Ratings, Codes & Standards Update

Report created by Jonathan Humble
Ratings, Codes & Programs Committee Chair
Membership Meeting
June 24, 2010
Las Vegas, NV
CRRC-1 Standard - ANSI
- Completed the consensus process.
- CRRC BOD voted document out for ANSI acceptance and publication in May 2010.
- Awaiting ANSI response.
- Plans are to submit CRRC-1 Standard to national model energy codes and standards developers.
2009-2010 News

• **ASHRAE Standard 90.1 (Commercial)**
• In process of updating to their 2010 edition of the standard, to be released fall 2010.
• Addenda “f” modified the cool roof provisions.
• CRRC “program” is still mentioned. We did not make the deadline for the CRRC-1 Standard to be recognized.
2009-2010 News

- ASHRAE Standard 90.1 (Commercial)
- Mandatory prescriptive cool roof requirements:

<table>
<thead>
<tr>
<th>Minimum 3-year aged Reflectance</th>
<th>Minimum 3-year aged Emittance</th>
<th>Minimum 3-year aged SRI</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.55</td>
<td>0.75</td>
<td>64</td>
</tr>
</tbody>
</table>
• **Int. Energy Conservation Code**
• Three code change proposals were submitted in 2009 concerning cool roofs.
• Working with proponents of same proposals to have the CRRC-1 Standard recognized.
• Final action code hearings to be held 23 October thru 2 November 2010 in Charlotte, NC. See www.iccsafe.org.
2009-2010 News

- **International Green Construction Code**
- Version 1 or the green code references the CRRC-1 Standard.
- First code hearings to be held 14-22 August 2010 in Rosemont, IL.
- Publication of code proposals July 2010.
- See [www.iccsafe.org](http://www.iccsafe.org) for more.
2009-2010 News

• **International Green Construction Code – Draft Version 4 Roof Requirements**
• 75% of roof surface of buildings in climate zones 1-3 = covered with green, cool or PV roofing.

<table>
<thead>
<tr>
<th>Roof Slope</th>
<th>Minimum Aged Solar Reflectance</th>
<th>Minimum Aged Thermal Emittance</th>
<th>Minimum Aged SRI</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 2:12</td>
<td>0.55</td>
<td>0.75</td>
<td>60</td>
</tr>
<tr>
<td>&gt;2: 12</td>
<td>0.30</td>
<td>0.75</td>
<td>25</td>
</tr>
</tbody>
</table>
2009-2010 News

• CA Green Building Standards Code
  • On January 12, 2010 the CA Building Standards Commission adopted the 1\textsuperscript{st} statewide code – to take effect Jan 2011.
  • Applicable to all building types.
  • State jurisdictions can adopt Tier 1 (SBD requirements) or Tier 2 (15\% > than SBD).
### Tier 1 Cool Roof Requirements

<table>
<thead>
<tr>
<th>Roof Slope</th>
<th>Roof Weight</th>
<th>Climate Zone</th>
<th>Minimum 3-year SR</th>
<th>Thermal Emittance</th>
<th>SRI</th>
</tr>
</thead>
<tbody>
<tr>
<td>≤2: 12</td>
<td>N.A.</td>
<td>13 &amp; 15</td>
<td>0.55</td>
<td>0.75</td>
<td>64</td>
</tr>
<tr>
<td>&gt;2: 12</td>
<td>&lt;5 lbs./ft²</td>
<td>10-15</td>
<td>0.2</td>
<td>0.75</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>≥5 lbs./ft²</td>
<td>1-16</td>
<td>0.15</td>
<td>0.75</td>
<td>10</td>
</tr>
</tbody>
</table>
## Tier 2 Cool Roof Requirements

<table>
<thead>
<tr>
<th>Roof Slope</th>
<th>Roof Weight</th>
<th>Climate Zone</th>
<th>Minimum 3-year SR</th>
<th>Thermal Emittance</th>
<th>SRI</th>
</tr>
</thead>
<tbody>
<tr>
<td>≤2: 12</td>
<td>N.A.</td>
<td>2, 4, 6-15</td>
<td>0.65</td>
<td>0.85</td>
<td>78</td>
</tr>
<tr>
<td>&gt;2: 12</td>
<td>N.A.</td>
<td>2, 4, 6-15</td>
<td>0.23</td>
<td>0.85</td>
<td>20</td>
</tr>
</tbody>
</table>
• **CA Green Building Standards Code**

• Exceptions for thermal mass construction projects of 25 lb/sqft.

• Roofing Products not certified with the CRRC are provided default values
  – Asphalt shingles = (SR) 0.08  (TE) 0.75
  – All other products = (SR) 0.10  (TE) 0.75
• **CA Title 24 Standards**
• 2008 Version effective January 1, 2010
• 2011 Version currently being developed

<table>
<thead>
<tr>
<th>Slope Type</th>
<th>Minimum 3 year Aged Solar Reflectance</th>
<th>Minimum Thermal Emittance</th>
<th>Minimum Solar Reflectance Index (SRI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low Slope</td>
<td>0.55</td>
<td>0.75</td>
<td>64</td>
</tr>
<tr>
<td>Steep Slope &lt; 5 pounds/ft²</td>
<td>0.2</td>
<td>0.75</td>
<td>16</td>
</tr>
<tr>
<td>Steep Slope ≥ 5 pounds/ft²</td>
<td>0.15</td>
<td>0.75</td>
<td>10</td>
</tr>
</tbody>
</table>
• **Collaborative for High Performance Schools**

• 2009 edition of CHPS for New Construction and Major Renovations includes requirements for minimum SRI.

• Roofing material must cover at least 75% of the roof area and meet or exceed the minimum specified SRI.
  
  – Steep slope = 29
  
  – Low slope = 82
2009-2010 News

• **City of Philadelphia**
  • In 2010 the City of Philadelphia adopted into law (Law 3912, a.k.a. Bill 70555) cool roof provisions.
  • Provisions cite the Cool Roof Rating Council CRRC-1 Product Rating Program.
  • Focus is low sloped roofs.
  • Law does differentiate roof product types.
2009-2010 News

- **Ballasted Roofing Systems**
- Recognized by
  - ASHRAE Std 189.1 as a prescriptive alternative
  - CEC Title 24 provides an exception (>25lb/ft\(^2\))
  - City of Chicago municipal building code as an accepted cool roof alternative
2009-2010 News

• EPA’s Energy Star Changes
• CEIR’s RoofPoint Program
• To be presented on later during the Membership Meeting!
• When the CRRC-1 Standard is recognized by ANSI, CRRC will submit code change proposals for recognition to:
  • ASHRAE Standard 90.1 (Commercial Energy Code)
  • ASHRAE Standard 90.2 (Residential Energy Code)
  • ASHRAE Standard 189.1 (Green Standard)
Future Work

• For this fall 2010, attempt to seek recognition to:
  • ICC International Energy Conservation Code (IECC)
  • International Green Construction Code
Existing References

- Because of how the CRRC-1 Roof Product Program and the CRRC-1 Standard are being developed there will not be a need for existing jurisdictions who reference the CRRC-1 Roof Product Program to modify their adopted code provisions.
- The Program will reference the Standard.
- However, the date of the Program may need to be updated when appropriate.