Technical Committee Update

Membership Meeting

June 19, 2014

Image courtesy of DECRA Roofing Systems

Committee Roster

2014 Technical Committee Roster with Alternates			
Voting Member	Company	Alternate	Company
Tim McQuillen	**Firestone Building Products**	**Steve Heinje**	**Quest Construction Products**
Ronnen Levinson	Lawrence Berkeley National Laboratory	**Hashem Akbari**	Concordia University
Andre Desjarlais	Oak Ridge National Laboratory	**Chad Fisher**	**UL**
Gary Whittemore	Sika Sarnafil, Inc.	**Mike Ennis**	Single-Ply Roofing Industry (SPRI)
Bill Morgan	Malarkey Roofing	**Marcin Pazera**	**Owens Corning Roofing and Asphalt, LLC**
Scott Kriner	Metal Construction Association	**Chuck Praeger**	Metal Building Manufacturer's Association
Richard Slomko, Chair	Atlas Material Testing Solutions	**Matthew Friday**	Q-Lab Weather Research Service
Ted Best	Valspar	**Mark Thimons**	American Iron & Steel Institute
Jay Cruz	Boral Roofing	**Rick Olson**	Tile Roofing Institute
Kurt Shickman	Global Cool Cities Alliance	**Payam Bozorgchami**	California Energy Commission
David Roodvoets	DLR Consultants	**Cindy Campbell**	Momentum Technologies
Dan Rardon	**Specialty Granules, Inc.**	**Diana Fisler**	**Johns Manville**
Kurt Sosinski	Tremco, Inc.	**Paul Riesebieter**	**Tremco, Inc.**
Annette Sindar	**Eagle Roofing Products**	**Yoshi Suzuki**	MCA Clay Tile
Hal Leland	Western Colloid	**Frank Klink**	3M
Dave Yarbrough	R&D Services, Inc.	**Tyler Westerling**	Architectural Testing, Inc.

Test Methods

Directionally Reflective Materials (DRM)

- Oct 2013 – TC approved
- DRM reflectance is a function of the solar position (time, date, location), surface orientation, and surface tilt
- CRRC Study conducted by Dr. Hashem Akbari
- Board approved rating method
  - Report one value for annual performance
- Task group developing standard test method

Image: Akbari 2013

Mono-Color Blend Aged Rating Calculation

- Oct 2013 - TC approved ratings calculation for aged solar reflectance for:
  - Variegated shingles
  - Granule-surfaced roll products – *Pending BOD approval*

$$\left(\sum_{i=1}^{n} r_i \times u_i \right) = R$$

r_i = Solar reflectance of granule color i
u_i = Percent usage of granule color i
n = Number of granule colors
R = Solar reflectance of shingle **and Granule-surface roll product**

Example

(Black Granule Reflectance)	X	(Black Granule Percent Usage)	+	(White Granule Reflectance)	X	(White Granule Percent Usage)	=	(Overall Shingle Reflectance)
0.01	X	80 / 100	+	0.50	X	20 / 100	=	0.11

Accelerated Aging Protocol

- May 2014 – TC approved
- LBNL study developed method that mimics soiling and weathering in 3 days
- Simulates aged solar reflectance ratings
- Involves spraying mixture of dust, dirt, salts, etc.
- *Pending BOD approval*

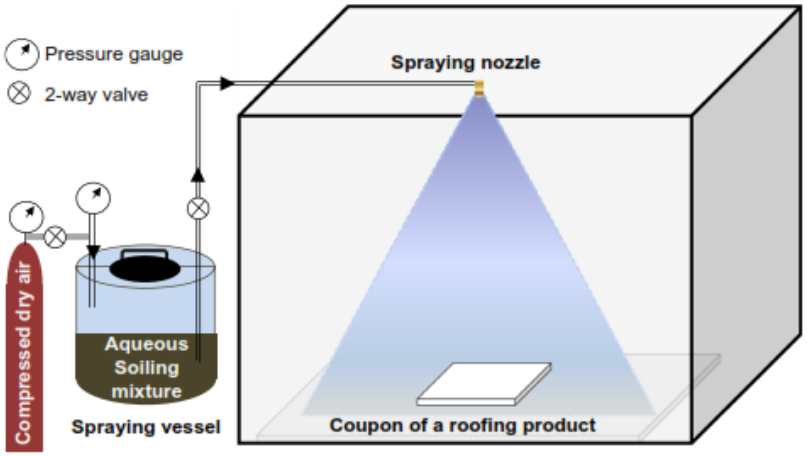


Fig. 1. Laboratory apparatus used for accelerated soiling of roofing materials.

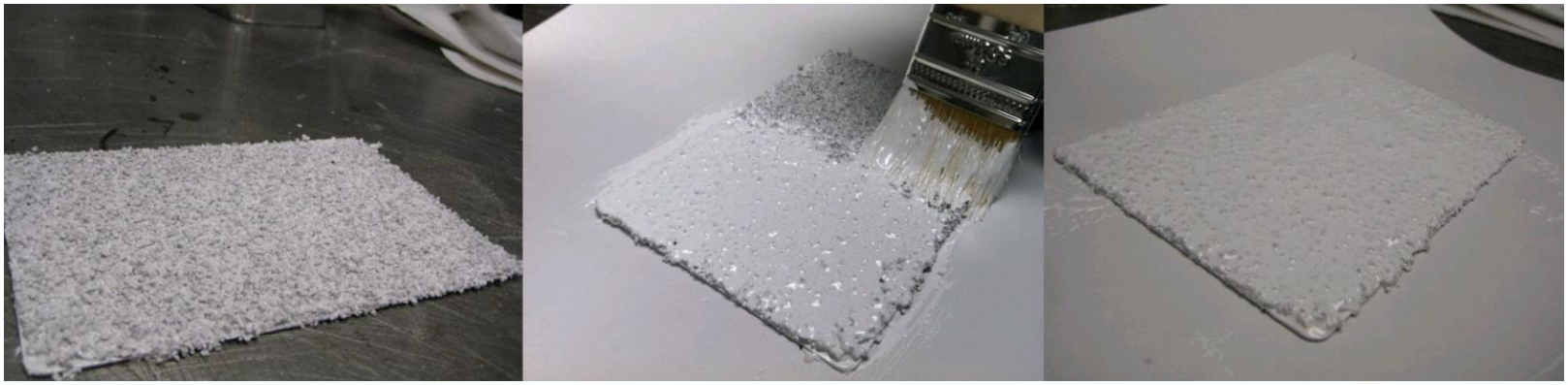
Image: Sleiman et al. 2014 Lawrence Berkeley National Laboratory

Aggregate Test Method

- Oct. 2013 – TC approved “Box of rocks” test method. “Mock shingle” to be tested alongside to confirm performance
- Developing test spec with industry

Rough Substrates for Coatings

- April 2013 – Board approves testing of coating products on rough substrates
- Working Group develops draft procedure
- Next steps: R&R study evaluation



Working Groups

NIST Traceable Standard

- National Institute of Standards & Technology
- Development of traceable standard for measuring thermal emittance
  - C1371 and E408
- Working group garnering support

E1918 Precision & Bias

Laboratory testing (complete) → Analyze data (complete) → Develop P&B statement → Update E1918 standard

E408 Consideration

Revisions to E408 (complete) → ASTM Approval (complete) → Design Round Robin Study → Run study & analyze results

Method Evaluation

- Working group to evaluate technical basis for retesting of CRRC products
- Conducted round robin study of Slide Method impacts
- Will determine technical requirements of retesting if needed

CRRC-1 Test Method 1 Precision Statement

- Conducting precision study for CRRC-1 Test Method 1
- Will evaluate repeatability and reproducibility
- Study is currently on hold until other studies are complete

Upcoming Meetings

- August 14 – Conference call
  - 2 hours (10 a.m. – 12 p.m. Pacific)
- October 21 – In-person
  - New Orleans, LA
  - All day
- Contact sarah@coolroofs.org

Questions