

## **Cool Metal Roofing Coalition Comments on ENERGYSTAR Program Requirements for Roof Products, Draft 1, Version 2.0**

Note that we are providing comments on the entire document, not necessarily those items that have been initially revised in Draft 1. We think that the entire document should be reviewed for improvements or clarifications during this updating process.

### **1) Definitions**

B. Low-Slope Roofs: We think the footnote to ASTM E1918-97 should not say "...in proposed ASTM Standard E1918-97." If EPA wants to validate that the definition used for low-slope roofs is the same as used in E1918-97, we suggest that the footnote say, "This is consistent with the definition of low-slope surfaces in ASTM Standard E1918-97." Also, it is not appropriate to have the units "inches" in the definition - 2:12 is dimensionless since it is the ratio of vertical to horizontal. This latter comment is also applicable to the definition of Steep-Slope Roofs.

D. Low-Slope Roof Products: We suggest deleting "standing-seam profiled metal" from the list because this is just a subset of "metal panels" and does not need to be listed separately. Also, we would like "metal panels" to be added to the parenthetical list of products that also are commonly installed on steep-slope roofs.

E. Steep-Slope Roof Products: We would like "metal shingles" to be added to this list in addition to "metal panels." Metal shingles are specifically defined in the building codes, along with metal panels and refer to metal sheets with an exposed area of less than 3 ft<sup>2</sup>. We also suggest that "metal panels" be added to the parenthetical list of products that are also commonly installed on low-slope roofs. Note that metal shingles would not be included in this list because they are only used on steep-slope applications.

H. Metal Roof Component: We suggest that this be changed to "Metal Shingle" and the definition is good as it stands.

I. Metal Roof Panel: We suggest this be changed to "Metal Panel" and the definition be changed as follows: "Roofing systems using metal panels are divided into two categories, architectural and structural. Architectural metal roofs are applied over a substrate while structural metal roofs span between structural supports without the need for a substrate to carry the applied loads. Standing seam roofs can be used on roofs with slopes as low as ¼:12. Steel and aluminum sheets...". (The rest of the definition is unchanged).

**3) Energy-Efficiency Specifications for Qualifying Products:** Please add "metal panels" to the list of roof products that may be applied to either low-slope or steep-slope roofs.

Comments on the addition of the thermal emittance requirement in Table 1 and Table 2:  
With regard to the technical merits of adding a thermal emittance requirement, we support this only if the energy benefit of low emittance roofs in colder climates is equally recognized. As pointed out in the definition of metal roof panels, they can be either metallic coated or painted. There are numerous metal roof products currently listed with EPA EnergyStar that are metallic coated and have an initial reflectance of approximately 0.68, but they have a low emittance. We are in agreement that roofing materials with a low emissivity will result in a higher roof surface temperature and heat transfer through a roof. This would not be beneficial for energy savings in warmer climates that are dominated by air-conditioning costs versus heating costs. However, an energy cost calculator, such as available on the ORNL website (<http://www.ornl.gov/sci/roofs+walls/facts/CoolCalcEnergy.htm>), shows that low emittance can have a positive energy benefit in northern climates. The EnergyStar program is all about energy savings, so it should not exclude a product that in fact can save more energy than one that is listed for these climates.

Editorially, there is a typo in Table 1 – “of” should be “or”.

#### Aged Reflectance vs. Initial Reflectance

EPA also asked for comments on the issue of revising the initial reflectance requirement from 0.65 to 0.70 for low-slope products. We think this is not the answer in promoting long-term energy savings. The more relevant property to determine if a roof will save energy is the aged solar reflectance. Roofing products that degrade less should not be excluded from the EPA list because their initial solar reflectance is between 0.65 and 0.70. Is a roofing product that has an initial solar reflectance of 0.70, but degrades to 0.50 going to save more energy than a roofing product that has an initial solar reflectance of 0.65 but only degrades to 0.55? This could be accomplished by having two acceptance criteria:

1) Initial solar reflectance  $\geq 0.70$  and an 3 year solar reflectance  $\geq 0.50$

or

2) Initial solar reflectance  $\geq 0.65$  and an 3 year solar reflectance  $\geq 0.55$

The other option would be to just eliminate the initial solar reflectance requirement and use a 3 year solar reflectance  $\geq 0.50$ .

#### **4) Test Criteria**

In Part C, Items (1) and (2), the “inches” units should be removed in 5 places for the reason previously noted.