

Technical Committee Update

Membership Meeting
June 18, 2015



Committee Roster Changes

2014 - 2015 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	Dan Walker	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
Wade Shepherd	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, Vice Chair	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 and Standard Practices

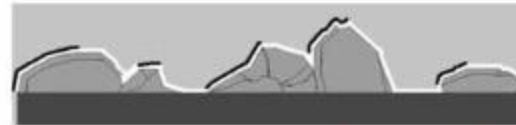
Directionally Reflective Materials (DRM)



• Cool Angle™ Shingles
White Coating on Dark Granules



Dark Coating on White Coating





Directionally Reflective Materials (continued)

2012-2013

- CRRC funded study (H. Akbari)
- Board approved solar reflectance rating method

Image: Akbari 2013

2014

- Technical Committee working group developed test procedure for measuring solar reflectance of DRM

2015

- Jan to June - round robin study of draft test procedure
- August - Technical Committee to receive results of round robin
- Fall 2015 – Board will consider adoption

Laboratory Aging Practice

1. Weathering-apparatus exposure before soiling

- 24 h total (2 cycles)
- 1 cycle = 8 h UVA-340 at $0.89 \text{ W/m}^2/\text{nm}$ and $60 \text{ }^\circ\text{C}$,
4 h water condensation at $50 \text{ }^\circ\text{C}$
- Air dry

2. Soiling

- Spray aqueous mix of dust, salts, organic matter, and soot
- Deposit wet mass of $8 \pm 1 \text{ mg/cm}^2$
- Dry under infrared lamp

3. Weathering-apparatus exposure after soiling

- 24 h total (2 cycles)
- 1 cycle = 8 h UVA-340 at $0.89 \text{ W/m}^2/\text{nm}$ and $60 \text{ }^\circ\text{C}$,
4 h water condensation at $50 \text{ }^\circ\text{C}$
- Dry under infrared lamp

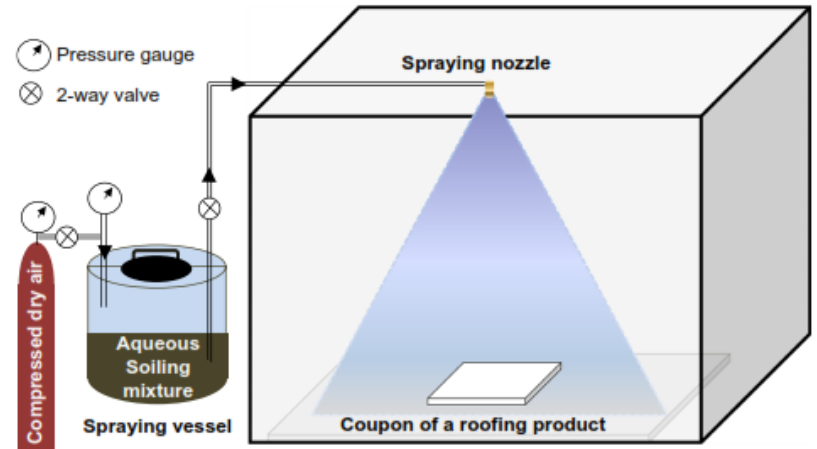


Fig. 1. Laboratory apparatus used for accelerated soiling of roofing materials.

Image: Sleiman et al. 2014 Lawrence Berkeley National Laboratory



Working Groups



Methods & Instruments Subcommittee

- Methods & Instruments (M&I) subcommittee established in October 2014 at the direction of the TC
- Subcommittee Scope
 - Discuss and undertake the technical evaluation of new or modified methods or instruments for radiative measurement
 - Report results of discussions and evaluations to the TC
- Current topics of focus:
 1. Emittance Traceability
 2. Aggregate Test Method
 3. C1549 Update



Methods & Instruments Subcommittee (cont.)

1. Emittance Traceability Objectives:

- To develop a traceable standard for measuring thermal emittance
- Required for ISO 17025 accreditation
- Increases accuracy and credibility of CRRC product ratings
- Subcommittee is evaluating multiple pathways based on technical feasibility and cost
- Make recommendation to Board by end of 2015



Methods & Instruments Subcommittee (cont.)

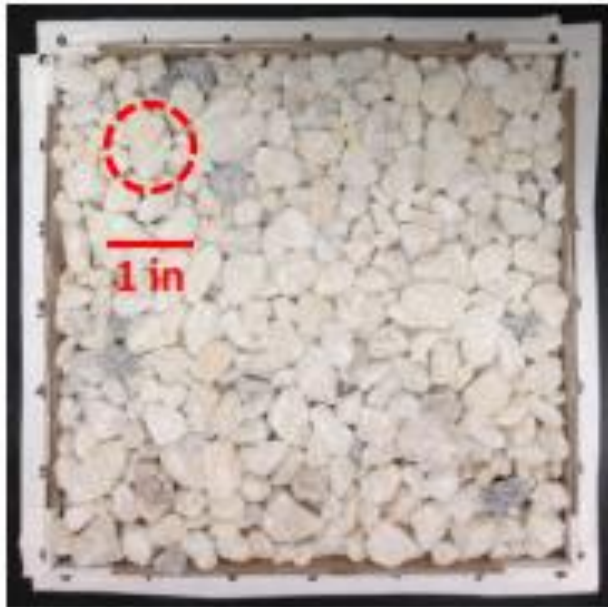


Image: Levinson and Chen 2014

2. Aggregate Test Method Objectives:

- Finalizing specification for assembling test samples
- Addressing question of how AITLs will take aged measurements without disturbing product samples
- Getting input of aggregate manufacturers
- Making recommendation to TC

Methods & Instruments Subcommittee (cont.)

3. ASTM C1549 Update Objectives:

- Evaluate impact of adding new instrument to CRRC test method specifications
 - Include specification to CRRC-1 Program Manual
- Recommendation to Technical Committee by end of 2015

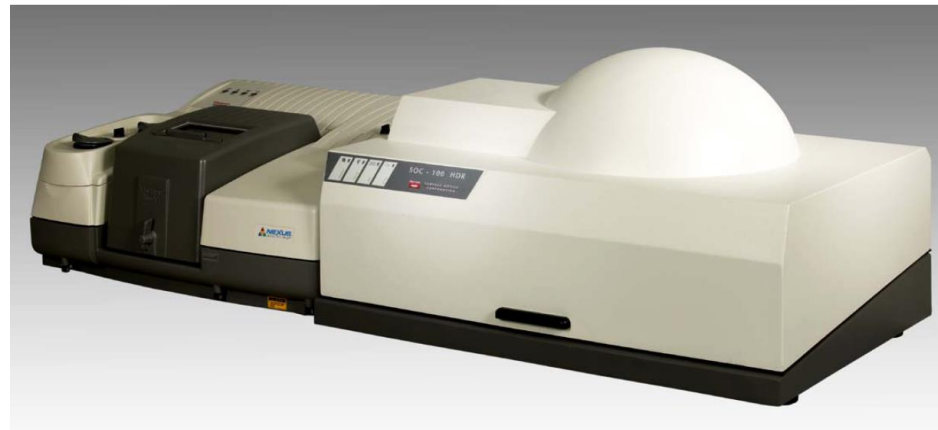


Image: Surface Optics



Rough Substrates Working Group

2012

- RRCI and RCMA studies find solar reflectance lower for coatings on rough substrates

2013

- Technical Committee voted for dual ratings for coatings
- Draft test procedure developed

2015

- Working group designed round robin procedure
- CRRC working with RCMA to identify manufacturer participants

Rough Substrates Working Group (cont.)

Next Steps:

- Conduct round robin testing to verify technical procedure
- Develop product listing approach





ASTM E408 Working Group

Revisions to
E408
(complete)

ASTM
Approval
(complete)

Design
Round
Robin Study

Run study &
analyze
results





Method Evaluation Working Group

2013-2015

- Studying data from C1371 - Slide Method round robin to develop statistical approach to adopt for other proposed test method changes

June 2015

- ARMA has completed analysis and proposal. Analysis will provide guidance on methods to be used in future test method updates

August
2015

- Findings and recommendation presented to Technical Committee in August



Upcoming Meetings

- August 13 – Conference call
 - 2 hours (10 a.m. – 12 p.m. Pacific)
- October 22 – In-person
 - Denver, Colorado
 - All day
- Contact sarah@coolroofs.org

Questions

