENERGY STAR program. Please find below our specific recommendations to Version 2.2 of the ENERGY STAR® Program Requirements for Roof Products criteria.

### **Grandfathering of Previously Rated Products**

The Partner Commitment memo stated that products must obtain certification from a Certification Body and must be tested in an EPA accredited lab. How will the EPA enforce this certification and testing requirement for grandfathered *manufacturer* tested products? The CRRC strongly cautions the EPA against grandfathering in the ratings of previously rated ENERGY STAR products. This exemption will introduce inconsistencies between the old ratings and new ratings that undergo the rigorous certification process. Previously rated ENERGY STAR roofing products may have employed different aged testing protocol, resulting in discrepancies between published ratings. Additionally, if retesting of initial ratings will not be required, how will the newly created verification process be able to police the thousands of products previously rated? With over 5,000 Qualified Roofing Products currently listed, the EPA cannot expect verification testing of 10% of randomly selected products to guarantee accuracy and credibility in energy performance ratings. Additionally, the verification testing will not be able to check the validity of grandfathered aged values, only the initial ratings - which are not representative of how a roofing product may age. As the EPA is invested in developing a robust verification program, please recognize that all products must undergo the same high quality of certification.

### **Removal of In-field Measurements for Aged Ratings**

Currently the ENERGY STAR Specification document Test Method Sections A and B for aged-maintenance ratings accepts measurements taken from existing rooftops. The EPA fails to specify climate zone locations for these in-field measurements, except that one reading should be located in a



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major metropolitan area. Studies have shown that weathering measurements are highly subjective to location (impacts from dust or algae), as well as if the measurement has taken place soon after heavy rain. The EPA procedure does not check for the validity of roof age, that the roof has not been cleaned prior to measurements, that measurements were not made following a heavy rain, nor that all three chosen rooftops are from a representative range of climate locations. If the EPA desires a comprehensive maintenance measurement that takes all of these factors into account then they must update their Specification document. The CRRC implements a much more robust method where 9 samples are divided and placed on 3 climate zone locations (hot/dry, hot/humid, and cold/temperate) for a full 3 year cycle, monitored by a third party weathering farm, and are tested un-cleaned, after removal by independent testing laboratories. The CRRC recommends that the EPA adopt the CRRC weathering protocol for aging and testing products. Specifically this would remove the allowance for Test Method Section A and B (testing from existing rooftops), as well as strengthening Section C to specify the 3 climate zones, use of 9 samples and use of an independent weathering farm facility.

### **Allowing Compound Ratings**

Though the ENERGY STAR program allows products to be processed under the CRRC Color Family Program protocol, no mention is made regarding allowing CRRC Compound Ratings. Under the CRRC program, products are allowed to group under a single rating if they share the same surface formulation and therefore the same reflectance and emittance values. The CRRC calls these types of ratings Compound Ratings and allows them for single ply, shingle, modified bitumen, and polymer products. Tile products also fall under a similar “compound rating” protocol, where profile is not currently taken into effect in the CRRC ratings, and hence all applicable profile shapes are listed under tile products of the same formulation. The products that are granted this compound allowance may have differing backing materials, shape, backing material weight, or other design features that do not affect the radiative properties. The CRRC recommends that the EPA include CRRC Compound Ratings in the Specification document.

### **Use of the CRRC Color Family Program**

The EPA Version 2.2 document takes verbatim from the CRRC-1 Program Manual the protocol to rate Color Family products. The CRRC is open to sharing our process for rating products under our Color Family Program, however we would recommend that the EPA request manufacturers to rate products properly under the CRRC program, rather than follow the incomplete cut and pasted sections in the ENERGY STAR Roof Program document.

### **Test Methods for the Qualified Roof Program – E1918**

Under Table 3, test method E1918 is not included, and yet is referenced in the Test Method Section A of the Product Specification (field measurement for solar reflectance for roof products and coatings installed at least 3-years prior). The CRRC allows E1918 to be used to read initial and aged ratings, therefore in order to maintain consistency between the ENERGY STAR program and the CRRC ratings, we recommend that E1918 is added as an acceptable test method under the Test Method Section C –



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roof products exposed for 3-years on commercial weathering farms. Please also add E1918 to Table 3 to harmonize this table with the Test Method section of the Specification document. Additionally, can the EPA define the difference between a commercial versus private weathering farm?

#### **Test Methods for the Qualified Roof Program – E408**

Another area with which the CRRC suggests the EPA complement to the CRRC program is regarding test method E408. Currently, the CRRC does not allow this test method, but only allows C1371 to measure thermal emittance. E408 measures direct normal thermal emittance while C1371 measures total hemispherical thermal emittance. As these values are not directly comparable, both test methods should not be used interchangeably. Additionally, due to a lack of laboratory ownership in the E408 device, a quality assurance round robin has not been conducted to verify E408. For these reasons, at this time, the CRRC has chosen to continue using only C1371 for thermal emittance tests and recommends that the EPA consider the same policy.

#### **Incongruous Sample Size Specification**

The ENERGY STAR Roof Program version 2.2 specifies a single sample sized at 3' x 3' for collecting initial ratings. However, the CRRC specifies a total of 9 samples, sized at 24 in<sup>2</sup> for non-variegated products and 360 in<sup>2</sup> for variegated products. The CRRC sample size requirement for variegated products is incompletely referenced in the Specification document, thus to retain consistency between adoption of certain aspects of the CRRC program under the ENERGY STAR program, the CRRC recommends the use of our variegated and non-variegated sample size dimensions. By specifying 9 samples rather than 1 sample, the EPA will strengthen the integrity of the initial energy performance ratings it publishes.

Thank you again for considering our comments. In particular, we hope you favorably consider adopting the CRRC Product Rating Program protocol to be the ENERGY STAR® qualified roof products program specification guide. Please contact me with any questions or concerns.

Sincerely,

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