



Roofing Reflections

2006-2007 Winter Issue

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Cool Roof Rating Council

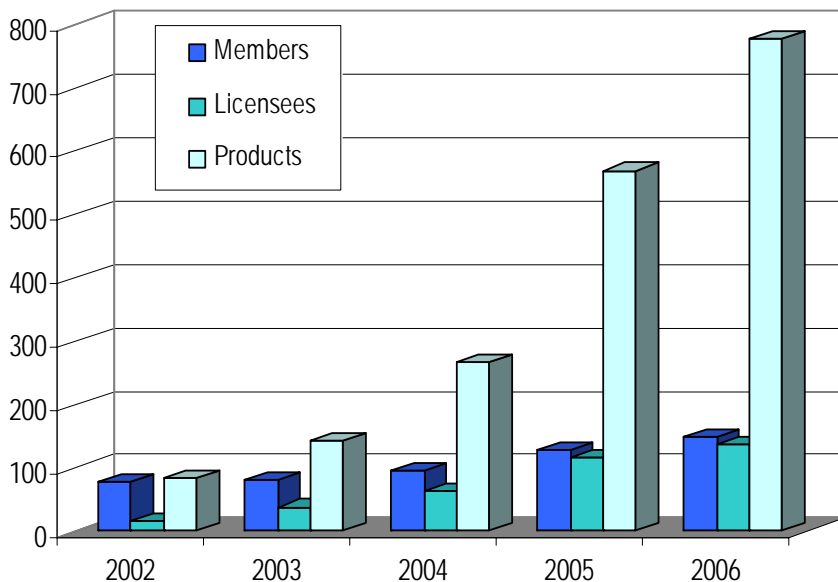
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Chair's Corner

The CRRC Board is composed of industry experts from a broad array of specialties, and, to these board members, cool roofs are well understood and somewhat commonplace. To others outside of this inner sanctum, however, this is a brand new field. CRRC exists to serve: The California Energy Commission, the suppliers of roofing, the consumers of roofing, code bodies, and a host of others. Over the past year, CRRC has managed to become financially sound. We have addressed some nagging, non-trivial issues. There has been a necessary and positive amount of contention as these issues were addressed, and this is how an effective association works. Once the issue is resolved, however, we remain cordial colleagues and get ready to roll up our sleeves for the next task. 2007 promises to be another year of growth in CRRC membership and rated products. Thank you all (who are reading this short article). Each of you has made an impact on energy savings and the success of CRRC.

-David Cocuzzi, CRRC Chairman

CRRC Growth Chart





What's New(s) for 2007?

CRRC Seeks ANSI Accreditation

The CRRC is pursuing ANSI accreditation as an Accredited Standards Developer. The American National Standards Institute (ANSI) is a non-profit organization that coordinates the development of use of voluntary consensus standards. In order to become an Accredited Standards Developer, the CRRC will need to meet ANSI's Essential Requirements, which require the process for standards development to be fair, open, and balanced.

To bring the CRRC's operations into compliance with these Essential Requirements the Board of Directors adopted a new policies and procedures document at the December Board Meeting. This document guides the process to make changes to the CRRC-1 Program Manual and, most notably, adds a period for public comment and review by a consensus body. The consensus body will be open to all interested members of the public and must approve all changes to CRRC-1 by a two-thirds majority.

For more information about CRRC Policies and Procedures, contact info@coolroofs.org. For more information about ANSI, visit www.ansi.org.

Ratings, Programs and Codes

CEC Blueprint Issue #86 (Title 24 Update)

The California Energy Commission released an updated version of its newsletter, *Blueprint* (#86), on cool roofing intended to clarify some existing Title 24 requirements, including elaboration on barrel roofing and conditioned space that doesn't reach the warehouse ceiling.

With regard to re-roofing of barrel roofs on nonresidential conditioned buildings, 2005's Title 24 cool roof requirements stipulate that only the *low-sloped* portion of the roof must be re-roofed with a cool roof product. The 2005 Standards also allow an exception to using a cool roof—a building owner may choose to utilize the Overall Envelope Approach or the Prescriptive Approach, in which an energy-equivalent amount of insulation may be used in combination with a non-cool roof.

For conditioned spaces that don't reach the warehouse ceiling, there are two possible scenarios. In Scenario 1, the conditioned walls do not reach the warehouse roof. The unconditioned space right below the roof communicates directly with the unconditioned portion of the rest of the building, so cool roof requirements do not apply. In Scenario 2, the walls of the conditioned space meet the underside of the warehouse roof. The cool roof requirements apply *only* to the portion of roof above the conditioned space, since there is directly or indirectly conditioned space below the roof.

Other addressed topics in *Blueprint* #86 include changes to minimum performance requirements for liquid applied roof coatings for low-sloped roofs (Title 24, Part 6, Section 118 (i) 3) as well as whether there are types of low-slope nonresidential roofs that needn't comply with cool roof requirements. To view this Blueprint, visit: <http://www.energy.ca.gov/efficiency/blueprint/>.

SCE Residential Cool Roof Rebate

Southern California Edison Company's new Cool Roof Rebate Program is now providing incentives for qualifying SCE customers. In order for homeowners to qualify for the rebate, they must utilize CRRC-rated roofing materials that meet SCE's prescribed minimum solar reflectance and thermal emittance requirements. SCE is offering two rebate levels for steep slopes, and one for low slopes. Rebate levels for steep-slope residential products are as follows: \$0.10 per square foot for products with a solar reflectance between 0.25 and 0.39 and a minimum thermal emittance of 0.75; \$0.20 per square foot for products with a minimum solar reflectance of 0.40 and a minimum thermal emittance of 0.75. SCE's low-slope rebate parameters are \$0.20 per square foot for products with a minimum solar reflectance of 0.70 and a minimum thermal emittance of 0.75.

For more information, please visit SCE's website at:

<http://www.sce.com/RebatesandSavings/Residential/Heating+and+Cooling/CoolRoof/>

Technical Update

Technical Committee Meeting Recap

The CRRC Technical Committee met in Denver on November 13. The purpose of the meeting was to address substrate and mil thickness impacts on the radiative properties of field-applied coating product samples that are to be submitted to CRRC for product ratings. Several stakeholders presented to the Committee on their own findings. Here is a summary of the presentations:

Dave Yarbrough (*R&D Services*)

Mr. Yarbrough presented data from research looking at two coatings with high and low levels of titanium oxide applied to standard aluminum panels. Each coating was applied with both a black primer and a white primer. The results indicated the dependence of solar reflectance on the coating thickness to some extent. Generally, coatings thicker than 7 mils did not show a significant difference between the black and white primers.

Bill Kirn (*National Coatings, representing the Reflective Roof Coatings Institute (RRCI)*)

Mr. Kirn presented RRCI's position that using an aluminum panel is consistent and standard and that there is no data to support requiring other substrates. Mr. Kirn explained that the Field Applied Coatings Task Group, chaired by Mr. Tom Ennis, will begin a study in 2007 to test 3 types of coatings and three thicknesses on seven substrates. The samples will be exposed in Minnesota, Arizona and Florida.

Mr. Kirn reviewed the unintended consequences of additional testing, including added costs to manufacturers, potential marketplace confusion, and difficulty ensuring consistency. He also noted the benefits, including ratings that are more consistent with real world application, but argued that many other factors affect aged ratings, like climate, slope, and environmental pollution.

Jim Leonard (*ER Systems*)

Mr. Leonard summarized studies from the 2005 RCI meeting, a compilation of 39 studies, and did a literature search, picking pieces out of other studies to look for trends to see if reflectance and emittance are dependent upon on thickness and substrate. Mr. Leonard presented a study which used a procedure similar to ASTM E1918 to measure the reflectance of aged roofs in a wide range of locations and types of substrates and coatings. He concluded from these results that there is little variation by substrate in the first 6 months, and that at one year the data is fairly consistent (within 10%).

Mr. Leonard noted that his literature review agreed that aged rating drops most in the first year, though rough gravel shows a more significant loss of reflectance than other substrates. He also noted that looking at averages of different substrates in same location shows a significant substrate effect, but that it is overwhelmed by other factors. The data also show that the lowest reflectance values in the field are on metal, possibly from the shadows from a standing seam roof.

Don Portfolio (*PRI Construction Materials Technologies, LLC*) and Joe Mellott (*Momentum Technologies, Inc.*) representing the Roof Coatings Manufacturers Association (RCMA)

The presenters explained RCMA issued letter to the CRRC explaining their position that the data does not support an additional substrate requirement and that the environmental benefits of using reflective coatings are more significant than the effect of the substrate effect. Mr. Portfolio and Mr. Mellott shared their RCMA's plans to conduct research. They will look at two products from each coating category and apply each to an aluminum panel and a polyester reinforced SBS granulate surfaced membrane. The project will measure both reflectivity, using ASTM C 1549, and emittance for the initial values, after 1000 hours of xenon arc exposure and after exposure at test farms.

Joe Rokowski (*Rohm and Haas*)

Mr. Rokowski presented a Rohm and Haas study where acrylic coatings were applied to three substrate types, aluminum, APP and foam, at a low slope for six and a half years of exposure at the Rohm and Haas exposure farm. After three years, the metal substrate yielded significantly lower reflectance results than the APP or the foam. The difference between the APP and the foam was not significant.

Technical Committee Discussion

The Technical Committee discussed the data presented and deliberated on the issues until all perspectives were shared. Both RCMA and RRCI announced that further research would be underway in January 2007. The possibility of CRRC supplementing these research efforts in order to broaden the scope of the studies was discussed. With a majority in favor, the Committee voted to recommend that the Board of Directors vote to allow aluminum to be the only required substrate for field-applied coating test samples.

Board Decision

On November 14, the Board voted to modify CRRC-1 to require that field-applied coatings be tested on aluminum panels only, effective April 1, 2007. This change to CRRC-1 is contingent upon the research being well underway at that point. The Board also voted to require that field-applied coatings be tested at the minimum thickness according to the manufacturer's

recommendation, also effective April 1, 2007. The thickness will be verified by the AITLs at the time of initial testing. The Board will revisit this requirement when RCMA's and RRCI's coatings studies are complete.

Membership & Outreach

Meetings and Events

Greenbuild recap

In November 2006, the CRRC attended the US Green Building Council's Greenbuild International Conference & Expo in Denver, Colorado. The show had a tremendous turnout, with over 12,000 attendees! There were some roofing companies present at the show, and we had the chance to talk to many architects. Greenbuild proved to be a great opportunity to reach a new crowd, and we are looking forward to Greenbuild 2007 in Chicago! For more information on Greenbuild 2007, please visit:

<http://www.greenbuildexpo.org/DisplayPage.aspx?CMSCategoryID=1>.

Next Up:

IRE in Las Vegas

Our next tradeshow will be the International Roofing Expo at the Las Vegas Convention Center in Las Vegas, NV from March 6-8. For more information, see

<http://www.theroofingexpo.com/Roofing07/public/enter.aspx>.

**There will be a CRRC Panel held in
conjunction with the International Roofing
Expo from 9:45-11:15 a.m. on March 8.
The presentation topic is "Everything You
Need to Know About Cool Roofing".
Presenters will include:
Bill Kirn, Peter Turnbull,
Stan Graveline, and Dave Roodvoets.**

CRRC Membership Meeting

The annual CRRC Membership Meeting, which is typically held in conjunction with the IRE, has been postponed to June 2007 due to conflicting dates with the RCI International Convention and Tradeshow in Tampa, FL. We will be sending out more information in the coming weeks. Stay tuned!

CRRC in Print

- The CRRC is pleased to be working with *Building Operating Management* magazine on a Special Report on Cool Roofs for their March 2007 issue. This special report will include information on the benefits of cool roofs, codes and programs, and industry trends. It will be distributed to over 73,000 building owners and facility executives.

- RCI has prominently featured CRRC Vice Chair Peter Turnbull's paper *Cool Roofing and the Cool Roof Rating Council: The Evolution of a Rating System* from the 2005 Cutting Through The Glare Cool Roof Symposium in their February issue of their technical monthly journal *Interface*.