Cool Roof Rating Council

by **Mark S. Graham**

In September 2002, the Cool Roof Rating Council (CRRC) launched its product rating program. The program provides for testing and labeling roofing products' surface radiative properties (solar reflectance and thermal emittance) using standardized methods that should prove useful for roofing professionals.

History

CRRC was created in 1998 as a nonprofit educational organization to develop recognized methods for evaluating and labeling solar-reflectance and thermal-emittance properties of roofing products and disseminate this information to interested parties.

CRRC membership is open to any organization or individual interested in roofing products' solar reflectances and thermal emittances or the energy efficiency of roof assemblies. Currently, CRRC consists of about 75 members and is governed by a board of directors elected by its membership. CRRC has four standing committees: membership; education and outreach; technical; and ratings, codes and standards. Since 1998, CRRC's board of directors and committees have been meeting regularly to develop CRRC's product rating program.

Product ratings

CRRC's product rating program provides a means for product manufacturers and sellers (those that package, label and market products) to voluntarily submit their products for testing. Once they have met CRRC's licensing requirements, they can use CRRC's label on tested product(s). The CRRC label lists a product's specific solar-reflectance and thermal-emittance properties.

For the CRRC program, product testing is conducted by CRRC-accredited testing laboratories. Products' solar-reflectance properties are tested according to ASTM E903, "Standard Test Method for Solar Absorptance, Reflectance, and Transmittance of Materials Using Integrating Spheres"; ASTM E1918, "Standard Test Method for Measuring Solar Reflectance of Horizontal and Low-Sloped Surfaces in the Field"; or a prescriptive CRRC method. Products' thermal emittances are tested according to ASTM C1371, "Standard Test Method for Determination of Emittance of Materials Near Room Temperature Using Portable Emissometers," or ASTM E408, "Standard Test Methods for Total Normal Emittance of Surfaces Using Inspection-Meter Techniques," which is similar to ASTM C1549, "Standard Test Method for Determination of Solar Reflectance Near Ambient Temperature Using a Portable Solar Reflectometer."

Manufacturers and sellers using a CRRC product label also must show evidence to CRRC of an appropriate quality-control plan that ensures rated products continue to be manufactured at or above their tested radiative properties.

Also, as part of the CRRC program, CRRC periodically will test select rated products obtained in the open market to ensure they continue to be manufactured to their tested and labeled radiative properties.

To date, CRRC's product directory consists of 84 rated products from 15 companies.

Considerations

I encourage you to look for the CRRC label on reflective roofing products. The CRRC label will help you compare the solar-reflectance and thermal-emittance properties of reflective roofing products. Unlike the ENERGY STAR® program, which only indicates whether a product meets an arbitrary solar-reflectance threshold, the CRRC product rating provides products' specific solar-reflectance and thermal-emittance properties.

Also, the CRRC label will help roof system designers identify products and roof assemblies that meet the solar-reflectance and thermal-emittance criteria necessary to qualify for a roof assembly's U-value adjustment, or allowance to reduce insulation, in ASHRAE 90.1-99, "Energy Standard for Buildings Except Low-rise Residential Buildings." (For additional information about ASHRAE 90.1-99 and the U-value adjustment, see "Revised thermal insulation requirements," May 2001 issue, page 56.)

At this point, the CRRC program only provides for measurement of products' surface radiative properties at the time of initial installation in "like new" condition. CRRC intends to add testing of weathered samples to its product rating requirements in the future. I encourage CRRC to follow through with weathered-sample testing and include it in its product rating program as soon as possible. The addition of such data substantially will increase the value of the CRRC program to users.

Additional information regarding CRRC, its product rating program and current rated product directory is available on CRRC's Web site, www.coolroofs.org.

Mark S. Graham is NRCA's associate executive director of technical services.