TECHNICAL COMMITTEE, RESEARCH STUDIES & WORKING GROUP UPDATES

George Daisey
CRRC Technical Committee Chair

Annual General Membership
Virtual Meeting
June 16, 2021
TECHNICAL COMMITTEE UPDATES
WHAT IS THE TECHNICAL COMMITTEE?

• Advisory committee to the Board of Directors
• Charged with understanding and resolving scientific and technical issues
• Makes non-binding recommendations
WHAT IS THE TECHNICAL COMMITTEE?

• Diverse and balanced group comprised of 32 members (16 voting)
• Meets 3 - 4 times per year

TC Meeting attendees at May 2, 2019 meeting in St. Louis, MO
### 2020-2021 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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</thead>
<tbody>
<tr>
<td>Steve Heinje</td>
<td>GAF</td>
<td>Anna Johnson</td>
<td>Arkema</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>Randy Ober</td>
<td>Single-Ply Roofing Industry (SPRI)</td>
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<td>Greg Keeler</td>
<td>Owens Corning Roofing and Asphalt</td>
<td>Brendan Dineen</td>
<td>Malarkey Roofing</td>
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<td>Bob Zabcik</td>
<td>Metal Construction Association</td>
<td>David Cocuzzi</td>
<td>National Coil Coating Association</td>
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<tr>
<td>Ted Best</td>
<td>Sherwin Williams</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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<tr>
<td>Brent Barbeau</td>
<td>PRI</td>
<td>Payam Bozorgchami</td>
<td>California Energy Commission</td>
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<tr>
<td>Stacey Weister</td>
<td>Momentum Technologies Laboratories</td>
<td>Andrew Jambor</td>
<td>Momentum Technologies Laboratories</td>
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<tr>
<td>Dan Rardon</td>
<td>Specialty Granules, Inc.</td>
<td>George Daisey, Chair</td>
<td>Dow Construction Chemicals</td>
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<tr>
<td>Kurt Sosinski</td>
<td>Tremco, Inc.</td>
<td>Jennifer O'Neal</td>
<td>Firestone Building Products</td>
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<tr>
<td>Annette Sindar, Vice Chair</td>
<td>Eagle Roofing Products</td>
<td>Tyler Allwood</td>
<td>Eagle Roofing Products</td>
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<tr>
<td>Rebecca Everman</td>
<td>3M</td>
<td>Maureen Kavanagh</td>
<td>3M</td>
</tr>
<tr>
<td>Michael Joyce</td>
<td>R&amp;D Services</td>
<td>Tyler Westerling</td>
<td>Architectural Testing, Inc.</td>
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NEW APPOINTMENTS

Since 2020 Membership Meeting:

• Voting members appointed:
  – Michael Joyce, R&D Services
  – Bob Zabcik, Metal Construction Association

• Alternate voting members appointed:
  – Tyler Allwood, Eagle Roofing Products
  – David Cocuzzi, National Coil Coating Association
  – Brendan Dineen, Malarkey Roofing
Since 2020 Membership Meeting:

- Voting members re-appointed for another two-year term:
  - Andre Desjarlais, Oak Ridge National Laboratory
  - Ted Best, Sherwin Williams
  - Kurt Sosinski, Tremco, Inc.

- Re-appointed for another two-year term as Vice Chair
  - Annette Sindar, Eagle Roofing Products
DEPARTURES

• Dave Yarbrough (R&D Services) has retired from the Technical Committee
• The CRRC thanks Dave for his significant contributions during his many years of service!
**COMMITTEE UPDATE: MAJOR DECISIONS**

<table>
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<tbody>
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<td>Approved revisions to the CRRC-1 Program Manual to cover solar reflectance testing of aggregate-in-liquid products.</td>
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<td>Approved study plan for the Evaluating Variegated Test Methods research study.</td>
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<td>Recommended approval of the document “Determining the Energy Savings of a Cool Roof,” which was developed by the Energy Savings Working Group</td>
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<td>Approved revisions to the CRRC-1 Program Manual related to single-ply thickness and damaged test specimens.</td>
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<td>Approved Moore’s Aggregate Thermal Emittance Test Method and reporting tool.</td>
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WORKING GROUPS
ACTIVE WORKING GROUPS

- Rough Substrates
- Methods & Instruments (M&I) Subcommittee

Photo: Atlas Weathering Services
• Developing framework for a rough substrate rating option for coating products

• Three key documents were approved by CRRC Board of Directors:
  ‒ Implementation Specification
  ‒ Excel Reporting Tool
  ‒ Policy for Existing Ratings
• Continuing to develop dual ratings label
• Rough Substrates Rating Option will become available for field-applied coating products on September 1, 2021
• Subcommittee established to:
  - Evaluate new/modified test methods and devices for the measurement of SR or TE
  - Make recommendations to the TC on actions related to methods or instruments for determining SR or TE
Completed since 2020 Membership Meeting:

- Moore’s Aggregate Thermal Emittance Test Method
  - Reviewed round robin results
  - Recommended approval of test method to Technical Committee
- Developed edits to the implementation specification for aggregate products embedded in a coating
Current topics:

- Evaluate Surface Optics Corporation ET100 Emissometer for potential use in the Product Rating Program
- Review ASTM E1980 approaches for SRI calculation
- Thermal emittance traceability
TECHNICAL RESEARCH UPDATE
• Coatings on Rough Substrates: Weathering Observation
• Site-Specific Aged Data Project
• Compilation of Historical Weathering Data
• Evaluating Variegated Test Methods
Objective: Observe durability of rough substrate underlayment during field exposure in 3 climates

Key details:
- 66 total specimens provided by RCMA manufacturer members and CRRC working group
- Observe specimens at 3-month intervals for up to 3 years

Outcome: Confirmation that rough substrate protocol can withstand three-year weathering
ROUGH SUBSTRATES STUDY

• Specimens weathered for three years
  – No observed delamination
  – No significant granule loss
• Specimens were removed in May 2021

Photo: Atlas Weathering Services
Objective: Develop a dataset of current and previously CRRC-rated products with aged data, separated by climate zone

Key details:

• Three Phases: Data Compilation (Phase 1), Analysis (Phase 2), Dissemination (Phase 3)

Outcome: Comprehensive dataset that will facilitate further research and understanding of how products age under different conditions
SITE-SPECIFIC AGED DATA

- **Phase 1**
  - Data compilation completed

- **Phase 2**
  - Internal analysis completed
  - External analysis to align with Compilation of Historical Weathering Data project

- **Phase 3**
  - Pending completion of Phase 2
Objective: Analyze SR and TE values for a Lawrence Berkeley National Laboratory dataset taken over a three-year exposure period

Key details:

• Data will be correlated to atmospheric data
• Data was collected quarterly from 2010 - 2013 for products exposed at 5°-south and 45°-south in AZ, FL, and OH

Outcome: Validation or identification of improvements to the current CRRC three-year weathering policy
• Lawrence Berkeley National Laboratory performing analysis
• Launched in August 2020, delayed to 2021
• Anticipated completion date: December 2021
Objective: Evaluation of the current methods to determine whether a product is variegated and to test variegated products

Key details:

• Complete grid of measurements taken on each specimen
• Simulation and analysis of existing and alternative measurement techniques

Outcome: Validation or proposal of alternatives for identification and testing of variegated products
• Draft results were presented to the Technical Committee in May 2021
• Current methods are accurate, with some opportunities for efficiencies and further study
Comparison of SR Methods Study

- Published in the journal *Solar Energy* in August 2020
- ASTM standard
  - Inclusion in ASTM E1918 or development of a new standard is in progress
• August 5
• October 21

• Interested in attending?

Contact: Sarah Schneider  
sarah@coolroofs.org
QUESTIONS?