Technical Committee Update

Membership Meeting
June 18, 2015
### 2014 - 2015 Technical Committee Roster with Alternates

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

2012-2013
• CRRC funded study (H. Akbari)
• Board approved solar reflectance rating method

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 W/m²/nm and 60 °C,
     4 h water condensation at 50 °C
   - Air dry

2. Soiling
   - Spray aqueous mix of dust, salts, organic matter, and soot
   - Deposit wet mass of 8 ± 1 mg/cm²
   - Dry under infrared lamp

3. Weathering-apparatus exposure after soiling
   - 24 h total (2 cycles)
   - 1 cycle = 8 h UVA-340 at 0.89 W/m²/nm and 60 °C,
     4 h water condensation at 50 °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
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.)

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

Image: Levinson and Chen 2014
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
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
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